DCMA NSEO MANUFACTURING PROCESS SURVEILLANCE (MPS) CHECKLIST #03UT

ULTRASONIC TESTING

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| **SUPPLIER & CAGE:** |  |
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| **LOCATION:** |  |
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| **Program Type:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Level I/SUSBAFE (LI/SS) |  | Navy Propulsion Program (NPP) |  | Deep Submergence Systems/Scope of Certification Program (DSS-SOC) | |  | Nuclear Plant Material (NPM) |  | Naval Nuclear Propulsion Program (NNPP) |  | Aircraft Launch & Recovery Equipment (ALRE) | |  | Fly By Wire Ships Control Systems (FBWSCS) |  | Ships Critical Safety Items (SCSIs) |  | Other: |   **Contractual Requirement(s) for this process:**   |  | | --- | |  |   **Supplier Procedure Number(s), Title(s) & Revision Level(s)/Date(s):**   |  | | --- | |  |  |  |  |  | | --- | --- | --- | | Surveillance Performed By: |  | | |  |  | | | Date(s) of Surveillance: |  | | | Contract Number(s): | |  | |  | |  | | Part Number(s)/Serial number(s)/NSN: | |  | |  | |  | | Part Nomenclature(s): | |  | |  | |  | | Supplier Personnel Contacted and Titles: | |  | |  | |  | | Drawing Number & Revision: | |  | | | | |  |  |  |

**Process Concerns and Guidance:**

* Improper Scanning Speed, either dynamically during scan or in relation to calibration, limits the effectiveness of an inspection by limiting the inspector’s ability to detect and evaluate indications.
* Insufficient coverage of the full area of interest.
* Surface conditions of calibration standards should be equal to or rougher than the part to be inspected.
* Calibration/setup not performed properly, and to the procedure requirements.
* Calibration standards not properly and uniquely identified.
* Couplant not removed at conclusion of inspection.
* No system in place to qualify equipment, including master transducers and calibration blocks.
* Scans not performed in the correct direction (parallel, transverse, axial, circumferential), and in opposing directions.
* Attenuation checks not performed.
* Correct calibration of the equipment, including correct calibration blocks.
* Incomplete scanning or operator inattention will greatly reduce the sensitivity of the inspection.
* Standards used for calibration must be sized appropriately for the entire range of tolerances allowed by part thickness to ensure proper sensitivity.

**Governing Specifications**:

* NAVSEA 250-1500-1
* MIL-STD-2132
* T9074-AS-GIB-010/271

**Additional Oversight Checklists**

* Addendums to this MPS checklist are available to use for a more in-depth process surveillance. If used, the completed Addendum(s) are to be attached to the PDREP Surveillance Plan with the base checklist.

* 03 MPR-MPS - Addendum 1 – NDT Qualification, Certification and Oversight

**QARs should use the “BASIS OF DETERMINATION” column to document the objective quality evidence and/or clarify the rationale used to support their decision. (e.g. direct observation, documents verified etc.)**

S = Satisfactory U = Unsatisfactory

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| **SURVEILLANCE QUESTIONS** | **S** | **U** | **BASIS OF DETERMINATION** |
| 1. Are there any Corrective Actions previously issued for UT that will impact this inspection? |  |  |  |
| 1. Is the UT inspector certified in the method being performed? List inspector certification level and expiration dates for vision and NDT certifications.(NAV03-40/6a-b/7) |  |  |  |
| 1. Are procedures available to the personnel performing the task, with clear, correct inspection/acceptance requirement documentation and revisions? Have UT procedures been approved by the Level III? Record procedures used and approval dates. (NAV03-2/39a) |  |  |  |
| 1. Does the procedure/technique used meet contract/inspection requirements? Are the UT procedures/techniques being used correctly for the tests being performed? (NAV03-39b) |  |  |  |
| 1. Are the product and the materials used to perform the tests controlled and traceable throughout the process? |  |  |  |
| 1. Is inspection and testing equipment of the required adequacy, accuracy, precision, and range to assure supplies produced comply with specifications and drawings? ***What Items were sampled and were they part of the supplier’s calibration program and within the calibration/check cycle?*** |  |  |  |
| 1. Is the calibration block(s) surface equal to or rougher than the item being inspected? (NAV03-42) |  |  |  |
| 1. Is the calibration block(s) correctly identified by material type and uniquely identified (serialized)? ***Record calibration blocks material type and identification number***   (NAV03-43) |  |  |  |
| 1. Is instrument calibration checked prior to starting inspection, periodically during inspection, as required, and rechecked at the completion of inspection? Is equipment qualification/calibration current?   (NAV03-45a-b) |  |  |  |
| 1. Are acoustic compatibility/attenuation checks performed, if required? ***Record gain used and search unit used.*** |  |  |  |
| 1. Are proper scanning techniques used? (overlap, scanning speed, oscillation, etc.) |  |  |  |
| 1. Are the proper inspection angles being used? (0, 45, 60, etc.) |  |  |  |
| 1. Are indications properly evaluated and documented? |  |  |  |
| 1. Is couplant promptly and completely removed upon completion of inspection? (NAV03-44) |  |  |  |
| 1. Are inspection records adequate to meet procedural requirements and include at least the following: (NAV03-46)  * Description and unique identification * Approved procedure identification * Instrument manufacturer, model number, and serial number * Transducer size and type * Search beam angle * Test frequency * Couplant * Calibration standard number * Acceptance standard used * Date of inspection * Signature(s) of inspector(s) * Disposition (accept/reject)of the item inspected |  |  |  |
| 1. Are records maintained to confirm that all required inspection processes were performed? |  |  |  |
| Other observations: |  |  |  |
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| **Overall MPS Results:** | **SATISFACTORY** |  | **UNSATISFACTORY** |  |

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| **Corrective Action Generated?** | **No** |  |  | **Yes** |  |  | **CAR#** |  |

**FOLLOW-UP ACTION REQUIRED?**

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**SUMMARY/NOTES/COMMENTS/CONCERNS**:

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