

**Activity:                      Cleanliness**

1.0    Purpose:                      To provide a method of assuring that cleanliness is being maintained on systems, components and equipment that are necessary for safe and reliable operation.

2.0    Scope: This guideline gives a means of assuring that cleanliness is maintained during maintenance, modification, or testing.

3.0    References:

3.1        ANSI N45.2.1

3.2        ANSI N45.2.3

3.3        Reg. Guide 1.37

4.0    Guidelines:

4.1        In preparation for and during the conduct of this surveillance:

E        Obtain and review implementing procedures, instructions and drawings governing this activity.

E        Prepare a guide or checklist using the selected items from this guideline.

E        Review past surveys, audits, surveillances and other evaluations or assessments.

E        Ensure that checklists include, where applicable, actual observations of performance, general plant conditions, radiological work practices, housekeeping, work document controls and use, and safety practices.

**NOTE:** Refer to Guideline A.1, "General Quality Surveillance Guidance," for specific details on the attributes listed above.

- 4.2 Verify that personnel are made aware of cleanliness requirements through indoctrination on specific requirements or through locally posted instructions.
- 4.3 Verify that cleanliness classifications have been established for systems, components or equipment. Suggestions include specifications, design documents, maintenance procedures, storage procedures and administrative procedures.
- 4.4 Verify that the assignment of the cleanliness classification has considered the susceptibility to corrosion of the material, the consequences of malfunction or failure of the item and the probability of contaminants contributing to or causing such malfunction or failure.
- 4.5 Verify that cleaning methods and materials are approved for the task and that they are specified in the work documents or procedures.
- 4.6 Verify that housekeeping zones around activity have been upgraded if necessary to preclude contamination.
- 4.7 Observe that access control has been established so as to exclude unwanted personnel and contamination.
- 4.8 If marking materials are used, verify that they are approved for the material they are used on.
- 4.9 Observe that precautions are taken to avoid contamination of crevices, blind holes, dead legs, undrainable cavities, and inaccessible areas.

- 4.10 Observe that openings and pipe ends are selected at all times except when necessary for the performance of the task.
- 4.11 Observe that fitted and tack-welded joints (which will not be immediately sealed by welding) have been wrapped appropriately until the welds can be completed.
- 4.12 Verify that the item has been oriented when grinding, sanding, chipping, or wire brushing, so that chips fall away from the opening or have covers or seals provided for the openings.
- 4.13 Verify that large openings have been protected against falling and wind blown contaminants.
- 4.14 Where environmental contamination could cause degradation of quality, verify that seals have been installed which are designed to be hermetically tight and difficult to remove.
- 4.15 If contaminants are detected, are they removed, evaluated and accepted as is or determined that they will not be removed in subsequent cleaning operations.
- 4.16 Observe that cleaning or flushing is conducted in accordance with the work documents or procedures.
- 4.17 Observe that inspections are being performed and documented.
- 4.18 Observe that the inspection methods are in accordance with the work documents, inspection plans, or procedures.
- 4.19 Verify that inspection and test results identify:
- A. Conditions encountered which were not anticipated, including nonconformance.

B. Identity of inspector or tester.

C. Completion date.

4.20 Verify that the test reports and data sheets include an evaluation of the acceptability of inspection and test results and provide for identifying the individual who performed the evaluation.

5.0 Other Guidelines for Consideration:

5.1 A.1, "General Quality Surveillance Guidance"

5.2 L.7, "Housekeeping"

5.3 Q.6, "Storage"

5.4 V.6, "Chemical Cleaning and Flushing of Fluid System and Components"