



AERB FORMATION DAY RUBY JUBILEE ANNIVERSARY



AERB FORMATION DAY-RUBY JUBILEE ANNIVERSARY



Dignitaries Present During Celebration of AERB Day 2023



Lighting of Lamp During the Celebrations



Dignitaries Attending Celebration of AERB Day 2023

AERB FORMATION DAY-RUBY JUBILEE ANNIVERSARY

On November 15, 2023, AERB celebrated its Ruby Jubilee Anniversary, having completed forty years since its formation, and organized activities focused on introspection and strategizing the way forward.

AERB decided to observe journey for transformative 41st year as 'SANKRANTI KAAL'. This KAAL (period) is being observed by conducting round the year activities of introspection, retrospection through intensive staff interactions (i.e. process of "MANTHAN") for transitioning to future readiness state. This "MANTHAN" process assumes significance in view of challenges posed by the national plans to expand the nuclear power programme in a big way by deploying mix of existing and emerging technologies through joint ventures and public- private partnerships (PPP).

The subsequent paragraphs detail AERB's journey so far and illustrate, how through "MANTHAN", the organization is adapting to meet evolving regulatory needs.

Formative Years and Consolidation Phase (1983- 2008)

AERB inherited the good practices and attributes of safety governance evolved in the initial days by its predecessors. Development of practical regulations evolved with the experiences gained from the concurrent development of technology with the strong backing of a long-term R&D programme. With limited number of staff and modest resources at its disposal, AERB devised a mechanism which was suitable at that point of time. While retaining the basic framework of multitier reviews which evolved from initial days of research reactor operations at CIRUS, AERB

started utilising the knowledge base available within DAE and other premiere academic institutes. The multitier safety review structure of AERB, with participation of external experts, progressively evolved and strengthened and slowly became the hallmark of AERB's regulation. Over the years, AERB steadily built its own pool of competent human resource, which AERB values as its important asset for maintaining independence.

The Introspection and Transformative Phase (2009-2023)

Around 2010, AERB witnessed series of challenging situations such as the Mayapuri incident, Fukushima nuclear accident, Kudankulam nuclear power plant protest and litigations followed by first time performance audit of AERB by CAG. AERB also hosted the IRRS peer review mission for the first time in 2015 which also provided various suggestions and recommendations for improvement besides recognising strength areas. This prompted AERB to carry out an in-depth introspection of its practices holistically and to undertake improvements.

These efforts were essential in addressing the evolving challenges within the nuclear sector and aligning with global best practices. With transformed outlook and beliefs, some novel approaches were conceived. Some of the major changes taken up were:

- **Introduction of Web based e-Licensing of Radiation Applications(e-LORA)**

To enhance the management of radioactive sources and facilitate business operations, AERB introduced the e-Licensing of Radiation

Applications (e-LORA) platform. This state-of-the-art web-based system represents a milestone in regulating radiation facilities across the country, streamlining processes, and ensuring radioactive source inventory management.

- **Competency Building and Emphasis on Self Reliance**

AERB developed a structured program aimed to enhance the competency of its staff and allocating them more responsibilities. This program emphasized self-reliant in-house reviews, which were supplemented by reviews from external experts and committees. The approach maintained an objective, participative, and inclusive decision-making process while ensuring that it remained non-intrusive.

- **Influenced Self-Regulation among Licensees**

AERB developed approaches towards encouraging licensees to self-regulate and recognize safety issues independently. This led to significant improvements in the safety performance of licensed units and fostered a positive licensee-regulator relationship.

- **Revamped Regulatory Inspection Strategy**

Comprehensive measures were taken to streamline, harmonize and update the regulations and to improve the regulatory processes. Regulatory inspection methodology was revamped to factor in the programmatic part, for deciding the scope and frequency of inspections. AERB also started posting resident site observer teams to improve regulatory presence at the co-

located operating and construction sites of nuclear power plants.

- **Strengthened Emergency Preparedness and Response**

Learning from the Fukushima incident, AERB updated its emergency preparedness and response strategies. The plan was revamped to assign decision-making responsibilities to plant management, while district authorities were responsible for implementing response actions. Table-top exercises were introduced to assess operator's decision-making capabilities during crisis conditions.

