



Role and Collaboration of Radiation Protection Experts: Summary of Discussions between the Japan Health Physics Society and the Korean Association of Radiation Protection Related to Tritiated Water

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The Japan Health Physics Society (JHPS) held a symposium on June 22, 2021, entitled “Current status of Fukushima Daiichi decommissioning project, treated water, and future collaboration.” This symposium to share the information on the decommissioning process and environmental monitoring of tritium and other radioactive materials was held with radiation protection (RP) experts from Korea that is a neighboring country with high interest in this project. In the panel session, discussions were made on the role of RP experts and the promotion of further communication to build a cooperative relationship with the Korean Association for Radiation Protection (KARP) in case of an emergency and post-accident situations.

Dr. Yoshida (President of JHPS) opened the symposium to explain the purpose and objectives of this session, and Mr. Matsumoto (Tokyo Electric Power Company Holdings Inc. [TEPCO]) introduced the current status of decommissioning at Fukushima Daiichi and the disposal of treated water (advanced liquid processing system [ALPS] treated water). In discharging the ALPS treated water into the ocean, he explained TEPCO’s plan that they will comply with the safety standards based on laws and regulations, expand and strengthen the sea area monitoring, and basically ensure the safety of the surrounding environment and agriculture, forestry, and fishery products. Efforts will be made to ensure transparency and to dispel harmful rumors, and the monitoring of the sea area will be conducted appropriately and reviewed by the International Atomic Energy Agency (IAEA) experts. Efforts will also be made to disseminate information to promote reconstruction and decommissioning.

Prof. Aoyama (University of Tsukuba) introduced the long-term behavior of tritium radioactivity concentrations since the 1970s along the coast of Fukushima Prefecture and in the North Pacific Ocean. The long-term measurement of cesium and tritium showed that (1) tritium has less advection and diffusion than cesium and (2) there is a source of tritium. Although, the activity concentration of tritium off the coast of Fuku-

shima was lower than that of tritium in Japan off the coast of Fukui before 2011, it increased sporadically by uncontrolled release after the accident. The impact of tritium release can be evaluated by a simple proportional calculation without computer model simulation. It can be said that the increase of tritium concentration in the open sea and the Japan Sea is not detectable except for the areas very close to the release sites.

Next, Prof. Yong Hoon Jeong (KARP, Korea Advanced Institute of Science and Technology) introduced the understanding and recognition of the issue of the treated water in Korea. The government of South Korea is not aware that the Japanese government is planning to release the treated water in 2023. The government of South Korea expressed strong opposition and concern over the Japanese government's decision to release the treated water stored in tanks at the premises of Fukushima Daiichi nuclear power plant into the sea on April 13, 2021, and there was an overreaction from the society of South Korea. The scope and frequency of information disclosure should be increased, data should be made public, and descriptive language should be replaced with everyday language to make quantitative facts easier to understand. Since it is impossible to find a solution by eliminating anti-nuclear sentiment including anti-Japanese sentiment, it is necessary to find a solution based on this fact.

Finally, Dr. Sasaki introduced the framework of our ad-hoc committees and task groups and their activities related to emergency monitoring and disposal of treated water, as well as the compilation of issues and recommendations after the Fukushima Daiichi nuclear power plant accident. The conclusion of the tritium session organized by the Board of Directors at the JHPS Annual Meeting in June 2020, and the joint symposium of KARP-JHPS in March 2021 [1] were also explained.

Following the presentations above, a panel discussion was done on (1) How to share relevant information on decommissioning of Fukushima Daiichi nuclear power plant for better communication? and (2) What are the expectations for the role of experts? During the panel discussion, Dr. Yoshida, Mr. Matsumoto, Prof. Aoyama, and Prof. Yong Hoon Jeong, Prof. Michiaki Kai, Dr. Kyo-Youn Kim (President of KARP, Korea Atomic Energy Research Institute), and Dr. Hee-Seock Lee (Vice President of KARP, Pohang Accelerator Laboratory/Pohang University of Science and Technology) participated as panelists. The main opinions of the panelists on (1) and (2) above were as follows.

On (1), facilitate access to scientific data; provide reliable

data to experts and the public individually (because the needs and purpose of both groups are different); improve the IAEA's cooperation and communication methods; ensure transparent decision-making; and promote communication based on facts, specifically the measured data.

On (2), improving the ability to express expert opinions and to communicate with the public; provide information on the level of risk following an accident; sharing timely question and answer (Q&A) and continuing dialogue (especially important on food products); and building an international approach, cooperation between KARP and JHPS.

In conclusion, Dr. Yoshida summarized the need for further collaboration between KARP and JHPS to address this issue, and the importance of involving appropriate experts in cooperation with activities related to radiation safety culture and public understanding.

Currently, KARP and JHPS have established a contact point to further promote communication, and are planning to exchange information by e-mail and other means, as well as to hold regular web conferences. Regarding the communication with the society, immediately after the accident, JHPS opened a Q&A page [2, 3] and provided information based on facts, but the content of questions from the public changed as time passed. With the release of tritiated water, a new phase in the decommissioning of the nuclear power plant, and the change in public interest, it may be time to reconsider what the role of experts is, what RP experts can do, and how to set them up. In addition, it may be effective to cooperate with other RP-related societies to find a way to deal with this issue. The presentation materials are available on the JHPS website [4].

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Author Contribution

Conceptualization: Sasaki M. Writing-original draft: Sasaki M. Writing-review & editing: Yoshida H, Kai M, Jeong YH, Kim KY, Lee HS.

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