WSRC Lessons Learned Program Information System

Title: **9975 Shipping Containers Vibro-Etched Markings (Submitted by SRNL Instrumentation & Equipment Systems)**

Identifier: **2008-LL-0043** **(Special Information Notice)**

Date: **5/14/2008**

Lesson Learned Statement:

Users of 9975 shipping packages should be aware of an inadvertent marking method used by the fabricator during a halt of 9975 package fabrication.

Discussion:

In 2004, fabrication of 9975 shipping packages at Joseph Oats Corporation was temporarily halted. To keep track of the many parts that were being processed at the time, the manufacturer vibro-etched match-marks on the bearing surfaces of the cone seal nut and plug of up to 400 shipping packages with serial numbers between 9975-03000 and 9975-05400.

The vibro-etching resulted in the parts not meeting surface finish requirements for these bearing surfaces.

When production restarted, the manufacturer reassembled the match-marked parts, completed acceptance testing and distributed the packages within the DOE Complex. This surface finish condition is being identified during annual maintenance of the containment vessels and has caused the generation of numerous nonconformance reports. A generic disposition has resulted from this nonconforming condition and is to be applied to each of the 9975 packages identified with this surface condition. The 9975 packaging Design Authority and Design Agency have concurred that the vibro-etching condition should be addressed in the annual maintenance procedure(s) in order to become more consistent and efficient in handling this condition.

See Attachments 1 and 2 for Pictures.

Attachments:

Attachment 1
Attachment 2

Analysis:

Corrective Action Being Applied In Annual Maintenance Procedure:

The vibro-etching resulted in raised metal edges that protrude above the bearing surface. These raised edges diminish the required surface finish and could lead to galling on the adjoining bearing surface. Correct this condition by removing the raised edges with fine grit abrasive. Do not attempt to completely remove the markings below the finished surface as this would remove too much metal. The depressed areas of the vibro-etch markings that are left will not affect the safety performance of these parts. After refinishing, clean the surfaces with ethyl or isopropyl alcohol and a lint-free cloth to remove debris.

See Attachment 2. Notice reverse image of vibro-etch on mating part caused by fabricator hydro pressure testing.

Recommendation:

The following corrective actions should be implemented to address and prevent recurrence of this situation.

- Issue an NCR to address the vibro-etching issue for 9975 packaging manufactured by this vendor.
- Incorporate the approved NCR disposition details into the 9975 packaging annual maintenance procedure.
- Verify that appropriate controls have been applied in procurement documents to preclude similar marking concerns on future 9975 packaging fabrication.
- Perform a corrective action effectiveness review of the adequacy of the annual maintenance procedure and prevention of similar marking issues with other 9975 packaging fabricators.

WSRC-Specific Recommendations

Organization/Facility Operating Experience Program Coordinators should share this information with their Project Area Personnel as appropriate, including:

- Management
- Supervision
- 9975 package personnel
- Others as Applicable

Specific to the WSRC Operating Experience Program

Actions pertaining to the WSRC Operating Experience Program and Organization/Project Operating Experience Program Coordinators for this lesson learned will be tracked via Site Tracking, Analysis, and Reporting (STAR) 2008-CTS-005200 (this STAR is specific to the WSRC Operating Experience Program Program).

Contacts:

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References:

Site Tracking, Analysis, and Reporting (STAR) 2008-CTS-003932, *Vibro-Etching On 9975 Packaging*

Nonconformance Report (NCR) 2008-NCR-29-0010, *9975 Shipping Packages Purchased Under DOE-SR Contract # DE-AD03-03-SF22745 and Received under WSRC PO # AC42075W*

SRS Design Change Form M-DCF-A-01003, *9975 Cone-Seal Vibro-Etch Marking Repair.* To obtain a copy, call Denny Vanover at (803) 557-5610.

