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International Atomic Energy Agency safeguards: differentiation without discrimination

Working paper submitted by Switzerland

Background and objective: promoting the State-level approach

1. The 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons adopted an action plan on nuclear disarmament. In action 32, it recommended that International Atomic Energy Agency (IAEA) safeguards should be assessed and evaluated regularly, and that decisions adopted by the IAEA policy bodies aimed at further strengthening the effectiveness and improving the efficiency of IAEA safeguards should be supported and implemented. Along the same lines, in its resolution GC(54)/RES/11, adopted in September 2010, the IAEA General Conference urged the secretariat to continue to improve the effectiveness and efficiency of safeguards through the use of a State-level approach in the planning, implementation and evaluation of safeguards activities, in conformity with the relevant safeguards agreement(s) in force for a State.
2. Such a State-level approach allows for the specific features of each State to be taken into consideration. Instead of focusing exclusively on declared quantities of nuclear material and types of facilities, the State is considered as a whole.
3. Differentiation between States on the basis of specific factors has, of course, to take place without discrimination, as recommended in the study entitled “Optimizing the IAEA safeguards system”, which was published in 2011 by the Center for International Security and Arms Control Studies, a French think tank, with the support of the Federal Department of Foreign Affairs of Switzerland. The study was also presented on the margins of the fifty-fifth regular session of the IAEA General Conference, in September 2011.
4. In the present working paper, the aim is to contribute to further improving the effectiveness and efficiency of the IAEA safeguards system by elaborating on the various technical and non-technical aspects that a more focused and adaptable safeguards system, allowing for greater differentiation between States but avoiding discrimination, should encompass.



Aspects of a safeguards system that differentiates but does not discriminate

Common safeguards objectives and obligations and the need for flexibility

5. The identification of State-specific factors and development of State-specific objectives cannot change the technical objective of timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown, and deterrence of such diversion by the risk of early detection (see INFCIRC/153 (Corrected), para. 28). This objective remains the same for all States, sharing as they do the same obligations provided for in a comprehensive safeguards agreement and, when applicable, an additional protocol.

6. State-level approaches should, however, reflect both the evaluation process influencing the conclusions reached by IAEA and the implementation process. As the frequency, intensity and scope of inspections and visits can vary according to specific factors, the level of on-site activities should not be the same for every State. In that respect, IAEA should implement the principle of non-mechanistic verification, as stated in article 4 of the Model Additional Protocol (see INFCIRC/540 (Corrected)).

7. Flexibility should help to meet the goals of effectiveness and efficiency, as expressed in the standard text of the agreement to be concluded between IAEA and States for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (see GOV/INF/276, annex A), which is based on the principles of document INFCIRC/153 (Corrected). It should enable the Agency to keep the number, intensity and duration of routine inspections, applying optimum timing, to the minimum consistent with the effective implementation of the safeguards procedures, to make the optimum and most economical use of inspection resources available and to ensure optimum cost-effectiveness.

State factors

8. Specific State factors allowing for differentiation could be identified on the basis of paragraph 81 of INFCIRC/153 (Corrected), which sets out the criteria to be used for determining the actual number, intensity, duration, timing and mode of routine inspections of any facility. They should then be further elaborated and divided into two categories: technical and non-technical factors. Both should be taken into account in determining the level and distribution of verification efforts in a given State.

Technical State factors

9. Some State factors are of a technical nature and thus easily quantifiable and measurable. According to paragraph 81 of INFCIRC/153 (Corrected), they include:

- (a) The form of the nuclear material present in a State;
- (b) Characteristics of the State's nuclear fuel cycle, including the number and types of facilities containing nuclear material subject to safeguards, the characteristics of such facilities relevant to safeguards; the extent to which the design of such facilities facilitates verification of the flow and inventory of nuclear

material; and the extent to which information from different material balance areas can be correlated;

(c) Technical developments in the field of safeguards.

10. Such factors fit the physical model used by IAEA to provide a detailed overview of the nuclear fuel cycle. As the technical components of acquisition path analysis, they are essential in assessing whether States have the technical capability to develop a nuclear weapon, and consequently help to determine where verification is needed. They need to be complemented by non-technical factors, however.

Non-technical State factors

11. Non-technical factors imply more qualitative judgements. As listed in paragraph 81 of INFCIRC/153 (Corrected), they comprise:

(a) The effectiveness of the State's accounting and control system (SSAC), including the extent to which the operators of facilities are functionally independent of that system; the promptness of reports submitted to the Agency; their consistency with the Agency's independent verification; and the amount and accuracy of the material unaccounted for, as verified by the Agency;

(b) International interdependence in relation to nuclear material acquisition.

12. Such factors could also include:

(a) The history of the State's nuclear energy programme and its acceptance of non-proliferation legal instruments;

(b) The non-proliferation and safeguards legal framework in force and the extent of the State's compliance therewith. Special consideration should be given to cases of implementation of an additional protocol and integrated safeguards;

(c) The level of transparency shown by the State and its cooperation with IAEA. The latter can be measured by assessing whether additional information has been provided voluntarily, whether national legislation and accounting and control system practices have been published, and whether IAEA evaluation services, such as SSAC Advisory Service missions, have received an invitation from the State;

(d) The plausibility and coherency of the development of a national nuclear programme.

13. Other possible factors that might be considered are:

(a) The plausibility or likelihood of diversion of peaceful nuclear activities, based on the following indicators: technical capability; the nature and content of official statements related to peaceful and military applications of nuclear energy; political and strategic stability at the national and regional levels; and security concerns at the national and regional levels;

(b) General openness and accountability of the political system, based for example on the following indicators: separation of powers; system of checks and balances; and transparency in the political decision-making process.

Objective evaluation and transparent process

14. Although some factors imply more qualitative judgement than others, their evaluation should remain as objective as possible. IAEA should not use such factors as part of a rating system, but rather as a guide for safeguards implementation and evaluation and, ultimately, as a tool for improvement, as evaluation of non-technical factors could help to highlight where further efforts could be directed in order to give better assurances as to the peaceful nature of a State's nuclear programme. States should, however, see the benefit of maximum cooperation and transparency.

15. Moreover, IAEA itself needs to be transparent and open. The safeguards system and institutional processes should be made more understandable and transparent to States, which need to understand clearly how State factors are elaborated and evaluated.

Conclusion

16. The burden of efforts to further optimize IAEA safeguards and develop the State-level concept cannot be borne by IAEA alone; active support from States is essential. In line with action 33 of the 2010 action plan, all States parties should ensure that IAEA continues to have all political, technical and financial support so that it is able to effectively meet its responsibility to apply safeguards as required by article III of the Treaty.
