

ENGAGEMENT AND COOPERATION ON IAEA SAFEGUARDS— ADDITIONAL PROTOCOL: VERTIC INITIATIVE AND METHODS

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Abstract

When considering ratification and implementation of safeguards agreements, States typically need to examine their legislative, regulatory and institutional frameworks to identify what changes or additions they may need to make. To assist in this endeavour, VERTIC runs an initiative offering cooperation and technical engagement on legislative and related arrangements to States interested in bringing the IAEA additional protocol into force and in identifying effective approaches to implementation. This paper explains the activities carried out under this initiative and provides observations on safeguards implementation as well as questions that States may encounter when considering taking up the protocol. The initiative includes familiarization activities for States; presenting guidance on legislative and institutional implementation; reviewing legislation and institutional arrangements in States currently without the protocol and providing tailored regulatory assistance. In addition, the project runs a knowledge base on State practice in implementing the protocol. The purpose of this practical resource is to allow States to learn from each other's experience and approaches, and identify new and potentially more efficient approaches to implementation. The tool consists of a database of State legislation, regulation and institutional practice in applying safeguards and the additional protocol. The information is categorized into each area that the protocol covers. The search functions generate results forms showing an index of one State's approach to implementation across all categories, or alternatively, display how a range of States have implemented one or more categories. The database includes information on States' legal traditions and fuel cycle activities allowing examples of countries with similar profiles to be identified for enhanced experience-sharing. Where possible, the database includes information on the evolution of States' safeguards and fuel cycle activities to pinpoint key factors determining the approach chosen by the country.

1. Introduction

This paper introduces VERTIC's safeguards database, a new tool to assist states in the implementation of their safeguards arrangements, with a specific focus on the Additional Protocol. The database draws on a knowledge base of safeguards implementation across different countries to provide examples and facilitate experience-sharing. The tool, which is currently under development, will provide tailored information and analysis on different implementation approaches that will be useful for governments and national stakeholders in their work towards efficient and effective implementation solutions.

2. Needs for experience-sharing in nuclear safeguards

Nuclear safeguards provide an opportunity for states to demonstrate the peaceful nature of their nuclear activities by setting up accountancy and control systems and providing reports to the IAEA. The international community, through the IAEA, can confirm the validity of these reports and the peaceful nature of countries' nuclear activities through desk-based and in-country verification activities. The results of this process can provide confidence to countries and enhance stability and security globally.

Certain fundamental arrangements, specified in safeguards agreements, are common to all safeguards implementation, and must be addressed to have an effective national safeguards system. States are however free to adopt different approaches to meeting their safeguards requirements based on their particular legal traditions, national institutions, and the type and extent of the nuclear activities taking place in their jurisdiction.

Setting up a safeguards system requires an understanding of what the safeguards agreement consists of and what materials, activities and items it covers. It correspondingly requires an awareness of what measures and actions a country may need to carry out to identify, account for, control and report on these materials and activities. Furthermore, it is important both to states and to the IAEA that safeguards are implemented in a way that is efficient and appropriate to each country's circumstances, to avoid any waste of effort or resources. This is particularly important as some countries may face resource constraints, and have multiple economic, social and security priorities to address.

Countries differ widely in their level of familiarity with safeguards and their capacity to engage with the area. For those with less experience, building such capacity can consume time and resources, and even the most advanced countries in the safeguards field can benefit from considering alternative approaches. Building knowledge and sharing tools can help remove barriers to improved safeguards implementation by increasing the level of understanding on how countries go about developing their safeguards arrangements and the reasons they have selected the systems they use. These tools can be particularly valuable to states that are starting the process of ratifying and implementing the Additional Protocol, or that are considering revising their own legislative framework with regards to nuclear issues. Countries that are reviewing their current institutional practices and looking for ways to improve and rationalize their own already-established systems may also benefit from such tools.

The cross-fertilization of ideas and approaches is common in many sectors. Countries regularly identify a need to review practices internationally, across a wide range of policy areas from education to health-care, and to ascertain whether there are approaches they can learn from, and adapt to their own circumstances. In the field of safeguards, the need and desire to share experiences and practices can also be seen in the various workshops that take place, which provide a platform for governments to briefly describe their systems to their colleagues. The database tool under development at VERTIC will complement such activities by providing a systematic and extensive knowledge set with built-in analytical functions for displaying information relevant to a country's needs.

3. VERTIC's Safeguards - Additional Protocol project

Since 2012, VERTIC has run a project to assist countries in developing their safeguards arrangements, particularly in adopting and implementing the Additional Protocol.¹ VERTIC has conducted studies of countries' safeguards legislation and arrangements to examine how safeguards provisions have been translated into each country's legislative framework, how the framework has evolved, and, where possible, what factors drove such evolution. For the countries that have not yet implemented an Additional Protocol, similar studies can be used to establish a type of gap analysis identifying what new laws, amendments or measures may

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need to be introduced and what existing national arrangements could be used or built upon. VERTIC also provides in-country visits, on invitation by governments, to carry out awareness-raising and implementation assistance on safeguards and the additional protocol. It is also useful to note here that VERTIC offers similar assistance visits on the Convention for the Physical Protection of Nuclear Materials (CPPNM), the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) and the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, as well as UN Security Council Resolution 1540.