Keywords:

Design Basis, Inspection, Testing

Activity:

Inspection & Testing; Material - Material Handling; Packaging & Transportation

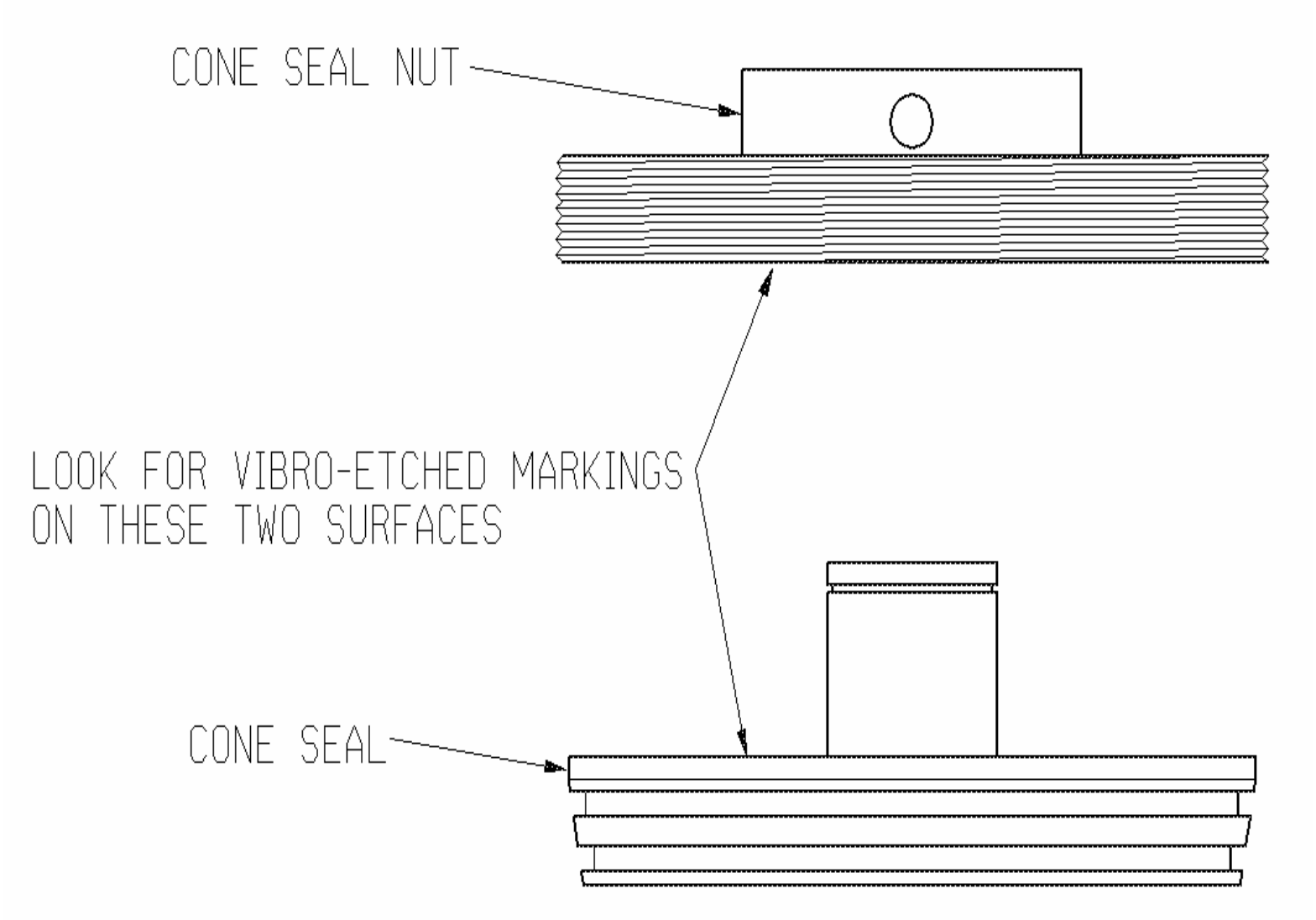
Hazard:

Other

ISMS Function:

Define Scope of Work, Analyze Hazards, Develop/Implement Controls

Vibro-Etching, Attachment 1



Vibro-Etching – Attachment 2

Vibro-Etching, Attachment 1