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Atomic Energy Regulatory Board



75
Azadi Ka
Amrit Mahotsav

e-Newsletter

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“The mission of AERB is to ensure that the use of ionising radiation and nuclear energy in India does not cause undue risk to health of people and the environment”



From the Chairman's Desk

“I am also very pleased to share that as part of our continual endeavour towards competency enhancement of our staff, a web-based program has been developed to assess the inspectors and trainees of AERB.”



Dear Readers,

We, AERB fraternity, join fellow countrymen in celebration of 'Azadi Ka Amrit Mahotsav' commemorating seventy five years of independent India. It is a very joyous moment for entire nuclear fraternity that despite various challenges and constraints, India has emerged as one of the global leaders to harness atomic energy technologies today. We were indeed extremely fortunate to have great visionaries and scientists such as Dr Homi Bhabha, Dr Vikram Sarabhai, Shri Meghnad Saha, Dr Swarup Bhatnagar, to name a few, who through their wisdom and far sightedness have shaped the illustrious journey of nuclear science and technology in the country and has made India 'aatma-nirbhar' in true sense.

The emphasis of the founding leaders of the programme that safety is the essential foundation for sustainability is one of the key factors for the success. To commemorate the 75 years of self-reliance achieved through decades of dedication, perseverance, AERB has planned various awareness and scientific events and competitions round the year.

On the international cooperation front, the last quarter has been quite eventful. The 65th Regular Session of the IAEA General Conference was held during September 20 - 24, 2021 at Vienna, Austria. I am delighted to share that the bilateral arrangement between Atomic Energy Regulatory Board (AERB) and the Nuclear Safety Authority (ASN) of France for the exchange of technical information and cooperation in the regulation of nuclear safety and radiation protection was renewed on the margins of the General Conference. During this visit, opportunity was also utilized to participate in Senior Safety and Security Regulators' Meeting and the bilateral meetings with Canadian Nuclear Safety Commission (CNSC) and United States Nuclear Regulatory Commission (USNRC).

With the relaxing of COVID-19 restrictions, AERB started functioning with 100% strength from office from August 2021. AERB has started organising most of the regulatory activities in hybrid mode through judicious mix of physical participations and web-based platforms including safety review of nuclear and radiation facilities, licensing and regulatory inspections. Various theme meetings towards safety promotion of our stakeholders, inter-ministerial coordination for strengthening the regulatory interfaces continued through virtual participation.

As part of AERB's continued public outreach activities, a one day webinar on "Societal Benefits of Radiation Technology and Safety Aspects" for institutions of higher education in Guwahati and stakeholders of radiation facilities possessing ionising radiation sources in Assam was held on July 07, 2021. The webinar was attended by several faculty members and students of different educational institutions and representatives of radiation facilities.

I am also very pleased to share that as part of our continual endeavour towards competency enhancement of our staff, a web-based program has been developed to assess the inspectors and trainees of AERB.

AERB as the national regulator in the country reaffirms its commitment in ensuring safe use of nuclear energy and radiation applications for the betterment of the society.

With Festive Greetings.

Stay Safe.

(G. Nageswara Rao)

1.0 Safety review and regulation

During July 2021, AERB HQ was working from office with up to 50% staff strength, following the COVID-19 preventive measures. Remaining 50% staff was working from home. From August onwards, AERB started functioning with 100% strength at office. AERB continued to use the web-based platforms for most of its regulatory activities including safety review of nuclear and radiation facilities, conducted on-line safety review meetings and carried out remote regulatory inspections for continued regulatory oversight of nuclear and radiation facilities.

The safety status of all nuclear and radiation facilities remained satisfactory and no major incidents / new safety issues of concern were observed in any of the facilities. Radiation doses to occupational workers and radioactivity releases in the nuclear facilities were well within the specified limits.



