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IAEA Safeguards and SSAC Advisory Service (ISSAS) Guidelines

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IAEA SAFETY STANDARDS AND RELATED PUBLICATIONS

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IAEA SERVICES SERIES No. 13 (Rev. 1)

IAEA SAFEGUARDS AND SSAC ADVISORY SERVICE (ISSAS) GUIDELINES

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FOREWORD

The IAEA Safeguards and SSAC Advisory Service (ISSAS) was established in 2004 and is a fundamental part of the IAEA's efforts to assist States, upon request, in establishing and maintaining a State system of accounting for and control of nuclear material (SSAC). ISSAS provides a peer review of a State's safeguards infrastructure and the performance of the SSAC. This review takes into account the State's obligations under its safeguards agreement with the IAEA and the Guidance for States Implementing Comprehensive Safeguards Agreements and Additional Protocols (IAEA Services Series No. 21) published in 2016.

The service enables representatives of the State, to have in-depth discussions with a team of IAEA staff and external experts regarding the technical capabilities and effectiveness of the SSAC and the nature and scope of cooperation between the State and the IAEA in the implementation of safeguards, all of which can impact IAEA verification efforts for a State. Recommendations and suggestions are compiled in a report to the State and can provide an objective basis for setting national goals and developing an action plan to enhance SSAC technical capabilities and effectiveness. The IAEA offers customized assistance packages to help States address identified needs.

This publication supersedes the 2005 edition of the ISSAS guidelines (IAEA Services Series No. 13). The updated ISSAS guidelines are adaptable to individual national contexts and responsive to the needs of States. The updated guidelines are intended to ensure the adequacy and consistency of ISSAS missions and provide suitable information to States considering or preparing to receive such missions.

Since 2004, the IAEA has conducted 24 ISSAS missions in 23 countries. More than 50 IAEA staff members and external experts from 25 States have participated in ISSAS missions as team members or team leaders. The updated guidelines take into account feedback from States that have hosted ISSAS missions, contributions from IAEA staff and external experts familiar with the IAEA's broader support to SSACs as well as other IAEA peer review services. The IAEA officer responsible for this publication was S. Dunlop of the Division of Concepts and Planning.

EDITORIAL NOTE

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1. INTRODUCTION

1.1. BACKGROUND

One of the IAEA's peer review and advisory services is the IAEA Safeguards and SSAC Advisory Service (ISSAS). Established in 2004, the service supports the effective and efficient implementation of IAEA safeguards by identifying opportunities for enhancing State systems of accounting for and control of nuclear material (SSACs) and increasing cooperation between State or regional authorities with responsibility for safeguards (SRAs) and the IAEA. ISSAS missions also provide a mechanism for identifying and disseminating good practices and lessons learned.

1.2. OBJECTIVE

These guidelines have been prepared to provide a basic structure and common reference for ISSAS missions. They describe the process and steps for requesting, organizing, carrying out and following up such missions. The intended users include counterparts in States, IAEA staff and external experts preparing for and conducting ISSAS related activities. The intent of the IAEA Department of Safeguards is that this advisory service be useful for and serve the needs of all States with safeguards agreements in force with the IAEA.

1.3. SCOPE

These guidelines have been developed in a way that they can be used to review State safeguards infrastructure and SSACs for a wide range of nuclear programmes that include different types of safeguards agreements, a variety of nuclear material and different types of facilities and locations outside facilities (LOFs). Many States have certain types of nuclear material and either have or are planning to commission certain types of facilities such as power or research reactors or other nuclear fuel cycle facilities. To achieve flexibility and specificity that matches the needs of States, ISSAS missions are offered based on a modular approach. The scope of each mission is agreed between the State and the IAEA.

1.4. STRUCTURE

Following this introduction, Section 2 presents the general methodology for how an ISSAS mission is requested, prepared, conducted, reported and followed up. Sections 3 and 4 present detailed, modularized guidance to give States a sense of what specifically may be reviewed by the ISSAS in terms of the conditions to be demonstrated, relevant documentation and potential review point/specimen questions. This guidance covers organizational and functional elements of the SSAC at the State level and the organization and operation of the SSAC at facilities and at locations outside facilities (LOFs). Annex I provides a standard outline of the contents of an ISSAS mission report. Annex II provides a standard structure and content for the advance reference material which is to be prepared by the State, reviewed by the team and discussed during the mission.

2. GENERAL METHODOLOGY FOR THE IAEA SAFEGUARDS AND SSAC ADVISORY SERVICE

2.1. OBJECTIVES AND BENEFITS

The objectives of an ISSAS mission are:

— To evaluate the adequacy of the legal and regulatory framework and the administrative and technical systems of the SSAC at the State and facility/locations outside facilities (LOF) level;

— To evaluate the performance of those systems in meeting the State's safeguards obligations pursuant to its safeguards agreements and protocols in force with the IAEA;

— To identify areas where further cooperation with the IAEA could increase the effectiveness or efficiency of safeguards implementation;

— To make recommendations and suggestions on how any gaps or weaknesses identified could be addressed to enhance the SSAC's capabilities, while recognizing good practices identified in the course of the mission.

Evaluations are made on the basis of the combined expertise of the team members. The mission is not a safeguards inspection. Rather, it is an objective evaluation of a State's SSAC and practices, conducted at the request of a State using IAEA guidance documents, which are derived from international best practices, and taking into account the State's obligations under its safeguards agreement with the IAEA.

The key benefits of an ISSAS mission are:

— To receive an independent peer review of State safeguards infrastructure in a cooperative and voluntary environment;

— To enable representatives of the State to have in-depth discussions with a team of IAEA staff and external experts on experience and good practices regarding the technical capabilities of the SSAC and the nature and scope of cooperation between the State and the Agency in the implementation of safeguards, all of which can impact IAEA verification effort for a State;

— To develop an objective basis for setting national goals and developing an action plan to enhance SSAC technical capabilities and effectiveness, which can help the IAEA and other partners tailor assistance to help address identified needs;

— To develop interfaces and raise awareness of safeguards obligations among various national stakeholders;

— To provide a mechanism for identifying and disseminating good practices and lessons learned among the international safeguards community.

2.2. REFERENCE DOCUMENTS

For ISSAS missions, the main reference documents are:

— The State's safeguards agreements and protocols in force with the IAEA;
— *IAEA Safeguards and SSAC Advisory Service Guidelines* (IAEA Services Series No. 13 (Rev. 1) — this publication);
— *Guidelines for States Implementing Comprehensive Safeguards Agreements and Additional Protocols* (IAEA Services Series No. 21) [1];
— *Safeguards Implementation Guide for States with Small Quantities Protocols* (IAEA Services Series No. 22, if applicable) [2];
— "Model Regulation for Implementing Comprehensive Safeguards Agreements and Additional Protocols", *Safeguards Implementation Practices Guide on Establishing and Maintaining State Safeguards Infrastructure* (IAEA Services Series No. 31) [3], Annex I.

Other relevant documents include:

— *Guidelines and Format for Preparation and Submission of Declarations Pursuant to Articles 2 and 3 of the Model Protocol Additional to Safeguards Agreements* (IAEA Services Series No. 11, if applicable) [4];
— *Nuclear Material Accounting Handbook* (IAEA Services Series No. 15) [5];
— *Handbook on Nuclear Law* [6];
— *Handbook on Nuclear Law: Implementing Legislation* [7].

While not used specifically as reference documents for ISSAS missions, States may find the practical examples included in the following documents to be useful when developing an action plan to enhance SSAC technical capabilities and effectiveness:

— *Safeguards Implementing Practices Guide on Facilitating IAEA Verification Activities* (IAEA Service Series No. 30) [8];
— *Safeguards Implementation Practices Guide on Establishing and Maintaining State Safeguards Infrastructure* (IAEA Services Series No. 31) [3];
— *Safeguards Implementing Practices Guide on Provision of Information to the IAEA* (IAEA Services Series No. 33) [9].

2.3. INITIATION OF THE MISSION

An ISSAS mission can be requested by any State with any type of IAEA safeguards agreement, regardless of the size or nature of its nuclear fuel cycle. This includes States with no significant nuclear activities.

An ISSAS mission can be initiated only after the IAEA has received a request from a State at an appropriate government level. All ISSAS missions require the approval of the Head of the Safeguards Department (DDG-SG).

