

Newsletter

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What is U-ATOM?

The Academy for Global Nuclear Safety and Security Agent is running a "boarding school with a new and unique nuclear education (DOJO for Global Nuclear Safety and Security)." U-ATOM is a combination of the capital letter of "Unique" and ATOM.

2nd year class students enrolled to the "DOJO for Global Nuclear Safety and Security"

On Tuesday October 1, 2013, a commemorative ceremony of enrollment of the 2nd year class students to the Academy for Global Nuclear Safety and Security Agent was held at the Tokyo International Exchange Center Plaza Heisei, located in the Odaiba area.



Chaired by Masayuki Igashira, the Academy deputy director, the enrollment ceremony began with the solo-singing of the school song by Michiko Fukuzawa, a promotion staff and a professional vocalist. Amid the solemn atmosphere, the already tense new DOJO students and the entire attendance straightened themselves as they listened to the beautiful voice. Masaki Saito, the Academy's director offered words of congratulations and advices for new comers, including the importance of communication and teamwork. Guests included director Hideki Yonekawa (Japan Student Services Organization), President of the Titech Professor Yoshinao Mishima, Head of Faculty of Engineering Professor Kikuo Kishimoto, and IAEA's DDG Janice Dunn Lee from overseas as well. Individually, they offered words of

expectations and encouragements to the newly joined students aiming to become the world's next generation leaders. Then, a representative from the first year DOJO class shared helpful experiences for the past twelve months with a "Let's do it together!" cheer. In response, a representative from the second class made a manifesto of taking advantage of the Academy's exclusive programs to acquire skills with an aim to address the Fukushima accident as soon as possible, and expressed a strong wish to become a global leader and drive the world's nuclear energy. It was a day when U-ATOM embarked for a new beginning.

USA study tour

A valuable "touch and feel" experience of the international stage front line

From September 10 to 21 2013, 7 students and 5 faculty members joined the USA study tour and visited Texas, Washington DC, and Idaho.

The tour took them to many places including the Texas A&M University, the Japanese Embassy, the World Bank, the Idaho National Laboratory and many others. There, students made academic exchanges, joined the nuclear disaster countermeasure exercise, and visited the TMI-2 accident site and the fuel debris storages. The "touch and feel" of the international stage front line was both a rewarding and valuable experience.



▲Albert Einstein Memorial

Texas A&M University

Texas A&M University is home to the largest nuclear engineering program in the United States, with two nuclear reactors built on its campus site in 1958. We visited this place to join the student workshop, hold free discussions on the background, current situation, measures, and futures of the Fukushima Daiichi Nuclear Power Station accident, and made academic exchanges. Then, the tour took us to the "Disaster City", a place that delivers full array of emergency trainings and exercises for disaster situations that no other facilities in the world can match. A nuclear disaster caused by earthquake was simulated and a radiological countermeasure team was formed by our students to exercise actions against nuclear disaster such as searching, finding, confirmation, and collection of radioactive materials.



▲ Students in pairs enter the building debris to collect radioactive materials

Idaho National Laboratory and the University of Idaho

Visit was made to the Idaho National laboratory to tour the ATR (Advanced Test Reactor) irradiated material test reactor, the TMI-2 accident site and the fuel debris storages, EBR-1 (Experimental Breeder Reactor 1) known as the world's first nuclear power reactor (now used as museum), dry reprocessing and analysis facility, safeguards equipment, nuclear security and nuclear non-proliferation equipment. The group also had a chance to experience a three-dimensional virtual reality system and exchanged ideas on educating 3S (Safety, Security, and Safeguards). We also visited the Idaho University to tour its facilities and spend time with university students.



▲ Cherenkov light measurement (ATR) to check nuclear materials from spent fuel

Washington DC

In Washington DC, the center of international politics and diplomacy, we visited the Japanese Embassy and the World Bank to meet with the Japanese staff working at the forefront of international stage, and exchanged information and thoughts on various topics, for example the Japanese Embassy's information diplomacy during 3/11 and the World Bank's energy-related lending policies. We also met with people involved in nuclear power (sixteen in total), of which the majority were graduates of the Tokyo Institute of Technology (called the "Kuramae-kai") and now residing in Washington DC.



