



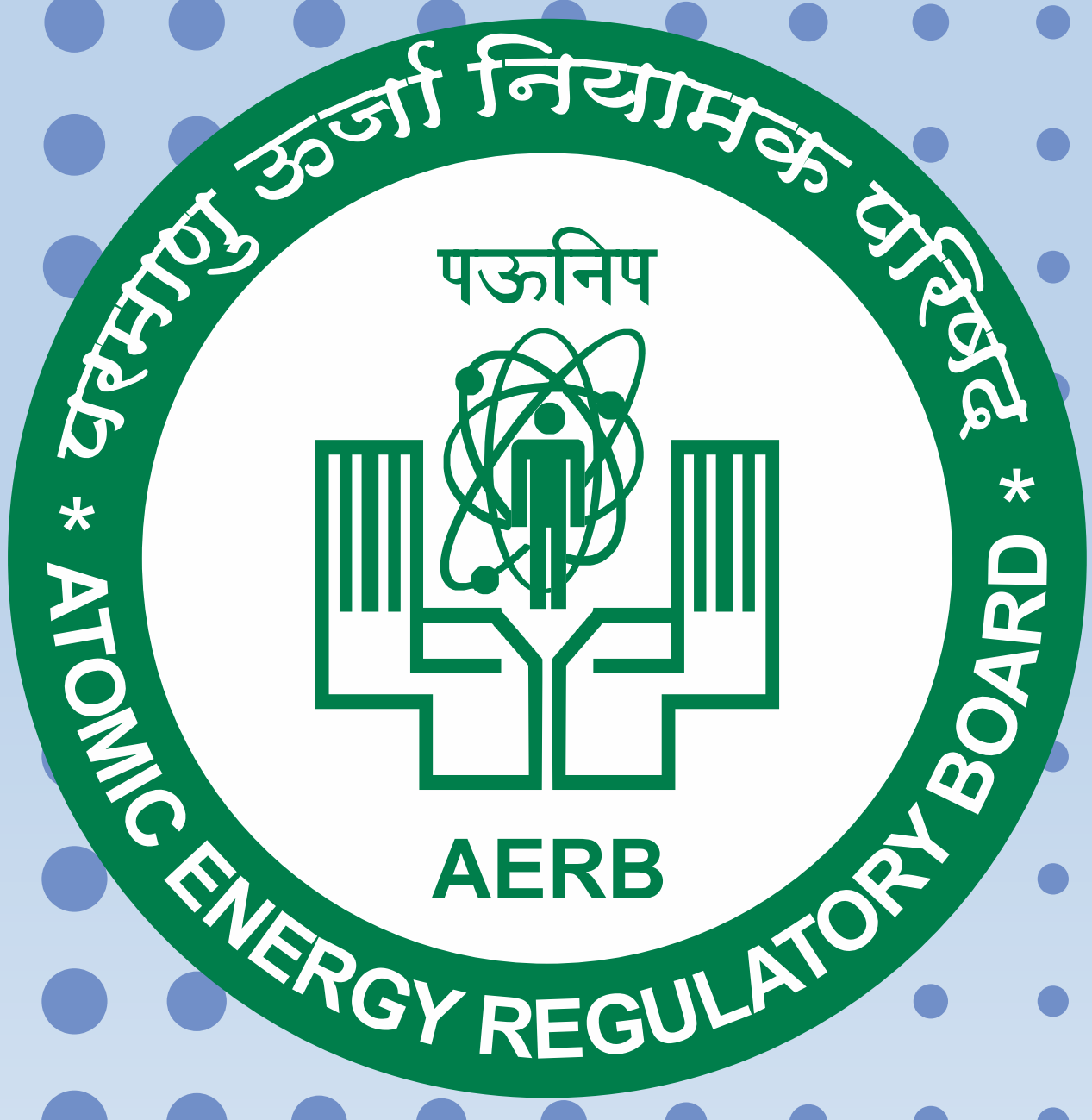
Government of India

Atomic Energy Regulatory Board



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

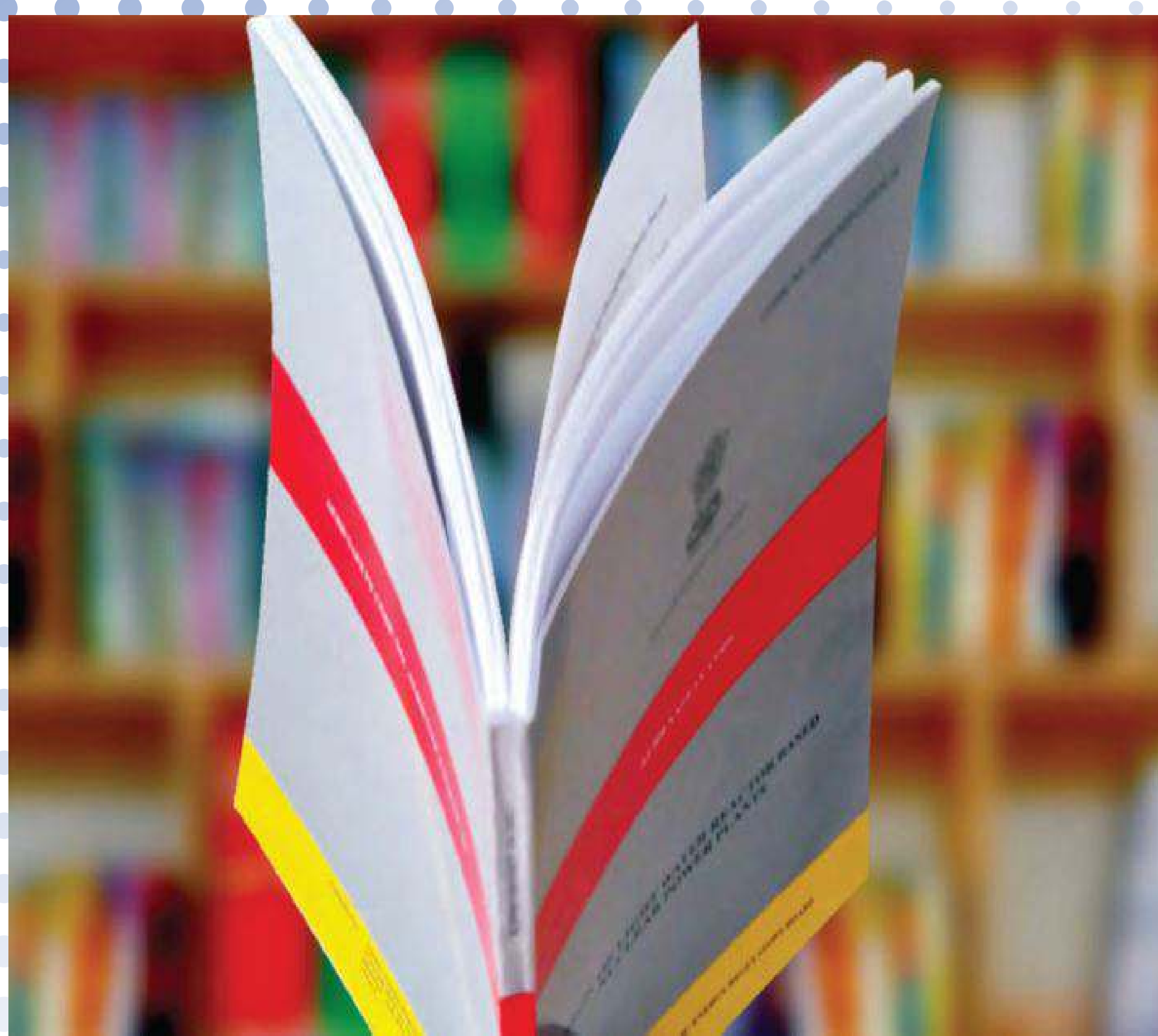
www.aerb.gov.in



Atomic Energy Regulatory Board

Core Regulatory Functions

Specifying Regulatory Requirements



Mandatory
requirements in
the form of
safety codes
and standards

Safety Review & Licensing

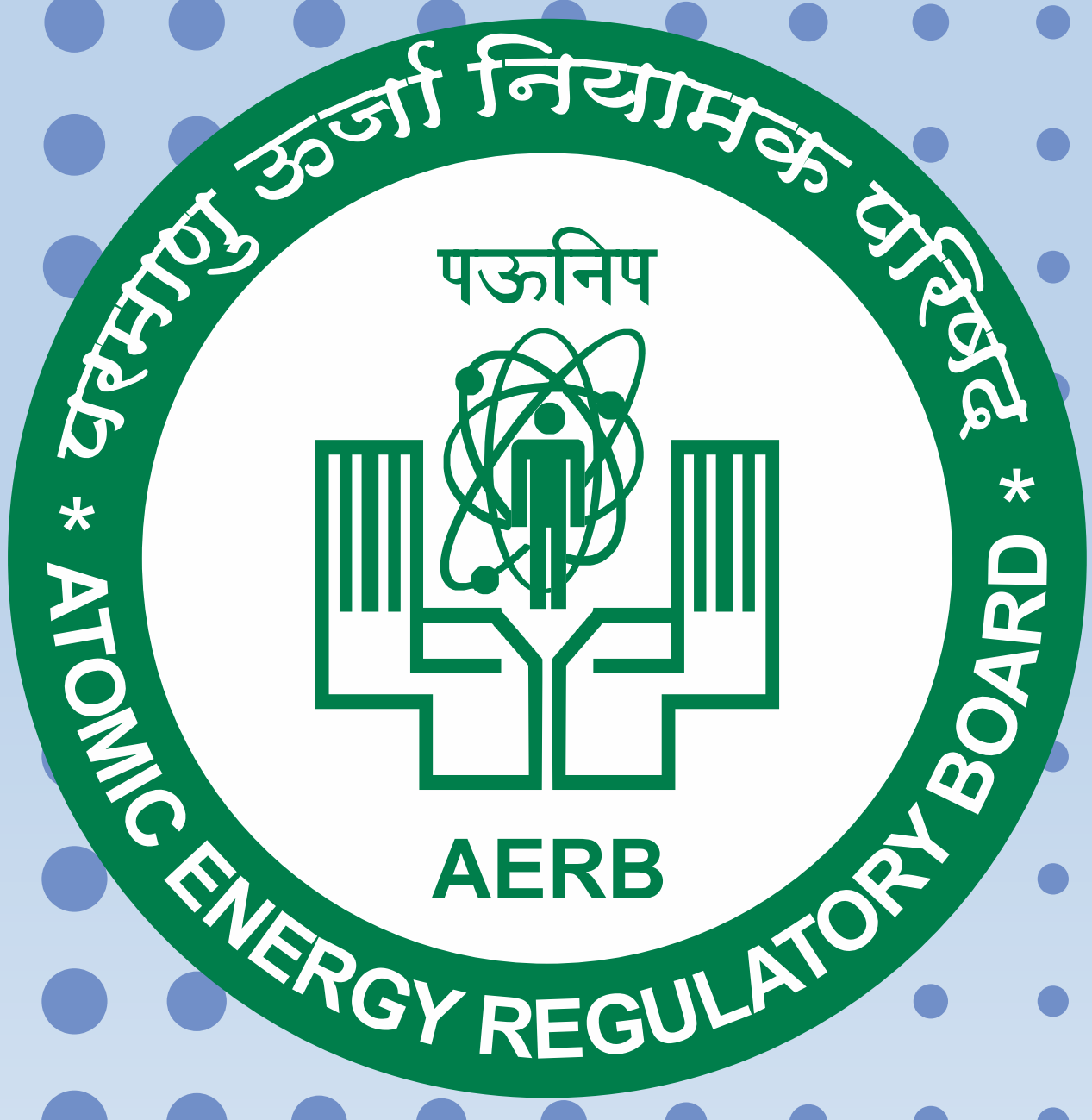
Multi-tier review
process with
participation of
stakeholders



Inspection and Enforcement



To verify compliance
with licensing
conditions and
statutory norms



