Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Wealth from Nuclear Waste – Recovery and Recycle

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BARC, Mumbai

Recycling of spent nuclear fuel invariably leads to the generation of High Level Radioactive Wastes which are presently vitrified in borosilicate matrices in all our back-end facilities in our country. This is in accordance with internationally endorsed methodology for the safe management of high level radioactive wastes. Recent advancements in the field of partitioning technology at BARC, have presented us with an opportunity to have a fresh perspective on management of high level liquid radioactive wastes streams that emanate from recycling operations.

Development and demonstration of such partitioning facilities in our country are not only showing a significant reduction in radiotoxicity associated with HLLW, but are also leading to harvesting of useful radionuclides for societal applications. An example of this could be the separation of Cs-137 from HLW and its conversion to Cs-137 pencils for use in blood irradiators. Strontium-90 when separated from such waste streams, leads to the milking of Yettrium-90 which is being used for cancer treatment. Ru-106 when electrodeposited on silver plate and made into a silver plaque is being used for treatment of eye cancer in our country. In the Indian context, with the programmes of Fast Reactors and Accelerators under development, the partitioning strategy could be dovetailed to transmutation, thereby resulting in a reduction in radiotoxicity and a significant decrease in radioactive waste for final disposal.

The talk would be giving an overview of such developmental efforts at BARC and would endeavour to showcase the technological aspects of setting up and operating such advanced back-end fuel cycle facilities.

Friday, Mar 8th 2024

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFR-H