



WNU Course on  
**" Key Issues in the World Nuclear Industry Today "**

*Short Course*  
**OVERVIEW AND KEY TOPICS IN THE WORLD NUCLEAR INDUSTRY TODAY**

**Seoul, South Korea**

**21-23 May 2014**

*Purpose*

This course is designed to enhance the knowledge about how nuclear science and technology which are applied in the world today, while encouraging an expansive view of where it is likely to go in the future. International experts will lecture on a wide range of topics with the aim of offering practical knowledge, a global perspective and an exciting vision of the future, which should stimulate interest among attendees in pursuing further careers in this area.

The overall aim of the course is to give attendees a comprehensive knowledge of the key issues in the world industry today, to enable them to place their own current role into perspective while also opening their eyes to the opportunities of the future.

*Venue*

Geon-Seol-He-Gan (71-2 Non-Hyun-dong, Gang-Nam-gu, Seoul, Republic of Korea)

*Participants*

Participants will be university students in nuclear science and engineering, staff at nuclear research centers, professionals in the local nuclear industry and equivalent government employees, including regulators and energy planners. They will generally be people with some background knowledge of nuclear and maybe some specialist knowledge in one or more areas.

*Lecturers*

Leading world experts from IAEA, WNA, WNU, KAERI will present overviews of a full range of nuclear-related topics (see the draft programme below). Lecturers are encouraged to summarise key points and draw out important issues for further

discussion. These will be taken up at coffee breaks, lunches and dinners, where the teaching faculty will be freely available to stimulate discussion and debate.

### *Registration*

- Fee: 500,000 KRW/person or 500 USD
- Application form by mail or e-mail
- By 13 May, 2014
- Payment may be made by wire transfer to the following bank account
  - Name and Address of account holder:  
Korea Atomic Energy Research Institute  
111, Daedeok-daero 989beon-gil, Yuseong-gu, Daejeon, Korea
  - Bank Name and Address:  
Woori bank  
111, Daedeok-daero 989 beon-gil, Yuseong-gu, Daejeon, Korea
  - Accountant Number:  
087-074376-03-001
  - SWIFT CODE:  
HVBKKRSEXXX
  - Contact Byungduk Yoo (+82-10-5476-4728)

### *Contact Point*

Course organizer

Yeon-gyung Kwon

Tel: 042)868-2677

E-mail: ygkwon@kaeri.re.kr

*Short Course*  
**OVERVIEW AND KEY TOPICS IN THE WORLD NUCLEAR INDUSTRY  
TODAY**  
Seoul, South Korea, 21-23 May 2014

**PROGRAMME**

**21 May (Wed)**

- 09:00–09:15 Opening Ceremony
- 09:15–09:30 Introduction to the WNU and to the Course, *P. Wieland*
- 09:30–10:30 Nuclear power in the World Energy Context, *F. Perchet*
- 10:30–11:00 Refreshments
- 11:00–12:30 Nuclear Industry Infrastructure and Nuclear Development Globally, *F. Perchet*
- 12:00–13:30 Lunch
- 13:30–14:30 Nuclear Fuel Market, *M. Caplan*
- 14:30–15:00 Refreshments
- 15:00–16:20 Nuclear Economics, *M. Caplan*
- 16:20–16:40 Refreshments
- 16:40–17:30 Nuclear Project Structuring and Financing, *M. Caplan*

**22 May (Thu)**

- 09:00–10:30 International Radiation Safety Regime. Safety, Security and Safeguard, *A. Gonzalez*
- 10:30–11:00 Refreshments
- 11:00–12:00 Lessons from the Major Nuclear Accidents: Feedback into the International Safety Regime, *A. Gonzalez*
- 12:00–14:00 Lunch
- 14:00–15:00 Nuclear Safety Research for Prevention and Mitigation of Severe Accidents, *C. Song*
- 15:00–15:30 Refreshments
- 15:30–17:00 Comparison of the Nuclear Development in Different Countries: Case study A: Vietnam, Bangladesh, Philippines, UAE, Turkey, India *M. Caplan*

