香港城市大學
City University of Hong Kong

Department of Mechanical and Biomedical Engineering

香港核學會
Hong Kong Nuclear Society

Half-Day Nuclear Safety and Risk Symposium

on

Fourth Year After Fukushima Nuclear Accident - Safe Restart of Japanese Nuclear Reactors

Date: 6 March 2015 (Friday)
Time: 1:30pm – 5:30pm
Venue: LT-17, Academic 1, City University of Hong Kong

Registration:

- **On-line free registration, on a first-come-first-served basis , for members of organizers and supporting organizations is via:**
  http://hkarms.org/registration/EventRegister.php?Event=62
  (If you do not have a membership number, please input "0")
- **For non members, HK$500, download registration from http://www.hkns.hk**

Before the Fukushima Dai-ichi nuclear accident, around 29.2% of Japan's electricity was nuclear-generated. After the accident, all 48 plants were shut down for safety reasons. However, the Japanese government has argued that the shutdown has hurt the economy, forcing Japan to import expensive fossil fuels to make up the electricity shortfall. In order to reduce the fuel cost burden to its economy, by the end of 2014, Sendai nuclear power plants and Takahama nuclear power plants have already been granted licenses for restart However, there are still hurdles to be overcame. The Japanese Government has yet to decide how much electricity should come from nuclear energy. The restart of Japanese nuclear reactors will not only affect the Japanese economy but also countries in the Asia Pacific region. In view of this, top international consultant and scholars have been invited to present their view on the restart programme of Japanese reactors.

Programme
Japanese Nuclear Energy Policy Facing to Reluctant Public Concerns and Uncertainty in Safety Prof. Akira Yamaguchi, *University of Tokyo, Nuclear Professional School; chairman of Risk Technology Committee of the Atomic Energy Society of Japan and a Board member of IAPSAM*
Severe Nuclear Accident Response - insights from a recent collaborative research project Prof. William Nuttall, *Professor of Energy at the Open University and Fellow of Hughes Hall, University of Cambridge*
Tea/Coffee Break
Not Losing to the Rain: What I learned about when I learned about Onagawa Mr Steve "woody" Epstein, *Director of Risk and Safety (Asia-Pacific), Scientech Nuclear Division, Curtiss-Wright Corporation*
Open Discussion Forum

Attendance/CPD Certificate will be provided

Supporting Organisations

HKARMS 香港風險管理與安全協會 Hong Kong Association of Risk Management and Safety

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Enquiry: Please send email to info@hkns.hk or call at (852)34429536. http://www.hkns.hk

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Date: 6 March 2015 (Friday)
Time: 1:30pm – 5:30pm
Venue: Lecture Room LT-17, Academic 1, City University of Hong Kong
Registration Fees:
- General registration: HK$500
- Members of Organizers and Supporting Organizations: Free

Registration Deadline: 5 March 2015

1. For members of Organizers and Supporting Organization, please register at http://hkarms.org/registration/EventRegister.php?Event=62
2. For general registration, please fill in the following Registration Form and prepare a cheque, payable to **"Hong Kong Nuclear Society"**, sign and send by post with the completed Registration Form to **Dr. Louis Liu, SEEM Department, City University of Hong Kong, Kowloon, Hong Kong**.

Registration Form

Title: _____ Surname: _____ Given Name: _____

Company: _____

Position: _____ Contact Tel: _____

Contact Email address: _____

If pay by cheque, please state: Bank Name: _____ Cheque No.: _____ and Amount: _____

香港核學會 Hong Kong Nuclear Society

Symposium on
Nuclear safety and Risk: Challenges and Opportunities

香港城市大學 City University of Hong Kong

Programme
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Japanese Nuclear Energy Policy Facing to Reluctant Public Concerns and Uncertainty in Safety

Prof. Akira Yamaguchi
The University of Tokyo

Abstract

Three years after the March 11, the 2011 earthquake off the Pacific coast of Tohoku, the Japanese government has published the National Strategic Energy Plan in April 2014. It is mentioned that the nuclear energy is one of the base load power source, which can be operated stably and by low cost all day and all night. It also mentions that Japan will depend on describes Japan will depend on nuclear energy less than ever. Public concerns are whether we use nuclear in the future or are away from nuclear energy. The expected total capacity of nuclear energy is not clarified and remains an open issue.

