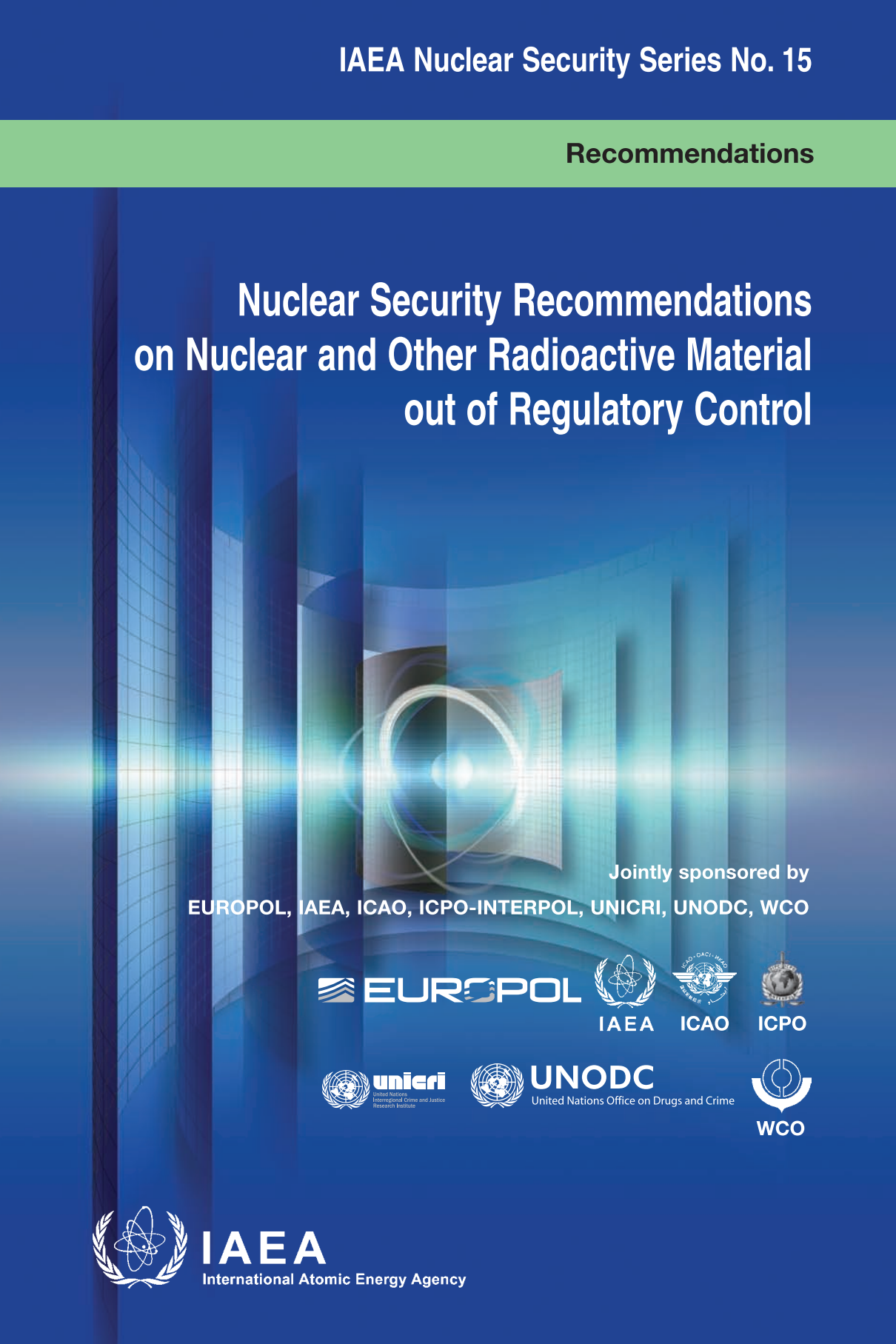
IAEA Nuclear Security Series No. 15

Recommendations

Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control



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Nuclear security issues relating to the prevention and detection of, and response to, theft, sabotage, unauthorized access and illegal transfer or other malicious acts involving nuclear material and other radioactive substances and their associated facilities are addressed in the **IAEA Nuclear Security Series** of publications. These publications are consistent with, and complement, international nuclear security instruments, such as the amended Convention on the Physical Protection of Nuclear Material, the Code of Conduct on the Safety and Security of Radioactive Sources, United Nations Security Council Resolutions 1373 and 1540, and the International Convention for the Suppression of Acts of Nuclear Terrorism.