**23 May (Fri)**

- 09:00–10:15 Reactor Technology Development, *F. Perchet*

10:15–10:30 Refreshments  
10:30–11:30 NPP Technology Selection Criteria, *M. Caplan*  
11:30–12:30 Comparison of the Nuclear Development in Different Countries:  
Case Study B: USA, China, Korea, UK and France, *F. Perchet*  
12:30–14:00 Lunch  
14:00–15:00 Small and Medium Reactor, *K. Kim*  
15:00–15:45 Medical and Industrial Applications of Radiation Technology, *S. Jeong*  
15:45–16:00 Refreshments  
16:00–16:30 Nuclear Communications, *P. Wieland*  
16:30–17:00 Knowledge Management, *P. Wieland*  
17:00–17:15 Closing

## Lecturers

	<p><b>Patricia Wieland</b>          Head of the World Nuclear University          Vice-President of the Brazilian Nuclear Energy Association</p>		<p><b>Abel J. Gonzalez</b>          Representative at the UNSCEAR.          Member of the IAEA-CSS, Senior Advisor to the Nuclear Regulatory Authority of Argentina</p>
	<p><b>Francois Perchet</b>          Former Senior Technical Advisor at WNA with broad expertise at French EDF in Nuclear Generation and Engineering;          Mentor of the WNU Summer Institute from 2009 to 2011</p>		<p><b>Milton Caplan</b>          President MZ Consulting Inc.          Chair of the WNA Economics Working Group</p>
	<p><b>Keung Koo Kim</b>          Director, SMART PM Advanced Reactor Development,          Korea Atomic Energy Research Institute</p>		<p><b>Chul-Hwa Song</b>          Director, Thermal Hydraulics Safety Research Division,          Korea Atomic Energy Research Institute</p>
	<p><b>Sung In Jeong</b>          Senior Researcher Korea Atomic Energy Research Institute</p>		

## **Abel González**

Abel J. González has worked in radiation protection for the last four decades, most recently as Director of Radiation, Transport and Waste Safety, the senior radiation safety official of the International Atomic Energy Agency (IAEA). Previously, in his native Argentina, he was a Director of the Argentine National Atomic Energy Commission and President of the Argentine Nuclear Power Plant Corporation. He is a founding member of the Argentine Radiation Protection Society.

Mr González was a member of International Commission on Radiological Protection (ICRP) Committee 4 from 1978 to 2000 and is currently an ICRP commissioner, member of the ICRP Main Commission. He is one of the longest serving participants of the United Nations Committee on the Effects of Atomic Radiation (UNSCEAR). He is also member of the IAEA Commission on Safety Standards.

He has been honoured with a number of awards, notably: the IAEA Distinguished Service Award in recognition of his work for the International Chernobyl Project; the Morgan Award of the Health Physics Society (twice); the Lauriston S. Taylor Award of the National Council on Radiation Protection and Measurements; and, most recently, the Sievert Award for outstanding contributions to the field of radiation protection. Mr. González graduated in 1964 from the University of Buenos Aires (UBA) with the highest diploma in engineering. In 1962, while still an undergraduate, he began his professional career as a staff member of the Argentine National Atomic Energy Commission (CNEA) specializing in the fields of radiation protection, safety of radioactive waste management and of radioactive materials transport, and related aspects of nuclear safety.

## **Milton Caplan**

Milton Caplan is President of MZ Consulting Inc. He has more than 25 years senior experience in the nuclear industry primarily in the areas of project development, strategy formulation, business model development, economic assessment, project financing and contract negotiation. He has a very keen interest in issues related to the overall competitiveness of projects, and how deals will have to be structured to manage the risks.

## **François Perchet**

He joined the World Nuclear University Coordinating Centre (WNU-CC) in London in 2008. He is working there as a secondee from his French parent company, EDF.

His 34 year-long professional experience in the nuclear Industry ranges from direct involvement in on site commissioning of early EDF PWR NPPs in the late 1970's and early 1980's, to Operation, Maintenance and Safety management positions, at various French PWR Plants and corporate Engineering Divisions. He was for example Operation group manager at Blayais NPP, for two 900 Mwe PWR Units in 1986, and Deputy Director for Maintenance and Outages for the Chinon site 4 X 900Mwe units. He was RCM – Reliability Centred Maintenance – Project manager in 1996, and in charge of Information System management group at EDF Nuclear Generation in 2001. Later on, as a Safety and Quality director at one of EDF Engineering operational division, he became acquainted with ISO 9000 and 14000 certification and nuclear Safety issues surrounding whole EDF Fleet Spare Parts management and Fleet wide so called Generic Maintenance.

