Decision Dendritic for GRaDER℠ Re-testing

Considerations:
- Test Results
- Manufacturer's Failure Analysis
- Proposed Mitigation / Corrective Actions

W / SW

Hardware Change? (Identify all H/W changes)

ANSI/IEEE Standard Clauses

Cosmetic?

5.0	General Requirements
10. 0	Documentation (No Testing Required comment for RKB.)

Performance?

5.0	General Requirements
10.0	Documentation
6.0	Radiological Tests
7.0	Environmental performance requirements
8.0	Electromagnetic performance requirements
9.0	Mechanical performance requirements

Impact on Detection / Identification?

6.0 Radiological Tests - Complete

No Impact on Detection/Identification?

6.0 Radiological testing - Minimal subset of isotopes and subtests.

Defective / Obsolete Parts?

"Defective part" is replaced with an identical part?

Part Number? Lot Number?

YES

- Simple regression testing at the vendor's plant (witnessed by a DNDO/NIST rep.) possible.
- ANSI tests performed depend on part replaced.
- 6.0 Radiological testing - Minimal subset of isotopes and subtests may be required.

NO

"Defective part" replaced with a different part due to obsolescence?

YES

Performance rule above applies

NO

Performance rule above applies

Software/Firmware Change? Identify all software/firmware changes to:

Cosmetic?

5.0	General Requirements
10. 0	Documentation (No Testing Required comment for RKB.)

Performance?

5.0	General Requirements
10.0	Documentation
6.0	Radiological Tests
7.0	Environmental performance requirements +
8.0	Electromagnetic performance requirements +
9.0	Mechanical performance requirements +

Impact on Detection / Identification?

6.0 Radiological Tests

No Impact on Detection/Identification?

6.0 Radiological testing - Minimal subset of isotopes and subtests.

Considerations:
- Potential functional and ancillary impacts on performance?
- New part certifications compared to original part?
- Design specs. compared to original part?
- Form, Fit, Function compared to original part?

Test Article Set up/Operating Procedure change? Identify all set up/ operating procedure changes

5.0	General Requirements
10. 0	Documentation

Impact on Detection / Identification?

6.0	Radiological Tests
7.0	Environmental performance requirements +
8.0	Electromagnetic performance requirements +
9.0	Mechanical performance requirements +

No Impact on Detection/Identification?

6.0 Radiological testing - Minimal subset of isotopes and subtests.
7.0 Environmental performance requirements +
8.0 Electromagnetic performance requirements +
9.0 Mechanical performance requirements +

Assembly Process? *

Quality Assurance? *

Design? *

Conformity? *

* These issues are considered to be included in configuration management. Assembly process, quality assurance (QA) and documentation may be handled as workmanship flaws that may affect the final outcome and use of the product. These issues are usually captured at the factory level in 2 main processes: Functional Configuration Audits (FCA) and Physical Configuration Audits (PCA). These 2 address the product itself (and corresponding documentation in the case of the PCA process). DNDO will consider process certifications that manufacturers adhere to whenever an assembly process or QA process is changed, and this certification is conducted by a third party. It is conceivable that whenever a FCA/PCA process takes place or a process re-certification takes place at the factory level, the government may witness it or require the vendor to provide evidence that the certification by a third party took place. This might be used in lieu of a retest of the hardware under the GRaDER program at one of the accepted labs. A spreadsheet checklist of the PCA process similar to those used by DOD may be employed.

\+ As applicable