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DRAFTING AND REVIEW

International experts assist the IAEA Secretariat in drafting these publications. For Nuclear Security Fundamentals, Recommendations and Implementing Guides, open-ended technical meeting(s) are held by the IAEA to provide interested Member States and relevant international organizations with an appropriate opportunity to review the draft text. In addition, to ensure a high level of international review and consensus, the Secretariat submits the draft texts to all Member States for a period of 120 days for formal review. This allows Member States an opportunity to fully express their views before the text is published.

Technical Guidance publications are developed in close consultation with international experts. Technical meetings are not required, but may be conducted, where it is considered necessary, to obtain a broad range of views.

The process for drafting and reviewing publications in the IAEA Nuclear Security Series takes account of confidentiality considerations and recognizes that nuclear security is inseparably linked with general and specific national security concerns. An underlying consideration is that related IAEA safety standards and safeguards activities should be taken into account in the technical content of the publications.

NUCLEAR SECURITY RECOMMENDATIONS ON NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL

IAEA NUCLEAR SECURITY SERIES No. 15

NUCLEAR SECURITY RECOMMENDATIONS ON NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL

RECOMMENDATIONS

JOINTLY SPONSORED BY THE
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FOREWORD

The possibility that nuclear or other radioactive material could be used for malicious purposes cannot be ruled out in the current global situation. States have responded to this risk by engaging in a collective commitment to strengthen the protection and control of such material and to respond effectively to nuclear security events. States have agreed to strengthen existing instruments and have established new international legal instruments to enhance nuclear security worldwide. Nuclear security is fundamental in the management of nuclear technologies and in applications where nuclear or other radioactive material is used or transported.

Through its Nuclear Security Programme, the IAEA supports States to establish, maintain and sustain an effective nuclear security regime. The IAEA has adopted a comprehensive approach to nuclear security. This recognizes that an effective national nuclear security regime builds on: the implementation of relevant international legal instruments; information protection; physical protection; material accounting and control; detection of and response to trafficking in such material; national response plans; and contingency measures. With its Nuclear Security Series, the IAEA aims to assist States in implementing and sustaining such a regime in a coherent and integrated manner.

The IAEA Nuclear Security Series comprises Nuclear Security Fundamentals, which include objectives and essential elements of a State's nuclear security regime; Recommendations; Implementing Guides; and Technical Guidance.

Each State carries the full responsibility for nuclear security, specifically: to provide for the security of nuclear and other radioactive material and associated facilities and activities; to ensure the security of such material in use, storage or in transport; to combat illicit trafficking and the inadvertent movement of such material; and to be prepared to respond to a nuclear security event.

This is a Recommendations level publication for the nuclear security of nuclear and other radioactive material that is out of regulatory control. It is based on national experience and practices, and publications in the field of nuclear security, as well as the international instruments related to nuclear security. These recommendations are provided for consideration by States and competent authorities.

This publication is jointly sponsored by the European Police Office (EUROPOL), IAEA, International Civil Aviation Organization (ICAO), International Criminal Police Organization-INTERPOL (ICPO-INTERPOL), United Nations Interregional Crime and Justice Research Institute (UNICRI), United Nations Office on Drugs and Crime (UNODC) and the World Customs Organization (WCO).

The preparation of this publication in the IAEA Nuclear Security Series has been made possible by the contribution of a large number of experts from IAEA Member States and co-sponsoring organizations. An extensive consultation process with all Member States has included open-ended technical meetings in Vienna, the first in February 2010. The draft was then circulated to all Member States for 120 days to solicit further comments and suggestions. During a final open-ended technical meeting in September 2010, the comments received from Member States were reviewed and consensus was obtained on the final version of this publication.

CONTENTS

1. INTRODUCTION

BACKGROUND

1.1. The IAEA has established a Nuclear Security Programme and instituted a Nuclear Security Series of publications to provide recommendations and guidance that States can use in establishing, implementing and maintaining their national *nuclear security regimes*[1].

1.2. The IAEA Nuclear Security Series framework comprises four levels of publications: Nuclear Security Fundamentals; Recommendations; Implementing Guides; and Technical Guidance.

1.3. The top tier publication — Nuclear Security Fundamentals — contains objectives and essential elements of nuclear security[2] and provides the basis for security recommendations.

