IAEA
International Atomic Energy Agency

International Nuclear Security Advisory Service (INSServ) Guidelines

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IAEA Services Series 39

IAEA NUCLEAR SECURITY SERIES AND RELATED PUBLICATIONS

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- **Implementing Guides** provide guidance on the means by which States could implement the measures set out in the Nuclear Security Recommendations. As such, they focus on how to meet the recommendations relating to broad areas of nuclear security.
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INTERNATIONAL NUCLEAR SECURITY ADVISORY SERVICE (INSServ) GUIDELINES

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

IAEA SERVICES SERIES No. 39

INTERNATIONAL NUCLEAR SECURITY ADVISORY SERVICE (INSServ) GUIDELINES

INTERNATIONAL ATOMIC ENERGY AGENCY
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FOREWORD

The International Nuclear Security Advisory Service (INSServ) was established by the IAEA in 2006 and revised in 2016. It is a fundamental part of the IAEA's efforts to assist States, upon request, in establishing and maintaining an effective national nuclear security regime to protect against criminal or intentional unauthorized acts involving or directed at nuclear or other radioactive material out of regulatory control, while recognizing that the ultimate responsibility for nuclear security lies with the State.

The INSServ programme can assist Member States, upon request, with a peer assessment of their national nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control and to major public events, in order to identify gaps and enhance nuclear security systems and measures. The peer assessment and its recommendations are based on relevant international legal instruments and the IAEA's Nuclear Security Fundamentals and Recommendations. The INSServ team also evaluates the State nuclear security regime with regard to the IAEA's Implementing Guides and Technical Guidance publications, to provide suggestions for improvement and to acknowledge good practices. For this assessment, the INSServ team may review written material, interview relevant personnel and conduct site visits to observe nuclear security systems and measures as defined in the national nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control.

The INSServ guidelines, presented here, reflect a modular approach that provides the flexibility to accommodate individual national contexts, practices and objectives as expressed by the requesting States. The INSServ guidelines were developed to complement the expertise of the INSServ team members, providing overall guidance to ensure the consistency and comprehensiveness of the mission. The present publication also provides guidance to the host State on preparing for and receiving such missions.

INSServ missions are performance oriented in that they allow for different approaches to the implementation of a national nuclear security regime. Recommendations are made on items that could directly affect the nuclear security regime, whereas suggestions made might only indirectly contribute to improving the nuclear security regime. Commendable good practices identified may be communicated to other States for long term improvement.

These guidelines were compiled by experts in the Division of Nuclear Security with the assistance of experts from Member States. The IAEA officer responsible for this publication was T. Pelletier of the Division of Nuclear Security.

EDITORIAL NOTE

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

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CONTENTS

1. INTRODUCTION

The International Nuclear Security Advisory Service (INSServ) programme, initiated in 2006 and revised in 2016, is a fundamental part of the IAEA's efforts to assist Member States to establish and maintain an effective nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control (MORC).

The INSServ programme is offered to assist Member States, upon request, with a peer assessment of their State nuclear security regime as it relates to MORC as well as for preparedness for a major public event. The peer assessment and its recommendations are based on relevant international legal instruments and IAEA Nuclear Security Fundamentals and Recommendations publications. The INSServ team also evaluates the State's nuclear security regime with regard to the IAEA Implementing Guides and Technical Guidance publications in order to provide suggestions for improvement and acknowledge good practices. For this assessment, the INSServ team may review written material, interview relevant personnel, and conduct site visits to observe nuclear security systems and measures as defined in the national nuclear security regime as it relates to MORC.

The INSServ programme can assist Member States to identify gaps in order to enhance nuclear security systems and measures for the State nuclear security regime related to MORC as well as for a major public event.

1.1 PURPOSE

These guidelines have been prepared to provide a basic structure and a common reference for INSServ missions. As such, they are addressed principally to the team members of INSServ missions, although, they also provide guidance to a Member State that might consider hosting an INSServ mission, or information to a host country on preparing for and receiving a mission. The competent authorities and other relevant stakeholders may also use this guidance for self-assessment purposes.

These guidelines are intended to assist an INSServ team to formulate its assessment and to complement its members' own experiences. It is not exhaustive and should not limit the expert's review, but rather be considered as elaborating on the requirements for an adequate assessment.

An INSServ assessment is based on relevant international legal instruments, the IAEA Nuclear Security Series and, when appropriate, relevant Safety Standards Series publications. For INSServ missions, the main reference sources are:

- The Convention on the Physical Protection of Nuclear Material (CPPNM, INFCIRC/274), IAEA, Vienna (1980) and its Amendment (GOV/INF/2005/10-GC(49)/INF/6), IAEA, Vienna (2005);
- International Convention on the Suppression of Acts of Nuclear Terrorism, United Nations, New York (2005);
- United Nations Security Council Resolution 1540, United Nations, New York (2004);
- Code of Conduct on the Safety and Security of Radioactive Sources, IAEA, Vienna (2004).;
- International Atomic Energy Agency, Objective and Essential Elements of a State's Nuclear Security Regime, Nuclear Security Fundamentals, Nuclear Security Series No 20, IAEA, Vienna (2013);

- European Police Office, International Atomic Energy Agency, International Civil Aviation Organization, International Criminal Police Organization-INTERPOL, United Nations Interregional Crime and Justice Research Institute, United Nations Office of Drugs and Crime and World Health Organization, Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control, Nuclear Security Series No. 15, IAEA, Vienna (2011);
- International Atomic Energy Agency , Nuclear Security Systems and Measures for Major Public Events Nuclear Security Series No 18, IAEA Vienna (2012);
- International Atomic Energy Agency, Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material out of Regulatory Control Nuclear Security Series No. 21, IAEA, Vienna (2013);
- International Atomic Energy Agency, Radiological Crime Scene Management, Nuclear Security Series No 22-G, IAEA, Vienna (2014);
- International Atomic Energy Agency, Risk Informed Approach for Nuclear Security Measures for Nuclear and Other Radioactive Material out of Regulatory Control, Nuclear Security Series No. 24-G, IAEA, Vienna (2015);
- International Atomic Energy Agency, Nuclear Forensics in Support of Investigations, Nuclear Security Series No. 2-G (Rev. 1), IAEA, Vienna (2015).
- International Atomic Energy Agency, Security of Nuclear Information, Nuclear Security Series No. 23-G, IAEA, Vienna (2015);
- International Atomic Energy Agency, Developing Regulations and Associated Administrative Measures for Nuclear Security, IAEA Nuclear Security Series No. 29-G, IAEA, Vienna (2018);
- Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Civil Aviation Organization, International Labour Organization, International Maritime Organization, Interpol, OECD Nuclear Energy Agency, Pan American Health Organization, Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, United Nations Environment Programme, United Nations Office for the Coordination of Humanitarian Affairs, World Health Organization and World Meteorological Organization, Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSR Part 7, IAEA, Vienna (2015);
- Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Labour Organization, Pan American Health Organization, United Nations Office for the Coordination of Humanitarian Affairs, and World Health Organization n, Arrangements for Preparedness for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-G-2.1, IAEA, Vienna (2007).

1.2 OBJECTIVES

An INSServ Mission is a peer review of a State's existing nuclear security regime as it relates to MORC or elements thereof. The key objectives of the INSServ programme are to:

- Assist the State in capability and gap analysis, setting priorities for an effective nuclear security regime as it relates to MORC as well for implementing nuclear security systems and measures during a major public event;

- Provide advice to the State and its competent authorities (such as relevant regulatory bodies, law enforcement agencies, customs and border control agencies, national security and intelligence agencies, response organizations, judicial entities) and other stakeholders based on an objective assessment of the status of the State's nuclear security regime as it relates to MORC through the evaluation of the implementation of the international legal instruments, IAEA nuclear security guidance and taking into account the international good practices;
- Provide representatives of relevant competent authorities and other stakeholders with an opportunity to discuss their practices with a team of international experts who have experience in their particular fields.

Additionally, in the course of the mission, the INSServ team will promote the identification of good practices that could be communicated to other Member States for long term improvement. The nuclear security specialists who participate on the INSServ teams also have opportunities to broaden their experience and knowledge in their own field. An INSServ mission should be conducted by a team of international nuclear security and other relevant experts who will also use their extensive experience and international guidance to recommend improvements to that system. Findings, conclusions, resulting recommendations, suggestions and identification of good practices are made on the basis of the combined expertise of the international expert team.

The INSServ team reviews the processes for analysing capabilities and gaps and, where necessary, makes recommendations and/or suggestions to improve these processes.

The INSServ mission is, therefore, not an external audit against prescribed codes and standards. Rather, it is an assessment of the existing capabilities and practices of the State, in the light of relevant international legal instruments, IAEA nuclear security publications, relevant safety standards series publications, as appropriate, and an exchange of experience and accepted international practices aimed at strengthening the nuclear security regime as it relates to MORC.

The implementation of recommendations and suggestions presented by the INSServ mission is strongly encouraged, but the decision to do so is at the discretion of the relevant authorities in the host country.

1.3 PROTOCOL AND CONFIDENTIALITY

An INSServ mission will be initiated only after the IAEA has been approached formally by an interested State at the appropriate governmental level. The scope of each mission is agreed between the host country and the IAEA. The mission is performed by a team of nuclear security and other relevant experts selected by the IAEA in consultation with the host country. Relevant personal data concerning these experts will be submitted to the host country in advance of the mission for formal confirmation before official team member invitations are issued. All team members are treated at the same level of trustworthiness during the mission.

The provision of sensitive information to the INSServ team is at the discretion of the host country. INSServ team members are required to protect all information obtained during the mission at an appropriate level and to sign the IAEA form entitled Confidentiality Undertaking for Non-Staff Members. In addition, INSServ team members may be asked by the host country to sign a declaration of confidentiality.

Team members, when producing technical notes or draft sections of the report must take adequate precautions, as defined by the host country according to its national regulation for protection of sensitive information, to ensure the security of such information. Sensitive information generated or received by the INSServ team, including electronic data, will be destroyed, deleted or returned to the host organization at the end of the mission.

The IAEA provides one copy of the mission report to the host country and retains another to be used for any future activities with the host country. INSServ mission reports are classified by the IAEA as specified by the requesting State and marked accordingly. INSServ mission reports are handled by the IAEA staff members on a strict 'need-to-know' basis, in accordance with IAEA established information security procedures and responsibilities. The IAEA will not distribute the report (or parts thereof) to any third parties without the express permission of the host government.

1.4 SCOPE AND STRUCTURE

This advisory service is intended to be useful to and serve the needs of all Member States with a nuclear security regime as it relates to MORC, including in the context of major public events. Thus, the advice rendered must address the degree to which a State implements, maintains, and sustains the objective and essential elements of a nuclear security regime as it relates to MORC and the corresponding nuclear security recommendations. The INSServ programme is designed for flexibility and specificity in the conduct of INSServ missions for Member States. To achieve this objective, a modular approach based on 3 modules can be used to assist in the definition of the mission scope.

This publication is organized in the following structure:

- Section 2 on the INSServ process outlines the process for the preparations, conduct and reporting processes and procedures;
- Section 3 on the basis for the nuclear security systems and measures for MORC (Module 1)
- Section 4 on the detection systems and measures. (Module 2)
- Section 5 on the response systems and measures. (Module 3)

Figure 1 below presents the above modular approach for the INSServ missions.

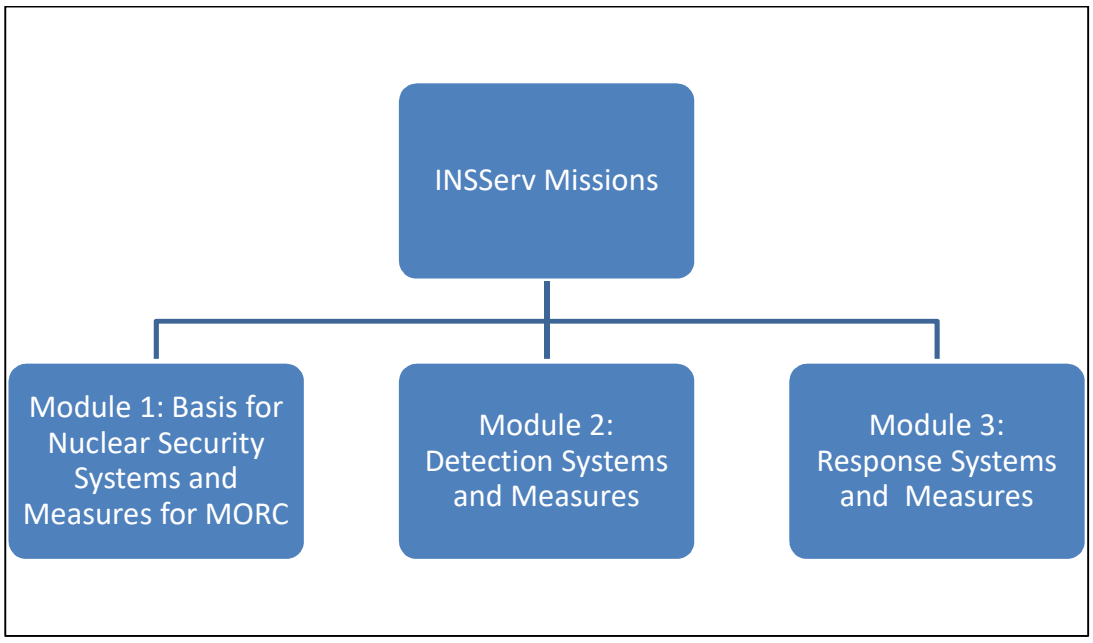

FIG. 1. Schematic presentation of INSServ modules.

Member States may also request the INSServ mission be tailored to address any combination of the above modules as well as selected areas from each module. The level and the degree of the review of the selected areas can be accomplished by one or multiple missions as part of the INSServ programme.

All terms used in these guidelines have the meaning of the definitions contained in the relevant IAEA Nuclear Security and Safety Standards Series publications.

2. INTERNATIONAL NUCLEAR SECURITY ADVISORY SERVICE PROCESS

2.1 OVERVIEW

The INSServ process as outlined below - commences with a formal request from the Member State. This is followed by a preparatory meeting for the actual mission, and finishes with completion of the final report - usually takes nine to twelve months. Figure 2 below summarizes the INSServ process.

An interested State will consult with an IAEA representative to discuss the INSServ programme. This could include discussions with all the relevant State competent authorities and, as appropriate, other stakeholders that might participate in such a mission.

In some cases, these initial consultations could result in a determination that an INSServ mission is not the appropriate tool to achieve the objectives of the State, then alternative activities should be considered.

If the State decides to proceed, the appropriate State official makes a formal request for an INSServ mission (through or copied to its Permanent Mission) to the IAEA's Division of Nuclear Security. The host country should designate a point of contact (name/organization) responsible for further communication with the IAEA on planning the mission and making practical arrangements. In acknowledgement of, and response to, the formal request, the IAEA will designate the technical officer as its point of contact.

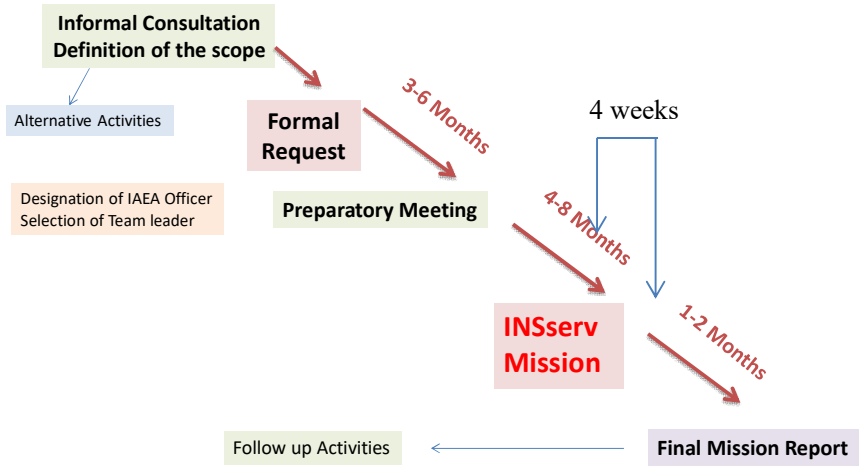

FIG. 2: Flowchart of INSServ process.

