

## **Document Preparation Profile (DPP) Revision 2 Version 2.0 dated 12 April 2018**

### **1. IDENTIFICATION**

**Document Category** Nuclear Security Series- Technical Guidance

**Working ID:** NST061

**Proposed Title:** **Detection of Nuclear and Other Radioactive Material out of Regulatory Control within a State**

**Proposed Action:** New publication

**Interface Document:** No

**Review Committee(s) or Group:** NSGC

**Technical Officer(s):** Thierry Pelletier

### **2. BACKGROUND/RATIONALE**

The IAEA Nuclear Security Series (NSS) No. 15, “*Nuclear Security Recommendations on Nuclear and Other Radioactive Materials out of Regulatory Control*”, presents recommendations for the security of nuclear and other radioactive material out of regulatory control. As part of a comprehensive nuclear security regime, NSS No. 15 includes recommendations for the detection and assessment of alarms and alerts related to criminal or unauthorized acts with nuclear security implications involving nuclear or other radioactive material out of regulatory control. These recommendations cover assessment, confirmation, notification and response to a nuclear security event. In particular, NSS No. 15 highlights that detection systems and measures should be based on a risk informed approach and addresses situations in which the material originates from both within and outside of the State.

Building upon recommendations in NSS No. 15, the Implementing Guide NSS No. 21 “*Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material out of Regulatory Control*” describes how States can develop a national-level approach to an effective nuclear security detection architecture (NSDA) to detect of criminal or unauthorized acts with nuclear security implications involving material out of regulatory control. NSS No. 21 discusses detection by instrument and information alert and provides general guidance on the design, implementation and sustaining of an NSDA as well as considerations for the initial assessment of alarms and alerts for the detection of material out of regulatory control.

A draft DPP for an Implementing Guide originally titled “*Detection of and Response to Radioactive Material at Points of Entry and Exit* (NST016)” was approved by AdSec prior to 2011 and was intended to respond to the need for further detailed guidance for States on designing, implementing, and sustaining systems and measures to detect material out of regulatory control at State borders. Similarly, a Technical Guide “*Verification of Declared Shipments* (NST008)” was approved by AdSec prior to 2011. In addition, a DPP for an Implementing Guide titled “*Detection of and Response to Radioactive Material at Undesignated Points of Entry and Exit*” was proposed to and approved by NSGC in June 2014.

In October 2017, responding to the NSGC’s expressed preference for consolidation of publications, the Secretariat proposed the merging of these three draft publications (NST016, NST008 and NST049) to create a single Technical Guidance document addressing the detection of nuclear and other

radioactive materials at State borders. This was proposed to an ad hoc sub-group of the NSGC charged with considering a revision to the NSS Roadmap in October 2017 and discussed further by the NSGC during its 12<sup>th</sup> meeting in November 2017. The Secretariat also presented a DPP for a new publication addressing detection of nuclear and other radioactive material within a State (NST061) to the 12<sup>th</sup> meeting of the NSGC.

Stressing their interest in further consolidation of publications, the NSGC rejected the DPP proposed for NST061 and requested that the Secretariat develop a new DPP for Technical Guidance consolidating the content originally planned to be contained not only in NST016, NST008 and NST049, but also that proposed for inclusion in NST061 as well as relevant updated and revised content from NSS No. 3, *“Monitoring for Radioactive Material in International Mail Transported by Public Postal Operators”*.

However, following careful consideration of NSGC’s request, the Secretariat proposes separating the requested publication into two dedicated Technical Guidance publications, taking into account the differences in the nature of detection at borders and within a State as well as differing audiences, technologies, the importance of detection by information alert within a State as well as the large scope of the proposed consolidation. The first Technical Guidance (described in a separate DPP) will focus on detection at borders and the second (described in this DPP) will address detection within the State. During the preparation of these two publications, it will be considered whether there are aspects of NSS No. 3 to be updated and included in these publications.

This proposed Technical Guidance publication will focus on detection of nuclear and other radioactive material out of regulatory control within the State’s interior.

### **3. JUSTIFICATION FOR THE PRODUCTION OF THE DOCUMENT**

The proposed publication will provide detailed guidance for detection systems and measures within a State’s interior and will be complementary to NST016 which covers detection at State borders.

National threat and risk assessments, nuclear security plans, and States’ national-level detection strategies often highlight the need for addressing nuclear security for material out of regulatory control within the State, but an examination of the currently published documents and those in process shows that practical guidance in the Nuclear Security Series still remains to be developed for designing, implementing, and sustaining nuclear security detection systems and measures within the State.

The competent authorities, methods, techniques, concepts, and procedures to be followed for detection systems and measures within a State are substantially different from those at the borders, and tailored guidance for detection within a State (separate from guidance at borders) continues to be needed by Member States.

The development of this publication in conjunction with NST016 will replace five proposed detailed publications (NST016, NST008, NST049, NST061 and a revision of NSS-3) addressing detection with two publications, in line with the NSGC’s request to further consolidate NSS publications.