1.4. The second tier set of Recommendations elaborates on the essential elements of nuclear security and presents international consensus on what States should do in applying these essential elements.

1.5. The third and fourth tiers — Implementing Guides and Technical Guidance — provide more detailed information on implementing the recommendations using appropriate measures.

1.6. This current publication provides recommendations for the nuclear security of nuclear and other *radioactive material* that is out of *regulatory control*. In developing these recommendations, national experience and practice and guidance publications in the field of nuclear security were used, as were the primary nuclear security related international legal instruments such as the

[1] Italicized words in the text represent terms defined in the section on Definitions. The recommendations outlined in this publication are based on the provisions of relevant binding and non-binding instruments related to nuclear security. When drafting domestic legislation based on these instruments, States should ensure that the definitions used therein are properly incorporated in their domestic legislation.

[2] Nuclear security focuses on the prevention of, *detection* of, and *response* to, criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities, or associated activities. Other acts determined by the State to have an adverse impact on nuclear security should be dealt with appropriately.

Convention on the Physical Protection of Nuclear Material and its 2005 Amendment [1], the International Convention for the Suppression of Acts of Nuclear Terrorism [2], United Nations Security Council resolution 1540 (2004) [3] and the Code of Conduct on the Safety and Security of Radioactive Sources [4]. An overview of the legislative history and salient provisions of the primary international instruments, both binding and non-binding, that are related to nuclear security has been published in the IAEA International Law Series [5]. Another resource for relevant international conventions and treaties is the United Nations publication on International Instruments Related to the Prevention and Suppression of International Terrorism [6].

1.7. The recommendations herein should be taken in conjunction with obligations undertaken by States parties to applicable international legal instruments and are not intended to override or modify obligations under such instruments. The present publication will assist States to implement a comprehensive *nuclear security regime* including any obligations and commitments they might have with respect to international legal instruments.

1.8. This publication is complementary to and consistent with the following Nuclear Security Recommendations publications on:

— Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5) [7]; and
— Radioactive Material and Associated Facilities [8].

These provide recommendations for *nuclear material* and other *radioactive material* that is under *regulatory control*. In order to establish a comprehensive national *nuclear security regime,* the recommendations contained in all three publications should be implemented.

1.9. The focus of the recommendations to a State contained in this publication is on security related measures associated with nuclear and other *radioactive material* that is out of *regulatory control*. References are made to safety related and emergency response guidance throughout the text in order to emphasize the importance of the interface between safety and security.

PURPOSE

1.10. The purpose of this publication is to provide guidance to States in strengthening their *nuclear security regimes*, and thereby contributing to an effective global nuclear security framework, by providing:

- Recommendations to States and their *competent authorities* on the establishment or improvement of the capabilities of their *nuclear security regimes*, for carrying out effective strategies to deter, detect and respond to a criminal act, or an unauthorized act, with nuclear security implications[3], involving nuclear or other *radioactive material* that is out of *regulatory control;*
- Recommendations to States in support of international cooperation aimed at ensuring that any nuclear or other *radioactive material* that is out of *regulatory control*, whether originating from within the State or from outside that State, is placed under *regulatory control* and the alleged offenders are, as appropriate, prosecuted or extradited.

These recommendations are provided for consideration by States and *competent authorities*, but are not mandatory upon States and do not infringe the sovereign rights of States.

SCOPE

1.11. This publication provides recommendations to a State for the nuclear security of nuclear or other *radioactive material* that has been reported as being

[3] A 'criminal act' is normally covered by criminal or penal law in a State, whereas an 'unauthorized act' is typically the subject of administrative or civil law. In addition, criminal acts involving nuclear or other *radioactive material* may constitute offences related to acts of terrorism which, in some States, are subject to special legislation that may be of relevance in following these recommendations. Unauthorized acts with nuclear security implications could include both intentional and unintentional unauthorized acts as determined by the State, as described in footnote 2. Examples of a criminal act or an unauthorized act with nuclear security implications could, if determined by the State, include: (1) the undertaking of an unauthorized activity involving *radioactive material* by an *authorized person;* (2) the unauthorized possession of *radioactive material* by a person with the intent to commit a criminal or unauthorised act with such material, or to facilitate the commission of such acts; or (3) the failure of an authorized person to maintain adequate control of *radioactive material*, thereby making it accessible to persons intending to commit a criminal or an unauthorized act, using such material.

out of *regulatory control*, as well as for material that is lost, missing or stolen but has not been reported as such, or has been otherwise discovered.