Currently, no nuclear power plant is in operation. Instead, Japan pays extra political cost for the import of oil and natural gas for alternative energy and operation of old fossil power plants decades ago. By the end of 2014, Sendai nuclear power plants and Takahama nuclear power plants have already licensed for restart and they are almost ready to go in operation.

However, there exist problems to overcome. The public concerns with the safety of the nuclear power plant and do not have firm trust in the utilities as well as the regulatory body. The author will discuss the lessons from the Fukushima Dai-ichi accident, how the related organizations have been reformed, and the new framework for achieving nuclear safety. Major conception is to prepare for unknowns or uncertainties and how decision-making is performed regarding nuclear safety with uncertainties.

Prof. Akira Yamaguchi

Dr. Yamaguchi is a Professor in the University of Tokyo, Nuclear Professional School, Graduate School of Engineering. He holds BS degree in 1979 and MS degree in 1981 in Nuclear Engineering from the University of Tokyo. He has received Ph.D degree in the nuclear engineering from the University of Tokyo in 1984. He joined the Power Reactor and Nuclear Fuel Development Corporation (currently Japan Atomic Energy Agency) and involved in the thermal-hydraulic and safety research of sodium cooled fast breeder reactor. In April of 2005, he moved to Osaka University, Department of Energy an Environment where he performed nuclear thermal-hydraulics, safety and risk assessment studies. Since January of 2015, he is Professor of the University of Tokyo. He has more than 30 years of experience in nuclear engineering. He has been a member of governmental committees on atomic energy policy, nuclear safety, nuclear regulation and nuclear science and technology by the METI, NRA and MEXT. Currently he is the chair of Risk Technology Committee of the Atomic Energy Society of Japan and a Board member of IAPSAM.

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Nuclear safety and Risk: Challenges and Opportunities

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Severe Nuclear Accident Response - insights from a recent collaborative research project

Prof William J. Nuttall
The Open University

Abstract

Professor Nuttall will report on results and insights emerging from a recent research project led by Professor Philip Thomas at City University, London, UK. The research has been undertaken under the title of "Nuclear Risks: Economic, Financial and Safety", but is widely known as "NREFS" for short. Details can be found at: http://www.nrefs.org/ The research forms part of the indo-UK Civil Nuclear Research Partnership and has been funded by the Engineering and Physical Sciences Research Council, UK. The research has considered the impacts of severe nuclear accidents and lessons that can be drawn for public policy and the strategies of key stakeholders. Professor Nuttall's group has given particular emphasis to the role of insurance in risk mitigation.

Prof. William J. Nuttall

Dr William J. Nuttall is Professor of Energy at The Open University, based in Milton Keynes, UK. Professor Nuttall's career has taken him from experimental physics (PhD MIT USA 1993) to technology policy with an emphasis on nuclear energy policy. He is author of *Nuclear Renaissance -Technologies and Policies for the Future of Nuclear Power* (Taylor and Francis, 2005), co-editor of several other books and an author of more than fifty five journal articles. In 2011 Dr Nuttall was elected Fellow of the Institute of Physics. He is a Fellow of Hughes Hall, Cambridge and he is an Adjunct Professor of the City University of Hong Kong.

Not Losing to the Rain: What I learned about when I learned about Onagawa

Woody Epstein
Curtiss-Wright
Scientech Nuclear Division
Director of Safety and Risk, Asia-Pacific, Country Manager Japan

Abstract

The Great East Japan earthquake of 2011 was one of the largest ever recorded and by far the largest earthquake to affect any nuclear power station anywhere in the world. With a magnitude of 9.1 and 300 seconds of ground movement, the Onagawa nuclear power station was subjected to the strongest shaking during this earthquake and appeared to have emerged with little earthquake damage, especially to safety related component.

