Students of Nagaoka University of Technology at the training course on whole body counter

Developing human resources in nuclear energy field

Training course on whole body counter and public lectures at Nagaoka University of Technology

The Nagaoka University of Technology (NUT) in Nagaoka City, Niigata Prefecture, celebrated its 38th Campus Festival (called "Gidaisai") on September 15 and 16, 2018. During the event, the Japan Atomic Energy Agency (JAEA) held a training course for students on the inspection of internal radiation exposure using a whole body counter (WBC), a device for measuring the amount of radioactive materials inside human bodies. JAEA also gave lectures and opened a booth for visitors aiming to let them understand the basics of radiation and the current status of Fukushima.

These events, the fourth time this year, were a part of the human resource development activities in nuclear energy field under the comprehensive partnership agreement between NUT and JAEA, which was signed after the accident of the Fukushima Daiichi Nuclear Power Station, Tokyo Electricity Power Company Holdings Inc.

Preliminary sessions before hands-on WBC training

On September 14, one day before the campus festival, ten graduate students of the Department of Nuclear System Safety Engineering, NUT attended a special class titled "The current status of Fukushima and the effects of radiation on the human body" to understand the basics of how our bodies are affected by radiation. Also, the students received a lecture on the method for the evaluation of internal radiation exposure. In the training on the inspection of internal radiation exposure using the WBC, the students experienced the total procedures for the visitors such as reception, guide to the WBC vehicle, measurement and evaluation of the WBC results, and the explanation of the results. Through these trainings, the students could learn the total WBC procedure (upper photograph). Since overseas students joined the program, the documents in English were also prepared this time.

Students practiced the inspection of internal radiation exposure.

The students were kept very busy for both days attending to continuous WBC requests by the visitors (lower photograph). At the beginning, they seemed not to be familiar with how to respond to the visitors. But after repeating the practices, they could calmly explain in detail with confidence about what they learned in the preliminary session, e.g., how potassium-40, a natural nuclide, can be found inside human bodies. The number of people waiting in line increased even before the opening of the WBC inspection. Therefore, at the booth exhibiting cloud chamber etc., the staff of JAEA explained to the waiting people about the basic knowledge on radiation and the latest research by JAEA in Fukushima.

During the two-day festival, almost 110 people visited for the inspection of their internal radiation exposure by WBC, including some people who had been inspected every year. The organizers were surprised to find so many people are interested in internal radiation exposure.

One of the participants said, “I was able to feel that there are natural radioactive materials also in my body.” Like this, there were a lot of positive feedbacks showing this year’s WBC event was a meaningful experience.

One of the students talked about the impression of the training as follows. “I realized it is difficult to explain to ordinary people with easy-to-understand words.” The other student said, “I was able to understand how radiation including natural radiation affects our bodies.” Judging from these words, we consider that it was a meaningful training course.

Over the two days, two lectures were held, entitled “How radiation affects the body – latest situation in Fukushima”. About 15 people attended every lecture. One of the attendees said, “The session helped me understand the radiation effects for the first time.” The other attendee said, “I think that more effort should be made to spread the correct knowledge and information on radiation (left photograph).

Visitors to the exhibition booth were particularly interested in the visible traces of radiation inside the cloud chamber. Some visitor said, “I want to make a cloud chamber by myself.” In addition, many people showed special interest in exhibits explaining the radiation situation in Fukushima (right photograph).

Looking back at the project

This project reminded the organizer of the importance of releasing information also for people outside Fukushima about the JAEA’s activities and the current status of Fukushima Prefecture.

JAEA will continue the activities contributing to the development of young human resources necessary to the reconstruction of Fukushima through the training course for students such as WBC training.

Note: This project was conducted as a part of the NUT initiative for the Human Resources Development on Nuclear Regulation based on the System Safety and the Regional Cooperation Niigata Model. For more information on this initiative, see the following website:
http://sdfrs.nagaokaut.ac.jp/sdfrs/nuclearregulatory/

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