

10 CFR 71.95 REPORT EVALUATION FORM

Docket No.: 71-9215
Package Model No.: NPI-20WC-6 MkII
Report Submitted By: William L. Ransohoff, Neutron Products, Inc.
Report Date: October 15, 2015
Report ADAMS Accession No.: ML15314A032

Review the incoming report to determine if additional Commission or staff action is warranted. The review should consider whether the report identifies a generic defect or problem with the package design and the safety significance of the issue. Note that a high safety significance represents a potential for significant radiation exposure, medium safety significance represents a potential for some moderate radiation exposure, and low safety significance represents little or no potential for radiation exposure.

1. The report identifies:

- Significant reduction in the effectiveness of a package during use;
- Defect with a safety significance;
- Shipment in which conditions of the approval were not observed.

2. What is the safety significance? High Medium Low

3. Summary of the report:

While repairing a small tear on the outer metal shell sidewall of OP-8, corrosion was identified on the inside of the 12 gauge outer metal shell behind the 2 x 2 x 3/16 angle which forms the mating surface for the metal shell lid. The affected area of 12 gauge metal was removed and pitting corrosion was observed between the 12 gauge metal and the 2 x 2 x 3/16 angle. Because a stitch weld joined the 12 gauge metal and the 2 x 2 x 3/16 angle, additional pitting corrosion was suspected. Subsequent ultrasonic testing confirmed the presence of pitting corrosion. In addition, even though corrosion was not visible from either the outside or the inside of the lid, ultrasonic testing identified pitting corrosion on both the 12 gauge shell and the vertical leg of the angle which form the overpack lid mating surface.

Neutron Products suspended activities using the USA/9215/B(U) packages and chose to ultrasonic test the flange areas, as well as other metal surfaces, on all overpacks. Similar problems were identified on overpacks OP-10A and OP-11. In addition, although pitting corrosion was not identified on overpacks OP-12, -13 and -14, ultrasonic testing identified the metal shells bottoms for these overpacks exceeded the maximum allowed thickness specified on the drawing.

Neutron Products determined the pitting corrosion was likely caused by moisture entering the area between the metal surfaces over the lifetime of the package components by either of the following methods: opening and closing the package outside facilities in the rain and storing the package outside facilities. Neutron Products directs receiving personnel to handle and store packages in dry locations in an effort to minimize these situations, and although Neutron Products has not always stored packages inside storage facilities, this is their current practice. The thickness nonconformances were caused by inattention to detail during manufacture. They were not identified during annual inspections because Neutron Products was incapable of measuring material thicknesses from one side of the material.

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4. Corrective actions taken by the licensee:

The affected parent material on the overpacks will be replaced using approved, vendor supplied material. In lieu of stitch welds, Neutron Products will employ seal welds on the repaired components (ML16033A038). The seal welds will be painted and maintained to prevent future water and humidity intrusion. Enhanced storage, maintenance and handling requirements will be implemented. Annual inspections will be expanded to include quantifiable measurements of package components. In addition, ultrasonic testing equipment has been purchased and will be employed in future annual inspections.

5. Staff comments:

The 12 gauge outer metal shell sidewall is given little credit in the safety analysis report for its presence, and in some respects, it is considered somewhat sacrificial. The corrosion identified neither caused affected packaging components to fail, nor detrimentally impacted the safe use of the package. In addition, the 2 x 2 x 3/16 angle is not considered in any of the drop test calculations since it primarily acts as a flange to connect the lid to the body of the metal shell.

6. Staff conclusion:

- The report does NOT identify generic design or license/certificate issues that warrant additional Commission or staff action. This report is considered closed.
- There is a need to take additional action. Provide a summary of the bases and recommended actions:

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