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Radiation Facilities under purview of AERB

Industrial Facilities

Radiation Processing Plants
Gamma Irradiation Chamber
Industrial Radiography
Nucleonic Gauge
Oil Well Logging
Consumer Products



Medical Facilities

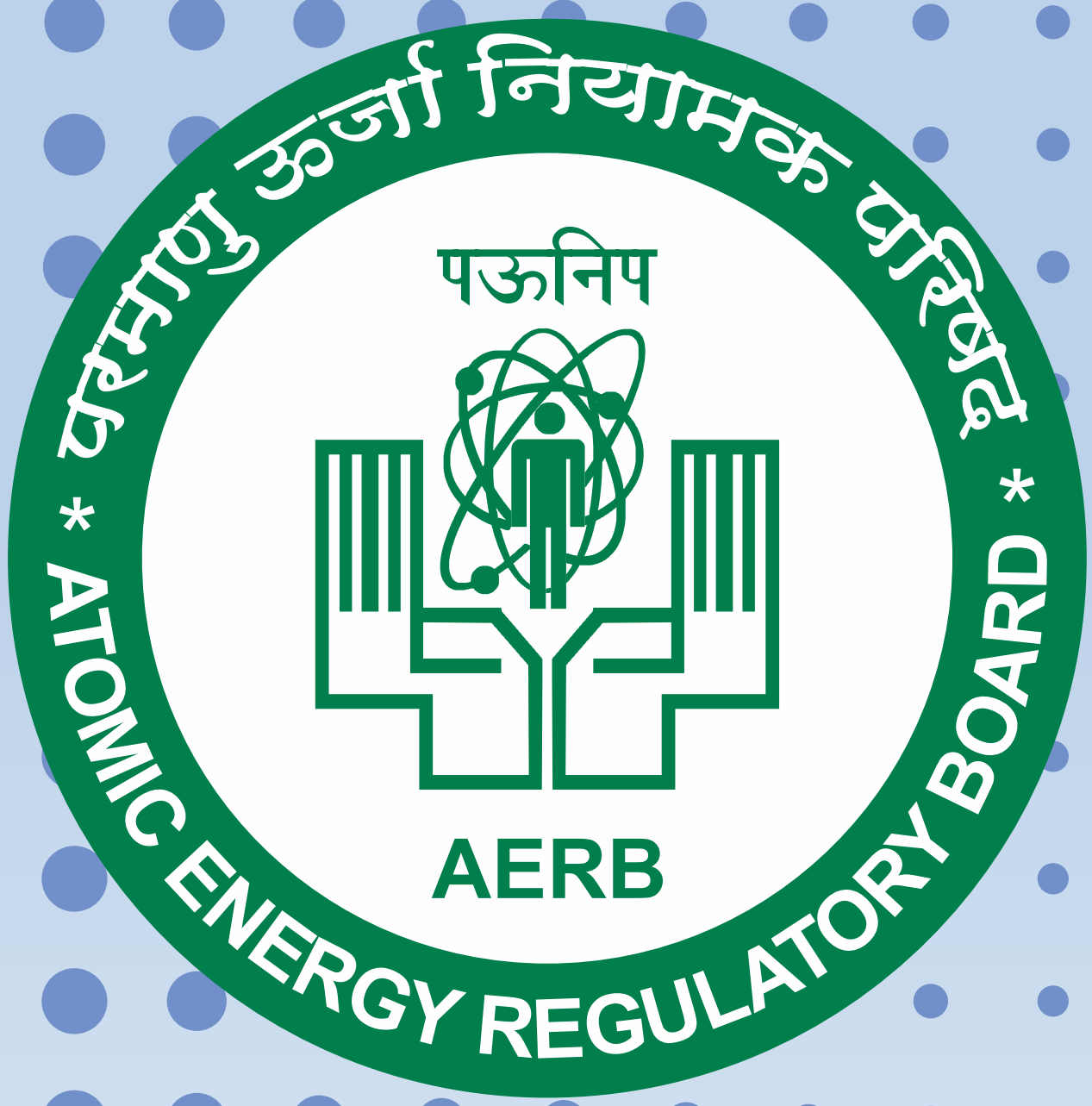


Radiotherapy
Nuclear Medicine
Medical X-ray Equipment
in Diagnostic Radiology
Blood Irradiator

Research Facilities

Sealed and unsealed
sources for
research studies





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Regulatory Requirements for Obtaining Licence for Industrial Radiography Facility



