

Expert Consideration on the Amendment to the INFCIRC/225

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1. Introduction

The INFCIRC/225 has played an important role as a guideline for establishing international regimes for physical protection since it was published in 1975 by the IAEA. It has been amended four times to reflect the changes that have taken place with regard to nuclear security. The fourth revision was released in 1999. Since the release of this revision, the international nuclear security environment has changed drastically. Because of the September 11, 2001 terrorist attacks in the USA, an amendment to the CPPNM (Convention on Physical Protection of Nuclear Material) was passed at an international conference held in July of 2005 in Vienna. Many requests for a revision of the INFCIRC/225 have been raised since then. The IAEA had prepared a revised document; and sponsored the first of six meetings in order to amend the document beginning in February of 2008. A TM (Technical Meeting) was also held in February of 2010. Physical protection experts from 22 countries participated in the meeting. After the TM, a draft document was sent to member states for reviewed for a designated 120 days. If ratified, document will then become the 5th amendment to the INFCIRC/225. The INFCIRC/225 will be used as a basis for physical protection measures specified in the Act. This paper will analyze the revised document and discussed on how it affects our national regime of physical protection.

2. Amendment Process

The first amendment meeting was held in February of 2008. The main subject in this meeting was what content should be included and how to keep it consistent with other nuclear series documents. Also, a time schedule for the amendment was suggested in detail. The revised document was prepared by the US delegation, but there was not enough time to review it thoroughly. The categorization table for nuclear material and graded approach for sabotage were the main issues for discussion at the 2nd meeting held in November of 2008. Discussions were raised on various subjects, such as: should depleted uranium and thorium should be included in the categorization table, and should small amounts of irradiated nuclear material be excluded from Category II material. A decision was made to keep the categorization table and the definition of sabotage without change. At the 3rd meeting, the main issue focused on the graded approach to sabotage. The US strongly suggested adopting a categorization

table for it. Most of the participants agreed to the American suggestion, but they had different views on how to categorize it. A drafting group was organized to facilitate the process of preparing a revised document. The 4th meeting was held in May of 2009 and the adoption of the annex chapter was a controversial issue. Most delegates agreed to the necessity of adopting the annex chapter to reduce the redundancy, but the US delegation strongly opposed it because they felt that the annex chapter would great confusing. It was decide to continue discussion of on this matter at the next meeting. The matter of the annex was discussed at the 5th meeting; however, there was strong disagreement between the US and the EU delegations. A new concept in the area regarding physical protection was suggested at this meeting. Many participants raised the necessity for an additional area for the protection of category III nuclear material, and a draft group prepared a preliminary document which including the area defined as the: 'limited access area'. The 6th meeting was held in November of 2009 and the US and EU delegations continued to debate on the matter of the adoption of annex chapter. Still there was no agreement on this issue. This prompted the IAEA to hold a small group meeting between the US and the EU in order to settle the issue. In addition, the strengthening of physical protection measures during the transportation of nuclear material was a big issue at this meeting. There were still many issues to be solved after the 6th meeting, but the overall features on revision 5 was determined and agreed upon at this meeting. The final version of the amended document was decided after a small group meeting and later an e-mail discussion. The TM (Technical Meeting) was held in February of 2010 in Vienna. The amended document was circulated to the member states for 120 days.

3. Overview on the amendment of INFCIRC/225

3.1 Contents

The revised document is comprised of seven chapters. Chapter 1 outlines the background, purpose and scope of the document. Chapters 2 and 3 explain the terminology used in the document and the objectives, respectively. The elements of a state's physical protection regime specified in chapter 4 have been drastically changed when compared with the previous version. It reflects the 12 fundamental principles included in the amended CPPNM. Chapter 5 deals with requirements for measures against unauthorized removal of nuclear material; while chapter 6 explains

measures against sabotage. The last chapter is devoted to the requirements for measures against unauthorized removal and sabotage of nuclear material during transport. The annex chapter that was the most controversial issue during the amendment process is not included.

3.2 Major changes

There are many changes in the revised document as it reflects the amended CPPNM and circumstances that have drastically changed after the publication of the INFCIRC/225, Rev.4, in 1999. Major changes are illustrated as follows:

- **Scope of the document:** Risk of unauthorized removal with the intent to disperse. This was added to the risk type that should be taken into consideration for the protection of nuclear material.
- **Number of definition:** Reflecting the strengthening measures of physical protection. The number of definitions increased to 40 from 17. New terminologies such as: conveyance, force-on-force and limited access area were added.
- **12 principles:** The 12 principles for physical protection are included in the document with a detailed explanation.
- **Limited access area:** A new term has been added. 'Limited access area' has been adopted to apply for protection of a facility with category III nuclear material
- **Cooperation among 3S:** Articles that emphasize the combination of safety, safeguards and security have been added.
- **Cyber security:** Physical protection measures for cyber security have been added
- **Performance testing:** Performance testing of the implemented physical protection measures, with an integrated physical protection system with response by guards and response forces has been included as evaluation methods.
- **Unacceptable radiological consequences:** Requirement of a state to determine the level of unacceptable radiological consequences is added
- **Graded approach against sabotage:** Basis for a graded approach for physical protection against sabotage has been added
- **Vital area:** Requirement of an operator to identify vital areas if the potential radiological consequences of sabotage exceed a state's unacceptable radiological consequences is added.
- **Requirements for measures during transport:** Requirements for physical protection of nuclear material against unauthorized removal and sabotage during transport have been strengthened.

4. Conclusion

The INFCIRC/225 that was based on the 'Act of physical protection and radiological emergency (APPRE)' has been extensively revised. Measures to strengthen physical protection against unauthorized removal of nuclear material and sabotage have been added. The amended document should be closely reviewed to in order to understand its effect on the national regime of physical protection. The government has already organized a task team for revising the APPRE reflecting the requirement of the amended INFCIRC/225. The team will review the revised INFCIRC/225 and compares it with the measures specified in the APPRE. As explained in the previous chapter, there were many changes that were different from the content of the APPRE. Most of the requirements newly adopted in the revised INFCIRC/225 are strengthened. From the view point of reinforcing a national regime of physical protection and following an international standard, all the strengthened measures specified in the amended INFCIRC/225 should be reflected in the APPRE. However, we should be careful to adopt these changes since the consolidated measures could be a burden to the operator. The adopted measures on cyber security and performance testing would especially not be easy to implement. Therefore, the revised document should be scrutinized thoroughly. In addition, technologies related to physical protection should be developed to support regulator and operator to implement the strengthened measures.

Acknowledgement

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REFERENCES

- [1] The draft version of INFCIRC/225, Rev.5, 2010