1.12. This publication includes recommendations to a State for the *detection* and assessment of alarms and alerts and for a graded *response* to criminal or unauthorized acts with nuclear security implications involving nuclear or other *radioactive material* out of *regulatory control*. The recommended actions cover the confirmation of a credible threat, assessment and interdiction of an attempted act and response to a *nuclear security event*.

1.13. The publication does not provide recommendations for the security of *nuclear material* or other *radioactive material* that is under *regulatory control.* Recommendations for such material can be found in the IAEA Nuclear Security Series publications mentioned in paragraph 1.8 [7, 8].

1.14. This publication does not provide recommendations on preventing and protecting against the sabotage of *nuclear material* and other *radioactive material* in authorized use, storage, or transport, or in the case of the sabotage of their associated facilities and associated activities. These matters are addressed in IAEA Nuclear Security Series publications identified in paragraph 1.8 [7, 8].

1.15. For a *nuclear security event* with exposure to, potential exposure to, or dispersal of nuclear or other *radioactive material*, the focus of this publication is on recommendations to a State on the recovery and security of the material and the management of the *nuclear security event*. States should refer to IAEA Safety Standards Series publications for further information about the measures needed for protection of health and safety, which are of primary importance in responding to an exposure or dispersal event.

STRUCTURE

1.16. Section 2 provides the objectives of the *nuclear security regime* of a State.

1.17. Section 3 provides general recommendations to the State and, in particular, for the roles and responsibilities of the State and various *competent authorities* and on national threat assessments.

1.18. Section 4 covers the preventive measures such as deterrence, information security and trustworthiness.

1.19. Section 5 provides recommendations to a State on *detection measures* including interdiction and initial assessment of any *instrument alarms* or *information alerts*.

1.20. Section 6 provides recommendations to a State on *response* measures to a *nuclear security event*.

1.21. Section 7 covers recommendations on international cooperation.

1.22. Italicized words in the text are defined in the Definitions section.

2. OBJECTIVES OF A STATE'S NUCLEAR SECURITY REGIME FOR NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL

2.1. The overall objective of a State's *nuclear security regime* is to protect persons, property, society, and the environment from the harmful consequences of a *nuclear security event*. With the aim of achieving this objective, States should establish, implement, maintain and sustain an effective and appropriate *nuclear security regime* to prevent, detect and respond to such events. The *nuclear security regime* covers *nuclear material* and other *radioactive material*, whether it is under or out of *regulatory control*, and associated facilities and associated activities throughout their lifetimes. The overall objective could be achieved by the implementation of all the nuclear security recommendations publications, including the Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5) [7] and on Radioactive Material and Associated Facilities [8] in a consistent manner. The objectives of a *nuclear security regime* for nuclear and other *radioactive material* out of *regulatory control* are achieved by:

— A comprehensive and complete set of legislative provisions for providing relevant administrative and enforcement powers to the various *competent authorities* within the State, so that they can undertake their activities in an effective manner;
— Provision of sufficient and sustained resources to the various *competent authorities* to enable them to carry out their assigned functions, including:

(1) Measures to prevent a criminal act, or an unauthorized act, with nuclear security implications involving nuclear and other *radioactive material* out of *regulatory control*.

(2) *Detection*, through an *instrument alarm* and/or an *information alert,* of the presence or indications of a criminal act, or an unauthorized act, with nuclear security implications involving nuclear or other *radioactive material* that is out of *regulatory control* and, in particular to:
- Develop a national *detection* strategy;
- Establish *detection systems*;
- Perform the initial assessment of the *instrument alarms* and *information alerts* promptly to determine if a *nuclear security event* has occurred.

(3) *Response* to the *nuclear security event*, in particular to:
- Notify the *competent authorities;*
- Assess the validity and potential consequences of the *nuclear security event*;
- Locate, identify, categorize and characterize nuclear or other *radioactive material*;
- Secure such material and apply other *response* measures appropriate to the *nuclear security event*, such as neutralization of the device;
- Recover, detain and/or seize and place such material under *regulatory control*;
- Collect, preserve, store, transport and analyse evidence, including the application of nuclear forensics measures, related to a criminal act, or an unauthorized act, with nuclear security implications that involves such material;
- Apprehend and subsequently prosecute or extradite alleged offenders.