2.2 INFORMAL CONSULTATION/DEFINITION OF MISSION SCOPE

The informal consultation is a discussion between the IAEA and the host country representatives about INSServ mission, and to decide whether the INSServ is the appropriate tool to address the State needs. The consultation may result in no need for the INSServ; in this case the IAEA may recommend proceeding with alternative activities.

If after consultation the State and the IAEA agree that an INSServ mission is the most appropriate way to proceed, the appropriate State official will make a formal request to the IAEA's Division of Nuclear Security.

The informal consultation is also aimed to define the mission scope where the Member States may request one or more modules for the INSServ mission; however the State may consider requesting modules with particular focus to be tailored to address in greater detail selected aspects of the State nuclear security regime as it relates to MORC.

2.3 FORMAL REQUEST

After the host country decides on the required module/modules of the INSEERV, the host country should submit a formal request to the IAEA's Division of Nuclear Security with clear description and explanation of the purpose of this request.

The host country should designate a point of contact (name/organization) responsible for further communication with the IAEA on planning the mission and making practical arrangements.

The following is an example of a formal request for an INSServ mission from an interested State to the IAEA to be submitted to the IAEA's Division of Nuclear Security (through or copied to the State's Permanent Mission).

DRAFT LETTER

Ms/Mr ……., Director

Division of Nuclear Security

Department of Nuclear Safety and Security

International Atomic Energy Agency

P.O. Box 100

1400 Vienna, Austria

Dear Ms/Mr ……

I have the honour to refer to the IAEA's International Nuclear Security Advisory Service (INSServ) programme. We are aware that this programme can be useful in assisting States in the assessment of their nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control and in the development of future activities in support of these nuclear security issues. In this regard, my Government respectfully requests that the IAEA arranges for an INSServ mission to assess [Module/Modules 1, 2 and 3 of] our nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control at the earliest opportunity:

We have identified Ms/Mr xxxxx as being the point of contact responsible for making detailed arrangements for the organization of the mission. His/her contact information is as follows:

2.4 DESIGNATION OF TECHNICAL OFFICER AND TEAM LEADER

On receipt of a formal request for an INSServ mission, the IAEA will designate a staff member to act as technical officer responsible for coordinating the preparatory work and making the necessary arrangements to conduct an INSServ mission.

With the consent of the host country, the IAEA will select a Member State expert with recognized leadership qualities and broad experience in nuclear security issues related to MORC as the INSServ team leader.

2.5 PREPARATORY MEETING

Prior to the preparatory meeting which will be held in the host country, the IAEA technical officer should convene a meeting involving relevant divisions within the IAEA in order to harmonize the IAEA's approach to the proposed mission and review existing information related to the host country.

The preparatory meeting, involving the IAEA technical officer and the team leader, should be held in the host country approximately three to four months before the INSServ mission to allow governmental organizations, including all relevant competent authorities and other stakeholders to participate. At this meeting, the IAEA should present a briefing to foster a clear understanding of the INSServ process and methodology. In a complementary manner, the host country should provide a briefing on the nuclear security regime as it relates to MORC. The meeting will address:

- The main features of the INSServ programme;
- The scope of the mission;
- The topics, corresponding to INSServ programme modules about which the host country is particularly seeking advice;
- Identification and scheduling of all organizations to be interviewed and locations to be visited;
- Preparation of an advance information package for the mission team, including a description of systems and measures for detection of and response to MORC to be reviewed, summary of the national threat and risk assessments, relevant laws, regulations etc., information on sites to be visited and activities to be observed, as well as a list of documents relevant to nuclear security;
- Logistical support required, e.g. team office, computer, printer, copier, data projector, local transportation and accommodation;
- Physical and information security access/protocols to be followed by the INSServ team;
- Provision of translation/interpretation services;
- Preparation, review and confidentiality of technical notes and of the INSServ mission final briefing and report;
- Finalization of the detailed mission schedule.

A record of the meeting will be exchanged within two weeks.

2.6 HOST COUNTRY RESPONSIBILITIES

As part of the discussions at the preparatory meeting, the IAEA technical officer and the team leader will make arrangements with the host country to ensure the provision of necessary support facilities. The host country will be expected to provide in-country transportation for team members to all required venues and to assist in obtaining suitable accommodation and in other related aspects.

INSServ reviews are conducted in English. The host country should provide any necessary interpretation to allow team members to do their work. At all times, there should be at least one meeting room at the disposal of the team, of sufficient size to enable them to work and to hold discussions in reasonable privacy. The room should be equipped with sufficient electrical outlets to allow each member to work independently. A computer, printer, projector, and a photocopying machine and paper should also be readily available to team members.

Information provided in advance of the mission could include, but is not limited to:

- Relevant legislation and regulations;
- National organization charts;
- Management organization charts;
- Relevant national strategies;
- Description of roles and responsibilities of each of the involved competent authorities;
- National coordination mechanism and interagency agreements;
- Relevant procedures for interagency coordination, such as the ones associated with the response activities;
- Information on the national capabilities and the implemented nuclear security detection architecture and the framework for the response to nuclear security events, including relevant concept of operations and standard operating procedures;
- Summary results of any self-assessment, e.g. NUSIMS, carried out by the competent authorities.

Information that might be sensitive and cannot be provided in advance could be provided during the INSServ mission.

Documents, or their relevant sections, identified during the preparatory meeting should be supplied in English. If necessary, the host country should translate pertinent documents to be used during the mission into English. The host country, should provide documents related to the governmental structure, including organization of relevant Ministries and Departments, competent authorities and the relevant legislation and regulations that establish the roles and responsibilities of each, to the IAEA for transmittal to INSServ team members at least one month prior to the conduct of INSServ mission.

A good practice for the host country is to plan carefully and thoroughly and prepare for the INSServ mission as a means of supporting an efficient and productive information exchange. The host country should identify in advance the officials and representatives who will participate in the INSServ team visit. They should all familiarize themselves with the main reference documents and other relevant documents appropriate to the mission's scope. They should consider how the recommendations in referenced documents are addressed in their country, and they should present their major, general information as part of the country briefing and be prepared to discuss the specific, detailed information during the interview process. In particular, preparing answers to the specimen questions in each topical area would facilitate a more effective and efficient INSServ mission. It is highly recommended that the host country conducts a prior self-assessment of the nuclear security systems and measures and identify available capabilities and capacities and a gap analysis for an effective nuclear security regime as it relates to MORC.

2.7 INSSERV TEAM FORMATION

The team should be composed of the IAEA technical officer and international experts with complementary experiences and skills according to the needs expressed by the host country for the mission. Specifically, the team should comprise a team leader and experts with expertise in the following areas, e.g. legislative and regulatory framework, threat and risk assessments, detection architecture, response framework and others, corresponding to the preferred focus areas of the requesting State. A technical writer to assist the team in developing technical notes and the mission report and an information technology expert may be included.

2.7.1 Team leader

The team leader must have recognized leadership qualities and broad experience in nuclear security areas that are part of the mission scope, paying special attention to the desires of the requesting Member State. Preferably, the team leader is a former INSServ team member/expert.

The team leader has overall responsibility for:

- Participating in the preparatory meeting prior to the mission;
- Representing the INSServ team;
- Orientation of INSServ team experts;
- Leading the INSServ team review activities, including conducting daily team meetings, ensuring that schedules are met, and providing debriefings and interacting with host government officials;
- Coordinating the review of all technical notes and production of the draft mission report;
- Leading the team discussions and analyses that result in a consensus set of recommendations, suggestions and good practices;
- Preparing and presenting the mission results (briefing and report) at the exit meeting;
- Producing, in collaboration with the IAEA, the final INSServ mission report.

2.7.2 Team experts

The IAEA selects team experts in consultation with the team leader and with the consent of the host country to which information on the expertise and experience of potential team experts should be provided in advance (e.g. short curriculum vitae). The experts are invited from Member States, have recognized broad knowledge and extensive experience in nuclear security as it relates to MORC, and are able to commit up to approximately three weeks for the preparation, conduct of the mission and mission reporting. All formal requests for persons to become team experts should be made through the respective Permanent Mission or other agreed official channels.

Team experts are selected so as to ensure that a variety of national concepts and procedures are represented. Each of the experts is likely to have, in addition to their particular area of expertise, knowledge of other national approaches and other relevant areas. This knowledge, combined with knowledge of the international legal instruments and IAEA guidance, allows good practices to be provided.

2.7.3 Technical officer

The IAEA technical officer has overall responsibility for:

- Confirming the host country's primary contact for planning and conduct of the mission;
- Identifying, in consultation with the host country, a nuclear security expert to be designated as the team leader for the INSServ mission;
- Arranging, in conjunction with the team leader, for a preparatory meeting with the host country;
- Making proposals regarding selection of INSServ team members, acknowledging that the final INSServ team composition requires formal approval by the host country;
- Arranging to receive an advance information package from the host government;
- Coordinating necessary logistical arrangements for support of the INSServ team.

The appointed IAEA technical officer will accompany the INSServ team throughout the mission to liaise with the host government counterparts and to provide any other administrative or expert support that may be required. The IAEA technical officer will ensure that the INSServ team members are provided with instructions for the formation of the team and its arrival at the site of the mission. Additional to the advance information provided by the host country, the technical officer will research and collect the current edition of relevant IAEA reference publication and any other material pertinent to the mission, providing it to the team leader and/or team in an appropriate form, time and place.

The IAEA technical officer will be responsible for collecting and destroying or returning to the host organization all sensitive information before the team leaves the host country.

Finally, the IAEA technical officer has overall responsibility for coordinating and transmitting the final INSServ mission report.

2.7.4 Technical writer and IT specialist

A technical writer may assist in the development and timely completion of the INSServ draft report and exit presentation. The technical writer gathers written input from the team and formats and edits the material, as appropriate.

An IT specialist may contribute to the efficiency of the mission by providing administrative and technical support to the expert team.

2.8 INSSERV MISSION

An INSServ mission may take five to ten working days in the host country, but this duration may be adapted to the scope of the mission.

2.8.1 Team organizational meeting

On arrival in a host country, prior to the official commencement of an INSServ mission, the IAEA technical officer and team leader provide a briefing to the team experts with the aim of reviewing the objectives and overall scope, as well as the conduct of the mission.

The briefing may last only a few hours or up to one day and should address the e following topics:

- Introduction of team members;
- Purpose and mission objectives;
- Scope of the mission;
- Roles and responsibilities of each team member;
- Mission schedule and team meetings;

- Review methodology;
- Exchange of views regarding materials and information provided by the State
- Reporting;
- Confidentiality;
- Observance of safety and security rules.

2.8.2 Opening meeting

The INSServ mission starts with an opening meeting with representatives of the host country, during which the programme and schedule for the mission is confirmed. The host country should present an overview of the State's nuclear security regime, in particular, as it relates to MORC, as well as locations to be visited, competent authorities and other relevant stakeholders to be interviewed and activities to be observed during the mission.

2.8.3 Information collection

The INSServ team uses documents and briefings, interviews, and direct observations to acquire the information needed to conduct the mission and to develop the INSServ report.

The handling and distribution of all documentation and information must fulfil rules as determined by the host country according to its requirements for protection of sensitive information. If no specific rule is defined by the State, field notes are treated as sensitive information and restricted on a 'need-to-know' basis, in accordance with IAEA procedures.

(a) Documents and briefings

Examples of types of written material of general interest to the expert team that should be provided prior to the mission are listed in section 2.6 above.

Sections 3, 4 and 5 below include a list of documents that may be requested by the team during the mission from the host country or from locations and sites to be visited.

In addition to these documents, briefings by relevant representatives of competent authorities and other stakeholders will assist the INSServ experts in their understanding of the specific conditions and practices of the host country's nuclear security regime as it relates to MORC.

(b) Interviews

Interviews with representatives of the competent authorities and other relevant stakeholders should be used to:

- Gather additional information;
- Clarify and/or review issues arising from previously provided documents or briefings;
- Support, confirm or refute observations of nuclear security systems and measures in place.

Interviews will also provide an opportunity for important information to be exchanged between INSServ team members and host country representatives. Interviews should be an open discussion between host country representatives and team members. The interviews should not be conducted nor construed as being an interrogation or test of the host country's representatives.

It is understood that the review points/specimen questions outlined in sections 3, 4, and 5 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 international legal

instruments, IAEA recommendations and implementing guidance, and international good practices. The specimen questions are not an exhaustive list and team members are encouraged to ask additional questions as necessary.

(c) Observation

A substantial part of the review should be devoted to observation of the systems and measures in place. In agreement with the host organization, this may include but not limited to observation of the work of front line officers, technical reach-back, operations and analysis centres, command and control centres.

2.8.4 Assessment

On the basis of the documentation and briefings, interviews and observations, the team forms an assessment of the host country's nuclear security regime as it relates to MORC as well as for preparedness for a major public event.

For each working day of the INSServ mission, the team leader should conduct a team meeting during which team members individually summarize their findings and concerns developed during the day, including perceived strengths and weaknesses. This environment provides an opportunity for all team members to contribute their views, further strengthening the basis of the assessment, and to identify topics needing further information or clarification.

During the course of the review, individual team members will write detailed technical notes on their observations and conclusions on the areas assigned to them, including any recommendations, suggestions or instances of good practices observed. These technical notes are then the subject of peer review by all team members.

2.8.5 Draft report

The team leader is responsible for compiling the information collected throughout the INSServ mission into a draft report which will be delivered to the host country at the end of the mission. The INSServ team review, reflected in a draft report, compares the State nuclear security systems and measures for MORC with existing international legal instruments, IAEA guidance and international good practices. The review:

- Reviews national practices with respect to Member State obligations, international guidance and accepted international practices;
- Considers laws, regulations, and procedures, and how effectively these are implemented in practice;
- Provides proposals for improvements, when appropriate.

The comparisons should result in recommendations, suggestions, and the identification of good practices in accordance with the following definitions:

✓ **Recommendation**: A recommendation is advice on improvements that should be made in the areas that have been evaluated and discussed with the host country. Such advice must be based on relevant international legal instruments and IAEA Nuclear Security Fundamentals and IAEA Nuclear Security Recommendations. 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 a State's nuclear security regime by indicating useful expansions of existing programme and/or pointing to better alternatives to current practices. In

general, it should stimulate the competent authorities to consider ways and means of enhancing nuclear security. Suggestions are based on IAEA Nuclear Security Implementing Guides and Technical Guides and/or international good practices.

✓ **Good practices**: A good practice is an indication of an outstanding organizational arrangement, process, programme or performance as a model in the general drive for excellence.

The draft report is discussed with the host country representatives to seek clarification regarding any subject that may have been misinterpreted, and to consider the wording from a presentational standpoint. Host country agreement is required for the inclusion of any photographs, diagrams, drawings, etc., in the draft report.

After the INSServ team has reviewed and discussed the draft report with the host country representatives, it will revise the draft report for presentation to the competent authorities and other stakeholders at the exit meeting.

