

Results of 6th Review Meeting and Perspective of the 7th Review Meeting of the Convention on Nuclear Safety

Sukho Lee, Manwoong Kim *, Jeongwon You, Youngeal Lee

Korea Institute of Nuclear Safety, 62 Gwahak-ro, Yuseong-gu, Daejeon 34142. Republic of KOREA

*Corresponding author: M.Kim@kins.re.kr

1. INTRODUCTION

The 7th Review Meeting of the Convention on Nuclear Safety (CNS) will take place at the Headquarters of the International Atomic Energy Agency (IAEA) in Vienna, Austria from 27 March – 7 April, 2017. This Review Meeting will provide us the opportunity to demonstrate to the world the effectiveness of the CNS at maintaining and improving nuclear safety. It will be clearly shared that operators and regulators have learned from and acted upon the lessons from the Fukushima Daiichi accident. The Contracting Parties took an important step in this regard by adopting the Vienna Declaration on Nuclear Safety. The declaration includes three principles to guide Contracting Parties in implementing the objectives of the CNS.

The fundamental safety principles provided by the CNS and the commitment it entails to the continuous improvement of the implementation of these principles; In this regard, the world-wide Action principles on Nuclear Safety has adopted to implement the objective of the CNS to prevent accidents with radiological consequences and mitigate such consequences should they occur:

To provide a consistent way to report on these principles and to allow for a fulsome peer review, it is requested that Contracting Parties to use the summary of their National Reports to describe the actions that have been taken to address the principles outlined in the declaration. Five challenges of the declaration are introduced in the Section 2.

The 6th Review Meeting to the Convention was held from 24 March to 4 April 2014. Sixty-nine of the 76 Contracting Parties participated in the Review Meeting. During the Review Meeting, the Country Groups met for four and one half days and discussed each National Report with each Contracting Party providing answers to the supplementary questions raised in the discussion. The discussions in the Country Group sessions were generally good with a lively and frank exchange of information. The Country Groups noted the significant measures taken by Contracting Parties to improve nuclear safety and identified a number of good practices to be shared with all Contracting Parties.

The objective of this paper is to introduce the results of the 6th Review Meeting and perspectives of the 7th

Review Meeting.

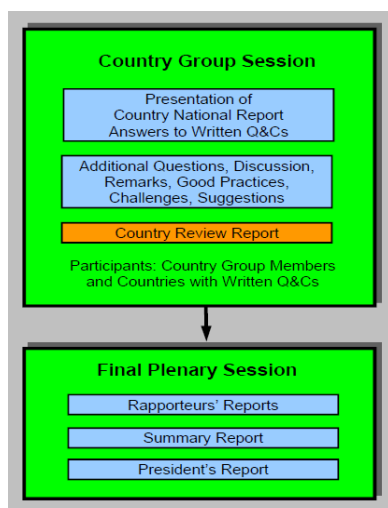
2. REVIEW PROCESS

Two basic commitments by each CP are necessary for the Convention to be successful: preparing and making available a National Report for review and putting its National Report into a peer review by the other CPs. This peer review process is based on a three year cycle, defined according to Article 21(3) of the Convention as shown below Table 1.

Table 1. Review Schedule

Months prior to the Review Meeting	Event
T - 36	Previous Review Meeting
T - 19	Organizational Meeting to assign Country Groups and elect Officers, i.e. a President, two Vice-Presidents, and Country Group Officers (Chairpersons, Vice-Chairpersons, Rapporteurs and Coordinators for each Country Group) for the subsequent Convention Review Meeting
T - 7.5	Deadline for submission of National Reports by each Contracting Party (available on CNS secure website)
T - 4	Deadline for submission of written questions and comments on the National Reports of all Contracting Parties (available on CNS secure website)
T - 1.5	Officers Meeting
T - 1	Deadline for answers to written questions submitted by each Contracting Party (available on CNS secure website)
T = 0	Review Meeting

Although organized in a cyclical manner, the peer review process implies a commitment to a continuous learning and improving process. All questions asked by CPs in the review process were addressed by the respondent Parties and written answers were provided. The discussion in the Country Group sessions and the plenary sessions were constructive, offering insights with regard to safety improvements, and conducive to strong commitment of each participating CP to the objectives of the Convention.



