DCMA NSEO MANUFACTURING PROCESS SURVEILLANCE (MPS) CHECKLIST #25

SOLDERING AND ELECTROSTATIC DISCHARGE

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

**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:**

**Class 1 — General Electronic Products:** Includes products suitable for applications where the major requirement is function of the completed assembly.

**Class 2 — Dedicated Service Electronic Products:** Includes products where continued performance and extended life is required, and for which uninterrupted service is desired but not critical. Typically the end-use environment would not cause failures.

**Class 3 — High Performance Electronic Products:** Includes products where continued high performance or performance-on-demand is critical, equipment downtime cannot be tolerated, end-use environment may be uncommonly harsh, and the equipment must function when required, such as life support or other critical systems.

* Material Control is the foundation for the Level I program, ensure this is being followed.
* Proper classifications of assemblies for evaluation not properly classified (Class 1, 2, 3) or being inspected to the correct class.
* Programmable Read-Only Memory components (PROM) were burned incorrectly. The software/part/drawing numbers were correct, but the software used was the wrong version. All three must be verified separately.
* Harness assemblies were of an incorrect configuration.
* Insulation pinched between a lug and terminal seating surface caused a high resistance connection.
* Environmental testing not complied with or proper posttest inspection unsat
* Are securing mechanisms being applied/installed properly?
* Are all marking requirements, including nameplates, as required?
* Is configuration management under control?

**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. Is the material/product controlled and traceable throughout the process being audited?
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| 1. Are procedures available to the personnel performing the task with clear acceptance criteria?
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| 1. Is the documentation clear, readable and does it match with the material being processed?
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| 1. Do training records exist and are they current with proper certifications?
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| 1. Is the area where the work is being performed clean and free from dirt and debris?
 |  |  |  |
| 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 all non-conforming material segregated, controlled, traceable and procedures exist for disposition of the non-conforming material?
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| 1. Are parts protected from contamination and damage during and after the soldering process?
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| 1. Are the soldering procedures approved, if applicable?
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| 1. Is process data documented, i.e., temperature, solder, personnel, etc., and traceable to finished parts?
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| 1. Are time and temperature profiles performed per the approved procedure, with the correct ramp up and cool down times.
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| 1. Is the correct type and amount of flux used in the soldering process?
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| 1. Are parts heated to the correct temperatures with maximum allowable temperatures part of the procedure and observed?
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| 1. Are proper heat sinks used in the proper locations, where applicable?
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| 1. Is the proper sized soldering tip used for the soldering being performed and per the procedure?
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| 1. Is solder applied to the correct component in the proper location in the proper amount with no bridging of the soldered joints?
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| 1. Is final cleaning of the soldered joints and assemblies performed per the procedure?
 |  |  |  |
| 1. Is rework properly documented, when allowed?
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| 1. Are ESD practices being properly followed per contractor procedures?
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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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