IAEA
International Atomic Energy Agency

Integrated Regulatory Review Service (IRRS) Guidelines for the Preparation and Conduct of IRRS Missions

Vienna, May 2013

Services Series 23

IAEA SAFETY STANDARDS AND RELATED PUBLICATIONS

IAEA SAFETY STANDARDS

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INTEGRATED REGULATORY REVIEW SERVICE (IRRS) GUIDLELINES FOR THE PREPARATION AND CONDUCT OF IRRS MISSIONS

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IAEA SERVICES SERIES No. 23

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INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 2013

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FOREWORD

The IAEA Integrated Regulatory Review Service (IRRS) was established to strengthen and enhance the effectiveness of national regulatory infrastructure for nuclear safety, radiation safety, radioactive waste and transport safety, and the security of radioactive sources, while recognizing the ultimate responsibility of each Member State to ensure safety in these areas. The IRRS process sets out to accomplish this expressed purpose through consideration of both technical and policy issues of a regulatory nature against IAEA safety standards and, where appropriate, good practice elsewhere. The regulatory review process directly draws upon the wide-ranging international experience and expertise of IRRS review team members.

Peer exchange on technical and policy issues gives insight into the efficiency and effectiveness of the legal and governmental framework and regulatory infrastructure for safety. Through this process, opportunities for improvement are explored and potential improvement strategies identified which may be shared with other States.

IRRS missions provide an opportunity for sharing regulatory experiences, harmonizing regulatory approaches among States, and creating mutual learning opportunities among regulators. IRRS discussions focus on issues arising from the State's self-assessment and the evaluation of technical areas and policy issues.

The IAEA Fundamental Safety Principles (IAEA Safety Standards Series No. SF-1) provide the basis for IAEA safety standards and IAEA safety related programmes. In support of effective regulation, the IAEA has established safety standards in the area of the Governmental, Legal and Regulatory Framework for Safety (IAEA Safety Standards Series No. GSR Part 1). These safety standards form a core component of an IRRS review.

Other requirements and guidance, such as The Management System for Facilities and Activities (IAEA Safety Standards Series No. GS-R-3) and Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (IAEA Safety Standards Series No. GSR Part 3 — Interim Edition), may be used in conjunction with GSR Part 1 in order to conduct a thorough review of a national legal and governmental infrastructure.

The IRRS recognizes that organizational structure and regulatory processes vary from country to country depending on national legal and administrative systems, the size and structure of the nuclear and radiation protection programme, financial resources available to the regulatory body, social customs and cultural traditions. The IRRS process allows for such variations within a single integrated review service.

The IRRS process includes performance and prescriptive approaches to varying degrees. It is performance oriented in that it accepts various approaches to the organization and practices of a regulatory framework and body that contribute to a strong national nuclear and radiation safety regime. At the same time the review process is prescriptive in its objective comparison against IAEA standards and guidance. These IRRS guidelines have been published to encourage consistency and comprehensiveness in the preparation for, conduct and follow-up of an IRRS mission.

During an IRRS mission, recommendations and suggestions may be offered to the host country. Recommendations made are related to items of direct relevance to safety as referenced in IAEA Safety Requirements, while suggestions made are related to items which are not be essential to compatibility with IAEA standards but may enhance the effectiveness of the national nuclear and radiation safety regime and/or improve the organization or performance of the regulatory body. Good practices identified may be documented for consideration by other States.

These guidelines were compiled by experts in the Division of Nuclear Installation Safety, the Division of Radiation, Transport and Waste Safety, and the Incident and Emergency Centre.

CONTENTS

1. INTRODUCTION

Regulators throughout the world face significant challenges given the complexity and diversity of activities and practices involving radioactive and nuclear materials and radiation generating devices. Each state is ultimately responsible for establishing a framework for ensuring the safety of facilities, activities and practices involving radiation sources and radioactive materials on its own territory. Thus, there is a growing need to support and strengthen national regulatory bodies and to consider the broader policy implications presented by such challenges and emerging issues.

The IAEA's Fundamental Safety Principles [1] relating to nuclear and radiation risks provide the basis for the IAEA safety standards and its safety regulation, the IAEA has established safety standards in the area of governmental, legal and regulatory framework for safety. These safety standards provide guidance for every national regulatory body's authority, independence and competence.

In support of the application of the IAEA safety fundamentals, safety standards and guidance and towards enhancing the effectiveness of the national regulatory infrastructure for safety, the 'Integrated Regulatory Review Service' (IRRS) has been developed. It provides a peer evaluation of the host state's regulatory infrastructures in relation to the relevant IAEA safety standards. IRRS missions provide for discussion among experienced regulators regarding both technical and policy issues of a regulatory nature. Regulatory experiences are shared and regulatory approaches are harmonised among states. Both technical and policy discussions conducted during IRRS missions take into account issues identified during both the states' self-assessment and the IRRS review of regulatory technical areas.

The IAEA offers several review services to Member States. Thus to avoid any potential overlap of the topics addressed by such services (which cover wide-ranging thematic areas) the IAEA has developed the IRRS to offer an integrated approach to the review of common aspects of any state's national, legal and governmental framework and regulatory infrastructure for safety.

The IRRS combines the common regulatory infrastructure elements of the various safety review services offered by the IAEA, resulting in a cross-cutting review of the regulatory oversight of all facilities and activities utilising radiation technologies in the receiving state.

Within the reasonable and necessary variations among national regulatory approaches, there is no absolute measure of the adequacy and effectiveness of the various systems. Notable differences are inevitable between the regulatory infrastructures of states having one or more nuclear installations and a large number and variety of practices using radiation sources relative to those states having no nuclear installations and relatively few practices using radiation sources. The regulatory approach and requirements may differ significantly between these two extremes.

The IRRS regulatory review process provides the opportunity for peer review of both regulatory technical and policy issues in any state regardless of the level of development of its activities and practices involving ionizing radiation or nuclear programme, and enables an objective comparison of the national regulatory infrastructure against IAEA Standards and Guidance. The IRRS evaluates as objectively as possible, the state's regulatory infrastructure for safety with respect to these standards and practices, and provides recommendations and suggestions for improvement. An expert peer review of the current extent of compliance with IAEA Standards provides a good indicator of the effectiveness of the regulatory oversight of nuclear, radiation, radioactive waste and transport safety.

An IRRS mission addresses all relevant areas, facilities and activities regulated in the state, with a follow-up IRRS mission no more than four years later to review progress in implementing the suggestions and recommendations of the initial IRRS mission. Preparation for the IRRS mission includes a self-assessment conducted by the state in accordance with the IAEA Self-Assessment Methodology. The IRRS mission is an IAEA coordinated peer review conducted by a team of international reviewers led by a senior regulator from a Member State. The review is structured to lead to the identification of areas for improvement and the formulation by the host country, of an action plan to address identified deficiencies.

A follow-up mission is undertaken in due course, by which the host country and IRRS Review Team assess progress in implementing the recommendations and suggestions in the period since the initial review. The IRRS follow-up mission also provides the opportunity for the IAEA, international reviewers and host country to identify additional technical and policy issues for review, to identify further good practices and through feedback, provide input for the review of IAEA safety standards.

These IRRS Guidelines have been produced to provide:

- guidance to host countries, peer reviewers and IAEA coordinators on the preparation, execution, and reporting of initial and follow-up IRRS missions; and
- a consistent and systematic methodology for:
  - conducting the review of both regulatory technical and policy issues;
  - a detailed, consistent evaluation of the status of development of the national regulatory infrastructure for nuclear and radiation safety and security of radioactive sources;
  - the identification of areas where the national regulatory infrastructure should be improved to meet IAEA safety standards;
  - providing recommendations and suggestions related to the identified deficiencies; and
  - offering assistance if necessary, with the development of an action plan to achieve improvements.

2. IRRS BACKGROUND

The importance of international peer review to the continuous improvement of regulatory effectiveness and the opportunity it provides to share knowledge and experience of regulatory issues and good practice has been acknowledged at the Review Meetings of the contracting parties to the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. It has also been emphasised at major international conferences on safety such as those related to the March 11th 2011 accident of the TEPCO Fukushima Dai-ichi Nuclear Power Plant.

In addition to addressing the technical safety requirements for effective regulatory control, it is also important for peer review to consider the broader policy implications for states receiving peer review of emerging issues and to share relevant insights with the wider international community. Consideration of both the technical and policy issues provides opportunities for improvements to regulatory infrastructure and identifies strategies that might be shared with other Member States.

The IRRS provides a cross-cutting review, against the relevant IAEA safety standards [2-52], of the governmental and legislative framework for safety and the regulatory oversight of all facilities and activities utilising radiation technologies in the host state.

All IAEA safety reviews provide an opportunity to exchange professional experience and to share lessons learned and good practice. They constitute a mutual learning mechanism that accepts differing approaches to the organization and practices of a national regulatory body but which contribute to ensuring effective nuclear safety and radiation protection. These reviews also provide effective feedback for the improvement of existing IAEA Standards and Guidance, for the development of new standards and to establish a knowledge base in the context of an integrated safety approach.

3. OBJECTIVES AND BENEFITS OF THE IRRS

The IRRS offers states a means to assess through peer review, the status of national regulatory infrastructure against IAEA safety standards. The team of international reviewers participating in an IRRS have direct experience applicable to all aspects of the agreed scope of the review.

The objectives of an IRRS mission are to enhance nuclear and radiation safety and regulatory effectiveness by:

(a) Providing an opportunity for continuous improvement of the national regulatory body through an integrated process of self-assessment and review;

(b) Providing the host country (regulatory body and governmental authorities) with a review of its regulatory technical and policy issues;

(c) Providing the host country (regulatory body and governmental authorities) with an objective evaluation of its regulatory infrastructure with respect to IAEA safety standards;

(d) Promoting the sharing of experience and exchange of lessons learned among senior regulators;

(e) Providing key staff in the host country with an opportunity to discuss regulatory practices with IRRS Review Team members who have experience of other regulatory practices in the same field;

(f) Providing the host country with recommendations and suggestions for improvement;

(g) Providing other states with information regarding good practices identified in the course of the review;

(h) Providing reviewers from Member States and IAEA staff with opportunities to observe different approaches to regulatory oversight and to broaden knowledge in their own field (mutual learning process);

(i) Contributing to the harmonization of regulatory approaches among states;

(j) Promoting the application of IAEA Safety Requirements;

(k) Providing feedback on the use and application IAEA safety standards.

These objectives are consistent with the development and application of self-assessment methodologies as component parts of regulatory body management systems, including the IAEA Self-Assessment Methodology and its associated tools such as SARIS (see the IAEA Self-Assessment Methodology). Some regulatory bodies have already implemented a

continuous improvement strategy based on experience feedback and self-assessment, but for those countries still developing management systems, the IRRS helps to identify the strengths and weaknesses in the existing regulatory system through its combination of self-assessment and peer review.

IRRS review fosters:

— An enhanced global nuclear safety regime through sharing of information between international reviewers and the host state, experience feedback and insights on contemporary issues of relevance;

— Greater openness and transparency of the governmental, legal and regulatory system;

— Improved regulatory management systems emphasizing continuous improvement through periodic assessment of safety performance, and encouraging broader consideration and application of lessons learned from international experience and thereby enhancing safety culture;

— More effective use of information and knowledge management networks to share relevant information on regulatory issues among and between states having common interests.

Critical feedback collected as part of the review of regulatory technical and policy issues helps to improve IAEA safety standards and enhance understanding of regulatory issues having a widespread impact on nuclear and radiation safety.

4. STRUCTURE OF THE IRRS

The IRRS has a modular structure (see Figure 1) designed to be tailored to both generic and country-specific needs and to facilitate the review of circumstances where the scope of regulatory responsibility may be changing. Figure 1 illustrates facilities and activities within the scope of IRRS and how core regulatory processes interface with them. The importance of the regulatory body's management system is emphasised by its position in the diagram, overarching processes and activities.

The details of the modular structure of the IRRS, based on GSR Part 1, are shown in Figure 2.

IRRS Modules 1 to 4 cover the various elements of the framework for safety needed at the state level, regardless of the range and number of facilities and activities to be regulated.

Modules 5 to 9 of this matrix represent the five core regulatory processes. Each of these regulatory processes (namely, Authorization, Review & Assessment, Inspection, Enforcement and Regulations and Guides) is applied to all regulated facilities and activities.

Module 9 differs from Modules 5 to 8 since it comprises two levels of review:

The first level is part of the core modules of the IRRS and is related to the process of developing regulations and guides. It addresses requirements R32 to R34 of GSR Part 1, as indicated in Figure 2.

The second level is optional and relates to the content of regulations and guides issued by the regulatory body. It addresses compliance of regulations and guides with the corresponding IAEA Safety requirements and guides.

Module 10 deals with the regulatory aspects of the nuclear and radiological emergency preparedness of the host country.

Module 11 includes a number of additional technical areas related to transport of radioactive materials; radiation protection; control of exposure, discharges and clearance; and environmental monitoring.

Module 12 discusses the interface of nuclear and radiation safety with nuclear security.

The tailored module for countries embarking on a nuclear power programme consists of a review against the actions of SSG-16 and the respective IAEA Requirements.

The tailored module to address the regulatory implications of the Fukushima accident is a core module, included in the scope of the IRRS for countries having nuclear power plants.It assesses the status of national regulatory frameworks and regulatory bodies in light of the Fukushima accident, based on initial lessons learned.

Policy issues discussions are held to foster exchange of information and experience between the reviewers and the host country experts.

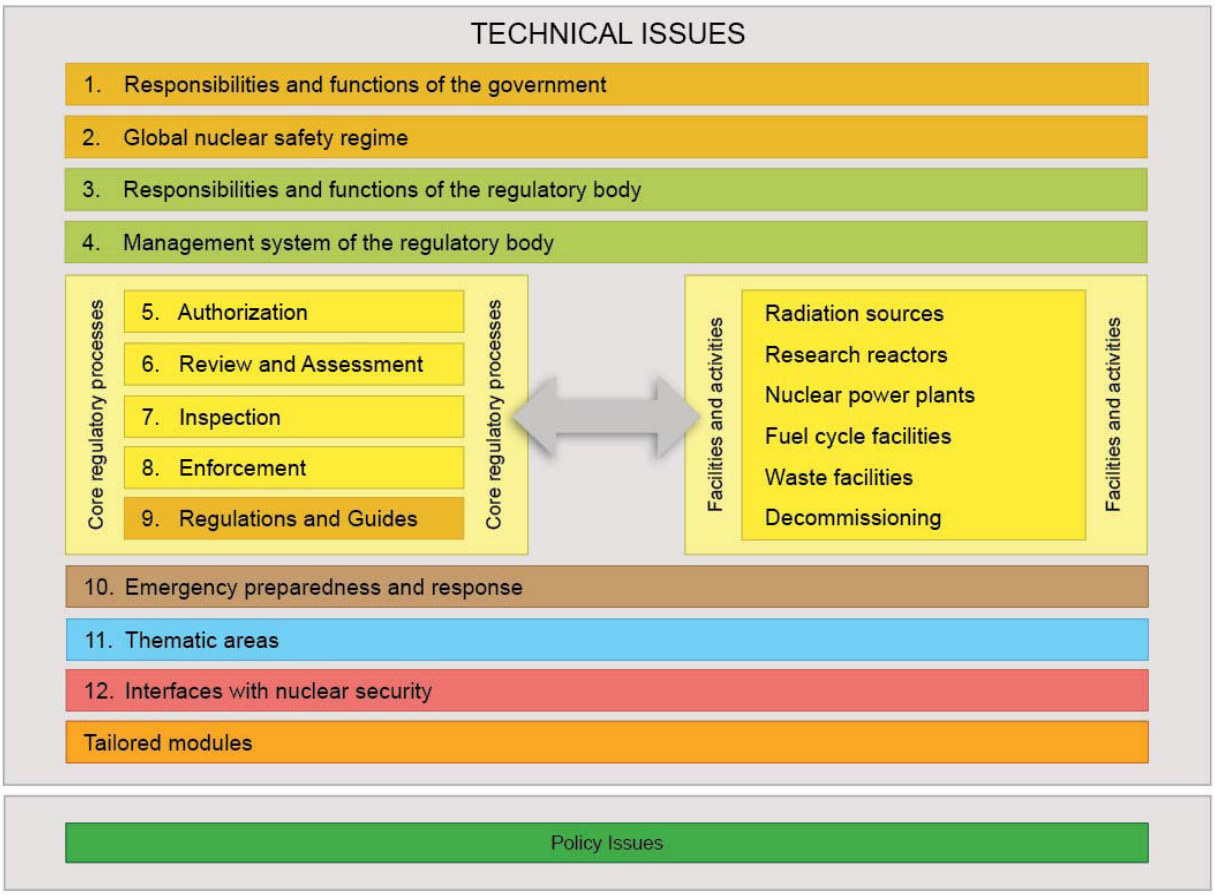

FIG. 1. The modular structure of the IRRS.