3. PERSPECTIVES OF THE 7TH REVIEW MEETING

3.1 Summary of the 6th Review Meeting

Through the review process, a summary report was drawn up with observations on the present state of nuclear safety, existing good practices, challenges and areas for future improvement, and conclusions reached from the national reports, presentations and discussions during the Country Group sessions.

During the Review Meeting, the Country Groups discussed each National Report with each Contracting Party providing answers to the supplementary questions raised in the discussion. The following paragraphs seem worthy to get special attention of regulators and operators of nuclear power plants in Korea.

(1) Cross-cutting issues

- Independence of Regulatory Bodies
- Transparency
- Safety oversight within licensees
- Safety Culture
- Knowledge management – maintain competence and knowledge
- Quality and availability issues in the supply of materials and services
- Instrument & Control (I&C) systems
- Long Term Operation
- Reduction of radioactive releases
- Severe accident management / Emergency Preparedness
- Bilateral cooperation issues and regional activities
- International Cooperation between regulatory bodies
- Peer Reviews

(2) Response to Fukushima Daiichi accident

Contracting Parties having completed self-assessments, in light of the lessons learned from the Fukushima Daiichi accident, reported that in general nuclear safety, emergency preparedness and response arrangements had improved. Differences were observed in the objectives, priorities and implementation of schedules for safety improvements. Factors relating to these differences were: different natural conditions, in particular to extreme natural events; different regulatory approaches and application of periodic safety assessments in order to continuously improve safety to meet the objective of the CNS to achieve and maintain a high level of nuclear safety worldwide. Based on these observations following challenges were identified:

- How to minimize gaps between Contracting Parties' safety improvements?
- How to achieve harmonized emergency plans and response measures?
- How to make better use of operating and regulatory experience, and international peer review services?
- How to improve regulators' independence, safety culture, transparency and openness?
- How to engage all countries to commit and participate in international cooperation?

Making preparations for the post-accident phase is an essential part of developing emergency preparedness and response. Contracting Parties noted that such considerations are also applicable to the installations covered by the Joint Convention and suggested that the President of the 6th Review Meeting of the CNS discuss with the President of the next Review Meeting of the Joint Convention consideration of the post-accident phase in their Review Meetings.

During the meeting Contracting Parties reconfirmed their commitment to the findings of the 2nd Extraordinary Meeting as followings:

“The displacement of people and the land contamination after the Fukushima Daiichi accident calls for all national regulators to identify provisions to prevent and mitigate the potential for severe accidents with off-site consequences.

- Nuclear power plants should be designed, constructed and operated with the objectives of preventing accidents and, should an accident occur, mitigating its effects and avoiding off-site contamination.
- The Contracting Parties also noted that regulatory authorities should ensure that these objectives are applied in order to identify and implement appropriate safety improvements at existing

plants”.

(3) Proposals to improve the effectiveness and transparency of the Convention

To improve the effectiveness and transparency of the Convention peer review process, the Contracting Parties discussed the proposals to amend the CNS Guidance INFCIRC/571, 572 and 573, and to make Recommendations for Action. These proposals were based on a Report of the Working Group on Effectiveness and Transparency, which was established during the 2nd Extraordinary Meeting. The proposed amendments to the guidance documents as well as the recommendations for Actions provide clearer guidance on actions to be taken by the Contracting Parties to meet the objectives of the Convention, enhance preparation of National Reports, improvements to the review process, enhancement of international cooperation and more transparency towards the public.

3.2 Vienna Declaration on Nuclear Safety

According to the observations of the Contracting Parties of the CNS at the 2nd Extraordinary Meeting in 2012 and the 6th Review Meeting in 2014, the displacement of people and the land contamination after a nuclear accident call for all national regulators to identify provisions to prevent and mitigate the potential for severe accidents with off-site consequences. In this regard, the fundamental safety principles provided by the CNS to implement the objective of the CNS to prevent accidents with radiological consequences and mitigate such consequences should they occur:

- New nuclear power plants are to be designed, sited, and constructed, consistent with the objective of preventing accidents in the commissioning and operation and, should an accident occur, mitigating possible releases of radionuclides causing long-term off site contamination and avoiding early radioactive releases or radioactive releases large enough to require long-term protective measures and actions.
- Comprehensive and systematic safety assessments are to be carried out periodically and regularly for existing installations throughout their lifetime in order to identify safety improvements that are oriented to meet the above objective. Reasonably practicable or achievable safety improvements are to be implemented in a timely manner.
- National requirements and regulations for addressing this objective throughout the lifetime of nuclear power plants are to take into account the relevant IAEA Safety Standards and, as

appropriate, other good practices as identified inter alia in the Review Meetings of the CNS.