The Board of AERB is the decision making body on policy matters for regulation of nuclear and radiation facilities and associated activities. The Board held its 134th meeting on July 28, 2021, through Video-conferencing. Apart from the highlights of the important regulatory activities and the safety status of the regulated installations the Board was apprised of the revised Off-Site Emergency Exercise framework, safety performance assessment of operating NPPs using the newly developed indicators and the safety culture assessment of AERB staff. In this meeting, the Board recommended for grant of siting Consent for setting up Away From Reactor (AFR) Facility at KKNPP-3&4 for interim storage of spent fuel.



AERB Board Meeting in Progress

(i) Consenting of Nuclear and Radiation Facilities

The following Licences/Approvals/Clearances were issued/renewed during the period:

- 1) Licence for operation of Kudankulam Nuclear Power Plants (KKNPP)-1&2, extended up to July 31, 2025.
- 2) Licence for operation of Tarapur Atomic Power Plants (TAPS)-3&4, extended up to August 31, 2026.
- 3) Siting Consent for Away from Reactor (AFR) spent fuel storage facility at Kudankulam Nuclear Power Plant (KKNPP)-3&4 on August 23, 2021.
- 4) Permission for continuation of certain commissioning activities at Demonstration Fuel Reprocessing Plant (DFRP), up to December 31, 2021.
- 5) Total 5,815 licences were issued to radiation facilities involved in medical, industrial and research activities.

2.0 Regulatory Inspection and Enforcement Actions

(i) Regulatory Inspections

Due to the prevailing pandemic situation, AERB continued to extensively use the virtual platforms for remote Regulatory Inspections (RI) to ensure continuity in regulatory oversight of nuclear and radiation facilities. The virtual RIs are conducted using self-assessment checklists. The assessment reports are reviewed by a team of inspectors at AERB and meetings are held through video conferencing with the licensees to verify certain compliances, as necessary.

During this quarter, remote regulatory inspections of five Nuclear and two Industrial Facilities in virtual mode were carried out. In addition to these, three remote regulatory inspections to oversee refuelling shutdown/biennial shutdown activities of KKNPP-2, KAPS-2 and MAPS-2 were carried out in hybrid mode (partially remote and physical inspection).

Total 168 routine and 15 special remote regulatory inspections of radiation facilities were carried out during this period.

(ii) Enforcement Actions

- Enforcement action was taken against one of the industrial radiography institutions in Mumbai by suspension of its licence for operation for a period of 3 months, due to non-compliance with regulatory requirements.
- Enforcement action was taken against one of the industrial radiography institutions in Faridabad by suspension of its licence for operation and Certificates of RSO and Radiographer for one year, due to gross violations noticed in radiation safety, inadequate security provisions and radiography work undertaken by the untrained person.

Inauguration of web-based Inspector Assessment Module



Chairman, AERB inaugurating the 'On-line Module for Assessment of Inspectors & Trainees in presence of Executive Director, AERB and Heads of all Technical Divisions of AERB.

Building inspector competencies and their management play an important role for effective execution of Regulatory Inspection (RI) programme in Nuclear and Radiation Facilities (NRFs). A web-based procedure has been developed in-house to assess the inspectors and trainees of AERB. Chairman, AERB inaugurated the On-line Module for Assessment of Inspectors & Trainees on August 15, 2021. The assessment module is now available to the officials through AERB intranet.



3.0 Off-site Emergency Exercises at NPPs

To assess the emergency preparedness and response in case of an off-site emergency situation due to a hypothetical accidental condition in a Nuclear Power Plant (NPP), off-site emergency exercises were conducted at two NPP sites viz. Tarapur in Maharashtra and Narora in Uttar Pradesh on September 3 and 8, 2021 respectively. The exercises were conducted in the integrated command control and response (ICCR) mode involving representatives from various agencies viz. National Disaster Management Authority (NDMA), NPCIL, Crisis Management Group (CMG) of DAE, BARC and AERB. NDMA and AERB observers assessed the decision making capabilities and response actions by plant and district authorities. Insights from the exercises will be appropriately incorporated in respective plans, procedures and in conduct of future emergency exercises at NPP Sites.