Six to nine months lead time is needed to prepare for an ISSAS mission. States are encouraged to request the mission one year in advance.

2.4. SCOPE AND DURATION OF THE MISSION

The scope and duration of an ISSAS mission is determined through consultations between the IAEA and the requesting State, accounting for factors such as the nature of the safeguards agreement and protocols in force in the State, the types and amounts of nuclear material present in the State and the size and nature of the State's fuel cycle. It is expected that missions would

take from 3 to 7 working days. The mission will deal mainly with issues relating to safeguards, including imports and exports of nuclear material and equipment, unless there are specific reasons to include other areas, such as nuclear security. In such cases the State would have to request to broaden the scope, and the composition of the review team would have to reflect the broader scope of the mission. A broader mission may be more cost effective for States with very limited nuclear activities or amounts of nuclear material.[1]

2.5. MISSION COORDINATOR

On receipt of a request for an ISSAS mission, the Director of the Division of Concepts and Planning will designate an IAEA staff member with appropriate experience, normally a staff member of the Safeguards Training Section as the mission coordinator who will be responsible for:

- Initiating the approval process;
- Coordinating the preparatory work and making the necessary arrangements (including financial arrangements) to conduct an ISSAS mission;
- Establishing liaison contacts with the appropriate counterparts of the host country who will be the primary contacts with the team during the mission;
- In consultation with the section head of the Safeguards Training Section, identifying the team leader for the ISSAS mission;
- In consultation with the team leader, selecting the members of the team;
- Arranging for a preparatory visit to the host country to plan the mission;
- Receiving the advance reference material and facilitating completion of the self-assessment questionnaire;
- Consolidating the draft ISSAS report;
- Ensuring the follow-up action plan is fully implemented after the mission is completed.

2.6. TEAM LEADER

The team leader will normally be an IAEA staff member and should be approved by DDG-SG. The team leader will be responsible for:

- Liaising with the government counterparts before the ISSAS mission;
- Coordinating the work of the ISSAS team, including a preparatory-visit team briefing where necessary, and assigning specific duties;
- Representing the team in the preparatory, entry and exit meetings;
- Managing the mission, including ensuring that objectives are met, liaising with government officials during the ISSAS mission, resolving issues requiring decision and preparing for the exit meeting;
- Coordinating the preparation of all presentations;
- Reviewing and finalizing the ISSAS report.

2.7. TEAM COMPOSITION

The size of the team will depend on the scope of the mission, which will be established through consultations between the State and the IAEA (see Section 2.4 above). It could vary, e.g., from

[1] The Department of Safeguards consults with other relevant departments such as the Department of Nuclear Safety and Security regarding approaches to cost-sharing for States. Depending on the circumstances, an ISSAS mission could be funded entirely by the IAEA, entirely by the receiving State through an extrabudgetary contribution to the IAEA or through some combination of the two.

four to seven members. Team members will have experience in the areas determined to be covered by a particular ISSAS mission. An ISSAS team is typically composed of IAEA staff and external experts.

Team members will typically include the team leader, mission coordinator and a safeguards inspector (from a safeguards operations section different from the one responsible for the host country). The team will have the responsibility to ensure that full account is taken of safeguards implementation issues when preparing for the mission. A legal expert will be selected in consultation with the IAEA's Office of Legal Affairs.

ISSAS team members will be selected so as to ensure that a variety of national approaches to safeguards regulation and implementation at the national level is represented. Each of the experts is likely to have, in addition to a particular area of expertise, knowledge of other SSAC arrangements and other relevant areas, such as information management, export control and human resource development. Knowledge of the host country's language should be considered while selecting team members.

The final team composition is agreed with the host country prior the conduct of the mission. The host organization/SRA and other involved organizations as appropriate, designate counterparts in each review area to be the primary counterparts to the reviewers in each specified review area.

2.8. PREPARATION FOR THE MISSION

During preparation for the ISSAS mission, the team leader, mission coordinator and host country counterparts will communicate and exchange information regularly. Early team building and orientation of host country counterparts and the IAEA are vital steps in maximizing the effectiveness of the teams during the mission.

The preparation for the ISSAS mission includes:

- A preparatory meeting, usually conducted in the host country, to establish the terms of reference for the ISSAS mission including the scope of the mission and identification of information that needs to remain confidential;
- Selection of the ISSAS mission team members;
- Completion of a self-assessment by the host country (a self-assessment seminar can be organized virtually or in person upon request);
- Forwarding to the IAEA of the advance reference material (ARM) prepared by the host country, including the self-assessment;
- Pre-mission preparation by the mission team members;
- Finalizing the mission agenda and logistics.

Figure 1 shows the ISSAS process flowchart including the main inputs and outputs of each step of the process.

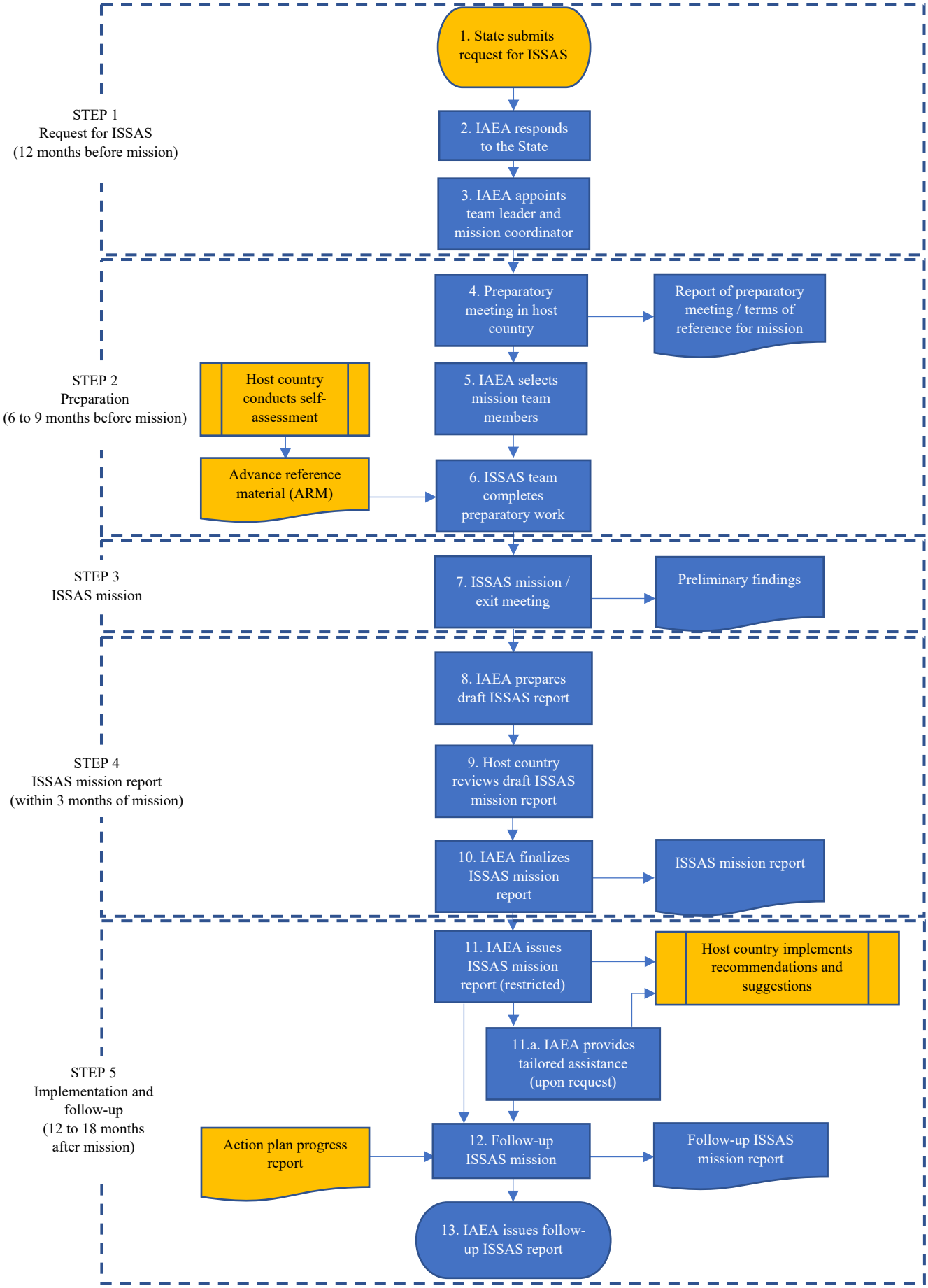

FIG. 1. ISSAS process flow chart.

