



ENGINEERS
AUSTRALIA
Hong Kong Chapter

Does the Nuclear Power Industry have a Future?

Abstract: The development of nuclear power generation aims at providing a reliable long-term energy supply for the future, despite its links with military application in the early days. There are two kinds of nuclear energy, namely fission and fusion. It is expected that fission can eventually meet world energy needs for thousands of years while fusion can meet such needs for millions of years. Fission power has been in use since the 1950s while fusion is still under development with electricity generation at least some 30 years away.

In the history of nuclear fission power, there have been 3 major accidents; Three Mile Island, Chernobyl and the recent Fukushima Daiichi Nuclear Power Station. The Chernobyl 'man-made' accident, which occurred 25 years ago, put nuclear power into a 'freeze'. Since 2001, the rising concerns over global warming, pollution and fossil fuel shortage have triggered a 'nuclear renaissance'. However, the revival of the nuclear industry in the developed countries and the aggressive nuclear programmes of the developing countries are overcast by the Fukushima 'natural' accident. The future use of nuclear power does not have a simple black or white answer. While the use of nuclear power has its associated risks, there is also a potential cost of not having nuclear power. Since the Fukushima nuclear accident, the governments over the world have reacted with responses ranging from reviewing safety of existing power plants, halting construction of new plants to phasing out of nuclear power.

Is it possible to make nuclear energy a clean and sufficiently safe energy source? Fission reactor design has improved over the years. The newer reactor designs have incorporated advanced safety features which would serve to avoid the catastrophic consequences of event such as the Fukushima accident. Nuclear accidents are not a local issue though; the radioactive leakage can affect nearby regions as well as the whole world. Hong Kong has for many years benefited from reliable low-cost electricity from the nearby Daya Bay Nuclear Power Plant; there is also major public concern over the safety issues. How can the industry re-gain public trust on nuclear reactor safety and believe that similar accidents won't happen? The presentation will attempt to impart a glimpse of the nuclear future by taking a look at the development of nuclear energy, advances in nuclear engineering safety and safety management

Date, Time & Venue

8 June 2011 (Wednesday), 6:00 pm (Registration and Networking); 6:45 to 8:00 pm (Technical Talk). The Australian Consulate General, Hong Kong, "The Wombat Hole" 24/F, Harbour Centre, 25 Harbour Road, Wanchai, Hong Kong.

Speaker: Ir Dr. Herman Tsui, B.Sc. (Nuclear Engineering), PhD, CEng, MIEE, FEI, FHKIE

Ir Dr. Herman Tsui is the Technical Director of Interactive Systems & Technologies Limited, and responsible for the development of plasma technology for air sterilization. He worked on R&D of nuclear energy in Europe and USA for some 15 years with specialization in plasma control and turbulence induced transport in fusion energy systems. He initiated a research programme in industrial application of plasma technology in Hong Kong and successfully applied nuclear fusion technology to air sterilization. He is a visiting lecturer of The University of Hong Kong and The Hong Kong University of Science and Technology. He was the chairman of the Nuclear Division, Hong Kong Institute of Engineers and the chairman of the Energy Institute (Hong Kong Branch). He obtained his B. Sc. (Nuclear Engineering) from University of Manchester, UK and Ph.D. from UMIST, UK.

Special Highlight

2 free soft drinks or beers will be served during the event to the Engineers Australia members in this technical talk.

Important Note, Registration & Enquiry

The seminar is free of charge. The Organizer(s) or the parties concerned do not accept any liability in connection with the above event. All participants should be responsible for their own safety and belongings. The organizer(s) shall not be held responsible for any losses or accidents caused to participants arising wholly or partly from their own fault, negligence or physical unfitness. Please complete and return the Registration Form to Simon Fan preferably by email: info@ieausthk.org (or fax: 2430 9080) before 7 June 2011. For enquiry, please contact Simon Fan on 9351 4963.

Continuing Professional Development (CPD)

EA member will be issued a certificate acknowledging 1.5hrs Continuing Professional Development (CPD).

Registration Form

SEMINAR: DOES THE NUCLEAR POWER INDUSTRY HAVE A FUTURE?

6:45 pm to 8:00 pm, 8 June 2011

To: Simon FAN

From:

Name in full:

IEAust no.:

Email:

Phone no.