HIGHLIGHTS OF ACTIVITIES

The Atomic Energy Regulatory Board (AERB) continued to carry out safety monitoring and regulatory supervision of nuclear and radiation facilities under its purview. Regulatory safety oversight of operating power plants, nuclear power projects (under site evaluation/under construction), several fuel cycle facilities, research units and large numbers of radiation facilities spread across the country was carried out.

All operating nuclear power plants and fuel cycle facilities under AERB's purview operated safely during the year and radioactive discharges and radiation doses to occupational workers were well within prescribed limits. The radioactive releases from nuclear power plants remained well within the limits authorised by AERB and the effective dose to public around the nuclear power plant sites was far less than the annual limit of 1 mSv.

KEY ACHIEVEMENTS DURING THE YEAR

1. Licensing/Consent of Nuclear Power Projects / Fuel Cycle Facilities (under Construction)

(a) Clearance for Hot-Conditioning and associated Hot-tests for KAPP Unit-3.

(b) Permission for draining of Light Water from Primary Heat Transport for KAPP-3.

(c) Clearance for receipt, handling and storage of 42 nos. of fresh fuel sub-assemblies at Fuel Building at PFBR.

(d) Clearance for Acid-solvent run at DFRP, Kalpakkam.

2. Renewal of Licences of Nuclear Facilities

(a) Licences for operation of 3 Nuclear Power Plants viz. RAPS-1&2, KAPS-1&2 and KKNPP-1&2 (Factory Licence).

(b) Authorization for operation of Sodium Facility for Component Testing at IGCAR.

(c) Permission for commencement of irradiation campaign at FBTR.

(d) Licences for operation of Nuclear Facilities viz. HWP- Hazira and Thal, Mohuldih mine and BSM Facilities of IREL at Manavalakurichi, Chavara & OSCOM and M/s KMML, Chavara.

(e) Permission for resumption of ore production at Jaduguda and Bhatin mine and extension of validity of the consent for trial operation of Tummalapalle mill.

(f) Amended existing licence w.r.t Enhancement of production capacity of Zirconium Complex (ZC), Pazhayakayal from 250 to 300 MT per year.

(g) Amendment in existing licence for operation of Versatile Solvent Synthesis Pilot Plant (VSSP) at HWP-Tuticorin to include operation of HWP main plant.

3. Licensing/Consent of Radiation Facilities

(a) 20,520 Licences for medical, industrial and research radiation facilities.

(b) Issued 5,469 permissions for procurement of radioactive sources.

(c) 10,458 permissions for procurement of diagnostic X-ray equipment.

(d) Approved 3,631 Radiation Safety Officers (RSO) for various radiation facilities.

(e) Simplified the module for processing of applications for Licence for operation of Dental X-ray equipment.

4. Regulatory Inspection of Nuclear and Radiation Facilities

(a) Special inspection of KKNPP-1&2 based on media reports on cyber attack on computer system.

(b) Special RI of NPCIL HQ to verify the compliance of requirements prescribed for a responsible organisation.

(c) NFC and NPC Regional QA offices at Hyderabad inspected under vendor inspection programme.

(d) Continuous surveillance by AERB Site Observers Team (SOT) at twelve operating, two under commissioning and five under construction units.

(e) 27 inspections of nuclear power projects, 64 inspections of operating NPPs and 37 inspections of industrial and fuel cycle facilities were carried out.

(f) 1,038 inspections of medical, industrial and research radiation facilities.

5. Enforcement Inspections

(a) Under special drive for diagnostic X-Ray facilities about 207 equipment inspected in the North Eastern States. Due to non-compliance of regulatory requirements 11 X-ray equipment were 'Sealed' and issued 'Warning for Seal' to 91 X-ray equipment.

(b) Noticing the violations of regulatory and safety requirement, four Industrial Radiography devices were sealed.

6. Emergency Preparedness and Response (EPR) at NPPs

(a) New off-site emergency exercises developed viz. Table Top exercise, Integrated Command Control and Response (ICCR) exercise and Field exercise. These exercises were conceptualized and conducted, focusing on different aspects of emergency management.

(b) Trial table-top exercises conducted at three sites (Narora, Tarapur and Kaiga).

(c) ICCR offsite emergency exercise conducted at Kalpakkam site in September 2019.

7. Regulatory Safety Documents

(a) Two Safety Guides viz. 'Remediation of Areas Affected by Radioactive Contamination' and 'Monitoring and Assessment of Occupational Exposure due to Intake of Radionuclides' were approved and uploaded on AERB website.

(b) About 16 regulatory safety documents (REGDOC) are at various stage of development.

(c) 32 draft Safety Standards and Documents Preparation Profiles (DPP) of IAEA reviewed and commented.

