

# AERB

*e-Newsletter*

**Atomic Energy Regulatory Board**



[www.aerb.gov.in](http://www.aerb.gov.in)

July – September 2018



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

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## *From the Chairman's Desk*

As the monsoon retreats, it's indeed very rejuvenating to see the blue skies in all its glory, filled with renewed hopes and promises for brighter avenues. As responsible citizens, we too need to make promises to ourselves and contribute our bit for a better tomorrow. Atomic Energy Regulatory Board (AERB) is making all conscious efforts in this direction. As an organization, we have carried out an in-depth introspection of our activities and have identified areas which need to be further augmented or enhanced so as to serve the society better.

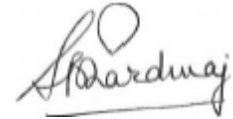
As an Authority committed towards public service, we have been taking concerted steps towards '*Minimum Government, Maximum Governance*', notable among them are web based licensing system for radiation applications, simplification of regulatory processes, revamping of external website to make it more informative and user friendly, providing opportunity to stakeholders for direct interaction through website, strengthening regulatory interfaces with other concerned agencies, and so and so forth.

For radiation safety in public domain, our efforts are directed towards enhancing the awareness among various radiation users. For this purpose, dedicated radiation safety campaign plans are being launched. Another area which AERB has been concentrating is emergency preparedness and response in nuclear activities. Table-top exercises were conducted at few NPPs with emphasis on Emergency Action Levels. It has provided foundation for developing tools towards decision making for emergency managers in response to an emergency situation, especially during the early phase.

On international scene, we have been interacting continuously with our counterparts with whom AERB has bilateral and multilateral arrangements. Additionally, cooperation with new countries have also been formalized such as that with Bangladesh Atomic Energy Regulatory Authority. AERB has also led the Indian delegation for the 7<sup>th</sup> Review meeting of the Contracting Parties for Convention on Nuclear Safety (CNS).

Within AERB, our focus has been to maximize the utilization of our skilled and competent workforce. With this objective, we have carried out some major restructuring of the organization. We also adopted the Integrated Management System which is in line with current IAEA standard on 'Leadership and Management for Safety'.

In order to conserve our resources and as part of our Government's initiative of 'Digital India', we have decided to forego the publication of newsletters and instead have decided to bring out 'e-newsletter' every quarter. I congratulate the team for bringing out this e-Newsletter. This is the first in the series and we would be happy to further improve on it based on your valuable feedback and suggestion.

A handwritten signature in black ink, appearing to read 'S.A. Bhardwaj', with a horizontal line underneath the name.

(S.A. Bhardwaj)

### Consenting of Nuclear and Radiation Facilities

- Renewed the Operating Licences of Narora Atomic Power Station (NAPS) under the Atomic Energy Act, 1962 and licence under the Factories Act, 1948, up to June 30, 2023. These licences were valid till June 30, 2018 and July 12, 2018 respectively. The renewal of Licence was based on a multi-tier safety review of the facility and recommendations.
- Renewed the Operating Licences for Fast Breeder Test Reactor (FBTR) and Interim Fuel Storage Building (IFSB) which were valid up to June 30, 2018, till June 30, 2023. The renewal was based on detailed safety review of the facility and recommendations.
- Based on satisfactory review, AERB granted the Excavation Consent for pump house of Units- 5&6 of Kudankulam Nuclear Power Project on July 24, 2018.
- The licence for operation of HWP-Hazira under Factories Act, 1948 from July 31, 2018 till January 31, 2019.
- Permission for fuel loading in Kakrapar Atomic Power Station Unit -1 after completion of En-Masse Coolant Channel Replacement (EMCCR) activities.
- Licence for operation of Versatile Solvent Synthesis Pilot (VSSP) facility at HWP Tuticorin granted under Factories Act, 1948.

### Safety Review of Root Cause Analysis of Pressure Tubes leakage events at Kakrapar Atomic Power Station (KAPS) -1&2

KAPS-1&2 units had experienced the events of leak from pressure tube (PT) in coolant channel on March 11, 2016 & July 01, 2015. Preliminary examination of the affected pressure tube confirmed the presence of number of through wall cracks. Based on the findings of preliminary examination, AERB had asked a plan for detailed examination of PT and completion of the investigation for establishing the root cause of coolant channel leak expeditiously. Affected pressure tube had been removed from the core and transported to the laboratory at BARC for further examination. The investigation on the cause of the corrosion spots seen on KAPS PTs points to the possible presence of some trace impurity in the CO<sub>2</sub> gas, which is used in the Annulus Gas System of coolant channels in KAPS units.

Similar inspection on PTs were performed as precautionary measure in all the other PHWRs in the country, after KAPS events. These inspections have confirmed that the localised corrosion phenomena was limited to KAPS-1&2 reactors alone. As an abundant precaution, AERB has directed to other operating PHWRs to strengthen the quality assurance checks on the carbon dioxide gas being used in Annulus Gas System.

The Board of AERB reviewed the investigations and R&D studies were undertaken to arrive at the Root Cause Analysis of Pressure Tubes leakage events at KAPS -1&2. En-Masse Coolant Channel Replacement (EMCCR) activities were taken up in KAPS-1&2 units. These activities have been completed in KAPS-2 unit and its start-up activities were also reviewed by AERB. The reactor has attained criticality at 2:22 am on 17.09.2018.



- As a part of radiation safety awareness campaign for auxiliary staff working in Industrial Radiography, safety training booklet has been prepared and uploaded on AERB website.
- With a view to create awareness for Law Enforcement Authorities under whose jurisdiction high intensity radiation facilities are located in the State of Maharashtra, AERB provided a syllabus on radiation safety for inclusion in the training course curriculum of police personnel and also communicated the list of radiation facilities using high intensity radioactive sources located in public/industrial area in Maharashtra. The first such training program of police personnel on the subject 'Security of Radioactive Material' was held on July 5, 2018 at Maharashtra Academy of Police, Nashik in which AERB officers participated and delivered lectures.