The Nuclear and Radiological Emergency Monitoring Centre (NREMC) at AERB was activated during the exercise to verify the established capability for independent monitoring and assessing of emergency conditions by AERB, should they arise. Detailed atmospheric dispersion modelling of important radionuclides were also carried out.

4.0 National and International Co-operation

A. National Coordination

(i) Joint Consultation Meeting

AERB conducted a virtual Joint Consultation Meeting (JCM) on July 22, 2021, with an objective to finalise revised Off-Site Emergency Exercise (OSEE) framework which has been systematically evolved over the past few years. The JCM was attended by representatives from AERB, National Disaster Management Agency (NDMA), Crisis Management Group, DAE, BARC and NPCIL. The stakeholders agreed to the revised OSEE framework.

(ii) Inter-ministerial virtual meeting with Directorate General of Foreign Trade (DGFT)

AERB continued the Inter-Ministerial coordination activities by carrying out review of applications, referred by Director General of Foreign Trades (DGFT), Ministry of Commerce and Industry (MoCI) for approval / renewal of "Recognition" in respect of Pre-Shipment Inspection Agencies (PSIA) by verifying the technical details of Radiation Survey Meters and Nuclear Identifiers. These "Recognised" PSIA's from DGFT are responsible for conduct of radiation surveys of consignment containing metal scraps and provide certificate that the consignment is free from presence of radioactivity.

During the period, one virtual meeting was held on August 27, 2021 to recognize PSIA for issuance of Pre-Shipment Inspection Certificate (PSIC) to imported metal scraps in India.

(iii) Coordination with Ministry of Health and Family Welfare

AERB Officers delivered a talk on "Regulatory Requirements and Safety in Diagnostic Radiology" organized by National Health Systems Resource Centre (NHSRC), Ministry of Health and Family Welfare. Also, they participated as panelists in the National Level virtual review in the workshop.

B. International Cooperation

- (i) Shri G. Nageswara Rao, Chairman, AERB attended the 65th General Conference of the International Atomic Energy Agency (IAEA) held during September 20 - 24, 2021 at Vienna, Austria as a Member of Indian delegation led by Dr. K.N. Vyas, Chairman, Atomic Energy Commission. On September 23, 2021 Chairman, AERB attended the Senior Safety and Security Regulators' Meeting.



Indian delegation in 65th General Conference of IAEA

Chairman, AERB also participated in bilateral meetings with ASN (nuclear regulatory body of France), USNRC



(nuclear regulatory body of USA) and CNSC (nuclear regulatory body of Canada) arranged supplementaries to the General Conference.

- (ii) The bilateral arrangement between Atomic Energy Regulatory Board (AERB) and the Nuclear Safety Authority (ASN) of France for the exchange of technical information and cooperation in the regulation of nuclear safety and radiation protection was renewed on September 21, 2021 in Vienna, on the margins of the General Conference. The arrangement will remain valid for five years.

- (iii) AERB officers actively participated in following



**Signing of the Bilateral Arrangement between AERB and ASN,
Shri G. Nageswara Rao, Chairman AERB and Mr. Bernard Doroszczuk, Chairman, ASN**

International Meetings / Webinars / Training Programmes through virtual mode:

- Indo-US-UK "Virtual Technical Exchange program on Security by Design for Devices and Facilities that use Radioactive Materials" organized by GCNEP, Bahadurgarh.
- IAEA Consultancy meeting on the Review of Applicability of Safety Standards to Novel Advanced Reactors (Part III), during July 12-16, 2021.
- Online Atomic Energy Research (AER) Working Group meeting on 'International benchmark exercise for VVER Reactor Pressure Vessel (RPV) and fuel assembly coolant mixing', a couple of CFD benchmark analyses.
- As member of MDEP VVER TEGS on Severe Accidents, AERB officers attended meeting for preparation of technical report on long term heat removal from the containment.

