

## Supplier Quality Assurance Manual Summary of Changes

### 095871 Contracts Deliverable Requirements Rev 10

This is to notify you of changes to the BAE Systems CDR Manual. Please see the following changes/additions/deletions:

Please note:

ALL DELETIONS ARE IN GREEN

ALL ADDITIONS ARE IN RED

ALL CHANGES ARE IN BLUE

#### 007 Welding-Combat Vehicles

Prior to the Supplier's start of fabrication (or repair to raw material, casting, forgings, etc.), the Supplier shall submit procedure(s) and supporting qualification test data in accordance with the applicable specifications (including weld personnel certifications) and Form(s) to the BAE Systems Authorized Purchasing Representative

#### 009 Soldering

The Supplier shall submit soldering plans in accordance with the applicable specification requirements for this item within (30) days of receipt of the Purchasing Agreement to the BAE Systems Authorized Purchasing Representative

#### 016 Plating

The Supplier shall provide written certification documenting that the plating was performed in accordance with all Purchasing Agreement, drawing and Purchasing Agreement specification requirements. The facility actually performing the plating shall prepare the certification. When baking for hydrogen embrittlement relief is required, the certification shall define the required bake time at temperature and contain a statement that the items were baked at the required temperature for the required minimum time specified in accordance with the required revision level of the specification.

The Certification **MUST** include as a minimum:

- Part number
- Purchasing Agreement number
- Plating process specification used
- Baking temperature
- Baking time
- A statement that the baking operation was started within **3 hours** of plating completion

## 021 Mercury

The Supplier shall **certify** that the material shipped under this Purchasing Agreement does not contain functional mercury in any form and that no mercury-bearing instruments and/or equipment that might cause contamination have been used in the manufacture, fabrication, assembly, or testing of any material shipped under this Purchasing Agreement. This requirement must be included in all sub-tier Purchase Orders however certification is only required from the BAE Systems tier 1 suppliers **when requested**.

## 034 Ballistic Requirements- Metal and Composite Materials

(Under PROCEDURES)

Documentation shall be provided with the results of the Initial Qualification Test. Supplemental documentation may be attached to support the results of NDT and microhardness testing.

Documentation of the microhardness readings in the HAZ shall be provided in accordance with the Initial Qualification Test. Supplemental documentation may be attached to support microhardness results.

PROCESS INSPECTION: (Under PROCEDURE APPROVAL & PERIOD OF QUALIFICATION)

- Visual inspection performed by qualified personnel in accordance with supplier's procedure. Inspection frequency shall be 100%.
- Inspection personnel shall be certified per a written practice in accordance with ASNT SNT-TC-1A, AWS QCI, CSA W178.2, or comparable.
- Alternatively, an engineer or technician who by training and experience in metals fabrication, inspection, and testing, is competent to perform the inspection of thermally processed material (welding, cutting, and/or heat treating) and maybe be considered qualified inspection personnel for the purposes of visual inspection for this process inspection.
  - Non-destructive testing in accordance with ASTM E1417, ASTM E1444 or equivalent. Frequency shall be inspection level II, AQL 2.5%, SPEC ANSI/ASQ Z1.4. (i.e. for Lot = 50, Inspection Level D = 5 samples **rejected**)
  - If rejectable indication is found, institute 100% inspection of subject lot.

## 084 Process Failure Mode and Effects Analysis (PFMEA) and Control Plans (CP)

### A. PFMEA AND CONTROL PLANS PER THE TOP LEVEL DRAWING, AND FLOW DOWN TO ALL SUPPLIERS

The contractor shall develop and implement the use of PFMEA and CPs that ensure compliance with the requirements of this contract. The PFMEA and CP must involve the entire production system and flow down of these requirements to its suppliers.

The contractor shall submit, for BAE Systems approval, an implementation plan which describes in detail: schedule, milestones, exception criteria, submission methodology and Supplier flow down requirements. Specific processes in the manufacturing of the

components must be identified that are used to ensure conformance to the requirements. The Implementation plan is to be completed and submitted 30 days following receipt of the contract in accordance with the data submission instructions located in the SQAM.

Control plans shall include outputs from the PFMEA's. Special or key characteristics, whether identified by the Customer or the Supplier, must be used in the development of the control methods. The control methods must also include specific reaction plans when any undesirable measurement results are obtained. The reaction plans, in conjunction with the inspection/test frequency shall effectively mitigate the risk of suspect material being released for shipment from the contractor's/suppliers facility.

The CP and PFMEA documents are to be completed, submitted in accordance with the data submission instructions located in the SQAM and approved prior to shipment of any product. CPs shall be treated as a living document and shall always reflect the current process. CPs shall be controlled documents and retained for the life of the contract.

The contractor shall use Automotive Industry Action Group (AIAG) publications "Potential Failure Mode and Effects Analysis" version 4, 2008, and "Advanced Product Quality Planning and Control Plan" version 2, 2008 for development and use of PFMEAs and CPs.

#### B. PFMEA AND CONTROL PLANS PER THE TOP LEVEL DRAWING, TIER I & II SUPPLIERS

The Contractor shall develop and implement the use of PFMEA and CPs that ensure compliance with the requirements of this contract. The PFMEA and CP must involve the entire production system as defined on the top level drawing.

The Contractor shall submit, for BAE Systems approval, an implementation plan which describes in detail: schedule, milestones, exception criteria, and submission methodology. Specific processes in the manufacture of the components must be identified that are used to ensure conformance to the requirements. The Implementation plan is to be completed and submitted 30 days following receipt of the contract in accordance with the data submission instructions located in the SQAM.

Control plans shall include outputs from the PFMEA's. Special or key characteristics, whether identified by the Customer or the Supplier, must be used in the development of the control methods. The control methods must also include specific reaction plans when any undesirable measurement results are obtained. The reaction plans, in conjunction with the inspection/test frequency shall effectively mitigate the risk of suspect material being released for shipment from the supplier's facility.

The CP and PFMEA documents are to be completed, submitted in accordance with the data submission instructions located in the SQAM and approved prior to shipment of any product. CPs shall be treated as a living document and shall always reflect the current process. CPs shall be controlled documents and retained for the life of the contract.

The Contractor shall use Automotive Industry Action Group (AIAG) publications "Potential Failure Mode and Effects Analysis" version 4, 2008, and "Advanced product Quality Planning and Control Plan" version 2, 2008 for development and use of PFMEAs and CPs.

**085 FIRST ARTICLE INSPECTION**

The Contractor shall conduct First Article Inspection (FAI) in accordance with AS9102B for all provided parts and those not previously subjected to First Article Inspection requirements in accordance with the Supplier Quality Assurance Manual, to ensure Supplier product/processes have the capability of meeting design and/or specification requirements. FAI's shall be conducted, reviewed, submitted in accordance with the data submission instructions located in the SQAM and approved prior to the first shipment of product. Where changes require only a delta FAI, the delta FAI will be limited to the impact of the change only. The customer reserves the right to review any/or all associated FAI documentation at its discretion.