

TRAINING COURSE ON RADIOGRAPHY TESTING LEVEL-2

(BARC RT-LEVEL 2)

INFORMATION BROCHURE

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आईसोटोप एवं विकिरण अनुप्रयोग प्रभाग
Isotope and Radiation Application Division
भाभा परमाणु अनुसंधान केंद्र
Bhabha Atomic Research Centre
Mumbai / मुंबई-400085

Introduction

Training and certification of Non-Destructive Testing (NDT) Personnel has a significant role in the country's industrialization programme since 'Quality' is the key word in its growth and prosperity. The reliability and success of NDT application greatly depends upon the technical skill and ability of their practitioners, as the data generated during these tests have to be analyzed and interpreted to arrive at a correlation-ship with the soundness of the material under test. The training programme on Radiography Testing Level-2 (RT Level-2) has been designed and developed to meet the professional needs in Industrial Radiography and to provide instructions on proper and safe use of radiation sources.

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

The course is conducted as per guidelines of ISO-9712 and in accordance with the syllabus as prescribed in Bureau of Indian Standards, IS – 13805 which also conforms to IAEA- TECDOC-628/Rev.2. **BARC RT Level-2 Course extensively covers Radiation Safety as specified in AERB/RF/Training-Syllabi/2012 approved by Atomic Energy Regulatory Board, Government of India.** This course is mandatory in the country 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. **Successful completion of this course qualifies the candidate to become eligible to be accredited as Radiological Safety officer (RSO)/Site-in-charge and to procure radiography sources/equipments for industrial radiography practice in the country. A candidate who successfully completes the BARC RT Level-2 training programme becomes eligible to act as a certified industrial radiographer as per standard provisions.**

As per ISO 9712:2012, within the scope defined on the certificate, an RT Level-2 certified 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 10th 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 is required to produce the proof of their 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 trainee radiographer/radiographer. The experience is counted from the date of issue of approval letter by the AERB.

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

The applicants should submit self-attested copy of their updated AADHAAR certificate 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. Relaxations 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 for 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 at 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 ₹ 39,370/- payable by two demand drafts.

- (i) A Demand Draft for ₹ 25,370/- drawn in favour of “IDEMI, Mumbai”;**
- (ii) A Demand Draft for ₹ 14,000/- drawn in favour of “Accounts Officer, BARC, Mumbai”.

The total course fee of ₹ 39,370/- 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 ₹ 2,000/- drawn in favour of “Accounts Officer, BARC, Mumbai”.

The total re-examination fee of ₹ 5,600/- includes applicable GST payable to IDEMI, Mumbai.

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

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 J. V. Nayak
 Deputy 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
 Fax: 022-2405 0016
 Email: idemi@vsnl.net

- (iii) A candidate must have valid registration in the training programme in order to attend the classes and appear in the examination/re-examination.
- (iv) Right to accept or reject any application without assigning any reason is reserved.
- (v) **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.**
- (vi) 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-L2 certificate based on the Statement of Marks is issued subject to terms and conditions of its validity/expiry as outlined in IS 13805:2004 and ISO9712:2012.**
- (iii) Only a certificate of participation with details of marks/grade is issued to unsuccessful candidates.
- (iv) The certificate must be presented 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 one week from the last date.
- (iv) Successful completion of this course qualifies the candidate to act as site-in-charge at any radiography site in the country. The authorization to act as site-in-charge 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.

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

Shri A. S. Tapase, IT&IS, IRAD, BARC, Mumbai. Tel: 022 2559 2548

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

Officer-in-charge (BARC RT-L2 Programme) -

Dr. Umesh Kumar

Head, IT&IS, IRAD, Bhabha Atomic Research Centre

Mumbai – 400085, INDIA

Phone: 91-22-2559 3966 (+Voice mail)

Email: umeshkum@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 three months) for the course fee do not reach IDEMI, Mumbai by the specified dates, the applications forms may not be considered for the course and registration may not be permitted.