2.8.6 Exit meeting

At the exit meeting, the team leader presents a briefing on the outcome of the mission and hands over the draft report to the host country. The exit meeting provides an opportunity for both parties to discuss the mission's findings, in particular, recommendations and suggestions. The host country's point of contact is requested to provide the IAEA technical officer with additional consolidated host country comments, if any, within four weeks after the exit meeting.

The exit meeting marks the completion of the INSServ mission in the host country.

2.9 FINAL REPORT

The relevant State authority and, as decided by the host country, other authorities/agencies will review the draft report. The State point of contact will transmit consolidated comments to the IAEA technical officer within four weeks following conclusion of the mission.

On the basis of these consolidated comments, and on the outcomes of the exit meeting, the IAEA technical officer, in consultation with the INSServ team leader, will finalize the INSServ mission report. The final mission report will be transmitted through official channels to the host country within four weeks after receiving the final consolidated comments. The IAEA technical officer will have overall responsibility for transmitting the final mission report to the host country.

2.10 FOLLOW-UP ACTIVITIES

The State may address most of the recommendations and suggestions resulting from a mission without any external assistance. However, in some cases, external assistance may be leveraged through the IAEA, other international institutions, or bilateral support programmes.

The IAEA remains ready to coordinate follow-up activities. A post-mission consultation may be initiated by the host country or by the IAEA after submission of the INSServ report to the host country in order to discuss whether any advice or assistance can be provided to help implement the mission recommendations and suggestions.

At the request of the Member State, a number of follow-up support activities may be pursued, such as an additional INSServ mission to address additional review modules, and incorporating activities arising from the recommendations and suggestions into an Integrated Nuclear Security Support Plan (INSSP).

In addition, it is recommended that within a period of three to five years after the completion of an INSServ mission, the host country assess the degree to which recommendations and suggestions have been adequately applied.

3. BASIS FOR NUCLEAR SECURITY SYSTEMS AND MEASURES FOR NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL (MODULE 1)

INSServ is a broad based review of nuclear security systems and measures ranging from the legislative and regulatory framework, competent authorities and coordination mechanisms, through the implementation of all nuclear security systems and measures related to MORC. The basis for an effective implementation of nuclear security systems and measures related to MORC is described in the sections as follows:

- Legislative and regulatory framework;
- Roles and responsibilities of the competent authorities;
- Coordinating body or mechanisms;
- National threat assessment and risk informed approach;
- International cooperation and assistance;
- Deterrence;
- Information security;
- Nuclear security culture;
- Trustworthiness of personnel.

These are common elements for the implementation of the detection and response systems and measures and have to be considered in combination with those systems and measures.

In addition, Sections 3.3, 3.5 and 3.6 address, as relevant to nuclear security systems and measures related to MORC, various aspects of information exchange and need for coordination, public information and communication, and the need for cross-disciplinary training, drills and exercises, as well as international cooperation and assistance. Their coordination and integration with associated emergency arrangements put in place to respond to a nuclear or radiological emergency associated with MORC are addressed in module 3-Section 5.6.

3.1 LEGISLATIVE AND REGULATORY FRAMEWORK

3.1.1 Objectives

- Determine whether the State has established, and is maintaining, an effective legislative and regulatory framework to govern nuclear security of MORC;
- Determine whether the State has concluded the principal international legal instruments that address international legal obligations arising from MORC.

3.1.2 Basis[1]

- Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment:

  Article 7:

[1] In addition to the international legal instruments and IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Developing Regulations and Associated Administrative Measures for Nuclear Security (NSS No. 29-G) for preparation of "Suggestions" and "Good Practices":

"The intentional commission of:

(a) an act without lawful authority which constitutes the receipt, possession, use, transfer, alteration, disposal or dispersal of nuclear material and which causes or is likely to cause death or serious injury to any person or substantial damage to property or to the environment;

(b) a theft or robbery of nuclear material;

(c) an embezzlement or fraudulent obtaining of nuclear material;

(d) an act which constitutes the carrying, sending, or moving of nuclear material into or out of a State without lawful authority;

(e) an act directed against a nuclear facility, or an act interfering with the operation of a nuclear facility, where the offender intentionally causes, or where he knows that the act is likely to cause, death or serious injury to any person or substantial damage to property or to the environment by exposure to radiation or release of radioactive substances, unless the act is undertaken in conformity with the national law of the State Party in the territory of which the nuclear facility is situated;

(f) an act constituting a demand for nuclear material by threat or use of force or by any other form of intimidation;

(g) a threat:

(i) to use nuclear material to cause death or serious injury to any person or substantial damage to property or to the environment or to commit the offence described in sub-paragraph (e), or

(ii) to commit an offence described in sub-paragraphs (b) and (e) in order to compel a natural or legal person, international organization or State to do or to refrain from doing any act;

(h) an attempt to commit any offence described in sub-paragraphs (a) to (e);

(i) an act which constitutes participation in any offence described in sub-paragraphs (a) to (h);

(j) an act of any person who organizes or directs others to commit an offence described in sub-paragraphs (a) to (h); and

(k) an act which contributes to the commission of any offence described in sub-paragraphs (a) to (h) by a group of persons acting with a common purpose; such act shall be intentional and shall either:

(i) be made with the aim of furthering the criminal activity or criminal purpose of the group, where such activity or purpose involves the commission of an offence described in sub-paragraphs (a) to (g), or

(ii) be made in the knowledge of the intention of the group to commit an offence described in sub-paragraphs (a) to (g).

shall be made a punishable offence by each State Party under its national law".

- International Convention for Suppression of Acts of Nuclear Terrorism (ICSANT):

Article 2:

"1. Any person commits an offence within the meaning of this Convention if that person unlawfully and intentionally:

(a) Possesses radioactive material or makes or possesses a device:

(i) With the intent to cause death or serious bodily injury; or

(ii) With the intent to cause substantial damage to property or to the environment;

(b) Uses in any way radioactive material or a device, or uses or damages a nuclear facility in a manner which releases or risks the release of radioactive material:

(i) With the intent to cause death or serious bodily injury; or

(ii) With the intent to cause substantial damage to property or to the environment; or
(iii) With the intent to compel a natural or legal person, an international organization or a State to do or refrain from doing an act.

2. Any person also commits an offence if that person:
(a) Threatens, under circumstances which indicate the credibility of the threat, to commit an offence as set forth in paragraph 1 (b) of the present article; or
(b) Demands unlawfully and intentionally radioactive material, a device or a nuclear facility by threat, under circumstances which indicate the credibility of the threat, or by use of force.

3. Any person also commits an offence if that person attempts to commit an offence as set forth in paragraph 1 of the present article.

4. Any person also commits an offence if that person:
(a) Participates as an accomplice in an offence as set forth in paragraph 1, 2 or 3 of the present article; or
(b) Organizes or directs others to commit an offence as set forth in paragraph 1, 2 or 3 of the present article; or

(c) In any other way contributes to the commission of one or more offences as set forth in paragraph 1, 2 or 3 of the present article by a group of persons acting with a common purpose; such contribution shall be intentional and either be made with the aim of furthering the general criminal activity or purpose of the group or be made in the knowledge of the intention of the group to commit the offence or offences concerned."

Article 5:

"Each State Party shall adopt such measures as may be necessary:
(a) To establish as criminal offences under its national law the offences set forth in article 2;
(b) To make those offences punishable by appropriate penalties which take into account the grave nature of these offences."

- United Nations Security Council Resolution 1540 (2004):

Article 1: "Decides that all States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery."

Article 2:

"Decides also that all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them."

- Nuclear Security Fundamentals (NSS No. 20):

Essential Element 3: Legislative and Regulatory Framework:

"The legislative and regulatory framework, and associated administrative measures, to govern the nuclear security regime:

(a) Establish competent authorities, including regulatory bodies, with adequate legal authority to fulfil their assigned nuclear security responsibilities.

(b) Assign the nuclear security responsibilities identified in Essential 2 of each competent authority, including those of the regulatory bodies having nuclear security responsibilities, and provide these authorities with sufficient financial, human and technical resources to fulfil these responsibilities.

(c) Establish measures to ensure proper coordination and communication among competent authorities, and between competent authorities and authorized persons, in fulfilling their nuclear security responsibilities.

(g) Provide for the establishment of regulations and requirements for protecting the confidentiality of sensitive information and for protecting sensitive information assets.

(k) Take appropriate and effective steps to prevent, deter, detect, respond to, and otherwise combat illicit trafficking in nuclear material and other radioactive material.

(l) Establish verification and enforcement measures to ensure compliance with applicable laws, regulations and requirements, including the imposition of appropriate and effective sanctions."

Essential Element 5: Offences and Penalties Including Criminalization:

"A nuclear security regime includes measures for:

(a) Defining as offences or violations under domestic laws or regulations those criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities or associated activities;

(b) Appropriately dealing with other acts determined by the State to have an adverse impact on nuclear security;

(c) Establishing appropriate penalties that are proportionate to the gravity of the harm that could be caused by commission of the offences or violations;

(d) Establishing the jurisdiction of the State over such offences or violations;

(e) Providing for the prosecution or, as appropriate, extradition of alleged offenders".

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

Para. 3.2. "As part of an overall framework, the State should establish and maintain effective executive, judicial, legislative and regulatory frameworks to govern the detection of and response to a criminal act, or an unauthorized act, with nuclear security implications involving any nuclear or other radioactive material that is out of regulatory control. Responsibilities should be clearly defined for implementing various elements of nuclear security and assigned to the relevant competent authorities, as described in paragraphs 3.15–3.18.

Para. 3.3. "In establishing legislative and regulatory frameworks to govern nuclear security, the State should define the conduct which it considers to be a criminal act, or an unauthorized act, with nuclear security implications".

Para. 3.4. "The State should establish criminal offences under domestic law which should include the wilful, unauthorized acquisition, possession, use, transfer or transport of nuclear or other radioactive material consistent with international treaties, conventions and legally binding United Nations Security Council resolutions".

Para. 3.5. "The State should also establish as criminal offences a threat or attempt to commit an offence as described in paragraph 3.4."

Para. 3.6. "The State should consider establishing as criminal offences, unlawful scams or hoaxes with nuclear security implications."

Para. 3.7. "The State should establish its jurisdiction over any criminal act associated with a nuclear security event when the offence is committed in the territory of that State or on board a ship or aircraft registered in that State or when the alleged offender is a national of that State or when the alleged offender is present in its territory and it does not extradite the alleged offender".

3.1.3 Documentation

- Ratification Status of CPPNM;
- Ratification Status of the 2005 CPPNM Amendment;
- Ratification Status of ICSANT;
- National Report Status of United Nations Security Council Resolution 1540 (2004);
- Laws, regulations, and administrative measures addressing the nuclear security of MORC, including those which:
    - Designate competent authorities and assign roles and responsibilities;
    - Require the development and implementation of a national detection strategy;
    - Require the development and implementation of a national framework and plan for responding to nuclear security events involving MORC;
    - Establish criminal offenses and assign appropriate penalties;
    - Establish reporting requirements for detecting and responding to nuclear security events involving MORC;
    - Require that competent authorities develop and maintain a national threat assessment and follow a risk-informed approach;
    - Establish a coordinating body or mechanism among relevant competent authorities to ensure all activities regarding MORC are in accordance with national legislation and regulations;
    - Provide for the application of information security.

Note: the particular form of laws, regulations, and administrative measures may vary widely among States, and could include, for example: national laws; executive, ministerial, or departmental orders, decrees, instructions, memoranda of agreement; etc.

3.1.4 Review Points/Specimen Questions

- Is the State a Party to the amended CPPNM? Has the State brought the amended CPPNM into force? If not, what efforts are under way to do so?
- Is the State a Party to ICSANT? Has the State brought ICSANT into force? If not, what efforts are under way to do so?
- Has the State submitted a national report to the 1540 Committee? If not, what efforts are under way to do so?
- Has the State established a legislative and regulatory framework regarding MORC? How frequently is the legislative and regulatory framework reviewed and updated?
- What efforts are underway to address gaps in the legislative and regulatory framework?

3.2 ROLES AND RESPONSIBILITIES OF THE COMPETENT AUTHORITIES

3.2.1 Objective

- Assess whether the State has identified all relevant competent authorities, and defined and assigned their roles and responsibilities at all governmental levels addressing nuclear security systems and measures for MORC.

3.2.2 Basis[2]

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 2: Identification and Definition of Nuclear Security Responsibilities: "Nuclear security responsibilities of competent authorities designated by the State, as described in Essential Element 3, including regulatory bodies and those competent authorities related to border control and law enforcement, and responsibilities for all authorized persons, are clearly identified and defined. Provisions are identified and defined for appropriate integration and coordination of responsibilities within the nuclear security regime, as well as for the State's oversight to ensure the continued appropriateness of the nuclear security responsibilities".

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 3.15. "The competent authorities should have responsibilities for putting in place and implementing the detection and response measures within their areas of authority related to the nuclear security regime of the State".

  Para. 3.16. "The functions of the competent authorities should include, inter alia:

  - Contributing to the development of the national detection strategy and national response plan;
  - Developing, operating and maintaining the national detection systems, assessment procedures and the national response plan and providing the resources necessary for implementing and testing the associated activities;
  - Providing adequate training and information to all personnel involved in carrying out nuclear security detection and response measures;
  - Sustaining the detection and response capabilities and ensuring operational preparedness through sound management practices, addressing instrument maintenance, personnel training, exercises and process improvements;
  - Cooperating with the coordinating body, other competent authorities and bilateral and multilateral counterparts as applicable, in part to ensure the effectiveness of their detection and response procedures and responsibilities."

  Para. 3.17. "The competent authorities should cooperate in the exchange of relevant information on the nuclear security of nuclear and other radioactive material under regulatory control within the State, with a view to strengthening the effectiveness of competent authorities concerned with all aspects of nuclear security. Where appropriate, they should also cooperate with their counterparts in other States"

  Para. 3.18. "The regulatory authorities should take appropriate actions when nuclear or other radioactive material is reported to be out of regulatory control, i.e. lost, missing or stolen. In

[2] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Developing Regulations and Associated Administrative Measures for Nuclear Security (NSS No. 29-G) for preparation of "Suggestions":

particular, they should inform promptly the other competent authorities in the event of a suspected criminal act, or an unauthorized act, with nuclear security implications".

3.2.3 Documentation

- Legislation and regulations;
- Description of each competent authority's legal status, powers, duties and responsibilities in relation to nuclear security of MORC, e.g. organization charts;
- Administrative arrangements, e.g. memoranda of understanding or coordination mechanisms.

3.2.4 Review Points/Specimen Questions

- How are roles and responsibilities assigned to competent authorities for performing the following functions?
    - Contributing to the development of the national nuclear security detection strategy and national nuclear security response plan;
    - Developing, operating and maintaining the national detection systems, assessment procedures and the national response framework;
    - Providing the resources necessary for implementing and exercising the nuclear security detection architecture and nuclear security response framework;
    - Providing adequate training and information to all personnel involved in carrying out nuclear security detection and response systems and measures;
    - Sustaining the detection and response capabilities and ensuring operational preparedness through sound management practices, addressing instrument maintenance, personnel training, exercises and process improvements;
    - Cooperating with the coordinating body, other relevant competent authorities and bilateral and multilateral counterparts as applicable, in part to ensure the effectiveness of their detection and response procedures and responsibilities;
    - Conducting law enforcement investigations and carrying out arrests in various jurisdictions;
    - Applying the appropriate legal sanctions to responsible persons in cases of noncompliance with criminal or regulatory provisions.

