



Engineering Staff College of India
Autonomous Organ of The Institution of Engineers (India)
Old Bombay Road, Gachi Bowli, Hyderabad – 500 032. TS, India

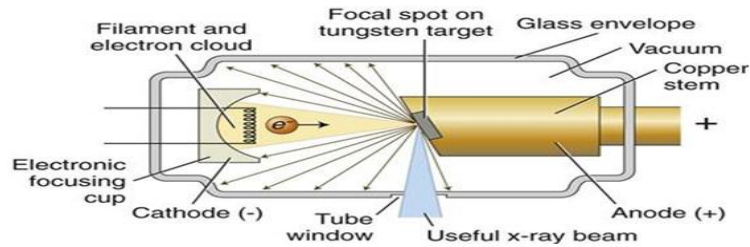
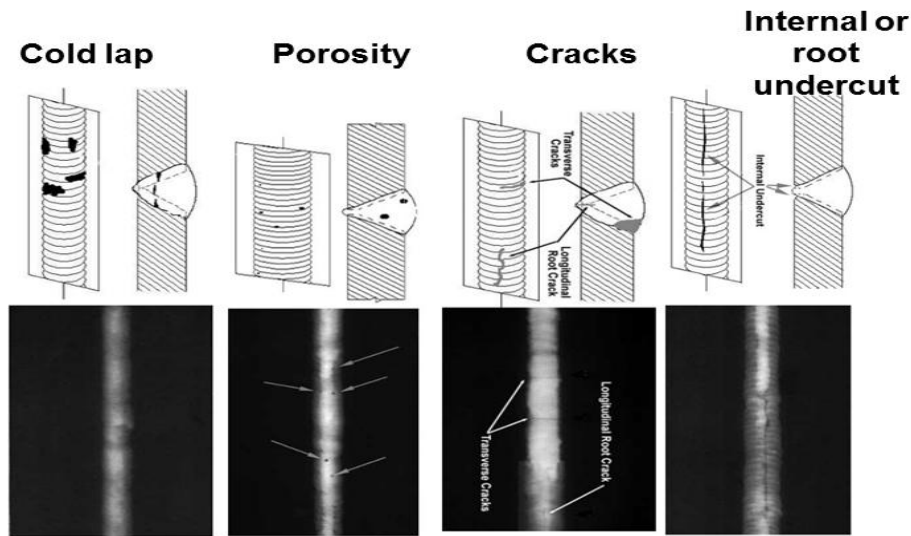


Management and Technology Division

PROFESSIONAL DEVELOPMENT PROGRAMME

RT Film Interpretation-for the award of NDT Level-II Certification in Radiographs as per SNCT TC 1A

05-09 Feb 18



(An ISO 9001:2015 Certified, AICTE & CEA Recognized Institution)

Centre for Promotion of Professional Excellence

INTRODUCTION

Radiograph Interpretation - Welds

Radiographs are taken for various purposes in Industry then industry. Apart from producing high quality radiographs, the radiographer must also be skilled in radiographic interpretation. Interpretation of radiographs takes place in three basic steps: (1) detection, (2) interpretation, and (3) evaluation.

All of these steps make use of the radiographer's visual acuity. Visual acuity is the ability to resolve a spatial pattern in an image. The ability of an individual to detect discontinuities in radiography is also affected by the lighting condition in the place of viewing, and the experience level for recognizing various features in the image. The radiographers need to acquire a definite skill to look the radiographs. Programme is also linked with the award of Level-II certification as per ASNT SNT TC 1A 2016 in case the participants successful undergo the programme and pass the examination with Min 80% marks.

OBJECTIVE

This certification course is developed to enable radiographers to develop an understanding of the types of defects found in weldments, casting and other wrought products and how they appear in a radiograph and how to report them.

