



**Nuclear Medicine Diagnostics/Therapy Inspection  
Checklist** [Doc No. : AERB/IMS/L-III/DRI/RFIC/33C]

**Directorate of Regulatory Inspection  
ATOMIC ENERGY REGULATORY BOARD**

Revision : 1  
Date : March 2020

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<b>Name of Facility</b>	
<b>e-LORA ID</b>	
<b>Additional Facilities</b>	Medical Cyclotron <input type="checkbox"/> Radiotherapy <input type="checkbox"/> Diagnostic Radiology <input type="checkbox"/> Gamma Chamber(Blood Irradiator) <input type="checkbox"/> Any other _____
<b>Facility Status</b>	In Operation <input type="checkbox"/> Not in Operation <input type="checkbox"/> Reasons for Not in Operation _____
<b>Inspection Date</b>	
<b>Type of Inspection</b>	Routine <input type="checkbox"/> Special <input type="checkbox"/> Announced <input type="checkbox"/> Unannounced <input type="checkbox"/>
<b>Inspection Team</b>	1. 2. 3.

**1.0 Organization & Administration** (to be filled in, in case the details are not matching with e-LORA)

<b>1.1 Facility</b>
Address :
Telephone (O) :
e-mail :
<b>Type of Facility</b> : Government <input type="checkbox"/> Private <input type="checkbox"/> Others <input type="checkbox"/> _____



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**1.2 Organization** (to be filled in, in case the details are not matching with e-LORA)

**Employer**

Name :

Designation :

Mobile Number : +91

E-mail :

**Whether Employer is the same as mentioned in e-LORA?** Yes  No

**If No, whether Employer change has been initiated in e-LORA?** Yes  No

**Whether Licensee is same as Employer?** Yes  No

**If No, Licensee**

Name :

Designation :

Mobile Number : +91

E-mail :

**Whether Licensee is the same as mentioned in e-LORA?** Yes  No

**If No, whether licensee change has been made in e-LORA?** Yes  No

**RSO**

Name :

Designation :

Mobile Number : +91

E-mail :

**Whether RSO approval is/are valid?** Yes  No



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### Operation Staff

Number of Nuclear Medicine Physician (s): \_\_\_\_\_

Number of Nuclear Medicine Technologist (s): \_\_\_\_\_

Whether the operation staff are qualified as per AERB requirements?

Yes  No

Whether the operation staff is adequate?

Yes  No

*(Consider no. of Equipment & work load -Refer RSD Guidelines/Consult RSD)*

Whether employee related details are up-to-date in e-LORA?

Yes  No

### Observations:

## 2.0 Consents / Approvals

### 2.1 Site & Layout Approval

Whether Site and Layout approvals are obtained for all NM installations? Yes  No

Whether NM facility is in a residential building? Yes  No

Whether the facility has been constructed as per AERB approved Plan? Yes  No

**If No**, details of Non-compliances (Safety):

### 2.2 Operation

Whether Authorization for operation is valid? Yes  No

Whether Authorization for Source procurement is valid? Yes  No

Whether valid license for operation is available? (In case of SPECTCT/PETCT units only) Yes  No



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**If No**, details of Non-compliances:

### 3.0 Compliance to Previous Inspection Findings

a) Whether any Inspection was carried out in the past? NA  Yes  No

Date of inspection: \_\_\_/\_\_\_/\_\_\_

b) Whether NCs, if any are already complied? Yes  No

**If No**, Particulars of pending recommendations :

1.

2.

3.

### 4.0 Procedures Performed

In-vivo non-imaging	Yes <input type="checkbox"/> No <input type="checkbox"/>
In-vivo imaging	Yes <input type="checkbox"/> No <input type="checkbox"/>
Low Dose Therapy with I-131)	Yes <input type="checkbox"/> No <input type="checkbox"/>
High Dose Therapy (with I-131)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Beta therapy (other than I-131)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Alpha therapy	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other	



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Whether the above Procedures are as per the authorization issued to the Facility?

