

The status of occupational health check-up of employees working in laser labs, workshops, chemical facility and radiation zone was also reviewed by ASC. Besides this, ASC also reviewed the status of testing & maintenance of pressure vessels & cranes, status of earth pits, their maintenance and resistance measurement, status of occupational health check-up of employees and also for the contractor workers engaged in preparation & serving of food in Guest House and canteen, etc. Status of license from MP Pollution Control Board for operating Chemical Treatment Facility in RRCAT, status of operation & maintenance of fire pump house, status of license for inflammable store, status of height pass, compliance status of deficiencies observed in illumination & noise levels at various locations of work, compliance status of adherence to work permit system in Indus complex, compliance status of corrective measures taken after an accident, compliance status of recommendations of Internal Safety Inspection Committees, etc. were also reviewed.

Necessary documents and records in compliance with AERB guidelines were maintained for regulatory inspection by the regulator. Quarterly status report of RRCAT on safety, health and environment, industrial hygiene surveillance report, industrial safety award report, plant accidents details report, etc. were prepared. These reports include data on injury statistics of different categories of employees including contractor workers.

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**N.6: Fire safety at RRCAT**

*First aid fire-fighting training to RRCAT employees:* To inculcate fire safety culture in the employees of the organization as well as to minimize loss of property & human life due to fire, the Fire and Safety Cell, RRCAT organized first aid fire-fighting training for 63 number of RRCAT employees from July to December-2021, in spite of the COVID-19 pandemic while taking all preventive measures. During this training, not only a lecture with audio-visual aids was conducted, but also operational training of fire extinguishers, breathing apparatus set, fire-fighting with delivery hose & branch was imparted to the employees.

*Skill development program for fire personnel:* To develop skill among RRCAT fire personnel, Fire and Safety Cell organized 25 lectures on fire technology including wireless communication at Fire Station.



*First aid fire-fighting training to RRCAT employees.*



*Skill development training to fire personnel.*

*Water Fire Tender for Fire Station:* Now, a fire fighting vehicle with large quantity of water has become part of RRCAT Fire Station. This vehicle has been built on Ashok Leyland BS VI chassis-1920 and has multi-modes of firefighting jets – normal jet of water, high pressure (40 bar) jet of water, foam jet and high length jet (45 m) of water. In spite of its small size, the vehicle is fully compliant with IS 950 for water tender. The vehicle is equipped with 6000 liters of water tank made of 5 mm thick austenitic stainless steel 316L plates that are welded with ER317L filler using ASME B & PV code section IX procedures and 100% radiography of T joints to provide enhanced protection against the use of normal municipal water. The water pump can deliver 3200 LPM at 7 bar pressure and 300 LPM at 40 bar pressure. The performance of the water pump is certified by Underwriters Laboratory to ensure dependability in critical conditions.



*Water Fire Tender at RRCAT*



*Water Fire Tender demonstrating jet of water.*

One of the unique features of this vehicle is a LED Light Robot with Mast & Lamps. Roof mounted lighting system, fitted with 2500 lumens LED; vertically elevated pneumatically up to 5.5 m has been installed on the roof of the vehicle. Lighting is provided by battery of vehicle with remote control, directional lighting system with rotation of 360 degrees & tilt lamps are provided for total coverage. The remote-control unit allows a person to operate all the functions of the light mast & accurately aim for complete directional positioning. In addition auto-show, a one button command, automatically retracts, turns out the lights and stows the entire system to the compact transport position is also included in the remote controller. The Fire Tender is also equipped with electrical winch of 6 Ton capacity connected with 5.5 HP 12 V DC series wound electric reversible motor and fitted with 27 m heavy duty galvanized EIPS wire rope with replaceable self-looking clevis hook for removing any debris during rescue. This is fitted in the front of the vehicle.

This Fire Tender has been commissioned on 28<sup>th</sup> October 2021. The configuration design of the vehicle was proposed by RRCAT and an order was placed on M/s Aarel Industries, Indore. The code compliances have been checked and certified by TUV SUD South Asia Pvt. Ltd. The design, manufacturing, installation and commissioning was done under the technical supervision of RRCAT.