3.3 COORDINATING BODY OR MECHANISM

3.3.1 Objective

- Assess whether the State has a coordinating body or an effective mechanism in accordance with national legislation and regulations;
- Assess the effectiveness of national-level coordination;
- Assess whether the State has provisions for coordination among the competent authorities and authorized persons, including exchange of relevant information concerning their respective roles, responsibilities and procedures;
- Assess whether the State has arrangements for disseminating information to the public in a coordinated, understandable, and consistent manner.

3.3.2 Basis[3]

- Nuclear Security Fundamentals (NSS No. 20):

Essential Element 2: Identification and Definition of Nuclear Security Responsibilities: "Nuclear security responsibilities of competent authorities designated by the State, as described in Essential Element 3, including regulatory bodies and those competent authorities related to border control and law enforcement, and responsibilities for all authorized persons, are clearly identified and defined. Provisions are identified and defined for appropriate integration and coordination of responsibilities within the nuclear security regime, as well as for the State's oversight to ensure the continued appropriateness of the nuclear security responsibilities".

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

Para. 3.8. "Effective and sustainable detection and response measures rely on multidisciplinary infrastructures implemented by several independent competent authorities in the State. The State should ensure proper cooperation, coordination, information exchange and integration of activities and clearly defined responsibilities across multiple competent authorities, and establish a coordinating mechanism or identify an existing governmental body, committee or organization to act as the coordinating body, as described in paragraphs 3.12–3.14. In carrying out the nuclear security measures, the State should take into consideration the results of the threat assessment."

Para. 3.9. "The State should ensure effective coordination among the different levels and jurisdictions of federal, state, and local authorities."

Para. 3.12. "All nuclear security activities involving nuclear or other radioactive material that are out of regulatory control should be coordinated by a body or an effective mechanism in accordance with national legislation and regulations."

Para. 3.13. "The State through its coordinating body or mechanism should ensure that the roles and responsibilities of the competent authorities are clearly defined and that possible conflicts are identified and resolved. In particular, it should review the national detection strategy, response plans, procedures, necessary infrastructure for the respective activities and, as appropriate, coordinate training activities, drills and exercises at the national level".

Para. 3.14. "The State, through its coordinating body or mechanism, should inter alia:

- Ensure the development of a comprehensive national detection strategy based on a multilayered defence in depth approach within available resources;
- Ensure development of a national response plan for any nuclear security event using a graded approach commensurate with the threat and based on available resources;
- Oversee the development and implementation of the national detection and response systems;
- Re-evaluate and identify possible nuclear security gaps and resource needs and initiate proper corrective actions on a regular basis;

[3] In addition to the international instruments and IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Developing Regulations and Associated Administrative Measures for Nuclear Security (NSS No. 29-G) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

- Ensure the establishment of points of contact within the competent authorities as part of an overall coordination within the State;
- Encourage the timely sharing of operational information among competent authorities within the State;
- Ensure the establishment and maintenance of a reliable and comprehensive set of records for each nuclear security event, and encourage the exchange of information among competent authorities concerning any such event, using a common reporting and notification format;
- Ensure appropriate coordination and cooperation with relevant authorities in other States and international organizations".

3.3.3 Documentation

- Legislation and regulations;
- Administrative arrangements, e.g. memoranda of understanding;
- National policy, plans and procedures;
- National level exercise strategy.

3.3.4 Review Points/Specimen Questions

- How do the competent authorities coordinate with other relevant competent authorities that have roles and responsibilities for nuclear security of MORC?
- Has a coordinating body been identified? If not, is there an alternative mechanism that coordinates competent authorities? Are there plans to establish one?
- Is there a strategic planning mechanism for ensuring appropriate budget allocation for the State's nuclear security regime?
- How are the oversight arrangements for the State's detection architecture and response framework?
- Does the State have coordination arrangements to allow the effective, timely and secure exchange of information between organizations involved in the response to a nuclear security event and between the various command levels?
- Is this coordination achieved and evaluated through formal arrangements, such as agreements and protocols?
- How are the mechanisms for re-evaluating and identifying possible nuclear security gaps and resource needs, and for initiating proper corrective actions on a regular basis?
- What are the national standards for nuclear security information management and exchange?
- What are the arrangements for cross-disciplinary training activities, drills and exercises at the national and/or interagency level?

3.4 NATIONAL THREAT ASSESSMENT AND RISK INFORMED APPROACH

3.4.1 Objective

- Determine whether threat assessments are conducted and, if so, whether they support a risk-informed approach for planning, implementation, and evaluation of the nuclear security regime as it relates to MORC.

3.4.2 Basis[4]

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 7- Identification and Assessment of Nuclear Security Threat:

  "A nuclear security regime ensures that:

  a) Nuclear security threats, both internal and external to the State, are identified and assessed, including their credibility, regardless of whether the targets of internal nuclear security threats are within or outside the jurisdiction of the State;
  b) The State's assessments of nuclear security threats are kept up to date;
  c) The State's assessments are used in implementing the State's nuclear security regime".

  Essential Element 8: Identification and Assessment of Targets and Potential Consequences:

  "A nuclear security regime ensures that:

  - Targets under the State's jurisdiction are identified and assessed to determine if they require protection from nuclear security threats;
  - The assessment is based on the potential consequences should the targets be compromised;
  - An up to date assessment of such targets is maintained."

  Essential Element 9: Use of Risk Informed Approaches:

  "A nuclear security regime uses risk informed approaches, including in the allocation of resources for nuclear security systems and nuclear security measures and in the conduct of nuclear security related activities that are based on a graded approach and defence in depth, which take into account the following:

  a) The State's current assessment of the nuclear security threats, both internal and external;
  b) The relative attractiveness and vulnerability of identified targets to nuclear security threats;
  c) Characteristics of the nuclear material, other radioactive material, associated facilities and associated activities;
  d) Potential harmful consequences from criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities, associated activities, sensitive information or sensitive information assets, and other acts determined by the State to have an adverse impact on nuclear security."

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 3.19. "For the preparation of the national detection strategy, the national response plan and the design of nuclear security systems, the State should identify strategic locations and perform a national threat assessment against criminal acts, and unauthorized acts, with nuclear security implications involving nuclear or other radioactive material out of regulatory control. Competent authorities should work closely together and consider, inter alia:

  - The threat through and to the transboundary movement and transport of goods and movement of persons;

[4] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Risk Informed Approach for Nuclear Security Measures for Nuclear and other Radioactive Material out of Regulatory Control (NSS No. 24-G) for preparation of "Suggestions":

- The threat to strategic locations;
- The location of, and vulnerability to, the criminal or unauthorized acquisition of nuclear and other radioactive material under regulatory control and consequences of their misuse;
- The intent and capability of potential offenders who may wish to acquire or use this material for a criminal act, or an unauthorized act, with nuclear security implications, or to transport it from, to or through State territory."

Para. 3.20. "The State should establish procedures for reliable and timely exchange of threat information related to nuclear security, both domestically and internationally, in accordance with its national information security policies and regulations, and international obligations."

Para. 3.21. "The State should assign priorities and design the detection and response systems based on its national threat assessment and a risk informed approach in combination with the following points:

- Vulnerability to a criminal act, or an unauthorized act, with nuclear security implications, both within and outside its borders;
- Relative attractiveness of identified targets to a nuclear security threat;
- Possible consequences of a criminal act, or an unauthorized act, with nuclear security implications, that involves the use of nuclear or other radioactive material;
- Possible evolution of the threat or vulnerabilities."

Para. 3.22. "The State should update the threat assessment periodically and as the need arises. In particular, the State should consider undertaking a threat assessment for any major public event."

3.4.3 Documentation

- Description of the process and methodology by which competent authorities developed threat assessments to prioritize resources.

3.4.4 Review Points/Specimen Questions

- Has a lead competent authority for developing nuclear security scenarios and conducting a national-level threat and risk assessment been designated? How is this process coordinated? How does this inform organization-level threat and risk assessments?
- How do the competent authorities use the results from threat and risk assessments to prioritize resources to enhance nuclear security detection and response systems and measures?
- Has the State identified vulnerabilities in the nuclear security regime as it relates to MORC? How is this information used to inform the detection strategy and response framework?
- What are the procedures for prioritization of gaps in capabilities and resources? What is the coordination process for making such determinations on a national basis for detection and response measures?
- What are the procedures for reliable and timely exchange of threat information related to nuclear security, both domestically and internationally?
- How often are the threat and risk assessments reviewed and updated?

3.5 INTERNATIONAL COOPERATION AND ASSISTANCE

3.5.1 Objective

- Assess whether the State has developed protocols and procedures for:

- Exchange of information;
- Technical cooperation and assistance, e.g. nuclear forensics
- Cooperation and assistance with respect to criminal investigations and prosecutions;
- Recovery and return of seized materials;

3.5.2 Basis[5]

- Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment:

  Article 5:

  "1. States Parties shall identify and make known to each other directly or through the International Atomic Energy Agency their point of contact in relation to matters within the scope of this Convention.

  2. In the case of theft, robbery or any other unlawful taking of nuclear material or credible threat thereof, States Parties shall, in accordance with their national law, provide co-operation and assistance to the maximum feasible extent in the recovery and protection of such material to any State that so requests. In particular:

  (a) a State Party shall take appropriate steps to inform as soon as possible other States, which appear to it to be concerned, of any theft, robbery or other unlawful taking of nuclear material or credible threat thereof, and to inform, where appropriate, the International Atomic Energy Agency and other relevant international organizations;

  (b) in doing so, as appropriate, the States Parties concerned shall exchange information with each other, the International Atomic Energy Agency and other relevant international organizations with a view to protecting threatened nuclear material, verifying the integrity of the shipping container or recovering unlawfully taken nuclear material and shall:

  (i) co-ordinate their efforts through diplomatic and other agreed channels;

  (ii) render assistance, if requested;

  (iii) ensure the return of recovered nuclear material stolen or missing as a consequence of the above-mentioned events".

  Article 13:
  "States Parties shall afford one another the greatest measure of assistance in connection with criminal proceedings brought in respect of the offences set forth in article 7, including the supply of evidence at their disposal necessary for the proceedings.
  The law of the State requested shall apply in all cases. The provisions of paragraph 1 shall not affect obligations under any other treaty, bilateral or multilateral, which governs or will govern, in whole or in part, mutual assistance in criminal matters".
- International Convention for Suppression of Acts of Nuclear Terrorism (ICSANT):

[5] In addition to the international legal instruments and IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Developing Regulations and Associated Administrative Measures for Nuclear Security (NSS No. 29-G), Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) and Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)),for preparation of "Suggestions" and "Good Practices":

Article 7:

"1. States Parties shall cooperate by:

(a) Taking all practicable measures, including, if necessary, adapting their national law, to prevent and counter preparations in their respective territories for the commission within or outside their territories of the offences set forth in article 2, including measures to prohibit in their territories illegal activities of persons, groups and organizations that encourage, instigate, organize, knowingly finance or knowingly provide technical assistance or information or engage in the perpetration of those offences;

(b) Exchanging accurate and verified information in accordance with their national law and in the manner and subject to the conditions specified herein, and coordinating administrative and other measures taken as appropriate to detect, prevent, suppress and investigate the offences set forth in article 2 and also in order to institute criminal proceedings against persons alleged to have committed those crimes. In particular, a State Party shall take appropriate measures in order to inform without delay the other States referred to in article 9 in respect of the commission of the offences set forth in article 2 as well as preparations to commit such offences about which it has learned, and also to inform, where appropriate, international organizations.

2. States Parties shall take appropriate measures consistent with their national law to protect the confidentiality of any information which they receive in confidence by virtue of the provisions of this Convention from another State Party or through participation in an activity carried out for the implementation of this Convention. If States Parties provide information to international organizations in confidence, steps shall be taken to ensure that the confidentiality of such information is protected.

3. States Parties shall not be required by this Convention to provide any information which they are not permitted to communicate pursuant to national law or which would jeopardize the security of the State concerned or the physical protection of nuclear material.

4. States Parties shall inform the Secretary-General of the United Nations of their competent authorities and liaison points responsible for sending and receiving the information referred to in the present article. The Secretary General of the United Nations shall communicate such information regarding competent authorities and liaison points to all States Parties and the International Atomic Energy Agency. Such authorities and liaison points must be accessible on a continuous basis".

- Code of Conduct on the Safety and Security of Radioactive Sources:

  Article 12:

  "Every State should ensure that information concerning any loss of control over radioactive sources, or any incidents, with potential transboundary effects involving radioactive sources, is provided promptly to potentially affected States through established IAEA or other mechanisms"

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 6: International Cooperation and Assistance:

  "A nuclear security regime provides for cooperation and assistance between and among States, either directly or through the IAEA or other international organizations, by:

  (a) Making known designated points of contact for notification, assistance and cooperation;

  (b) Providing timely information as appropriate to States affected or likely to be affected or concerned about criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities or associated activities, or credible threats thereof;

  (c) Providing timely response to requests for assistance on nuclear security related matters, including requests for the recovery and protection of nuclear material and other radioactive

material; requests for technical support, including nuclear forensic assistance; and requests for mutual legal assistance;

(d) Cooperating and exchanging experiences and information, including on the establishment, implementation, maintenance and sustainability of nuclear security systems;

(e) Ensuring through appropriate arrangements that sensitive information or other information exchanged in confidence is adequately and appropriately protected".

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 3.11. "The State should ensure effective cooperation with other States and with the relevant international organizations regarding any nuclear security event as outlined in this publication. In particular, the State should nominate a national point of contact for other States and for the relevant international organizations for all matters related to detection of and response to such acts."

  Para. 7.1. "States should exchange accurate and verified information on nuclear security events in accordance with international obligations and national legislation, taking into account the designation of roles and responsibilities described in paragraph 3.11 and information security measures described in paragraphs 4.5–4.9. States should identify and make known to each other directly or through the IAEA, the United Nations, or other relevant international organizations, as appropriate, their points of contact for detection of and response to nuclear security events."

  Para. 7.2. "The State should inform the IAEA, the United Nations or other relevant international organizations of cases of nuclear security events involving nuclear or other radioactive material or seizures thereof in accordance with its international obligations and national legislation."

  Para. 7.3. "The State should provide information concerning any loss of control over nuclear or other radioactive material, or any other nuclear security events, with potential transboundary effects, to potentially affected States through bilateral or multilateral mechanisms, in accordance with its international obligations and national legislation."

  Para. 7.4. "The State should participate in and report relevant nuclear security events to applicable regional and international information databases in accordance with its international obligations and national legislation. One example is the IAEA's Illicit Trafficking Database (ITDB)."

  Para. 7.5. "The State should consider exchanging information on lessons learned after relevant nuclear security events."

  Para. 7.6. "On request and in compliance with information security requirements, States should consider exchanging functional and technical specifications and performance data of instruments for the purpose of enhancing other States' detection and response capabilities. States should develop protocols and procedures for such information exchange and consider development of common data formats."

  Para. 7.7. "The State should promote the cooperation of its customs and other border authorities with those of other States, including at points of exit and of entry. States could consider coordinating or sharing detection capabilities and expertise at designated and undesignated points of exit and/or entry."

  Para. 7.8. "States should consider enhancing preparedness by conducting or participating in joint exercises and training events related to nuclear security, at the international, regional and national levels, and by coordinating respective national response plans, as appropriate."

Para. 7.9. “The State should consider providing assistance, including expertise and equipment, upon request by another State, for example for a major public event requiring nuclear security measures”.

Para. 7.10. “The State should consider requesting assistance from other States and international organizations to improve its technical capabilities for detection and response. The State should also consider requesting assistance during nuclear security events.”