There was only way to ascertain if the above claim was true. And if true, by luck or by diligence: to visit the Onagawa plant and collect success and failure data by conducting damage walk downs. Onagawa was a real-life stress test, yet no one had moved to systematically collect these data in detail and to bring the story to the public.

For seven months beginning in January, 2012, Peter Yanev and I lobbied and convinced international experts, the IAEA, the Japanese government, the Tohoku Electric Power Company, and the Japanese Nuclear Regulators to create an International Expert Walk down Mission to Onagawa under the IAEA flag. Peter and I put together an international group who provided the core expert team and the funding behind the mission.

From a human and economic perspective, demonstrating safety through data collection and analysis is the most important thing that the nuclear industry can do for itself and for Japanese society. By studying the effects of the earthquake, the mission showed conclusively and independently that the earthquake shaking did no damage to the safety systems at Onagawa due to the continual earthquake engineering diligence shown by the Tohoku Electric Power Company.

But most importantly, what did I learn from the walk down and my experience at Onagawa that can help risk practioners ensure safety.

Will the stress tests in Europe, the new regulations in Japan (touted as the most stringent in the world), and the NRC's Near Term Task Force recommendations in the USA improve nuclear safety? For me, this is still an open question.Regulations, guidelines, and standards do not ensure safety.

Woody Epstein

Since 1983, Woody Epstein has been a probabilistic risk assessment (PRA) consultant, manager, mathematician, and technical advisor for large organizations, both public and private.

He is presently the Director of Safety and Risk, Asia-Pacific, Country Manager, Japan at Curtiss-Wright. Previously, from 2011 – 2014, he was the Manager of Risk Consulting, for Lloyd's Register Consulting, Japan; and from 2001 – 2011, he was the Operations Manager and Manager of Risk Consulting for ABS (PLG, EQE) Consulting, Japan.

He has been a team member in over 20 nuclear power station risk assessments worldwide.

Woody started working in Japan in 2001 and was the project manager of the Abandoned Chemical Weapons (ACW) PRA. The 4 year project was done for the Japanese Prime Minister's Office. In 2009, he was project manager for the Preliminary System Safety Assessment project to analyze Mitsubishi's new regional jet (MRJ) type certification.

In March, 2011, Tokyo Institute of Technology invited Woody to be a visiting scientist at Tokyo Institute of Technology, where he authored an independent evaluation of the accident at Fukushima Daiichi for the Ninokata Laboratory, "A PRA Practioner looks at the Great East Japan Earthquake and Tsunami"

In August, 2012, he was the operations manager for the International Atomic Energy Agency's Mission to the Onagawa NPS, to do a damage walk down of the station after the Great Eastern Japan Earthquake.