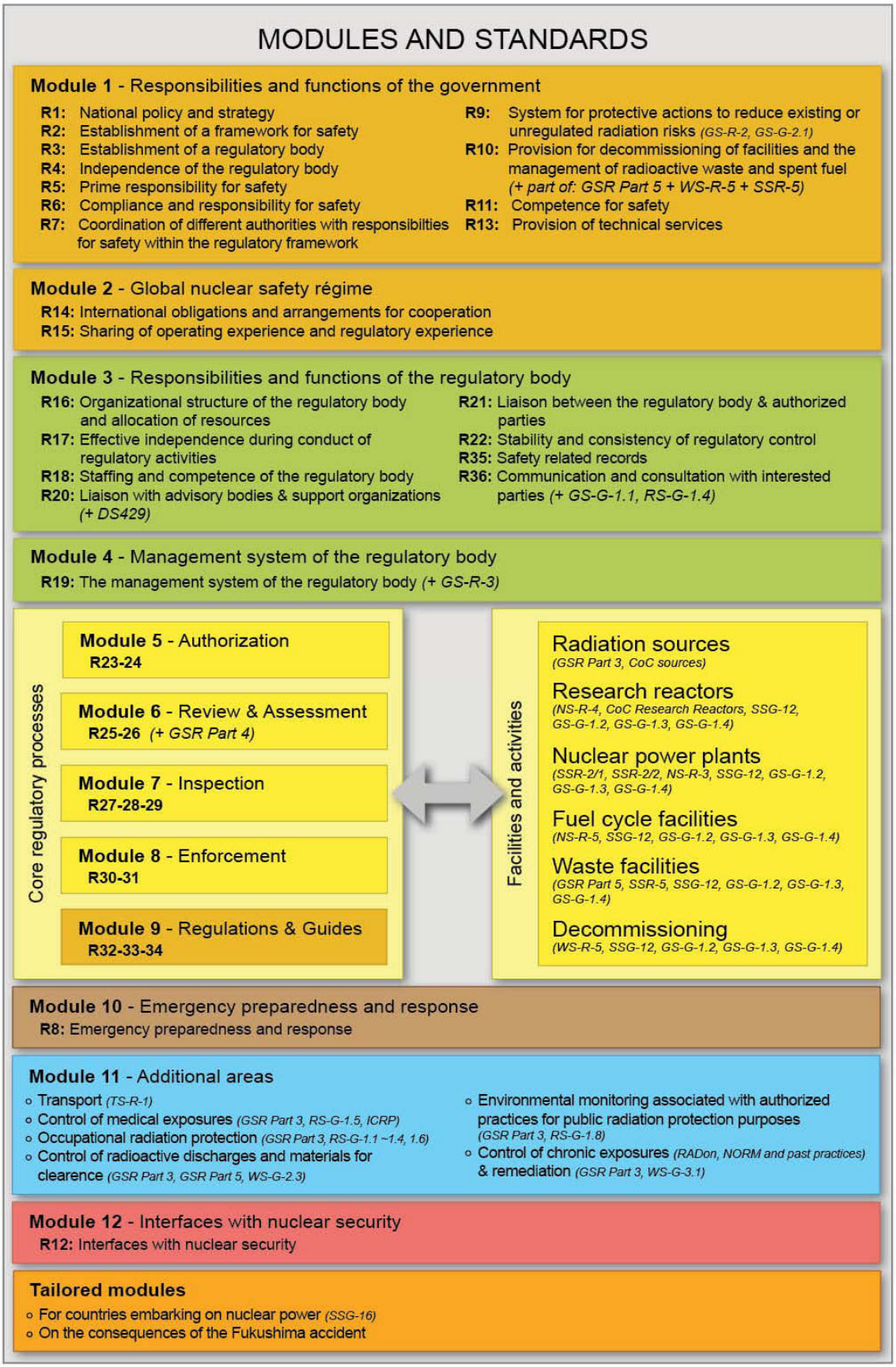

FIG. 2. Modules and associated Safety Requirements of the IRRS.

5. SCOPE OF AN IRRS MISSION

The minimum scope of an IRRS mission includes the core modules, i.e., Modules 1 to 10, together with policy issues discussions. In order to be called an IRRS mission, the mission scope should always cover the minimum scope.

When requesting an IRRS the state is strongly encouraged to include all regulated facilities and activities in the mission. Without prejudice to the previous paragraph, if the state wishes to exclude specific facilities and activities, a detailed explanation for the exclusion of these facilities or activities should be provided. The mission report will reflect this in both the title and content of the relevant report sections, including the Executive Summary.

5.1. TECHNICAL ISSUES

For all facilities and activities within the scope, the IRRS review should always cover the following:

— Responsibilities and functions of the government (Module 1).

— Global nuclear safety regime (Module 2).

— Responsibilities of the regulatory body (Module 3).

— Management system of the regulatory body (Module 4).

— Authorization (Module 5).

— Review and assessment (Module 6).

— Inspection (Module 7).

— Enforcement (Module 8).

— Development of regulations and guides (Module 9, first level).

— Emergency preparedness and response (regulatory aspects) (Module 10).

In addition, at the request of the host state and as applicable, a review of regulations relating to the following facilities/activities may also be included in the scope of the IRRS (Module 9, second level):

— Radiation sources applications.

— Research reactors.

— Nuclear power plants.

— Fuel cycle facilities.

— Waste management facilities.

— Decommissioning.

Additional technical issues may be included in the scope of the IRRS. These are incorporated in Modules 11 (Additional Areas) and 12 (Interfaces with Nuclear Security); see Section 4 for short descriptions of these additional areas.

5.1.1. Basis for technical issues

The basis for the review of technical issues is the IAEA safety standards, which reflect an international consensus on what constitutes a high level of safety for protecting people and

the environment from harmful effects of ionizing radiation. They are issued in the IAEA Safety Standards Series, which has three categories:

— Safety Fundamentals;

— Safety Requirements;

— Safety Guides.

The safety standards include the Safety Fundamentals, the applicable General Safety Requirements, with a graded approach to all facilities and activities, complemented by a set of Specific Safety Requirements relating to facilities and activities. The Safety Requirements are implemented through a corresponding set of general and specific Safety Guides.

Safety Fundamentals

The Safety Fundamentals SF-1 establishes the fundamental safety objective and principles of protection and safety and provides the basis for the safety requirements.

Safety Requirements

An integrated and consistent set of Safety Requirements establish the requirements that should be met to ensure the protection of people and the environment, both now and in the future. The requirements are governed by the objective and principles of the Safety Fundamentals. If the requirements are not met, measures should be taken to reach or restore the required level of safety. The format and style of the requirements facilitate their use for the establishment, in a harmonized manner, of a national regulatory framework. The safety requirements use 'shall' with statements of associated conditions to be met.

Safety Guides

Safety Guides provide recommendations and guidance on how to comply with the safety requirements, indicating an international consensus that it is necessary to take the measures recommended (or equivalent alternative measures). The Safety Guides present international good practices, and increasingly reflect best practices, to help users striving to achieve high levels of safety. The recommendations provided in Safety Guides are expressed as 'should' statements.

5.1.2. Basis for core areas review

IRRS core review areas address IAEA Safety Requirements set out in:

— GSR Part 1: Governmental, Legal and Regulatory Framework for Safety [2];

— GS-R-3: The Management System for Facilities and Activities Safety Requirements [3], and

— GS-R-2:Preparedness and Response for a Nuclear or Radiological Emergency [5] (requirements related to regulatory aspects)

GSR Part 1 comprises 36 overarching requirements (hereafter R1 to R36), organized in the following manner:

— Responsibilities and functions of the government (R1-R13);

— Global nuclear safety regime (R14-R15);

— Responsibilities and functions of the regulatory body (R16-R36).

GSR Part 1 constitutes the backbone of the IRRS. As further explained in Section 4, the various modules of the IRRS correspond to different parts and/or the various requirements of GSR Part1.

5.1.3. Basis for additional areas review

Other IAEA Safety Requirements are used as appropriate, in order to cover the detailed scope of regulatory control for safety of nuclear installations and for radiation, radioactive waste and transport safety. These are detailed in Appendix I.

5.2. POLICYISSUES

5.2.1. Purpose of policy issues

The IRRS review of policy issues is aimed at enabling greater understanding of regulatory issues potentially having international policy implications and addressing specific technical issues relevant to the regulation of nuclear safety and radiation protection in the host country. The review of policy issues provides for the exchange of experience and lessons learned. It may also identify potential strategies for solving regulatory challenges faced by the host country.

Policy issues to be discussed during the IRRS mission are identified after reviewing a broad spectrum of information including, but not limited to, insights resulting from convention activities, international conferences and forums and previous IAEA safety review services conducted in the host country. The policy issues review may be further tailored to the host country's IRRS mission through prior review of the host's self-assessment and initial action plan.

Policy discussions between IRRS Review Team members and their host country counterparts are used to further the understanding of the attributes of an effective regulator and provide feedback for developing criteria to assess the effectiveness of regulatory systems. Whereas policy discussions may be held at a senior level, it is important that such issues are dealt with in a transparent and inclusive manner. Further information on policy issues can be found in Appendix III and Section 7.4.

While cooperative activities contributing to enhanced performance of regulatory functions are conducted under various multilateral, regional and bilateral arrangements, the IRRS policy issues review contributes to knowledge and information about new regulatory initiatives, areas of concern and/or good practice and other policy-level matters deserving to be further addressed and shared among regulators and operators globally.

Wherever possible, policy issues should be linked to IAEA safety standards. In such cases IRRS recommendations maybe made as with technical issues. Occasionally however, there may be no direct link with the Standards and in such cases it is important to explain why the issues will be addressed and what outcome is expected.

5.2.2. Basis for policy issues

Documents and commitments made by the host country may provide useful information for reviewers evaluating the current functioning of the regulatory body and identifying policy issues. Such documents might include:

— The host country's self-assessment and action plan;

— The host country's Advance Reference Material (ARM);

— Relevant technical issues arising during the IRRS, etc.

Other material may generate policy issues and facilitate discussion of their potential impact on regulatory responsibilities, functions and activities. Such material includes IAEA publications on regulatory and safety conferences and other relevant international meetings and forums; reports on safety issues and trends; results from other IAEA review missions; INSAG Reports; insights from the analysis of operational experience feedback from the IAEA's Incident Reporting System (IRS) and others.

5.3. TAILORED IRRS MODULES TO REFLECT RECENT DEVELOPMENTS

5.3.1. Tailored module for countries embarking on nuclear power programme

The IAEA has developed a safety guide (SSG-16, [41]) whose objective is to provide guidance on the establishment of a national safety infrastructure, in accordance with the IAEA safety standards, to countries considering or preparing to embark on a national nuclear power programme. SSG-16constitutes a road-map of safety-related actions to be taken in the first three phases (see Figure 3 below) of the development of the nuclear power programme, in order to achieve a high level of safety throughout the lifetime of nuclear power plants, including decommissioning and waste management.

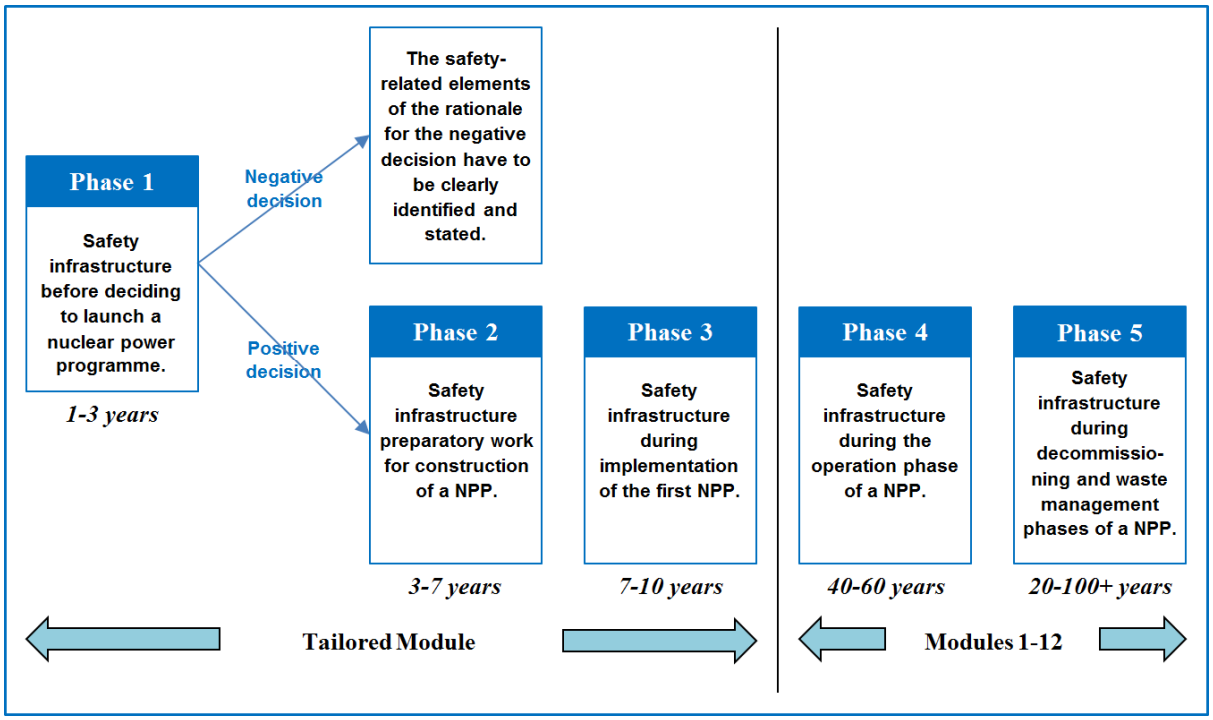

FIG. 3. Relationship between IRRS Modules and national safety infrastructure phases.

This tailored module comprises a review against actions set out inSSG-16 and the IAEA Requirements on which the actions are based, as described in Appendix II. Depending upon the level of development of the national safety infrastructure, the host country, when agreeing the scope of the mission, will determine the phases it wishes to have subject to review. However, if the country selects phase 2 for instance, then for completeness, the actions of phase 1 will also be reviewed. Appendix II shows the sub-sections of the tailored module. Appendix II also contains supplemental guidance for IRRS missions to embarking countries.

5.3.2. Tailored module to address the regulatory implications of the Fukushima accident

This is a core module, included in the scope of the IRRS for countries having nuclear power plants.

The international nuclear community has recognized the fundamental importance of identifying all lessons to be learned from the TEPCO Fukushima Dai-ichi nuclear power plant accident and of effectively addressing their implications in pursuit of continuously improving nuclear safety. Although it is acknowledged that this process will last many years, there must be a response to global concerns as soon as possible. Thus, this (interim) tailored module has been developed as a review of the status of national regulatory frameworks and regulatory bodies in the light of the Fukushima accident and based on initial lessons learned.

Areas requesting appropriate attention are identified across every IRRS Module, with an account of related weaknesses identified in light of the Fukushima accident. The IAEA Safety Requirements and Guidance pertaining to the issue are recalled to formalize gaps and as a tool to indicate how to effectively address the gaps, leading to recommendations, suggestions and conclusions for improvement.

As further lessons are learned and knowledge acquired, the content of this tailored module will be revised accordingly.

Appendix II provides additional guidance for the application of the tailored module.

6. OVERVIEW OF THE IRRS PROCESS AND INITIAL STEPS

The IRRS process flowchart is provided in Figure 4. It consists of the following phases:

— Pre-mission or preparatory phase;
— Conduct of the review mission, completion and dissemination of the mission report;
— Follow-up mission.

6.1. GENERALOVERVIEW

An IRRS is initiated through a formal governmental request to the IAEA. In some cases, it may be appropriate for the IAEA to suggest to a Member State that an IRRS should be considered.

The IRRS is performed by an international team comprising senior regulatory experts with broad knowledge of the regulation of nuclear and radiation safety and extensive related experience, often in specialized areas. The IRRS Review Team is led by a senior regulator from a Member State designated as the IRRS Team Leader and in general, the team comprises both designated IAEA staff and experienced international regulators recruited from Member States and selected by the IAEA in consultation with the host country.

The IRRS process also provides an opportunity for feedback to further develop the basis of the review, i.e. the IAEA safety standards. Thus, all IRRS participants are encouraged to discuss issues arising related to the standards and potential improvements of the IAEA Safety Standard Series.

The outcome of an IRRS mission is a report that, following the preliminary steps of collating, drafting, review and final agreement is submitted through official channels to the state concerned. The IAEA will use the report to update the reviewed country’s radiation and waste safety infrastructure profile and the nuclear safety profile, as appropriate.

In the interest of openness, countries are encouraged to make their IRRS mission report public. Should they not have done this within 90 days of the IAEA transmittal letter the report will be made available to the public unless the host country specifically requests that it remains restricted. The report's initial distribution is restricted to the authorities concerned, the contributors to the report and responsible IAEA staff.

Figure 4 describes the general process of the IRRS.

6.2. STATE'S REQUEST FOR IRRS AND INITIAL ARRANGEMENTS

On receiving a request for information about IRRS, the IAEA responds by forwarding a copy of these IRRS Guidelines to the appropriate official in the requesting state. In due course, the state may submit a formal request for an IRRS mission to the IAEA Deputy Director General for Nuclear Safety and Security. On receipt of the formal request, the IAEA reviews the request and begins dialogue with the state. Alternatively, for some Member States where the IAEA believes an IRRS would be beneficial, a recommendation to consider an IRRS mission together with a draft proposal may be forwarded to the country.

Upon receipt of a request for an IRRS, the IAEA staff member designated as 'IAEA Coordinator' contacts the host regulatory body in order to:

— Identify the host country Liaison Officer for the mission;

— Arrange a date for the preparatory meeting with the organization(s) involved;

— Discuss the scope and expectations for a regulatory self-assessment in preparation for the review mission.