2.8.1. Preparatory meeting

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 team leader and the mission coordinator and, as necessary, other representatives of appropriate IAEA divisions. The preparatory meeting is normally held at the host country's SRA headquarters to allow the participation of senior management and other stakeholder organizations in the country.

The main purpose of the preparatory meeting (or other preparatory arrangements if a meeting is not deemed necessary) is for the team leader and mission coordinator to:

- Meet with SRA senior management and counterparts and exchange contact details;
- Inform the SRA and other stakeholders that may have a role in the mission about how the ISSAS process works;
- Identify the SRA's priorities, aims and objectives for the mission;
- Explain the roles and responsibilities of ISSAS team members and the way they will interact with the SRA, other organizations, and facility/LOF representatives;
- Explain the role of the host country liaison officer and counterparts before and during the mission;
- Discuss and confirm the dates and scope of the mission and which safeguards and SSAC areas will be reviewed and which facilities/LOFs will be visited, and the material the SRA will provide in advance;
- Explain the importance of the SRA's providing clear written replies to the self-assessment;
- Agree an outline schedule for the mission and the logistical aspects, including on arrangements for the exit meeting;
- Discuss the preparation, review and confidentiality of the ISSAS mission report;
- Discuss follow-up procedures, including the handing over of the ISSAS mission report;
- Explain pertinent IAEA policies (e.g. funding, contact with the media);
- Answer any questions the SRA and other involved organization representatives may have and address their concerns to the extent possible.

A six- to nine-month time interval between the preparatory meeting and the ISSAS 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).

2.8.2. Advance reference material

The State needs to prepare advance reference material (ARM) and send it to the IAEA for distribution to the ISSAS team members at least two months prior to the mission. The ARM needs to contain adequate information and data to ensure a good understanding of the legal and regulatory framework and the administrative and technical systems of the SSAC at the State and facility/LOF level.

An important aspect of the State's preparation for an ISSAS mission is the conduct of a thorough self-assessment. The results of the self-assessment need to be included in the ARM in sufficient detail for the IAEA team members to understand any challenges which the State, facilities and LOFs, as applicable, might currently be facing. While the specific methodology used to conduct the self-assessment (i.e. how the relevant information is collected and compiled) is left to the State, the results of the self-assessment need to contain the following key components:

— For each review area, a description of how the conditions to be demonstrated, as described in Sections 3, 4 and 5, as applicable, are met (This information can typically be presented on 3 to 4 pages);
— Specific gaps where the systems or their performance are not in line with IAEA guidance;
— Where gaps are identified, an explanation of what corrective actions are being taken/planned to close the gap, including budget commitments, staffing, document preparation, increased or modified training, equipment purchases, etc.

While the contents of the ARM need to cover essential information, they should also be concise. An example of typical ARM content is given in Annex II. A self-assessment seminar can be organized upon request.

2.9. CONDUCT OF THE MISSION

To meet the mission objectives set out in Section 2.1 above, the ISSAS team will review in detail the laws, regulations and other measures that govern the establishment and operation of the SSAC, including such provisions related to the implementation of the safeguards agreement and additional protocol, if applicable, at the national level and will assess how effectively they are implemented in practice.

Activities to meet the first and second objectives (to evaluate the adequacy and performance of the legal and regulatory framework and the administrative and technical systems of the SSAC at the State and facility/LOF level) will include a review of those systems against the State's safeguards obligations under its safeguards agreement and additional protocol, if applicable, and detailed guidelines set out in the documents referred in Section 2.2. and will include technical visits and interviews with representatives of organizations selected by the State to be evaluated during the mission.

Activities to meet the third objective (to identify areas where further cooperation with the IAEA could increase the effectiveness or efficiency of safeguards) will include discussions with the relevant counterparts.

The ISSAS team will acquire the information needed to develop its conclusions and recommendations through:

— A review of written material;
— Interviews with SSAC staff at State and facility/LOF levels;
— Technical visits and direct observation of organization, practices and systems in place at the State level, at a facility/LOF level and at locations related to the additional protocol, if applicable.

The ISSAS team is expected to cover all aspects of the SSAC at the State and facility/LOF level to the extent necessary to be able to make an informed evaluation. Matters within the scope of the mission should be evaluated to the extent necessary to document them accurately and in sufficient detail to be readily understandable. Findings, recommendations and suggestions should be formulated on the basis of the peer review. Similarly, good practices identified in the review should be documented and described in sufficient detail as to be readily understandable by those who could benefit from them.

2.9.1. Review of advance reference material

The basis for any review of the SSAC will consist of the ISSAS team's review of:

- The State's safeguards agreements and protocols in force with the IAEA;
- National legislation;
- SRA organization and procedures;
- Regulations and guides;
- Facility instructions and procedures, as appropriate.

These and other relevant materials that need to be provided by the host country prior to the review are described in Section 2.8.2. above, and additional detail is provided in Annex II.

All documents related to the mission, including the ARM, the presentations of findings, and the report of the mission, including drafts, will be treated according to the IAEA's procedures governing the classification and security of information and in consultation with the State.

2.9.2. Interviews

After consideration and analysis of the relevant written material, interviews with SSAC staff can then be used to:

- Obtain additional information and clarification;
- Elicit individual opinions;
- Review issues arising out of the previous actions or briefings;
- Evaluate whether the national legislation, regulatory and administrative arrangements and SSAC measures in place are consistent with the State's safeguards obligations and enable it to implement such obligations;
- Support, confirm or refute observations made during the visits and interviews.

The interviews provide an opportunity for important information to be exchanged between the team members and their counterparts. An interview is intended to be an exchange of views and not an interrogation. Views and clarifications provided will not be assigned to specific individuals in the report of the mission. Properly conducted interviews are an important part of the ISSAS mission.

2.9.3. Technical visits and direct observation

Direct observation of the implementation of the national legislation, regulations and SSAC measures at a facility or other locations are an important aspect of the review process. A substantial part of the review period is devoted to practices in use. The observation of work covers SSAC regulations and practices, national regulatory oversight and inspections, facility procedures, routine and special reporting and quality control measures in use and also includes a review of management controls in place.

On the basis of the interviews and observations, the team can then, if necessary, modify its preliminary views to form an evaluation of performance and effectiveness. It may be that more than one iteration of document review, interviews and observations will be necessary in order to complete the evaluation, document the findings and make recommendations and suggestions.

2.10. MISSION REPORT

The objectives of an ISSAS mission are given in Section 2.1. above. The report of the mission should clearly address all of these objectives, document the team's findings and recommendations and suggestions, and include an action plan for follow-up by the State and the IAEA.

During the course of the mission, individual team members will prepare detailed findings on the areas assigned to them, including initial conclusions, recommendations, suggestions and good practices. These findings are then the subject of peer review by all team members. The reviewed findings will form the basis of presentations at the exit meeting, where the SRA will have the opportunity to comment on them. One or more copies of the presentations will be given to the State authorities prior to the exit meeting.

Recommendations, suggestions and good practices are defined as follows:

— **Recommendation:** A recommendation is advice on improvements to be made in the areas that have been evaluated and discussed with the State. Such advice needs to be based on one of the main documents listed in Section 2.2. Recommendations are specific, realistic and designed to result in tangible improvements.

— **Suggestion:** A suggestion may either be an additional proposal in conjunction with a recommendation or a stand-alone item following discussion of the associated topic with the host country. It contributes to improvements in the State safeguards infrastructure by indicating useful expansions of existing practices and programmes and pointing to better alternatives to current work practices. In general, it should stimulate the SRA, other relevant entities and facility or LOF operator management and staff to consider ways and means of enhancing the SSAC. Suggestions can be based on one of the other relevant documents listed in Section 2.2. or the collective experience of the review team.

— **Good practice:** A good practice is an indication of an outstanding organizational arrangement, practice, programme or performance that is more than just the fulfilment of international safeguards obligations or following IAEA guidance in the area of safeguards. It should be worthy of bringing to the attention of other States as a model in the general drive for excellence.