3. A STATE'S NUCLEAR SECURITY REGIME FOR NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL

GENERAL

3.1. The essential elements of the State's *nuclear security regime* are applicable to the nuclear security recommendations on nuclear and other *radioactive*

material out of *regulatory control* and should be referred to in the establishment and implementation of the State's *nuclear security regime*, as appropriate.

ROLES AND RESPONSIBILITIES OF THE STATE

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.

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.

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.

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

3.6. The State should consider establishing as criminal offences, unlawful scams or hoaxes[4] with nuclear security implications.

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

[4] Historically, scams and hoaxes constitute a portion of the cases of illicit trafficking. Despite the absence of nuclear or other *radioactive material*, such scams and hoaxes can necessitate responses that potentially expose operational and/or *detection* vulnerabilities that could be exploited by smugglers. Scams and hoaxes can perpetuate the belief that smuggling such material can be profitable and may encourage the criminal or unauthorized possession of nuclear or other radioactive material.

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.

3.8. 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.

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

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*.

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.

COORDINATING BODY OR MECHANISM

3.12. All nuclear security activities involving nuclear or other *radioactive material* that are out of *regulatory control* should be coordinated by a body[5] or an effective mechanism in accordance with national legislation and regulations.

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.

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;
— 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.

[5] An example of a coordinating body is a committee with representatives of all relevant *competent authorities*. If the State has a federal structure, the coordinating body could be established at the federal and at the state level.

COMPETENT AUTHORITIES

3.15. The *competent authorities*[6] 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.

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.

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.

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 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.

[6] When an organization or institution carries out nuclear security functions in its capacity as an *authorized person*, it is not considered to be acting as a *competent authority.*

NATIONAL THREAT ASSESSMENT

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;
— 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.

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.

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.

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*.

4. RECOMMENDATIONS ON PREVENTIVE MEASURES

DETERRENCE

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.

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.

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.

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.

INFORMATION SECURITY

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.

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.

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.

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

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.

TRUSTWORTHINESS OF PERSONNEL

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.

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

5. RECOMMENDATIONS ON DETECTION MEASURES

GENERAL

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.

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.

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

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*.

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.

DETECTION BY INSTRUMENTS

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.

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

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.

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.

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**.**

INFORMATION ALERTS

Operational information

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.

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*.

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

Medical surveillance

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.

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.

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

Reporting regulatory non-compliance

5.17. The *competent authority* with regulatory responsibility should require *authorized person*s 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.

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.

Reporting loss of regulatory control

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.

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*.

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.*

INITIAL ASSESSMENT OF AN INSTRUMENT ALARM AND/OR INFORMATION ALERT

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.

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.

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.

SUSTAINABILITY OF DETECTION MEASURES

5.25. The *competent authorities* should consider the policies, management practices and procedures associated with sustaining *detection* measures. They should apply sound management 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.

6. RECOMMENDATIONS ON RESPONSE MEASURES

GENERAL

6.1. Using legislative instruments as necessary, the State should develop a national *response system*[7] 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*.

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.

6.3. The implementation of the *response system* of the State should be documented in a national *response* plan (the Plan)[8] outlining the various *response measures*, and should be implemented coherently by the various *competent authorities,* ideally coordinated by the coordinating body.

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 event*s, based on health and safety concerns and on circumstantial factors and the involved nuclear or other *radioactive material*.

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.

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[7] *Response systems* are integrated sets of *response* measures. *Response* comprises two phases: The first phase is the assessment phase which is a continuation of the initial assessment of an *instrument alarm* or an *information alert* if that initial assessment is inconclusive. The outcome of the assessment process would be the determination that a *nuclear security event* has occurred unless the alarm or alert is determined to be false or innocent. The second phase of the response is the management of the *nuclear security event* through the execution of the national *response* plan.

[8] In a State with a federal structure, the response may be established on the federal as well as on the state level.

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.

ASSESSMENT OF INSTRUMENT ALARMS

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.

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*.

ASSESSMENT OF INFORMATION ALERTS

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.

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.*

NOTIFICATION OF A NUCLEAR SECURITY EVENT

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.

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.

COLLECTION AND HANDLING OF EVIDENCE WITHIN A NUCLEAR SECURITY EVENT

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.

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.

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.