COURSE CONTENT

MODULE 1: RADIATION AND SAFETY

- Units
- Dosage and Health Effects
- Radiation detectors including Dosimeter, survey meter, film badge, TLD
- Types of Radiation
- X-Ray
- Gamma Rays
- Properties of Radiation
- Attenuation of Electromagnetic Radiation

MODULE 2: RADIATION SOURCES

- X-rays
- Gamma rays

MODULE 3: FILM RADIOGRAPHY

- Film Speed
- Selection of Film
- Radiographic Screens
- Intensifying Screens

MODULE 4: IMAGE QUALITY

- Geometric unsharpness and definition
- Radiographic Sensitivity
- Radiographic Density
- Radiographic Contrast

MODULE 5: RADIOGRAPHIC EXPOSURE TECHNOLOGY

- Establishing 2mR boundary
- Radiographic Techniques
- Exposure Time
- Setup and Geometrical Unsharpness
- IQI Selection and Placement
- Location markers

MODULE 6: VIEWING RADIOGRAPHS

- Equipment
- Acceptable Densities
- Film Viewing Considerations
- Indications: Relevant and Non-Relevant

MODULE 7: Weldments and Castings

- Evaluation of Casting Radiograph**
 - o Types of Castings
 - o Origin and Orientation of discontinuities
 - o Casting – Specifications/Standards/Codes
- (b). **Evaluation of Weldments**
 - o Welding Process
 - o Special welding processes
 - o Discontinuities in welds

Overview on Examination (Objective/Subjective) test for the awards of Level –II Certificate in Radiographic Interpretation as per ASNT SNT TC 1A 2016

METHODOLOGY

Methodology of the programme includes class room Sessions with Lecture/discussion with audio visual aid, benched marked video shows, Chalk & Talk sessions, group discussions, case studies, debates, sharing of experiences, etc. All the sessions will be interactive demanding active participation from all the members. CMI will be the main method of instruction. Social /management Visits will also be conducted to encourage participants learning from each other's experiences in an informal platform. Besides the participant will be given intensive practice to interpret the films and give correct diagnosis.

PROGRAMME ADVISORS AND RESOURCE PERSONS:



Mr. Lella Venkata Rama Rao

Certified ASNT NDT Level-III in UT, MPI and LPT over 25 years of progressive experience, trained and certified more than 100 engineering graduates in NDT techniques

Beside Faculties of ESCI will also be sharing their experience

TARGET PARTICIPANTS

Practicing Radiographers, Supervisors and Engineers and any other individual meeting the QR & Minimum Qualifications from the industries, who requires an in-depth knowledge of the radiographic interpretation of welds. The course concentrates on the identification of weld defects, assessment of radiographic quality and sentencing to example specifications

PREREQUISITE FOR THE PARTICIPANTS & ORGANISATIONS

- Participants are requested to bring Vision Certificate as per Format attached at **Annexure -I**
- Certificate of experience of working in NDT in General & Radiography Methods both taking the radiographs and their interpretation **As per Annexure –II**
- **Minimum Experience in NDT in General & RT for award of**
 - Level-1 Certification: 400/210 hrs
 - Level-2 Certification 1200/: 630 hrs

Nominating authorities are requested to ensure above Prerequisite while nominating and sending the participants. while forwarding nomination they must send these Annexures duly filled & signed by Individual & Competent authority.

BENEFITS TO THE PARTICIPANTS:

- Hands on experience to go through large no of Radiographs and discussion on the interpretation techniques and best methods
- Refreshment on the defects generated in production
- Various Quality relate issues in the Radiography
- Gaining confidence in Film Interpretation

COURSE DIRECTOR



Gp Capt (Retd) BS Phillora AE (L), BE (ETC), MMS, MPhil, IPMA-D, FIE, Certified Lead Auditor (ISO 9001-2015)
Dean of Studies ESCI & Sr. Faculty,
Head, Management & Technology Division &
Head Design & Prototyping Centre ESCI

COURSE FEE

₹ 30,000/-(Residential Fee) per participant. Fee includes, course material, course kit, twin-sharing/single AC accommodation as per availability, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

DISCOUNTS

- ❖ Non-Residential Fee- 10% discount on course fee is allowed for non-residential participants.
- ❖ Group Discount: Additional 10% discount for three or more participants, if sponsored by the same organization.

(All discounts are applicable only if fee is received at ESCI before the commencement of the programme.)

Service Tax as applicable (FY 2016-17 @ 15%) is to be paid extra over and above the training fee, as training is also brought under the purview of Service Tax in Finance Bill 2010. PAN Card No AAATT3439Q; Service Tax registration No AAATT3439QST008. (Under commercial training or coaching services- Clause 65 (105) (ZZC) of Finance act 1994)

Programme fee is to be paid in favour of "IE (I)-Engineering Staff College of India" in the form of demand draft payable at Hyderabad at par cheques payable at any Bank Branches.

Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - **SB A/c No.0432104000039631 with The IDBI Bank Ltd., Gachi Bowli Branch, Diamond Park, Plot No.81, Vinayak Nagar Colony, Gachi Bowli, Hyderabad-500032 by RTG's/ NIFT / IFSC Code No: IBKL0000432. ESCI PAN No. is AAATT3439Q and Service Tax Regn. No. AAATT3439Q ST008.** While using EFT/ Draft method of payment, kindly forward a covering letter giving details on the names of the participants, Title and the programme schedule so that proper accounting can be done.

REGISTRATION

Online registration shall be available on ESCI website. ([URL:www.esci.org](http://www.esci.org)) Visit our M&T Division Web Page at: <http://www.esci.org/index.php/mt-upcoming-trainings>

To register, manually please send your nominations giving details of name, designation, contact address, email address, mobiles no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to:

Head,

**Management & Technology Division
Engineering Staff College of India**

Old Bombay Road, Gachibowli, Hyderabad 500 032, Telangana, India

Phone: 040 6630 4111 & 6630 4112 & 6630 4105

Fax : 040-23000336 & 040 6630 4103

Email : mt@esci.org

Contact:

Mr. LV Rao

Programme Officer

Land Line 040 6630 4112

Mob: 0 9949145865

CERTIFICATION

Following certificats will be awarded to each participanton RT Method:-

Level –II Certificate as per ASNT Document No : SNT-TC-1A 2011 will be awarded to each participant on successful conclusion and passing the exam of the programme.

ESCI Certificate: Participation Certificate; to all the participants undergoing the programmes.

GENERAL INFORMATION

- ESCI encourages participants to present case studies from their respective organizations.
- For the convenience of outstation participants, ESCI will facilitate pick-up and drop from Airport / Railway Stations / Bus Stations, if travel plans are received at least 3 days in advance along with mobile number by fax or email. The charges shall be paid by the participant directly to the Cab.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200 h) and one day after conclusion (Check-out 1200 h) of the programme duration. Overstay charges will be applicable as per ESCI rules (**subject to availability of accommodation**)
- Well-developed Information Centre and Internet facilities are available to the participants
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Nominating authorities are requested to kindly send the contact details of the participants while sending their nomination letter. This will help us in making necessary administrative arrangement for them.

VISION CERTIFICATE

This is to certify that I have examined Mr. _____ of M/s.....as per the requirement given below and the results are recorded.

Sl. No.	Test Required	Minimum acceptable requirements	Readings	Result
1	Near vision result (Corrected or Natural)	To read Jaeger number 2 with at least one eye on a standard Jaeger test or equivalent at a nominal minimum distance or not less than 12 inches	Distance read Right eye: Left eye:	
2	Far vision (Corrected or Natural)	To read snellen eye chart at least one eye 20/30 symbols at a distance of 240 inches	Distance read Right eye: Left eye:	
3	Colour contrast differentiation	To distinguish minimum 20 shades of grey numbers on computer screen or on hard copy at a distance of 30-50cm under normal desktop working light condition.	No. of shades Read	
4	Colour contrast differentiation	To distinguish Red-Green Ishihara chart out of 25 plates, minimum 20 plates	No: of Plates Read.	

Signature & Seal of Ophthalmologist

Date of Examination

Name:

Address:

Candidate data for award of Certification in NDT Methods

Method: Penetrant Method/ Ultrasonic testing /Magnetic particle Inspection/ RT Photo interpretation Method. (Cross whichever is not applicable)

Duration

SI No	Information Needed	Data
1	Name of Participants	
2	Designation & Organisation	
3	Name of Father/Mother	
4	Education qualifications (10th Class Onwards)	
	(a) Name of School and Address	
	(b) Year and Division Class 10 passed	
	(c) Board/ System	
5	Graduation	
	Stream & Institution with year of passing	
6	Post Graduation	
	Stream & Institution with year of passing	
7	Working Experience in NDT in General (in Hours)	
8..	Experience in NDT Method for which examination to be taken for the award of Certification (in Hours)	

Signature of the Participant_____