

Implementation of radioactive source security regulatory infrastructure in electronic licensing of radiation application (eLORA) - an Indian perspective

Introduction:

Ionizing radiation sources are used in multifarious applications in various fields such as medicine, industry agriculture, research, etc. Safety record of the sources used in these practices is generally good, however, if radiation sources are not handled safely and securely then it may give rise to potential exposure leading to unacceptable health hazards including death of exposed person. Regulation of facilities using ionizing radiation in India are carried out by Atomic Energy Regulatory Board (AERB). It is a statutory requirement, in accordance with the Atomic Energy (Radiation Protection) Rules, 2004 issued under Atomic Energy Act 1962, that all the radiation facilities need to obtain requisite License from AERB.

The remarkable growth of Radiation Facilities in India has posed tremendous challenges for AERB to enforce safety regulation at all these facilities effectively and efficiently to ensure safety and security of radiation sources all the time. In order to meet the challenges, AERB took initiative for implementing state of art e-Governance system, eLORA (e-Licensing of Radiation Applications) through automation of regulatory processes associated with the use of ionizing radiation in India.

Key note on the eLORA system:

eLORA is a web-based Information and Communication Technology application establishing direct communication channel between AERB and its stakeholders for exchange of information and communication transaction for delivering its regulatory services as well as for achieving higher efficiency, reliability, traceability and transparency in dealings.

The process developed in eLORA system is as per stipulated requirements of the Atomic Energy (Radiation Protection) Rules, 2004 and regulatory documents developed by AERB (viz. Regulatory Codes, Manuals and Standards). Various modules have been designed, developed and implemented for external stakeholders such as Radiation Facilities, Supplier, Manufacturer, Disposal Agencies etc. and internal stakeholders such as AERB officials operating from head office located at Mumbai and other regional offices located at different parts of the country.

Regulatory Infrastructure implemented for safety and security:

Introduction of each end-user starts with registration process in eLORA wherein various supporting documents for facility and its owner are reviewed. Regulatory infrastructure for ensuring safety regulation have been compartmentalized with various modules. The application forms for various regulatory clearances are interlocked among the subsequent consenting stages such as siting, design, commissioning, etc. and integrated to aforesaid compartments with emphasize on the tracking of radiation sources starting from the procurement to its safe disposal i.e. cradle to grave.

Similarly, regulatory infrastructure for implementing security measures at Radiation Facilities have been considered in eLORA. The module "Security of Radioactive Source" consists of Categorization of sources and detailed security plan submission mechanism. It has been constructed along with various upload provisions catering the need for first submission and subsequent re-submissions/ad-hoc submissions owing to the modification/change in facility layout/design/occupancy, change in functional status of the radiation sources, augmentation of new radiation sources, change in security scenario, increased threat perception etc. System creates interlocks in case of non-availability of qualified security plan while submitting the applications for source procurement, commissioning and operational licence with a decision making provision at regulators end. As eLORA is an integrated system, provision for submission and review of security plan for medical/industrial practices and during transport are in place. Additionally, provision has been made for submission of Police Verification Certificates of key personnel for Category 1 radiation facilities. Non submission and non-availability of qualified security plan will attract regulatory non-compliance and enforcement actions. Provision has also been designed keeping in view to extend the System for other coordinating government authorities involved in implementing the security measures at radiation facilities.

To facilitate stakeholders for submission of security plan a detailed checklist is provided to ensure that the plan is as per the prescribed security guide of AERB. Security plan is institution-centric irrespective of various practices available at the institute. Accordingly, interdependence across the practices, sharing of resources, and

credit from safety systems are part of this Module in eLORA. During the plan submission process, stakeholders need to declare/provide the operational status of the existing radiation sources/institute, police verification details and all relevant attachments such as security plan, PVC copy, layout of the facility indicating security architectures etc.

An AERB official, identified for this purpose receives the complete submissions. The review process depends on the categorization of the facility. For Category 1 & 2 facilities, security plans are reviewed through a committee and for Category 3, 4 & 5 facilities, security plan are reviewed within the Division as per the stipulated review process. The review comments are recorded and appropriately transmitted through eLORA to the end users regarding the shortcomings/acceptance of the submitted plan.

Conclusion:

All of our radiation facilities using radioactive sources are harnessing the benefit of eLORA system. Source categorization feature in eLORA helps in implementation of graded approach in various regulatory functions at the same time compliance towards implementation of security measures has been increased.

State

India

Gender

Male

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