- **Strengthening Regulatory Interface with Line Ministries**

Another area which AERB stressed upon was to understand and appreciate the key difference in control and safety regulation. AERB realized that for effective regulation of radiation facilities it is important to also leverage the national machinery and resources provided through various statutory framework. Towards this, AERB identified the nodal agencies and has started interacting with them for a cohesive regulatory interface for simplified and pragmatic regulations.

- **Enhanced Stakeholder Engagements**

Further, AERB augmented its stakeholder engagement by having annual conferences for collecting feedback from its stakeholders, awareness programmes in the vicinity of nuclear power plants, media personnel, etc.

- **Adaptation during COVID-19 Pandemic**

The COVID-19 pandemic posed a significant

challenge to the regulatory inspection program, as movement restrictions across the country made traditional inspection methods difficult. In response, AERB developed a remote regulatory inspection process to maintain oversight of licensed activities and facilities. Leveraging computer networking infrastructure, including video conferencing systems, AERB created an inclusive environment for communication with stakeholders. These innovative approaches ensured that regulatory standards were being maintained even during the pandemic, demonstrating AERB's adaptability and commitment to safety.

Completion of 40 Years: Ruby Jubilee Celebration

To commemorate its 40th anniversary, AERB organized talks by key speakers, highlighting its journey, challenges faced, lessons learned, and introspective measures taken to improve regulations and practices.

Stalwarts of Indian nuclear fraternity came together to extend their wishes to AERB on this momentous occasion. Dr. A. K. Mohanty, Chairman, Atomic Energy Commission, Shri Vivek Bhasin, Director, Bhabha Atomic Research Centre, former Chiefs of Atomic Energy Commission Dr. R. K. Sinha and Dr. K. N. Vyas, former Chairpersons of Atomic Energy Regulatory Board Shri S. S. Bajaj and Shri S. A. Bhardwaj, esteemed AERB Board members Prof. Harsh Gupta and Prof. Lakshmi Kantam along with other distinguished luminaries appreciated the progress made by AERB during the glorious four decades. They also provided their insights on the future challenges and expressed their confidence in AERB's capabilities to meet these challenges. Chairman, AERB

recollected the guidance provided by eminent delegates during the silver jubilee celebration held in 2008 and summarised how AERB had worked on those guidance for preparing itself for future challenges.

Adapting to New Regulatory Needs

With the anticipated expansion of nuclear energy through joint ventures, PPP models, number of PHWR reactors, foreign design advanced reactors, and the aging of old reactors there is a need to address the increased complexity and diversity of nuclear technologies, ensure the continued safety and security of both new and existing facilities, and foster a regulatory environment that supports innovation while maintaining stringent safety standards.

In view of above, following actions have been contemplated and being implemented:

■ Revisiting and Overhauling Regulation

Updating regulations to make them technology-neutral, entity-independent and non-prescriptive. Structured programs are being developed to obtain feedback from relevant stakeholders for continuous improvement.

■ Applying a Graded Approach Strategy

This strategy is applied across various regulated facilities and activities. Regulatory processes are designed to ensure that regulatory actions are proportionate to the risk, considering the complexity of design, repeat designs, first-of-a-kind systems, or emergent concepts.

- **Revamping Human Resource Policy**

Updating human resource policy to emphasize competence management, ensuring that staff are well-prepared to meet current and future regulatory challenges.

- **Adopting Smart Regulatory Approaches**

Adopting strategies to ensure that regulatory efforts are efficient and effective, balancing hard work with smarter choices.

- **Integrating Regulatory Oversight**

Safety review and assessment are complemented by regulatory inspections, ensuring comprehensive regulatory oversight.

- **Strategizing Regulatory Research**

Conducting regulatory research for supporting decision-making processes by undertaking in-house research, collaborative projects with premier research institutes, and sponsored projects in academic institutions.

- **Engaging Stakeholders**

Developing strategies for engaging with various stakeholders in an open and transparent manner. Engagement activities range from providing information and increasing radiation literacy to more involved interactions such as consultation and feedback collection.

Within forty years of its existence, AERB has established the necessary regulatory infrastructure and demonstrated its capability to shoulder greater responsibilities. AERB has gradually flourished making its presence felt in national and international arena. With a transformed outlook and ongoing efforts in above areas, AERB continues to perform its regulatory activities effectively, ensuring the safety and security of nuclear and radiation facilities in India.