
IAEA-ACTIVITIES FOR PHYSICAL PROTECTION: ROLE AND IMPORTANCE OF IPPAS MISSIONS

Mark S. Soo Hoo

IAEA, Office of Physical Protection and Material Security

Abstract: The IAEA program includes the International Physical Protection Advisory Service (IPPAS), aimed at assisting States, upon their request, to evaluate their physical protection systems, at State and Facility levels, based on the recommendations INFCIRC/225 and obligations stated in the Convention on Physical Protection of Nuclear Material. The IPPAS program started in 1996 and experiences have been gained from missions carried out at the request of States. The experiences gained conclude that this service is applicable for all States with nuclear programs.

The importance of the IPPAS program as a fundamental activity in the Agency's physical protection program has been underlined by Member States. The increased number of IPPAS missions requested indicated the increased attention by States to have effective physical protection systems in place.

The many recommendations generated during the IPPAS missions conducted so far indicate that the protection of nuclear material could be improved. The recommendations range from improving national legislation and regulations to the implementation of physical protection at the facility level. Even though the performance of an IPPAS mission has the character of an inspection it must be emphasized that IPPAS missions are initiated at the request of the State. It is a service which provides, upon request of the State, advice and assistance assessing its system of physical protection, helps to identify areas where improvement is needed and helps the IAEA develop a plan of activities to further assist the State in strengthening its system of physical protection.

1. INTRODUCTION

Adequate levels of physical protection are recognized as fundamental to prevent trafficking in nuclear material. In addition to providing general recommendations and guidance on the establishment of physical protection for nuclear material, the IAEA established an advisory service to assist States, upon request, with a review of their national systems for physical protection.

A Consultants Meeting of international experts was convened in October 1995 to assist the Agency to develop the necessary guidance and procedures for an International Physical Protection Advisory Service (IPPAS). These initial procedures were reviewed in 1998 and the updated version published as IAEA Services Series No. 3 *IPPAS Guidelines: Reference Document for the International Physical Protection Advisory Service*¹. These guidelines set the basis for an IPPAS mission, and define the objectives and procedures to follow when the IPPAS mission is planned, conducted and concluded. Consequently, the *IPPAS Guidelines* can be useful both to the IPPAS team members and to the State that has requested an IPPAS mission. In April 2000, the program was reviewed again in a review meeting which consisted of representatives of countries having had an IPPAS mission and IPPAS team leaders.

¹ IAEA Services Series No. 3, IPPAS Guidelines, t-3.

2. THE IPPAS PROGRAMME

IPPAS is fundamental in the Agency's programme to assist States in their efforts to establish and maintain effective systems for physical protection of nuclear material and nuclear facilities. Through IPPAS missions the Agency may review systems implemented at the national and facility level, thereby helping States identify needs for improvement as well as good practices of implementation. A mission report is an integral part of all IPPAS missions. The report contains the findings of the mission, which include recommendations for follow-up actions to the State authorities and facility operators. When the need for upgrades is identified, the State bears the sole responsibility for upgrading the systems. In some cases such upgrades are facilitated through bilateral cooperation between States and through Agency programmes. If the State requests assistance from the Agency on physical protection matters, the IPPAS report is used as the basis for the assistance.

3. CONCEPT AND OBJECTIVES

The fundamental objective of IPPAS is to assist Member States to establish, implement, maintain and, as appropriate, strengthen their national physical protection systems. The IPPAS programme is available, upon request, to all IAEA Member States.

The key objectives of an IPPAS mission are to enhance the national physical protection system by:

- Providing assistance to national authorities on the implementation of INFCIRC/225/Rev. 4 (Corr.) in the national regulatory system for the physical protection of nuclear materials in use, storage and transport and of nuclear facilities;
- Providing assistance to facility operators on the various methods by which INFCIRC/225/Rev. 4 (Corr.) may be satisfactorily implemented;
- Providing an opportunity for key staff of the relevant national authority and facility operators to discuss their practices with qualified and experienced experts from other countries;
- Recognizing good practices identified in the course of the mission; and
- Providing experts and observers from Member States with opportunities to broaden their experience and knowledge of their own field.

4. BASIS FOR EVALUATION OF PHYSICAL PROTECTION SYSTEMS

States Parties to the Convention on the Physical Protection of Nuclear Material (INFCIRC/274/Rev.) are required to implement the legally binding undertakings under the Convention. The physical protection undertakings, which include levels of physical protection that apply only to nuclear material used for peaceful purposes during international transport and during storage incidental to such transport, are examined during an IPPAS mission. However, not all of the other undertakings in the Convention (e.g., those relating to criminality), are examined during an IPPAS mission. The analysis of all of these issues during an IPPAS mission will be considered in the anticipated amendment of the IPPAS Guidelines².

