

Recent Activities of INRA and Recommendations

Dohyoung KIM*, Hyun-Sop CHANG, Jae-Woong CHUNG, Chae-Woon OH, Kun-Woo CHO

Policy and Cooperation Department
Korea Institute of Nuclear Safety (KINS)

dohyoung@kins.re.kr*

1. Introduction

The INRA (International Nuclear Regulators' Association) was established as an association of top regulators in 1997 to influence and enhance nuclear safety and radiological protection from the regulatory perspective. The members include the most senior officials of well-established independent national nuclear regulatory organizations. Previously, it had 9 members from 8 member countries; U.S. (NRC), France (ASN), Sweden (SKI), U.K. (NII), Canada (CNSC), Germany (BMU), Spain (CSN) and Japan (NSC and NISA). As of March 2006, the Director General for Atomic Energy Bureau in MEST of Korea became the 10th member of the INRA. [1] From this time, Korea has participated in the INRA regular meetings and shared its knowledge and experience in nuclear safety regulation area with members.

2. Recent INRA Activities

As a member, Korea has participated from its first attendance in the 19th Regular Meeting held in France on September 2006 to the most recent 23rd Regular Meeting in San Antonio, Texas, U.S. in December 2008. In this paper, the major discussion topics in the recent regular meetings will be introduced, which cover the 23rd meeting.

Discussion has been focused on the following topics during the 23rd regular meeting, which was held in San Antonio from Dec. 3 to 4, 2009. [2]

- The status of nuclear safety in member states
 - New nuclear-related agency establishment
 - Construction of new NPPs and related issues
 - Experience from the IAEA's IRRS mission
 - Power upgrade and life extension of NPPs
 - Human resource management in nuclear industry
 - Management of radioactive waste
- National radioactive source tracking system
 - System development status of member countries
 - Need for replacement of powder-type radioactive material use in industry (especially CsCl in medical area)
- Control of radiologically contaminated scrap metal imports
- Radioisotope productions for medical use
 - Most of radioisotope production facilities (research reactors) are very old (over 40 years)
 - Very unstable and complex supply chain for Mo-99
 - What is the responsibility of regulatory body in supply chain of radioisotopes for medical use?
 - Long lead time for construction of radioisotope production facility
 - Need for resolving the issue of denial of shipment for the radioactive material
- Safety culture
 - Consider the safety culture as important in most member country
 - Senior management level must recognize the importance of safety culture
 - Impossible to regulate the safety culture itself except related safety management system
 - Sharing related information and experience is important
- Management of material degradation
 - Material issues from life extension and power upgrade
 - Investigate the possibility of life beyond 60 years
 - Need for the study on material degradation
 - Need for the development of related regulatory standards
- The 3rd review meeting of Joint Convention
 - Continuity during 3 years between review meetings
 - Independence of regulatory body and activities
 - Relationships with stakeholders (NGOs and journalism)
- INRA chairmanship
 - Korea will have the chairmanship during the year of 2009

3. Conclusions

From the recent INRA meetings, the following recommendations to nuclear safety regulations could be identified.

- Strengthening the regulatory effectiveness and independence
 - IAEA's IRRS mission
 - Reorganization of regulatory body
 - Need to investigate the possibility to take IRRS mission to Korea
 - Need to improve the effectiveness and efficiency in the review process of national report of CNS and Joint Convention
- Emphasizing the importance of nuclear safety infrastructure
 - Growing the importance in current situation of expanding nuclear energy usage
 - Especially in developing countries pursuing the new NPP build
 - Possibility to be prerequisites for expanding the nuclear industry. So need to construct close cooperation with NPP import countries
- Nuclear safety standards harmonization
 - MDEP (Multinational Design Evaluation Program) activities
 - Harmonization activities in EU
 - Application of IAEA's safety standards to their national regulatory system
- Emphasizing the nuclear security
 - Since 9/11, growing importance of physical protection for facilities and radioactive materials
 - Safety and security harmonization
 - Enhancing the emergency preparedness and physical protection system of nuclear power plants
 - Large fire management in nuclear power plants due to airplane crash
 - Consider security aspect from design stage of new NPP

Recent activities and recommendations for nuclear safety from INRA are briefly introduced through the paper. From these recommendations above, several recommendations to national safety regulatory policy have been developed as follows.

- Investigate the feasibility of taking the IRRS mission in Korea. Most nuclear countries took mission or are preparing the mission. Request for taking IRRS mission in Korea from international society is now expected to grow continuously.

- Need the cooperative relationship to help developing countries in building their nuclear safety infrastructure. This help can be benefit to international community through enhancing the global safety level. In addition, good relationship with potential candidates for NPP buyer will be help in exporting Korean-made NPP.
- Need to participate in the international nuclear safety harmonization activities, such as MDEP. The standards resulting from MDEP have possibility of being international standards for nuclear safety regulation.
- Need to consider the security aspect from the design stage of Korean-made NPP, such as APR-1400. Now we are facing the competitors like AP 1000 and EPR which already have security aspect considered design. Therefore, it is essential to consider the security aspect for Korean-made NPP in order to have competitive power in global nuclear market.

REFERENCES

- [1] Terms of Reference for INRA
- [2] INRA 제 23 차 정기회의 참가결과 보고서, KINS/DR-2006
- [3] INRA 활동을 통한 원자력안전정책 개발 연구, KINS/GR-407