

# International Conference on Management of Spent Fuel from Nuclear Power Reactors: An Integrated Approach to the Back End of the Fuel Cycle



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## Management of Spent fuel from PHWRs in India-An Integrated approach

India has adopted closed fuel cycle to complete the three stage nuclear power programme envisaged by great founder and nuclear scientist Dr Homi J. Bhabha which would provide energy security for the country. The spent fuel from Pressurised Heavy Water Reactors, the mainstay of nuclear power production in the country are processed in reprocessing plants at Tarapur and Kalpakkam. In order to implement stage –II of Indian NPP i.e Fast Breeder Reactors( FBRs) are planned and fuel for these FBRs will be generated at large scale Integrated Recycle plants being set up for the first time.

India has mastered the spent fuel transportation, storage reprocessing and waste management technology indigenously for PHWR fuels and has been operating plants since last three decades. The large throughput plants are based on solid-in and solid-out concept using the existing technology incorporating improvements based on the feedback from the operating facilities taking into consideration of economics of construction and operation.

This paper describes the details of Integration approach, spent fuel transportation, storage, processing and waste management being planned for large scale recycle plant.

Keywords: Nuclear Power Programme( NPP), Spent Fuel( SF), PHWRs( Pressurised Heavy Water Reactors), high level waste (HLW), low & intermediate level (L&IL) long lived solid waste, vitrified waste product (VWP), vitrified waste storage facility (VWSF)

### Country/ int. organization

India/ Department of Atomic Energy, Bhabha Atomic Research Centre

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