Yes  No

**Observations:**

### 5.0 Equipment / Source Inventory / Handling Tools

#### Radioisotopes:

S No	Description	Isotope	Activity / Date	Remarks
1	Sealed Sources (calibration & check Sources)			
2	Disused Sources (calibration & check Sources)			
3	<b>Others</b>			

Whether the above information is as maintained in e-LORA?

Yes  No

#### Imaging Equipment

S No	Description	No. of Units	Remarks
1	Gamma Camera		
2	SPECT		
3	SPECT-CT		
4	PET		
5	PET-CT		
6	PET-MRI		
7			

#### Non-Imaging Equipment

S No	Description	No. of Units	Remarks
1	Thyroid Uptake Probe		
2	Gamma probe (used in case of sentinel node detection)		
3			
4			



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### High Dose Therapeutic Facilities

a) No. of Isolation Rooms : \_\_\_\_\_

b) Capacity of each delay tank (in liters) : \_\_\_\_\_

### Low Dose Therapeutic Facilities

Whether separate area is earmarked for low dose therapy administered patients?

Yes  No

Whether the above information is as per the Authorization issued by AERB?

Yes  No

### Handling Tools

Whether the following Safety features/handling tools (as applicable) are available & functional?

S. No.	Facilities	Available	Functional
1	Fume hoods	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
2	L-Bench	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Lead bricks	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Sink	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
5	Remote handling tools	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
6	Lead apron	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
7	Decontamination kit	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
8	Hand gloves	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
9	Syringe shield	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
10	Syringe carrier	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
11	Patient viewing system (eg. CCTV/Window)	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

### Observations:



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## 6.0 Operational Safety

Sr. No.	Description	Status
1	Whether the flooring in the laboratory is satisfactory?	Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Whether work surface is smooth & covered with adsorbent sheet?	Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Whether doors & walls are painted with smooth and washable paints?	Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Whether separate rooms are provided for each of the radioactive operations as per guidelines?	Yes <input type="checkbox"/> No <input type="checkbox"/>
5	Whether sinks are provided in each of the rooms where radioactive material is handled?	Yes <input type="checkbox"/> No <input type="checkbox"/>
6	Whether sinks are made of non-porous material like SS or Glazed Ceramic?	Yes <input type="checkbox"/> No <input type="checkbox"/>
7	Whether type of taps fitted at the sinks are elbow-operated?	Yes <input type="checkbox"/> No <input type="checkbox"/>
8	Whether radiation warning symbols are displayed where required?	Yes <input type="checkbox"/> No <input type="checkbox"/>
9	Whether emergency procedures for radioactive spillage/misadministration are pasted at appropriate place in the facility?	Yes <input type="checkbox"/> No <input type="checkbox"/>
10	Whether ventilation of the radioactive handling rooms is satisfactory?	Yes <input type="checkbox"/> No <input type="checkbox"/>
11	Whether illumination inside the radioisotope laboratory is satisfactory?	Yes <input type="checkbox"/> No <input type="checkbox"/>
12	Whether separate drainage system provided for Nuclear Medicine facility?	Yes <input type="checkbox"/> No <input type="checkbox"/>
13	Whether the delay tank (in case of HDTF) is properly cordoned off?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
14	Whether the delay tank is maintained properly?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
15	Whether any provision is made for indication of radioactive effluent levels in the delay tank?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
16	Any modifications done to the existing approved radiation installation	Yes <input type="checkbox"/> No <input type="checkbox"/>

