

# TRAINING COURSE ON RADIOGRAPHY TESTING AND RADIOLOGICAL SAFETY LEVEL-2

(BARC RT-LEVEL 2 as per AERB/RF/Training-Syllabi/2012)

INFORMATION BROCHURE  
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औद्योगिक टोमोग्राफी एवं यंत्रिकरण अनुभाग

भाभा परमाणु अनुसंधान केंद्र

Industrial Tomography & Instrumentation Section

Bhabha Atomic Research Centre

मुंबई / Mumbai - 400085

## Introduction

Training and certification of Non-Destructive Testing (NDT) Personnel has a significant role in quality assurance processes in industrial sector. The reliability and success of NDT techniques greatly depend upon the technical skill and ability of their practitioners, as the data generated during these tests have to be analyzed and interpreted correctly and appropriately. The training programme on Radiography Testing and Radiological Safety Level-2 (BARC/AERB RT Level-2) was developed to meet the professional needs in Industrial Radiography and to provide instructions and practical training in proper and safe use of radiation sources.

Radiography Testing and Radiological Safety Level-2 training course conducted by Bhabha Atomic Research Centre (BARC), Mumbai is one of the important and successful skill development and proficiency upgradation programme in the industry sector. The training programme carries forward the societal benefits of radioisotopes and nuclear radiation by way of non-power (NDT) applications in industrial manufacturing sector in the country.

The four-week full-time RT training programme including examination is conducted as per important guidelines and course syllabus as outlined in IS-13805(BIS) and IAEA-TECDOC-628/Rev.2. In addition, **BARC RT Level-2 course extensively covers Radiation Safety as specified in AERB/RF/Training-Syllabi/2012 approved by Atomic Energy Regulatory Board (AERB), Government of India.** The course will be useful for those who would like to obtain radiography exposure devices/radiography sources to set up radiography testing facilities or to work as Radiological Safety officer (RSO) in the radiography practice in the country. **Successful completion of this course qualifies the candidate subject to approval/authorization by AERB, to become eligible to be nominated as Radiological Safety officer (RSO) and to procure radiation sources/equipment for radiography practice in the country. Please see AERB amended Safety Code on Industrial Radiography which can be downloaded from AERB website.**

Within the scope defined on the certificate, an RT Level-2 qualified personnel may be authorized by the employer to:

- a. *select the NDT technique for the test method to be used;*
- b. *define the limitations of application of the testing method;*
- c. *translate NDT codes, standards, specifications and procedures into NDT instructions adapted to the actual working conditions;*
- d. *set-up and verify equipment settings;*
- e. *perform and supervise tests;*
- f. *interpret and evaluate results according to the applicable standards, codes, specifications or procedures;*
- g. *carry out and supervise all tasks at or below level 2;*
- h. *provide guidance for personnel at or below Level -2, and*
- i. *report the results of non-destructive tests.*

## 1. Eligibility Criteria:

### A. Experience & Certified Radiographers (BARC RT-1 Course):

- I. 10+2 or equivalent examination passed with Science subjects, and Mathematics in 10<sup>th</sup> standard or equivalent from a recognized Board, and minimum of 36 months practical experience in radiography testing;
- OR
- II. Diploma in Engineering (minimum two years) or Basic Degree in Science with Physics and Mathematics and a minimum of 12 months practical experience in radiography testing.

### B. Direct Access:

- I. Diploma in Engineering (minimum two years) or Basic Degree in Science with Physics and Mathematics, and;
    - (a) minimum of 24 months practical experience in radiography testing, **OR**;
    - (b) minimum of 18 months practical experience with two testing methods, (RT + one other method) – reduction of total required time by 25 percent **OR**;
    - (c) minimum of 16 months practical experience with three or more testing methods (RT + two other methods) - reduction of total required time by 33 percent.
- OR
- II. Degree in Engineering or M. Sc. with Physics / Mathematics; and
    - (a) minimum of 18 months practical experience in radiography testing, **OR**;
    - (b) minimum of 14 months practical experience with two testing methods, (RT + one other method) – reduction of total required time by 25 percent, **OR**;
    - (c) minimum of 12 months practical experience with three or more testing methods (RT + two other methods)- reduction of total required time by 33 percent.

### C. Proof of Experience and other requirements:

The candidate must have successfully completed his academic qualifications from UGC/AICTE or any other central or state government approved institution/college only. The candidate may be required to produce proof for the same. The candidate is required to produce proof of their work experience from their employer(s). Experience certificates, clearly indicating the duration of experience after the basic qualification in Radiography Testing should be sent along with the application form. ***The radiography experience should be supported with enrollment in personnel monitoring badge (TLD) service from an accredited laboratory for a minimum period of six months as a***

*helper/intern/trainee-radiographer/radiographer. In case of absence of AERB approval letter candidates may submit copy of the TLD dose record.*

Qualifications in other NDT methods should be supported with the relevant passing certificates.

