

## **SUMMARY**

### **2023 IPPAS-mission in The Netherlands**

This report presents the results of the International Physical Protection Advisory Service (IPPAS) mission conducted by the IAEA from 2 October to 13 October 2023 for the Authority for Nuclear Safety and Radiation Protection (ANVS) and the Ministry of Infrastructure and Water Management. As with all IPPAS missions, the overall goal was to provide advice and assistance to the Government of the Netherlands in their efforts to implement and sustain an effective nuclear security regime.

The last IPPAS mission was more than a decade ago, and there have been many changes in the Government. As an example, after the last IPPAS mission to the Netherlands, ANVS was created as an independent organization within the Government. Given the amount of time since the last mission and a number of changes in the Netherlands nuclear security regime, it was agreed the current mission would be a new IPPAS mission. The objectives of this mission were to evaluate the nuclear security regime of the Netherlands at a national level including visits to three facilities of nuclear or other radioactive material and discussions with two carriers responsible for transport security of nuclear and other radioactive material.

The IPPAS mission was accomplished by the team through document reviews, presentations, interviews, and discussions with Governmental officials representing the Authority for Nuclear Safety and Radiation Protection and Ministry of Infrastructure and Water Management as well as representatives from the three facilities visited and the two carriers involved in transport of nuclear and other radioactive material. During the mission, it was apparent that a significant effort had been made by the Government to prepare for this IPPAS mission, and the team received outstanding cooperation and openness from all personnel at all levels. All participants were willing to share their knowledge and experiences in sensitive area of nuclear security.

Although outside the scope of the current mission, portion of previous IPPAS reports were available, and the team was provided briefings on physical protection improvements over the years. The IPPAS team identified a number of recommendations, suggestions, and good practices in the areas within the scope of the mission, and these are documented in the body of the report.

Overall, it is clear that the Netherlands has made steady and continuous improvements in many areas within its nuclear security regime. Within ANVS and the three facilities visited, the fundamental principles established in legal instruments, such as the Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment are well understood by personnel involved in nuclear security activities. The Government, through ANVS, has adopted a principle of working to align their practices with internationally accepted fundamental principles and consensus recommendations. As an example, the Netherlands Cancer Institute has implemented the fundamental principles in a hospital setting in a manner that is logical, reasonable, and defensible. This is noteworthy. In addition, the Government has implemented several good practices that set an example for other Member States of the IAEA, such as efforts to collaborate with other countries to better understand potential threats to the nuclear industry to better establish protection requirements for their facilities, and formally documenting threats determined to be beyond their Design Basis Threat (DBT), which is used as the basis for the physical protection measures implemented at nuclear facilities, and which the State has assumed primary responsibility for protecting against. In most countries, threats determined to be beyond DBT are not formally documented and recognized as they are in the Netherlands.

This is a noteworthy practice, taking into account this information is sensitive and requires appropriate protection so it cannot be exploited by potential adversaries.

In line with the objectives to provide advice and assistance to the Government, the IPPAS team identified seven key topics they believe are important to consider. The IPPAS Mission Team provided specific recommendations and suggestions in the report to consider to address each of these topics.

**The first topic** is regarding the implementation of a performance-based regulatory framework. There are many advantages to this approach, but to be implemented effectively, it requires clearly defined objectives along with measurable criteria to determine if the objectives are being met. In several areas evaluated by the IPPAS team, clear objectives and measurable criteria do not exist sufficiently to implement an effective performance-based framework, and should be developed.

**The second topic** is related to the first, and it is that in some areas, a more prescriptive approach is a better method to ensure the implementation of reasonable, defensible, and consistently applied security measures. An example is in the determination of security related information that is considered sensitive. In many countries, the competent authority issues classification guidance to operators describing which specific types of nuclear security information should be considered sensitive, along with regulations or guidance on how to protect the information. In several areas that might benefit from this approach, such as information protection and identification of positions requiring a trustworthiness determination, comprehensive prescriptive requirements do not exist.

**The third topic** is that a comprehensive, systematic, and recurring internal review of the legal and regulatory framework should be conducted. It is noteworthy that the Netherlands hosts many international missions to get an independent review of different aspects of their nuclear program, but these missions are high-level, and generally do not have access to sensitive information. An internal review would help identify and prioritize specific areas where better performance-based objectives and criteria are needed and where there would be a benefit in development of more prescriptive requirements.

**The fourth topic** is related to determining whether there are sufficient resources within ANVS to meet Fundamental Principle D in the CPPNM and its 2005 Amendment to ensure the competent authority “...is provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.” Considering the first three topics above, which if addressed would result in an increase in needed resources, coupled with increased work associated with the planned expansion of the nuclear power program in the Netherlands, led the IPPAS team to recommend that the competent authority conduct an evaluation of whether there are sufficient resources within the competent authority to fulfil its nuclear security related responsibilities.

**The fifth topic** the IPPAS team noted is that the reliance on computer-based systems as essential elements of the physical protection systems at nuclear facilities significantly increases the importance of computer security regulations and guidance for identifying systems that are essential for nuclear security and protecting these systems accordingly. A weakness or failure in protecting computer systems that are essential elements within a physical protection system could result in a partial or catastrophic failure, resulting in a system that fails to achieve its primary objectives. Strengthened computer security regulations and guidance are needed to

ensure the reliability and availability of computer-based systems based on their importance as part of a physical protection system.

**The sixth topic** is the practice of not having armed response personnel on-site. Like many countries, in the Netherlands private security guards are prohibited by law from the use of force, and only police and military organizations are authorized to carry weapons and use force, up to deadly force. Private security guards are prohibited from any use of force, and their functions at a nuclear facility are normal guard duties including notifying the police when a response to an incident is needed, and providing support to the police as needed during their response to the facility. The ability to effectively interdict and prevent some physical attacks, such as sabotage of a reactor, depending on the threats defined in a State's DBT, is based on relatively short timelines. This requires the capability to reliably respond in a timely manner with sufficient armed responders to prevent the defined threat from achieving these objectives. Many countries have determined that reliably achieving this objective requires having some number of armed response forces on-site. Because many countries have similar restrictions regarding giving use of force authority to private security guards, arrangements have been made to have some number of police posted at the facility. The Government should consider evaluating the current practice to determine if the current response framework is sufficiently reliable and effective.

**The seventh topic** is related to the distribution of nuclear security responsibilities, and the lack of formal agreements between agencies with nuclear security responsibilities. In the Netherlands, many agencies contribute to achieving the objectives of the nuclear security regime. Cooperation and close coordination is required to ensure the agencies continue to work effectively together. Although the IPPAS team did not find any evidence it was not working effectively, there was little evidence of formal and current agreements between various agencies. As an example, the agreement between the Dutch police and the Government for the police to provide armed response to nuclear installations is outdated. Consideration might be given by the Government to implement more formal agreements to ensure organizations with nuclear security responsibilities continue to work together effectively.

The IPPAS team concludes that the nuclear security regime in the Netherlands is in line with the CPPNM and its 2005 Amendment and the international consensus recommendations of the Member States of the IAEA. Continuous improvement in the Netherlands is evident, and the recommendations and suggestions in the report may help further strengthen the nuclear security regime.