On completion of the mission, the mission coordinator will consolidate the draft ISSAS report for review and finalization by the team leader. The report will summarize the team's main findings and conclusions, including all recommendations, suggestions and good practices, and a follow-up action plan. A suggested outline of the report is shown in Annex I. The team leader will pass the draft report to the team for final comment before submitting it to the SRA (tentatively within one month of the completion of the mission) for comment.

The SRA is expected to collect all comments on the draft report from participating stakeholder organizations in the State and send them to the team leader within one month after the receipt of the draft report. The comments are expected to be limited to the factual correctness of the information contained in the report. Changes proposed to the technical content of the report, in particular on the recommendations and suggestions cannot be accepted at this stage.

The final report will be cleared by DDG-SG and submitted through official channels to the host country concerned within three months of the completion of the mission. The IAEA will restrict initial distribution to the authorities concerned, the contributors to the report, and relevant IAEA staff. Any further distribution will be at the discretion of the host country. Modifications to these report preparation procedures, as appropriate, can be considered at the preparatory meeting.

2.11. FOLLOW-UP ACTION PLAN

A detailed follow-up action plan, with targets and due dates agreed with the State, should form part of the ISSAS mission report. The responsibility for tracking the implementation of the action plan lies with the IAEA's safeguards training section, which will liaise with the relevant country officer in the Division of Operations, State authorities and other IAEA staff or donor country representatives as necessary.

It is a good practice to review the status of implementation of the follow-up action plan on an annual basis. This can be done virtually or in person. The IAEA can use the opportunity of visits of SRA representatives to IAEA headquarters (e.g. during the sessions of the General Conference or Board of Governors) or IAEA visits to the State not to only update the implementation status but also to agree and manage for the additional activities to increase the efficiency and effectiveness of the SSAC, as necessary. In exceptional cases, when agreed by both sides, a follow-up ISSAS mission can be conducted upon request by the State.

Upon completion of each action, relevant directors of divisions involved in the action should be notified. Upon completion of the whole plan, DDG-SG and the head of the SRA should be notified.

2.12. FOLLOW-UP MISSION

The purpose of an ISSAS follow-up mission is to continue the work of improving the effectiveness of the SSAC by reviewing the state's progress in response to the initial ISSAS mission recommendations or suggestions. Where appropriate, an ISSAS follow-up mission could address areas of significant change since the main mission including new topics as requested.

If requested by the State, an ISSAS follow-up mission may also include a review 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 ISSAS Guidelines continue to apply.

An ISSAS follow-up mission will normally be requested formally by the State. In some circumstances the IAEA may suggest the State to consider a follow-up mission. Typically, a follow-up mission will take place two to four years following the initial ISSAS. Two years should allow significant progress to be made with the implementation of the recommendations and suggestions of the initial ISSAS mission. Beyond four years the effectiveness of the follow-up process may be limited.

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

3. GUIDELINES FOR REVIEW OF STATE LEVEL ORGANIZATION AND FUNCTION (MODULE 1)

The ISSAS State level review module is the primary ISSAS review module that evaluates a State's safeguards infrastructure. It is a broad review ranging from governmental organization and legislation regulating nuclear activities in the State and establishing the SSAC, the role and processes of the SRA, procedures and practices for ensuring compliance and enforcement and the integration of all relevant organizations. In order to facilitate review of these fundamental issues, the ARM will need to be provided to the ISSAS team in advance of the mission. Arranging for the appropriate documentation is the responsibility of the technical officer and the team leader.

Guidance outlined in the following sections is considered by the ISSAS team members during the course of the mission. The SRA and other relevant authorities can use this guidance for self-assessment purposes. The review points/specimen questions should not be used as a simple yes/no checklist but rather questions which allow the interviewer to gain an appreciation of the subject and, as appropriate, to compare implementation with safeguards obligations, IAEA guidance and international good practices. The specimen questions posed below are not an exhaustive list, and team members are encouraged to ask additional questions as necessary.

The State level review module includes the following areas:

- Legal and regulatory framework;
- Nuclear material accounting and control and reporting;
    - Starting point, termination and exemption of accounting and control;
    - Categorization of nuclear material;
    - Material balance areas;
    - Records and reports system;
    - Measurement system;
    - Nuclear material flow;
    - Physical inventory taking;
    - Shipper receiver differences;
    - Material balance closing;
    - Measurement control;
    - Application of containment and surveillance measures;
    - International transfers of nuclear material;
- Export and import controls;
- SSAC information management system;
- National inspections and facilitating IAEA verification activities;
- Resources, recruitment and training.

3.1. LEGAL AND REGULATORY FRAMEWORK

It is an obligation under a comprehensive safeguards agreement to establish and maintain an effective SSAC. The responsibility for establishing, implementing and maintaining an SSAC within a State or group of States party to a safeguards agreement in force with the IAEA rests entirely with the government of that State or with that group of States. The State therefore needs to have an adequate and supportive governmental organization and legislation in order to be able to fulfil its international safeguards obligations. The legislation needs to provide for the designation of a governmental institution responsible for the implementation of safeguards (SRA) with clearly defined authorities and responsibilities, sufficient competent staff, technical

capabilities and funding to perform its duties and the freedom to do so without undue interference.

There may be certain advantages in forming the SRA as a single body, but several separate bodies may discharge the foregoing responsibilities, provided that the duties and responsibilities of each are defined clearly.

The State needs to make and regularly review the necessary laws, regulations or other measures to ensure that the requirements for nuclear material accounting and control, in particular those under international agreements, are met. These laws, regulations or other measures need to include the requirements and definitions in respect of nuclear material and facilities, nuclear sites and other locations, as well as in respect of international transfers of nuclear material and equipment to ensure that safeguards procedures related to them are met.

The SRA needs to establish a clear framework of requirements with which applicant(s)/licensee(s) have to comply and to provide guidance amplifying how regulatory obligations may be fulfilled. Detailed regulations and guides are not obligatory for all situations. The SRA may consider it appropriate to develop or enhance them in step with the development of relevant national nuclear programmes.

3.1.1. Condition to be demonstrated

The State has established (e.g., through the enactment of national legislation) the SSAC within which the SRA is established or designated and can operate effectively and, inter alia, has sufficient authority through laws and regulations to carry out its safeguards responsibilities and sufficient funding for its activities and can pursue its regulatory task without undue interference.

The State has ensured an adequate hierarchy of authority and responsibility to enable the SRA to fulfil its SSAC functions. In particular, the SRA is separated legally and administratively in the governmental organization from the bodies responsible for developing and promoting the use of nuclear energy or operating nuclear installations.

All SRA staff clearly understand the legal authority underpinning their activities and how this governs their activities in planning, assessing, licensing, inspecting, enforcing, etc. In exercising their authority in matters of SSAC, all SRA staff understand their organization's regulatory role and objectives, how these are achieved, and how they compare with international standards and good practices.

The SRA has established any necessary arrangements for coordination with other regulatory organizations and those responsible for physical security, import and export control, and other affiliated agencies to ensure an integrated approach to SSAC. The SRA has established a clear policy regarding the approach taken to elaborate regulations and technical guides. This policy has been developed to suit both the licensing system and the governmental structure of the State.

The SRA ensures that applicants/licensees are made aware of regulations and guides that are applicable. The applicants/licensees have the opportunity to comment during the elaboration process (drafting) of regulations and guides.

3.1.2. Documentation

— Primary legislation: laws enacted by the State legislative or executive body (e.g., the congress/parliament/local legislatures and ordinances; decrees or decisions by the president or the government);
— Secondary legislation, subsidiary/lower tier laws (e.g., regulations issued by the government, ministries or administrative agency/body pursuant to primary legislation);
— Authorizations, licenses or permits and conditions included therein issued by the SRA;
— Description of the constitutional and legal system of the State;
— Description of all the government ministries or departments involved in the SSAC, their responsibilities and how they interrelate, e.g., overall coordination mechanisms.
— Description of the SRA's legal status, authorities, responsibilities and its objectives as defined by law;
— Description of how the SRA coordinates, liaises with and relates to each of the other government ministries, departments or other organizations involved with the SSAC;
— List of all relevant regulations, guides, codes or technical standards that are required to be used or complied with by the applicant(s)/licensee(s).