In order to implement the objective of the Declaration, the Contracting Parties decided that:

- The agenda of the 7th Review Meeting of the CNS shall under its process include a peer review of the incorporation of appropriate technical criteria and standards used by Contracting Parties for addressing these principles in national requirements and regulations, which should lead the CNS to a process of consideration of key areas to be agreed at Review Meetings for subsequent Review Meetings
- Each national report should include an overview of implementation measures, planned programs and measures for the safety improvements identified for existing nuclear installations.

3.3 Preparation for the 7th Review Meeting

This report describes a series of actions carried out by the government of the Republic of Korea (ROK) in order to implement the obligations of Contracting Party imposed by Article 6 - Article 19 of the Convention on Nuclear Safety (CNS).

Overall structure of the 7th report follows “Guidelines regarding National Reports under the Convention on Nuclear Safety” and describes the obligation and implementation status following the order of the Articles of the Convention.

- Summary of Basic Information on the National Programme
- Feedback of the 6th Review Meeting
- Changes in the National Programme since the last Review Meeting
- Safety Improvements for Existing Nuclear Power Plants
- Response to the Challenges and Suggestions of the 6th Review Meeting and to International Peer Review Missions Results
- The 6th Review Meeting – Special Rapporteur Challenges
- Highlights of the 7th National Report
- Vienna Declaration
- Fukushima Follow up since the 6th Review Meeting
- Current and Future Challenges
- National Report Update to the 7th Review Meeting

The National Report addressed the following highlights items:

- Safety Improvements for Existing NPPs
- Implementation of Stress Test

- Expansion of the evaluation factors of PSR
- Expansion of Emergency Planning Zone
- Approval of the Continued Operation of Wolsong Unit 1

Response to the Challenges and Suggestions of the 6th Review Meeting and to International Peer Review Missions Results

- Responses to the 6th RM Challenges and Suggestions
- Encouragement of reporting counterfeit, fraudulent and suspicious items/actions at NPPs
- Establishment of Robust Certification System for Equipment Qualification
- Expanding Scope of Vendor Inspections
- Strengthening Quality Assurance Inspections
- Tracking and Management System of Equipment/Stock Parts
- Development and Implementation of an Enhanced Regulatory Oversight of Safety Culture
- Reassessment of Site Safety
- Increase of the Number of Regulatory Experts
- Response to IAEA IRRS Follow-up Mission

The 7rd review meeting will be focused on:

- Review the summary report from the 7th review meeting and their own notes taken from rapporteur's report, noting the good practices and the challenges that remained to be addressed
- Assess progresses on addressing these challenges and implementing the planned actions to improve safety
- Post a progress report on the available CNS website. And the president also expressed her hope that all CPs will take the opportunity to reflect on the peer review process and they look forward to starting in earnest later this year their preparations for the forth Review Meeting in 2008.

3. CONCLUSIONS

This paper highlighted the objective and role of the Convention on Nuclear Safety organized by the IAEA. The Convention provides Member States to demonstrate and share how to maintain and improve the level of nuclear safety.

The results of the 6th review meeting were implemented for safety improvements and to prepare for 7th national report. Seven and a half months before the 7th Review Meeting, the National Report has submitted on steps and measures taken to implement Convention obligations. The Contracting Parties reviewed each other's reports, and exchanged written questions, written answers and comments.

Information on the cross-cutting issues, response to

Fukushima Daiichi accident, Vienna Declaration on Nuclear Safety at the 6th CNS could provide current and future challenges and issues on the nuclear safety.

In the following, the 7th National Report was drafted to critically reflect on what we have done after the 6th review meeting and what we have to do until the 7th review meeting. In this regard, the 7th National report has addressed the highlight issues and responses and implementations to the Challenges and Suggestions of the 6th Review Meeting and to International Peer Review Missions Results stated above.

REFERENCES

- [1] 7th National Report of the Contracting Parties to the Convention on Nuclear Safety
- [2] Summary Report 6th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety CNS/6RM/2014/11_Final
- [3] Report of the President of the Review Meeting of the Convention on Nuclear Safety 6th Review Meeting of the Contracting Parties April 2014