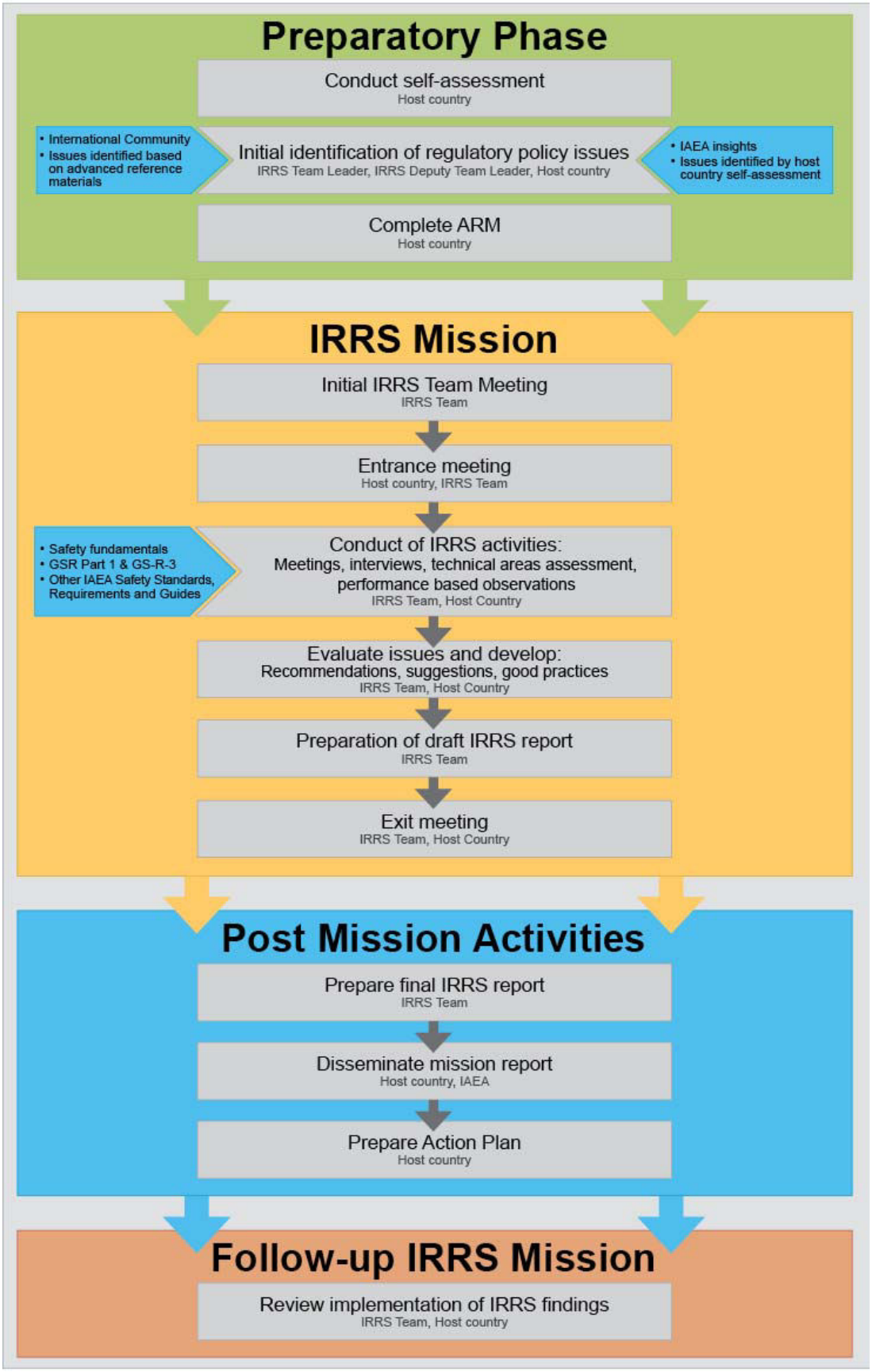

FIG. 4. The IRRS process.

7. PREPARATORY PHASE

The preparatory phase includes:

- Development of an agreement between the IAEA and the host country on the initial scope of the proposed IRRS;
- A preparatory meeting, usually conducted in the host country;
- Completion of a self-assessment by the host country (a prior self-assessment seminar can be organized upon request);
- Agreement on and preparation for policy issue discussions;
- Forwarding to the IAEA of the Advance Reference Material(ARM) prepared by the host country, including self-assessment and initial action plan arising from the self-assessment outcomes;
- Identification of information that must remain confidential;
- Selection of the IRRS Review Team;
- Pre-mission preparation by Review Team members and IAEA participating officers;
- Mission agenda and logistics.

7.1. MISSION SCOPE DETERMINATION

The scope of the IRRS includes selected technical issues related to the regulatory infrastructure and agreed policy issues. The final scope is agreed during the preparatory meeting (c.f. Section 7.2 below).The agreed scope determines the key specialist skills and experience required for the mission (among both the international IRRS Review Team and the host counterparts).

The host regulatory body and other involved organizations as appropriate, nominate potential counterparts in each review area to be the primary counterparts to the reviewers in each specified review area.

The table in Appendix III provides examples of typical policy issues for consideration and their associated key attributes. The host country is responsible for identifying those policy issues it considers relevant to its circumstances but where possible, focussing on those having potential global interest or impact. In addition, the IAEA may also propose policy issues for discussion.

7.2. PREPARATORY MEETING ARRANGEMENTS

During preparation for the IRRS mission, the IRRS Team Leader, the IAEA Coordinator and host country will communicate and exchange information regularly. Early team building and orientation of team members are vital steps in maximising the effectiveness of the teams during the mission.

A preparatory meeting will be conducted six to nine months prior to the mission. The meeting, typically of two or three days' duration, should be attended by the IRRS Team Leader, the IAEA Coordinator and, as necessary, the Deputy Team Leader and other representatives of appropriate IAEA Divisions. The preparatory meeting would normally be held at the regulatory body's headquarters to allow the participation of senior management and other stakeholder organizations in the country. As an alternative, the preparatory meeting may be held at IAEA Headquarters (Vienna, Austria). The main purpose of the preparatory

meeting (or other preparatory arrangements if a meeting is not deemed necessary) is for the IRRS Team Leader and IAEA Coordinator to:

- Meet with regulatory body staff (counterparts, senior management) and exchange contact details;
- Inform the regulatory body about how the IRRS review process works;
- Identify the regulatory body's priorities, aims and objectives for the mission;
- Explain the roles and responsibilities of IRRS Review Team members and the way they interact with the regulatory body, other organizations, and facility representatives;
- Explain the role of the host country Liaison Officer and counterparts before and during the review;
- Discuss and confirm the dates and scope of the mission and which policy areas will be reviewed, and the material the regulatory body will provide in advance [i.e. the ARM (Appendix V), self-assessment report];
- Explain the importance of the regulatory body's providing comprehensive written replies to the self-assessment including self-analysis/conclusions and a subsequent initial action plan;
- Agree an outline schedule for the mission and the logistical aspects;
- Explain pertinent IAEA policies (e.g. funding, contact with the media);
- Answer any questions the regulatory body and other involved organisation representatives may have and address their concerns to the extent possible.

A six to nine month time interval between the preparatory meeting and the IRRS mission is typically needed to enable the host country to complete its preparation in a timely manner (the longer period is needed in particular where translation of documents into English is required). It should be noted that self-assessment alone may require several months.

The main elements of the preparatory meeting are detailed in Appendix VI. Appendix IX provides a checklist that may be useful during the preparatory phase.

7.3. REGULATORY SELF-ASSESSMENT AS PART OF THE IRRS

Regulatory self-assessment is an integral part of the IRRS process and is conducted by the host country in preparation for the IRRS mission. The IAEA Self-Assessment Methodology and the associated software (SARIS) provide a detailed approach and comprehensive information on this important part of the IRRS process.

According to the IAEA Self-Assessment Methodology, a complete self-assessment comprises five main phases:

- Preparation;
- Answering;
- Analysis of results;
- Action plan;
- Implementation and follow-up.

The first four phases are necessary preparation for an IRRS review. These phases provide a comprehensive picture of how the regulatory body is performing against IAEA safety

standards. The IRRS sets out to be a peer verification of the host's self-assessment findings, thus, the considerable effort and time needed for completing the self-assessment should not be underestimated.

The scope of the self-assessment conducted as an integral part of the IRRS process should be consistent with the agreed scope of the IRRS mission.

At the request of the host country the IAEA may organize and deliver a self-assessment workshop, describing the self-assessment methodology and process (including tools where appropriate) as well as providing practical examples of its application.

To provide a consistent review against IAEA safety standardsthe IAEA has prepared sets of questions for each module of the IRRS. SARIS, an electronic tool incorporating these question sets is available to the host country. SARIS is provided to the regulatory body (with training if requested). The self-assessment according to the IAEA methodology must be completed well in advance of the mission using the SARIS tool. SARIS question-sets address both compliance and performance aspects, and comprehensively reference the pertinent safety standard sand associated guides. SARIS question-sets for any particular IRRS mission contain the relevant standards-based material for the selected mission scope, and are structured in a modular format. Question sets addressing Modules 1-11and others related to the optionally included 'additional' areas are provided within SARIS.

The self-assessment should be completed thoroughly as it provides essential information to the IRRS Review Team about the state's regulatory infrastructure for nuclear, radiation, radioactive waste and transport safety and security of radioactive sources as applicable with respect to the scope of the IRRS. This phase may take nine months or longer, depending on the availability of information and the status of the regulatory body's management system. The information provided as a result of the self-assessment will be verified by the IRRS Review Team during the mission (see Section8.4.2'Interviews').

The regulatory body includes the completed self-assessment question-sets as part of the ARM. Thus, it is essential that the questions be answered thoroughly and as completely as possible. Wherever possible, the regulatory body is encouraged to reference responses with the applicable documents. The responses to the questionnaire and the attached documentation form the bulk of the ARM provided by the regulatory body to the IRRS Review Team.

Upon completion of a self-assessment including self-analysis of the questionnaire responses, an initial action plan should be developed by the host country to address deficiencies revealed during the self-assessment. The regulatory body (and other involved organisations, as appropriate) will determine the most appropriate way for preparing the action plan. For instance, where a planning process exists as part of the regulatory body's management system, it may be used for developing the action plan.

Self-assessment activities should be conducted such that the outcomes and resulting action plan are forwarded to the IRRS Review Team via the IAEA Team Coordinator, at least two months prior to the start of the mission, as part of the ARM.

7.4. PREPARATIONS FOR POLICY ISSUES DISCUSSIONS

Policy issues are usually agreed before the mission but they may also be identified or adapted as a result of the self-assessment or during the course of the mission.

Policy issues can be proposed by both the host country and the IRRS Review Team.

Thorough preparation for IRRS policy issues review is essential and early identification of these issues maximises the time available for all parties to prepare fully for the policy discussions.

Examples of typical policy issues are provided in Appendix III.

7.5. ADVANCE REFERENCE MATERIAL

Prior to the mission IRRS Review Team members will review the ARM (Appendix V) provided by the IAEA, which includes the self-assessment report prepared by the host country in preparation for the IRRS mission and the action plan arising from the self-assessment. Wherever possible the ARM should include text and material relating to the identified policy issues. The ARM should be forwarded to the IAEA Coordinator at least two months in advance of the mission so there is adequate time for a thorough review of the material.

Each IRRS reviewer is expected to:

— Allocate sufficient time for a thorough review of the ARM;

— Review the initial information related to policy issues and identify any additional issues relating to their assigned technical areas;

— Assess the ARM against the relevant IAEA safety standards;

— Form an initial opinion of the subject area to which they have been assigned and identify priority technical areas for review during the IRRS mission;

— At least two weeks prior to the mission, provide written feedback to the IAEA Coordinator, Deputy Coordinator, the Team Leader and Deputy Team Leader on any significant issues identified for their assigned review areas, so that if necessary, there will be sufficient time to adjust the mission programme and logistics in response to team member inputs.

The ARM of the initial IRRS mission should be retained by both the host country and the IAEA for further use and comparative review during the follow-up mission.

7.6. SELECTION OF THE REVIEW TEAM

7.6.1. Team size and composition

As a general rule, IRRS missions will be 5 to 15 days in duration and typically include teams comprising 5-20international experts. For large teams and broad scope reviews, two team members may be assigned joint responsibility for certain review areas. The size of the IRRS Review Team and the duration of the mission are primarily affected by the legal, administrative and technical complexity of the host country's infrastructure for nuclear, radiation, radioactive waste and transport safety and security of radioactive sources and by the range of facilities, activities and practices included in the scope of the IRRS.

An IRRS Review Team, as appropriate, will include:

— **IRRS Team Leader**, who will be recruited from a Member State;

— **IRRS Deputy Team Leader**, also recruited from a Member State;

— **IAEA Coordinator**, who will be an IAEA staff member;

— **IAEA Deputy Coordinator**, also an IAEA staff member;

— **IAEA Review Area Facilitators**(for large or complex review missions; typically one for nuclear installations and one for radiation, transport and waste safety), drawn from IAEA staff, and;

— **IRRS Review Team members** recruited from Member States and who may additionally include, where necessary, experts drawn from IAEA staff.

— **IAEA Administrative Support** as appropriate.

— **Observers** from other states may participate with the agreement of the host state**.**

7.6.2. Recruitment of IRRS Review Team Members

IRRS Review Team members are recruited from Member States, IAEA staff, and external consultants to the IAEA. Those recruited from the Member States should be experienced regulators and experts in specific topics. It is important that these experts recognise the collective responsibility they have as part of the team. This will be emphasised by the Team Leader, who should clearly state the expectations of the team and the mission. Wherever possible the majority of the team should have previous IRRS mission experience.

It should be emphasized that IRRS Review Team members must dedicate sufficient time for preparations well in advance of the mission.

IRRS Review Team members should have well developed general attributes for this undertaking, including:

— Good communication skills;

— Good verbal and written English;

— Professional knowledge and experience;

— Good technical knowledge together with an appreciation of the ‘bigger picture’;

— Good report-writing skills;

— A sense of responsibility for the mission as a whole; and

— The ability and willingness to work in a team.

The following specific attributes are relevant:

— The IRRS Team Leader will be a senior regulator from a Member State, experienced in the regulatory aspects of nuclear and / or radiation safety; the personal characteristics of this individual are core to ensuring the success of a mission. In addition to the relevant professional and technical attributes the Team Leader should have:-

  - known leadership qualities;
  - effective communication skills with good spoken and written English;
  - a clear mission vision;
  - known ability to build effective teams;
  - recent knowledge of global and local regulatory issues; and
  - a clear understanding of the peer review process and what needs to be done.

— The IAEA Deputy Team Leader should have:

  - experience as the chair of multi-disciplinary meetings;

- an ability to work under pressure;
- a good knowledge of the relevant technical issues and an understanding of the wider peer-review process;
- the experience to reconcile varying points of view;
- good team building and management skills; and
- a good overview of the team's activities.

— The IAEA Coordinator and where required, the IAEA Deputy Coordinator (both drawn from IAEA staff) should have experience in the regulatory aspects of nuclear or radiation safety and in conducting international regulatory infrastructure reviews.

— IRRS Review Team members (e.g. IRRS Team Leader, IRRS Deputy Team Leader, IAEA Review Area Facilitators, Review Team members) will have experience in the regulatory aspects of nuclear or radiation safety and in the review of regulatory infrastructures.

— No one from the host country may be included in the IRRS Review Team.

— Ideally, as many team members as possible should be able to communicate in the language of the host country (in addition to English).

— Team members should adopt an open attitude towards systems and approaches that vary from those with which they are familiar.

In the case of missions to countries receiving assistance from the IAEA, there may also be involvement by relevant IAEA Technical Cooperation (TC) staff. Interactions with TC will be in accordance with established IAEA procedures.

For reduced-scope, thematically-focused, or follow-up IRRS missions, not all IRRS Review Team positions need be filled. In these instances, the IAEA Coordinator should ensure that roles and responsibilities of vacant positions are appropriately assigned to other team members.

Detailed responsibilities of the IRRS mission participants are provided in Appendix IV.

After determining the initial scope of the IRRS mission, the IAEA Coordinator in conjunction with the host country recruits an IRRS Team Leader. The IAEA Coordinator, after appropriate consultation with the IRRS Team Leader and in cooperation with the IAEA Deputy Coordinator, contacts potential team members regarding their availability for the IRRS mission. Team members will then be recruited and cleared for the mission in accordance with IAEA procedures and established agreements.

Tasks and responsibilities are assigned to team members (e.g. IRRS Deputy Team Leader, IAEA Deputy Coordinator, IAEA Review Area Facilitators, Review Team members) at the earliest opportunity so they may concentrate on their specific responsibilities. Using the IRRS mission scope and provisional schedule, the IAEA Coordinator, in consultation with the IRRS Team Leader assigns specific tasks to selected team members and confirms that each agrees with and accepts his or her assigned responsibilities.

Whilst not being a member of the IRRS Review Team itself, an important link with the team is the person nominated by the host country to be the Liaison Officer. This person needs to be knowledgeable on all matters relating to the IRRS and have a good understanding of what the host country has provided with respect to the IRRS Modules being reviewed as well as a good overview of the national regulatory infrastructure. The host country Liaison Officer

should also have the characteristics of a team leader in order to access resources, and have credibility with host country officials, staff and IRRS reviewers.