3.1.3. Review points/specimen questions

— What is the principal legislation (laws, ordinances, decrees or other legally binding provisions) that regulates nuclear activities and establishes the SSAC? Is this body of legislation satisfactory, and does it require appropriate control, administrative and technical measures for the SSAC, holders of nuclear material and owners or operators of nuclear facilities as a prerequisite for obtaining a licence?
— Describe how the current legislation regulates nuclear material and activities.
— Describe how the current legislation requires the establishment of an SRA with responsibilities for comprehensive governmental regulation of all aspects of SSAC, handling and use of nuclear material and construction and operation of nuclear facilities.
— Provide a diagram showing the governmental organization(s) for the oversight of the facility/LOF operators' programmes within the SSAC. The diagram should make clear the reporting lines of the various authorities or bodies within the legislative and regulatory framework. It would be helpful to distinguish between direct lines of control and lines which show where advice is given and/or received.
— Does the current legislation require the SRA to issue safeguards related secondary legislation? If not the SRA, then who does?
— Are there any undue impediments to update regularly the secondary legislation?
— Does the current legislation require the preparation of periodic reports (e.g. nuclear material accounting reports, provision of design information, additional protocol declarations), and if so, by whom? If yes, to whom are these reports addressed?
— Does the legislation prescribe specific requirements to be met as a prerequisite for nuclear activities to be licensed?
— Describe how the regulatory independence of the SRA from the licensees, including State bodies using nuclear energy, is guaranteed.
— Describe the arrangements for the prompt notification in the event that evaluation of accounting and control information indicates losses, unauthorized use, or removal of nuclear material from regulatory control.
— Are laws and regulations reflecting the requirements for NMAC and the obligations of the State's international agreements?

— Are regulatory requirements for nuclear material, facilities, and international transfers, included in these laws and regulations?
— Is the statutory responsibility of the SRA institutionally separate from that of the applicant(s)/licensee(s)? If not, what is the relationship?
— If the SRA comprises more than one organization (e.g. national and State bodies), what is the relationship between these bodies having responsibility for SSAC of nuclear material and nuclear facilities?
— Does the SRA possess the following authorities?
    - To establish and issue binding regulations, requirements and standards that, among other things, serve as the basis for reporting and national inspections;
    - To enter at any time for inspection purposes the premises of any nuclear facility or related establishment;
    - To require preparation of and access to within a reasonable time such reports and documents from applicant(s)/licensee(s) as are essential for the performance of its inspection responsibilities;
    - To cooperate with and support each of the various governmental bodies possessing regulatory and inspection related competence or qualifications;
    - To communicate to authorized organizations inspection information, findings, recommendations and conclusions;
    - To require licensees to promptly inform the SRA of conditions, events or developments which could affect the operation of nuclear facilities or possible loss of nuclear material;
    - To require licensees to comply within a reasonable period of time with all regulatory decisions and enforcement actions of the SRA;
    - To apply, as appropriate, sanctions to responsible persons (e.g., licensees) in case of non-compliance with the applicable legislation and regulations related to safeguards?
— If any answers above are yes, identify the principal laws, ordinances, decrees, regulations or other legal provisions that confer the authority.
— What are the SRA's responsibilities for informing other relevant governmental organizations and the public of regulatory activities and safeguards related issues? How are these responsibilities discharged?
— What are the SRA's international contacts in the field of safeguards for the provision and exchange of information, notification of abnormal occurrences and mutual assistance?
— Are these contacts based upon formal agreements/arrangements or are they on an ad hoc basis?
— At what levels are international contacts made?
— Are the SRA's safeguards functions clearly stated and readily understandable? Do they strike a good balance between being too general and too prescriptive, and between innovation and reliance on proven techniques?
— Has the budget for the SRA kept pace with inflation and the growth of the industry? Is funding sufficient to allow the employment of staff of adequate competence?
— What is the hierarchy of regulations and guides that are to be used by the applicant(s)/licensee(s)?
— What system of consultation with technical bodies and/or applicant(s)/licensee(s) is in place to obtain feedback on guides produced by the SRA? Is this voluntary or required by legislation?
— What system of internal scrutiny and assessment has the SRA established to confirm the adequacy of any guide prior to its implementation?

3.2. NUCLEAR MATERIAL ACCOUNTING AND CONTROL AND REPORTING

The SRA needs to establish the requirements of accounting for and control of nuclear material, taking into account the requirements of the State's safeguards agreement in force with the IAEA and, as appropriate, applicable laws, regulations or other measures. These requirements need to enable the IAEA to establish in a timely fashion whether there has been any diversion of nuclear material.

3.2.1. Accounting and control

3.2.1.1. Condition to be demonstrated

The SRA has established the following:

— Nuclear material will be subject to accounting and control procedures as required by the State's international obligations;
— Safeguards will be terminated on nuclear material upon receiving confirmation from the IAEA that it has determined that the material has been consumed or has been diluted in such a way that it is no longer usable for any nuclear activity or has become practicably irrecoverable.

3.2.1.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.1.3. Review points/specimen questions

— Have NMAC procedures been established by the SRA?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of the NMAC procedures required?
— In which regulatory document(s) is the time for the starting the NMAC specified?
— Do the specified procedures take State's international obligations into account?
— Are criteria for exemption from regulatory control nuclear material subject to NMAC procedures established by the SRA?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of these criteria required?
— In which regulatory document(s) are the criteria specified?

3.2.2. Categorization of nuclear material

3.2.2.1. Condition to be demonstrated

As described in IAEA Services Series No. 15 [5], categorization of nuclear material has been established in order to enable an appropriate balance to be maintained between the significance and accessibility of material and the intensity of accounting and control measures. This categorization considers characteristics of significance for accounting and control, e.g. the material type and isotopic composition (including in particular the content of fissile isotopes) and the irradiation level. The categorization is used, in conjunction with

information on quantities of nuclear material involved, in specifying the intensity of accounting and control measures, including the taking of physical inventories and the determination of quantities of nuclear material in the inventory and material unaccounted for (MUF), as appropriate.

3.2.2.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.2.3. Review points/specimen questions

- Has nuclear material categorization been established by the SRA?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of categorization required?
- In which regulatory document(s) are the limits for categorization specified?
- Does the categorization fulfil requirements in the safeguards agreement and subsidiary arrangements?
- Is the categorization taken into account when specifying the intensity of accounting and control measures?

3.2.3. Material balance areas

3.2.3.1. Condition to be demonstrated

The SRA has established factors to be taken into account and criteria to be met in the determination of material balance areas (MBAs). These factors include the existence and location of key measurement points (KMPs), containment and surveillance possibilities (particularly to help ensure the completeness of flow measurement, the accuracy with which the material balance can be established, and the type of accounting, i.e. item or bulk accounting). The SRA has determined the facility MBAs. To the extent possible, the State system of MBAs is consistent with that agreed in the Subsidiary Arrangements between the IAEA and the State.

3.2.3.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.3.3. Review points/specimen questions

- Has the SRA established factors to be taken into account and the criteria to be met, in the determination of MBAs?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of these factors and criteria required?
- In which regulatory document(s) are the factors and criteria specified?
- Are requirements for the existence and location of KMPs, and containment and surveillance possibilities, included in the regulation?
- How are facility/LOF MBAs determined?

3.2.4. Records and reports system

3.2.4.1. Condition to be demonstrated

The SRA has established requirements (for material both in identifiable items and in bulk form) for accounting and operating records and reports for each MBA, providing relevant data on nuclear material transactions and operations that affect the accounting for and control of nuclear material.

3.2.4.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.4.3. Review points/specimen questions

- Are requirements for accounting and operating records and reports for each MBA established by the SRA?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of requirements for these records and reports required?
- In which regulatory document(s) are the requirements for the content of accounting and operating records and reports for each MBA specified?

3.2.5. Measurement system

3.2.5.1. Condition to be demonstrated

The SRA has established requirements for a measurement system and measurement uncertainties, including provisions for the determination of nuclear material received, produced, shipped, lost or otherwise removed from inventory and for the determination of inventory quantities based on sampling and chemical or non-destructive analysis, as appropriate.

3.2.5.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.5.3. Review points/specimen questions

- How does the SRA establish requirements for a measurement system and measurement uncertainties?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of requirements for a measurement system and measurement uncertainties required?
- In which regulatory document(s) are the requirements for a measurement system and measurement uncertainties specified?
- Are provisions for the determination of nuclear material received, produced, shipped, lost or otherwise removed from inventory, included in the requirements? Are they customarily followed? Please provide a reference.

