

Prof N S Govinda Rao Memorial Lecture 2015

GREEN AND SAFE NUCLEAR POWER

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Distinguished Scientist & Raja Ramanna Fellow

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On Friday, 6th February 2015, 16:00 hours

Venue: Faculty Hall, Indian Institute of Science

Abstract: Electricity generation plays an important role in the national economic growth. Presently the per capita consumption of electrical energy in our country is about 450 kWh which is very low in comparison to that in the developed countries, for example, U.S.A., where it is about 12000 kWh. As of now the total installed capacity of electricity generation is about 238000 MW(e) which is drawn from Coal (60%), Gas & Oil (10%), Hydro (17%), Nuclear (3%) and the rest (10%). It is expected that by the end of year 2020, the required installed capacity would be more than 300,000 MW(e). To meet the power challenges in our country, all form of commercially viable source of electricity generation need to be considered. For choosing better alternatives, various factors, such as, availability of resources, potential to generate commercial power, economic viability, etc., need to be considered. Besides these factors, an important factor which must be considered is economics & protection of environment around the operating power plants. The operation of commercial nuclear power plants does not pose any threat to the environment and safety to radiation workers and public living around nuclear power plants. The talk will discuss basic principles of ensuring reactor safety, safety of older nuclear power plants, zoning concept around nuclear power station, and emergency preparedness. This talk also explains that the nuclear power generation is an environmentally benign option for meeting the future requirement of electricity in India.



Shri H S Kushwaha, Distinguished Scientist, DAE, is now a Raja Ramanna Fellow at the Department of Atomic Energy. He joined the Reactor Engineering Division of BARC in 1971 after graduating from 14th batch of Bhabha Atomic Research Center Training School in Mechanical Engineering. He did his M Tech in Mechanical Engineering with specialization in Finite Element Method from IITK. Since beginning, he has been working in the area of structural mechanics. He was appointed as Head, Reactor Safety Division in 1996. Shri Kushwaha was elected Fellow of Indian National Academy of Engineering in 1999. In August 2003, he was appointed as Associate Director, Health, Safety & Environment Group and in December, 2003, he took over as Director of the above Group. He was also chairman of BARC Safety Council. He has been awarded following: Indian Nuclear Society Award: 2005, Special Contribution Award by Department of Atomic Energy: 2007, President of Indian association of Radiation Protection: 2005-09, President of Indian Aerosol Science and Technology: 2005-07, and Carl Von Bach medal for outstanding Contributions in the field of materials and Mechanics by Materialprüfungsanstalt, Germany, 2010.



Professor N S Govinda Rao joined IISc in 1950 as a Professor and the Head of the Department of Civil and Hydraulic Engineering. He served IISc in these capacities till 1967, and in the intervening period, he established vibrant research programs in the streams of water resources, structural and geotechnical engineering. He was a leader in the area of hydraulics research in our country and was the principal adviser to national river valley projects. He distinguished himself as a teacher, researcher and consultant. He was a fellow of Indian Academy of Sciences, Indian National Science Academy, and American Society of Civil Engineers. He received the Alumni Award during the Platinum Jubilee year from IISc in 1987.

(6th February 1907-1995)

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