7.7. PREPARATION BY IRRS REVIEW TEAM MEMBERS

Each IRRS Review Team member will:

- Review and familiarize themselves with the background material;
- Give priority to those actions necessary to assist in fulfilling their assigned responsibilities, including a detailed review of and written advance feedback on those parts of the host country's completed self-assessment and other Advance Reference Material (see Section7.5) for which they have accepted review responsibility;

A short summary of the team member's review of the ARM, including the self-assessment and his/her initial observations should be prepared and presented at the initial team meeting (see Section 8.2).

7.8. MISSION AGENDA AND LOGISTICS

7.8.1. Mission agenda

The host country Liaison Officer will develop the initial agenda for the mission in conjunction with the IAEA Coordinator and the IRRS Team Leader.

Based on the assignment of specific tasks to team members there may be modifications to the original schedule. Any such modifications must be agreed with the host country counterpart, who may also wish to propose modifications.

In finalizing the IRRS mission schedule, great care should be exercised to ensure sufficient time is available for each part of the schedule, including travel time.

7.8.2. Mission logistics

In preparation for the IRRS mission, the IAEA Coordinator will:

- Confirm and finalise all resourcing arrangements for the mission, particularly the source of funding;
- Confirm dates for the mission with the host country Liaison Officer, taking due account of any holidays, national vacation periods, workweek structure and working hours;
- Confirm that appropriate travel arrangements have been made by the IRRS Review Team, ensuring that all team members are scheduled to arrive in the host country insufficient time to attend the initial team meeting;
- Ensure necessary security training and clearance for the team, if needed.

The host country Liaison Officer will:

- Make the necessary hotel reservations;
- Make arrangements for adequate working space for the team including printers, paper, computer projector if available, audio-visual equipment;
- Make arrangements for communication between the IRRS Review Team members and their base organizations (especially the IAEA), and between team members in the country;

— Arrange local transportation;

— Make arrangements for translators and technical escorts, if required; and

— Make the necessary arrangements for entry to the facilities, including clearance and any required training.

Each IRRS Review Team member will:

— Obtain a visa, if required;

— Bring a laptop computer with the appropriate electrical adapter, word processing, presentation and other software, as required, or inform the IAEA Coordinator if this is not possible, so that alternative arrangements may be made;

— Undergo, as appropriate, the IAEA online training courses for Basic Security in the Field and Advanced Security in the Field;

— Arrange to receive the required immunizations in good time; and

— Make travel arrangements and provide their travel details to the host country Liaison Officer and IAEA Coordinator.

It is important to note that security clearance and obtaining visas for entry to the host country may take a considerable time. Underestimating this time factor may pose a risk to the scheduling or conduct of a mission.

8. CONDUCT OF THE REVIEW MISSION

8.1. INITIAL TEAM COMMUNICATION

At the earliest opportunity prior to the mission, the Team Leader will contact IRRS Review Team members as part of the team building process. Experience has demonstrated that early interaction facilitates mission preparation by providing initial insights and answering team members' questions and concerns.

8.2. INITIAL TEAM MEETING

When all IRRS Review Team members have arrived in the host country, an initial team meeting will be conducted (prior to commencement of the IRRS mission) to discuss the specifics of the mission including the methodology for the review and the evaluation.

Depending on the experts' previous experience, it may be necessary to devote a full day to the initial team meeting. Appendix VII shows a typical agenda. It is important that all team members have a common understanding of the background, context and objectives of the IRRS, the basis for the review (i.e. IAEA safety standardsand the State's completed IRRS self-assessment with initial action plan), type of information needed and the way it will be evaluated.

The IRRS Coordinator 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 also report their first impressions of their subject area based on their in-depth review of the ARM. The IRRS Coordinator will remind the team of the need to finish and agree on the report well before the end of the mission.

8.3. ENTRANCE MEETING

An entrance meeting will be conducted with senior management of the host country's regulatory body (be it one or several authorities) and relevant government officials. At the meeting, both the IRRS Review Team and the host country should present their primary objectives for the IRRS. The IRRS Team Leader should present a brief outline of the plan, approach and expectations for the mission, emphasising that it is not an inspection or audit, but will be conducted as a peer review in cooperation with the relevant host country organizations. A sample agenda for the entrance meeting is shown in Appendix VIII. Except in unusual circumstances, the entrance meeting should not take more than half a day in order to optimise time for interviews.

If necessary, there may be a more detailed introductory and information meeting with senior representatives from key organizations scheduled to be visited during the mission. This step may secure the goodwill and fullest cooperation of such organizations. If practicable, there are benefits to be gained from inviting as many as possible of the host country's personnel directly involved in the review, so that all are prepared and know what to expect.

8.4. REVIEW METHODS

Reviewers use three methods to acquire sufficient information to allow an objective review of regulatory effectiveness and identification of the important regulatory technical and policy issues:

— A review of written material.

— Interviews with personnel and other officials.

— Direct observation of regulatory body activities in the office and at facilities.

The review will predominantly concentrate on national regulatory responsibilities, functions and activities against relevant IAEA safety standards. However, adequate attention should also be paid to policy issues beyond the safety standards or having an overall significant impact on aspects of regulatory work. Observations should be properly recorded in technical notes and reflected in the mission report.

It is vital to the effectiveness of the review and success of the mission that all observation and review activities are conducted in a frank and open atmosphere.

8.4.1. Review of written material

The review of the written material has two stages. The first stage occurs prior to the start of the mission. Reviewers study information provided by the host country (mainly the ARM, which will have been forwarded by the host country to the IAEA Coordinator and then distributed to the full IRRS Review Team) together with other documents supplied by the IAEA. Results of the regulatory self-assessment including identification of actions for improvements as given in the initial host country action plan are of particular importance. The results of this first stage are summarized in the written feedback report provided by each reviewer and form the basis of the initial impressions presented by each reviewer at the initial team meeting.

The second stage takes place during the mission. Additional material in the form of regulatory body documents, presentations and examples of their work will be reviewed. This information will be taken into consideration in analysing and formulating conclusions, recommendations, suggestions, and identifying good practices.

Good quality written material provided by the regulatory body improves the efficiency of the reviews, facilitates preparation of the mission report, minimizes risk of misunderstanding and helps concentrate minds on the areas considered important by the regulatory body.

8.4.2. Interviews

Interviews will be conducted with personnel from the regulatory body and as appropriate, other government departments performing regulatory functions or having responsibility for the regulatory body, together with technical support organizations, research institutes and regulated organizations etc. The prime objective of the interviews is to gather information not covered by the written material and where necessary, to seek clarification of written information provided. In some cases it may be appropriate to hold discussions with parliamentary committees (or similar) involved in preparation of relevant legislative acts.

The reviewers' extensive use of the self-assessment as a guide enhances the need for thoroughness in the host state's preparation and presentation of the self-assessment outcomes, the depth of detail required and the efficiency by which relevant information and evidence is collected. The self-assessment provides a systematic and effective agenda for discussions and helps to confine discussion to topics most directly relevant to the IRRS mission. IRRS Review Team members will verify the information provided in the self-assessment and ARM and enquire further where necessary to ensure they have full understanding. Reviewers may deviate from the structure and content of the self-assessment and where alternative approaches might be beneficial in resolving untypical, difficult or contentious issues. When particular strengths become apparent during the discussions, reviewers should ensure they are highlighted for inclusion in the report, and if appropriate, identified as good practice. In line with the review of the relevant written material, interviews should be linked to the relevant aspects of the host country's self-assessment and used to:

— Review initial open issues arising out of the documentation review;

— Identify the arrangements, authorities, duties and responsibilities of the regulatory body;

— Compare these regulatory and administrative arrangements with the IAEA safety standards and determine potential differences, as well as make an informed judgement on the adequacy of the host regulatory body's national practices;

— Examine the relationship between the regulatory body, its stakeholders and all those bodies involved in the process of the subject area (e.g. authorization);

— Identify additional regulatory technical and policy issues; and

— Judge whether there is a need to propose a recommendation or suggestion in the topic area reviewed.

Interviews represent an important component of the mission, since in addition to complementing and verifying written information; they provide an opportunity for host regulatory body staff to discuss their practices and professional opinions with the reviewers. Thus, interviews should be conducted as a mutual exchange of views and not as an interrogation. The reviewer should lead the interview but allow time for counterparts to explain and contribute to the body of knowledge on the topic area. Encouraging the description or demonstration of examples of the work carried out is an effective way to illustrate specific points.

To the extent practicable, questions should be asked in a logical sequence. A general question should be followed by the appropriate supplementary questions in order to obtain sufficient evidence to support the original response.

8.4.3. Direct observation

Direct observation of regulatory work activities provides an opportunity for personal contact between regulators and reviewers, improves understanding of existing regulatory technical and policy issues and allows the mission to be an exchange of professional knowledge and experience rather than a one way flow of information. The prime focus of the IRRS will inevitably be the regulatory body and its activities and it is to be expected that work activities of the various sections or groups within the regulatory body may have to be separately observed.

Opportunities to observe work activities should be taken both at the regulatory body offices and during site visits (see next section).

Direct observation of work activities can provide valuable information complementary to the review of written material and the interviews. A precondition for using observation as a data source for conclusions is that the context of the observed activity is understood by the reviewer. Useful activities to observe could be management meetings, safety committee meetings, meetings with licensees and other stakeholders, project review meetings, planning of inspections and other regulatory tasks, management system audits, training sessions and emergency exercises.

From these observations the reviewer should gain an improved understanding of:

— How regulatory and administrative procedures are applied in practice;

— Attitudes and commitment of the regulatory staff;

— Work effectiveness;

— The use of electronic documentation systems and other administrative aids; and

— Traceability of regulatory activities and the decision making process, etc.

8.5. SITE VISITS

8.5.1. Purpose of a site visit

Certain interviews and direct observations of regulatory practices and activities (typically inspections) should be carried out on the sites of authorized organizations to obtain a better understanding of how the regulatory body discharges its responsibilities and to give an opportunity for direct conversations with licensees.

Through observations of work activities and interviews with the regulatory body (as well as authorized organization staff) 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;

— Manner and effectiveness of the discharge of responsibilities;

— Knowledge, skills and abilities of the host country's regulatory inspectors to perform inspections;

— Effectiveness of regulatory processes;

— Elements relevant to policy issues; and

— Relations between the regulatory body and the licensee.

8.5.2. Preparation for site visit

To minimize travel time and reduce disruption for the visited organizations, only one visit need be arranged to each broad category of organization or facility. Since all relevant topics should be covered in the single visit more than one person (interviewee) from the organization may have to be available by prior arrangement during the visit. Site visits should be scheduled as early in the mission as possible so thatobservationsmade during these visits may be properly incorporated in the IRRS Report's conclusions.Similarly and to the extent possible, visits to government offices and/or other agencies for information gathering should be scheduled in the first half of the mission. Visits to government offices to discuss mission findings should be scheduled to minimize the disruption of necessary mission tasks (report writing, exit meeting preparations etc.).

Prior to a site visit IRRS Review Team member(s) should:

— Be satisfied that relevant representatives of the organisation to be visited have been briefed well in advance on the purpose, aims and objectives of the visit (and of the IRRS itself);

— Gain an understanding of the role and functions of the organization;

— Identify those topics relevant to the IRRS and that organization; and

— Be aware of issues raised so far during the mission and their relevance to the visited organization.

8.5.3. Conduct of site visit

The visit should start with an opening statement to the site host, which includes a summary of the scope of the IRRS mission, the purpose of the visit and questions to be addressed. This is particularly important if the visited organization was not represented at the IRRS entrance meeting. Although the success of a visit depends on good preparation, reviewers should be prepared to accept changes in scheduling and arrangements made by the visited organization while making every effort to cover all the topics on their agenda.

It is important that staff of the visited organisation understand in advance that the visit is not an IAEA review of their facility but is conducted solely to observe regulatory procedures in practice and the actions of regulatory body staff. IRRS Review Team members should be accompanied by a host country counterpart to facilitate the logistics of the visit. If possible, the reviewer should also interview the senior manager at the visited facility to discuss the nature of the relationship with the regulatory body. During interviews with licensees, the preference would be that the host country's regulatory body is ***not*** be present, in order to facilitate open and frank discussions.

At the conclusion of the visit, reviewers should discuss their observations with the full IRRS Review Team at the daily team meetings.

8.6. POLICY ISSUES DISCUSSIONS

The host country is expected to develop views and discussion points relating to the identified policy issues, particularly as to how these issues apply to their regulatory framework. The host country should forward these views and discussion points to the IAEA Coordinator for circulation to all IRRS Review Team members no later than the first day of the mission, but some basic background on the policy issues should have been provided beforehand, incorporated with the ARM.

IRRS Review Team members will take note of the policy issues, host country views and discussion points, develop initial impressions regarding implications of the policy issues for their technical review areas and maintain awareness of the potential policy implications as they complete their technical reviews.

The IRRS Team Leader should schedule discussions associated with policy issues. These meetings should be open to host country counterparts and attended by as many IRRS reviewers as are available. The IRRS Team Leader, in consultation with the host country, may schedule additional policy discussions. Policy discussions should take place no later than the beginning of the second week of the mission.

The IAEA Coordinator provides support for the review of policy issues during the mission. In fulfilling this role, the Coordinator works closely with the IRRS Team Leader, IRRS Deputy Team Leader and the IAEA Deputy Coordinator to resolve review concerns, provide support to reviewers in integrating policy insights and key elements into their technical review activities and preliminary report input, coordinate with the host country to schedule interviews and meetings on policy issues and provide advice on policy issues.

The IRRS Team Leader may also schedule interviews or small group discussions with the host country during the mission to be attended by a targeted group of host country representatives and the IRRS Team Leader, IRRS Deputy Team Leader, the IAEA Coordinator and the IAEA Deputy Coordinator. IRRS Review Team members are invited to suggest potential policy issues that may become apparent during their review activities.

The IRRS Team Leader ensures that principal insights and conclusions regarding regulatory technical and policy issues identified in the policy review are documented in the preliminary IRRS Report.

8.7. DAILY TEAM MEETINGS

At the end of each day the IRRS Review Team meets, and the host country Liaison Officer is expected to be in attendance. The purpose of this meeting is to discuss the main observations of the day. The IRRS Team Leader will establish the style and conduct of these meetings. It is important the daily team meetings be conducted in an efficient manner in order to allow reviewers working time on their issues. Daily team meetings are not meant for activity reporting by reviewers. They provide a forum to raise issues of importance, concern or common interest to be discussed according to the following suggested agenda:

— Highlight the day's key observations in each review area, particularly significant concerns or positive features which may form the basis for recommendations, suggestions or good practices.

— Report issues which need to be brought to the attention of other reviewers, especially issues that have a bearing on the remainder of the IRRS.

— Identify gaps, overlaps and areas where the information is not clear or inconsistent.

— Determine whether any of the day's observations might affect the remaining schedule for the mission.

— Summarize the visits/interviews to be conducted during the next day to enable all team members to provide input to the key topics to be addressed.

— Determine the status of each reviewer's written input to the draft IRRS report.

During daily team meetings, IRRS Review Team members share insights and observations regarding the implications of identified regulatory technical and policy issues pertinent to their review area(s).

9. EVALUATION AND DOCUMENTATION OF OBSERVATIONS

9.1. RECORDING OBSERVATIONS

It should be clearly noted that observations and consequently, the number of recommendations, suggestions and good practices, are not a measure of the current performance of one regulatory body relative to any other.

During interviews and direct observations, reviewers should make detailed notes of all relevant information gained (observations), together with its source. The writing of notes serves as a tool in developing the draft IRRS Report. IRRS reviewers may compile a considerable volume of observations on various subjects and thus, it is essential to record every observation at the earliest opportunity, preferably during interviews and site visits etc. Working in pairs provides a better opportunity for accurate recording. Technical notes may include:

— The official names or titles designating the organizational units and positions of persons interviewed/met.

— A summary of points recorded or actions observed during the interview or visit and their source(s).

— Comments on any regulatory technical issue or policy issue observations.

— Comments on the role, responsibilities and effectiveness of the organization.

— Documentation obtained or reviewed.

— Comments on strengths and areas for improvement within the organization, as perceived at the time.

— A list of issues to be brought to the attention of other IRRS Review Team members.

— The full meaning of abbreviations or acronyms used.

— Information needed to complete those parts of questionnaires not previously completed.

Observations may be formulated as recommendations, suggestions or good practices as defined below:

9.1.1. Recommendations

Recommendations are proposed where aspects relative to the IAEA Safety Requirements are missing, incomplete, or inadequately implemented. Recommendations should be specific, realistic and designed to result in tangible improvements to regulatory effectiveness.

Recommendations should be based on IAEA Safety Requirements, and the basis (i.e. the relevant Requirement) for the recommendation should be clearly documented in the mission report. Recommendations may also reference Codes of Conduct where these have been agreed as part of the basis for the IRRS review. Recommendations should be formulated such that they are succinct and self-explanatory. They should clearly specify the responsible party and use "*should*"- language (for example, "the regulatory body should do…").