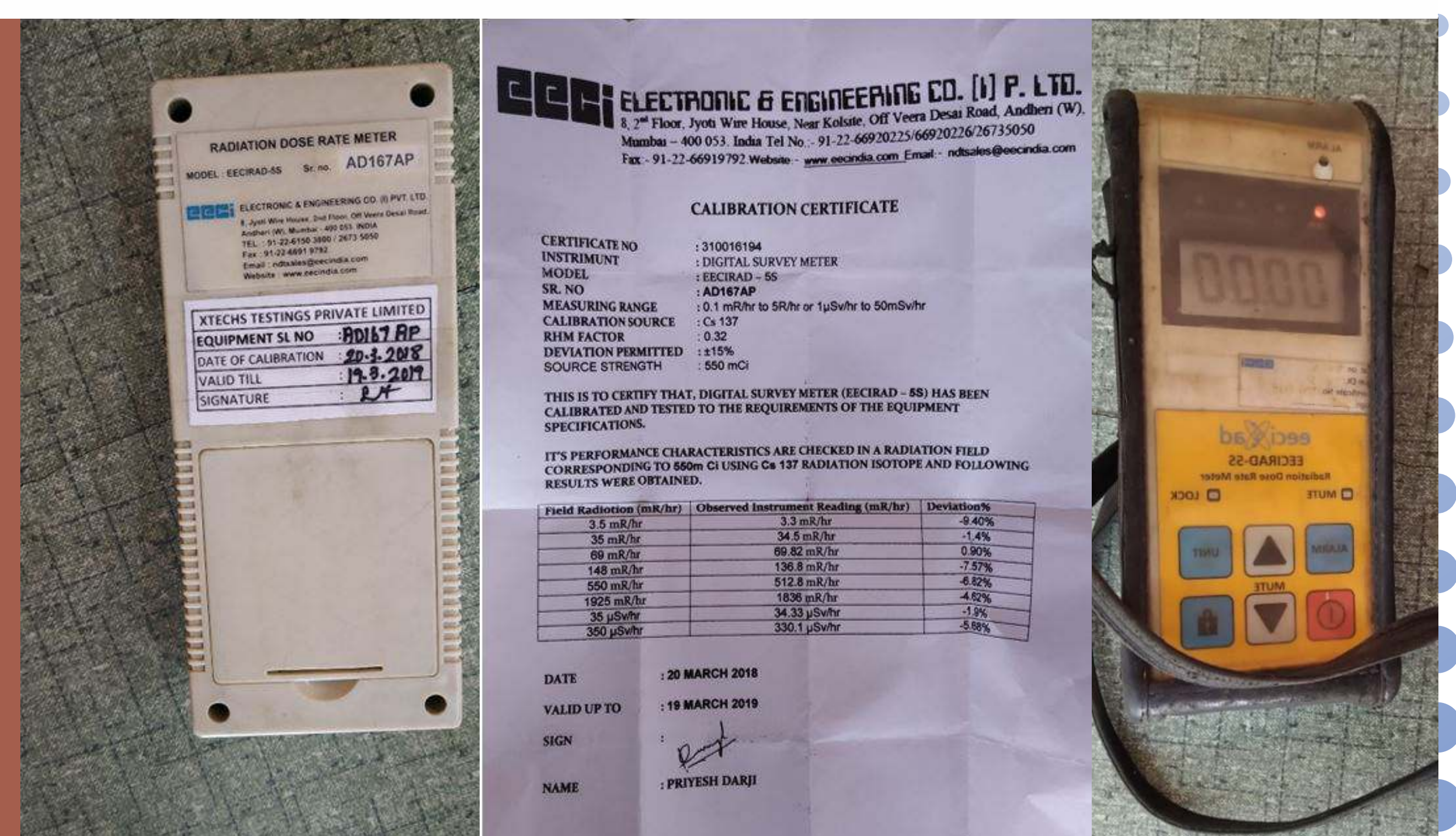
Procurement of AERB Type Approved Industrial Radiography Exposure Device (IRED)

Availability of adequate radiography personnel such as RSO and radiographers.



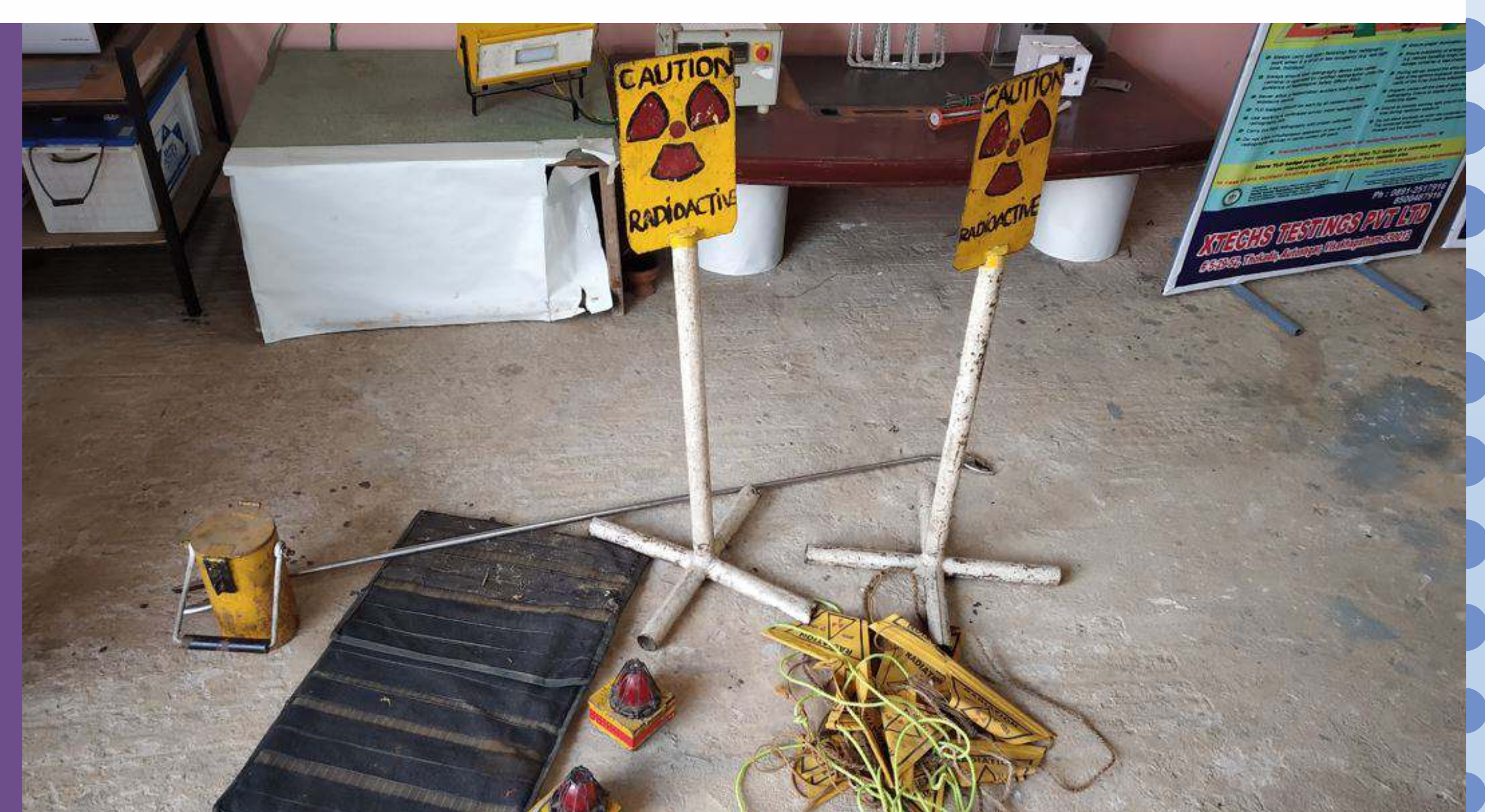
Personnel Monitoring of radiography personnel.

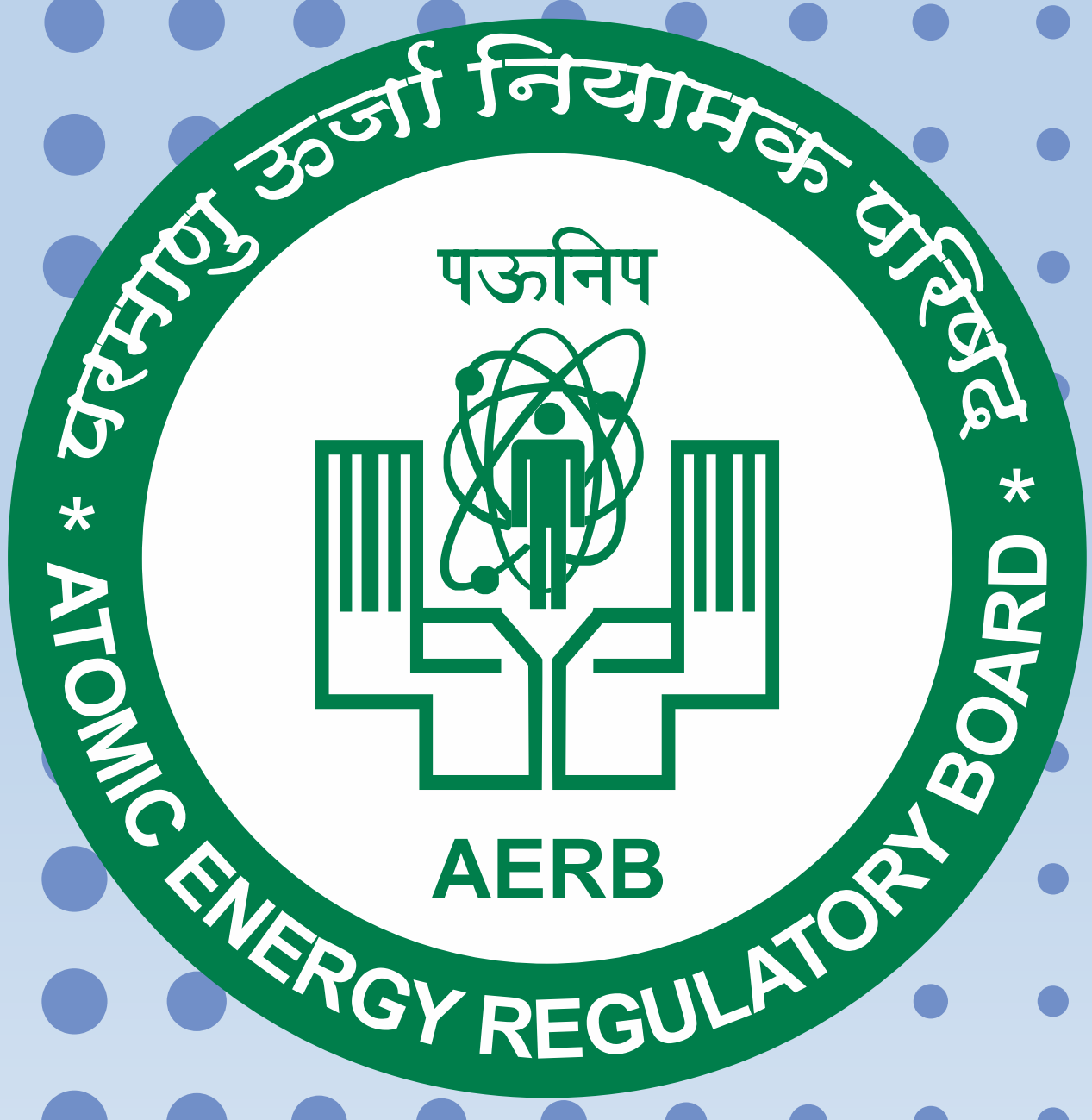
Availability of adequate number of calibrated and properly working radiation monitors.



