KARNATAK UNIVERSITY, DHARWAD

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Department of Physics & Electronics

$\mathcal{E}$-Club

Invites you to Special Lecture on

Risk of Radiological Dose from Nuclear Power Plant Accident Release

By

Dr. Shripad T. Revankar

Professor and Director of Multiphase and Fuel Cell Research Labs

PURDUE UNIVERSITY

School of Nuclear Engineering

West Lafayette, IN 47907 USA

&

Indian Institute of Technology Jammu, India

Date : 21-09-2023 ***Time : 12.00 noon***

Venue:

S. Chandrasekhar Hall, Dept. of Physics, K.U. Dharwad

You are cordially invited

Dr. Aravind S. Bennal
Chairman $\mathcal{E}$-Club
Dept of Physics & Electronics

Prof. R. F. Bhajantri
Chairman
Dept. of Physics & Electronics

Students Represenattives:

Anthony S. Devraj R Sneha H. Amar D Ganesh Venugopal
Deviramma Y. Sahana Akshay I Aishwaya H Ramya Neha

Dr. Shripad T. Revankar

Professor and Director of Multiphase and Fuel Cell Research Labs

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Currently there are over 460 nuclear power plant operate in the world with 22 nuclear power reactors in India. The industrial safety record of nuclear plants is better than aviation industry. However nuclear reactors carry radioactive material and a severe accident can lead to release of the radioactive material to the environment. The reactors have safety systems and the sites are zoned to isolate the radiation from public. The talk will introduce 3 major accidents that have led to release of the radioactivity. The talk will address the methods of calculating the risk from such releases resulting from severe accident. When it comes to practical simulation on radiological dose, the source term calculation and the assumption about various weather conditions are considered important. In the dose calculation for sheltering-in-place those who live near the nuclear power plants, the effects of sizes or shapes of shelters are examined. The talk will present recent progresses in dose calculation from such releases.

Dr. Shripad T. Revankar: Dr. Shripad T. Revankar is a Professor of Nuclear Engineering and Director of Multiphase and Fuel Cell Research Laboratory in the School of Nuclear Engineering at Purdue University, West Lafayette, Indiana. He is currently Visiting Senior Professor at the Indian Institute of Technology Jammu. He received his BSc, MSc and Ph.D. in Physics from Karnatak University,Dharwad, India and M. Engg. in Nuclear Engineering from McMaster University, Canada. He has worked as a post-doctoral researcher at Lawrence Berkeley Laboratory and at the Nuclear Engineering Department, University of California, Berkeley from 1984 to 1987. He has over 40 years of research experience in advanced reactor systems, reactor safety, reactor thermal hydraulics, composite fuel for advanced nuclear reactors, instrumentation, multi-phase flow and heat transfer, microgravity multiphase flow, direct energy conversion, hybrid power systems, nuclear hydrogen generation, solar energy storage, packed bed reactor, *renewable energy*, and fuel cell technology. He has published over 400 peer reviewed technical articles in archival scientific journals and conference proceedings and author/coauthor of several books including: *Storage and Hybridization of Nuclear Energy: Techno-economic Integration of Renewable and Nuclear Energy*, Academic Press, November 2018, and *Fuel Cells-Principles, Design, and Analysis*, CRC Press, June 2014.He is Chief Editor of *Frontier in Energy- Nuclear Energy* He is life member of ASME, ANS (American Nuclear Society) and AIChE (American Institute of Chemical Engineers, Indian Society for Heat and Mass Transfer, and Korean Nuclear Society. He was elected as Fellow of ASME in 2008, Fellow of ANS in 2015 and Fellow of AIChE in 2017. He was recently honored with two major international awards: *Technical Achievement Award* by American Nuclear Society and *Long Service Award* jointly by Nuclear Engineering Division of ASME, Japan Society of Mechanical Engineers and Chinese Nuclear Society, for his significant contributions to reactor thermal-hydraulics through experiments, and modeling of phenomena important in the analysis of nuclear reactor safety and applications, and sustained professional services.