

Scope of Work

1.0 Specifications:

Pipe Size (inch) -	Ø 2/4/6/8/10/12
Material -	Carbon Steel/Alloy Steel
Thickness of the Pipe (mm) -	Sch. 40 / Sch. 80 / Sch. 160

2.0 Scope of Work:

This procedure covers the general requirements for Time-of-Flight Diffraction (TOFD) Examination of weld joints.

2.01 Reference Standard:

ASME SECTION V, Article 4-Latest Edition; ASME Code Case 2235-9.

3.0 Contractor's Obligations:

- 3.01 Personnel performing and evaluating TOFD examinations shall be certified to at least NDT Level-II in UT as per SNT-TC-1A.
- 3.02 Level-II or Level-III personnel shall analyze the data or interpret the results. Qualification records of certified personnel shall be maintained by the employer.
- Person who acquires and analyze TOFD data shall be trained in TOFD theory and use of the equipment.
- 3.03 TOFD machine should have the facility of PAUT and wherever required the examination of weld joints be carried out with PAUT facility.
- 3.04 TOFD Calibration Block: -Block drawing etc. shall be provided to NFL in advance by the contractor. Material, Fabrication and machining facilities shall be provided by NFL free of cost. However, supervision of fabrication of the block shall be in the scope of the Contractor.
- 3.05 Time period of TOFD machine shall be reckoned from the entry of the machine inside the main entry gate of the factory till exit with working of the machine for minimum 12 hrs per day inside the factory deputed for examination of weld joints handed over by NFL.
- 3.06 **Data Interpretations**
- a) Flaw evaluations/ characterization shall be performed by qualified Level-II or Level-III Individual. The data review may be performed by another Level-II or Level-III individual from the same organization.
 - b) The final data package shall be reviewed by a UT level III. The review shall include:
 - (i) The ultrasonic data record
 - (ii) Data interpretations
 - (iii) Flaw evaluations / characterizations performed by another qualified Level II or III individual.
 - (iv) The data review may be performed by another individual from the same organization.

3.07 Documentation

i) Examination Record:

For each examination, the following information shall be recorded:

- (a) Probe center spacing
- (b) Data sampling spacing
- (c) Flaw height, if specified
- (d) The final display processing levels.
- (e) The final interpretation and evaluation of all data to be made by a qualified Level III person.

i) Report:

The following items shall be reported in the examination report

- (a) Equipment (Type, Manufacturer, Identification No.)
- (b) Identification and location of weld or volume scanned
- (c) Date of examination
- (d) Basic calibration block thickness
- (e) Frequency and search unit
- (f) Examination result
- (g) Signature and level of qualified inspector

ii) REPAIR:

The welds that are subjected to the repair shall be re-examined using the same procedure and technique that was employed prior to repair.

4.0 NFL's Obligations:

- i) NFL shall handover the job with proper safety work permit.
- ii) NFL shall provide free of cost a small space for storing material, however safe custody of that material shall be in contractor's scope.

Date: _____

Signature of Tenderer