

The whole event was managed, under keen supervision of Dr. S. V. Nakhe, Director, RRCAT, by an Organizing Committee with Shri Rajesh Arya as the Convener and Dr. S. K. Majumder as the Co-convener for the event. The committee had made quite elaborate arrangements for the event with the help and enthusiastic cooperation of a large team of volunteers, exhibitors, administrative staff, and security personnel. The event was covered by different major national and state level newspapers.

Reported by:
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N.7: Industrial and radiation safety activities in RRCAT

Fire and Safety Section, RRCAT is taking care of the safety compliance for the improvement of safety culture among the staff members. Different safety activities are being carried out to meet the said objectives.

Periodic inspection and maintenance of breathing apparatus sets: Every month, the inspection of breathing apparatus sets, which are kept in different labs of the RRCAT technical area is carried out to check their healthiness. The main features include checking of face mask, warning whistle, air pressure, harness assembly, low and high pressure hose, pressure gauge, pressure reducer, back plate and cylinder valves in each assembly. Wherever a fall in pressure in the cylinder is observed to be less than the permissible limit, it is topped. A total of 30 numbers of breathing apparatuses are installed in different buildings of the RRCAT technical area and two sets are also kept in the Agricultural Radiation processing Facility (ARPF).



Inspection of breathing apparatus set.

Noise & illumination measurement: Fire & Safety Section is regularly conducting sound level measurement tests in various buildings of RRCAT. The sound level have been measured quarterly. Measurement of sound produced by various

machines and their sub-systems at different places of RRCAT like Workshop-A & B, LCW & Power Conditioning Unit, etc. for occupational safety of employees working at noisy area was done. Wherever sound level is more than permissible limit, concerned employees have been suggested to use proper PPE. Wherever sound level is very high, employees are suggested to use various engineering control methods like damping, isolation & machine guards, etc.

Similarly illumination measurements are done as per the guidelines set in Atomic Energy Factory Rules - 1996 and corrective measures are taken to improve the observed deficiencies, if any. Illumination measurements have been carried out at various labs of RRCAT with the help of digital lux meter -Lutron Lx-101A.



Noise and illumination survey in DMTD.

Issuing of height passes: RRCAT ensures the safety of the employees and workers working at height. For this purpose, height pass test were conducted. Height pass certificates were issued to 06 workers of CSD. Height pass document is prepared and record of issued height pass is also maintained.



Height pass test for workers.

Routine inspection of fire hydrants, isolation valves, and water/foam monitors: Monthly routine inspection, preventive maintenance, cleaning, oiling, checking for smooth valve operation of 79 fire hydrants, 30 isolation valves, and 20 water/foam monitors, spread all over the technical area of RRCAT are being carried out. A monthly report of these works was prepared and corrective measures were taken.

Preparation of various safety reports: Regular coordination and data collection from Administration, Medical Centre, Security, CISF, and other Sections/Divisions on various aspects of industrial safety and reporting to the regulator was done in the form of “Quarterly Status Report of RRCAT on Safety, Health and Environment, Industrial Hygiene Surveillance Report, Industrial Safety Award Report, Plant Accidents details report, etc”. These reports include data on injury statistics of different categories of employees including contractor workers, number of reportable injuries (both fatal & non-fatal), man days lost, frequency rate (FR), severity rate (SR) and injury index (II), fire incidents, significant events and dangerous occurrences as per Factory Act, 1948.

Radiation safety: Radiation surveillance was provided to all radiation facilities to ensure radiation safety of staff and workers. During the period of Jan. – June, 2023 radiological surveillance was provided during the operation of the synchrotron radiation facilities and their beam lines. Induced radioactivity measurement on accelerator components and performance check of area radiation monitors & survey meters were carried out during Indus shutdown. Detailed radiation measurements were carried out at H⁻ ion source (RF based) within the shielded vault at H⁻ ion building and the recommendations were made to plug the glass viewing windows (with SS flange or lead glass) through which low energy x-rays were streaming out. Personal dosimetry for 499 workers (including temporary) of RRCAT was carried out during the period. The biometric data of 24 new radiation workers was uploaded on National Occupational Dose Registry System. From the dose data (of first quarter), the maximum individual dose recorded is 0.15 mSv, which is well within acceptable limit. Quarterly testing of various equipment /instruments of Radiation Emergency Response Centre was carried out and kept in a preparedness state for responding to any radiological emergency. Elementary training on radiations protection were imparted to 182 users of synchrotron radiation source of Indus-1 and Indus-2. The environmental radiation monitoring data from 11 locations of RRCAT campus and ARPF site indicated no increase in radiation level due to operation of the radiation facilities.

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N.8: Fire safety activities at RRCAT

Fire activities group of Fire and Safety Section (FSS), RRCAT is involved in fire fighting during fire emergencies. Along with

this, they are also conducting first-aid fire fighting training program and fire safety awareness program. Different fire safety activities were carried out to meet the said objectives.

Live demonstration during National Science Day 2023: The Fire and Safety Section organized a science exhibit during the National Science Day Celebration in RRCAT, Indore on 25th & 26th February 2023. During this event, different types of fire safety equipment like Fire Entry Suit-3000 Series, Fire Proximity Suit-750 Series, Water Turbine based Smoke Extractor, Fire-fighting Hose with water branch, Aqueous Film Forming Foam (AFFF) Compound, DCP type Fire Extinguishers, CO₂ type Fire Extinguishers, Portable Fire Pumps, Breathing Apparatus Sets, Breathing Apparatus Compressor, etc. were displayed.



Fire fighting demonstration on National Science Day-2023.

Students from different schools were briefed about their operations and applications for mitigating the emergencies. A live operation of the High Expansion Foam Generator was also demonstrated, the foam discharge of this generator is 02 lakh liters per minute. Various types of fire-fighting water branches with different patterns of the water jet, donning & doffing of breathing apparatus set, and Multi-purpose Fire Tender with high-pressure hose reels, water monitors & remote controlled Light Mast were also demonstrated. The event was conducted at RRCAT Fire Station. Visitors from various schools, and colleges along with RRCAT colony residents and their relatives participated in this program.

Periodic training for fire fighting equipment and breathing apparatus set: Fire and Safety Section is regularly conducting training on fire-fighting and the breathing apparatus set. This monthly training program is imparted to RRCAT employees, using the latest training aids along with power point presentations, safety video clips and short movies, Hands-on experience with fire extinguishers & B.A. sets. During this period, total of 99 RRCAT employees were trained. Fire mock drills were also conducted in RRCAT technical area, which includes the Free Electron Laser (FEL) building and Indus Complex. A fire hazard analysis including fire load density & smoke filling calculation for the Indus Complex including MPS & RF hall was also conducted. A drive to control fire in the grass area of the unoccupied technical area was also