He has some international experience, through his past two-year assignments in the USA (at the Institute of Nuclear Power Operation – INPO in 1989–1991) and in China (Senior Technical Advisor in Daya Bay / Ling Ao Nuclear Power Station in 2006–2008).

At WNU, he was involved as a mentor during the 2009, 2010 and 2011 WNU Summer Institute held in Christ Church, Oxford. He also acts as a Technical Advisor at the World Nuclear Association for various Working groups. He is a visiting lecturer in MSc at Imperial College of London. He graduated in 1976 from one of the leading Engineering Schools in France, “*Ecole Supérieure d'électricité*”.

## **Keung Koo Kim**

Dr. Kim received a bachelor's degree and Master's in Nuclear Engineering from Seoul National University (1981 and 1983) and Ph.D's degree in Nuclear Engineering from M.I.T in USA(1992).

Dr. Kim worked at Korea Atomic Energy Research Institute for 8 years after the graduation of Seoul National University. Then he moved to USA for further study. After the Ph.D degree, he joined Korea Atomic Energy Research Institute again as a senior researcher.

Dr. Kim started his career involving Wolsung NPP (PHWR) fuel technology localization project After success of fuel development project, he joined the

HANARO(Korean Research Reactor) design and construction team. In 1997, HANARO construction was completed, Dr. Kim joined the SMART development project. Currently he is a SMART Project Manager. His specialties are system dynamic analysis, and advanced control system design.

### **Chul-Hwa Song**

He is working for KAERI since 1985, and currently working as the Director of the Thermal Hydraulics Safety Research Division. He stayed in CEA-Grenoble as a visiting researcher during 1987-1989. He has been involved mainly in the developments of advanced light water reactors such as APR 1400, APR+and SMART, especially in the fields of developing new safety features and also evaluating and verifying the thermal-hydraulic safety and performances. He received his BS and MSc from Dept. of Mechanical Eng. of Han Yang University, respectively and Ph.D from Dept. of Nuclear Eng. of KAIST. He was appointed as a Tenured Researcher of KAERI in 2011. He is a lifetime member of KNS, KSME, ANS and ASME. He is a council member of KNS/KSME and a member of Executive Committee of ANS Thermal-Hydraulics Division. And recently he was appointed as a member of Professional Divisions Committee of ANS. He received a Technical Achievements Award from KNS in 2004. He is working for OECD/NEA/CSNI as a bureau member and Korean representative of the Working group of Analysis and Managements of Accidents(WGAMA).

He is the executive editor of Nuclear Engineering and Technology(NET), and a member of international advisory board of two international journals: Nuclear Engineering and Design(NED) and Journal of Nuclear Science and Technology(JNST). He has got the medal of industries and the prime minister award from the Korean government for his contributions to nuclear safety enhancement. His research interests include nuclear thermal-hydraulics and safety, gas-liquid two-phase flow, and advanced measuring techniques for two-phase flow. He chaired technical program committees and organization committees of a variety of international conferences.

### **Sung In Jeong**

Dr. Sung In Jeong received his B.S. degree in Polymer Science and chemistry from Pai-Chai University (2001), and his M.S. (2003) and Ph.D, (2008) degrees from Hanyang University in Chemical Engineering in South Korea. He held postdoctoral positions at the Case Western Reserve University (2008-2011) and at



the Korea Atomic Energy Research Institute (2012). He is currently working as a Senior Researcher in Chemical Engineering, Biomedical Engineering, and Biologic & Materials Sciences for Advanced Radiation Technology Institute at Korea Atomic Energy Research Institute since 2013. Research in his laboratories is focused on elucidating the mechanisms by which cells receive information from materials, and utilizing this information to design new biomaterials that precisely regulate cellular gene expression using radiation technologies. The resultant biomaterials are currently being tested in a variety of drug delivery and tissue engineering applications. His current research activities are focused on elucidating interactions between biomaterials and cells, degradable polymeric scaffolds, and delivery of growth factors for tissue engineering using radiation technologies.

## Venue Information

### Geon-Seol-He-Gan

Address: 71-2 Non-Hyun-dong, Gang-Nam-gu, Seoul, Republic of Korea

Tel: 02) 3449-8687

- Metro
  - line 7(Hak-dong station) gate 10
  - line 3(ApGuCheong station) gate 1
- Bus (SeGwan station)
  - 141, 401, 640, 145, 440
  - 3011, 3414, 4431, 6411, 4212
  - 41
  - 6704