9.1.2. Suggestions

Reviewers may identify opportunities for improvement not directly related to inadequate conformance with IAEA Safety Requirements, but which should be shared with the host country (e.g. a more efficient way of utilizing staff resources). Suggestions are a means of achieving this aim. Suggestions may contribute to improvements in national regulatory arrangements but are primarily intended to make the regulatory body's performance more effective or efficient, to indicate useful expansions of existing programmes and to point out possibly better alternatives to current regulatory, technical or policy activities.

In general, suggestions should stimulate the regulatory body's management and staff to consider new or different approaches to regulatory technical and policy issues that may enhance performance. A suggestion may be proposed in conjunction with a recommendation or may stand on its own following a discussion of the associated background. Each suggestion shall have a basis either in IAEA Safety Requirements, Safety Guides or other relevant IAEA documents or regulatory body commitments (e.g., Codes of Conduct, Conventions, etc.). The basis for the suggestion shall be clearly documented in the mission report. Suggestions should be formulated such that they are succinct and self-explanatory. They should clearly specify the responsible party and use "*should consider*"- language (for example, "the regulatory body should consider doing…").

9.1.3. Good practices

A good practice is identified in recognition of an outstanding organization, arrangement, programme or performance superior to those generally observed elsewhere. A good practice goes beyond the fulfilment of current requirements or expectations. It will be worthy of the attention of other regulatory bodies as a model in the general drive for excellence. Good practices shall also reference a basis similar to suggestions, and the basis shall be clearly documented in the mission report.

9.2. EVALUATING OBSERVATIONS

Each reviewer should summarize the day's observations and record insights and judgements in notes to support effective discussion of all subject review areas at the daily team meeting. This meeting offers the opportunity for reviewers to consolidate their views, reach consensus where necessary and formulate the way in which their observations should be captured in the final report.

The reviewers will evaluate their observations daily and draw conclusions which may be further developed into recommendations, suggestions, or recorded as good practices.

Evaluated observations should be provided to the full IRRS Review Team daily so they may be discussed and where agreed, fully incorporated into the IRRS report.

Reviewers should be providing daily written inputs to the IRRS Report, commencing at the earliest opportunity. Their inputsmay be updated as necessary throughout the mission.

9.3. CONCLUSIONS

The evaluation of observations should be expressed in concise conclusions. Conclusions must have their basis in known facts and formally documented evidence relating to IAEA Requirements and Guidance. 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 IAEA Requirements and Guidance and if not, how it maybe deficient. Additional information provided by other team members at the daily meetings should be taken into consideration in refining the conclusions.

In developing conclusions, reviewers should:

— Consider how effectively laws, regulations, procedures, etc., are implemented in practice relative to IAEA Requirements and Guidance;

— Consider the key elements of any policy issues;

— Identify where elements of national regulatory infrastructure differ from those of the IAEA safety standards, taking into account, as appropriate, the regulatory body's self-assessment results;

— Identify the significance of differences relative to IAEA Requirements and Guidance.

As information is gathered and evaluated, conclusions specific to a topic (such as inspection) may be developed. Specific conclusions in multiple topic areas should be reviewed to determine if a generic conclusion may be derived or to confirm that the conclusion is limited to the one topic area. This is important to avoid the apparent repetition of recommendations and suggestions throughout the IRRS Report.

Conclusions logically form the basis for development of recommendations, suggestions and good practice statements.

9.4. ANALYSIS OF OBSERVATIONS AND REPORT DRAFTING

The Team Leader and IAEA Coordinator should define a structured process for the development of the mission report and ensure it is implemented. At an appropriate time the IRRS Team Leader should hold a team meeting to discuss and formulate the team's conclusions, the potential recommendations, suggestions and good practices (all based on analysis of the team's review of written material, interviews with personnel and direct observations).

— Each team member should have reached tentative conclusions for those areas of the IRRS for which he/she has been assigned, gained an adequate understanding of their topic areas and where appropriate, shared information in other relevant review areas.

— When discussing each reviewer's input, the IRRS Team Leader should ensure team agreement on the broad conclusions and thereafter, the recommendations, suggestions and good practices that will appear in the report.

— The results of discussions relating to regulatory technical and policy issues should also be agreed and documented.

— When a reviewer's conclusions are agreed by the team, the IAEA Coordinator will request the reviewer's updated written input to the IRRS Report.

— At this stage, the IRRS Team Leader and the IAEA Coordinator should ensure that the report is factually correct and agreed rather than try to resolve differences in reporting styles.

9.5. PRELIMINARY REPORT AND COUNTERPART REVIEW

During the latter part of the mission, the IAEA Coordinator, together with the IRRS Deputy Team Leader, will compile a preliminary IRRS Report comprising the individual and collective inputs from the IRRS Review Team, in order to capture the results of the review of the host country's regulatory infrastructure and any regulatory technical and policy issues. It is important that the mission schedule allows sufficient time for the IRRS Review Team to review and agree the significant points and for the host country's counterparts to review this preliminary report. The host is invited to comment on this report to ensure technical accuracy and common understanding of its content. Recommendations, suggestions and good practices included in the preliminary report should be in a reasonably finalized stage. The IRRS Review Team should then have an opportunity to discuss any final points made by the host, particularly where these may lead to adjustments to the content of the preliminary report. At the end of the mission, a copy of the preliminary report is handed to the host. Previous missions have indicated that timely delivery of the preliminary report can be a challenge, so it is important this aspect receives appropriate attention by the IRRS Review Team management.

For an agreed period following the mission, the host may further review and comment on the preliminary report. Comments should be forwarded to the IAEA Coordinator in accordance with an agreed time schedule.

9.6. EXIT MEETING

The IRRS mission concludes with an exit meeting. This includes a presentation by the IRRS Review Team of the main results.

The exit meeting will normally be attended by:

— The IRRS Review Team;

— Host country counterparts;

— The head of the regulatory body and;

— Representatives of other organizations involved in the IRRS.

The IRRS Team Leader summarizes the main observations of the mission. The format of the exit meeting may vary, but should include a description of the mission, the IRRS Review Team, the areas reviewed, activities conducted, strengths identified, areas for improvement, and other observations the team feels need to be highlighted to the host country. IRRS Review Team members may, as appropriate, provide a brief verbal report of conclusions in their own topic review areas. As noted earlier, the goal is to provide the host country with a preliminary draft IRRS report in sufficient time prior to the exit meeting to allow the counterparts to review and provide comments on its content. The IRRS Team Leader should explain to the host country that the document is a preliminary report and will require further review and subsequent approval by both the host and the IAEA before a final mission report is issued.

9.7. FINAL REPORT

The host country Liaison Officer will collate the preliminary report comments of all participating organizations within the host country and submit the complete set to the IAEA. Comments from the host country should be limited to issues relating to factual correctness of information contained in the preliminary report. The host country should endeavour to return final comments to the IAEA Coordinator as quickly as possible within the agreed time frame.

Upon receipt of comments from the host country, the IAEA Coordinator in conjunction with the IRRS Team Leader, and with appropriate coordination with other team members, will assess the host country comments and draft the final IRRS Report; the goal being to issue this final report within two months following receipt of host country comments. The report is submitted through official channels to the state concerned. Distribution of the final IRRS Report is restricted to the host country Liaison Officer, IRRS Review Team members and appropriate IAEA staff. Any further distribution will be at the discretion of the host country.

The final IRRS Report will be used by the IAEA to update the host country's radiation and waste safety infrastructure profile and the nuclear safety profile (as applicable). The results of the IRRS mission may be considered as inputs for future IAEA activities, such as TC support programmes, extra-budgetary programmes and identifying regulatory trends and issues.

Countries are encouraged to make their IRRS mission reports public. 90 days after the transmittal letter the IAEA will make the report publicly available unless the host country specifically requests that it remains restricted.

9.8. ACTION PLAN

Working from the IRRS Report, the host country should update its initial action plan (originally derived from the self-assessment). The updated action plan will be used to implement recommendations and suggestion set out in the IRRS Report. In some cases, the action plan may also indicate what on-going IAEA input or assistance might be provided to the state (e.g. documentation, expert missions, training, provision of inspection equipment, etc.). However, the decision to implement an action plan to address the IRRS Review Team's recommendations and suggestions lies entirely with the relevant authorities of the country concerned.

10. IRRS FOLLOW-UP MISSIONS

10.1. OBJECTIVES OF THE IRRS FOLLOW-UP MISSION

The purpose of an IRRS follow-up mission is to continue the work of improving regulatory effectiveness by reviewing the state's progress in response to the initial IRRS mission recommendations or suggestions. If requested by the state, an IRRS follow-up mission may also include there view of specific topical areas not previously covered (in which case, it would usually be defined as an 'extended follow-up' mission). In such a case the IRRS Guidelines continue to apply.

This section is primarily addressed to members of the IRRS Follow-up Review Team but also provides guidance to a host regulatory body receiving a follow-up mission.

The purpose of an IRRS follow-up mission is:

— To review progress in implementing improvements resulting from the initial IRRS mission recommendations or suggestions;
— Where appropriate, to address areas of significant change since the last mission including new topics as requested.

10.2. REQUESTING A FOLLOW-UP MISSION

An IRRS follow-up mission will normally be requested formally by the state through the IAEA Deputy Director General for Nuclear Safety and Security. In some circumstances the IAEA may suggest the state considers a follow-up mission. Typically, a follow-up mission will take place two to four years following the initial IRRS. Two years should allow

significant progress to be made with the implementation of the recommendations and suggestions of the initial IRRS mission. Beyond four years the effectiveness of the follow-up process may be limited.

A minimum of nine months is normally required to prepare a follow-up mission.

10.3. PREPARATORY PHASE OF AN IRRS FOLLOW-UP MISSION

On receipt of a request for an IRRS follow-up review an IAEA Coordinator will be assigned who will arrange for the:

— Establishment of liaison contacts with the regulatory body;

— Recruitment of the IRRS Team Leader (in conjunction with the state concerned);

— Recruitment and briefing of Review Team members in conjunction with the IRRS Team Leader.

A preparatory meeting should be conducted approximately six months before the follow-up mission. The preparatory meeting should be attended by the Team Leader and, the IAEA Coordinator and, as necessary, the Deputy Team Leader and other representatives of the appropriate IAEA Divisions. At the same time, the host organization should nominate a counterpart in each review area to be the primary contact with respective IRRS Review Team members. Where possible, the preparatory meeting should be held at the regulatory body's headquarters to allow senior management and other organizations involved to participate. The meeting should consider the:

— Specific purpose of the IRRS follow-up mission in order to determine whether significant changes since the initial mission or the additional topic areas proposed can be effectively addressed within the scope of an 'extended follow-up' mission;

— Regulatory body's preparation for the follow-up review, including a list of the documentation required during the review;

— Preparation of the ARM;

— Logistical support required.

10.3.1. Follow-up team composition

The team will comprise an IRRS Team Leader, a Deputy Team Leader if necessary, an IAEA Coordinator and Deputy Coordinator if required, together with the appropriate number of reviewers. For reasons of continuity it is preferable that the follow-up mission includes the Team Leader, Coordinator and reviewers who participated in the initial mission. If the follow-up review will encompass new review areas, additional reviewers with the appropriate expertise should be recruited. As with the initial mission, no one from the host country may be included in the Review Team. The inclusion of observers from other states may be proposed by the IAEA for consideration by the host country.

The roles and responsibilities of IRRS Review Team members for the follow-up mission are similar to those assigned for the initial mission.

10.3.2. Advance Reference Material for the follow-up IRRS

Prior to the start of the follow-up mission IRRS Review Team members will review the Advance Reference Material (ARM) provided by the IAEA, which includes the report prepared by the host country in preparation for the follow-up IRRS mission. The ARM should outline any significant changes to the ARM provided for the initial mission and should

also include an evaluation of the status of recommendations and suggestions set out in the initial IRRS mission report. The results of a self-assessment undertaken in preparation for the follow up mission and the status of implementation of the action plan should also be submitted by the host country and included in the ARM.

In the case of an 'extended follow-up' mission the ARM should also give full information related to the extended parts according to the guidance applicable to initial missions.

The ARM should be provided at least two months in advance so there will be adequate time for a thorough review of the material.

The ARM from the initial IRRS mission should also be made available to the follow-up IRRS Review Team.

10.3.3. Support facilities

Prior to the IRRS follow-up review the IAEA and host state will agree the provision of necessary support facilities. All IRRS reviews are conducted in English and the state should thus, provide the necessary interpretation facilities to enable reviewers to do their work effectively. At all times, there should be at least one meeting room at the disposal of the reviewers, of sufficient size to enable them to work together and to hold discussions in reasonable privacy.

Additionally, administrative support should be provided by the host country throughout the review. The IAEA will provide administrative support if it is not available locally or as a dedicated support function for the IRRS Review Team.

10.4. CONDUCT OF A FOLLOW-UP MISSION

10.4.1. Review of host country responses to initial IRRS mission findings

The review of responses to the recommendations and suggestions made during the initial IRRS mission will be carried out following these IRRS 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.

The main written materials for this activity will be the ARM, including self-assessment outcomes and the action plan developed by the host country. However, additional written material may be necessary to demonstrate the measures implemented and progress made. The reviewers will be looking for evidence of the progress recorded in the action plan and may consequently provide further advice as appropriate.

10.4.2. Review of additional topics

If additional subject areas are included in the scope of the mission, they will be reviewed in accordance with the guidance applicable to the initial mission.

10.4.3. Documentation

During the course of the follow-up review, reviewers should write notes on their observations and conclusions. For the review of progress of the improvement plan actions, the reviewers will assess:

— Actions in progress;

— Further review necessary.

Additional advice may be provided using new recommendations or suggestions. For new areas that are subject to review the results should be reported in the same way as for an initial IRRS mission.

On completion of the review, the IAEA Coordinator will prepare the IRRS Follow-up Report summarizing the team's main observations, conclusions, recommendations, suggestions and identified good practices. 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 finalised report will be submitted through official channels to the host state.

10.4.4. Analysis of observations from a follow-up IRRS mission

The follow-up mission's review of progress made by the state in implementing actions in response to IRRS mission recommendations or suggestions will be expressed as conclusions. The following categories should be used for expressing these conclusions:

(A) Recommendation/Suggestion remains open;

(B) Recommendation/Suggestion closed;

(C) Recommendation/Suggestion closed on the basis of progress made and confidence in effective completion.

In exceptional circumstances, a recommendation or suggestion raised during the initial IRRS mission may no longer be relevant to the IRRS 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/ suggestion may be amended accordingly.

10.4.5. Schedule

An IRRS follow-up mission must be of sufficient duration to thoroughly review the actions taken in response to previously identified recommendations and suggestions. The duration should also allow for the preparation of a comprehensive preliminary report of the follow-up mission prior to the exit meeting. Experience has shown that in addition to the review period, a further two days may be required for final discussions and drafting of the preliminary report.

The programme for the mission should be agreed in advance. All follow-up missions should have formal entrance and exit meetings. The first half-day of the follow-up mission would normally involve presentation of information contained in the most recent ARM.

11. IRRS MISSION AND FOLLOW UP MISSION PROCESS REVIEW

Following both IRRS missions and follow-up missions, the IAEA Coordinator should conduct a meeting with all IAEA staff involved in the mission(s). The purpose of this meeting is to elicit feedback from IAEA participants in the mission and to discuss lessons learned from the mission(s). The input should include the views of the staff participating as well as feedback submitted by the IRRS reviewers. Lessons learned from this discussion should be documented in a memorandum to file and distributed to the appropriate Division Directors (including Technical Cooperation, if applicable).

Upon conclusion of the mission, the IAEA Coordinator ensures that principal insights and conclusions regarding the regulatory technical and policy issues review (as documented in the preliminary IRRS Report)are provided to appropriate IAEA technical officers.

Consideration should be given to holding international workshops to promulgate lessons learned from IRRS missions, both process and technically oriented.

APPENDIX I: DETAILS OF THE MODULES

I.1. MODULE 1: RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT

Core module (always included in the scope of the IRRS)

A fundamental prerequisite for regulatory effectiveness is a sound legislative and statutory framework, which establishes the regulatory regime needed to regulate the safety and security of facilities (nuclear facilities, facilities in medicine, industry, education and research, etc.), activities (production and use of sources of ionizing radiation, transport, waste management, etc.) and practices (nuclear power, irradiators, industrial radiography, teletherapy, well logging gauges, etc.).

The law establishing the regulatory body should provide for effective independence of the regulatory body from political and other interference or influence that may diminish its ability to impartially fulfil its mandate, in particular, to regulate nuclear and radiation facilities, activities and practices based on facts, sound judgement and decision-making. Thus, the regulatory body should be accountable to the national legislative or executive bodies, but its framework or processes for regulatory decision making should not be subject to political decision.

Other facets of effective independence include effective and proper separation between the regulation and promotion of the use of nuclear energy and radiation sources; authority, competence and adequate resources to discharge the regulatory mandate; objective decision-making based on facts and objective criteria; and unfettered communication with stakeholders.

