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| **PHASED ARRAY ULTRASONIC TESTING REPORT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **JOB DETAILS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Client: | | | **NCOC N.V.** | | | | Project: | | | | | **ESKENE WEST KARABATAN** | | | | | | | | | | Work Location: | | | | **Oil Tr.1** | | | |
| **JOB DESCRIPTION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brief Description of Job: | | | | | | | **Phased Array weld inspection of piping butt weld.** | | | | | | | | | | | | | | | | | | | | | | |
| Item.: | | | | | | | **A1-2101-RO-063- 8”-A13** | | | | | | | | | | Location: | | | | | **Unit - 210** | | | | | | | |
| Material: | | | | | | | **Carbon steel** | | | | | | | | | | Surface Condition: | | | | | **smooth** | | | | | | | |
| Nominal thickness | | | | | | | **8.18 mm** | | | | | | | | | | Diameter | | | | | **8”** | | | | | | | |
| Part temperature | | | | | | | **40 °C** | | | | | | | | | |  | | | | |  | | | | | | | |
| **INSPECTION PROCEDURE** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Procedure No: | | | | | **QP-11-PAUT-QO1 REV 02** | | | | | | | | In accordance with: | | | | | | **ASME sec V Art 4** | | | | In accordance with: | | | | | **Crack depth detection** | |
| **INSPECTION EQUIPMENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S. No | Equipment/  Material Name | | | | | | | | Manufacturer | | | | | | Serial No | | | | | Calibration certificate No | | | | | Calibration Expiry date | | | | |
|  | Omni Scan MX2 | | | | | | | | Olympus | | | | | | 103704 | | | | | BK-01-01672 | | | | | 12.09.2019 | | | | |
|  | NAVSHIP CYLINDRICAL REFLECTOR BLOCK | | | | | | | | Olympus | | | | | | 015716 | | | | | - | | | | | - | | | | |
|  | V1 Calibration Block | | | | | | | | Olympus | | | | | | S/N:2315 15 | | | | | - | | | | | - | | | | |
| **EQIPMENT PARAMETERS** | | | | | | | | | | | | | | | | | | | | | | **CALIBRATION BLOCK DETAILS** | | | | | | | |
| Mode | | | | N/A | | | | Filter | | | 5MHz | | | Points quantity | | | | | 640 | | | Cal block | | | | | Navship Cal block | | |
| Frequency | | | | 5 MHz | | | | Rectifier | | | FW | | | Sum gain | | | | | Auto | | | Material | | | | | CS | | |
| Energy | | | | 40v | | | | Video filter | | | On | | | Ref sensitivity | | | | | 25.1 dB | | | Thickness Range | | | | | 35 mm | | |
| Pulse width | | | | Auto | | | | Averaging | | | 1 | | | Scan sensitivity | | | | | 6 dB | | | temperature | | | | | 35°C | | |
| PRF | | | | Optimum | | | | Focus depth | | | 20 | | | Ref sensitivity | | | | | 1.5 mm SDH | | | Correction Factors | | | | | N/A | | |
| Probe | | | | A32 N55S AOD8 | | | | Couplant | | | Water | | | - | | | | | **-** | | | - | | | | | **-** | | |
| **SCAN PLAN** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Ref | | Scan type | | | | Beam type | | | | Index offset | | | | | | Start element | | Active elements | | | Minimum angle | | | Maximum  angle | | | | | Angle Step |
|  | | Sectorial | | | | Angle | | | | 8 | | | | | | 49 | | 16 | | | 40 | | | 70 | | | | | 1 |

|  |
| --- |
| **CALIBRATION DETAILS** |
| Calibration on Navships Block using 6.35mm depth hole:    PAUT SCAN AREA  SOUTH  NORTH |

| **INSPECTION DRAWINGS** |
| --- |
| **A1-2101-RO-063-8”-A13** |
|  |

| **Scan Plan** |
| --- |
| 8.18mm  8.18mm |
|  |

**Results**

| Line No | Joint No | Indication No | Type of Indication | Location (mm) | | Length (mm) | Depth (mm) | | Height (mm) | Surface / Sub-surface Flaw | Results | Scanned length (mm) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Start | End | Start | End |
| A1-2101-RO-063-8”-A13 | CML-09 | - | NSD | - | - | - | - | - | - | - | Accept | 0-730 |

**Note:**

* NSD : No Significant Defect
* ID : Inner Diameter or Surface
* OD : Outer Diameter or Surface
* CML-07 and CML-08 not scanned due to geometric limitations.

| **Scan images** |
| --- |
| **CML-09 (Datum point 0 started from Top dead centre)** |

|  |  |  |  |
| --- | --- | --- | --- |
| Examined by  UT Level III cert. No 282671  PA-UT Level II cert. No. NDT-NCS-1765 | Name: Arul Vignesh  expiry date: 01.05.2021  expiry date: 14.06.2021 | Signature: ...................... | Date: 22 Aug 2019 |
| Approved by  PAUT Level II cer. No 1A 111/16 | Shakunou Andrei  exp date: 31.12.2020 | Signature: ........................... | Date: 22 Aug 2019 |
| Client Representative: |  | Signature: ........................... | Date: ........................... |