Availability of secure source storage facility

Availability of radiography enclosures/accessories required for carrying out field radiography



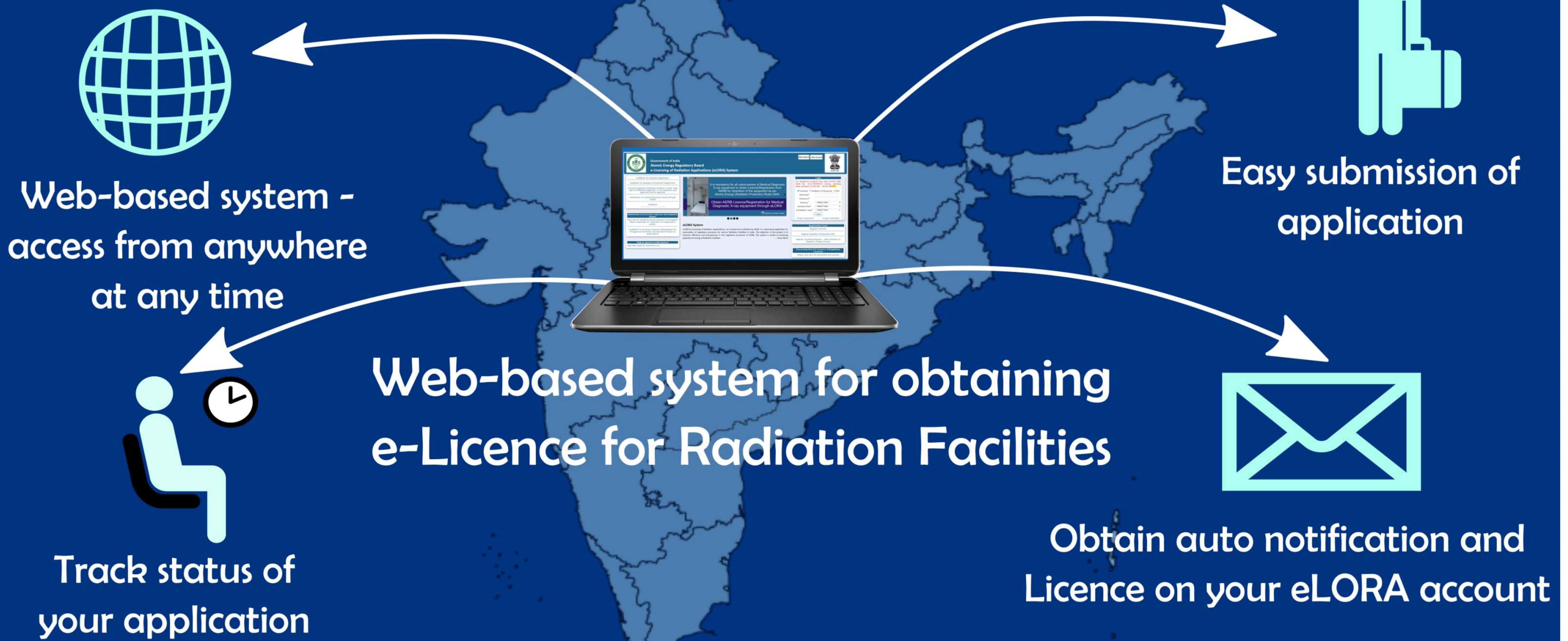


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e-Licensing System of AERB



AERB's Innovation : eLORA (e-Licensing of Radiation Applications)



DRA&C, AERB

eLORA Help desk No.: 022-25990675

Internal Stakeholders

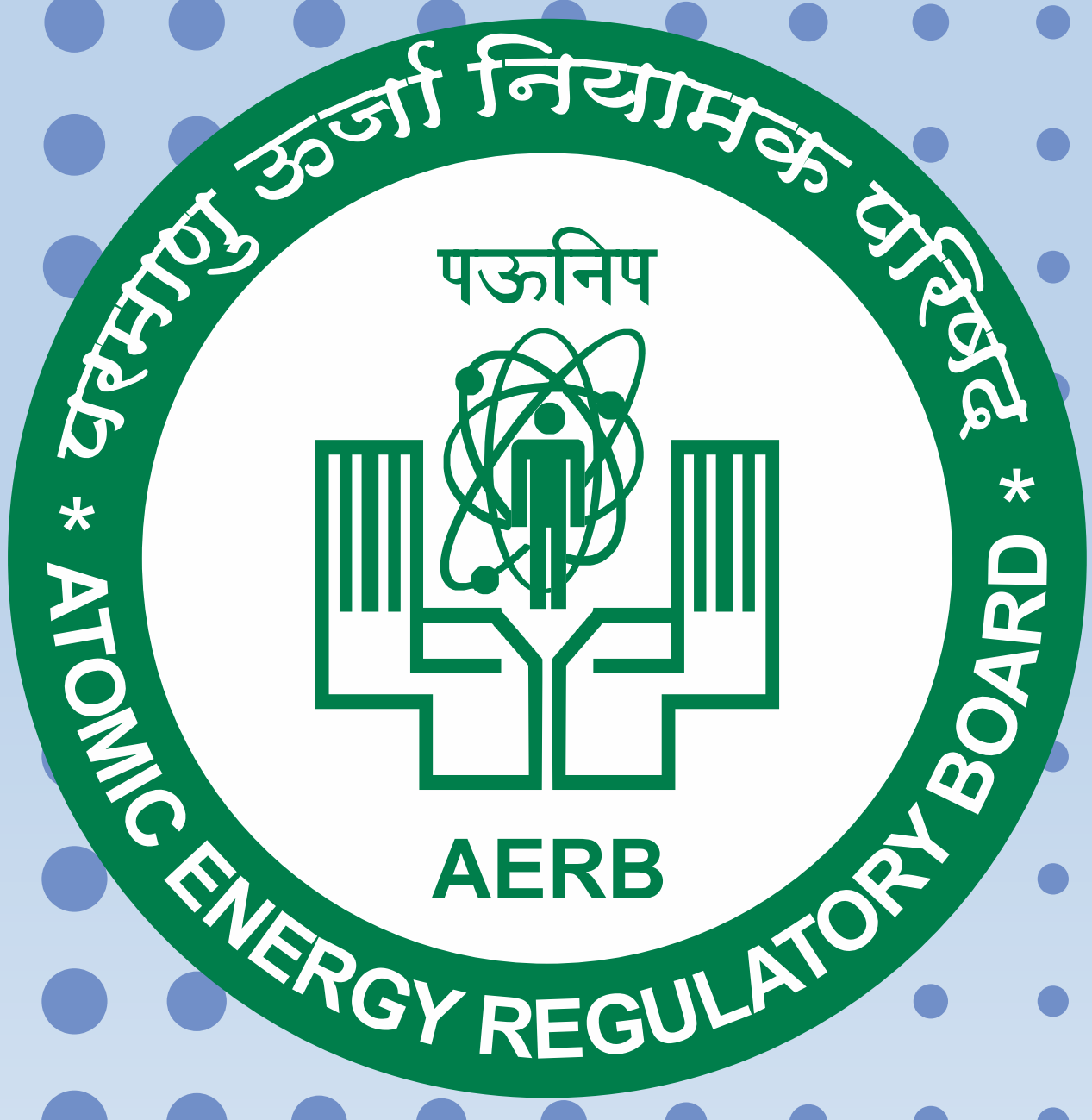
Back Office application for
AERBites
Back Office Module (BOM)

eLORA infrastructure

Security

Web interface
Internet Interface Module
(IIM)