AERB has brought out a training booklet on 'Security of Radioactive Material' for police personnel. This training information is for the first time part of the curriculum of the Disaster Management Module of the Maharashtra Academy of Police, Nashik.

- AERB has initiated steps towards simplification of regulatory process for Licence for operation of Dental X-ray equipment.

### Bilateral Co-operation with USNRC

AERB hosted the 16<sup>th</sup> bilateral meeting with U.S. Nuclear Regulatory Commission (USNRC) during August 08-10, 2018 at AERB, Mumbai. A four member delegation led by Mr. Michael John Case, Director, Divisions of Systems Analysis, office of Nuclear Regulatory Research, NRC participated in the meeting. AERB delegation was led by Shri Dinesh Kumar Shukla, Executive Director, AERB. Apart from AERB officials, experts from Bhabha Atomic Research Centre (BARC) and Nuclear Power Corporation of India Limited (NPCIL) also participated in the meeting.

During the meeting technical discussions took place in the areas of Spent Fuel Pool Cooling, Decommissioning Rulemaking of NPPs, Accident Analysis for PHWR & LWR, Integrity Assessment of NPP Components & Non-Destructive Evaluation, Low Dose Research and Source Oversight and Patient Protection. During discussion, an update on events of leak from pressure tubes in Kakrapar-1&2NPP was provided to NRC delegation.



Shri D. K. Shukla, Executive Director, AERB discussing with USNRC team at AERB.

## Discussion Meet

### Discussion meet on “Radiological Impact Assessment and Operational Intervention Levels”

Nuclear accident at Fukushima Nuclear Power Plants in Japan, due to earthquake and tsunami, and subsequent emergency conditions, renewed the debate over the safety of Nuclear Power Plants (NPP) worldwide w.r.t. radiological impact of such accidents and the consequent countermeasures needed as part of Emergency Preparedness & Response (EPR) planning and decision making.

In AERB, review and regulations are directed towards further enhancing the safety of NPPs by strengthening the design and accident management strategies, so that such emergency conditions don't arise or can be tackled with minimum interventions in public domain. Significant advancement has taken place in the field of Radiological Impact Assessment (RIA) of accidents in NPPs as well as planning for early-phase decision-making during emergencies at NPPs. To consolidate views of stakeholders on adopting methodology for RIA and its utilisation in planning for emergencies, AERB conducted two-day discussion meet on the subject namely, 'Radiological Impact Assessment and Operational Intervention Levels (OIL) during Emergency Exposure Situation' at Mumbai, during June 26 & 27, 2018.

The discussion meet involved detailed presentations & talks by experts in the fields of RIA and Emergency Preparedness, from AERB, BARC, IGCAR and NPCIL. About 200 delegates from NPPs, NPCIL-HQ, BHAVINI, BARC, IGCAR and AERB participated in the discussion meet and put forth their views/opinions, queries raised were responded.



**Dignitaries on Dais during Inaugural Session of Discussion Meet on RIA and OIL**



**Participants of Discussion Meet on RIA and OIL**



A Hindi Meet on 'Experience Feedback from ACPSR & Associated Groups Involved in Safety Review of Kudankulam Atomic Power Units - 1&2' was organised on June 28, 2018 inviting all eminent personalities (officers of AERB, BARC and NPCIL) who had contributed to the safety review and execution of KKNPP-1&2. Prof. A. K. De, the founder Chairman of AERB was the Chief Guest of the programme. Shri S. K. Mehta, Chairman, ACPSR LWR#1 delivered the keynote address in the Meet. A summary booklet on "Safety Review of KKNPP Unit-1&2" based on the above report was released during the meet.



Shri S.A. Bhardwaj, Chairman, AERB and Shri D. K. Shukla, Executive Director, AERB addressing the Audience during the Inaugural Session of Hindi Meet

### International Yoga Day

International Yoga day was celebrated on June 21, 2018 at AERB with large participation from AERB employees. A talk on 'Pragya Yoga for Stress Management' was delivered by Shri Jateen Dave, Yoga Guru followed by relaxation and meditation session for benefit of AERB staff.



Celebration of International Yoga Day at AERB

## Home Page

AERB manpower is being augmented at various levels and through various channels in view of the expanding nuclear power programme and increasing number of radiation facilities in the country. Total sanctioned strength of AERB is 468, however in position strength is 343 comprising 283 scientific and technical and 60 supporting staff of Administrative / Accounts / Auxiliary. Following personnel joined during the period June-August, 2018.

| <b>S. No.</b> | <b>Name</b>               | <b>Designation</b> | <b>Date of Appointment</b> |
|---------------|---------------------------|--------------------|----------------------------|
| <b>1</b>      | Shri Dipak Suresh Padghan | Driver (OG)        | 27-06-2018                 |
| <b>2</b>      | Mr. Mohd Saif Osmani      | SO(C)              | 01-08-2018                 |
| <b>3</b>      | Shri Vaibhav Jain         | SO(C)              | 01-08-2018                 |
| <b>4</b>      | Shri Yogesh Kumar         | SO(C)              | 01-08-2018                 |
| <b>5</b>      | Shri Pramod Deokar        | Driver (OG)        | 06-08-2018                 |

## **Feedback**

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

**Materials published in AERB newsletter may be reprinted or translated freely with due acknowledgement.**

## **Editor**

Shri K Srivasista, Director, R&DD

## **Designed by**

Shri Vaibhav Gholap, R&DD

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