Sub-sections of Module 1		**GSR Part 1**	**Other safety standards**
1.1	National Policy and Strategy	R1	
1.2	Establishment of a Framework for Safety	R2	
1.3	Establishment of a Regulatory Body	R3	
1.4	Independence of the Regulatory Body	R4	
1.5	Prime Responsibility for Safety	R5	
1.6	Compliance and Responsibility for Safety	R6	
1.7	Coordination of Different Authorities With Responsibilities for Safety Within the Regulatory Framework	R7	
1.8	System for Protective Actions to Reduce Existing or Unregulated Radiation Risks	R9	
1.9	Provision for Decommissioning of Facilities and the Management of Radioactive Waste and Spent Fuel	R10	GSR Part 5, WS-R-5, SSR-5
1.10	Competence for Safety	R11	
1.11	Provision of Technical Services	R13	

I.2. MODULE 2: GLOBAL NUCLEAR SAFETY REGIME

Core module (always included in the scope of the IRRS)

It is important that the regulatory body is aware of, and contributes to the Global Nuclear Safety Regime. As such it recognizes its international obligations and arrangements for cooperation, in addition to sharing operational and regulatory experiences.

Sub-sections of Module 2		GSR Part 1	Other safety standards
2.1	International Obligations and Arrangements for Cooperation	R14	
2.2	Sharing of Operating Experience and Regulatory Experience	R15	

I.3. MODULE 3: RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY

Core module (always included in the scope of the IRRS)

The responsibilities and functions for carrying out the various regulatory activities should be defined and assigned. In fulfilling its statutory obligations, the regulatory body should define policies, safety principles and criteria as a basis for its regulatory actions – promotion/adoption of regulations and guides, authorization and inspection process and enforcement actions.

The regulatory body may have some additional functions to provide some technical services but in this case it should be ensured that they do not conflict with the main regulatory functions.

The regulatory body should establish appropriate cooperation with other relevant authorities and agencies.

Sub-sections of Module 3		GSR Part 1	Other safety standards
3.1	Organizational Structure of the Regulatory Body and Allocation Of Resources	R16	GS-G-1.1, RS-G-1.4
3.2	Effective Independence During Conduct of Regulatory Activities	R17	GS-G-1.1, RS-G-1.4
3.3	Staffing and Competence of the Regulatory Body[1]	R18	GS-G-1.1, RS-G-1.4
3.4	Liaison with Advisory Bodies and Support Organizations	R20	DS429 GS-G-1.1, RS-G-1.4
3.5	Liaison Between the Regulatory Body and Authorized Parties	R21	GS-G-1.1, RS-G-1.4
3.6	Stability and Consistency of Regulatory Control	R22	GS-G-1.1, RS-G-1.4
3.7	Safety Related Records	R35	GS-G-1.1, RS-G-1.4
3.8	Communication and Consultation with Interested Parties	R36	GS-G-1.1, RS-G-1.4

[1] A four-quadrant model for regulatory body's competence is available through the IAEA tool Systematic Assessment of Regulatory Competence Need (SARCoN) (http://www-ns.iaea.org/training/ni/sarcon.asp?s=100&l=103)

I.4. MODULE 4: MANAGEMENT SYSTEM OF THE REGULATORY BODY

Core module (always included in the scope of the IRRS)

A management system, when properly implemented, is recognized as a valuable tool to improve efficiency and effectiveness of organizations. A management system is a set of interrelated or interacting elements (system) that establishes policies and objectives and which enables those objectives to be achieved in an effective and efficient way. It encourages the identification, definition and control of processes, and provides a framework for continual improvement. It will therefore provide a mechanism for the regulatory body to perform effectively.

Integrated management systems bring together all aspects of managing an organization and thereby define a set of arrangements and processes which, when fully implemented, allow an organization to meet its objectives. These objectives may include safety, health, environmental, security, quality and economic considerations. The definition of a particular organization's processes forms the basis of its management system.

		GSR Part 1	Other safety standards
4	The Management System of the Regulatory Body	R19	GS-R-3

I.5. MODULES 5 TO 9: MATRIX OF THE CORE REGULATORY PROCESSES

Core modules (always included in the scope of the IRRS)

The matrix includes the core regulatory processes in general and their application to the various facilities and activities. The core regulatory processes and the respective GSR Part 1 requirements and other relevant safety standards are listed first, the facilities and activities and the respective standards and guides are given at the end of this section.

I.5.1. Module 5: Authorization

Authorization is defined as, "The granting by a regulatory or other governmental body of written permission for an operator to perform specified activities. Authorization could include, for example, licensing, certification, registration, etc.

In order to fulfil its statutory duties it is essential the regulatory body be provided with the authority to allow it to conduct its regulatory activities. This authority should be written into legislation, or adequately established by other means. The regulatory body shall have the authority to issue authorizations as well as attaching any conditions necessary to ensure safety. The regulatory body shall also have the authority to amend, suspend or revoke authorizations.

Effective regulatory bodies define and document the processes for granting authorizations. An authorization can include instruments such as licences, registrations, permits, and certificates, written statements of no objection, letters/memoranda or other documents that provide written permission for a licensee to proceed beyond a hold-point or for agreeing to the activity proposed by the licensee.

Prior to granting an authorization, the regulatory body should require the applicant to submit a detailed demonstration of safety, the safety case. The regulatory body should determine whether this safety case adequately demonstrates the safety of the activity and that the

regulatory body's safety objectives, principles and criteria have been satisfied. The authorization of activities is a continuous process which may start at the planning and feasibility study for a site and continue through the design, commissioning, operation, decommissioning or closure phases of the facility.

To facilitate this process the regulatory body may issue guidance on the format and content of the documents and information to be submitted.

		GSR Part 1	Other safety standards
5.1	Authorization by the Regulatory Body	R23	GSR Part 3, SSG-12
5.2	Demonstration of Safety for Authorization	R24	

I.5.2. Module 6: Review & Assessment

The objective of review and assessment is to determine whether the applicant's safety case adequately demonstrates the safety of the activity and that the regulatory body's safety objectives, principles and criteria have been satisfied. In performing the review and assessment the regulatory body needs to satisfy itself that:

— The available information provided by the applicant demonstrates the safety of the proposed activity;

— The information contained in the safety case is accurate and sufficient to enable confirmation of compliance with the regulatory body's safety objectives;

— The technical solutions, in particular novel ones, have been proven or qualified by experience or testing or both, and are capable of achieving the required level of safety.

The review and assessment shall encompass normal operation, anticipated operational occurrences, design basis accidents as well as accidents beyond the design basis as appropriate. The results of review and assessment are used by the regulatory body in formulating conclusions and decisions on its authorization activities.

Effective regulatory bodies define and document the processes for reviewing and assessing safety cases and manage the process to ensure that the review and assessment is completed prior to authorizing an activity.

To facilitate this process the regulatory body shall define and make available to the applicant the principles and associated criteria on which its judgements and decisions on the safety case are based and may issue guidance on the format and content of the documents and information to be submitted by the applicant.

		GSR Part 1	Other safety standards
6.1	Review and Assessment of Information Relevant to Safety	R25	GSR Part 3 GSR Part 4
6.2	Graded Approach For Review And Assessment	R26	GS-G-1.2

I.5.3. Modules 7 and 8: Inspection and Enforcement

Regulatory inspection and enforcement activities cover all areas of regulatory responsibility. Inspections allow the regulatory body to satisfy itself that the operator is in compliance with the conditions set out, for example, in the authorization or regulations.

The principal objectives of regulatory inspection and enforcement are to provide a high level of assurance that all activities performed by the operator at all stages of the authorization process and all stages during the lifetime of a facility or duration of an activity have been executed safely and meet the safety objectives and licence conditions.

Regulatory inspection is performed to make an independent check on the operator and to provide a high level of confidence that the operators are in compliance with the safety objectives, principles and criteria prescribed or approved by the regulatory body.

An inspection may result in a need for additional review and assessment or, in the case of non-compliance, for enforcement actions. Regulatory enforcement actions are intended to modify or correct any aspects of the operator's procedures or practices or of a facility's structures, systems or components as necessary to ensure safety. Enforcement actions may also include the imposition or recommendation of civil penalties and other sanctions and should be commensurate with the seriousness of the non-compliance.

The regulatory body shall have the legal authority for conducting and coordinating its inspection and enforcement responsibilities.

Written inspection reports should be prepared and where appropriate the conclusions should be communicated to the inspected organization

An effective regulator will have documented processes for monitoring and verifying compliance with its requirements following the granting of an authorization. Effective regulators also document processes for enforcing non-compliance or bringing nuclear and radiation facilities activities and practices back into compliance with regulatory requirements.

		GSR Part 1	Other safety standards
7.1	Inspection of Facilities and Activities	R27	GSR Part 3, GS-G-1.3
7.2	Type of Inspection of Facilities and Activities	R28	
7.3	Graded Approach for Inspections	R29	
8.1	Establishment of Enforcement Policy	R30	
8.2	Enforcement of Regulatory Requirements and Conditions	R31	

I.5.4. Module 9: Regulations and Guides

A system of regulations and guides shall be chosen so as to suit the legal system of the state and the nature and extent of the facilities, activities and practices to be regulated, for example, in providing a balance between the need for flexibility as in the performance based approach and the need to include detailed requirements as in the use of a prescriptive approach.

In developing regulations and guides, the regulatory body shall take into consideration feedback from experience and take due account of internationally recognized standards, such as the IAEA Safety Standards.

Effective regulatory bodies have processes for developing, reviewing, updating, publishing, and distributing regulatory standards and guides.

			Other safety standards	
		GSR Part 1	***Process*** of developing regulations and guides	***Content*** of regulations and guides
9.1	Regulations and Guides	R32	GSR Part 3, GS-G-1.4	any safety standard of the list below
9.2	Review of Regulations and Guides	R33		
9.3	Promotion of Regulations and Guides to Interested Parties	R34		

I.5.5. Module 5 to 9: Facilities and Activities

The core regulatory processes are applied to all facilities and activities regulated by the regulatory body under peer review. Thus an IRRS mission should cover all facilities and activities that fall into the scope of the mission for all regulatory activities of Modules 5 to 9.

Facilities and Activities	**Applicable IAEA safety standards and guides**
Radiation sources applications	GSR Part 3 Code of Conduct on the Safety and Security of Radioactive Sources + associated safety guides
Research reactors	NS-R-4 + SSG-12, GS-G-1.2, GS-G-1.3, GS-G-1.4
Nuclear power plants	SSR-2/1 SSR-2/2 NS-R-3 + SSG-12, GS-G-1.2, GS-G-1.3, GS-G-1.4
Fuel cycle facilities	NS-R-5 + SSG-12, GS-G-1.2, GS-G-1.3, GS-G-1.4
Waste management facilities	GSR Part 5 SSR-5 + SSG-12, GS-G-1.2, GS-G-1.3, GS-G-1.4
Decommissioning	WS-R-5 + associated safety guides

I.6. MODULE 10: EMERGENCY PREPAREDNESS AND RESPONSE (REGULATORY ASPECTS)

Core module (always included in the scope of the IRRS)

The questions for regulatory aspects of emergency preparedness and response are based on relevant requirements from IAEA safety standards GSR Part 1 and GS-R-2, Preparedness and Response for a Nuclear or Radiological Emergency.

		GSR Part 1	Other safety standards
10.1	Basic responsibilities	R8	GS-R-2, GS-G-2.1, GSG2, GSR Part 3
10.2	Functional requirements		
10.3	Requirements for infrastructure		

I.7. MODULE 11: ADDITIONALAREAS

Optional module: These questions are associated with requirements not applicable to all the regulated facilities and activities in the state.

I.7.1. Occupational Radiation Exposure

The additional questions for occupational radiation exposure are based on IAEA Safety Standard RS-G-1.1, Occupational Radiation Protection.

I.7.2. Patient Protection

The additional questions for patient protection are based on requirements on medical exposure found for the most part in GSR Part 3.

I.7.3. Public and Environmental Exposure

The additional questions for public exposure (including waste management) are mainly based on requirements from IAEA safety standardsWS-R-1, Near Surface Disposal of Radioactive Waste Safety Requirements, WS-R-2, Predisposal Management of Radioactive Waste, including Decommissioning, WS-R-3, Remediation of Areas Contaminated by Past Activities and Accidents, WS-R-4, Geological Disposal of Radioactive Waste, and WS-R-5, Decommissioning of Facilities Using Radioactive Material Safety Requirements.

I.7.4.Transport of Radioactive Material

The additional questions for transport safety are based on requirements from the IAEA Safety Standard TS-R-1, Regulations for the Safe Transport of Radioactive Material.

I.7.5. Code of Conduct on the Safety and Security of Radioactive Sources

Additional questions regarding safety and security of radioactive sources are derived from the Code of Conduct on the Safety and Security of Radioactive Sources (2004).

Examples of possible additional areas	Applicable safety standards
Regulations for the Safe Transport of Radioactive Material	TS-R-1
Control of Medical Exposures	GSR Part 3, RS-G-1.5
Occupational Radiation Protection	GSR Part 3, RS-G-1.1 to 1.4 and 1.6
Control of Radioactive Discharges and Materials for Clearance	GSR Part 3, GSR Part 5, WS-G-2.3
Environmental Monitoring Associated with Authorized Practices for Public Radiation Protection Purposes	GSR Part 3, RS-G-1.8
Control of Chronic Exposures (Radon, NORM and Past Practices) and Remediation	GSR Part 3, WS-R-3, WS-G-3.1

I.8. MODULE 12: INTERFACES WITH NUCLEAR SECURITY

Optional module

Safety measures and nuclear security measures shall be designed and implemented in an integrated manner so that security measures do not compromise safety and safety measures do not compromise nuclear security.

		GSR Part 1	Other safety standards
12	Interfaces with Nuclear Security	R12	

APPENDIX II: THE TAILORED MODULES

II.1.TAILORED MODULE FOR COUNTRIES EMBARKING ON NUCLEAR POWER PROGRAMMES

Sub-Sections of Tailored Module		Actions of the Safety Infrastructure Guide SSG-16		
		Phase 1	Phase 2	Phase 3
1	National policy and strategy	1-4	5-8	9-10
2	Global nuclear safety regime	11-13	14-16	17-19
3	Legal framework	20-21	22	23
4	Regulatory framework	24-26	27-32	33-38
5	Transparency and openness	39-40	41-42	43-47
6	Funding and financing	48-51	52-55	56-60
7	External support organizations and contractors	61-62	63-66	67-71
8	Leadership and management for safety	72-74	75-77	78-84
9	Human resources development	85-89	90-94	95-98
10	Research for safety and regulatory purposes	99-100	101-103	104
11	Radiation protection	105-107	108-113	114-116
12	Safety assessment	117	118	119-121
13	Safety of radioactive waste, spent fuel management and decommissioning	122-123	124-127	128-132
14	Emergency preparedness and response (regulatory aspects)	133-134	135-139	140-145
15	Operating organization	146-148	149-154	155-159
16	Site survey, site selection and evaluation	160	161-166	167-169
17	Design safety	170-171	172-176	177-184
18	Preparation for commissioning	-	-	185-188
19	Transport safety	189	190-191	192
20	Interfaces with nuclear security	193	194-196	197-200

II.2. SUPPLEMENTAL GUIDANCE FOR IRRS IN EMBARKING COUNTRIES

II.2.1. General Scope

The purpose of an IRRS mission is to evaluate a host state's regulatory infrastructure in relation to IAEA safety standards. The prime IAEA safety Standard is General Safety Requirements GSR Part 1, Governmental, Legal and Regulatory Framework for Safety. The IRRS review mission considers the responsibilities and functions of the government – principally enacted through an appropriate legal framework (law), the regulatory body and how the regulatory body discharges its functions. The primary counterpart is usually the regulatory body for nuclear and radiation safety. For embarking countries, the scope of the IRRS should address the existing regulatory infrastructure for control of sources and other currently regulated facilities and

activities, as well as the implementation of the IAEA safety standards during development of the safety infrastructure for a nuclear power programme.

IAEA Safety Guide SSG-16, establishing the Safety Infrastructure for a Nuclear Power Programme, addresses the roles of the government, regulatory body, and operating organization. *For the implementation of an IRRS mission as related to a state's development of its nuclear power regulatory infrastructure, the SSG-16 actions considered would be those to be implemented by the government and/or the regulatory body*.

Regarding actions directed to the operating organization(s), the focus of the IRRS review would be to ensure there are appropriate regulations in place or planned, such that the required actions are taken by the operating organization. Examples are:

— In Phase 2, Action 75, states both the regulatory body and the operating organization should start developing and implementing effective management systems. For this action related to the operating organization, the regulatory body should have within its regulations the requirements for the operating organization to implement a management system.

— Action 76, states both the regulatory body and operating organization should develop competences in managing the growth and change in the organization. This action, although required in GS-R-3, may or may not be explicitly stated in the national regulations. If it is not explicitly addressed in national regulations, the IRRS reviewer may consider proposing a suggestion in the context of GSR Part 1, Requirement 32, "The regulatory body shall establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements, decisions and actions are based."

In addition, if the action is within a "licensing process or authorized activity," the IRRS reviewer should review the action in the context of the regulatory body fulfilling its regulatory functions (i.e., authorization, review and assessment, inspection). The implementation of the operating organization's respective actions should be peer reviewed by other IAEA safety review services such as a preliminary Operational Safety Review Team (pre-OSART) mission in Phase 3.

II.2.2. Phased Application of the Embarking Countries Module in Relation to the IRRS

The level of development of the regulatory infrastructure will influence when the Member State requests an IRRS mission, the organization of the mission, and the subsequent documentation. The approach should be discussed and agreed to as early as practicable and confirmed during the IRRS preparatory meeting.