External Stakeholders



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Security of Radioactive Source

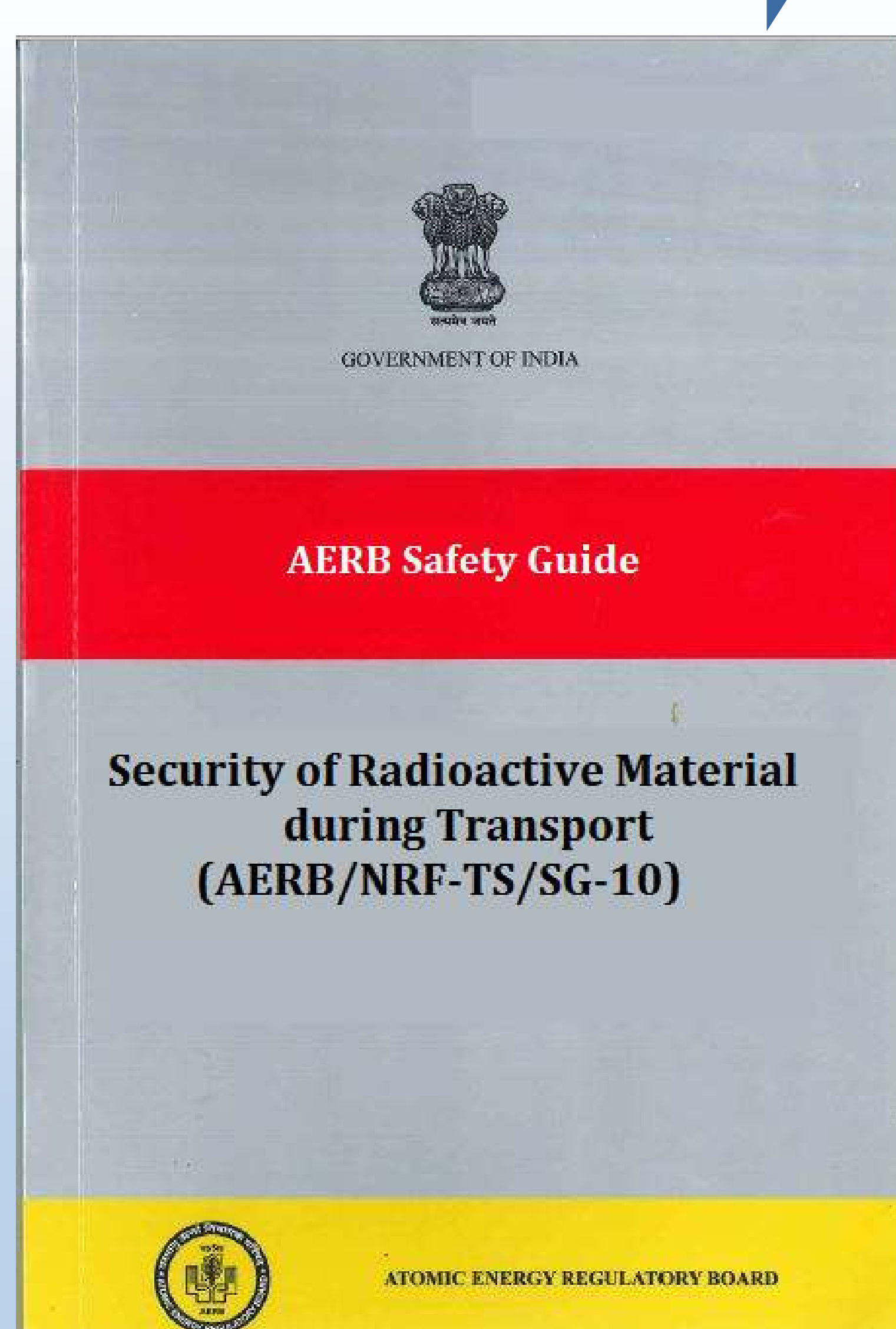
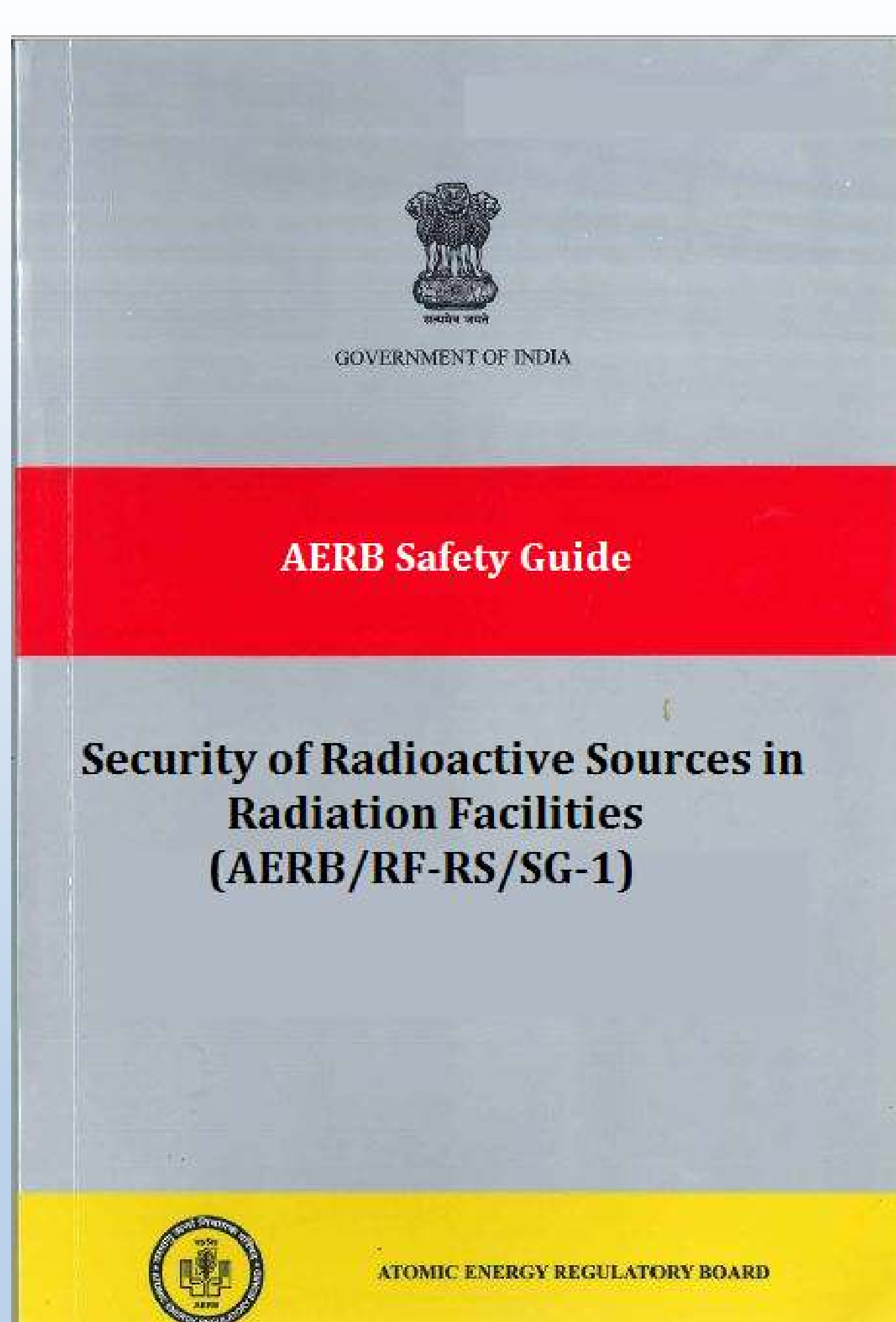
Physical Protection System (PPS)

Provide effective Physical Protection System (PPS) for ensuring security of radiography sources all the time...!!!

