



### SNMCS: AN OVERVIEW

School for Nuclear Material Characterization Studies (SNMCS) is being established with an aim to develop human resources for chemical characterization of nuclear materials employing both destructive as well as non-destructive techniques. The school will play a pivotal role in the effective implementations of nuclear material accounting and safeguard.

SNMCS would focus towards establishing an advanced infrastructure and a state of art demonstration facility for nuclear material characterization. The following laboratories will be established to realize the goals of SNMCS:

#### Laboratory for Destructive Analysis

##### Electro Analytical Techniques

Facilities will be established for the demonstration of Electrochemical methods based on potentiometry amperometry etc, for quantification of nuclear materials.

##### Mass Spectrometric Techniques

Mass Spectrometry is widely used technique for precise and accurate determination of isotopic information as well as concentration of elements. Thermal Ionization Mass spectrometer will be established at the proposed centre.

Multi-elemental analytical technique based on High resolution ICP-MS would be demonstrated for measuring

trace and ultra-trace level of radionuclides present in environmental samples.

#### Laboratory for Non-Destructive Analysis (NDA)

NDA techniques based on Neutron Multiplicity Counter would be established for the quantification of special nuclear materials in sealed containers.

Studies on NDA techniques would be carried out to exploit their potential for qualitative and quantitative measurement of nuclear materials in a sealed container as well as in inaccessible areas.

These facilities will be used to train the NUMAC personnel in physical inventory verification of SNM.

### PROGRAMS CONDUCTED

1. Two day workshop cum training course on *Nuclear Material Accounting and Control: Current Practices and future perspective (NUMAC-PP 2013)* was conducted at Training School Complex, Anushaktinagar, Mumbai, Maharashtra, during Oct. 3-4, 2013.

SNMCS is committed to facilitate studies to promote research and development for evolving new methodologies to detect and ascertain the causes for unaccounted losses of nuclear materials on a timely basis, education and training on effective implementation of safeguards and nuclear forensic.

Dr. B.S. Tomar  
HEAD SNMCS, GCNEP



2. National Workshop on *Radio Chemistry and Application of Radio Isotopes* was conducted during October 23-27, 2013 Kurukshetra, Haryana.



3. One day *School Workshop on Radiochemistry* for students of Government Girls Senior Secondary School Jasaur Kheri, was conducted on 25th July 2014 at Bahadurgrah, Haryana.



## PHYSICAL PROGRESS

100% Slab concreting done for first roof level of Block-A of the Guest House, pile cap works in progress for SNSS building

Slab concreting for the first roof level of Block-A of Guest House has been completed, at the residential site.

Work is now in progress for raising columns for the second/ terrace floor. Approximately 60% of this column raising has been done.



**Column works for the second roof level of Guest House**

Preparatory works related to slab casting for the second/ terrace floor are also in progress.

At the Institutional Site, pile cap & tie beam works are going on for SNSS building. Nearly 60% of these works have been completed. For SNSS building, a total of 345 piles were casted including 4 test piles.



**Under construction Block of Guest House**

On completion, the SNSS building shall host laboratories, conference room, library, faculty rooms and lecture rooms. The building is likely to be ready by the end of next year.



**Tie Beam works in progress for SNSS Building**

## PROGRAMS SCHEDULED FOR JULY 2015

Indo-US Technical Exchange on Simulation Technologies in the areas of Physical Protection, Protective Force and Material Control & Accounting, 13th – 17th July 2015 Albuquerque, New Mexico, USA

Modelling and Simulation tools facilitate training, evaluation & enhancement of security systems and response capabilities. It is envisaged to have Modelling & Simulation facilities setup under Global Centre for Nuclear Energy Partnership (GCNEP) Haryana and this technical

exchange program is seen as a platform to share views and enhance knowledge about the use of simulation technologies in the area of Physical Protection, Protective Force and Material Control & Accounting.

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<b>Project Directorate:</b>	GCNEP, RCnD Building, BARC, Mumbai- 400085	+91-22-25595176
<b>Transit Office:</b>	GCNEP, 2nd Floor, BSNL T.E. Building, Bahadurgarh, Haryana -124507	+91-1276-220700
<b>Site Address:</b>	GCNEP, Village Kheri Jasaur, Bahadurgarh, Haryana -124505	+91-1276-211121