Phase 1

For programmes in Phase 1 (e.g., building awareness and performing feasibility studies) without a decision to proceed with the implementation of a nuclear power programme, the peer review of the nuclear power regulatory infrastructure would be carried our within the auspices of the Integrated Nuclear Infrastructure Review (INIR). This does not prevent the state from requesting an IRRS mission to evaluate the existing regulatory framework (i.e. radioactive sources). A self-assessment methodology and tool for embarking countries, based on SSG-16 has been developed along with a revision to Evaluation of the Status of National Nuclear Infrastructure Development (NE-Series NG-T-3.2), with appropriate cross-references for providing states with consistent guidance and tools.

Phase 2

For programmes in Phase 2, the approach is consistent with the expectation contained in Section 8 of these Guidelines, i.e. there will be a review of the preparedness of the national regulatory infrastructure using the 20 elements contained in SSG-16 and documented, accordingly. In performing the self-assessment, the state should evaluate both Phase 1 and Phase 2 actions as these will be included in the scope of the IRRS review. The state may consider the inclusion of Phase 3 actions if plans for Phase 3 action implementation have been sufficiently developed. Where Phase 3 actions might be included in the IRRS review, these would be subject to a formal request and confirmed during the preparatory meeting.

Phase 3

In Phase 3, it is expected that a state would have developed its regulatory infrastructure to the extent that the organization of the mission and documentation would follow the format of an IRRS for countries having developed nuclear power programmes.

In this case, the state should:

— Be cognizant of the actions in SSG-16 and the corresponding self-assessment tool for embarking countries. These actions and question sets should be used as supplemental questions to the IRRS self-assessment tool (SARIS) to assist in the determination of whether the development of the regulatory infrastructure is consistent with the expected regulatory infrastructure;

— Identify the level of regulatory infrastructure development remaining to be completed to support the regulated activities. For example, if the regulatory body has issued a site licence, then it should have appropriate authorization, review and assessment processes established and the supporting regulations and guidance should have been issued. This must be supported by the legal framework providing for the regulated activity and the regulatory body responsible for the oversight;

— Identify activities planned to implement the regulatory infrastructure such that it supports the nuclear power programme. Certain requirements related to regulatory oversight of facility operation may not need to be in place until later in the construction period.

The IRRS reviewer should:

— Evaluate the host country’s regulatory infrastructure for regulated activities consistent with that of a normal IRRS for nuclear power plants, the basis for the evaluation being the relevant IAEA safety standards;

— Evaluate the host country’s plan for implementation of its regulatory infrastructure as provided in SSG-16 guidance. The IAEA SSG-16 self-assessment tool is recommended for embarking countries.

II.2.3. Documentation of Results

IRRS team reviewers should document their evaluations and observations using the guidance for IRRS. The use of recommendations, suggestions and good practices should follow guidance provided in Sections 11.5, 11.6, and 11.7, respectively.

II.2.4. Feedback on SSG-16

IRRS reviewers should discuss with their counterparts the host's experience in using SSG-16 and the specific SSG-16 self-assessment tool. The resulting insights should be provided to the IAEA Coordinator.

II.3. ADDITIONAL GUIDANCE FOR THE APPLICATION OF THE TAILORED MODULETO ADDRESS THE REGULATORY IMPLICATIONS OF THE TEPCO FUKUSHIMA DAI-ICHI ACCIDENT

II.3.1. Scope and approach

The scope of the review in this module encompasses all IRRS safety modules. Interfaces with security are not addressed.

Fukushima aspects should be reviewed as part of each IRRS Module review, following a transversal approach. Supporting material was developed and is available to the reviewers as a tool to facilitate discussions; for each IRRS Module, areas deserving particular attention in the light of the Fukushima accident are identified, together with relevant requirements from IAEA safety standards, guidance and extracts of other international reference documents, including the report of the IAEA Fact Finding Mission to Japan, the report of the government of Japan to the IAEA Ministerial Conference on Nuclear Safety and the Chairpersons' summaries following the IAEA Ministerial Conference on Nuclear Safety. The basis for review remains the IAEA safety standards.

In examining the Fukushima implications, IRRS reviewers are asked to use the following question as a methodological attitude: *"Do the IRRS findings give rise to concern about the capability of the current regulatory framework to prevent the occurrence of regulatory-related shortcomings identified in light of the Fukushima accident"?* Any such concerns should be identified and documented, with a view to facilitating action planning as necessary.

II.3.2. Possible incorporation of related policies issues

Additionally, some implications of the Fukushima accident may be discussed as IRRS policy issues at the request of the host country. Possible areas for discussion include the initial governmental and regulatory response, the regulatory actions taken to address possible concerns in public opinion, or the plans for regulatory measures to address the implications of the Fukushima accident.

II.3.3. Report

A dedicated chapter reports on the regulatory implications of the Fukushima accident, and incorporates all relevant policy issues.

As a core component, the significance of these implications on each reviewed area is described; for each IRRS Module, relevant observations are followed by a conclusion which summarizes the conclusions of the IRRS Review Team, possible concerns, and indications for measures to be taken as appropriate.

For each policy issue, the summary account of the discussion should also be followed by similar conclusions.

II.3.4. Guidance to the IRRS host country

Prior to the IRRS mission, in order to facilitate review related to the module on the consequences of the Fukushima accident, host countries are requested to prepare answers to the questions mentioned in Section 1 above. These questions relate to the requirements in the IAEA safety standards relevant to the Fukushima event for the various IRRS Modules. Accordingly, the answers should reflect facts related to the given modules and address current status as well as actions taken in response to lessons the host country has learned from Fukushima.

Answers should be inserted into the tables containing the questions together with the supporting facts. These should be submitted to the IAEA together with all other components of the ARM. The answers IRRS Review Team members in the discussions and peer review during the mission and in the compilation of the chapter in the report dedicated to this module.

II.3.5. Guidance to IRRS Review Team members

IRRS Review Team members responsible for modules having a bearing on the module addressing the regulatory implications of the Fukushima accident are requested to do the following:

(1) Read the answers to the questions in the module-wise supporting material as submitted by the host country with the ARM. This should be done prior to the mission.
(2) Discuss Fukushima-related issues with counterparts and based on the answers together with information from the ARM or elsewhere, derive conclusions to be included in the IRRS Report.
(3) Prepare a summary of the relevant observations from discussion and peer results as well as a short conclusion to be inserted into the IRRS Report chapter on the regulatory implications of the Fukushima accident.

Similar chapters of previous missions may serve as examples of what is expected. The compilation of the dedicated chapter shall then be the responsibility of an IAEA Review Area Facilitator.

APPENDIX III: POLICY ISSUES AND KEY ELEMENTS

This table is intended to provide an initial list of policy issues and their associated key elements and will be periodically updated based on insights and feedback from completed IRRS missions.

Issue	Summary/Background	Key Elements
1. Independence of Regulatory Body	Although increasing numbers of states have effective independent regulators, the issue of independence is still a challenge.	— Legislation establishes effectively independent regulatory body — Access to independent resources and technical advice — Funding independence — Balance between the operator and regulator responsibilities
2. Openness, transparency and Stakeholders involvement (including public communications)	Openness and transparency in regulation is essential to encourage continuous improvement of performance and building public confidence. The international community promotes openness through several services. However, finding a proper balance between public availability of information and protection of confidential data remains a challenge.	— Strategies for engagement of stakeholders — Stakeholder involvement in regulatory decision making — The basis for regulatory decisions made available to stakeholders — Use of electronic communication, including the internet, for communication to stakeholders — Low threshold for informing stakeholders of nuclear and radiation safety related information
3. Enhancing Regulatory Effectiveness and Competence	Challenges in maintaining and enhancing regulatory effectiveness and competence remain in many states. There is still no consensus on how to measure regulatory effectiveness.	— Harmonization with international practices — Commitment to resource planning — Commitment to knowledge management — Assessment of workforce competencies — Commitment to staff training and development — Commitment to continuous improvement and safety management systems

Issue	Summary/Background	Key Elements
		— Promote sharing experience and lessons learned — Use of regulatory performance indicators
4.Leadership and management of safety	Leadership in nuclear and radiation safety matters has to be demonstrated on the highest levels in an organization. The importance of human and organizational aspects of safety and safety culture is widely accepted. An effective management system is considered essential to support leadership in order to maintain and continuously enhance a good safety culture. Assessment tools for safety culture are being developed. Advanced decision-making techniques are increasingly needed to apply resources where they will do the most good. Recent events have led to concern over complacency in some operating organizations and lack of regulatory effectiveness in identifying and proactively responding to early symptoms of emerging problems.	— Safety policy defined — Safety management system — Integration of the elements of the safety management system (safety culture, environment, quality, financial etc.) — Internal assessment of safety culture — Open dialogue between regulatory body and senior industry executives — Internal decision making appeal process — Value and ethics programmes — Self-assessment — Regulatory experience included in appointing senior executives
5. Use of insights from operation experience feedback (OEF) into the regulatory process	Nuclear power plant (NPP) operational safety performance, in general, has remained at a high level throughout the world. Radiation doses to workers and members of the public due to NPP operation are well below regulatory limits. However we still see recurring events in nuclear installations. Enhanced operational feedback systems are needed to support the sharing of actions taken by operators and regulators towards risk	— Collecting OEF — Analysing OEF and identification of root causes — Make appropriate changes based on OEF — Disseminating results of OEF, nationally and internationally — Maintaining a safety culture that promotes consideration of low level events

Issue	Summary/Background	Key Elements
	reduction.	
6. Long Term Operation and Ageing Nuclear Facilities	Eighty per cent of the reactors operating worldwide could be eligible for a long term operation. Member States have demonstrated common initiative and are at different stages in the process while varying in their national practices. Long term operation of NPPs includes the Member States' practices such as plant licence renewal, life extension, continued operation and life management. A long term operation is economically attractive to plant owners while it offers Member States added energy security, environmental quality and economic growth. The long term operation of NPPs is one unique nuclear safety issue to be addressed by the international nuclear community.	— Regulatory approach — Existing process for renewing / extending / re-licensing beyond original operating term — Regulatory requirements and guidance — Regulatory inspection and monitoring process — Additional regulatory strategies to reduce the collective doses arising from long term periodic inspections and extensive maintenance activities.
7. New Build and New Technologies	This reflects a concern on whether the current approach would be successful also in the new situation where foreign owned licensees might be interested in nuclear power generation, and the potential suppliers of facilities are international companies. It has already been experienced that the authorization of a foreign designed nuclear power plant took a very long time and consumed a lot of resources of the society. The logical order of decisions needed from different authorities involved ensuring the consistency of all regulatory requirements is a challenge	— Current arrangements for the authorization can be used also to address the current challenges (privatized utilities, use of contractors, international nuclear industry) — The mechanisms identified for ensuring safety of the new build plants — The establishment of a contact forum with the aim of producing a joint plan for an integrated licensing process — Stepwise licensing of new NPP projects — Cooperation with regulatory bodies that have reviewed and possibly licensed the NPP designs proposed to be built

Issue	Summary/Background	Key Elements
8. Regulatory Approach Risk-informed and Deterministic. Performance-based Approach (functional based) and Prescriptive.	In some Member States, there is a trend towards risk-informed and performance-based approach to regulation, rather than a wholly compliance-based approach (deterministic and prescriptive). Similarly, new licensing procedures are being developed to improve predictability of the process and help to reduce financial risks of nuclear power plant construction. It is would therefore be essential that there be a framework to guide the regulatory transition.	— Guidance exist for risk informed regulatory decision making — Process for determining the safety significance of regulatory actions — Defined outcomes based on promoting safety — Prioritize regulatory activities based on safety significance — Expectations for balancing risk-informed and deterministic decision-making
9. Participations on legal and non-legal binding international instruments and globalization of the Nuclear Community	The world today is increasingly complex and not only the globalization of technology, business and communication, but also terrorism, affects all human activities. Therefore, solutions for increased nuclear safety and security require a multilateral approach that takes into consideration interests of key stakeholders, national policies and global trends. The Global Nuclear Safety Regime here is defined as the institutional, legal and technical framework for ensuring the safety of nuclear installations throughout the world. The objective of this regime is to lead to a world where all nuclear installations operate safely.	— Multilateral exchanges — Bilateral or multilateral agreements — Participation in Conventions — Commitment to Codes of Conduct — Participation in international safety review services — Demonstrated openness to improvement and mutual learning
10. Response to Nuclear Renaissance	International nuclear regulatory groups have been formed to address common problems and strengthen cooperation and coordination. Both nuclear power plant vendors and operating organizations have consolidated. Many vendors have evolved into global	— Commitment to resource planning — Commitment to knowledge management — Assessment of workforce competencies to meet emerging technologies (R&D from TSO or regulatory body itself)

Issue	Summary/Background	Key Elements
	enterprises, and large generating companies and management organizations now operate many plants. Multilateral R&D has become an important part of the future for nuclear energy. Advances in information technology and communications have led to stronger interactions between operating organizations, regulatory authorities, and concerned stakeholders, and greater public awareness of nuclear safety issues. . However, great effort is needed for emerging and mature nuclear Member States to ensure that necessary nuclear safety infrastructures are in place to maintain a viable nuclear programme. A priority of nuclear safety for new installations in their design, siting, construction and operation will be important.	— Collaborative efforts with other regulators on the review of new designs and technologies
11. Human Resources and Knowledge Management	In many regions, the human resource of the nuclear community is aging. There is a movement towards revitalization of the human resource in some Member States. The need for knowledge management a creation of new knowledge, preservation of the existing resource, and knowledge sharing - is recognized. The new move towards network building for global knowledge sharing and management is showing promising results. Efforts in this direction need to continue to ensure availability of resources. Also, facilities critical to the conduct of important safety research need to be preserved.	— Plans to attract and retain staff — Existing strategies to identify, capture, and transfer knowledge internally and externally — National or Regional training centres — Identified specialized skills and identified strategies to maintain and build competence — Appropriate emphasis on regulatory research and technical support organizations

APPENDIX IV: RESPONSIBILITIES ASSIGNED TOIRRS MISSION PARTICIPANTS BY ROLE

IV.1.IRRS TEAM LEADER

The IRRS Team Leader is primarily responsible for:

— Serving as IRRS liaison, in conjunction with the IAEA Coordinator, with the government/regulatory body and external stakeholders during the mission;

— Coordinating with IAEA Coordinator for external interaction related to the conduct of IRRS mission;

— The preparation phase, i.e. identifying appropriate team members based on the established work plan, in conjunction with the IAEA Coordinator;

— Determining the division of responsibilities between the Team Leader and deputy;

— Assigning tasks and responsibilities to the team members;

— Leading the IRRS mission including supervising the review, ensuring schedules are met and providing leadership in the resolution of issues that may arise;

— Leading the initial team meeting, entrance and exit meetings;

— Ensuring that the team works in a consistent and cohesive manner;

— Communicating with team members on a regular basis prior to and during the mission, in order to ensure team members are adequately prepared and informed;

— Ensuring that the objectives of the IRRS are met;

— Providing guidelines for the conduct of the daily meetings;

— Coordinating with the regulatory body and the IAEA Coordinator to prepare public information needed during the mission;

— Conferring on appropriate changes to the draft report in consultation with the team members, based on comments received from the host country.

IV.2. IRRS DEPUTY TEAM LEADER

The IRRS Deputy Team Leader is primarily responsible for:

— Conducting daily team coordination meetings;

— Sharing leadership responsibilities with the Team Leader especially with the daily coaching of the team

— Assisting the IAEA Coordinator with preparation of the preliminary IRRS report;

— Assisting the Team Leader with the initial team meeting, entrance meeting and exit meeting;

— Undertaking roles as assigned by the IRRS Team Leader.

IV.3. IAEA COORDINATOR

The IAEA Coordinator is primarily responsible for:

— Serving as official IAEA liaison with the government/regulatory body prior to, during and after the IRRS mission;

— Assuring IAEA representation at meetings with government officials, if IRRS mission related;

— Preparing a briefing for the host country on the IRRS process, including providing a copy of this document;

— After consulting with appropriate IAEA technical officers, determining the scope and terms of reference of the IRRS mission, paying due regard to the IAEA action plan for the country (if the country is receiving IAEA assistance);

— Requesting completion of the self-assessment, ARM by appropriate organizations in the host country, and ensuring their receipt by IAEA in a timely manner (preferably two months prior to commencement of the IRRS mission);

— Developing the detailed work plan for the IRRS mission;

— Identifying appropriate team members, in conjunction with the IRRS Team Leader, based on the established work plan;

— Recommending to the IRRS Team Leader the assignment of tasks and responsibilities to 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;

— Interacting with the appropriate section/divisions of the IAEA;

— Participating as a full team member in the IRRS, if other duties allow sufficient time;

— Providing team members with appropriate pre-mission information;

— Providing guidance to the IRRS Team Leader and IRRS Deputy Team Leader to help ensure that the objectives of the IRRS are met;

— Ensuring policy issues are adequately addressed;

— Collating the preliminary report of the IRRS with the assistance of the IRRS Deputy Team Leader, based on the contributions from the team members; and determining which, if any, portions of the report need to be in a confidential annex;

— Assisting the IRRS Team Leader and the regulatory body to prepare public information relating to the mission;

— Preparing the draft report based on the preliminary report and comments received from the host country and team members;

— Submitting the draft report to the host country for comments following IAEA approval;

— Finalizing the report based on the comments received from the host country;

— Issuing the final report to the host country following IAEA approval and through the Technical Cooperation Radiation Protection (TCRP) manager, if necessary.