8. Safety Analysis, Research and Development

(a) Contributed in development of PRABHAVINI, an integral safety analysis code of DAE, by

developing various models.

(b) Developed in-house computer code for analysing flow and power transients in fast breeder reactors.

(c) Conducted experiments on;

(i) Power and control cable fires at Compartment Fire Test Facility (CFTF)

(ii) In-vessel retention capability of calandria vessel in PHWRs at COre Melt REtention Facility (COMREF) and

(iii) Condensation Induced Water Hammer (CIWH) experiments at Water and Steam Interaction Facility (WASIF).

(d) Set up an experimental facility for investigating coolant channel heat-up and annulus gas monitoring system.

(e) Numerical studies conducted to study the effect of Zr-2.5% Nb anisotropy on notch stress triaxiality and stress intensity factor in a tension test specimen.

(f) Dynamic Soil-Structure Interaction (SSI) analysis of control building using specialised software.

(g) Under safety research programme to promote research in nuclear, radiation and industrial safety, four new projects were approved and renewed approvals for ten on-going projects.

9. Public Information and Safety Promotional Activities for Stakeholders

(a) 8 Theme Meetings organized on various subjects for stakeholders of nuclear facilities.

(b) 3rd National Conference on Regulatory Interface (NCRI) for Licensees of Accelerator Facilities and Transport of Radioactive Material was held.

(c) Organised special meet for Calibration and Testing of Radiological Laboratories to apprise stakeholders on accreditation process.

(d) Two awareness programs conducted on radiation safety for medical diagnostic X-ray and well logging facilities.

(e) Published an article on 'Regulatory Oversight for Medical X-ray Facilities' in RADBUZZ and ALARA magazine widely referred by medical X-ray professionals.

(f) Displayed exhibits on safety and regulatory aspects of nuclear and radiation facilities in relevant conferences/workshops.

10. International Cooperation

(a) Participated in the 63rd Regular Session of the IAEA General Conference and the Senior Safety and Security Regulators' Meeting at Vienna, Austria.

(b) AERB joined the Atomic Energy Research (AER), Hungary as member organisation. AER is an international community of countries running the VVER type nuclear reactors.

(c) Bilateral meeting between AERB and STUK, the nuclear regulatory body of Finland, providing an opportunity and platform for sharing an experience with regulatory review of VVER and EPR type of nuclear reactors, regulation w.r.t. radiation sources and national practices in radioactive waste management, was organised.

(d) A bilateral meeting with Ghana Atomic Energy Commission (GAEC) held in AERB.

(e) Contributed in IAEA Coordinated Research Project on PSA Benchmark for Multi-Unit/Multi-Reactor sites.

11. Convention on Nuclear Safety (CNS)

(a) Coordinated and lead the preparatory activities for Indian participation to the 8th Review Meeting of CNS. This included preparation of the National report (which was uploaded on the CNS website on August 15, 2019).

(b) Reviewed the National reports of other contracting parties of CNS and preparation of responses to the questions posed on the Indian National report.

12. International Regulatory Review Service (IRRS)

(a) Preparatory activities initiated for IAEA-IRRS follow up mission scheduled in 2020.

(b) One officer participated as expert member in IAEA IRRS mission of the United Kingdom.

13. Public Accountability

(a) 128 RTIs questions replied during the period.

(b) Responded 33 parliamentary questions.

(c) Redress all grievances pertaining to AERB through Centralized Public Grievance Redress and Monitoring System (CPGRAMS) portal in time.

14. Human Resource Development

(a) Augmentation of manpower by recruiting 12 personnel in various categories.

(b) Organised four Management Development Programmes (MDP) for middle level Officers towards developing soft skills.

(c) Ten officers underwent Orientation Course on Nuclear Law.

(d) Towards continual knowledge upgradation of its staff, AERB organized:

(i) One technical talk and 18 colloquia on safety related topics

(ii) A lecture series on 'Mechanical Vibrations' comprising of 25 lectures

(iii) Training course on 'Cyber Security'

(iv) Advanced training course on 'Human Factors'.

15. Infrastructure Development

(a) Completed construction of Regional Regulatory Centre at Kolkata.

(b) Construction activities started for Niyamak Bhavan - C building at HQ.

16. Promotion of Official Language

(a) Organised Scientific Seminar in Hindi with a theme on 'Atomic Energy and Environment'.

(b) AERB officer awarded with 'HINDI SEVI SAMMAN' for promotional / outstanding contribution in the field of official language.

(c) 28 officers successfully completed training of 'Parangat' under Hindi Teaching Scheme of Rajabhasha Vibhag.

(d) Press releases issued in Hindi and published in daily newspapers.

(e) 15,607 Bilingual letters were sent.

(f) Organised four Hindi workshops.