Para. 7.11. “States parties to relevant bilateral and multilateral instruments should provide and use, where applicable within the framework of national laws, the mutual legal assistance and other provisions in such instruments to provide effective cooperation in connection with criminal proceedings related to nuclear security events.”

Para. 7.12. “The State that has located, seized, recovered or otherwise obtained nuclear or other radioactive material that is out of regulatory control should safely and securely store the material and then, where appropriate, work with the State in which regulatory control had been lost to arrange for the safe and secure return of the material. Actions taken by States holding the material should be consistent with their national policies, procedures and with applicable bilateral and multilateral arrangements.”

Para. 7.13. “Upon detection of nuclear or other radioactive material out of regulatory control at a point of exit or entry, the State should work with the State of origin and other relevant States to return the material to regulatory control. The State should adopt a graded approach for such response that depends on the circumstances of the case and the nature of the material”.

Para. 7.14. “The State should apply nuclear forensics techniques to determine the source and route of transfer and to investigate loss of regulatory control. Investigations may entail cooperation between or amongst States to identify the origin, history and the route of transfer of the nuclear or other radioactive material. Cooperation on nuclear forensics should be subject to the State’s domestic laws, regulations and policies.”

Para. 7.15. “The State should assess its capabilities to perform nuclear forensics and the potential needs for forensics support. States without sufficient nuclear forensics expertise and capabilities are encouraged to enter into arrangements with other States or relevant regional or international institutions for the purpose of nuclear forensics analysis and interpretation. States should also consult with the IAEA, which can facilitate obtaining nuclear forensics assistance. In particular, the arrangements may include:

- Means and procedures for transfer of samples of nuclear or other radioactive material or items from the requesting State and into the territory of the assisting State or to assisting multinational institutions;
- Measures to preserve evidence to ensure its legal validity in accordance with the requesting State’s domestic laws, regulations and protocols regarding rules of evidence;
- Procedures for the return of samples, including responsibilities of the involved States and the State in which loss of regulatory control occurred;
- Disposal of sample residues and analytical wastes;
- Authorization of and limitations on forensics experts to access potentially restricted facilities and information;
- Provisions regarding the appropriate notification of national authorities and international organizations with respect to the results of the forensic analysis;
- Provisions on confidentiality of information and non-disclosure;

- Provision of written or oral expert testimony regarding the forensic examinations that were conducted and the conclusions reached as a result of such examinations;
- National level points of contact to be used by a State in requesting support on nuclear forensics".

Para. 7.16. "The State should consider establishing nuclear forensics libraries for its inventory of nuclear and other radioactive material. These libraries should include databases of all material produced, used and stored in the State and, if applicable, supported by sample and literature archives. The State should be capable of responding to queries of other States regarding recovered nuclear or other radioactive material that may have been produced, used or stored on the State's territory. Information security should be evaluated and appropriate measures taken when establishing a nuclear forensics library, in accordance with national laws and regulations."

3.5.3 Documentation

- Agreements and memoranda of understanding with other States and organizations;
- Participation in international and regional initiatives, e.g. international information exchange programmes.

3.5.4 Review Points/Specimen Questions

- Do the national detection strategy and response framework make use of opportunities for international cooperation and assistance?
- What are the mechanisms that the State uses for providing and receiving technical cooperation and assistance, e.g. with other States, international organizations, and industry, such as:
    - Joint reports on the results of R&D cooperation, sharing good practices and lessons learned;
    - Personnel exchanges (e.g., during crisis events);
    - Training and exercises;
    - Stipends and scholarships;
    - Joint concepts of operations (e.g., detection, response, forensics, source recovery, return of seized material);
    - Protocols for timely information exchange (e.g., bilateral, ITDB, USIE);
    - Equipment acquisition and deployment;
    - Testing and evaluation of equipment?
- What are the mechanisms for timely exchange of information on nuclear security events?
- Are the national points of contact identified for international information exchange programmes, e.g. Incident and Trafficking Database (ITDB), Unified System for Information Exchange in Incidents and Emergencies (USIE)?
- What is the mechanism for cooperation on nuclear forensic analysis?
- What are the mechanisms for responding to requests for information and assistance from international organizations and other States?

3.6 DETERRENCE

3.6.1 Objective

- Determine whether the State has adopted measures to deter criminal or unauthorized acts with nuclear security implications, including;
    - Establishment of offenses with appropriate penalties;
    - Use of and/or access to nuclear forensic capabilities;
    - Public dissemination of appropriate information for improving deterrence effects.

3.6.2 Basis[6]

- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 3: Legislative and Regulatory Framework:
  "The legislative and regulatory framework, and associated administrative measures, to govern the nuclear security regime:
  (k) Take appropriate and effective steps to prevent, deter, detect, respond to, and otherwise combat illicit trafficking in nuclear material and other radioactive material".
- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para 4.1. "The State should consider adopting measures to deter criminal or unauthorized acts with nuclear security implications in accordance with national policies, laws and regulations."

  Para 4.2. "The State should ensure that offences established under its laws for criminal or unauthorized acts with nuclear security implications are punishable by appropriate penalties which take into account their grave nature, consistent with international treaties, conventions and legally binding United Nations Security Council resolutions."

  Para. 4.3. "The State should consider using nuclear forensics for assisting authorities in determining the origin and history of seized material, which may contribute to deterring criminal or unauthorized acts involving nuclear or other radioactive material. Nuclear forensics is also an important element of the response measures as discussed in paragraph 6.16".

  Para. 4.4. "The State should consider the public dissemination of appropriate information as part of deterrence including information regarding detection capability, threat environment and punishment, in accordance with the State's information security policy, as discussed in paragraphs 4.5–4.9."

3.6.3 Documentation

- Legislation/regulations on criminal offenses and associated penalties;
- Examples of public messaging (e.g., press releases on exercises, detection/response capabilities).

3.6.4 Review points/specimen questions

- What are the criminal offences pertaining to MORC?
- What types of public information campaigns are undertaken to publicize detection/response/cyber security capabilities, both generally and in connection with public events (e.g., a public awareness day)?

[6] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) for preparation of "Suggestions":

- Describe information released to the press/public on nuclear forensics capabilities, exercises, training events, seizures, criminal prosecutions.
- How is the general public engaged in security awareness campaigns (e.g., "if you see something, say something")?
- How does the State prosecute crimes involving MORC, including incidents involving scams, hoaxes, and unsuccessful or thwarted attempts?

3.7 INFORMATION SECURITY

3.7.1 Objective

- Assess the State's capabilities for protecting sensitive information;
- Assess the State's capabilities for ensuring the timely, effective, and secure dissemination and coordination of information among competent authorities and other involved stakeholders.

3.7.2 Basis[7]

- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 3: Legislative and Regulatory Framework:
  "The legislative and regulatory framework, and associated administrative measures, to govern the nuclear security regime:
  (g) Provide for the establishment of regulations and requirements for protecting the confidentiality of sensitive information and for protecting sensitive information assets.

  Essential Element 6: International Cooperation and Assistance:

  "A nuclear security regime provides for cooperation and assistance between and among States, either directly or through the IAEA or other international organizations, by:

  (e) Ensuring through appropriate arrangements that sensitive information or other information exchanged in confidence is adequately and appropriately protected"

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 4.5. "The State should define the national policy on sensitive information and assign responsibilities to the various competent authorities for information security related to systems for detection of and response to a criminal act, or an unauthorized act, with nuclear security implications involving the use of any nuclear and other radioactive material out of regulatory control. This should be derived from and integrated with other policies of the State on information security".
  Para. 4.6. "The State should specify what nuclear security information could be misused by a possible offender and therefore should be protected. In particular, the information on the detection and response systems and associated procedures should be properly protected".
  Para. 4.7. "When defining the national policy on sensitive information, consideration should be given to ensuring that law enforcement personnel, other responders and personnel of the competent authorities have access to sufficient information to perform their duties."
  Para. 4.8. "The national policy on information security should detail what and how information regarding detection and response systems and protocols will be shared with other States,

[7] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Security of Nuclear Information (NSS No. 23-G) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

particularly neighbouring States and relevant international organizations. The exchange of information with other States on nuclear security events is covered in Section 7."

Para. 4.9. "Each competent authority should have an information security policy and should establish the rules for protecting the confidentiality and integrity of sensitive information and for the dissemination of such information to other competent authorities within and outside the State on a need to know basis. The competent authorities should ensure that all relevant personnel are trained in procedures for information security?

3.7.3 Documentation

- Legislation and regulations;
- Administrative arrangements, e.g. memoranda of understanding;
- National policies, plans and procedures;
- National-level exercise strategy.

3.7.4 Review Points/Specimen Questions

- Who are the points of contact within relevant competent authorities as part of an overall coordination within the State?
- What are the mechanisms for receiving or transmitting secure communications among competent authorities?
- What are the procedures for addressing classification issues?
- What is the basis for the establishment and maintenance of a reliable and comprehensive set of records?
- What are the means of processing information in a timely fashion and disseminating it among relevant competent authorities?
- What are the basis and procedures for identifying the appropriate competent authorities for generating, receiving and transmitting information?
- What are the mechanisms for coordinating the release of information to the public?
- What are the measures for ensuring cyber security?

3.8 NUCLEAR SECURITY CULTURE

3.8.1 Objective

- Determine how the State promotes, maintains, and enhances security culture within all relevant organizations (e.g. law enforcement, customs, intelligence agencies and emergency response agencies).

3.8.2 Basis

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 12: Sustaining a Nuclear Security Regime:

  "A nuclear security regime ensures that each competent authority and authorized person and other organizations with nuclear security responsibilities contribute to the sustainability of the regime by:

  (b) Demonstrating leadership in nuclear security matters at the highest levels;
  (c) Developing, fostering and maintaining a robust nuclear security culture";

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

Para. 3.10. “The State should promote a nuclear security culture. The foundation of such a culture should be the recognition that a credible threat exists, that preserving nuclear security is important, and that the role of the individual is important. The State should ensure that the various competent authorities responsible for relevant nuclear security measures develop a nuclear security culture, with the necessary training and exercises, and have the appropriate resources to deal with the management of an alarm or an alert, and with any consequent nuclear security event”.

Para. 4.11. “The State should implement relevant elements of the nuclear security culture for the trustworthiness programme.”

3.8.3 Documentation

- Policy, plans, protocols, and procedures used to build a nuclear security culture;
- Requirements of general security training for relevant employees.

3.8.4 Review Points/Specimen Questions

- What role does the coordinating body or mechanism have in promoting a nuclear security culture at all levels?
- How does the security culture for detection and response measures ensures that all those charged with operating detection and response functions are deemed trustworthy, adequately trained, have sufficient skills and competency and understand the significance of their actions and what actions to take under defined circumstances?
- How do competent authorities’ management systems address and prioritize the following topics in relation to nuclear security culture:
    - Visible security policy;
    - Clear roles and responsibilities;
    - Performance measurement;
    - Work environment;
    - Training and qualification;
    - Continuing education programme;
    - Work management;
    - Information security;
    - Operations and maintenance;
    - Determination of staff trustworthiness;
    - Quality assurance;
    - Change management;
    - Feedback process;
    - Self-assessment;
    - Interface with other competent authorities;
    - Coordination with off-scene organizations?
- How are competent authorities’ leaders encouraged to promote a strong nuclear security culture within their organizations? How is their performance evaluated?

3.9 TRUSTWORTHINESS OF PERSONNEL

3.9.1 Objective

- Determine whether each competent authority ensures that personnel are explicitly deemed trustworthy, to the appropriate levels for their roles.

3.9.2 Basis[8]

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 12: Sustaining a Nuclear Security Regime:

  "A nuclear security regime ensures that each competent authority and authorized person and other organizations with nuclear security responsibilities contribute to the sustainability of the regime by:

  - (g) Establishing and applying measures to minimize the possibility of insiders becoming nuclear security threats;"
- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 4.10. "Taking into consideration State laws, regulations, or policies regarding personal privacy and job requirements, the competent authorities should ensure that the personnel involved in nuclear security activities in the areas of detection and response, are explicitly deemed trustworthy, to the appropriate levels for their roles, by a formal process. This formal process should serve to assist in reducing the risk of authorized personnel engaging in illegal activities, e.g. insider threats. The State should adopt measures and procedures to ensure that the trustworthiness of personnel is regularly revalidated".

3.9.3 Documentation

- Processes for determining trustworthiness of personnel.

3.9.4 Review points/specimen questions

- What are the nuclear security roles for MORC that are subject to trustworthiness checks (e.g., customs police, border guards, emergency services personnel, regulatory staff, and maintenance technicians)?
- Does the process for verifying trustworthiness follow a risk-informed approach?
- How often is the trustworthiness of personnel reassessed?

4. DETECTION SYSTEMS AND MEASURES (MODULE 2)

The INSServ mission as it relates to the State's detection systems and measures is a review of the design, development and implementation of key components that contribute to an effective nuclear security detection architecture.

An effective nuclear security detection architecture is based on the national detection strategy, threat and risk assessment and the national legislative and regulatory framework for nuclear security, and is supported by a well-functioning system of law enforcement. The detection systems and measures

[8] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

complement preventive measures (described in sub-sections 3.6, 3.7, 3.8 and 3.9) and are an integral part of a comprehensive nuclear security regime as it relates to MORC.

This section outlines the guidelines for the review of the detection systems and measures, both technical and administrative, which can be accomplished in combination with the guidelines described in section 3 above. In addition, sections 3.3, 3.5 and 3.6 address, as relevant to nuclear security systems and measures related to MORC, various aspects of information exchange and need for coordination, public information and communication, and the need for cross-disciplinary training, drills and exercises, as well as international cooperation and assistance. Their coordination and integration with associated emergency arrangements put in place to respond to a nuclear or radiological emergency associated with MORC are addressed in module 3-section 5.6..

4.1 DETECTION STRATEGY

4.1.1 Objective

- Assess whether the State has defined and implemented a national strategy for detection of criminal or unauthorized acts with nuclear security implications involving MORC.
- Determine whether the national detection strategy defines the scope and priority for the nuclear security detection architecture.

4.1.2 Basis[9]

- United Nations Security Council Resolution 1540 (2004):
  Article 3. "Decides also that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall:
  (c) Develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat, including through international cooperation when necessary, the illicit trafficking and brokering in such items in accordance with their national legal authorities and legislation and consistent with international law;"
- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 10: Detection of Nuclear Security Events
  "A nuclear security regime ensures that nuclear security systems and nuclear security measures are in place at all appropriate organizational levels to detect and assess nuclear security events and to notify the relevant competent authorities so that appropriate response actions can be initiated, including:
  (a) At associated facilities;
  (b) During conduct of associated activities;
  (c) At major public events or strategic locations, including locations of critical infrastructure, as designated by the State;
  (d) In searches for, recoveries of, or discoveries of nuclear material or other radioactive material that is missing or lost or otherwise out of regulatory control;
  (e) Within the State's territory or on board its ships or aircraft, and at its international borders".

[9] In addition to the international instruments and IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 3.13. "The State through its coordinating body or mechanism should ensure that the roles and responsibilities of the competent authorities are clearly defined and that possible conflicts are identified and resolved. In particular, it should review the national detection strategy, response plans, procedures, necessary infrastructure for the respective activities and, as appropriate, coordinate training activities, drills and exercises at the national level."
  Para. 3.14. "The State, through its coordinating body or mechanism, should inter alia:
    - Ensure the development of a comprehensive national detection strategy based on a multilayered defence in depth approach within available resources;"

  Para. 5.1. "The State should develop a national strategy for detection of a criminal act, or an unauthorized act, with nuclear security implications involving nuclear or other radioactive material that is out of regulatory control. The national detection strategy should be coordinated among and implemented by the competent authorities in accordance with the assigned responsibilities, ideally with oversight by the coordinating body."

