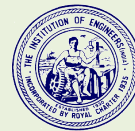




Engineering Staff College of India

Autonomous Organ of The Institution of Engineers (India)
(IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018],
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)
Old Bombay Road, Gachibowli, Hyderabad – 500 032. Telangana, India



Management and Technology Division

Classroom Continuing Professional Development Programme on **NDT Level-II Certification in Ultrasonic Testing**

(In accordance with ASNT Document No.: SNT-TC-1A 2011)

Date: 18 - 22 December 2023

at ESCI Camus, Hyderabad

INTRODUCTION

Non Destructive Examination consists of a wide group of analysis techniques used in science and industry to evaluate the properties of a material, component or system without causing damage.

Non-Destructive Testing (NDT) is the process of inspecting, testing, or evaluating materials, components or assemblies for discontinuities, or differences in characteristics without destroying the serviceability of the part or system. In other words, when the inspection or test is completed the part can still be used and that too with more confidence.

Today modern non-destructive tests are used in manufacturing, fabrication and in-service inspections to ensure product integrity and reliability, to control manufacturing processes, lower production costs and to maintain a uniform quality level. During construction, NDT is used to ensure the quality of materials and joining processes during the fabrication and erection phases, and in-service NDT inspections are used to ensure that the products in use continue to have the integrity necessary to ensure their usefulness and the safety of the public.

VARIOUS NDT TEST METHODS

Test method names often refer to the type of penetrating medium or the equipment used to perform that test. Current NDT methods are:

- Acoustic Emission Testing (AE),
- Electromagnetic Testing (ET),
- Guided Wave Testing (GW),
- Ground Penetrating Radar (GPR),
- Laser Testing Methods (LM),
- Leak Testing (LT),
- Magnetic Flux Leakage (MFL),
- Microwave Testing,
- Liquid Penetrant Testing (PT),
- Magnetic Particle Testing (MT),
- Neutron Radiographic Testing (NR),
- Radiographic Testing (RT),
- Thermal/Infrared Testing (IR),
- Ultrasonic Testing (UT),
- Vibration Analysis (VA) and
- Visual Testing (VT).

The six most frequently used test methods are MT, PT, RT, UT, ET and VT. ESCI proposes to conduct Training cum certification programme for Level -I/II in accordance with ASNT recommended practice SNT-TC-1A – 2011 for the conventional methods of Ultrasonic testing - NDT techniques.

The training will be conducted by experienced faculty in both theory and practical's. The duration and course schedules for individual processes and also collective programme including all these methods are given in following paragraphs.

OBJECTIVES

The objective of this programme is to impart theoretical as well as practical knowledge in the fields of respective NDT. Certification of NDT techniques are issued on successful passing of the exam in the respective methods as per the ASNT recommended practice SNT- TC-1A-2011.

COURSE COVERAGE

- Properties of Sound Waves
- Generation of Ultrasonic waves
- Interaction of ultrasound with matter and boundaries
- Types of Probes & Test Methods
- Test Equipment & Instrumentation
- Test Variables & Inspection procedures
- Types of Discontinuities
- How to Set up and calibrate the equipment
- Perform testing and interpret the results as per applicable standards
- Merits and Demerits of Ultrasonic Testing.
- To develop UT technique for testing a particular job
- Report preparation of the inspection results.
- Prepare written instruction for Level I.
- Responsible for care and maintenance of the NDT/UT equipment
- Identify suitability of UT for the material and inspection technique
- Be familiar with codes, standards and specifications for UT to evaluate results of the tests.

METHODOLOGY

Methodology of the programme includes class room Sessions with Lecture/discussion with audio visual aid, bench marked practices if any, 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. Case Method of Instructions will be the main method of knowledge facilitation. Technical Field and Social visits are integral part of the training methodology.

COURSE ADVISOR & RESOURCE PERSONS:

The Faculty consists of experts from the Industry, Research establishments and Academia besides ESCI.

TARGET PARTICIPANTS

This is an excellent course for NDT professionals who must have Level I and II training in order to qualify for certification as well as facility personnel who are responsible for or to oversee the application of testing or Quality Control/Quality Assurance. Target participants mentioned here is only indicative. Nominating Authorities at their discretion may suitably nominate the participants.

BENEFITS TO THE PARTICIPANTS

- A **Level II Technician** can calibrate, perform tests without supervision and make test assessments when required.
- It will provide platform to discuss on issues/problems individuals facing on LPT and arriving at solutions. They will also get practical exposure on finer issues related to application and best practices for the test will be imparted.

CERTIFICATION

A Certificate of participation will be awarded to each participant on conclusion of the programme

COURSE DIRECTORS

Dr. P.V.S.S. SRIDHAR, M.Tech, Ph.D. (IIT-G)
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Email: mtmkt@escihyd.org/mt@escihyd.org

PROGRAMME VENUE, DATES & TIMINGS: 18 – 22 December 2023

Venue: Engineering Staff College of India (ESCI) Campus, Old Bombay Road, Gachibowli, Hyderabad. 500032. TS, India.

Timings: The programme timings will be from 09.45-17.15 Hrs with breaks in between for tea and lunch.

COURSE FEE

Rs.27,500/- (Rupees Twenty Seven Thousand & Five Hundred only) (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.

Goods and Service Tax @ 18% is to be paid extra over and above the training. **PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV. H.S. No. 999293** (Under commercial training or coaching services – clause 65(105) (ZZC) of Finance Act 1994)

Programme fee is to be paid in in favour of “**THE INSTITUTION OF ENGINEERS (INDIA) – ENGINEERING STAFF COLLEGE OF INDIA**” in the form of demand draft payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - **SB A/c No.0432104000039631 with The IDBI Bank Ltd., Gachibowli Branch, Plot No. 2-53/2, JNIBF, IIIT Junction, Gachibowli, Hyderabad-500032 by RTG's/ NEFT / IFSC Code No: IBKL0000432**. While using EFT method of payment, please ensure to communicate us your company name, our Invoice reference and programme title.

REGISTRATION

Online registration shall be available on ESCI web portal <http://www.escihyd.org/index.php/mt-upcoming-training>. To register manually please send your nominations giving details of name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to: mt@escihyd.org/mtmkt@escihyd.org