— Are provisions for the determination of inventory quantities included in the requirements?
— Is sampling and chemical or non-destructive analysis required?

3.2.6. Nuclear material flow

3.2.6.1. Condition to be demonstrated

The SRA has established requirements, when relevant, for the accounting and control of the flows of nuclear material, taking into account the degree of assurance to be obtained from containment and surveillance measures. Requirements for measuring (including corresponding uncertainties) and for identifying receipts, shipments, and transfers within a facility have been defined as necessary to provide for periodic material balances.

3.2.6.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.6.3. Review points/specimen questions

— Are requirements for the accounting and control of the flows of nuclear material established by the SRA?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of requirements for the accounting and control of the flows of nuclear material required?
— In which regulatory document(s) are the requirements for the accounting and control of the flows of nuclear material specified?
— Do the requirements reflect the degree of assurance to be obtained from containment and surveillance measures?
— Are requirements for measuring and for identifying receipts, shipments, and transfers within a facility, established by the SRA?
— By which law(s)/regulation(s)/regulatory guide (s) is the establishment of requirements for measuring and for identifying receipts, shipments, and transfers, required?
— In which regulatory document(s) are the requirements for measuring and for identifying receipts, shipments and transfers specified? How are they provided to the operators?
— Are requirements regarding corresponding measurement uncertainties specified?

3.2.7. Physical inventory taking

3.2.7.1. Condition to be demonstrated

The SRA has established the requirements, including the completeness, frequency and allowable limits of measurement uncertainty, for the different categories of nuclear material, of the physical inventories to be taken by the facility operators, taking into account the degree of assurance to be obtained from containment and surveillance measures. Provisions have been made to notify the IAEA in advance of dates when physical inventories will be taken.

3.2.7.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.7.3. Review points/specimen questions

- Are requirements for the physical inventories to be taken by the facility operators, for different categories of material, established by the SRA?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of these requirements for physical inventory taking required?
- In which regulatory document(s) are the requirements for the physical inventories to be taken by the facility operators specified?
- Do the requirements include the completeness, frequency and allowable limits of measurement uncertainty?
- Do the requirements take into account the degree of assurance to be obtained from containment and surveillance measures?
- In which regulatory document(s) are procedures for notifying the IAEA in advance of dates of physical inventories specified?

3.2.8. Shipper receiver differences

3.2.8.1. Condition to be demonstrated

The SRA has:

- Established requirements for identifying, reviewing, resolving and evaluating differences in all shipper/receiver measurements and for deriving the limits of measurement uncertainty of transfers between MBAs within its control;
- Described the procedures to be followed when shipper/receiver differences or their limits of measurement uncertainty exceed specified values.

3.2.8.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.8.3. Review points/specimen questions

- Are requirements for identifying, reviewing, resolving and evaluating differences in all shipper/receiver measurements, established by the SRA?
- By which law(s)/regulation(s)/regulatory guide(s) is the establishment of the requirements for identifying, reviewing, resolving and evaluating differences in all shipper/receiver measurements, required?
- In which regulatory document(s) are the requirements for identifying, reviewing, resolving and evaluating differences in all shipper/receiver measurements specified?
- Are procedures to be followed when shipper/receiver differences or their limits of measurement uncertainty exceed specified values, specified by the SRA?
- In which regulatory document(s) are these procedures specified?

— Are requirements for deriving the limits of measurement uncertainty of transfers between MBAs, established by the SRA?
— In which regulatory document(s) are the requirements for deriving the limits of measurement uncertainty of transfers between MBAs specified?

3.2.9. Material balance closing

3.2.9.1. Condition to be demonstrated

The SRA has:

— Established requirements for:
  - The striking of material balances, and for calculating MUF together with its limits of measurement uncertainty;
  - The determination of the components of the material balance through the use of measurements or derived estimates based upon measurements;
  - The evaluation of accumulations of unmeasured inventory and unmeasured losses and their limits.
— Required that MUF be reduced to the lowest practicable level;
— Specified limits for MUF and for the measurement uncertainties associated with MUF, conforming substantially with the latest international standards, and procedures to be followed to routinely monitor conformance to these standards;
— Prescribed procedures to be followed when MUF or the measurement uncertainties associated with MUF exceed the appropriate specified level.

3.2.9.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.9.3. Review points/specimen questions

— Are requirements for the striking of material balances established by the SRA?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of the requirements for the striking of material balances required?
— In which regulatory document(s) are the requirements for the striking of material balances specified?
— Does the SRA establish requirements for calculating MUF, together with its limits of measurement uncertainty?
— By which law(s)/regulation(s)/regulatory guideline(s) is the establishment of the requirements for calculating MUF, together with its limits of measurement uncertainty, required?
— In which regulatory document(s) are the requirements for calculating MUF, together with its limits of measurement uncertainty, specified?
— Are limits for MUF, and for the measurement uncertainties associated with MUF, specified by the SRA?
— In which regulatory document(s) are limits for MUF, and for the measurement uncertainties associated with MUF, specified?

— Are procedures to be followed when MUF or the measurement uncertainties associated with MUF exceed the appropriate specified level, prescribed by the SRA?
— In which regulatory document(s) are these procedures prescribed?

3.2.10. Measurement control

3.2.10.1. Condition to be demonstrated

The SRA has established requirements for measurement control programmes with the objectives of ensuring, inter alia, that the adequacy of routine operation of the measurement systems is confirmed; that measurement systems are recalibrated at appropriate intervals; that random and systematic errors are properly estimated for propagation so that the limits of measurement uncertainties associated with MUF can be established; and that clerical errors are, so far as practicable, detected and corrected.

3.2.10.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.10.3. Review points/specimen questions

— Is the setting up of a measurement control programme required by the SRA?
— By which regulatory document(s) is the setting up of a measurement control programme required?
— Are procedures for the following required by the regulatory document(s) to be included in the measurement control programme:
  • Calibration of measurement systems at appropriate intervals;
  • Estimation of random and systematic errors;
  • Specifying limits of measurement uncertainties associated with MUF;
  • Detection and correction of clerical errors?

3.2.11. Application of containment and surveillance measures

3.2.11.1. Condition to be demonstrated

Containment and surveillance measures enable the competent authority, as part of its nuclear material control function, to monitor flows, to confirm the integrity of stores, and in general to indicate when material present in an MBA or facility is removed without appropriate accounting action.

3.2.11.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.11.3. Review points/specimen questions

— Does the SRA require containment and surveillance measures?

— By which regulatory document(s) are containment and surveillance measures required?
— Is the facility operator required by regulations to conduct a comprehensive investigation and to take appropriate corrective actions when containment and surveillance or accountancy measures have failed or indicate possible unauthorized removal of nuclear material?
— By which regulatory document(s) are the above investigation and corrective actions required?
— Has the requirement for re-establishing corresponding inventories in the above case been included in the regulation?

3.2.12. International transfers of nuclear material

3.2.12.1. Condition to be demonstrated

The SRA has established requirements for international transfers of nuclear material with time specifications on necessary arrangements for advance notifications, accounting and control responsibility, and reporting on nuclear material shipped and received.

3.2.12.2. Documentation

Appropriate law(s)/regulation(s)/regulatory guide(s) describing the requirements of accounting for and control of nuclear material.

3.2.12.3. Review points/specimen questions

— Does the SRA establish requirements for international transfers of nuclear material?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of requirements for international transfers required?
— In which regulatory document(s) are the requirements for international transfers of nuclear material specified?
— Are provisions for the following defined in this regulatory document(s):
  • Time specifications on necessary arrangements for advance notifications;
  • Accounting and control responsibility;
  • Reporting on nuclear material shipped and received?

3.3. EXPORT AND IMPORT CONTROLS

The responsibility for the establishment, implementation and maintenance of an export-import control system within a State rests entirely with that State.

3.3.1. Condition to be demonstrated

The State has designated a competent authority with responsibilities to establish and ensure proper implementation of export-import control and to serve as point of contact with the SRA in case the SRA has not been assigned with authorities and responsibilities for authorizing or licensing import and export of nuclear material and equipment.

The State has made (and regularly reviews) the necessary laws, regulations or other measures to ensure that the requirements export and import control of nuclear material are met.