5.0 Safety Promotional and Public Activities

AERB organises interactive programs with stakeholders and public about its regulatory controls for nuclear and radiation safety and on technologies under its purview by conducting outreach programs across the country.

Considering Covid-19 pandemic situation, safety promotional activities and public outreach activities continued to be performed in virtual mode.

- (i) **Webinar on "Societal Benefits of Radiation Technology and Safety Aspects"**

AERB conducted one day webinar on "Societal Benefits of Radiation Technology and Safety Aspects" for institutions of higher education in Guwahati and stakeholders of radiation facilities possessing ionising radiation sources in Assam on July 07, 2021. The webinar was attended by several faculty members and students of different educational institutions and representatives of radiation facilities.

Chairman, AERB, Shri G. Nageswara Rao, in his address highlighted the substantial benefits accrued from



**Dr. Avinash. U. Sonawane, Head, DRA&C, AERB
delivering lecture in Webinar**

applications of ionising radiation in medicine, industry, agriculture, food preservation and R&D field. Ionising radiation technologies are deeply entrenched in meeting societal needs and its aspirations. He expressed concern over misconceptions, misgivings and fears about the technology due to lack of proper understanding and knowledge of the subject. He expressed that the webinar



will be helpful to participants in understanding how societal benefits are derived safely from ionising radiation. Dr. Avinash U. Sonawane, Head, Directorate of Regulatory Affairs and Communications (DRA&C), AERB delivered the lecture on “Societal Benefits of Radiation Technology and Safety Aspects”. The webinar was interactive and appreciated by the participants.

(ii) Webinar on Operating and Regulatory Experiences on ‘Safety Significant Events in Indian NPPs

AERB planned to conduct a series of webinars for sharing Operating and Regulatory Experiences on Safety Significant Events in Indian NPPs. Objective of these webinars is to provide platform for sharing operation &



Webinar on Operating and Regulatory Experiences on ‘Safety Significant Events in Indian NPPs



regulatory experiences in handling these events among various stakeholders and also facilitate transfer of knowledge to next generation of designers, analysts, operators, internal reviewers and regulators to further improve their skill and competence.

The first webinar in this series was organised on July 22, 2021 through Video Conferencing. The webinar was attended by officers from NPCIL-HQ, BHAVINI, NPP Sites, BARC, IGCAR and AERB. Total five webinars were conducted during the period.

(iii) National Seminar on Welding Science and Technology (NSWEST) - Present Status & Future Direction

Two-day national seminar on ‘Welding Science and Technology (NSWEST) - Present Status & Future

Direction’ was organized by the Indian Institute of Welding (IIW) – Chennai branch on virtual platform from IGCAR Kalpakkam during July 23-24, 2021. Shri G. Nageswara Rao, Chairman, AERB inaugurated the seminar. Dr. A.K. Bhaduri, Director, IGCAR delivered the Plenary Talk and Dr. B. Venkatraman, Director, Safety, Quality & Resource Management and Engineering Services Group released the e-copy of the seminar souvenir.

Chairman, AERB in his address emphasised the role of new materials, advanced welding process like electron beam welding, use of modern technologies in welding automation, ASME codal guidelines and application of advanced non-destructive examination (NDE) techniques for quality assurance etc. He suggested to adopt methodology to finish most of the fabrication works of a nuclear component at factory and minimize work at site to overcome limitations at site conditions.

The seminar was attended by more than 250 delegates. The experts in the field of welding science & technology from national & international level delivered invited lectures on various topics.

(iv) Workshop on “Life Cycle of PHWR Coolant Channel”

A workshop on ‘Life Cycle of PHWR Coolant Channels’ was organized by Safety Research Institute (SRI)-AERB during August 02-05, 2021 at Kalpakkam. The objective of the workshop was to foster commitment for safety among all primary stakeholders. The workshop facilitated the stakeholders to share the outcome of experimental and analytical studies performed for improvement in life



Glimpses of the Workshop

of coolant channel and to plan studies for bridging identified gap areas. Several recommendations and suggestions were provided towards further improvement of coolant channel inspection techniques considering real time data acquisition system.



