

## Brief Report on Two-Day BARC-ANDRA Theme Meeting on Deep Geological Repositories (TMDGR)

A two-day Indo-French Theme Meeting on Deep Geological Repositories (TMDGR) was organized during 19-20<sup>th</sup> October 2009, in Mod Lab C block auditorium. The meeting sponsored by BRNS, involved a series of invited talks by experts from the French National Agency for Radioactive Waste Management (ANDRA) and Indian experts from Nuclear Recycle Group, BARC. Besides experts from Central Mining Research Institute (CMRI) Roorkee, National Geophysical Research Institute (NGRI), Hyderabad, Indian Institute of Technology (IIT), Mumbai also delivered invited talks related to various field and laboratory-based studies being carried out under the Indian Geological Repository Programme. The meeting was inaugurated by Dr Anjan Chaki, Director AMDER Hyderabad, who delivered a key note address on the evolution of geological disposal concept for high level radioactive wastes in the last couple of decades. He emphasized on the better suitability of granites as host rocks for waste disposal in the Indian context in view of larger occurrences, massive and homogeneous rock-mass with good mechanical and geochemical properties.

Dr. Gerold Ouzouinian, Director, International Division of ANDRA made a detailed presentation on radioactive waste management practices in France. He elaborated on various types of wastes and their disposal routes being followed in France including studies towards setting up deep geological repository and their earlier work on granites and current URL based experimentation in Argillite rocks at Bure URL. He also outlined regulatory requirements for geological repository and future plans for development of geological repository as laid down under the French Law. In his second talk, he explained safety related practices in French waste management activities. Mr. S.D. Misra Director,

NRG, BARC gave a detailed overview of radioactive waste management activities in India covering developments in vitrification technology, Interim storage facilities and ongoing activities in the field of geological disposal of radioactive wastes. Mr. P.K. Narayan, Head, RPS, BETDD, gave an overview of Indian Deep Geological Repository Programme covering salient aspects of Indian Thermo-Rock-Mechanical Experiment in Kolar Gold Mine, site selection activities for geological repository and ongoing URL development programme.

Dr. R.K. Bajpai, Convener of the theme meeting, presented details of site selection methodology, its application in granitic regions of India, associated laboratory based studies on micro crack developments, fracture permeability measurements, textural studies and determination of other rock mass parameters. He further elaborated on the ongoing geo-structural and hydro-geological investigations at URL site at Karnataka and gave details of the Buffer-Container experiment being planned in URL including its phasing and modelling. Mr. A.K. Rai, Regional Director, Southern Region, AMDER Bengaluru presented the geology and structure of Gogi URL Site and emphasized on the availability of good granites in deeper portion of this site. Dr SB Singh Emeritus Scientist, National Geophysical Research Institute Hyderabad, gave a very detailed account of various geophysical methods deployed in one of the promising sites in Rajasthan, to detect weak zones in granites up to a depth of one kilometre.

Dr. Patric Laidias, Scientific Director ANDRA gave a talk on various experiments being carried out at Bure, France. He explained various experiments



Dr. Anjan Chaki, Director, AMDER Hyderabad, Mr. S.D. Misra, Director NRG and Mr. P.K. Narayan, Head RPS, BETDD during the inaugural address delivered by Dr. Chaki.



Invitees and Delegates from BARC and other national institutes and laboratories

related to measurement of groundwater chemistry, pore water pressures and compositions, thermal degradation of clays, suction, re-saturation and other aspect of clays. He gave further details of instrumentation, excavation methods, monitoring

Safety Assessment of Near Surface Disposal Facilities and associated *In-situ* experiments. A panel discussion was held at the end of the meeting and possible areas of cooperation and collaboration between ANDRA and BARC were worked out.

systems being used in URL. The details of modelling for prediction of evolution of pore water pressures, moisture content, and porosity, permeability under the combined effect of thermal and mechanical stresses were also presented. Dr V.V.R. Prasad, Scientist In charge, Central Mining Research Institute Roorkee gave presentation on conceptual design and analysis of granite based deep geological repository. Prof TN Singh, Dept. of Earth Sciences, Indian Institute of Technology Mumbai, presented results of his studies on impact of the shape of disposal tunnel on their stability using site specific data and FLAC 3D Code. Dr. R.R. Rakesh made a presentation of radionuclide modelling related to