**The applicants should submit self-attested copy of their updated AADHAAR Card along with the application form.**

**Vision requirements:** A candidate has to fulfill stipulated vision requirements as provided in IS-13805 (BIS) and other applicable documents for award of RT- Level 2 certificate.

#### **D. Relaxation permissible to officially nominated candidates from defence establishments**

##### **(Government Sector only):**

On specific requests, competent authority at the Bhabha Atomic Research Centre, Mumbai may relax certain conditions on proof of experience and other requirements for attending the BARC RT-Level 2 course to officially nominated candidates from the defence establishments of Government of India.

**2. Course Duration:** Duration of the BARC RT-L2 training course will be 22 (Twenty two) working days (132 h) under normal circumstances.

##### **3. Examination:**

The examination on Radiography Technique and Radiation Safety shall consist of;

- I. Written Examination
  - (a) Radiography Testing General (100 marks)
  - (b) Radiography Testing Specific (100 marks)
  - (c) Radiation Safety (100 marks)
- II. Practical Examination
  - (a) Radiography Testing Specific (100 Marks)
  - (b) Radiation Safety (50 Marks)

##### **Passing Criteria:**

- I. Not less than 70% each in written and practical examinations;
- II. Not less than 80% in aggregate.

##### **Re-appearance for Examination:**

A candidate who fails to obtain the passing grade may reappear in the examination after a period of three months but preferably within twelve months without attending to fresh training classes. If the candidate fails again, he may have to undergo full training course before appearing in the examination again. A candidate failing for reasons of unethical behaviour must wait at least twelve months before re-applying. A candidate for re-examination shall apply and appear in the examination according to the procedure established for the new candidates.

**4. Venue of the Course:** The Radiography Testing Level -2 Course will be held at **Institute for Design of Electrical Measuring Instruments**, Swatantryaveer Tatya Tope Marg, Chunabhatti, Sion, Mumbai – 400 022, INDIA

**5. Course Fee:**

The total course fee is ₹ 48,080/- + applicable GST payable by two demand drafts.

- (i) A Demand Draft for ₹ 29,500/- drawn in favour of “IDEMI, Mumbai”;\*\*
- (ii) A Demand Draft for ₹ 23,080/- drawn in favour of “Accounts Officer, BARC, Mumbai”.

The total course fee of ₹ 52,580/- includes applicable GST payable to IDEMI, Mumbai.

**6. Re-examination fee:**

The re-examination fee for the unsuccessful candidates from the earlier courses is ₹ 5,600/-. The re-examination fee is to be paid by two demand drafts:

- (i) A Demand Draft for ₹ 3,600/- drawn in favour of “IDEMI, Mumbai”;\*\*
- (ii) A Demand Draft for ₹ 3,000/- drawn in favour of “Accounts Officer, BARC, Mumbai”.

The total re-examination fee of ₹ 6,600/- includes applicable GST payable to IDEMI, Mumbai.

**\*\* The fee payable to IDEMI includes applicable GST @ 18%.**

**Kindly provide GSTN as applicable in your application form.**

**7. Number of candidates:**

The total number of trainees to be admitted is limited to thirty (30) on first-come-first-served basis among the eligible applicants.

**8. Mode of Application / Selection:**

- (i) Prospective candidates are advised to read the instructions carefully. Applicants should download **only the latest application forms for admission or re-examination as the case may be** and fill it legibly. Incomplete application forms submitted for admission or re-examination may be rejected.
- (ii) Please send your duly filled-in application form in duplicate along with self-attested copies of certificates to:

***Shri H. N. Deshpande***

*Asstt. Director*

*Institute for Design of Electrical Measuring Instruments*

*Swatantryaveer Tatya Tope Marg, Chunabhatti, Sion, Mumbai – 400 022, INDIA*

*Telephone : 022-2405 0301/2/3/4 Extn. 244*

*Fax: 022-2405 0016 Email: toolroom@idemi.org*

Queries with respect to the receipt of application form may be carried out at the telephone no: 022-2405 0301/2/3/4 Extn. 244

- (i) A candidate must have valid registration in the training programme in order to attend the classes and appear in the examination/re-examination.
- (ii) Right to accept or reject any application without assigning any reason is reserved.
- (iii) **The competent authority at BARC, Mumbai reserves the right to postpone or cancel a particular course in advance. No communication will be entertained in this regard.**
- (iv) Canvassing in any form will be a disqualification.

