

## **Q233 Nondestructive Inspection for Space Station Hardware**

### **Nondestructive Inspection reports:**

A report shall be generated and submitted to the Buyer for each nondestructive inspection (NDI) or related series of inspections. As a minimum, these reports shall contain the following information:

1. Company Name performing (NDI);
2. Date of Inspection ;
3. Inspector/name/stamp and certification level;
4. NDI specification including revision;
5. Material or item identification (part number, heat lot number, Foundry Record (FR) number;
6. Materiel or item traceability (serial number, lot number, batch number, lot/date code);
7. Inspection results (accept/reject);
8. Reference to previous NDI reports for repair/rework if applicable;
9. Reference to attached recordings i.e., films or photographs if applicable;

### **Mass Spectrometer Helium Leak Inspection:**

Joints or regions having a leak acceptance criteria  $10^{-7}$  std -cc/sec or less shall be inspected before the region or joint has been in contact with liquids, e.g., before cleaning, liquid penetrant, or ultrasonic inspection.

Helium leak standards shall be calibrated by the gas accumulation method having volume, pressure and departure measurement instrument calibrations traceable to National Institute of Standards and Technology.

### **Ultrasonic Inspection:**

If Ultrasonic Inspection is applicable to this contract, all ultrasonic equipment and inspection systems shall be controlled to the provisions of MIL-STD-2154, Type 1, Class A.

All fracture critical raw stock/forgings are to be ultrasonically inspected to MIL-STD-2154, type I, class A and shall meet the additional requirements stated in section IV of MSFC-STD-1249 and special Nondestructive Evaluation (NDE) Guidelines and requirements, specifically, "elongated stringer type indications of any length are not acceptable." If no indications are detected, the Certificate of Conformance (C of C) must explicitly state:

"No elongated stringer type indications were detected".

Note: Stringers are not considered elongated when the observed aspect ratio EQUALS OR EXCEEDS 3:1.