### Observations:



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## 7.0 Radiation Protection

### 7.1 Personnel Monitoring

- a) Whether the facility has registered with a personnel monitoring service (PMS) provider? **Yes**  **No**
- b) Whether PMD is provided to all radiation workers? **Yes**  **No**
- c) Whether PMD is provided to the trainees (if any)? **Yes**  **No**
- d) Whether PMDs are being worn by workers appropriately? **Yes**  **No**
- e) Whether proper storage of PMDs is available? **Yes**  **No**
- f) Whether a control TLD is available and kept at a radiation free Area? **Yes**  **No**
- g) Whether radiation workers have access to their personnel monitoring records?  
**Yes**  **No**
- h) Whether PMS was suspended any time during last three years? **Yes**  **No**   
If Yes, reasons thereof \_\_\_\_\_
- i) Whether any excessive exposure was reported during last three years?  
**Yes**  **No**   
**If Yes**, whether dose recorded was found to be genuine? **Yes**  **No**
- Whether adequate measures have been taken to avoid recurrence of such excessive exposure? (ask what measures taken to confirm) **Yes**  **No**
- j) Whether pocket dosimeters are available? **Yes**  **No**   
**If Yes**, whether the dosimeters are used while working? **Yes**  **No**   
**If Yes**, whether dose records are maintained? **Yes**  **No**





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## 7.2 Radiation Surveillance

a) Status of the following radiation monitoring /measuring instruments

Sl No	Instrument	Available	Functional	Calibration Valid
1	RSM	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Contamination Monitor	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Dose Calibrator	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Gamma Zone Monitor (in case HDTF)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
5	Direct Reading dosimeters (not mandatory)	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

b) Whether the measuring /monitoring equipment are appropriate for radiation type and energy? **Yes  No**

c) Whether periodic radiation protection survey performed? **Yes  No**

**Observations:**



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## 8.0 Management Systems & Records

- a) Whether safe working procedures have been prepared based on OEM instructions? **Yes**  **No**
- b) Whether Local Safety Committee (LSC) to oversee safety of the facility/QA of the unit is functional & meeting are held quarterly? **Yes**  **No**
- c) Whether preventive maintenance schedule has been prepared & implemented based on OEM Instructions? **Yes**  **No**
- d) Whether any modification has been done to the Facility which has a bearing on Safety? **Yes**  **No**
- If **Yes**, whether approval from AERB has been sought before the modification was done? **Yes**  **No**
- e) Whether periodic safety status reports are filed in e-LORA? **Yes**  **No**
- If No, reasons thereof \_\_\_\_\_
- f) Whether emergency working procedures have been prepared for all unusual conditions and workers are familiar? **Yes**  **No**
- g) Whether any unusual occurrence/accidents (e.g. Misadministration, Excessive Exposure, Lost Source etc.) encountered since last Inspection? **NA**  **Yes**  **No**
- If **Yes**, whether the same was investigated & reported to AERB? **Yes**  **No**
- If No, reasons thereof \_\_\_\_\_
- h) Whether corrective actions have been taken by the Facility to prevent such reoccurrences? **Yes**  **No**
- i) Whether periodic QA programme is available and implemented as required by the AERB Safety Code/ Manufacturer Specified Protocols/ Institution QA protocols? **Yes**  **No**

If **Yes**, please specify details -

Daily Checks	<b>NA</b> <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/>
Weekly Checks	<b>NA</b> <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/>
Monthly Checks	<b>NA</b> <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/>
Annual Checks	<b>NA</b> <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/>



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QA after repair/replacement	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
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j) Whether the following records are available?

Sr. No.	Details of Records	Status
1.	Radiation Survey	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
2.	Personnel Dose Records	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
3.	Patient Information Records	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
4.	Activity Procurement & Usage	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
5.	Disposal of Radioactive Waste	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
6.	Instruments calibration records	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
7.	Delay Tank Sample Collection Records	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
8.	Servicing /Maintenance Records of the Imaging Equipment	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
9.	QA Test	NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

**Observations:**

### 9.0 Feedback

I/we was/were briefed by the inspector(s) about the above observations mentioned in this report.

**(Signature of Employer)**

Name:

FACILITY  
SEAL

**Name of Inspectors**

1.

2.

3.

**Signature with Date**

1.

2.

3.