#### **4. OBJECTIVE**

The objective of this proposed Technical Guidance publication is to provide detailed guidance for implementing systems and measures for the detection of nuclear and other radioactive materials out of regulatory control within a State's interior.

The intended audiences for this document would be the competent authorities responsible for designing, implementing and sustaining nuclear security systems and measures within a State, such as ministry of interior, law enforcement agencies, health authorities, national regulators, emergency response and national security organizations.

#### **5. SCOPE**

The scope of the proposed Technical Guidance publication will include the systems and measures by which material out of regulatory control can be detected within the State's interior, including the use of radiation detection instruments and information alerts. The guidance will cover the detection by instruments at strategic locations and targets, as applicable. Furthermore, it will describe the detection by information alerts obtained from operational information, medical surveillance, reports of regulatory non-compliances and reports of loss of regulatory control. Guidance for operational planning, system design, concept of operations, design and deployment, procedure development, human resource development and sustainability considerations related to detection by instrument alarm and information alerts within a State will be included in this Technical Guidance publication.

The proposed Technical Guidance publication will not address response activities in the situation that a nuclear security event has been declared. Once material is detected and a nuclear security event is declared, the subsequent activities would fall within the scope of other guidance, such as "*Developing a National Framework for Response to Nuclear Security Events (NST004)*" and relevant IAEA Emergency Preparedness and Response Guides.

The proposed Technical Guidance publication will not cover detection of nuclear and other radioactive material in regulated facilities and activities.

#### **6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS**

The proposed publication will be a Technical Guidance publication within the IAEA Nuclear Security Series. It will support the Recommendations level document NSS No. 15, and the Implementing Guide NSS No. 21 and be complementary to the Technical Guidance publication in development "*Detection of Nuclear and Other Radioactive Material out of regulatory control at State Borders (NST016)*".

References will be made to the Implementing Guide NSS No. 18 "*Nuclear Security Systems and Measures for Major Public Events*", as appropriate, and consistency will be maintained with other implementing and technical guides under preparation. As appropriate, reference will be made to other Implementing Guides and Technical Guidance, existing or under preparation.

This publication is likely to have interfaces with emergency preparedness and response and with radiation safety. As this publication is proposed as Technical Guidance, it will not be an interface document; however, as appropriate, drafts will be provided to RASSC and EPreSC for their information. The IEC will be consulted during drafting and review.

The proposed Implementing Guide is anticipated to have contributions from the International Criminal Police Organization (INTERPOL).

## 7. OVERVIEW

The content of this Technical Guidance publication should cover the following topics:

- Concept of operations and procedures for design, implementation, evaluation and sustainment of detection systems and measures at strategic locations, critical infrastructure, key resources, special events, and other internal areas and pathways;
- Detection by instruments at all strategic locations and targets with applicable technology, in particular mobile detection applications;
- Detection by information alerts obtained from operational information, medical surveillance, reports of regulatory non-compliances and reports of loss of regulatory control;
- Human resource development;
- Challenges for detection by instrument alarms and information alerts within the State interior;
- Cooperation and coordination among relevant competent authorities including information sharing and technical support.

## 8. PRODUCTION SCHEDULE:

	Date
STEP 1: Preparing a DPP	Done
STEP 2: Approval of DPP by the Coordination Committee	March 2018
STEP 3: Approval of DPP by the relevant review Committees	June 2018
STEP 4: Approval of DPP by the CSS	
STEP 5: Preparing the draft Indicate as to whether a TM is expected to be organized for the preparation of the draft	
STEP 6: Approval of draft by the Coordination Committee	
STEP 7: Approval by the relevant review Committees for submission to Member States for comments	June 2019
STEP 8: Soliciting comments by Member States	
STEP 9: Addressing comments by Member States	
STEP 10: Approval of the revised draft by the Coordination Committee Review in NSOC-SGDS (Technical Editorial review)	
STEP 11: Approval by the relevant review Committees	Nov 2019

STEP 12: - Submission to the CSS - Submission in parallel and approval by the Publications Committee - MTC D Editing - Endorsement of the edited version by the CSS	<div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <div style="background-color: #cccccc; height: 20px; width: 100%;"></div>
STEP 13: Establishment by the Publications Committee and/or Board of Governors (for SF and SR only))	<div style="background-color: #cccccc; height: 20px; width: 100%;"></div>
STEP 14: Target publication date	<div style="background-color: #cccccc; height: 20px; width: 100%;"></div>

## 9. RESOURCES

The development of this publication will involve preparation of a draft over the course of four Consultancy Meetings. The draft will then be reviewed by IAEA staff and other key stakeholders, and comments and input will then be solicited from a much wider group through the convening of a final Consultancy Meeting. This will result in a total of five Consultancy Meetings to develop this publication. Following the final CM, the draft will be provided to the Coordination Committee and then to the NSGC and other Committees, if needed. The project will be funded through extra-budgetary funds.