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### N.7: Clean and green campus activities at RRCAT

Sustained efforts have been made over the years to develop a clean, green and beautiful RRCAT campus by developing gardens and landscapes, and large-scale planting of trees. This year also, during the monsoon season, a massive green cover enrichment program was undertaken in RRCAT towards the aim of protecting the environment and improving the biodiversity of the campus. With these aims, two tree plantation campaigns were organized in the RRCAT campus. For the first plantation campaign organized on July 31, 2021, the site chosen was the Central Park (area between Basketball Court, AECS and Open Air Theatre). The theme of plantation at the site was "Nakshatra Garden", which means constellation (group of stars). Every Nakshatra has a symbolic tree/plant that has a connection with eternal nature, and has medicinal, economic as well as aesthetic value. Trees planted here were all native species suitable for local environment. Some of the prominent tree species planted were *Azadiracta indica* (Neem), *Ficus benghalensis* (Barghad), *Ficus benjamina* (Benjamin fig), *Ficus religiosa* (Pipal), *Mangifera indica* (Aam), *Nyctanthus arbortrista* (Harsingar), *Terminalia belerica* (Bahera), *Achar* (*Buchanania latifolia*), *Anjan* (*Hardwickia binata*), *Khirani* (*Mimusops hexandra*), *Bijasar* (*Pterocarpus marsupium*), *Kusum* (*Schleicher oleosa*), *Baraga* (*Gmelina arborea*), *Papada* (*Gardenia latifolia*) and *Garud* (*Radermachera xylocarpa*). The theme followed for rest of the area of Central Park was "Miyawakii", which is a high density

tree plantation scheme aimed at creating a multilayered natural forest using native tree species. For the second plantation campaign on August 05, 2021, the site chosen was the area around the Laser R & D Block - I (LIGO Building site). The theme of plantation at this site was "Miyawakii", which is a high density tree plantation scheme aimed at creating a multilayered natural forest using native tree species with a thrust on beauty, colour, canopy, shape, texture and foliage. Plants selected in this drive were trees and shrubs, which grows 10 time faster and 30 times denser than the traditional ones, and have ornamental value. The selected varieties require up-keep for only the first three years period and thereafter require minimum care. Some of the selected species include flowering shrubs, Royal palms, *Ficus benzamina*, *Ficus infectoria*, *tecoma*, in combination with colourful flowering shrubs like *ixora*, *pulchirimas*, *gardenia*, *bouganvillea*, etc. with introduction of some extinct species like *Achar*, *Anjan*, *Kaim*, *Garud*, *Kusum*, etc. In all, about 1600 plants were planted during the two campaigns by planting about 47 heterogeneous species with a special focus on rare and endangered flora of Madhya Pradesh. Plants used in the campaign were raised and reared in-house in the RRCAT nursery. The tree plantation campaigns were graced by members of the Director's Advisory Committee (DAC) with the support from the members of the Advisory Committee for Clean and Green Campus (ACCGC) of RRCAT, and the staff of the Horticulture Section. All the COVID-19 related precautions were followed during the plantation drive.



*Dr. S. V. Nakhe, Director, RRCAT planting a tree during the plantation campaign.*

Periodic cleanliness drives are undertaken in RRCAT to keep the campus clean. The objective of the 'Cleanliness Campaigns' is to take up sanitation initiatives, mobilise people and reinforce the mass movement for cleanliness to contribute to Mahatma Gandhi's dream of a clean India. In this regard, a special cleanliness campaign was undertaken in RRCAT premises during 2<sup>nd</sup> to 31<sup>st</sup> October, 2021. The importance of maintaining cleanliness in-and-around our working as well as residential areas has become even more important in the light of COVID-19 pandemic. All the Divisions in RRCAT technical area actively participated in this cleanliness campaign, which included cleaning inside-and-around each