— Coordinating with other IAEA Sections or Divisions for input that might be applicable to the review.

IV.4. IAEA DEPUTY COORDINATOR

The IAEA Deputy Coordinator is primarily responsible for:

— Providing support to the IAEA Coordinator;

— Providing expertise and support to team members with regard to application of IAEA safety standards and IAEA review process;

— Assisting the IAEA Coordinator in preparation of the preliminary report;

— Serving as a team reviewer as assigned by the IRRS Team Leader.

IV.5. IAEA REVIEW AREA FACILITATOR

The IAEA Review Area Facilitator (if needed)is primarily responsible for:

— Providing expertise and support to team members with regard to application of IAEA safety standards and IAEA review process;

— Assisting the reviewers with preliminary report input preparation;

— Assisting the IAEA Coordinator with preparation of the preliminary report;

— Serving as a team reviewer as assigned by the IRRS Team Leader.

IV.6. LIAISON OFFICER (Host Country)

The host regulatory body should appoint a Liaison Officer who should be an experienced, senior member of staff. The Liaison Officer has a key role in the effective coordination of the mission and the role includes:-

— Arranging logistics, administration, scheduling and documentation;

— Being the main contact and focal point with the IRRS Team Leader and IAEA Coordinator in the preparatory phase and during the mission;

— Being the conduit between the IRRS team and the regulatory body;

— Assisting in regulatory staff appreciation of what the mission entails;

— Attending team meetings throughout the mission; and

— Being available throughout the mission.

For large missions, the host regulatory body should consider appointing a Deputy Liaison Officer to assure continuity of support for the team during the mission.

IV.7. REVIEWERS

Reviewers are responsible for:

— Making necessary preparations for the IRRS, on the basis of information from the IAEA Coordinator;

— Review of the ARM and preparing the feedback report;

— Conducting the IRRS as directed by the IRRS Team Leader;

— Participating in the initial team and entrance meetings;

— Taking the lead during the interviews with their review area counterparts;

— Reviewing the assigned regulatory areas against IAEA safety standards;

— Evaluating their observations;

— Jointly reviewing with the team all observations, conclusions, recommendations, suggestions and good practices;

— Providing input to the preliminary report daily, as directed by the IRRS Team Leader;

— Reviewing the completed preliminary report;

— Maintaining appropriate confidentiality of sensitive information in accordance with their confidentiality agreement;

— Providing comments to the IAEA on the IRRS process, after completion of the mission.

IV.8. OBSERVER

The main purpose of an observer taking part in an IRRS mission is to provide another Member State's regulatory body with first-hand insight into the IRRS process. The scope of the observer's involvement shall be agreed to by the IRRS Team Leader, the host regulatory body and the observer's regulatory body prior to the start of the mission. Typically an observer would be expected to participate/attend the IRRS team activities and prepare notes concentrating on aspects of benefit to the observer's own country and discuss them with the IRRS Team Leader.

IV.9. COUNTERPARTS (Host Country)

A counterpart is a staff member of the host regulatory body who is the primary contact with the reviewer(s) for a particular area of review throughout the mission. A counterpart would normally be a senior staff member whose responsibility corresponds to the area(s) of review and would be expected to remain with, or available to the reviewers throughout the relevant portion of the mission.

The counterpart should:

— Lead the preparation of the written responses to the IRRS questionnaire in their specific subject area(s) and ensure the relevant documentation is provided as part of the ARM;

— Provide a coordination function and call in specialist staff as required;

— Participate in the review related to their area(s) of responsibility;

— Provide complete and correct information and facilitate understanding.

APPENDIX V: ADVANCE REFERENCE MATERIAL

Typical documents, to be submitted about two months prior to the IRRS review, are listed below. The IRRS Team Leader and IAEA Coordinator will agree with the Liaison Officer on what Advance Reference Material (ARM) would need to be translated into English if the original documents are in another language. The specific contents and designations of these documents may vary owing to particular national practices. Information that must remain confidential should be clearly indicated.

(a) National legal framework:

- Law(s) governing the siting, design, construction, commissioning, operation or decommissioning of nuclear installations, other facilities, activities and practices;
- Synopsis of the constitutional legislative system of the country and the responsibilities of the various government departments that deal with nuclear installations;
- An outline of the administrative structure of government departments and other bodies dealing with nuclear installations and how they all interrelate;
- Legislation for the use of radiation sources and the management of the associated radioactive waste; and
- Regulations on nuclear, radiation, waste management, transport safety and security of radioactive sources.

(b) Regulatory body organization and procedures:

- Legal status and responsibilities assigned by law to the regulatory body;
- Objectives of the regulatory body and how it maintains its effective independence;
- Regulatory body safety policy and quality management system;
- Structure, organization and staffing;
- Description of the authorization process;
- Procedures for assessment and review of technical submissions;
- Inspection practices;
- Enforcement practices;
- Roles and responsibilities in relation to nuclear emergencies;
- A typical licence; and list of applicable codes and standards.

(c) Regulatory body's written response to the IRRS Self-Assessment Questionnaire:

- Modules 1-10
- Additional area questions (as applicable)
- Pre-appraisal fact sheet (if applicable)
- Specific questions (as applicable)

A useful source of this material is the Country National Report to the Convention on Nuclear Safety and the regulatory body's annual reports and the Radiation Safety Information Management System (RASIMS) Profile (RaWaSIP);

(d) Self-assessment analysis and results

Suggested detailed material for (a), (b) and (c) as applicable:

— Legislation (including drafts) relating to the establishment, functions and operation of the regulatory body(ies). Where available, the legislation also should be provided in electronic form.

— Legislation not directly related to, but with implications for radiation safety and security of radioactive sources and/or radioactive waste (e.g. in health, labour, environment).

— Legislation (laws, mandates and regulations, including drafts) governing the safety and security of radioactive sources, including import/export of radioactive sources and for the management of the associated radioactive waste.

— Details of any political commitment made regarding the Code of Conduct on the Safety and Security of Radioactive Sources.

— Regulatory guidance material (including drafts), such as codes of practice.

— Copies of other documents relevant to the national regulatory infrastructure, whatever their origin (e.g. internal to the host country or prepared by external consultants or reviewers).

— Organizational chart showing the regulatory body(ies) and its (their) relationships to ministries, government departments and other organizations involved in radiation safety and security of radioactive sources.

— Organizational chart of the regulatory body(ies), with a list of staff members and their functions.

— Training plan for regulatory body staff (qualifications, training received to date and planned for future).

— Membership of regulatory advisory committees or boards (if appointed), including the criteria for appointment.

— Last annual report of the regulatory body(ies) to the responsible minister or parliament or assembly (including national register of radiation sources).

— Copies of memoranda of understanding between the regulatory body and other national bodies, including customs, law enforcement and health.

— Copies of any informal working arrangements between the regulatory body and other national bodies, including customs, law enforcement and health.

— Details of the host country’s involvement in:

  - international treaties and conventions;
  - regional cooperation agreements and arrangements; and
  - bilateral or multilateral cooperation agreements and arrangements.

— Procedures for notification including the notification form.

— Procedures and conditions for authorization, including the application form.

— List of authorizations issued and renewed during the previous calendar year.

— Expected authorization programme for the coming calendar year.

— Procedures for and guidance governing inspections.

— Planned inspection programme for the current calendar year.

- List of inspections (numbers by practice type) carried out during the previous calendar year, including a breakdown by geographical region, e.g. urban and rural.
- Planned inspection programme for the coming calendar year.
- Investigation procedures and guides, such as those concerning overexposure.
- Enforcement powers, procedures and guidance.
- List of enforcement actions taken during the previous calendar year.
- Information publications relating to radiation safety and security of radioactive sources.
- Annual or other reviews of, for example, occupational exposures.
- Approval procedures for service providers, such as dosimetry laboratories.
- List of service providers in radiation safety and security of radioactive sources and the range of services provided.
- Quality assurance documentation, including internal procedural instructions.
- Reports of events involving stolen, lost, found or orphan sources.
- Reports of illicit trafficking of radioactive sources, such as those submitted to the IAEA's illicit trafficking database.
- National or regional threats assessments and design basis threat.
- Guidance material relating to patient protection.
- Information relating to a secondary standards dosimetry laboratory, if one is established.
- Information relating to radiological surveillance programme.
- Copy of the national waste management policy and strategy, if there is one.
- Information relating to a competent authority for radioactive waste safety, if one is established.
- List of agencies and services provided in the country for the management of radioactive waste.
- Information relating to a competent authority for transport safety, if one is established.
- Information relating to a competent authority for radiation emergency preparedness and response, if one is established.
- Information relating to a competent authority for the security of radioactive sources, if one is established.
- Copy of the national arrangements for emergency preparedness and response, if there is one.
- Copy of the national arrangements for response to security incidents involving radioactive sources, if one is established.
- Copy of any national radiation safety and security of radioactive sources training plan, if there is one.

APPENDIX VI: PREPARATORY MEETING FOR AN IRRS MISSION

1. Discussions on the aims of the IRRS to be held between the IRRS Team Leader, Deputy Team Leader, representatives of the IAEA's IEC, NSRW and NSNI (one of whom will be the IAEA Coordinator) and the host country senior management.

The objective of the discussion is to:

(a) confirm the scope of the review;

(b) identify whether there is a need for a self-assessment seminar;

(c) issues relating to the implementation and management of the self-assessment;

(d) identify the counterparts;

(e) agree the composition of the international Review Team, i.e. expertise required, numbers and specific requests for reviewers; and

(f) agree, when appropriate, on the participation of observers.

2. Presentations by the host regulatory body to the IRRS Review Team representatives.

This part of the meeting gives the regulatory body the opportunity to explain the status of its organization and provides the team information that will be used to recruit suitable reviewers for the mission, by covering:

(a) the regulatory body structure, organization and independence; and

(b) the main responsibilities of the regulatory body and its current activities.

3. Presentation by representatives of the IRRS Review Team on the IRRS methodology to the host regulatory body staff.

This part of the meeting allows the team to:

(a) explain the IRRS methodology covering:

- the overall process;
- the roles and responsibilities of all the participants;
- the schedule;
- the entrance meeting;
- document review, interviews and direct observation;
- development of observations, conclusions, recommendations, suggestions and good practices;
- the drafting of the mission report;
- the exit meeting.

(b) explain (and provide) the IAEA safety standards which are used as the basis of the IRRS;

(c) explain the nature and purpose of the self-assessment;

(d) discuss the need or desire for a self-assessment workshop;

(e) explain that it is important for the success of the mission that the regulatory body provides comprehensive written replies in English to the IRRS self-assessment question-sets including how the regulatory body complies with each attribute in the question-sets;

(f) explain that the self-assessment forms a starting point for the review and ensure an objective, consistent and systematic approach to the review;

(g) present example results of previous IRRS missions to give regulatory body personnel an understanding of typical results and what is expected.

4. Discussions with counterparts.

Meetings of 15 to 20 minutes may be arranged with the individual counterparts covering the scope of the mission. These meetings take place after the presentation by the IRRS Review Team and are held between the team members and each of the counterparts in turn:

Their purpose is to:

(a) allow the counterpart to explain the regulatory approach and practices in their area(s) of review (approximately 5 minutes);

(b) provide the counterpart with an opportunity to ask questions about the mission;

(c) identify the ARM that the regulatory body needs to submit to the IAEA;

(d) establish which of the ARM needs to be made available in English before the start of the mission;

(e) discuss any specific requests from the regulatory body with regard to the focus of the IRRS review;

(f) identify locations where direct observation of working practices of the regulatory body could be carried out and the need for reviewers to make visits away from the regulatory body main offices, e.g. nuclear installations, radiation practices, technical support offices, regulatory body regional or local offices, other licensed activities/locations and emergency centres.

5. Discussion of the practical and logistical aspects of the mission between the IAEA team and the Liaison Officer.

Several basic logistical items need to be discussed so that an understanding is reached on what will be provided. These discussions cover the:

(a) mission schedule including logistics for the members of the international Review Team (reviewers) to visit other locations, e.g. a nuclear installation;

(b) planning of the entrance meeting;

(c) arrangements for the arrival of the reviewers in the country, accommodations, meals, etc.;

(d) working areas within the regulatory body offices, clerical/secretarial support in English with at least one room at the disposal of the team to enable them to work and to hold discussions in reasonable privacy;

(e) forms to be filled out in advance for visas, security badges, and detailed contact information;

(f) need for interpretation and translation of documents;

(g) safety equipment (safety shoes, safety glasses, etc.);

(h) dosimetry requirements.

APPENDIX VII: SAMPLE AGENDA FOR INITIAL IRRS TEAM MEETING

The initial team meeting is attended by the IRRS Team Leader, IRRS Deputy Team Leader, representatives of the IAEA's IEC, NSRW and NSNI (one of whom will be the IAEA Coordinator and another the Deputy Coordinator), reviewers, observers and the host State's Liaison Officer.

1.	Opening remarks. Introduce Liaison Officer	IRRS Team Leader
2.	Self-introductions: Each team member to give a brief statement of their careers and current responsibilities (2 min). Observers should introduce themselves.	Team members
3.	Remarks on country background	IRRS Deputy Team Leader
4.	Presentation of the IRRS process	IAEA Coordinator
5.	Guidance for reporting/documenting	IAEA Coordinator
6.	Review of schedule	IRRS Team Leader
7.	Break for 15 minutes to work in review subject areas to prepare statements to the team on first impressions in the assigned subject areas of the ARM. (working in subject area sub-teams)	
8.	Report of initial review of ARM: Reviewers to briefly present their prepared statements on their initial impressions of the ARM. Where a pair of reviewers is working together they should agree on who is to report to the meeting. This is also an opportunity to raise any initial concerns or specific requests for clarification with the liaison officer.	Reviewers
9.	Preparation for daily interviews: The team members should continue working in their subject areas, after the closure of the meeting, to agree on their approach for the conduct of the interviews	IAEA Review Area Facilitators
10.	Closing remarks	IRRS Team Leader

APPENDIX VIII: SAMPLE AGENDA FOR ENTRANCE MEETING

Each IRRS is different and the entrance meeting agenda will need to be customized to suit the occasion, but it should follow the pattern as shown below:

1.	Welcome and introduce senior attendees.	Regulatory Body Manager
2.	Short opening remarks (include as a minimum): — thanks to the host regulatory body for the arrangements; — thank the regulatory body staff making themselves available for the duration of the IRRS; — scope: initial mission or follow-up (mention previous IRRS involvement); — other related IAEA work, e.g. assistance programme.	IRRS Team Leader
3.	Introduce the reviewers, IAEA Staff (and observer) each turn to explain their background (2 minutes each).	All team members
4.	Briefing for IRRS team: — roles and responsibility of regulatory body; — structure of the regulatory body; — relationship of regulatory body to utilities (where applicable); — regulatory technical and policy issues; — why the team is there; — what the regulatory body hopes to gain from the review; — any current issues that could impact the review; — how the regulatory body will use the results of the review.	Regulatory Body Manager
5.	Introductions and working arrangements: — introduce counterparts; — present detailed schedule; — discuss current regulatory body status and current plant status; — problems or activities that might impact the review; — any near term activities that team should be aware of, e.g. outage, major repairs/modifications, reorganizations.	Regulatory Body Manager
6.	Detailed presentations on each of the areas to be covered by the review.	Counterparts
7.	Closing remarks.	IRRS Team Leader

APPENDIX IX: IAEA PREPARATORY ACTIVITIES FOR AN IRRS MISSION

Task		Responsibility
Request from a state		
1.	Receive request from a state or identify IAEA requirement: • for information relating to IRRS • to conduct an IRRS	IAEA
2.	Prepare briefing for host country on IRRS process, including a copy of this document	IAEA
3.	If IRRS is to proceed, appoint IRRS Team Leader, IAEA Coordinator, Deputy Team Leader and Deputy Coordinator	IAEA
4.	Appoint the Liaison Officer and potential counterparts	Host country
5.	Define provisional scope of the IRRS; propose and provisionally agree with host country	IRRS Team Leader, IAEA Coordinator and host country
Preparatory phase		
6.	Arrange for IRRS preparatory meeting	IRRS Team Leader, IAEA Coordinator and host country
7.	Define the exact scope, terms of reference and provisional schedule of the IRRS Plan resources (size, duration of IRRS mission)	IRRS Team Leader, IAEA Coordinator and host country
8.	Identify team members: • consider scope of IRRS • identify appropriate personnel • potentially observer	IRRS Team Leader and IAEA Coordinator
9.	Assemble background information	IAEA Coordinator
10.	Request completion of the IRRS self-assessment and preparation of the self-assessment report.	IAEA Coordinator and host country
11.	Resource planning (size, duration of IRRS mission)	IRRS Team Leader, IAEA Coordinator, host country
12.	Send completed self-assessment question-sets to IAEA at least two months before commencement of IRRS mission	Host country
Pre-mission phase		
13.	Recruit team members	IRRS Team Leader and IAEA Coordinator
14.	Provide background information to team members	IAEA Coordinator

Task		Responsibility
15.	Review ARM and develop initial impression	Team members
16.	Prepare mission agenda	IRRS Team Leader, IAEA Coordinator and host country Liaison Officer
17.	Prepare visit coordination/schedule	IAEA Coordinator, team members and host country Liaison Officer

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