Twelve invited talks were delivered by speakers from different DAE units and AERB. Around 90 engineers/scientists from various units of Department of Atomic Energy, Nuclear Power Corporation of India Limited (NPCIL) and all plant sites operating Pressurized Heavy Water Reactor (PHWR) type reactors attended the workshop.

(v) Webinar on Safety Review and Assessment of Civil Structures and Containments of NPP

AERB organised a webinar on “Safety Review and Assessment of Civil structures and containments of Nuclear Power Plants” to share experiences on civil structures and containments of NPPs. The webinar was held on August 26, 2021 and attended by experts from NPCIL HQ and all NPP sites, besides AERB.

(vi) Awareness Program on Radiation Protection in Diagnostic Radiology and on proper use of TLD badges

An online awareness program on “Radiation Protection in Diagnostic Radiology and Proper Use of TLD badge” for X-ray Technologists and Medical practitioners in Diagnostic Radiology (DR) facilities from Maharashtra state was organised on September 30, 2021. The program was attended by about 140 participants. Dr. P.K. Dash Sharma, Head, RSD, in his introductory remark emphasized to follow safe work practice while working in Diagnostic Radiology and implementation of TLD guidelines by X-ray technologist/medical practitioners. Lecture on ‘Radiation Protection in Diagnostic Radiology and Proper use of TLD badge’ was delivered by Dr. Arti Tripathi, AERB.

6.0 Human Resources Development

AERB officers attended following international training courses in virtual mode:

- IAEA training course for New and Prospective Points of Contact of the ‘Incident and Trafficking Database’ held during September 06-10, 2021.
- Training course organized jointly by International Centre for Theoretical Physics (ICTP) - IAEA on Theoretical Foundations and Application of Computational Fluid Dynamics in Nuclear Engineering’ during September 13 to 17, 2021.



Smt. Ritu Jitendra Singh

SO/G, NSARG has been awarded Doctor of Philosophy (Ph. D.) degree from Indian Institute of Technology (IIT) Bombay, Mumbai for her thesis titled ‘Effect of Roller Path and Constitutive Behavior on the Residual Stress in a Pressure Tube

Rolled Joint’ in the 59th Convocation ceremony held on August 07, 2021.

Smt. Aarti Kulkarni Tripathi

SO/F, RSD has been awarded Doctor of Philosophy (Ph.D.) degree from Homi Bhabha National Institute (HBNI), Mumbai (constituent unit is Tata Memorial Centre, Mumbai) for her thesis titled ‘Dosimetric and Quality Assurance studies in High Dose diagnostic imaging modalities to establish National Radiation Protection Programme’.





7.0 Implementation of Official Language

(i) Celebration of Hindi Day

Hindi Day was celebrated on September 14, 2021. Heavy Water Board, Mumbai organised the function through Video-conferencing on behalf of Joint Official Language Coordination Committee (JOLCC) comprising of AERB and DAE units viz. BRIT, Heavy Water Board (HWB), DCSEM and DPS.

Shri G. Nageswara Rao, Chairman, AERB addressed the gathering highlighting the increasing importance of Hindi as Official Language of the Central Government.

(ii) Following activities were performed to promote Hindi language:

a) Hindi essay writing competitions were organized for officers and employees in AERB in September 2021 in which total 15 officials participated.

b) On August 25, 2021, joint Hindi competitions were organized by JOLCC, which included interesting event writing competition, self-written poetry competition, story competition, Hindi essay competition, in which 06 participants of AERB were winners.

c) On August 25 and 26, 2021, a joint Hindi workshop was organized in BRIT, in which two officers and one employee of AERB participated. A lecture was delivered by Assistant Director (OL), AERB in this workshop.

d) AERB Officer delivered a lecture in Hindi in the Awareness Programme organized by Institute of Physics (IOP), Bhubaneswar on a topic "Safe Work Practices and Emergency Preparedness in Industrial Radiography". Assistant Director (OL), AERB also participated in this workshop.