4. The Safeguards implementation approaches database

4.1 Results and search functions

The database gathers implementation information and arranges the data in a systematic format according to a number of levels and categories:

- At the most general level, the database provides an overview of each country. This can help to quickly identify similar country profiles thereby enabling more relevant examples to be found. It includes, among other characteristics:
 - a. Geographical region;
 - b. General legal system;
 - c. Current and planned nuclear activities.
- The database identifies specific provisions and obligations contained in the Comprehensive Safeguards Agreement and in the Additional Protocol. It shows how each of these provisions has been translated into a given country's national legislation, including references to the relevant laws, decrees or regulations.
- The database provides information on the organisational structure of those institutions involved in regulating safeguards activities, and, where possible, how the system works in practice.
- The database provides an overall description of how countries have approached safeguards implementation. This is achieved by compiling a narrative-based analysis that looks not only at the laws *per se*, but at the system's evolution and practices, highlighting the key elements of different implementation approaches, as well as the factors behind those approaches, when those are known.

Collecting this kind of information through a database offers a significant advantage in flexibility and usability over other formats. The tool will allow for searches to easily sort information by category and country, generating tailored reports and results forms. The configuration will enable a search to focus on a single country's overall approach or obtain more in-depth information on the implementation of specific provisions in key areas. It will also enable a search to focus on how a selection of provisions and requirements have been implemented across different countries, from a comparative perspective.

All of the above search functions will be aided by the ability to select countries with specific legal traditions and nuclear fuel cycle profiles. This will allow for finer comparative analysis since trends and specific practices can be looked for across countries that have similar characteristics.

4.2 Summary of methodology, research and review procedures

The database captures information on how countries have tackled specific aspects of safeguards agreements and can provide an overall description of the evolution and practice of safeguards implementation in a country. To do this, the data is categorised according to a number of themes, outlined below:

1. *When*: identifying the time-line of legislative, regulatory and organisational implementation.
2. *How*: identifying the way provisions are incorporated into the country's national legislative framework, for example:
 - a. Whether provisions are implemented through laws, regulations, decrees or other instruments;
 - b. Whether the country has implemented the provisions through dedicated measures, or instead has built on other, pre-existing measures (for example, safety and radiation protection laws, export control laws.)
3. *Who*: identifying which institutions oversee or are involved in the implementation of the provisions, including:
 - a. Which bodies are tasked with managing the application of safeguards requirements internally, and what responsibilities and powers they have;
 - b. Which bodies and stakeholders were involved in the development of the legislative framework and other practical arrangements.
4. *Why*: identifying the rationales guiding the way a state has gone about implementing safeguards. It should be noted, however, that such information will not always be readily available.

To find such information, researchers work from a template that indicates what data to look for and where it typically might be found. In many cases, it is possible to collect information on countries' safeguards systems from desk-review. In some cases, relevant information may not be easily available. For example, it may not be available online or may be difficult to identify in the first place. Even when it appears that all relevant data is available, it may not be possible to confirm that the data set is in fact complete. Therefore, wherever possible, researchers will engage with a country's relevant nuclear body to discuss findings. Such outreach will also provide opportunities to discuss harder-to-find information including factors behind the evolution of a given country's safeguards system.

4.3 Beneficiaries

This type of knowledge-sharing tool will enable states and other stakeholders to learn from each other's experiences and approaches. Actors that could potentially benefit from this kind of experience-sharing are officials from departments directly affected by safeguards requirements, such as radiation protection and nuclear regulators (or equivalent bodies), custom officials, legislators, and diplomats. In addition, such information could be useful for representatives of other institutions that might be relevant to safeguards implementation, such as departments of energy, industry and mining, departments of research and higher education, as well as defence and public health officials.

VERTIC will generate results for queries and provide these to enquirers, and can also use database information as part of its facilitation activities. However, since the tool is under development, the designers have yet to finalize other access procedures and criteria. The designers are considering the feasibility and appropriateness of enabling public access to some aspects of the database, such as the reviewed collection of laws and institutions. On the other hand, it may be appropriate to restrict access to other areas of the database, due to the qualitative nature of the information contained therein. For example, access restrictions could be applied to narrative descriptions and to the results of discussions on the evolution of a country's safeguards systems. VERTIC would handle requests for information of this kind directly, in its role as moderator, providing the needed information according to the nature of the data, the wishes of the data provider, and the specific request at hand.

5. Status and future considerations

The tool for experience-sharing on safeguards implementation approaches discussed in this paper is currently under development. VERTIC will announce when it is finalized on our website and in other relevant forums. During the development process, the team has begun to consider the desirability and feasibility of extending the database to cover additional areas, such as nuclear security or safety. Such an endeavour would require considerably more resources, both in terms of designing appropriate analytical categories and in terms of country research. Nevertheless, it may be a very worthwhile task, especially considering the growing emphasis among practitioners on the '3S' (safety, security and safeguards) concept that looks for advantages in efficiency and effectiveness derived from a more integrated approach to the three areas. VERTIC is currently exploring methods for expanding the scope of the database to incorporate new issues into its existing framework.

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