PPS shall be based on provision for:

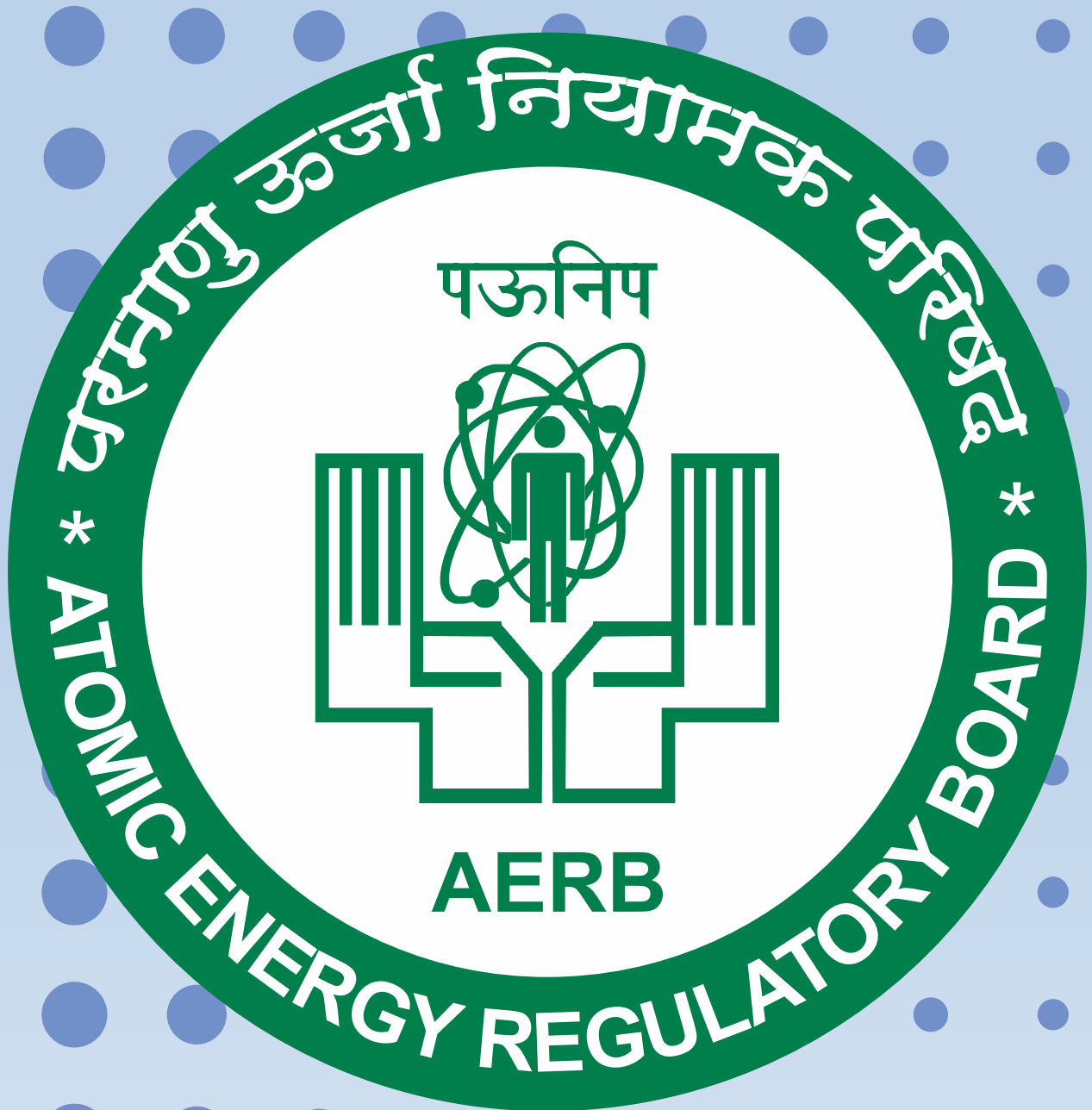
- ✓ Deterrence
- ✓ Detection
- ✓ Delay
- ✓ Response
- ✓ Security Management

Source storage room shall display contact nos. of radiography institution (RSO/Employer/Radiographer) and concerned person from Contract Awarding Agency (CAA)



Security shall be in place as per AERB safety guides:

- ✓ Security of Radioactive Sources in Radiation Facilities
- ✓ Security of Radioactive Material during Transport



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Radiation Dose Limits set by AERB for Occupational Worker and Public

Occupational worker

Public

Lens of eye: 150 mSv

Lens of eye: 15 mSv

Whole Body
(everything
except
extremities):

30 mSv maximum
per year
20 mSv averaged
over 5 years

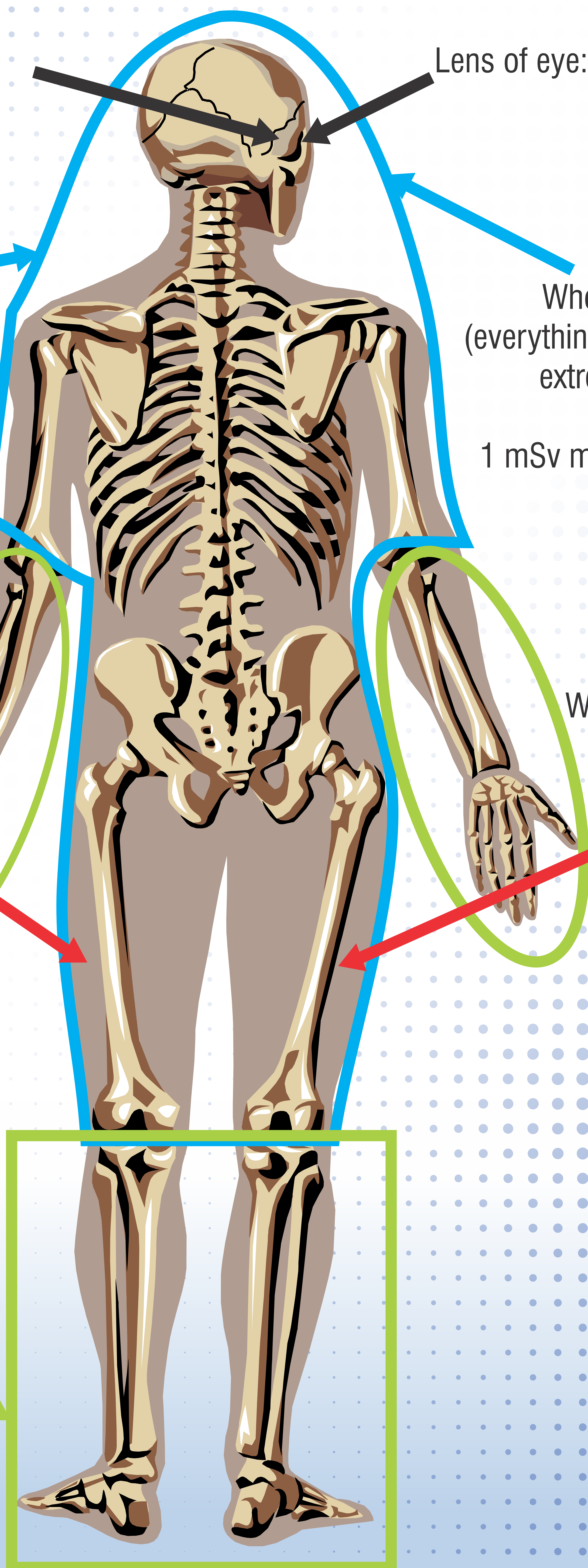
Whole Body
(everything except
extremities):

