Summary of 14th Chief Nuclear Officer Conference

1. Date: May 18, 2022 (Wed.) 10:00 ~ 12:00

2. Place: Otemachi Headquarter, Central Research Institute of Electric Power Industry (CRIEPI), and Webex

3. Participants:

Chair: Apostolakis (NRRC)
Members: Funane (Hokkaido EPCO),
Abe (Tohoku EPCO; substitute for Kato),
Fukuda (TEPCO HD), Ihara (Chubu EPCO),
Fukumura (Hokuriku EPCO; substitute for Ishiguro),
Matsumura (Kansai EPCO), Kitano (Chugoku EPCO),
Yamada (Shikoku EPCO),
Honda (Kyushu EPCO; substitute for Toyoshima),
Miyoshi (JAPC; substitute for Kenda),
Ota (JNFL; substitute for Matsuda),
Hagiwara (J-Power; substitute for Urashima), Asaoka (NRRC)
Observer: Nakaguma (FEPC), Hashimoto (JANSI; substitute for Yaegashi),
Uozumi (ATENA), Meserve (NRRC)
Organizer: Furuta (NRRC)
NRRC Management: Yoshida, Yoneda, Iwashima, Sakuramoto, Nishi,
Matsuyama

4. Proceedings:

(1) R&D Research Results of FY2021

NRRC presented the R&D results of FY2021.

(2) Activities of NRRC

NRRC reported on the Overview of NRRC's activities

Main comments from committee members:

- The development of PRA requires much cost and human resource development. However, the cost can be soon offset if the capacity factor increases. Just as PRA has been used in the U.S. to improve safety and maintain a high utilization rate of 95%. I hope that ATENA, working with the NRRC, will revise LCOs and develop an OLM guide using PRA and that the restarted power plants take the lead in achieving RIDM results.
- Since the initial cost of risk-informed application is high, it is important that the whole industry recognizes the future benefits and works toward them. We need successful examples such as revising LCOs and AOTs or OLM whose benefits are

very easy to understand.

- ATENA has a deep interest in RIDM. The issue is how to get involved in this area and how to exercise leadership in negotiating with the NRA. We would like to continue discussions with the NRRC and the utilities on this point.
- Spreading the use of the risk-informed application to all the utilities is a matter of culture change within them. There is still a large gap in awareness between personnel involved in safety and those in O&M. In addition, no matter how seriously we make proposals to the NRA, if they do not accept that, the progress will be slow.
- Since Japanese society has difficulty in accepting risk sense, the utilities and the NRA need to work together to present risk information utilization to the society in an easy-to-understand manner. It is important to be able to explain with risk information that more effective regulatory requirements should be implemented.
- For the future realization of RIDM, PRA needs to be explained in an easy-to-understand manner both within the utilities and to the public. PRA should be able to demonstrate the safety improvement achieved through the addition of specific safety facilities and SA equipment. It can also be used for voluntary safety improvements. In this way, we can communicate how the PRA can be utilized for RIDM.

Main remarks from Executive Advisor:

- PRA is very valuable in that it can be used as a framework for discussion not only among CNOs but also with the NRA. It can be used as a means of discussing, for example, what is important or not important, what is or is not a violation of regulations, and how effective are new or existing regulatory requirements.
- As an international advisor to the NRA, I have discussed this issue with Dr. Fuketa and Dr. Yamanaka, the previous and the present NRA chairpersons, and they both agree on the basic idea of considering what is important and what is not important through risk-informed regulation in the future. They are also very interested in what is being done internationally, so the IAEA movement and IRRS could be a very important force.

Main remarks from Director:

- PRA is resource-intensive but pays in the long run because risk-informed decision-making with PRA improves nuclear safety and reduces costs in nuclear power plants.
- I believe that the cooperation with ATENA is progressing well. Since ATENA is supposed to dialogue with the NRA, we would like to continue to work closely with ATENA.
- It will take much time to apply RIDM to actual plants because a change in the culture of power plant personnel is necessary to shift from the conventional deterministic approach to a probabilistic approach. CNO leadership in actively implementing RIDM is very important. It is also necessary to send the same

message to the regulatory side.

- Some NRA staff and utility employees may resist the use of risk information, which is because it requires cultural change, but this will be overcome by gradually accumulating the experience of its applications. In addition, we can expect influence from overseas, just as the repeated recommendations in the IAEA's IRRS led to the NRA's introduction of ROP.
- What the utilities should do for the public and society is to win their trust. The public is not interested in the results of PRA and disclosing them will not lead to winning their trust. The numbers and terminology used in PRA should be used only within the industry and in discussions with the NRA.