4.1.3 Documentation

- National detection strategy;
- Description of goals and objectives for detection systems and measures;
- Summary of the national threat assessment and risk informed approach.

4.1.4 Review points/specimen questions

- Which competent authority/authorities is/are responsible for developing the national detection strategy? How is this strategy adopted? How is it communicated to stakeholders?
- How does the national detection strategy fit within the State's overall national security policy framework?
- How do competent authorities coordinate their allocation of resources to detection?
- How does analysis of risk inform the detection strategy?
- How does the detection strategy incorporate exterior, border/trans-border and interior threats?
- How often is the detection strategy reviewed?

4.2 DETECTION ARCHITECTURE

4.2.1 Objective

- Assess the necessary functions, capabilities and resources for an effective nuclear security detection architecture.

4.2.2 Basis[10]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS 15):

[10] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guide Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

Para 5.2. “Detection of nuclear and other radioactive material that is out of regulatory control can be achieved through an instrument alarm or an information alert. The State should design and implement nuclear security systems based on such indicators.”

Para. 5.3. “The State should ensure that the detection measures are supported by effective response measures (as described in Section 6).”

Para. 5.4. “Designated points of exit and of entry are vital for commerce. Therefore, the State should consider minimizing as much as possible the impact on the legitimate movement of goods and people while effectively carrying out nuclear security measures”.

Para. 5.5. “In order to prevent illegal transfer of nuclear or other radioactive material and detect the falsification of relevant documents, the State should ensure that competent authorities have the power to adopt measures for authenticating documentation and package labelling for authorized shipments and for verifying the declared content of the authorized shipments of nuclear or other radioactive material by appropriate means, where circumstances demand”.

4.2.3 Documentation

- Detection architecture design plan;
- Description of roles and responsibilities of competent authorities in relation to detection architecture;
- Administrative arrangements, e.g. memoranda of understanding for integration of measures for gathering and sharing information.

4.2.4 Review Points/Specimen Questions

- How does the detection architecture support the detection at designated and undesignated borders and strategic locations within the State’s interior?
- How does the detection architecture support nuclear security in relation to major public events?
- How does the detection architecture incorporate the following architecture design attributes
    - Risk-informed;
    - Multilayered, defence in depth (e.g., designated POEs, undesignated POEs, interior, strategic locations, major public events);
    - Graded and balanced;
    - Resilient and robust;
    - Adapts and evolves over time;
    - Unpredictability;
    - Operational flexibility;
    - Technical and non-technical detection means;
    - Tailored to specific conditions and circumstances;
    - Exploits opportunities to integrate at national, regional, and international levels; and

- Strategic communication?

- How does the detection architecture incorporate different operational modes, e.g. steady state, enhanced steady state, surge, etc.?
- How does information on detection systems (e.g., configuration management, status information) ensure situational awareness of capabilities at the site and national level?
- What are the mechanisms for data exchange among different levels of users (e.g., senior leaders, operators, technical support organizations, etc.)?
- How are general security procedures and techniques (e.g. suspicious indicators) integrated with the use of detection instruments?

4.3 DETECTION BY INSTRUMENT ALARM

4.3.1 Objective

- Determine whether the competent authorities have established systems and measures for detection by instruments of MORC at designated and undesignated points of entry/exit and within the interior of the State.

4.3.2 Basis[11]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 5.6. "Using the national threat assessment, the competent authorities should establish nuclear security systems for detection by instruments of nuclear and other radioactive material that is out of regulatory control. The detection systems should be based on a multilayered defence in depth approach and on the premise that such material could originate from both within or outside the State, and provide the necessary detection capability and capacity."
  Para. 5.7. "Taking into account the prioritization of available resources, the competent authorities should develop an appropriate instrument deployment plan, considering the following:
  - Transportation routes inside the State's territory, at locations where the likelihood of detection is maximized or in proximity to locations where nuclear or other radioactive material is produced, used, stored, consolidated or disposed;
  - The existence of any strategic location;
  - Operational and detection performance specifications of the detection instruments, in accordance with national and international standards and technical guidelines;
  - Capabilities, constraints and limitations on detection instruments at points of exit and of entry, both officially designated and undesignated;
  - Mobile and relocatable detection systems to provide flexibility and adjustments to evolving threats;
  - Detection requirements in support of law enforcement operations associated with information alerts;
  - Detection of radiation at an event of national significance, such as a major public event or at a strategic location that is considered to be vulnerable to a criminal act, or an

[11] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

unauthorized act, with nuclear security implications using nuclear or other radioactive material.

Para. 5.8. "The competent authorities should ensure that the following elements are included in the instrument deployment plan:

- Initial installation, calibration, and acceptance testing of equipment, the setting up of a maintenance procedure, and the adequate training and qualification of users and technical support staff;
- Systems and procedures for conducting radiation surveys or radiation searches for nuclear and other radioactive material out of regulatory control;
- Defining threshold levels of an instrument alarm;
- Establishing systems and procedures for performing initial alarm assessment and other secondary inspection actions such as localization, identification, categorization and characterization of nuclear and other radioactive material, including obtaining technical support from experts to assist in the assessment of an alarm that cannot be resolved on site;
- Provision and sustainment of supporting infrastructure to ensure effective detection, including personnel training, equipment maintenance, safe and secure disposition of discovered material and documented response procedures."

Para. 5.9. "In order to prevent a criminal act, or an unauthorized act, with nuclear security implications at a strategic location, especially during a major public event, the competent authorities should consider conducting radiation surveys of the area for nuclear and other radioactive material, securing the area before such an event and applying detection and response measures at the entry points and other strategic locations during such events".

Para. 5.10. "The competent authorities should develop a nuclear security culture and ensure that all those charged with operating detection instruments are deemed trustworthy, adequately trained and have sufficient skills and competency in the use of the equipment and understand the significance of any measurement that they take and what actions to take under defined circumstances."

4.3.3 Documentation

- Instrument deployment plans;
- Concept of operations for detection by instruments at designated and undesignated points of entry/exit, the interior of the State and during major public events;
- Site-specific documentation for select detection systems;
- Quality assurance policies and programmes;
- Plans for maintenance, performance testing, and quality assurance records for detection systems;
- Records from detection systems;
- Sustainability plan (e.g., obsolescence, maintenance, training plans, etc.).

4.3.4 Review points/specimen questions

- Which are the competent authorities responsible for operating and maintaining the detection systems?

- How does the selection and deployment of detection systems support the detection strategy? What are the criteria for deployment of detection instruments?
- What instruments have been deployed and where are they deployed (fixed, mobile, relocatable)? Is actual deployment consistent with deployment plans?
- What are the processes for installation of equipment, acceptance testing, calibration, and maintenance?
- How are the general procedures used for operating the detection systems, including the basis for establishing threshold settings and minimizing impact on flow of traffic and site operations?
- What are the training and exercise programmes that support instrument deployment plans?
- Are complementary detection techniques used, such as x-ray equipment, in connection with passive detection?
- What is the time-phased plan for instrument deployment, maintenance and sustainability?
- How are instrument alarms recorded?
- Does the quality assurance plan meet the requirements for forensic investigation?

4.4 DETECTION BY INFORMATION ALERT

4.4.1 Objective

- Determine whether the competent authorities have established means of gathering, storing, and analysing information with the goal of identifying threats and suspicious activities involving MORC.

4.4.2 Basis[12]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

Para. 5.11. "As part of the detection measures, the State should continuously gather, store and analyse operational information with the goal of identifying any threat, suspicious activity or abnormality involving nuclear or other radioactive material that may indicate the intention to commit a criminal act, or an unauthorized act, with nuclear security implications involving nuclear or other radioactive material within the State. The State should also cooperate with other States to provide and obtain information for better understanding of any threat".

Para. 5.12. "The State should develop a policy on encouraging persons to report to the competent authorities any suspicious or unusual activity potentially involving nuclear or other radioactive material that is out of regulatory control".

Para. 5.13. "The competent authorities should consider developing a policy on the dissemination of information to the news media with the aim of informing the public of lost, missing or stolen nuclear or other radioactive material to educate them in the risks associated

[12] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

with the material and to elicit information from the public about such material, taking care not to cause undue public concern".

Para. 5.14. "As part of the detection measures the State should implement procedures and protocols requiring health professionals, medical institutions and health authorities to immediately report to the relevant competent authorities, in accordance with domestic public health reporting policies, the occurrence of any suspicious radiation injuries or illnesses."

Para. 5.15. "The State should include the collection and analysis of information from medical surveillance as part of detection measures and, as appropriate, any report should be investigated by relevant competent authorities to determine the cause and consequence of the injury or illness".

Para. 5.16. "The State should consider including the identification of radiation injuries or illnesses as part of the training of relevant health professionals".

Para. 5.17. "The competent authority with regulatory responsibility should require authorized persons to report immediately any regulatory non-compliance which they suspect could have nuclear security implications. Such a report would enable the competent authority to assess the event and alert other competent authorities with the aim of preventing a consequent criminal or unauthorized act with nuclear security implications".

Para. 5.18. "The competent authority with regulatory responsibility should develop procedures and protocols to assist authorized persons to report their regulatory non-compliances having nuclear security implications".

Para. 5.19. "The State should ensure that competent authorities are legally empowered to require authorized persons to immediately report lost, missing or stolen nuclear or other radioactive material for which they hold an authorization. Such a report should be regarded as detection by an information alert of a potential criminal act, or an unauthorized act, with nuclear security implications".

Para. 5.20. "The State should ensure that any competent authority that issues authorizations related to nuclear or other radioactive material, and that receives a report that such material has been reported as lost, missing or stolen, promptly inform other relevant competent authorities".

Para. 5.21. "The competent authorities responsible for implementing nuclear security measures related to customs and border control should report the detection of any nuclear or other radioactive material that is not under regulatory control to other relevant competent authorities, including the regulatory body".

4.4.3 Documentation

- Plans and procedures, including MOUs for surging capabilities, to use detection technologies to support detection by information alert;
- Requirements for reporting regulatory non-compliance and loss of regulatory control;
- Protocols/MOUs for gathering and sharing operational information;
- Protocols for dissemination of information to the public on lost, missing, or stolen material;
- Policies/outreach to encourage reporting of suspicious or unusual activity by the medical community and the public;
- Training and exercise plans for information alerts.

4.4.4 Review points/specimen questions

- What are the competent authorities' roles and responsibilities related to detection by information alerts?
- How is information processed and communicated to competent authorities?
- How do information alerts support the national detection strategy?
- What information sources are used, e.g., medical community, regulatory body, industry, general public, national registry of radioactive sources, and international sources (such as IAEA, INTERPOL)?
- What are the procedures for authenticating documentation and package labelling for authorized shipments?
- How are law enforcement assets used to respond to information alerts?
- What are the training and exercise programmes that support detection by information alert?

4.5 INITIAL ASSESSMENT OF AN INSTRUMENT ALARM OR INFORMATION ALERT

4.5.1 Objective

- Determine whether the competent authorities responsible for detection have established and implemented procedures and protocols for the initial assessment of instrument alarms and information alerts;
- Determine the coordination mechanism among the responsible detection and response authorities and whether the detection measures activate response measures based on initial assessment.

4.5.2 Basis[13]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

Para. 5.22. "An instrument alarm or an information alert should lead to the conduct of an initial assessment. The relevant competent authorities should ensure the establishment of procedures and protocols for the initial assessment of both an instrument alarm and an information alert by the designated staff and, as applicable, by other designated organizations".

Para. 5.23. "Upon detection through an instrument alarm or an information alert, the relevant competent authorities should implement procedures and protocols with the view to interdict and interrupt the potential criminal act, or unauthorized act, with nuclear security implications".

Para. 5.24. "Upon a conclusive initial assessment that a nuclear security event has occurred, the relevant competent authorities should commence with response activities. If the initial assessment is inconclusive, further assessment should be undertaken, as described in paragraphs 6.7–6.10".

4.5.3 Documentation

- Protocols and procedures for the initial assessment of instrument alarms and information alerts;

[13] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

- Description of competent authority roles and responsibilities for initial assessment and activation of response measures.

4.5.4 Review points/specimen questions

- What are the processes, organizations, and resources for initial assessment of instrument alarms and information alerts?
- How is technical expert support provided for assessment of instrument alarms and information alerts?
- What are the procedures for secondary inspection?
- What are the processes for interdicting and interrupting a potential criminal act or unauthorized act, including the basis for detaining or releasing the entity/material causing the alarm?
- What is the process for reporting to response authorities and initiating the response for a potential nuclear security event?
- What are the experiences in handling false, innocent, and confirmed non-innocent alarms, system downtimes, etc.?

4.6 SUSTAINABILITY OF DETECTION SYSTEMS AND MEASURES

4.6.1 Objective

- Determine the set of policies, management practices and procedures associated with sustaining detection systems and measures.

4.6.2 Basis[14]

- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 12: Sustainability of Nuclear Security Regime
  "A nuclear security regime ensures that each competent authority and authorized person and other organizations with nuclear security responsibilities contribute to the sustainability of the regime by:
  (a) Developing, implementing, and maintaining appropriate and effective integrated management systems including quality management systems;
  (d) Allocating sufficient human, financial and technical resources to carry out the organization's nuclear security responsibilities on a continuing basis using a risk informed approach;
  (e) Routinely conducting maintenance, training, and evaluation to ensure the effectiveness of the nuclear security systems;
  (f) Having in place processes for using good practices and lessons learned from experience;
  (g) Establishing and applying measures to minimize the possibility of insiders becoming nuclear security threats;
  (h) Routinely performing assurance activities to identify and address issues and factors that may affect the capacity to provide adequate nuclear security, including cyber security, at all times."
- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 5.25. "The competent authorities should consider the policies, management practices and procedures associated with sustaining detection measures. They should apply sound management

[14] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control (NSS No. 21) and Nuclear Security Systems and Measures for Major Public Events (NSS No. 18) for preparation of "Suggestions":

systems and practices and administer a time phased programme that accounts for an evolving threat and changing resource constraints. These considerations should include the budget and staff allocation necessary to operate and sustain the detection measures."

4.6.3 Documentation

- Description of competent authorities' management systems for sustaining detection systems and measures including:
  - Allocation of financial, technical, and human resources;
  - Maintenance and lifecycle planning of detection instruments;
  - Evaluation plans, procedures, and reports.
- Description of training programmes.

4.6.4 Review Points/Specimen Questions

- Does the national detection strategy promote the sustainability of detection systems and measures?
- How do competent authorities ensure appropriate financial and technical resources for detection systems and measures?
- How do competent authorities ensure the allocation of sufficient human resources for implementation of detection systems and measures?
- How do competent authorities conduct maintenance, training and evaluation to ensure the effectiveness of the nuclear security detection systems?
- What are the mechanisms in place for improving the effectiveness of detection systems based on good practices and lessons learned from exercises and experience?

5. RESPONSE SYSTEMS AND MEASURES (MODULE 3)

The INSServ mission as it relates to the State's response framework is an assessment of the design and implementation of key components that contribute to effective nuclear security response systems and measures. The assessment should take into account the national capabilities to respond to nuclear security events, which include the ability to rapidly assess and define the type of the event and implement coordinated measures for effective response.

An effective response framework is based on the national legislative and regulatory framework for nuclear security, and is supported by a well-functioning system of law enforcement. The response framework is an integral part of a comprehensive nuclear security regime as it relates to MORC and complements detection systems and measures (Section 4). The response to a nuclear security event should also support any subsequent legal proceedings associated with the event, including the prosecution or extradition of alleged offenders. Finally, an effective response framework in relation to MORC at the scene is built on and integrated with the national framework for response to nuclear or radiological emergency as well as to any other emergency.