8.0 Celebration of 'Azadi-ka-Amrit Mahotsav'

(i) Celebration of 75th Independence Day

Shri G. Nageswara Rao, Chairman, AERB hoisted the National Tri-colour at AERB premises on August 15, 2021. 'Azadi ka Amrit Mahotsav' is being celebrated to commemorate the 75th year of independence.

(ii) Azadi-Ka-Amrit Mahotsav

To commemorate AERB's contribution in nation building, AERB has planned to join the national celebrations 'Azadi-ka-Amrit Mahotsav' in a befitting manner for the entire year. It is planned to organize a number of events such as seminars/webinars/colloquia, engaging with public, schools and academic institutions, organizing quizzes and competitions, safety promotional events, awareness programmes, media outreach etc.

During the period following activities were organized in AERB.

a) A "Rangoli-cum-Hindi-Caption-Hindi Speech Competition" with a theme on 'Independence Day' was organized in AERB on August 13, 2021 as part of celebrations of Azadi Ka Amrit Mahotsav in which total 17 officers and employees participated.



b) A live quiz competition in Hindi was organized on September 22, 2021 at AERB, covering topics related to freedom struggle and Constitution of India. Shri Vaibhav Gholap, Scientific Officer/E, AERB served as the Quiz Master. The program was conducted by Shri Dhanesh Parmar, Assistant Director (OL).



Rangoli-cum-Hindi-Caption Competition

9.0 Appointments / Retirements

Total sanctioned strength in AERB is 459. The actual staff strength as on September 30, 2021 is 333, comprising 280 Scientific and Technical and 53 Administrative / Accounts / Auxiliary staff.

No new personnel joined AERB during this period.

Personnel Retired/Transferred/Resigned from AERB during July - September, 2021:

S. No.	Name	Designation	Date	Remarks
1.	Shri S. T. Swamy	Scientific Officer (H ⁺) and Head, DRP&E	31-07-2021	Retired on Superannuation
2.	Smt. Parvathi Harinarayanan	Senior Clerk	31-07-2021	Retired on Superannuation
3.	Smt. Prasanna Chandrashekhar	Sr. Senior Private Secretary	24-08-2021	Transferred to DAE, Mumbai
4.	Dr. L.R. Bishnoi	Outstanding Scientist and Director, NSARG	31-08-2021	Retired on Superannuation

FAREWELL



Shri G. Nageswara Rao, Chairman, presenting AERB Citation to Shri S. T. Swamy Head, DRP&E

Shri S. Thirumalaiswamy, Scientific Officer (H⁺) & Head, Directorate of Radiation Protection & Environment (DRP&E), joined AERB in May, 1987 after completing M. Tech (Nuclear Engg.) from IIT, Kanpur. He is one of the first few direct recruited Scientific Officers at that time. After an illustrious career spanning 34 years in various capacities at AERB, Shri Swamy retired on Superannuation on July 31, 2021.



Shri G. Nageswara Rao, Chairman, AERB, presenting AERB Citation to Smt. H. Parvathi in presence of Shri C. S. Varghese, Executive Director, AERB

Smt. Parvathi Harinarayanan, Senior Clerk, AERB, Mumbai retired on Superannuation on July 31, 2021. She had an accomplished career spanning from February 1982 to July 2021.



Shri G. Nageswara Rao, Chairman, AERB presenting AERB Citation to Dr. Lala Ram Bishnoi, Director, NSARG

Dr. Lala Ram Bishnoi, Outstanding Scientist & Director, NSARG, AERB, Mumbai joined BARC on November 18, 1985. He joined AERB in 1990 and had a long career spanning 36 years in the Department. Dr. Bishnoi retired on Superannuation on August 31, 2021.



Feedback

We appreciate feedback from readers / stakeholders.
If you have any question or comment, please send us on AERB Feedback Portal.

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