INFCIRC/225/Rev. 4 (Corr.), "The Physical Protection of Nuclear Material and Nuclear Facilities", which comprise consensus recommendations by international experts, included recommendations for the physical protection for nuclear material in use, storage and transport, whether domestic or international and whether peaceful or military. The INFCIRC/225/Rev.4 (Corr.) recommendations are published by the Agency for consideration by the competent authorities in States. Such recommendations provide guidance but are not mandatory per se upon a State and do not infringe on the sovereign rights of

² Paragraph II-7.3(l) of the IPPAs Guidelines only refers to questions related to sanction and punishable offences in the State penal legislation.

States³. Their implementation depends on existing, State specific, constitutional, legal, financial, technical and administrative systems as well as on the assessment of the threat particular to a State.

During an IPPAS mission, experts recognize and document good practices. If the host country decides to communicate the evaluation results or parts thereof to the general public, the mission result, revealing both good practices and needs for improvement, may contribute to the confidence of the public and other States about the security of nuclear material and nuclear facilities.

In several States, sustainability of physical protection systems is receiving increased attention. This is particularly the case for States, which have received bilateral assistance in the establishment of their physical protection systems. Costly equipment that is not readily available in a State may delay necessary maintenance with adverse effects on the effectiveness of the physical protection. In their efforts to strengthen the international physical protection system, the Agency, together with its Member States, should consider how IPPAS might be adapted to also help States sustaining the bilaterally-supplied physical protection systems. Consequently, IPPAS missions should give full attention to the necessary technical (e.g. spare parts), financial (procurements costs for equipment and repair services) and training prerequisites (training of operating and maintenance personnel, operating and maintenance manuals and documents) of bilaterally-supplied physical protection systems.

5. PREPARING FOR AN IPPAS MISSION

After receiving a formal request for an IPPAS mission a preparatory meeting is arranged in the host country to consider the following critical matters to successfully convene the IPPAS mission: the mission scope and objectives; preparations before the mission; the documentation to be provided to the IPPAS team; logistics support; and preparation, review and confidentiality of the IPPAS report. A detailed schedule of the activities during the mission is also helpful for ensuring a well coordinated mission.

The Agency designates a technical officer to manage the process and also selects, with the consent of the host government, a group of physical protection experts (four to five persons) suitable to conduct the IPPAS mission. The experts, who are usually recruited from national authorities of Member States, have a broad knowledge and long experience in the field of physical protection. The team-leader is particularly important in that much of the responsibility related to the result of the mission depends on his/her leadership and capability. It is beneficial to the mission if at least one team member is familiar with the design of the nuclear facilities operated in the host country. In addition, team members are selected so as to ensure that a variety of national approaches to regulation and implementation are represented. Each of the experts is likely to have, in addition to a particular area of expertise, knowledge of other national approaches and other relevant areas. In some missions, the host government has requested the team to focus their review on specific details or areas. In such cases, the Agency selects experts the appropriate expertise. For several IPPAS missions observers were invited to participate with an aim to take advantage of the mission as a learning opportunity.

As necessary and in consultation with the host country, the IPPAS team may also include a person experienced in nuclear-related legislation. This person may be drawn from with the Agency or from another Member State. Relevant comments on the national legislation of the visited State are incorporated in the IPPAS Mission report.

6. CONDUCTING AN IPPAS MISSION

In conducting a mission, the IPPAS team will collect the information necessary to make an accurate assessment of the physical protection systems implemented at the national level and at facilities. All written material provided to the team before and during the mission is reviewed. In addition, all information derived from interviews with personnel, as well as observations made by the team members, contribute to the mission results. Of particular interest are the observations related to organization,

³ INFCIRC/225/Rev.4, Para. 3.2.

allocation of responsibilities at the State level and at nuclear sites or for transport of nuclear material as well as practices implemented.

During a mission, team members make detailed technical notes on their observations and conclusions in the subject area assigned to them, including recommendations, suggestions and good practices. The technical notes of each team member are subject to review by all team members. The mission findings, such as recommendations and suggestions are discussed with the competent authority and the senior staff at the nuclear facility at an exit meeting and copies of the technical notes are given to the host government point of contact for the mission. All documents generated before, during and after the mission are treated as safeguards confidential documents by the Agency and the team members.