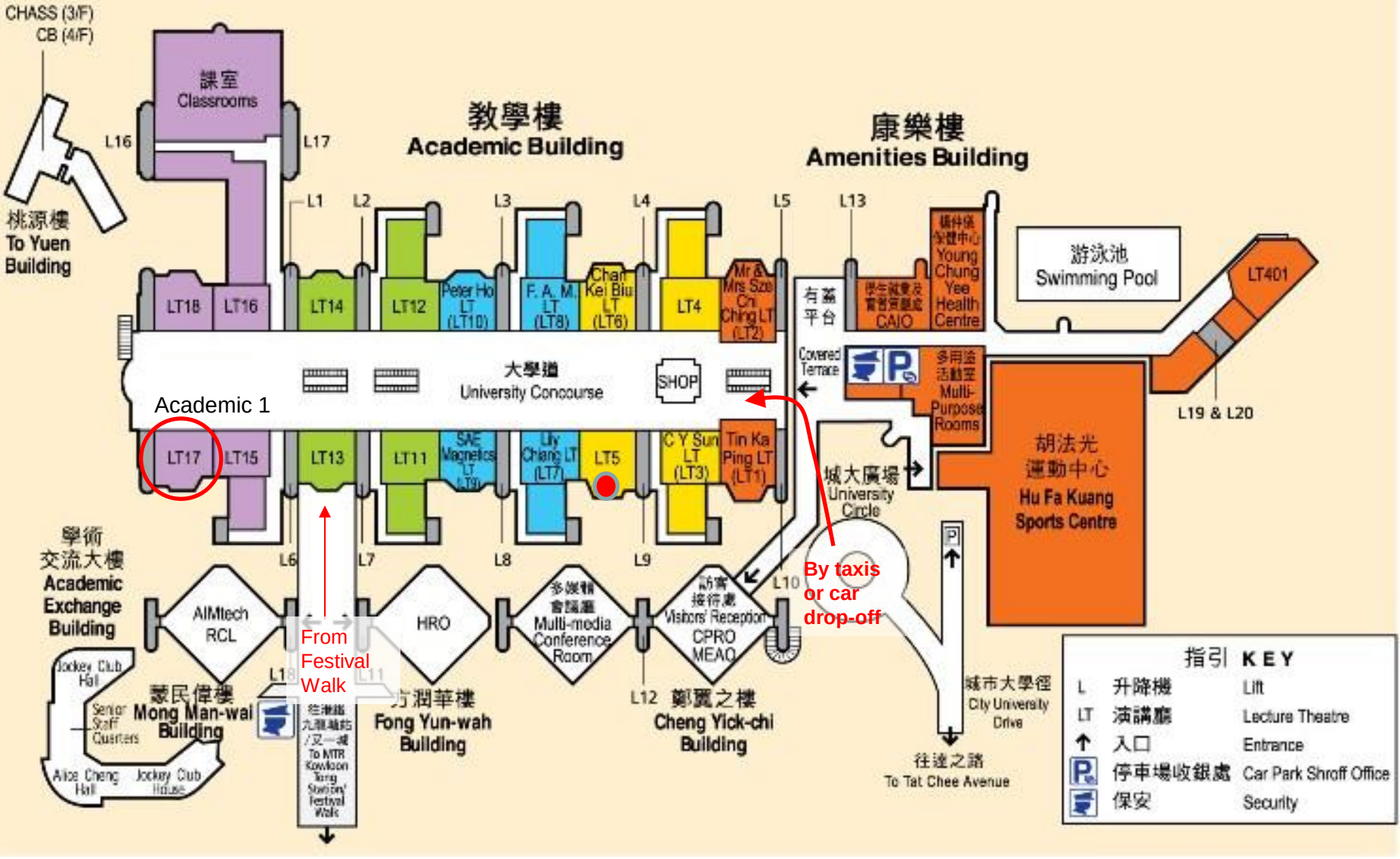
From March, 2013 until the present, Woody has been the project manager for the active faults studies for the Japan Atomic Power Company and the Tohoku Electric Power Company at the Tsuruga and Higashidori NPPs.

In August, 2013, he served as the operations manager for the United Nations Scientific Committee for the Effects of Radiation Mission to Fukushima Prefecture to listen to and film the Fukushima people.

He is one of the founders of the Open PSA Initiative, is a Core Group Member of the Resilience Engineering Group, member of the Japan Nuclear Safety Institute's Technical Review Committee for PRA and Seismic PRA and is a member of the Risk Technical Committee of the Atomic Energy Society of Japan.

教學樓內之訪客欲往其他大樓請先到大學道（四樓）
Users in Academic Building should always proceed to the University Concourse (Floor 4) for other areas or buildings.

大學道 四樓 University Concourse Floor 4



How to get to Lecture Theatre LT-17 by MTR railway?

1. When you get off the MTR at Kowloon Tong Station, look for Festival Walk exit.
2. In Festival Walk, on Level LG1, there is a Pedestrian Subway which will lead you to CityU campus.
3. Go straight after walking through the Pedestrian Subway, walk through the red doors to enter the Academic 1.
4. Go straight ahead past the Bookshop and you will see escalators on your right.
5. Go up one level to the University Concourse.
6. You will see all the lecture theatres on both sides of the Concourse.

How to get to Lecture Theatre LT-17 by Taxis or Car?

1. When you drop off at the University Circle, go along the Covered Walk Way, walk through the red doors to enter the University Concourse of the Academic 1 building
2. You will see all the lecture theatres on both sides of the Concourse.

港鐵路綫圖 MTR system map

www.mtr.com.hk