NUCLEAR FORENSICS

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[9]

[9] Categorization is performed to identify nuclear security implications and the risk of the seized material to the first responders, law enforcement personnel, and the public.

on-site and should be characterized[10] in a designated laboratory. Furthermore, traditional forensics should also be applied in designated laboratories for contaminated evidence, as necessary.

NATIONAL RESPONSE PLAN FOR NUCLEAR SECURITY EVENTS

6.17. In order to manage *nuclear security event*s, the State should have a comprehensive national *response* plan for *nuclear security event*s in combination with, inter alia, the national radiological emergency plan [9]. 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.

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 event*s, 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.

[10] Characterization is performed to determine the nature of the radioactive material and associated evidence. Basic characterization involves full elemental analysis of nuclear and other *radioactive material*, including major, minor, and trace constituents. For those major constituents of radioactive material, basic characterization would also include isotopic and phase (i.e. molecular) analysis, if necessary. The basic characterization also includes physical characterization.

(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 [10, 11] 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 [12] if there are no such national requirements or regulations.
(g) Identifies the standard operating procedures at the local level for *nuclear security event*s. 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 [9–11]. 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 event*s. 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.

PREPAREDNESS

6.19. The *competent authorities* should ensure the preparedness of the nuclear security *response* resources, including the availability of appropriate procedures.

6.20. The State should periodically review, exercise and revise the plan, incorporating the relevant lessons learned, as appropriate, or whenever there are changes that could impact the plan.

6.21. The State should carry out exercises under the plan using credible scenarios. *Competent authorities* should perform exercises and drills at regular intervals, in order to evaluate the effectiveness of the plan. When possible, States should consider participating in regional and international exercises and drills.

6.22. *Competent authorities* should ensure the availability of human resources and their training. Particular attention should be given to training of appropriate personnel and testing in:

— Procedures to be followed in *response* to a *nuclear security event*;
— Use of instruments for *response* activities;
— Identification, safe handling, recovery and packaging of nuclear and other *radioactive material*;
— Crisis management and communications;
— Radiological crime scene management, the implications of the presence of nuclear and other *radioactive material* on traditional crime scene management and forensic rules of evidence;
— Radiation protection of *response* personnel;
— Identification of radiation injuries;
— Procedures for providing information to the public and news media.

6.23. The *competent authorities* should consider the possibility of simultaneous and other ongoing events and the analysis of all available information for assessing the related threats. The *competent authorities* should ensure the availability of sufficient resources to respond to multiple *nuclear security events* involving nuclear and other *radioactive material*.

SUSTAINABILITY OF RESPONSE MEASURES

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.

7. RECOMMENDATIONS ON INTERNATIONAL COOPERATION

EXCHANGE OF INFORMATION ON NUCLEAR SECURITY EVENTS

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*.

7.2. The State should inform the IAEA, the United Nations or other relevant international organizations[11] of cases of *nuclear security events* involving nuclear or other *radioactive material* or seizures thereof in accordance with its international obligations and national legislation.

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.

7.4. The State should participate in and report relevant *nuclear security event*s 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).

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

[11] The other relevant international organizations include inter alia the United Nations, IAEA, ICPO-INTERPOL, EUROPOL, WHO, WCO and IMO. For example, criminal information and relevant events should be reported to ICPO-INTERPOL through the INTERPOL National Central Bureau (NCB).

TECHNICAL COOPERATION AND ASSISTANCE

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.

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*.

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.

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*.

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*.

COOPERATION WITH RESPECT TO CRIMINAL OFFENCES

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*.

RECOVERY AND RETURN OF SEIZED ITEMS

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.

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.

NUCLEAR FORENSICS COOPERATION

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.

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.

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.

DEFINITIONS

Terms used in this publication are defined below and are italicized in the text.

authorization. The granting by a c*ompetent authority* of written permission for operation of an associated facility or carrying out an associated activity.

authorized person. A natural or legal person that has been granted an *authorization*. An *authorized person* is often referred to as a 'licensee', or 'operator'.

competent authority. A governmental organization or institution that has been designated by a State to carry out one or more nuclear security functions. Example: *Competent authorities* include regulatory bodies, law enforcement, customs and border control, intelligence and security agencies, health agencies, etc.

defence in depth. The combination of successive layers of systems and measures for the protection of *targets* from nuclear security threats.