▲World Bank

Voice

Second year
master's course
Keisuke Tsukada



At the Disaster City, we worked in pairs with a flashlight and a survey meter in hands and recorded the internal structure and dose, found and collected containers of radioactive materials. Using real radionuclides and surveying the site was a great experience. The INL possesses many technologies required for the decommissioning of the Fukushima Daiichi Nuclear power plant, and we learned many things from the Three Mile Island power plant accident. Touring places outside of the nuclear field will no doubt widen our perspectives. This tour is highly valuable and presents an outstanding experience as it takes us to places we cannot visit otherwise.

Nuclear reactor severe accident simulation exercise

Voice

Second year
master's course
Yuki Sakata



The use of an actual simulator, also used by nuclear power plant staff, was very helpful in taking a structured approach to understanding the roles and relevancy of devices used in nuclear power plants. Understanding of a nuclear power plant behavior based on the scenarios set by the students was stimulating, as we had to make full use of the knowledge we had gained so far. Visit to the Tsuruga No.1 and No.2 reactors with WR and PWR designs allowed us to compare and reaffirm the individual characteristics of two different nuclear power plants. Especially interesting was the Tsuruga No.1 reactor as its structure is basically the same as the Fukushima Daiichi nuclear power plant.

This exercise is intended to become familiar with key facilities related to the safety of nuclear power plants and experience plant responses by a series of simulations, including transient, design-basis accident, and severe accident of Boiling Water Reactor. To start with, students sat in class to learn the key structures and safety equipment of a boiling water reactor, and to understand the analysis results of the accident progress behavior of the Fukushima nuclear power plant. Using the severe accident analysis code, the students studied the analytical results of typical accident sequences.

After these lessons, each student used a computer to simulate and exercise the boiling water reactor transient, design-basis accident, and severe accident. The globally well-known MAAP code was used as the severe accident analysis code. A total of 5 days were spent on this exercise, from July 22 to 26 2013, at the Tsuruga Training Center of Japan Atomic Power Co. The simulation exercise this time was received extremely well among students.



▲ Tsuruga Training Center of Japan Atomic Power Co.

Exercise on the "environmental fate of radioactive materials"

Use of WSPEEDI-II for the simulation of the environmental diffusion of radioactive materials caused by a nuclear power plant accident

A total of eight people from the initial DOJO class joined the 'Environmental fate of radioactive materials' exercise, one of the subjects in the Academy's 'Nuclear Power Safety & Security Courses'. The exercise lasted for 7 days, from August 26 to 30, 2013 at the JAEA (Japan Atomic Energy Agency) Nuclear Human Resource Development Center, and the JAEA environmental fate research group joined the exercise. To acquire skills to use simulation and to quickly predict the results of environmental diffusion of radioactive materials and public exposure upon nuclear accident, students used the WSPEEDI-II, an environmental emergency dose prediction system to calculate the environmental diffusion of radioactive materials and evaluate public exposure following a hypothetical nuclear accident. After attending lectures on nuclear accident and radioactive material release, biological effects by radioactive materials, environmental fate model from atmospheric dispersion, water environmental fate in general, use and input preparation method of the WSPEEDI-II, the students grouped into four teams and each took a hypothetical approach of four weather scenarios (rain, typhoon, southerly/southwestward wind, snow) using actual Fukushima 3/11 accident source term, and simulated the environmental diffusion of radioactive materials. On the last day, each team presented the results and compared them with the actual 3/11 accident simulation, then conducted a thorough discussion. The class also visited the JAEA Nuclear Emergency Support and Training Center and the Ibaragi prefecture Off-Site Center to understand and experience the use of WSPEEDI-II during nuclear emergency and disaster-prevention measures.

Voice

Second year
master's course
Tatsuki Watanabe



The experience I gained through this exercise with the actual use of WSPEEDI-II was very valuable; I learned various diffusion parameters and saw how radioactive materials are diffused. The simulation clearly taught me how weather conditions such as rain can greatly impact the diffusion and deposition of radioactive materials. I am committed to leverage the knowledge and experience obtained in this exercise in my future activities.



