International Conference on Human Resource Development for Nuclear Power Programs: Building and Sustaining Capacity (Strategies for Training, Networking and Knowledge Management)  
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IAEA CN-215: #87

International Training Program on Nuclear Engineering at Kinki University

Kinki University  
Atomic Energy Research Institute

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Genichiro Wakabayashi, Hirokuni Yamanishi, Tetsuo Itoh
Introduction

• Japanese government decided the nuclear power as an important “Base Load Electric Power” in the Master Plan for Energy Supply in 11 April 2014.

• Demands for nuclear technician in Japan is predicted to increase in the coming some decades.

• MEXT* Japan invited Human Resource Development Program on Nuclear Engineering, and Kinki Univ. suggested a international training program in 2013. The Program was adopted as a 3-years program since 2013.

* Ministry of Education, culture, sports, science and technology
Outline of the Training Program

• This training program is a 3-years program since 2013.

• This program is conducted with 5 universities’ cooperation.(Kyushu Univ., Nagoya Univ., Kyung Hee Univ., Kyoto Univ. and Kinki Univ.)

• Educations are provided in 3 experimental field.(Kinki Univ. Reactor: UTR-KINKI, Kyung Hee Univ. Reactor: AGN-201K, Reconstruction Support Test Field in Fukushima: RSTF)

• A language used in the program is English which is not mother tongue for both Japanese and Korean students.
International Training Program for Nuclear Engineering

• Students and Teachers from several universities join the program, and the education is provided with cooperation.

STUDENTS

KYUSHU UNIV. (JAPAN)

NAGOYA UNIV. (JAPAN)

Kyung Hee UNIV. (KOREA)

KINKI UNIV. (JAPAN)

KYOTO UNIV. (JAPAN)

TEACHERS

UTR-KINKI (JAPAN)

AGN-201K (KOREA)

RSTF (JAPAN)

Solid Line: Traveling fee is Supported in this program
Bloken Line: Traveling fee is NOT Supported in this program
Experimental Field

Kinki Univ. Reactor (JAPAN)
NAME: UTR-KINKI
For Nuclear Engineering
MAX 1W in thermal.
Used for Japanese Nuclear Education in this 52 years.

Kyung Hee Univ. Reactor (Korea, Republic of)
NAME: AGN-201K
For Nuclear Engineering
MAX 10W in thermal.
Used for Korean Nuclear Education in this 31 years.

Reconstruction Support Test Field (Fukushima, JAPAN)
NAME: RSTF
For Field Monitoring
Agricultural pilot plant for reconstruction from Radioactive Hazard.
Commissioned in 2012 at Kawamata town of Fukushima.
## Mile Stone of this Training Program

### Fiscal 2013

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- **@UTR-KINKI** FINISHED
- Meeting for NEXT Year FINISHED

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- **@AGN-201K**
- **@RSTF**
- Meeting for NEXT Year

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- **@UTR-KINKI**
- **@AGN-201K**
- **@RSTF**
- Meeting for NEXT project
## Schedule of the training program in 2013 (@ UTR-KINKI)

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<tr>
<td><strong>Safety Education</strong></td>
<td>(Group A) Neutron Flux Measurement</td>
<td><strong>Nuclear Industries’ situation</strong></td>
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<tr>
<td><strong>Facility Tour</strong></td>
<td>Energy Spectrum Measurement</td>
<td>Summary &amp; Discussions</td>
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<tr>
<td>(Group A) Reactor Operation Control Rod Calibration Dose Rate Measurement</td>
<td>(Group B) Reactor Operation Control Rod Calibration Dose Rate Measurement</td>
<td>Neutron Radiography Fukushima’s Environment Foods’ Activity Measurement</td>
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<tr>
<td>(Group B) Neutron Flux Measurement Energy Spectrum Measurement</td>
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Italic-style items are *Lectures* and Bold-style items are *Experiments*.
Answers of the Paper Form Asking
(Which experiment is difficult or easy?)

- Activity Measurement of Foods: 22% difficult, 22% easy, 56% interested.
- Neutron Radiography: 11% difficult, 50% easy, 39% interested.
- Neutron Flux Measurements: 17% difficult, 50% easy, 33% interested.
- Reactor Operation, Control Rod Calibration: 6% difficult, 22% easy, 72% interested.
- Safety Education, Facility Tour: 0% difficult, 50% easy, 50% interested.
Answer of the Paper Form Asking
(from Free Writing Form)

• It was harder to listen engineering English than to understand the experiment itself.
• It was very good experience to contact with foreign students.
• Very good program. However, I miss to listen some sentences (It’s because of a lack of my English proficiency), I wish you to have some care, for example, repeating sentences or so on.
• I feel so interesting. Reactor operation was very good experience for me. This program was good for not only studying nuclear physics but also studying English.
• Reactor operation was a meaningful experience. I realized a difference of English proficiency between Japanese students and Korean students, so I’ll study English harder.
• I was really enjoyed. Thank you for good program.
Take Away

• Kinki Univ. conducts a international training program on a cooperation with Kyushu Univ., Nagoya Univ., Kyung Hee Univ. and Kyoto Univ.

• Students of Kyushu Univ., Kyung Hee Univ. and Kinki Univ. got educations on this program in 2013.

• Educated students learned nuclear physics and radiation measurements through some lectures and experiments.

• Some students realized an importance of international communication through this program.