

## Our Consistent Countermeasure Following up with Lesson from Fukushima NPPs Accident

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### 1. Introduction

Fukushima NPPs accident has not only resulted in driving out the nuclear Renaissance which is about to revive after several lean years, but also given humankind a very rigorous lessons in nuclear safety. Recently administrative systems were reorganized for stepping up further nuclear safety. Nuclear Safety and Security Commission(NSSC) as a governmental organization, directly under the jurisdiction of the president which is responsible for a nuclear safety mission separated from Ministry of Education, Science and Technology.

A beef-up work of 50 safety-related items for Korean NPPs identified after Fukushima NPPs accident has been implemented under the supervision of the commission. It has also been emphasized that sincere communications between the nuclear society and the people at large are essential for obtaining public acceptance of nuclear energy by ensuring the credibility of nuclear safety. The main points of lecture materials presented in the nuclear senior members' forum have been reviewed to derive invaluable guidelines.[1]~[3]

### 2. Main points

2.1. *Balanced progress of both promotion and regulations areas in nuclear energy in Korea*

2.1.1. Comprehensive program for developing nuclear technology[1]

A goal that a share of nuclear power may be increased up to 59 % by 2030. Spent nuclear fuel is to store temporarily in AR(At Reactor) by 2016, and then comprehensive management program will be reviewed to set up in due consideration of the policy direction and progress of nuclear technology including the interim storage in AFR(Away-From-Reacto). R&D program combined pyro-processing with SFR(Sodium cooled Fast Reactor) is in progress.

For the medium and small type model, SMART, its construction is underway in Korea.

Pending issues encountered are selection of reactor sites for NPPs, SMART, SFR etc. and amendment of the existing R.O.K.-U.S.A. bilateral agreement.

2.1.2. Due course of nuclear safety regulations after an inauguration of NSSC[2]

Pivotal points of lecture presented by Mr. Guk-Hee Yoo, Director General of Nuclear Safety and Security Commission are as follows;

NSSC inauguration means that safety is a top priority in the uses of nuclear energy in Korea, and the mission is securing safety, security, and nuclear non-proliferation. To ensure safety of NPPs in Korea after Fukushima NPPs accident, implementation of a full-scale inspection and an improvement work for 50 safety-related items identified are underway

- To reenforce a coastal barrier of the Gori site up to 10 m high
- To install an immersion-free gate for the

diesel generator

- To set aside a vehicle-mounted diesel generator for the use in case of emergency
- To relocate a water-proof batteries for the use in case of emergency
- To install a tritium removal system which is workable without power supply
- To install de-pressurization facilities of the containment vessel, etc.

### 2.1.3. Suggestions/opinions raised at the Forum regarding nuclear safety regulations

- Regulations are essential, but should focus on ensuring effectively nuclear safety.
- As the most important thing is also of the public feeling towards nuclear safety in pushing up the nuclear option, sincere communications between the nuclear society and public in general are needed.
- Once even a small abnormality occurs in a nuclear reactor, it is designed that the reactor comes to stop automatically. It is not desirable for reactor operators involved to be punished in such a case.
- It is quite reasonable for NSSC to take "nuclear safety- our top priority" as its catch phrase. It is highly expected that the new-born NSSC as a independent body will contribute to upgrading nuclear safety and security in Korea.
- Even if NSSC is responsible for nuclear safety assessment, licensing, regulations and policy making concerned, it has to make an effort bring up the nuclear safety culture.
- If NSSC exerts to explain in easy to understanding manner and to do marketing the nuclear safety policy, people at large may willingly cooperate later on with.
- It is highly desired that nuclear safety regulations should be implemented in the reasonable and practical manner.

### 2.2. *A way how to obtain credibility from the general public through an improvement of nuclear safety*[3]

#### 2.1.1. Phenomena after Fukushima NPPs accident in Korea

The ratio that NPP is dangerous among people at large before and after Fukushima NPPs accident increased from 24.4 % to 46.4 %. Limit of present regulation system is that not being applied consistently and

compulsively in severe accidents. Nuclear safety regulations should coincide with their original goal. Followings are important points;

- Some people distrust 50 nuclear safety-related items, the safety goal in the probabilistic point of view, and advisory review service offered by IAEA experts.
- Politicization of nuclear technology; Different voices are announced from each political parties. So a lot of efforts in the nuclear society are needed for making them understand nuclear technology correctly as it is.

### 3. Conclusions

An application of nuclear safety as a top priority is absolutely right in the peaceful uses of nuclear energy. However, harmonized progress of both promotion and regulations areas in nuclear energy is also needed.

A way for obtaining credibility from the general public in nuclear safety is as follows:

It is necessary to show an reliable means which are ensuring the credibility and transparency. NSSC; Precautionary action, possession of expertise, opening of safety-related information to the public, development of inherent requirements for safety technology

It is emphasized that important points are to have consistently sincere communications with the general public, to disseminate information for radiation safety with the readily understandable means, and to let them have a first-hand experience of radiation detections.

### REFERENCES

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