3.3.2. Documentation

- Description of the laws and regulations for export-import control;
- Description of the licensing and enforcement powers of the competent authority, how much is delegated and to what level, and how they are exercised in practice;
- Identify the relevant legislation that confers such powers;
- Description of working relationship between any site/regional-based and headquarters-based competent authority staff.

3.3.3. Review points/specimen questions

- Has a competent authority with export-import control responsibilities been designated by the State?
- What is the name of the competent authority?
- Describe, in the form of a chart, the organizational position of the competent authority with respect to Ministries and other State bodies having responsibilities in export-import control.
- Describe how the statutory export-import control responsibilities are shared between different state bodies.
- Describe the institutional arrangements that exist between the competent authority with export-import control responsibilities and the SRA.
- Are laws and regulations for export-import control established by the State? If so, which laws/regulations?
- Are requirements for licensing and enforcement procedures included in the laws and regulations?
- If applicable, describe the mechanism for reporting exports and imports pursuant to the additional protocol.
- If applicable, describe the mechanism for reporting exports and imports pursuant to the voluntary reporting scheme described in GOV/2629.
- If applicable, describe the mechanism for reporting exports and imports of neptunium and americium as described in GOV/1999/19/Rev. 2.

3.4. SSAC INFORMATION MANAGEMENT SYSTEM

3.4.1. Condition to be demonstrated

The SRA has established and maintains an SSAC information system with the following main activities:

- The recording and processing of information on nuclear material accounting and control, provided by facility operators and reported to the SRA;
- The collecting, processing and recording of the information by the SRA and preparing of reports for evaluation internally and for submission to designated bodies as necessary to satisfy international and possibly national obligations.

3.4.2. Documentation

- Description of the SRA’s SSAC information system as required by law;

— List of all relevant regulations, guides or technical standards that cover the SSAC information system;
— Implementation guides or procedures.

3.4.3. Review points/specimen questions

— Has an SSAC information system been established by the SRA?
— By which law(s)/regulation(s)/regulatory guide(s) is the establishment of an SSAC information system required?
— In which regulatory document(s) are the main activities of an SSAC information system specified?
— Do these activities correspond to the above requirements?
— Are the following elements included in the SSAC information system?
    • A listing of current facilities and of other locations with information on material accounting and control procedures, including containment and surveillance?
    • A record of data on nuclear material inventories possessed at each facility and location in sufficient detail to permit categorization of the material for accounting and control purposes and for planning SSAC inspection activities as appropriate?
    • Data on transfers?
    • A record of inspection data and all operational information required for the evaluation and review of loss mechanisms, shipper/receiver differences, MUF and measurement uncertainties associated with MUF, as appropriate?
— Does the SRA:
    • Receive reports of inventories and inventory changes of nuclear material, including domestic and international receipts and shipments?
    • Maintain a record of all nuclear material (showing types, amounts and locations) and of responsible individuals?
    • Process and evaluate information acquired during inspections and information submitted by the facility operators?
    • Audit and evaluate facility records and reports, as appropriate?
    • Review loss mechanisms, shipper/receiver differences, MUF and measurement uncertainties associated with MUF, as appropriate?

3.5. NATIONAL INSPECTIONS AND FACILITATING IAEA VERIFICATION ACTIVITIES

The SRA should establish a regime for national inspection and enforcement that complements its licensing activities. It needs to ensure that each licensee complies with national legislation and maintains the nuclear installation(s), throughout all stages of its life, in conformity with the regulatory system approved by the SRA.

An inspection regime needs to be established to satisfy the SRA that the licensee is fulfilling the conditions set out in the licence specifically related to regulatory measures. The SRA will require correction of any non-compliance with the licence by exercising appropriate enforcement powers.

3.5.1. Condition to be demonstrated

The SRA has established a structured system for evaluating and systematically following up all inspection findings and an enforcement system to ensure that all aspects of legislation,

including the licence conditions, are fully complied with by each applicant/licensee, that this compliance is verifiable and that experience gained is fed back to the licensee.

The SRA ensures that the responsible persons in a licensee's organizations are qualified to discharge their SSAC functions.

The SRA ensures that each licensee at times specified performs the required self-assessments.

3.5.2. Documentation

— Description of how the SRA plans, carries out and documents its national inspections;
— Description of the enforcement powers of the SRA, how much is delegated and to what level, and how they are exercised in practice;
— Identify the relevant legislation that confers such powers;
— Description of working relationship between any site/regional-based and headquarters-based SRA staff;
— State-level procedures that enable inspectors to access facilities/LOFs.

3.5.3. Review points/specimen questions

— What are the responsibilities of the SRA for inspection and enforcement of the regulatory measures? Specify the distribution of inspection responsibilities between the SRA and the licensee. For example, does the SRA only ensure that the licensee performs its own inspection programmes properly, or do both the SRA and the licensee have separate inspection programmes?
— What types of inspection does the SRA conduct to verify that the licensee has adequately demonstrated that installations comply with the safeguards related regulations? Are there regulatory inspection programmes to which the inspector needs to adhere?
— Are special inspections to verify the regulatory measures (i.e. other than those in the routine programme) conducted as the result of a specific identified problem, concerns of the inspector, or a history of incidents or deficiencies?
— What kind of analysis is performed on regulatory inspection reports and by whom?
— Describe the basic arrangements and procedures for licensee reporting and classification of:
    • Abnormal occurrences and incidents concerning nuclear material;
    • Modifications to the facility.
— What are the procedures for investigating abnormal occurrences or incidents?
— What legal powers of enforcement does the SRA have to ensure compliance with the licence or other regulations?
— What methods of enforcement (e.g. warning letters, in order to curtail activities, suspension, withdrawal of licence, fines) are available to the SRA? Describe the basic criteria for each type of enforcement action.
— What sanctions are included in the legislation in case of non-compliance with the legislation, including those acts included as punishable offences in the State penal legislation (e.g., unauthorized removal, theft or robbery, or threat to use nuclear material to cause death or injury to persons or damage to property)?

3.6. RESOURCES, RECRUITMENT, AND TRAINING

Training of personnel responsible for accounting for and control of nuclear material, at State, facility and LOF levels, is recommended for the successful operation of an SRA/SSAC. Results of research and development aimed at improving accounting and control measures will be of interest both to the State and to operators. A number of States are engaged in their own research and development programmes aimed at improving the accounting for and control of nuclear material and might be requested to co-operate in disseminating the results of such activities.

3.6.1. Condition to be demonstrated

The State facilitates the provision of adequate technical assistance, from external sources if necessary, to facility and LOF operators in the area of material accounting and control to enable the operator to fulfil the requirements of the SRA. This assistance could include, for example help in establishing adequate measurement systems, incorporating non-destructive assay techniques as well as data processing and analysis procedures, making available international standards, and in establishing containment and surveillance measures.

3.6.2. Documentation

— Description of the State's training programme for SRA/SSAC personnel;
— List of organizations that require training;
— Description of the technical support programme;
— Sample training material.

3.6.3. Review points/specimen questions

— Describe the State's measures to organize training for the personnel responsible for nuclear material accounting and control.
— Describe the State's actions to facilitate the provision of adequate technical assistance.
— Which measures are taken to assure fast passage of the equipment through customs?
— What are the State's research and development and capacity building activities related to improving the effectiveness and efficiency of safeguards implementation?
— What are the results of these activities?

4. GUIDELINES FOR REVIEW OF ORGANIZATION AND OPERATION AT FACILITIES/LOCATIONS OUTSIDE FACILITIES (MODULE 2)

The ISSAS facility/LOF review module is a comprehensive review of safeguards infrastructure at facilities. The review provides the facility/LOF and the State with an independent assessment of the status of safeguards infrastructure at facilities/LOFs selected by the State and provides advice to assist the State in the form of recommendations, suggestions and the recognition of good practices based on accepted international criteria and practice. This review, conducted by an ISSAS team, does not replace the regulatory compliance function of the SRA.

The objectives of the ISSAS facility/LOF review are to:

— Provide an independent assessment of a selected facility/LOF's safeguards infrastructure as agreed to by the IAEA and the State;
— Provide advice to the facility/LOF and the SRA in the form of recommendations, suggestions and the recognition of good practices;

— Share experience on the conduct of a detailed assessment;
— Provide a basis for assistance to the State in enhancing its SSAC.