This section outlines the guidelines for the review of the response systems and measures, both technical and administrative, which can be accomplished in combination with the guidelines described in section 3 above.

While section 5.6 addresses the coordination and integration of nuclear security systems and measures for MORC with related emergency arrangements, sections 5.2 and 5.3 address, as relevant to nuclear security systems and measures related to MORC, various aspects of notification mechanisms, coordination and cooperation during the response including the command and control system, public

information and communication as well as aspects related to international assistance. Their coordination and integration with associated emergency arrangements put in place to respond to a nuclear or radiological emergency associated with MORC are addressed section 5.6 and are expected to be reviewed in that section.

5.1 RESPONSE SYSTEM[15]

5.1.1 Objective

- Assess whether the State has developed and established a system for response to nuclear security events.

5.1.2 Basis[16]

- International Convention for Suppression of Acts of Nuclear Terrorism (ICSANT):
  Article 18:
  "1. Upon seizing or otherwise taking control of radioactive material, devices or nuclear facilities, following the commission of an offence set forth in article 2, the State Party in possession of such items shall:
  (a) Take steps to render harmless the radioactive material, device or nuclear facility;
  (b) Ensure that any nuclear material is held in accordance with applicable International Atomic Energy Agency safeguards".
- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 11: Planning for, Preparedness for, and Response to, a Nuclear Security Event
  "A nuclear security regime ensures that relevant competent authorities and authorized persons are prepared to respond, and respond appropriately, at local, national, and international levels to nuclear security events by:
  (a) Developing arrangements and response plans for ensuring:
  (i) Rapid and effective mobilization of resources in response to a nuclear security event;
  (ii) Effective coordination and cooperation during response to a nuclear security event among all those carrying out response functions (including intelligence, law enforcement, crime scene investigation, and nuclear forensics) and between the security and safety aspects of the response;
  (iii) Effective use of relevant international emergency assistance and response systems;
  (iv) Investigation of any nuclear security event and, as appropriate, prosecution or extradition of alleged offenders".
- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 6.1. "Using legislative instruments as necessary, the State should develop a national response system for responding to a criminal act, or an unauthorized act, with nuclear security implications involving nuclear or other radioactive material that is out of regulatory control.

[15] For the purpose of this document, the term "response system" is considered equivalent to the term "response framework". As outlined in NSS No. 15, the detection and response systems and measures must be complementary and fully harmonized.
[16] In addition to the international legal instruments and IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Radiological Crime Scene Management (NSS No. 22-G) and Nuclear Forensics in Support of Investigations (NSS No. 2-G Rev. 1)) for preparation of "Suggestions" :

6.2. The State should ensure that the responsibilities for implementing the various response measures are assigned to the relevant competent authorities, together with sufficient resources to effectively undertake these tasks."

Para. 6.4. "The State should adopt a graded approach to respond to the various possible nuclear security events and differing degrees of consequences. In order to determine the appropriate response and follow-on actions, the State should strive to develop its own national capability to quickly grade nuclear security events, based on health and safety concerns and on circumstantial factors and the involved nuclear or other radioactive material".

Para. 6.5. "The competent authorities should develop a nuclear security culture and assign responsibility for the execution of the national response plan to appropriately equipped and trained personnel".

Para. 6.7. "The competent authorities should define the roles and responsibilities of technical staff, assigned experts and support organizations who may be involved in resolving an instrument alarm, if the initial assessment is not conclusive".

Para. 6.8. "The relevant competent authorities should ensure the establishment of procedures and protocols for final resolution of an instrument alarm which should result in the determination of whether or not a nuclear security event has occurred. The determination of a nuclear security event should lead to the activation of the national response plan by the relevant competent authority using a graded approach".

Para. 6.9. "The competent authorities should define the roles and responsibilities of, and obtain the necessary assistance from, the assigned experts and the support organizations, if the initial assessment is not conclusive".

Para. 6.10. "The relevant competent authorities should ensure the establishment of procedures and protocols for the assessment of an information alert which should result in the determination of whether or not a nuclear security event has occurred. The determination of a nuclear security event should lead to the activation of the national response plan by the relevant competent authority using a graded approach".

5.1.3 Documentation

- Legislation or regulations on designation of authority to a competent authority for overall response to nuclear security events;
- National response plan for nuclear security events;
- Procedures for assigning the necessary national and local resources for responding to nuclear security events as well as requesting international assistance.

5.1.4 Review points/specimen questions

- How does the nuclear security response system fit within the State's overall national security system, including the national emergency and/or disaster plans and radiological emergency plan?
- Are nuclear security scenarios included with other national-level response scenarios?
- How does the State ensure that the responsibilities for implementing the various response measures are assigned to the relevant competent authorities, together with sufficient resources to effectively undertake these tasks?
- Is there an assigned body responsible for coordinating the development and maintenance of the multi-agency plans and procedures for managing nuclear security events within the national response system?
- Are the response to the various possible nuclear security events and differing degrees of consequences based on graded approach?

- How do the competent authorities promote a nuclear security culture through the strategic, tactical and operational level of response for nuclear security events?
- How does the national response system facilitate appropriate multi-agency command, control, coordination, and communication for each type of nuclear security event?

5.2 NATIONAL NUCLEAR SECURITY RESPONSE PLAN FOR NUCLEAR SECURITY EVENTS

5.2.1 Objective

- Assess whether the State has developed a National Response Plan for nuclear security events.

5.2.2 Basis[17]

- Nuclear Security Fundamentals (NSS No. 20):

Essential Element 11: Planning for, Preparedness for, and Response to, a Nuclear Security Event:

"A nuclear security regime ensures that relevant competent authorities and authorized persons are prepared to respond, and respond appropriately, at local, national, and international levels to nuclear security events by:

(a) Developing arrangements and response plans for ensuring:

(i) Rapid and effective mobilization of resources in response to a nuclear security event;

(ii) Effective coordination and cooperation during response to a nuclear security event among all those carrying out response functions (including intelligence, law enforcement, crime scene investigation, and nuclear forensics) and between the security and safety aspects of the response;

(iii) Effective use of relevant international emergency assistance and response systems;

(iv) Investigation of any nuclear security event and, as appropriate, prosecution or extradition of alleged offenders.

(b) Periodically exercising, testing, and evaluating the plans for effectiveness by relevant competent authorities and authorized persons with the aim of ensuring timely implementation of comprehensive measures to:

(i) Mitigate and minimize harmful consequences to persons, property, society, and the environment from nuclear security events;

(ii) Locate, recover, and secure nuclear material and other radioactive material that is out of regulatory control;

(iii) Feed back into the preparedness process, including into the response plans, the results of exercises and tests of the plans, and of experience."

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

[17] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guide Radiological Crime Scene Management (NSS No. 22-G) and Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) for preparation of "Suggestions":

Para. 6.3. ″The implementation of the response system of the State should be documented in a national response plan (the Plan) outlining the various response measures, and should be implemented coherently by the various competent authorities, ideally coordinated by the coordinating body″.

Para. 6.17. ″In order to manage nuclear security events, the State should have a comprehensive national response plan for nuclear security events in combination with, inter alia, the national radiological emergency plan. The Plan should serve as: (1) a basis for establishing compatible operational tools (e.g. compatible communication systems) needed for prompt and effective response; and (2) a guide for the competent authorities to ensure that all necessary preparedness and response tasks are given the appropriate resources and support″.

Para. 6.18. ″The State should ensure that the Plan:

(a) Describes the process for various competent authorities to fulfil their roles and responsibilities in response to nuclear security events, including steps to:

- Notify and activate all relevant competent authorities;
- Notify all relevant international organizations and potentially affected States;
- Coordinate various organizations and command and control units of a nuclear security event, including federal, state and local response organizations;
- Locate, identify and categorize nuclear and other radioactive material;
- Detain and/or seize, recover and control material or render harmless any threat or associated device;
- Collect, secure and analyse evidence;
- Isolate, classify, package and document, any nuclear or other radioactive material, for transport, carriage, storage or disposal and placement under proper regulatory control;
- Initiate relevant investigations.

(b) Contains an appropriate command structure with integrated command, control and communication systems to effectively respond to a nuclear security event, preferably with a single person or competent authority assigned to direct the response at the scene.

(c) Has provisions for coordination among the competent authorities, including exchange of relevant information concerning their respective roles, responsibilities and procedures.

(d) Describes the roles, responsibilities and procedures for the competent authorities for medical services, handling of hazardous material, radiation protection and safety and other technical support organizations and for nuclear and conventional forensic laboratories.

(e) Has arrangements for informing the news media and the public, as appropriate, in a coordinated, understandable and consistent manner.

(f) Contains provisions for the transport of any seized or recovered nuclear or other radioactive material in accordance with the national transport safety and security regulations and requirements, or the IAEA Regulations for the Safe Transport of Radioactive Material if there are no such national requirements or regulations.

(g) Identifies the standard operating procedures at the local level for nuclear security events. In addition, all local level response plans should be integrated into the Plan, as appropriate.

(h) Takes into account the existing national radiological emergency plan, radiological emergency response procedures and the relevant IAEA Safety Standards. The Plan should also be coordinated with the arrangements for response to non-nuclear emergencies.

(i) Incorporates the possibility of multiple and simultaneous nuclear security events. In addition, the plan should incorporate the possibility of disruption of response infrastructure that would delay an effective response capability.

(j) Incorporates the mechanisms for requesting assistance, both domestically and internationally, when necessary, such as assistance for the recovery of nuclear and other radioactive material, to render harmless the device and nuclear forensics″.

5.2.3 Documentation

- National response plan for nuclear security events;
- Description of roles and responsibilities of competent authorities for a response to nuclear security events;
- Administrative arrangements defining the relationships among the involved organizations and the command, control, coordination, and communication structure.

5.2.4 Review points/specimen questions

- How is the national response plan for nuclear security events integrated with the overall National Response Plan?
- How is the implementation of the response system documented in a National Response Plan?
- How is the National Response Plan implemented and coordinated?
- How is the National Response Plan for nuclear security harmonized with organizational plans and procedures?
- Does the National Response Plan follow a graded approach for responding to the various possible nuclear security event types?
- What are the processes for exercising, evaluating, and revising the National Response Plan?
- How does the National Response Plan for nuclear security provide for the timely and effective mobilization of resources in response to a nuclear security event?
- What are the measures to appropriately equip and train response personnel at the local and national level?
- How does the National Response Plan for nuclear security facilitate appropriate multi-agency command, control, coordination, and communication for response to each type of nuclear security event?
- What are the plans and procedures for the provision of information to the public in the event of a nuclear security event?
- How are the on-scene and off-scene capabilities and resources that are needed to respond to different types of nuclear security events identified in the National Response Plan, e.g.:
    - Specialist law enforcement capabilities, such as fully trained responders and specialist investigators, bomb squad technicians, etc.;
    - Technical and scientific support;

- Conventional and nuclear forensic support;
- Equipment and personnel for radiation detection, on-scene survey and search operations (e.g. for aerial, terrestrial or maritime survey);
- Secure communications?

5.3 NOTIFICATION OF NUCLEAR SECURITY EVENTS

5.3.1 Objective

- Assess the State's capability to provide timely notification regarding nuclear security events to relevant competent authorities and other stakeholders as well as international organizations and other States.

5.3.2 Basis[18]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 6.11. "Notification of the relevant competent authorities should be carried out as soon as the assessment of an instrument alarm or information alert results in the determination of a nuclear security event. In order to initiate their response function, the competent authorities should notify other relevant competent authorities within the State of any nuclear security event taking into account the graded approach as described in paragraph 6.4.
  Para. 6.12. "In the case of a nuclear security event, the State should forthwith notify relevant international organizations and other States in accordance with international agreements and/or national policy, as described in paragraphs 7.1–7.5".

5.3.3 Documentation

- National Response Plan for nuclear security events;
- Administrative arrangements, e.g. memoranda of understanding, information exchange protocols, etc.;
- Examples of relevant notifications.

5.3.4 Review points/specimen questions

- What are the communication systems within and among the responsible competent authorities?
- How do coordination arrangements promote effective, timely and secure exchange of information among organizations and various command levels?
- What are the arrangements for informing the news media and the public, as appropriate, in a coordinated, understandable and consistent manner?
- What are the mechanisms for requesting information and assistance, both nationally and internationally?
- Who are the national points of contact for the Incident and Trafficking Database, INTERPOL, and other international information-sharing mechanisms (e.g. USIE)?

5.4 RADIOLOGICAL CRIME SCENE MANAGEMENT

5.4.1 Objective

- Assess the State's capabilities and capacities for managing radiological crime scenes.

[18] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing a Guide Radiological Crime Scene Management (NSS No. 22-G) for preparation of "Suggestions" and "Good Practices":

5.4.2 Basis[19]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 6.13. "The location of any nuclear security event should be managed as a potential crime scene, as appropriate. The competent authorities should ensure coordination among those involved in recovering control over the nuclear or other radioactive material, those concerned with safety and treating victims and those concerned with gathering evidence for possible subsequent investigation and prosecution".

  Para. 6.14. "The competent authorities should ensure that persons involved in the response should be suitably qualified and trained and should, as appropriate, be aware of the concepts of operations and the basic concepts of radiological crime scene management, evidence collection and radiation protection".

  Para. 6.15. "Personnel at the crime scene should be aware of the potential for news media interest. The competent authorities should make plans for proper and timely dissemination of information to the news media, including information pertaining to safety and security".

5.4.3 Documentation

- Criminal procedure code;
- Rules for admissibility of evidence;
- Administrative arrangements, e.g. memoranda of understanding;
- Competent authorities' standard operating procedures;
- Lists of approved facilities, equipment, assets, and resources.

5.4.4 Review points/specimen questions

- What is the incident command structure for on-scene and off-scene operations?
- What are the procedures for scene control, common hazards/risk assessment, risk reduction, forensic evidence collection and management, release of scene, and after-action review?
- What are the procedures for maintaining chain of custody and integrity of evidence?
- What are the procedures for collecting, handling, packaging, transporting and storing of potential evidence?
- What are the provisions for handling potential evidence contaminated with radionuclides?
- How are disputes regarding safety, security and investigative considerations resolved?
- What are the mechanisms for communicating necessary information for on-scene radiation safety for all nuclear security event types?
- How does the State's general crime-scene management training incorporate information regarding nuclear security events?
- How are the equipment and associated training for on-scene responders, including remote handling capabilities organized?

[19] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) and Radiological Crime Scene Management (NSS No. 22-G) for preparation of "Suggestions":

5.5 NUCLEAR FORENSICS

5.5.1 Objective

- Assess the State's capabilities and capacities for utilizing nuclear forensic techniques in support of investigation and response to nuclear security events.

5.5.2 Basis[20]

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):

  Para. 6.16. "The State should apply nuclear forensic techniques in its designated laboratories to seized nuclear or other radioactive material using a graded approach based on the quantity and nature of material, for the purpose of identifying the source, history and the route of transfer, taking into account the preservation of evidence. Where possible, seized materials should be categorized on-site and should be characterized in a designated laboratory. Furthermore, traditional forensics should also be applied in designated laboratories for contaminated evidence, as necessary".

5.5.3 Documentation

- Criminal procedure code;
- Rules for admissibility of evidence;
- Administrative arrangements, e.g. memoranda of understanding;
- Competent authorities' standard operating procedures;
- Lists of approved facilities, equipment, assets, and resources.