IPPAS missions normally cover: Legislation and allocation of responsibility of relevance for physical protection; role and responsibility of the competent authority; regulatory and licensing process; participation of other organizations; physical protection implemented at facilities and during transport; inspection and regulatory enforcement; and, recovery and response arrangements in case of, e.g., theft of nuclear material.

Typically, the IPPAS missions last about 10 days, which was adequate to cover all aspects of physical protection in those States which had a limited number of nuclear facilities and activities. For States with a large nuclear programme, multiple missions are necessary.

7. IPPAS MISSION REPORT

The mission team leader is responsible for preparing the draft IPPAS report based on the technical notes of the team members. He/she is required to submit the draft report to the team members for comments prior to submittal to the Agency. The IAEA technical officer reviews the draft report prior to submission to the competent authority of the host government in order to ensure that the objectives of the mission have been adequately addressed in the report. The relevant State authority and, as decided by the host government, other authorities/agencies involved in the mission will be given the opportunity to comment on the draft report. The IAEA technical officer and the team leader will discuss these comments before the report is finalized.

Information on physical protection systems implemented at nuclear facilities or for transport is considered as highly sensitive information, and treated as safeguards confidential information by team members and the Agency. The distribution of the report is restricted and made strictly on a need-to-know basis. A limited number of copies of the report are submitted to the State authority for further distribution. One copy is kept by the IAEA and one by the team leader. Any further distribution is at the discretion of the host government.⁴

8. IPPAS RECOMMENDATIONS

Most IPPAS missions have generated recommendations and suggestions for improvements, some have also revealed commendable good practices. The primary basis for the evaluation performed during an IPPAS mission is the recommendations in the current version of INFCIRC/225. The evaluation includes how the State is fulfilling its responsibility to provide a basic regulatory framework and how the physical protection measures are implemented at facilities and during transport.

In some States where an IPPAS mission has been carried out, physical protection systems have been in place, but the level does not meet the recommendations of INFCIRC/225/Rev. 4. Similarly, as to *organization and legislation*, although States have regulatory systems in place, needs for improvement have been identified. A number of recommendations were made for a need to have better supporting regulations and to upgrade the regulatory structure. These included the need for national regulations, improving licensing and inspection practices, adequate staffing and resources as well as the need to

⁴ IAEA Services Series No. 3, IPPAS Guidelines, Paragraph I-5.5.2

better coordinate the various regulatory tasks between all organizations involved. In several cases, the need to develop a national "Design Basis Threat" (DBT) was recognized.

On the facility level, the missions have generated a large number of recommendations related to *technical systems implemented at facilities and related procedures*, including, inter alia, improvements in access control systems, modernizing and hardening central alarm stations, better measures to protect fresh and spent fuel, assessment of targets for theft and sabotage, evaluation of barriers for additional delay, necessary modifications in detecting and assessing intruders, changing contraband search procedures, improvements in activities of response forces and better coordination among the various facility organizations. Few recommendations pointed to urgently needed upgrades, although many were implemented by the host country and/or donor States even before the final report was completed. For some facilities the IPPAS missions have noted and commended technically high quality systems, good transport practices, response forces training, excellent training programmes and exemplary coordination among involved groups. In one case, these good practices were more numerous than the recommendations.

9. IPPAS FOLLOW-UP

It is recognized that it is essential to follow-up on the IPPAS mission results. Most of the recommendations and suggestions resulting from the mission will normally be handled by the State/facility without any external assistance. In some cases, however, domestic resources are inadequate to deal with the recommendations. In such cases the State may obtain assistance through bilateral support programmes or, to a limited extent, through the IAEA's newly established Nuclear Security Fund.

In some cases where urgent upgrades were identified, the IAEA provided the necessary advice, legislative assistance and equipment for basic upgrades. In other cases, the IAEA has provided training and expert assistance. Some missions have identified the need to develop a relevant national Design Basis Threat (DBT), which is necessary for effective protection and response measures. The Agency provided several DBT methodology workshops to assist specific countries in their development.

10. CONCLUSIONS

IPPAS missions conducted in accordance with established guidelines have been found to be a valuable tool for assisting States to achieve compliance of national physical protection systems with internationally accepted recommendations (INFCIRC/225 Rev. 4 (Corr.)). The IPPAS approach should remain flexible and consider differences in national DBTs, and legal, economic and cultural conditions relevant for the individual State. IPPAS missions, furthermore, offer useful opportunities for all participants to broaden the perspective and enhance their physical protection capabilities. It is desirable, therefore, that in order to establish, maintain and, as appropriate, enhance the levels of physical protection world-wide and to increase the acceptance of IPPAS missions, these services should be considered by all States.