The ISSAS facility/LOF review evaluates a facility/LOF's safeguards infrastructure and seeks to answer the following questions:

— Do the safeguards and SSAC organization and procedures correspond to the obligations of the State's safeguards agreement and IAEA guidance?
— Does the SSAC function as designed?
— Is the facility/LOF's staff with responsibility for safeguards sufficiently staffed, trained and equipped to carry out its assigned responsibilities?
— Are the SSAC and associated procedures well maintained?

Guidance outlined in the following sections is considered by the ISSAS team members during the course of the mission. The facility operator, SRA and other relevant authorities can use this guidance for self-assessment purposes. The review points/specimen questions should not be used as a simple yes/no checklist but rather questions which allow the interviewer to gain an appreciation of the subject and, as appropriate, to compare implementation with safeguards obligations, IAEA guidance and international good practices. The specimen questions posed below are not an exhaustive list, and team members are encouraged to ask additional questions as necessary.

The facility/LOF level review module includes the following areas:

— Establishment and operation of SSAC elements at facilities/LOFs;
— Infrastructure for facilitating IAEA activities in facilities/LOFs;
— Information on facilities/LOFs.

4.1. ESTABLISHMENT AND OPERATION OF SSAC ELEMENTS

4.1.1. Condition to be demonstrated

Administrative procedures relating to accounting and control of nuclear material are effectively implemented at all facilities/LOFs based on a system of reports, records and measurements that permit the tracking of inventory changes and the closing of material balances.

4.1.2. Documentation

— Description of the facility/LOF's organizational responsibility for material accountancy and control, and laws and regulations relevant to IAEA inspectors and their radiological protection.

4.1.3. Review points/specimen questions

— In order to possess or process nuclear material or conduct nuclear related activity subject to safeguards requirements, what kind of authorization/license do they have from the SRA, including conditions imposed?
— Which unit/person is in charge of safeguards implementation in the organization?
— Where is its position within the organization (to whom do they report)?
— Are there any specific requirements for persons occupying such position(s) such as qualification/expertise/training?

— Is there any internal procedure/instruction for safeguards implementation in the organization (recording/reporting system, communication with, provision of access to State/IAEA inspectors and support to their verification activities)?
— Which management, nuclear material accounting and control and reporting systems are in place in the organization to comply with IAEA safeguards obligations?
— What kind of information management and quality assurance systems are in place with regard to the above areas?

4.2. INFRASTRUCTURE FOR FACILITATING IAEA VERIFICATION ACTIVITIES

4.2.1. Condition to be demonstrated

Prompt access is provided to the IAEA to all facilities/LOFs and to other locations to carry out verification activities. Correct, complete and up-to-date reports, records and supporting documentation are provided to IAEA inspectors in a timely manner for their examination to achieve their objectives.

4.2.2. Documentation

— Procedures to permit access of IAEA inspectors;
— Facility/LOF-specific health and safety procedures.

4.2.3. Review points/specimen questions

— Describe your internal procedures/instructions for provision of access to State/IAEA inspectors and support to their verification activities.

4.3. INFORMATION ON FACILITIES AND LOCATIONS OUTSIDE FACILITIES

4.3.1. Condition to be demonstrated

Detailed design information is provided on time to the IAEA for each facility. Information on changes to facility design of operations is provided to the IAEA well in advance of making the change, affording sufficient time for analysis and evaluation to ensure the effectiveness of the safeguards system at the facility is maintained. Information about LOFs is updated to reflect changes and provided to the IAEA not later than 30 days after the change has occurred. Where applicable, the IAEA receives complete and accurate descriptions of sites containing facilities including a detailed map.

4.3.2. Documentation

— Procedure for updating and submitting changes to the design information questionnaire, LOF information and site description, as applicable.

4.3.3. Review points/specimen questions

— Describe how the facility/LOF maintains institutional awareness of requirements regarding facility/LOF information.
— Describe how the facility/LOF submits changes to the SRA regarding facility/LOF information.

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ANNEX I.

OUTLINE CONTENTS OF AN IAEA SAFEGUARDS AND SSAC ADVISIORY SERVICE MISSION REPORT

EXECUTIVE SUMMARY

1. INTRODUCTION
2. EVALUATION OF THE SSAC IN MEETING SAFEGUARDS OBLIGATIONS
3. AREAS FOR INCREASED COOPERATION WITH THE IAEA
4. FINDINGS AND RECOMMENDATIONS
5. FOLLOW-UP ACTION PLAN

ACKNOWLEDGMENTS

ATTACHMENT 1: ISSAS TEAM MEMBERS AND COUNTERPARTS
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ANNEX II.

STANDARD STRUCTURE AND CONTENT OF ADVANCE REFERENCE MATERIAL

The Advance Reference Material (ARM) is prepared by the State hosting the ISSAS mission and is used to convey information relevant to the ISSAS team members for the preparation of their review.

The package needs to contain adequate information and data to understand the overall organizational structures and current operating practices. The compilation of information can be based on and/or utilize existing documents such as routinely prepared reports, procedures and training materials. Focus on the content is encouraged, with limited effort spent on editing.

To the extent possible, the format of the ARM should follow the review areas of the ISSAS Guidelines. To obtain a good understanding of the legal basis of the SSAC, the organization of the SSAC, the procedures applied at the State and facility/LOF level as well as of other relevant stakeholders, the following documents, translated into English (if necessary), need to be gathered and provided by the assigned point of contact in the host country to the IAEA assigned mission coordinator at least two months prior to the conduct of the mission.

II–1. ADMINISTRATIVE INFORMATION

a. Arrival logistics (airport, hotel, mission locations);
b. Transportation (airport-hotel, hotel-mission);
c. Hotel accommodation information (name, telephone number, website);
d. Contact points and list of counterparts;
e. Mission accommodation (information regarding access control, meeting rooms, lunch arrangements, etc.);
f. Summary of any site-specific safety requirements.

II–2. GENERAL INFORMATION

a. National legislation:

   — Relevant law(s) and regulations governing the SSAC, nuclear facilities and implementation of safeguards in the host country as required by the safeguards agreements and protocols in force with the IAEA;
   — Synopsis of the responsibilities and structure of, and institutional arrangements among, the various government organizations (specifying relevant departments) including primarily the SRA, as well as other organizations with responsibilities to the overall SSAC.

b. SRA organization and procedures:

   — Legal status and responsibilities assigned by law to the SRA;
   — Objectives of the SRA and how it maintains its independence;
   — Structure, organization and staffing of the SRA;
   — Overview of educational and/or training background of SRA staff;
   — Description of training requirements for SRA staff;
   — Description of other resources available to the SRA;
   — Description of the SSAC information management system;

— Description of the mechanism for reporting to the IAEA;
— Description of the requirements of nuclear material accounting and control;
— Description of the procedures for implementing the additional protocol at the State level (including those for identifying the manufacture, export and import of relevant items);
— Description of export control system, including procedures regarding collection of safeguards information and reporting;
— Procedures for facilitating IAEA access and cooperating with IAEA safeguards inspectors;
— Procedures for assessment and review of technical submissions;
— SRA inspection practices and enforcement procedures;
— A typical license that includes SRA/safeguards related requirements;
— List of applicable codes and standards;
— Quality assurance procedures at the State level.

c. Information from nuclear facilities, LOFs and other locations set out in the State's safeguards agreements and protocols in force with the IAEA:

— Description of the nuclear material accounting and control system at the facility/LOF level and related procedures;
— Procedures for implementing the additional protocol at the State and facility/LOF level or at other locations set out in the State's additional protocol, if applicable;
— Procedures for facilitating IAEA access and cooperation with IAEA safeguards inspectors at the State and facility/LOF level;
— Quality assurance procedures at the facility/LOF level;
— Description of organizational structures, staffing arrangements and training programmes related to safeguards implementation.

II–3. SELF-ASSESSMENT

a. For each review area, a description of how each individual condition to be demonstrated is met;
b. Specific gaps where infrastructure or performance does not fully meet the guidance;
c. For each gap identified, an explanation of what actions are being planned/taken to close the gap including budget commitments, staffing, document preparation, increased or modified training, equipment purchases, etc.

ABBREVIATIONS

DDG-SG	IAEA Deputy Director General, Head of the Safeguards Department
ISSAS	IAEA Safeguards and SSAC Advisory Service
LOF	Location outside facilities
MUF	Material unaccounted for
SRA	State or regional authority responsible for safeguards
SSAC	State system of accounting for and control of nuclear material

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