detection. Awareness of criminal act(s) or unauthorized act(s) with nuclear security implications or measurement(s) indicating the unauthorized presence of *nuclear material*, or other *radioactive material* at an associated facility or associated activity or a *strategic location*.

detection measure. Measures intended to detect a criminal or an unauthorized act with nuclear security implications.

detection system. Integrated set of *detection measures* including capabilities and resources necessary for *detection* of a criminal act or an unauthorized act with nuclear security implications.

graded approach. The application of *nuclear security measures* proportional to the potential consequences of a criminal or intentional unauthorized acts involving or directed at *nuclear material*, other *radioactive material*, associated facilities or associated activities or other acts determined by the State to have an impact on nuclear security.

information alert. Time sensitive reporting that could indicate a *nuclear security* event, requiring assessment, and may come from a variety of sources, including operational information, medical surveillance, accounting and consigner/consignee discrepancies, border monitoring, etc.

instrument alarm. Signal from instruments that could indicate a *nuclear security event*, requiring assessment. An *instrument alarm* may come from devices that are portable or deployed at fixed locations and operated to augment normal commerce protocols and/or in a law enforcement operation.

major public event. A high profile event that a *S*tate has determined to be a potential *target.*

nuclear material. *Nuclear material* is defined to be any material that is either special fissionable material or source material as defined in Article XX of the IAEA Statute.

nuclear security culture. The assembly of characteristics, attitudes and behaviours of individuals, organization and institutions which serves as a means to support, enhance and sustain nuclear security.

nuclear security event. An event that has potential or actual implications for nuclear security that must be addressed.

nuclear security measures. Measures intended to prevent a *nuclear security* threat from completing criminal or intentional *unauthorized acts* involving or directed at *nuclear material*, other *radioactive material*, *associated facilities*, or *associated activities* or to detect or respond to *nuclear security events*.

nuclear security regime. A regime comprised of:

— The legislative and regulatory framework and administrative systems and measures governing the nuclear security of *nuclear material*, *other radioactive material, associated facilities,* and *associated activities;*
— The institutions and organizations within the State responsible for ensuring the implementation of the legislative and regulatory framework and administrative systems of nuclear security;
— *Nuclear security systems* and *nuclear security measures* for the prevention of, *detection* of, and *response* to, *nuclear security events.*

nuclear security system. An integrated set of *nuclear security measures*.

point of exit or entry. An officially designated point of exit or entry is a place on the land border between two States, seaport, international airport or other point where travellers, means of transport, and/or goods are inspected. Often, customs and immigration facilities are provided at these points of exit and entry. An undesignated point of exit or entry is any air, land and water crossing point that is not officially designated for travellers and/or goods by the State, such as green borders, sea shores and local airports.

radiation search. The set of activities to detect, and identify suspicious nuclear or other *radioactive material* out of *regulatory control* and to determine its location.

radiation survey. Activities to map the radiation background of natural and human made *radioactive material* in an area or to facilitate later search activities.

radioactive material. *Radioactive material* is any material designated in national law, regulation, or by a regulatory body as being subject to *regulatory control* because of its *radioactivity.*

regulatory body. One or more authorities designated by the government of a State as having legal authority for conducting the regulatory process, including issuing *authorizations*.

regulatory control. Any form of institutional control applied to *nuclear material* or other *radioactive material,* associated facilities, or associated activities by any *competent authority* as required by the legislative and regulatory provisions related to safety, security, and safeguards. Explanation: The phrase 'out of *regulatory control'* is used to describe a situation where nuclear or other *radioactive material* is present without an appropriate authorization, either because controls have failed for some reason, or they never existed.

response. All of the activities by a State that involve the assessing and responding to a *nuclear security event*.

response measure. Measure intended to assess an alarm/alert and to respond to a *nuclear security event*.

response system. Integrated set of *response measures* including capabilities and resources necessary for assessing the alarms/alerts and *response* to a *nuclear security event*.

sensitive information. Information, in whatever form, including software, the unauthorized disclosure, modification, alteration, destruction, or denial of use of which could compromise nuclear security.

strategic location. A location of high security interest in the State which is a potential target for terrorist attacks using nuclear and other *radioactive material* or a location for *detection* of nuclear and other *radioactive material* that is out of *regulatory control*.

target. *Nuclear material,* other *radioactive material,* associated facilities, associated activities, or other locations or objects of potential exploitation by a nuclear security threat, including *major public events, strategic locations, sensitive information*, and sensitive information assets.

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