#### 9. Issue of Certificates:

- (i) The **Certificate of Completion & Statement of Marks** are issued to the candidate who has attended the RT Level -2 Course, appeared in the examination and obtained the qualifying marks.
- (ii) **The RT-Level 2 certificate based on the Statement of Marks is issued subject to terms and conditions of its validity/expiry as outlined in IS 13805:2004.**
- (iii) **Only a certificate of participation with details of marks/grade is issued to unsuccessful candidates.**
- (iv) **The candidate must present the certificate** along with Statement of Marks for all purposes.
- (v) The original **Certificate of Completion & Statement of Marks** should be carefully preserved as no duplicate **Certificate of Completion & Statement of Marks** will be issued.
- (vi) Original **Certificate of Completion & Statement of Marks** should not be laminated or modified in any manner by the certificate holder as the same may render them invalid by the issuing authority.

#### 10. Additional information:

- (i) BARC, Mumbai and IDEMI, Mumbai including their officers and staff will not be responsible for any monetary or personal loss incurred for any reasons whatsoever by the selected participants during the training period. The participants and/or their sponsoring organizations will be solely responsible for any misconduct, irresponsible acts and their performance in the training programme. Selected participants may have to sign an undertaking to this effect at the beginning of the course.
- (ii) All attendees to the RT-Level 2 training programme are advised in their own interest to ensure that they have adequate coverage for medical emergencies and other accidental losses.

- (iii) Candidates fulfilling all the conditions will be selected after screening their applications. Applications without the relevant certificates, marks-sheets, and experience certificates from their employers and Demand Drafts for requisite fees will not be considered. Provisional selection letter of the candidate for the course will be posted / emailed to the candidate within two weeks from the last date.
- (iv) Successful completion of this course qualifies the candidate to act as RSO at any radiography site in the country. The authorization is issued by the Atomic Energy Regulatory Board (AERB), Government of India on application. Interested person should visit the official website <http://www.aerb.gov.in> for further details.
- (v) **Information contained in this brochure does not constitute an invitation of employment of any kind.**
- (vi) The above guidelines and information are applicable to candidates of Indian nationality and whose applications are received from within the country only.
- (vii) Only Indian Nationals need apply to this course.
- (viii) Course fee / re-examination fee once paid will not be refunded.
- (ix) Information contained in this brochure may be revised as and when necessary.

***For further clarification on admission, examination and re-examination please contact Coordinator (BARC):***

Shri A. S. Tapase, ITIS, RC&IG, BARC, Mumbai.  
Tel: 022 2559 2548 Email: [astapase@barc.gov.in](mailto:astapase@barc.gov.in)

***In case of grievances or comments & suggestions for improvement, please write or email to:***

*Dr. Umesh Kumar*  
*Head, ITIS, Bhabha Atomic Research Centre*  
*Mumbai – 400085, INDIA*  
*Phone: 91-22-2559 5512 (ITIS Office)*  
*91-22-2559 3966 (+Voice mail)*  
*Email: [umeshkum@barc.gov.in](mailto:umeshkum@barc.gov.in), [itisoff@barc.gov.in](mailto:itisoff@barc.gov.in)*

**Special Note:**

- (i) Please send Demand Drafts ONLY after receiving the provisional selection letter.
- (ii) Candidates are advised to send the Demand Drafts so as to reach IDEMI, Mumbai by the date given in the provisional selection letter. If Demand Drafts (valid for at least next two months) for the course fee do not reach IDEMI, Mumbai by the specified dates, the candidate may not be considered for registration in the course.

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## CONSENT FORM

I Shri/Smt./Kum \_\_\_\_\_ have applied to attend BARC Radiography Testing Level-2 training programme as per schedule announced. I am aware that the offline training programme will be presently conducted at the premises of **Institute for Design of Electrical Measuring Instruments (IDEMI)**, Swatantryaveer Tatya Tope Marg, Chunabhatti, Sion, Mumbai – 400 022.

I understand that:

- I. All participants need to make their own arrangement for lodging and local travel.
- II. Canteen and lecture hall facilities will be available for use during normal working hours.
- III. The course will be conducted as per guidance from the State Govt. / Local Authorities / Collaborating institution.
- IV. The organiser(s) reserve the right to cancel/postpone a particular course without assigning any reason.

- 1) *I state that to the best of my knowledge, I am not suffering from any infectious disease at present. I also state that I am medically fit and in a good state of mind.*
- 2) *I hereby declare that I am willing to attend the course on my own / my sponsors' consent without the influence of any other party and I shall adhere to all suggested safety precautions and protocols updated and briefed from time to time.*
- 3) *The organiser(s) of the training programme will not be held responsible for any loss due to my health/accident/medical emergency or financial difficulties while travelling to attend the course or while attending the course at Mumbai.*
- 4) *I have adequate medical coverage for meeting any emergency needs while attending the course.*
- 5) *I agree to maintain good personal hygiene and follow good civic practices. Spitting in public places and littering anywhere are strictly prohibited.*
- 6) *I agree to abide by all instructions with respect to attending class-room lectures, tutorials and observing/carrying out laboratory experiments during the training programme in case I am selected to attend the course.*

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Place and Date

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(Signature with name of the Applicant)

Address:

Phone no/Email ID: