

Advances in Nuclear Safety Technologies

- Date : January 16 (Mon) - 20 (Fri), 2017
- Place : INTEC Atopia Hall #205, KAERI
- Hosted by Korea Atomic Energy Research Institute
- Sponsored by Korean Nuclear Society

Invitation

You are cordially invited to this advanced lecture course to share state-of-the-art information on nuclear safety technologies.

KAERI has been playing an important role in disseminating knowledge cultivated mainly through government-supported R&D projects, as well as through a variety of international cooperative programs.

This unusual opportunity will surely provide you with the most up-to-date information on enhancing nuclear safety, covering the prevention and mitigation of accidents, as well as environmental protection, through both deterministic and probabilistic safety assessment approaches.

I am certain that this lecture course will also give you more insight and inspiration to further strengthen our endeavors at enhancing nuclear safety in the future.

Looking forward to your participation,

Dr. Chul-Hwa SONG, Vice President, Nuclear Safety Research, KAERI

Time Table

	Jan. 16 (Mon)	Jan. 17 (Tue)	Jan. 18 (Wed)	Jan. 19 (Thu)	Jan. 20 (Fri)
09:00~11:30	Opening Remark (Chul-Hwa SONG) Advanced Thermal-Hydraulic Safety Analysis (Han Young YOON)	In-vessel Phenomena and RCS Integrity (Dong Ha KIM/ Hwan Yeol KIM)	Radiation and Environmental Impact Assessment (Moon-Hee HAN/ Won-Tae HWANG)	Level-1 Probabilistic Safety Assessment (Ho-Gon LIM)	Probabilistic Seismic Hazard, Fragility, Seismic Margin, Seismic Risk (Min Kyu KIM)
11:30~13:00	Lunch				
13:00~15:30	Thermal-Hydraulic Experiments and Advanced Measurement Technology (In-Cheol CHU)	Ex-Vessel Phenomena and Containment Integrity (Seong Wan HONG/ Hwan Yeol KIM)	Dispersion Modeling of Radioactive Material (Kyung-Suk SUH)	Level-2 Probabilistic Safety Assessment (Kwang-Il AHN)	Evaluation and Closing Ceremony
15:30~16:00	Coffee Break				
16:00~18:30	System-Scale Thermal-Hydraulic Code: Numerical method and physical models (Kyung-Doo KIM)	Fission Product Behavior (Kwang Soon HA)	Radio-ecology (Dong-Kwon KEUM)	Level-3 Probabilistic Safety Assessment (Seok-Jung HAN)	Technical Tours (optional)

Keywords of Each Lecture

Thermal-Hydraulics

- ▶ Advanced Thermal-Hydraulic Safety Analysis
 - Thermal-hydraulics, Safety analysis, Multi-scale, Multi-physics
- ▶ Thermal-Hydraulic Experiments and Advanced Measurement Technology
 - Thermal-hydraulic safety, Validation, Experiments, Measurement, Instrumentation
- ▶ System-Scale Thermal-Hydraulic Code: Numerical method and physical models
 - System-scale, Safety analysis code, Numeric, Models

Severe Accident

- ▶ In-vessel Phenomena and RCS Integrity
 - Core melt progression, In-vessel retention, RCS integrity, Cladding oxidation, Molten corium pool, RCS depressurization
- ▶ Ex-Vessel Phenomena and Containment Integrity
 - Steam explosion, Hydrogen combustion, MCCI, Ex-vessel coolibility, Containment integrity, Direct containment heating
- ▶ Fission Product Behavior
 - Fission product, Aerosol, Iodine chemistry, Pool scrubbing, Fission product transport, Realistic source term

Environmental Radiation

- ▶ Radiation and Environmental Impact Assessment
 - Radiological dose assessment, Routine release, Hypothetical accident, Regulatory standard
- ▶ Dispersion Modeling of Radioactive Material
 - Atmospheric dispersion, Marine dispersion, Dispersion prediction modeling, Radiological accident preparedness system
- ▶ Radio-ecology
 - Environment protection, Nuclear accident, Environmental transfer parameters, Exposure pathways, Dose assessment methodology

Risk Evaluation and Management

- Level-1 Probabilistic Safety Assessment (PSA) : Risk, Probability, Frequency, Reliability, Event tree, Fault tree
- Level-2 PSA: Severe accident scenario, Containment event tree, Source term, Large release frequency
- Level-3 PSA: Exposure pathways, Dosimetry, Atmospheric dispersion & deposition, Deposition, Economic impacts

Seismic Safety

- Probabilistic seismic hazard, Fragility, Seismic margin, and risk

Training Course Information

Lecturer

- Han Young YOON, In-Cheol CHU, Kyung-Doo KIM
- Dong Ha KIM, Hwan Yeol KIM, Seong Wan HONG, Kwang Soon HA
- Moon-Hee HAN, Won-Tae HWANG, Kyung-Suk SUH, Dong-Kwon KEUM
- Ho-Gon LIM, Kwang-Il AHN, Seok-Jung HAN, Min Kyu KIM

Registration

- Pre-registration: Until January 6 (Fri), 2017
- Registration fee: 500,000 KRW (Pre-registration is recommended)
- Accommodation: Not prepared by the Host
- Contact: Jung Hyun NA, The Nuclear Training Center, KAERI
- (Tel.) 042-868-4547 / (E-mail) njh@kaeri.re.kr

Location

- Address : KAERI - 111, Road No. 989, Daeduck-ro Yuseong-gu, Daejeon