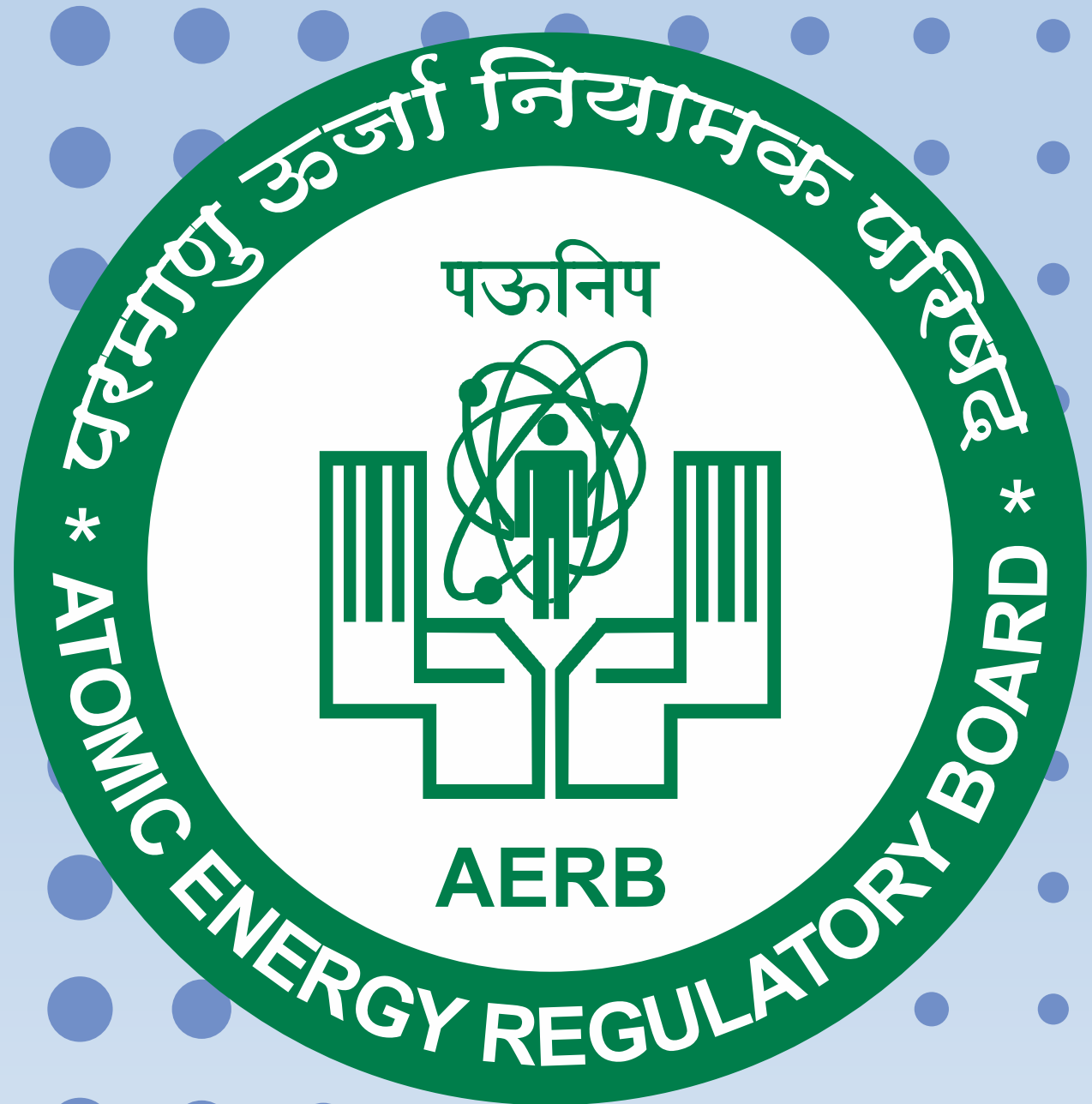
1 mSv maximum
per year

Skin of the
Whole Body:
500 mSv
per year

Skin of the
Whole Body:
50 mSv
per year

Extremities:
500 mSv per year

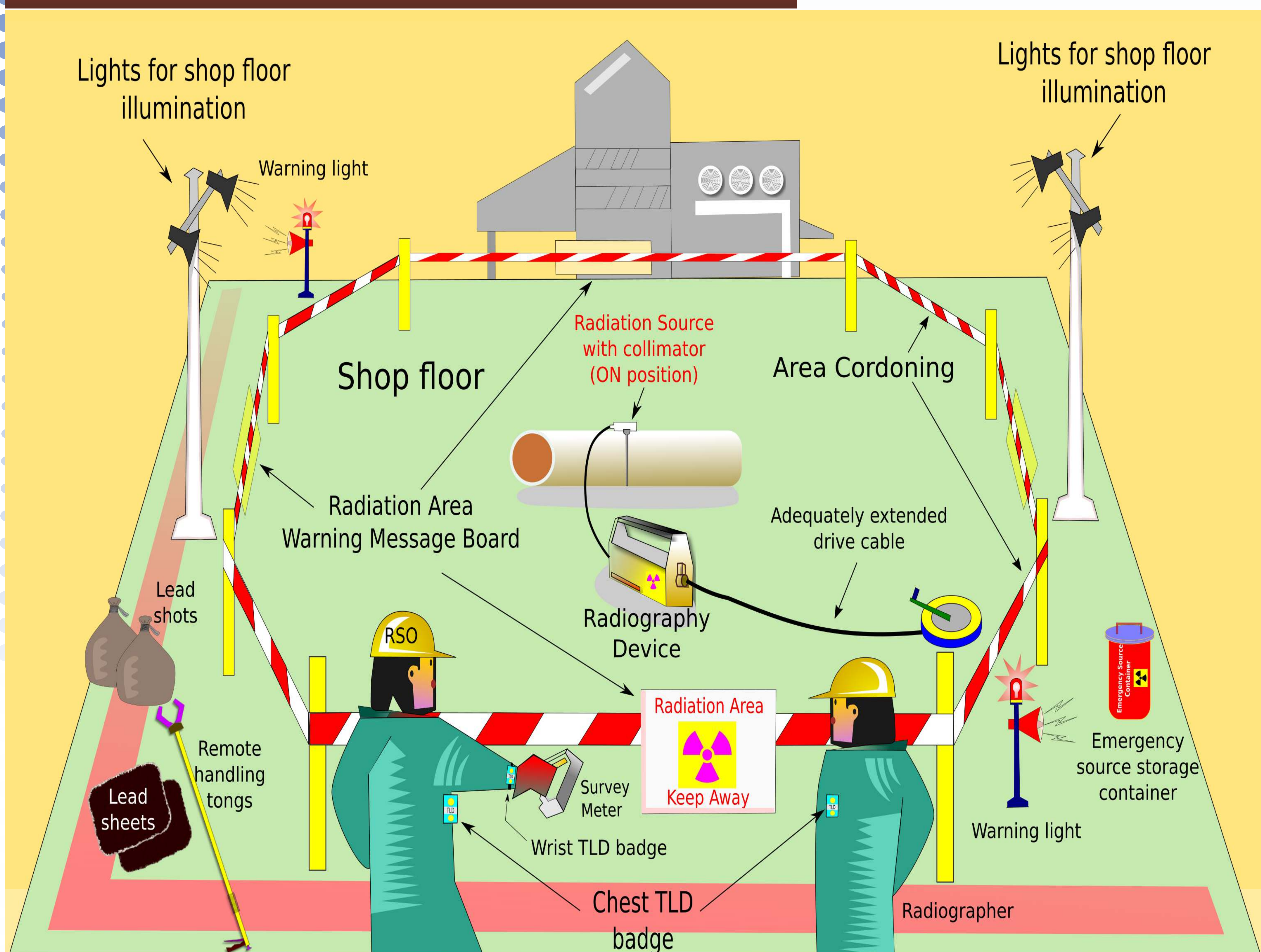




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Radiological Safety in Industrial Radiography

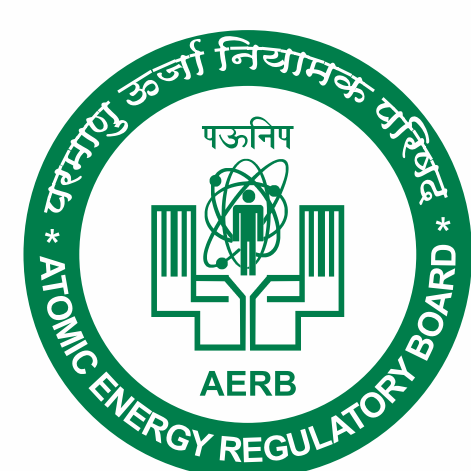
Open Field Radiography



AERB booklet for Auxiliary Staff
(Visit AERB website to download)

In case of any loss/theft of radiation source, contact AERB and CMG, DAE

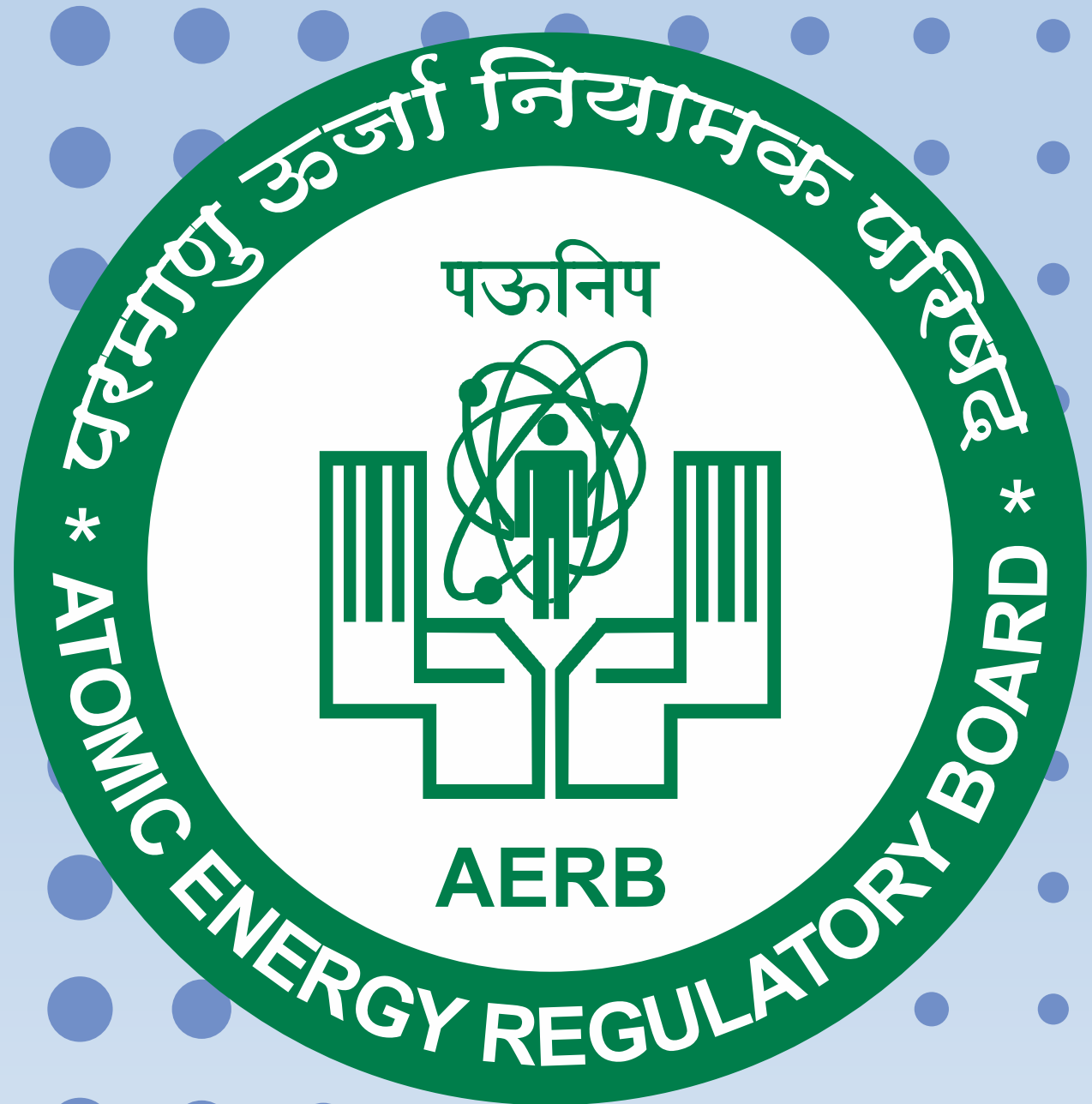
Basic Radiation Safety in Industrial Radiography-Information for Auxiliary Staff