5.5.4 Review points/specimen questions

- What nuclear forensic capabilities does the State possess?
- Are there designated national laboratories with appropriate quality assurance systems for conducting nuclear forensic analysis?
- What are the procedures for designating laboratory capabilities for conducting nuclear forensics and/or traditional forensics on radioactively contaminated materials?
- Has the State made arrangements with other States or relevant regional or international institutions for analysis and interpretation of nuclear and other radioactive material, or radioactively contaminated materials, if required?
- What existing capabilities and expertise can be used for nuclear and other radioactive material analysis to include categorization and characterization?
- What are the means and procedures for receiving, handling, packaging, transporting and storing of material with respect to nuclear forensic laboratories?
- How is chain of custody of evidence maintained throughout the nuclear forensics process?
- Has the State established a national nuclear forensics library or similar system for determining if nuclear or other radioactive material found outside regulatory control is consistent with national holdings?
- Has the State ensured appropriate measures for information security when establishing a national nuclear forensics library?
- What actions have been undertaken to allow nuclear forensic exhibits to be admitted as evidence in judicial proceedings?

[20] In addition to the IAEA Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) and Radiological Crime Scene Management (NSS No. 22-G) for preparation of "Suggestions" and "Good Practices":

5.6 EFFECTIVE COORDINATION AND COOPERATION BETWEEN THE NUCLEAR SECURITY MEASURES AND ARRANGEMENTS FOR EMERGENCY PREPAREDNESS AND RESPONSE

5.6.1 Objective

- Assess the State's capability for effective coordination and cooperation between nuclear security measures and arrangements for emergency preparedness and response

5.6.2 Basis[21]

- Nuclear Security Fundamentals (NSS No. 20):
  Essential Element 11: "Planning for, Preparedness for, and Response to a Nuclear Security Event:

  ″A nuclear security regime ensures that relevant competent authorities and authorized persons are prepared to respond, and respond appropriately, at local, national, and international levels to nuclear security events by:

  (a) Developing arrangements and response plans for ensuring:

  (i) Rapid and effective mobilization of resources in response to a nuclear security event;

  (ii) Effective coordination and cooperation during response to a nuclear security event among all those carrying out response functions (including intelligence, law enforcement, crime scene investigation, and nuclear forensics) and between the security and safety aspects of the response;
  (iii) Effective use of relevant international emergency assistance and response systems;

  (b) Periodically exercising, testing, and evaluating the plans for effectiveness by relevant competent authorities and authorized persons with the aim of ensuring timely implementation of comprehensive measures″ to:

  (i) Mitigate and minimize harmful consequences to persons, property, society, and the environment from nuclear security events;

  (ii) Locate, recover, and secure nuclear material and other radioactive material that is out of regulatory control;

  (iii) Feed back into the preparedness process, including into the response plans, the results of exercises and tests of the plans, and of experience.″

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 6.6. "For nuclear security events, the responsible competent authorities should complement and support the safety emergency response activities at the international, federal, state and local levels to mitigate and minimize the radiological consequences to human health and the environment. The coordination of competent authorities is vital for an effective response at the scene".

[21] In addition to the IAEA Nuclear Security Fundamentals and Recommendations and Safety Standards Series publications, the INSServ team can utilize the Implementing Guides Radiological Crime Scene Management (NSS No. 22-G) and Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) for preparation of "Suggestions":

Para. 6.17. “In order to manage nuclear security events, the State should have a comprehensive national response plan for nuclear security events in combination with, inter alia, the national radiological emergency plan. […]”

Para. 6.18. “The State should ensure that the Plan:

(a) Describes the process for various competent authorities to fulfil their roles and responsibilities in response to nuclear security events, including steps to:

- Notify and activate all relevant competent authorities;
- Notify all relevant international organizations and potentially affected States;
- Coordinate various organizations and command and control units of a nuclear security event, including federal, state and local response organizations;
- Locate, identify and categorize nuclear and other radioactive material;
- […]

(b) Contains an appropriate command structure with integrated command, control and communication systems to effectively respond to a nuclear security event, preferably with a single person or competent authority assigned to direct the response at the scene.

(c) Has provisions for coordination among the competent authorities, including exchange of relevant information concerning their respective roles, responsibilities and procedures.

(d) Describes the roles, responsibilities and procedures for the competent authorities for medical services, handling of hazardous material, radiation protection and safety and other technical support organizations and for nuclear and conventional forensic laboratories.

(e) Has arrangements for informing the news media and the public, as appropriate, in a coordinated, understandable and consistent manner.

[…]

(h) Takes into account the existing national radiological emergency plan, radiological emergency response procedures and the relevant IAEA Safety Standards. The Plan should also be coordinated with the arrangements for response to non-nuclear emergencies.

[…]

(j) Incorporates the mechanisms for requesting assistance, both domestically and internationally, when necessary, such as assistance for the recovery of nuclear and other radioactive material, to render harmless the device and nuclear forensics”.

- Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency (GSR Part 7):
  “Requirement 1: The emergency management system;
  The government shall ensure that an integrated and coordinated emergency management system for preparedness and response for a nuclear or radiological emergency is established and maintained”. In particular:
  > “4.3. The emergency management system shall be integrated, to the extent practicable, into an all-hazards emergency management system […]”.

  “Requirement 2: Roles and responsibilities in emergency preparedness and response:

The government shall make provisions to ensure that roles and responsibilities for preparedness and response for a nuclear or radiological emergency are clearly specified and clearly assigned." In particular:
"4.10. The government shall establish a national coordinating mechanism to be functional at the preparedness stage, consistent with its emergency management system, with the following functions: […]

(c)To coordinate and ensure consistency between the emergency arrangements of the various response organizations, operating organizations and the regulatory body at local, regional and national levels under the all-hazards approach, including those arrangements for response to relevant nuclear security events, and, as appropriate, those arrangements of other States and of international organizations; […]

(e) To ensure that appropriate emergency arrangements are in place, both on the site and off the site, as appropriate, in relation to facilities and activities under regulatory control, both within the State and, as relevant, beyond its borders, and also for sources that are not under regulatory control; […]

(h) To ensure that appropriate and coordinated programmes of training and exercises are in place and implemented, and that training and exercises are systematically evaluated;

Requirement 4: "Hazard assessment
The government shall ensure that a hazard assessment is performed to provide a basis for a graded approach in preparedness and response for a nuclear or radiological emergency". In particular:
"4.22. The government shall ensure that the hazard assessment includes consideration of the results of threat assessments made for nuclear security purposes" .
"Requirement 6: Managing operations in an emergency response
The government shall ensure that arrangements are in place for operations in response to a nuclear or radiological emergency to be appropriately managed". In particular:
"5.6. Arrangements for response to a nuclear or radiological emergency shall be coordinated and integrated with arrangements at the local, regional and national levels for response to a conventional emergency and to a nuclear security event. These arrangements shall take into consideration the fact that the initiator of the nuclear or radiological emergency may not be known early in the response.
5.7. Arrangements shall be made for the establishment and use of a clearly specified and unified command and control system for emergency response under the all-hazards approach as part of the emergency management system."

"5.18. In the event of a transnational emergency, the notifying State shall promptly notify the IAEA of the emergency and, either directly or through the IAEA, those States that could be affected by it. The notifying State shall provide information on the nature of the emergency and on its potential transnational consequences, and shall respond to requests from other States and from the IAEA for information for the purposes of mitigating any consequences.
"5.19. The State shall make known to the IAEA and to other States, directly or through the IAEA, its single warning point responsible for receiving emergency notifications and information from other States and information from the IAEA. […]
"5.20. The notifying State shall have arrangements in place for promptly responding to requests from other States or from the IAEA for information in respect of a transnational emergency, in particular with regard to minimizing any consequences. These arrangements

shall include making known to the IAEA and to other States, directly or through the IAEA, the notifying State's designated organization(s) for so doing.

"5.29. Arrangements shall be made to provide expertise and services in radiation protection promptly to local officials, first responders in an emergency at an unforeseen location and specialized services (e.g. law enforcement agencies) […], and to those personnel at locations where there is a significant likelihood of encountering a dangerous source that is not under control […]. This shall include arrangements for on-call advice or other appropriate mechanisms and arrangements to dispatch to the site an emergency team capable of assessing radiation hazards, mitigating radiological consequences and managing the exposure of emergency workers. In addition, arrangements shall be made to determine whether and when additional assistance is necessary and to determine how to obtain such assistance […].

"5.30. Arrangements shall be made to initiate a prompt search in the event that a dangerous source could possibly be in the public domain as a result of its loss or unauthorized removal […].

"5.44. Operating personnel for activities in category IV, first responders in an emergency at an unforeseen location and those personnel at locations where there is a significant likelihood of encountering a dangerous source that is not under control […] shall be provided with guidance and training on taking urgent protective actions and other response actions. This shall include guidance and training on the approximate radius of the inner cordoned off area in which urgent protective actions and other response actions would initially be taken and on the adjustment of this area on the basis of observed or assessed conditions on the site.

"5.69. Arrangements shall be made for providing useful, timely, true, clear and appropriate information to the public in a nuclear or radiological emergency […]. These arrangements shall take into account the need to protect sensitive information in circumstances where a nuclear or radiological emergency is initiated by a nuclear security event.

"Requirement 17: The government shall ensure that adequate arrangements are in place to benefit from, and to contribute to the provision of, international assistance for preparedness and response for a nuclear or radiological emergency."

Requirement 23: "Plans and procedures for emergency response

The government shall ensure that plans and procedures necessary for effective response to a nuclear or radiological emergency are established". In particular:

Para. 6.16. "Plans, procedures and other arrangements for effective emergency response, including coordinating mechanisms, letters of agreement or legal instruments, shall be made for coordinating a national emergency response. The arrangements for a coordinated national emergency response:

- […]
- Shall describe the coordination effected between these arrangements and the arrangements for response to a conventional emergency and to a nuclear security event."

"6.17. […]The emergency plans shall be coordinated with other plans and procedures that may be implemented in a nuclear or radiological emergency, to ensure that the simultaneous implementation of the plans would not reduce their effectiveness or cause conflicts".

"6.30. Exercise programmes shall be developed and implemented to ensure that all specified functions required to be performed for emergency response, all organizational interfaces […] and the national level programmes […] are tested at suitable intervals. These programmes shall include the participation in some exercises of, as appropriate and feasible, all the

organizations concerned, people who are potentially affected, and representatives of news media. […]"

5.6.3 Documentation

- National Response Plan describing roles and responsibilities of all authorities and organizations responsible for nuclear security measures and means for coordination with emergency response organizations;
- National emergency response plan describing the roles and responsibilities of all authorities and organizations in preparedness and response to nuclear or radiological emergency and elaborating relevant aspects of emergency response related to the means for coordination and integration;
- Administrative arrangements, e.g. memoranda of understanding, information exchange protocols, etc.; describing the coordination and cooperation mechanism among the organizations involved in emergency response and response to nuclear security events;
- Procedures for coordination between authorities with responsibilities in nuclear security and those with responsibilities in emergency response to nuclear security events;
- Evaluation reports from exercises in which coordination protocols have been tested and any associated action plans;
- Extracts from training programmes for nuclear security personnel in which elements of radiation protection and safety, emergency preparedness and response and coordination mechanisms are covered.

5.6.4 Review points/specimen questions

- How nuclear security measures for response to nuclear security events are integrated within overall emergency management system so there can be a benefit from established arrangements, and allocated resources?
- What coordination mechanism is used to ensure appropriate coordination takes place at the preparedness stage and during the response to provide for coordinated and integrated response at local, regional and national level to nuclear security events that may give or give rise to nuclear or radiological emergency?
- How it is ensured that roles and responsibilities for nuclear security measures and for emergency response are clearly assigned and well understood by all relevant authorities in cases for simultaneous response to nuclear security events (due to actual or perceived hazard warranting an emergency response) and that any potentially conflicting actions in priorities during the response are resolved at the preparedness stage?
- How it is ensured that the command and control system used for response to nuclear security events is based on the unified command and control system used for emergency response (under the all hazards approach)? How it is ensured that this system provides for integration of various response actions? How are disputes, if any, regarding safety, security and investigative considerations resolved during the response?
- How the results from the threat assessment are shared with relevant authorities with responsibilities in emergency preparedness and response to ensure adequate planning and coordination within overall emergency arrangements take place for response to nuclear security events that may result in a nuclear or radiological emergency involving MORC?
- How it is ensured that national response plan for response to nuclear security events is coordinated and integrated with the national emergency response plan as well as plans for response to any conventional emergency?

- What arrangements including protocols are in place for effective coordination and cooperation between various authorities with responsibilities in nuclear security and emergency response? Do the arrangements address the notification and activation mechanism, response coordination within the unified command and control system and the exchange of information among the organizations at different levels?
- What arrangements are in place for coordinating the information exchange and assistance at international level considering established international framework (such as under the Early Notification and Assistance Conventions), e.g. RANET and USIE?
- What arrangements are in place for coordinating the provision of public information in the event of a nuclear security event that (may) give rise to a nuclear or radiological emergency (either due to actual or due to perceived hazards)?
- What are the arrangements for the cross-disciplinary training activities, drills and exercises between authorities with responsibilities for nuclear security measures in response to nuclear security event and those with responsibilities for emergency preparedness and response for same events at the local, regional, national and/or interagency levels?
- What are the mechanisms for appraisal and re-evaluation of the coordination and integration of nuclear security measures and emergency arrangements?

5.7 SUSTAINABILITY OF RESPONSE SYSTEMS AND MEASURES

5.7.1 Objective

- Assess the policies, management practices and procedures associated with sustaining nuclear security response framework.

5.7.2 Basis[22]

- Nuclear Security Fundamentals (NSS No. 20):

  Essential Element 12: Sustainability of Nuclear Security Regime

  "A nuclear security regime ensures that each competent authority and authorized person and other organizations with nuclear security responsibilities contribute to the sustainability of the regime by:

  (a) Developing, implementing, and maintaining appropriate and effective integrated management systems including quality management systems;

  (d) Allocating sufficient human, financial and technical resources to carry out the organization's nuclear security responsibilities on a continuing basis using a risk informed approach;

  (e) Routinely conducting maintenance, training, and evaluation to ensure the effectiveness of the nuclear security systems;

  (f) Having in place processes for using good practices and lessons learned from experience;

  (g) Establishing and applying measures to minimize the possibility of insiders becoming nuclear security threats;

[22] In addition to the IAEA Fundamentals and Recommendations publications, the INSServ team can utilize the Implementing Guides Nuclear Forensics in Support of Investigations (NSS No. 2-G (Rev. 1)) and Radiological Crime Scene Management (NSS No. 22-G) for preparation of "Suggestions":

(h) Routinely performing assurance activities to identify and address issues and factors that may affect the capacity to provide adequate nuclear security, including cyber security, at all times."

- Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control (NSS No. 15):
  Para. 6.24. "The competent authorities should ensure sustainability of the response measures. This should include a robust maintenance programme for response equipment which should include periodic preventive maintenance, testing and calibration".

5.7.3 Documentation

- Description of competent authorities' management systems for sustaining response systems and measures including:
  - Allocation of financial, technical, and human resources;
  - Maintenance and lifecycle planning of response technical and administrative systems;
  - Evaluation plans, procedures, and reports;
  - Description of training programmes.

5.7.4 Review Points/Specimen Questions

- Does the State promote the sustainability of response systems and measures?
- How do competent authorities ensure appropriate financial and technical resources for response systems and measures?
- How do competent authorities ensure the allocation of sufficient human resources for implementation of response systems and measures?
- How do competent authorities conduct maintenance, training, and evaluation to ensure the effectiveness of the nuclear security response systems and measures?
- What are the mechanisms in place for improving the effectiveness of response systems and measures based on good practices and lessons learned from exercises and experience?

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No. 25

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