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

ULTRASONIC TESTING

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| **SUPPLIER & CAGE:**  |  |
|  |  |
| **LOCATION:** |  |
|  |  |
| **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:**

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**Supplier Procedure Number(s), Title(s) & Revision Level(s)/Date(s):**

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| --- | --- |
| 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: |  |

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**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?
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| 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)
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| 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.***
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| 1. Are proper scanning techniques used? (overlap, scanning speed, oscillation, etc.)
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| 1. Are the proper inspection angles being used? (0, 45, 60, etc.)
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| 1. Are indications properly evaluated and documented?
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| 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?
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| 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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