Issued by:
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Atomic Energy Regulatory Board
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Ph.: 022-2599 0655

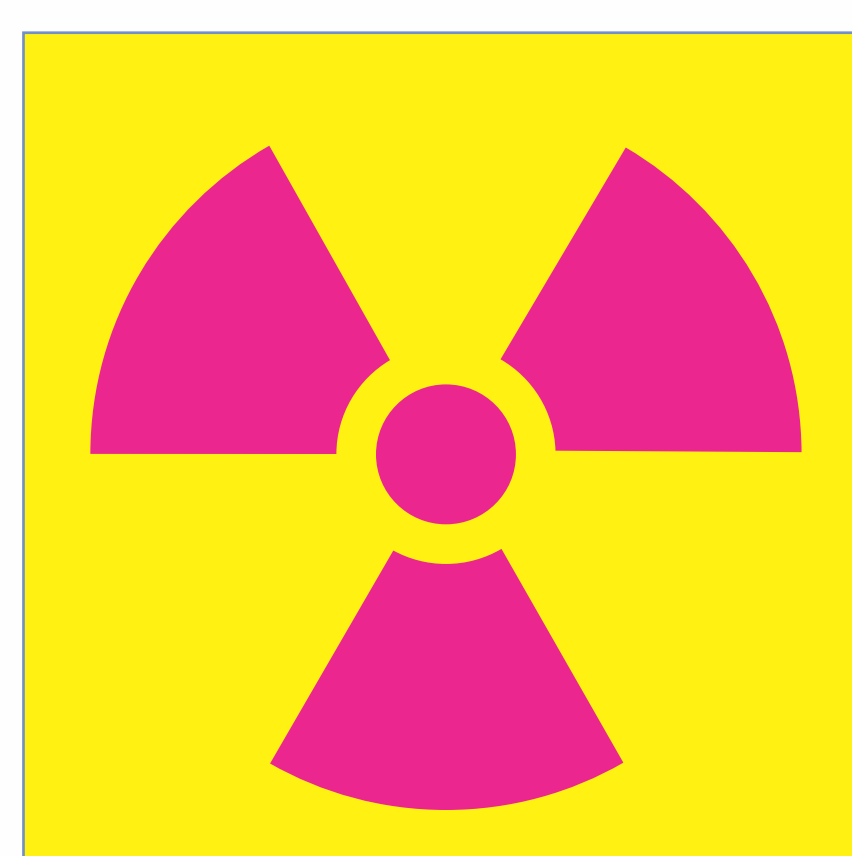
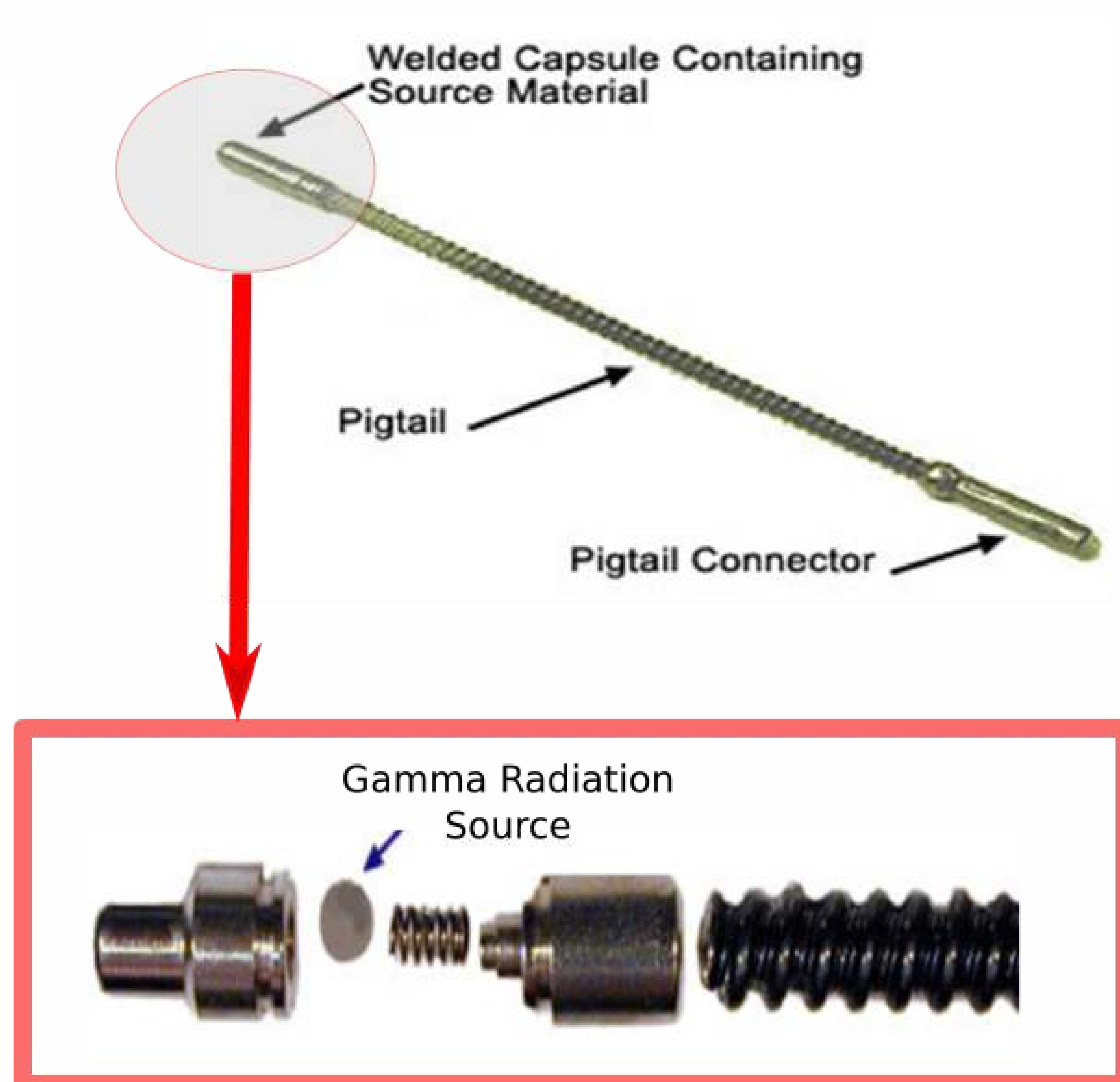
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Mobile : +91 99692 01364
E-mail: daeecr@dae.gov.in



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Unusual Incident – Highlights of Case study

The incident



Radiation injury on the right hand finger of an untrained & unmonitored person, who had been engaged for radiography work by a radiography agency was reported to AERB.

The source pigtail with radioactive source got decoupled from the driving cable and remained in the guide tube during operation of IGRED.

The person continued the radiography job without knowing that the source was in exposed condition, since he was not provided with a radiation survey meter.

Later the person found that the pigtail was in the guide tube. Without knowing the repercussions, he lifted the guide tube with source by bare hand and put the source back into the IGRED, which resulted the radiation injury.

The cause

The person was neither a trainee nor had undergone any radiation safety program. Moreover, he was not provided personal monitoring device (TLD badge) and no radiation survey meter was used during the radiography work.



Enforcement action by AERB



Revocation of the Licence of radiography facility, who engaged the untrained person on radiography work.

Suspension of approval of RSO and Certified Radiographer of radiography institution.

Lesson learned



Radiography work should not be carried out by untrained person



Carry out proper radiation survey while operating radiography equipment



If the source pig-tail falls, **never hold with bare hands**. Contact RSO/employer of the institute.