▲ Japan Atomic Energy Agency Nuclear Human Resource Development Center

Other events

The 9th DOJO Lecture
Lecturer: François PERCHET
 Senior Technical Advisor,
 World Nuclear University
 / World Nuclear Association
Lecture Title: Nuclear Energy Future in Europe
 DATE: 16 December 2013, Monday
 PLACE: 1F Lecture Room, No.1 North Bldg.
 TIME: 13:30-14:45 (including Q&A session)

U-ATOM Special Lecture
"60 Years of Atoms for Peace"
 In the subsequent 60 years, nuclear technology has achieved tremendous accomplishments while facing government constraints. Reflecting the advances of nuclear technology and changing life, the IAEA's mission has evolved to meet the world's need for an impartial institution dedicated to improving the safe and secure use of all things nuclear.
JANICE DUNN LEE
 Deputy Director General
 Department of Management
 DATE: 2 October 2013, Wednesday
 PLACE: 1F Lecture Room, No.1 North Bldg.
 TIME: 18:45-19:00 (including Q&A session)
 Academy for Global Nuclear Safety and Security Agent
 Tokyo Institute of Technology
 Office No. 8726-0606

The DOJO Lecture

"Perform globally" or "become a global leader" These words are easy to say but hard to achieve. As we search for answers in our daily endeavors, we come across words uttered by people with wealth of experience that are meaningful and heartfelt. The DOJO Lecture, the 10th in its series in January 2014, and prominent figures from various fields, as well as others beyond the boundaries of disciplinary areas and nationality. Listening to their stories on various themes and engaging in debates inspire the next generation leaders, with stronger motivation and sense of responsibility.



BBQ

In early November, the DOJO students, U-ATOM teachers and office staff joined a BBQ party held at the garden of International Exchange Center (the DOJO dormitory) to enjoy and mingle with each other. They enjoyed the free and fun atmosphere; engaging in conversation while cooking around the grill, talking with people of various ages and positions, or bask in the relaxing atmosphere and observe the event. It was a chilly day, but with plenty of foods and happy atmosphere, the participants forgot the cold and enjoyed the BBQ party.

Student profile 1

Lead the worlds nuclear field



Kota Kawai

I applied for the Department of Nuclear Engineering, as I am interested in the nuclear waste disposal issue. This issue must be addressed early, whether to resume operation or decommissioning of the nuclear power plants. Leveraging the Academy's unique education programs such as the individual field works and liberal arts, I want to study hard and learn from my classmates and obtain nuclear expertise balanced with general knowledge and education, and ultimately lead the world's nuclear field.

Aim to become a global leader



Hiroyuki Kazama

I was living in Koriyama City, Fukushima Prefecture during my school years, so the Fukushima Daiichi Nuclear Power Station accident was very close to me personally. Originally I was applying for Chemistry, but the accident caused me to think about nuclear power and I joined the Department of Nuclear Engineering to gain deep knowledge on this subject. The Academy offers opportunities to research, study tour in Europe, or attend an international seminar, so there are plenty of things to do everyday. My goal is to become a world leader who can apply learning from the accident.

Act globally with breadth of knowledge



Kazuki Nakahara

From childhood I wanted to have a job in manufacturing, and in my school years I attended the mechanical class. The Fukushima Daiichi Nuclear Power Station accident in 2011 taught me first hand the imperfections of the so-called "perfect" nuclear power technology. This triggered my interest toward the making of a safe nuclear reactor, and I applied to the Department of Nuclear Engineering. At this Academy, I want to gain a broad knowledge with a global mindset and work globally in the future.

Vision of the future with clear focus



Tetsu Kikuhara

The 2011 Fukushima nuclear accident moved me to apply for the Department of Nuclear Engineering. It is said that there is a long way to go to solve humanity's energy crisis, but reading the future is not easy. To clear the cloudy future, broad and accurate knowledge is what I believe we need the most. To start with, I want to learn many things and hear from various people; with that in mind, I am studying at U-ATOM.

Information

Event calendar

- February 25 to March 7, 2014 ...International Seminar
- March 20 to 24, 2014 ...Environmental radiation field work