Greetings and Introduction

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GCOE: Nuclear Education and Research Initiative

Systematic Education and Research including Nuclear Energy Sociology

Nuclear Energy Sociology
What is Technology for Society?
In collaboration with people outside Univ.

Nuclear Energy
Technology Innovation
Through comprehensive and interdisciplinary approach

Radiation Application
Therapy, diagnosis, biology, etc.
Spread in interdisciplinary fields: medicine, agriculture and so on

“We prepare next generation researchers to grasp the perspectives of complicated and divergent fields of nuclear energy.” - Dr. Yoshiaki OKA, Prof. UT, Program Leader -
Nuclear Energy

To develop University-of-Tokyo Originated and Japan Leading technologies for worldwide contribution

Three Key Subjects

Future Nuclear Energy System
Disposal of Radioactive Waste
Safe and Stable Operation

- Important issues of nuclear energy utilization in past, present and future
- GCOE fund for researcher education, while other external funds mainly for R&D

Light Water Reactor
Generation III & IV Nuclear Reactor
Fast Breeder Reactor
Nuclear Fusion
Recycling of Spent Fuel
Disposal of Rad. Waste

Now 2020 2040 2060

Roadmap of Nuclear Energy R&D

Nuclear Fuel Cycle & Radioactive Waste Disposal

Collaborative efforts with geoscience and nuclear sociology

Radioactive Waste Disposal
Reprocessing
Uranium Enrichment & Fuel Fabrication
Nuclear Fuel Cycle
Uranium Mine
Nuclear Power Plant – Next Generation Reactor

Geoscience
Geology
Lithology
Civil Engineering
Seismology
Earthquake Engineering
Probability
Statistics
Deepening

Fundamental Science for Nuclear Technology
Actinide Chemistry
Radiochemistry
Nuclear Fuel & Nuclear Material
Criticality Safety Study
Radiation Safety Science
Analytical Chemistry
Environmentology
Risk Theory

International Politics
Political Science
Ethics
Civilization History

Collaboration
Collaboration
Motivation for integrating nuclear science and engineering with social science

Many of current problems in nuclear engineering are inevitably combined to social aspects of nuclear energy, such as social acceptance or nuclear proliferation. Solving these problems is a key to lead the nuclear renaissance by building a new concept of nuclear technologies which serve the public good.

Therefore, as one of the core parts of GoNERI program, special emphasis is placed on integrating nuclear science and engineering with social science.

Among many other areas in the nuclear field, we recognize the particular relevance of social-scientific approaches to the nuclear fuel cycle and radioactive waste disposal.

We started to social-scientific activities in cooperation with social scientists (sociologists, historian, etc) from 2008.
Activity plan

One of the main purposes of our activity is to make an education program so that the new generation of nuclear engineers understand societal aspects of nuclear technologies sufficiently to serve the public good.

2008

Kick off

Seminar

Field work

2009

Summer school

2010, 2011

Education program

As we had not known the fundamentals of the social sciences (such as their domain, terminology, methodology, etc.) at all, 14 seminars were held in FY2008. By discussion in the seminars, good relationship with social scientists have been constructed.

Seminar

✓ 3 hours seminar: 1 hour for lecture and 2 hours for discussion
✓ 10~15 participants: engineers and social scientists (~7:7), staffs and students (~10:5)
✓ Connection to UCB using TV meeting system

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<td>2009/2/24</td>
<td>Amir (Nanyang U)</td>
<td>The state and anti-nuclear movements in post-authoritarian Indonesia</td>
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Field work

2008
Field work in Japan
(1) Rokkasho village,
   Aomori prefectural office,
   JNFL (Japan Nuclear Fuel Limited)
(2) Toyo town
   in Kochi prefecture

2009
Field work in US
(1) Yucca Mtn. Project, Nye county, state of Nevada,
    Federal Government: Washington DC
(2) WIPP (Waste Isolation Pilot Plant)
    example of a successful case

Summer school (start today)

- International summer school
- Wide spectrum of lectures
- Student session
- Field trips to Waste Isolation Pilot Plant (WIPP)
- Prototype of systematic integrated education program
- Important milestone toward the goal

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