

Summary of 19th Chief Nuclear Officer Conference

1. Date: November 14, 2024 (Thu.) 13:00 ~ 15:00
2. Place: Otemachi Headquarters, Central Research Institute of Electric Power Industry (CRIEPI)
3. Participants:
 - Chair: Apostolakis (NRRC)
 - Members: Katsuumi (Hokkaido EPCO),
Watanabe (Tohoku EPCO; substitute for Kanazawa),
Yamashita (TEPCO HD; substitute for Fukuda),
Otsuka (Chubu EPCO; substitute for Ihara),
Fukumura (Hokuriku EPCO),
Takabatake (Kansai EPCO; substitute for Mizuta),
Mimura (Chugoku EPCO),
Watanabe (Shikoku EPCO; substitute for Kawanishi),
Hayashida (Kyushu EPCO), Kenda (JAPC), Matsumoto (JNFL),
Hagiwara (J-Power), Asaoka (NRRC)
 - Observers: Otsuka (FEPC), Ono (JANSI), Uozumi (ATENA), Meserve (NRRC)
 - Organizer: Tanigawa (NRRC)
 - NRRC Management: Yoshida, Yoneda, Watanabe, Nishimura, Matsuyama

4. Proceedings:

(1) R&D Research Plans for FY2025

NRRC presented the overview of R&D research plans for FY2025.

(2) Discussions with the NRRC director

(Main comments from committee members)

- Currently, more existing plants are gradually being restarted in Japan; the Japanese industry is moving towards the next phase of constructing new nuclear power plants under the 7th Strategic Energy Plan. I believe this new situation will require a relative safety assessment of the plants and, therefore, this is the right time for a shift from deterministic regulation to more rational, that is, risk-informed regulation.
- Dr. Meserve mentioned that many countries have used safety goals as a basis of their nuclear regulation, which has made me think that the official establishment of safety goals will also be a breakthrough in risk-informed decision making (RIDM) and risk-informed regulation in Japan.
- Our plants use our own performance targets of 10⁻⁴/reactor year, 10⁻⁵/reactor year, and 10⁻⁶/reactor year, and have begun to develop the infrastructure to ensure that every plant personnel is firmly familiar with RIDM. We are sure to address any

kind of opinions and issues in cooperation with the NRRC, making efforts to incorporate RIDM as soon as possible ahead of the NRA's efforts.

(Remarks of the NRRC director)

- I have two messages for both the utilities and the regulator based on the U.S. experience in risk-informed regulation. One is that providing flexibility in operations to the utilities improves safety. It is important to understand this clearly.
- The other is that one needs to stop saying, "PRA has its limitations." This phrase will lead to the misunderstanding that PRA is inferior to a deterministic approach, which also has its limitations in that it relies heavily on engineering judgment.
- The Safety Goals and Regulatory Guide 1.174 are the cornerstones of the U.S. risk-informed regulation. I doubt that risk-informed regulation could be implemented in Japan without official safety goals and a regulatory guide equivalent to those in the U.S.
- There seems to be a mindset that CDFs must be of the order of $10^{-6}/\text{ry}$ in Japan, but this notion is inappropriate.

(Remarks of the Executive Advisor)

- At the last meeting of the NRA's External Advisors, I stated that Japan was far behind the rest of the world in risk-informed regulation and proposed the development of safety goals and performance objectives and the issuance of an official policy statement like the one issued in the U.S. thirty years ago.
- Chairman Yamanaka and the NRA commissioners are changing their thoughts to using PRA in the regulatory activities, which is an important step forward. However, I think they must continue to address the issues of understanding the trade-offs between tightening and relaxing regulations and ensuring sufficient human resources.