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January 25, 2013

ATTN: Document Control Desk  
Director, Spent Fuel Project Office  
Office of Nuclear Material Safeguards and Security  
U. S. Nuclear Regulatory Commission  
Washington, D. C.

To Whom it May Concern:

As required by 10CFR71, (71.95), Neutron Products, Inc. is submitting this report to describe the condition of nonconforming package components that were identified during an NRC inspection that was completed at our facility in Ranson, WV on November 29, 2012. The requirements in **71.95, Reports**, and responses are referenced by letter and number as follows:

***(c) (1) A brief abstract describing the major occurrences during the event, including all component or system failures that contributed to the event and significant corrective action taken or planned to prevent recurrence.***

The affected components are the wooden protective jackets used as part of the USA/9215/B(U) Certificate of Compliance shipping package, Neutron Products, Inc. serial numbers OP-8, OP-10A, OP-11, OP-12, OP-13 and OP-14. As part of the maintenance program, the wooden protective jackets are weighed every year in order to monitor weight loss or gain. The wooden protective jackets were weighed using a scale that had been calibrated in a weight range which did not bracket the actual weight of the wooden protective jackets. The six wooden protective jackets were removed from service.

***(c) (2) (i) Status of components or systems that were inoperable at the start of the event and that contributed to the event.***

The package components had no inoperable components or systems when they were used for shipping.

***(c) (2) (ii) Date and approximate times of occurrences.***

The following are the dates and approximate times of occurrences with this event:

IE72

- The wooden inner protective jackets were weighed using the scale in question after purchase of the scale on March 24, 2011;
- The wooden inner protective jackets were determined to be non-conforming during an NRC inspection on November 28, 2012 at which point they were tagged non-conforming and were removed from service;
- The scale was recalibrated in the proper weight range on November 29, 2012;
- All wooden inner protective jackets were weighed using the recalibrated scale between November 30, 2012 and December 18, 2012 and the weights were found to be satisfactory;
- All packages using these wooden inner protective jackets were released for use after each was weighed and determined to be conforming.

***(c) (2) (iii) The cause of each component or system failure, or personal error, if known.***

The crane scale was purchased from a vendor approved through the quality system and was calibrated to industry standards according to the vendor. In this case, the scale was calibrated to 1,000 pounds but not to the full range of 2,000 pounds. The wooden inner protective jackets generally weigh approximately 1,150 pounds. Our purchase order for the calibration specified "calibrate on all ranges" which the vendor maintains they did in accordance with industry standards. The wording has since been changed to "calibrate to full range of scale" or "calibrate to full scale capacity". When the calibration reports were received from the vendor, the failure to calibrate to full range was not discovered by receiving personnel.

***(c) (2) (iv) The failure mode, mechanism, and effect of each failed component, if known.***

As described above, there was no failure of the function of the package. The subsequent calibration of the scale to full range and re-weighing of the wooden inner protective jackets showed all components to be conforming.

***(c) (2) (v) A list of systems or secondary functions that were also affected for failures of components with multiple functions.***

There were no systems or secondary functions of the package that were affected by this nonconformance.

***(c) (2) (vi) The method of discovery of each component or system failure or procedural error.***

The package components were determined to be nonconforming during an NRC inspection on November 28, 2012.

***(c) (2) (vii) For each human performance related root cause, a discussion of the cause(s) and circumstances.***

As described in (c) (2) (iii), there was an incorrect interpretation of our special requirement to "calibrate on all ranges" and the vendor therefore used the industry standard when calibrating the scale. There was also a failure by receiving and reviewing personnel to discover that the scale was not calibrated to full range. In addition, there were no provisions in purchasing and receiving inspection documents to specify or inspect upon receipt whether instruments were calibrated to full range. We have a long history with the vendor, and, after reviewing the facts, we have decided to maintain the vendor's status as a qualified supplier for our program.

***(c) (2) (viii) The manufacturer and model number (or other identification) of each component that failed during the event.***

As noted in (c) (2) (iv), there were no failures of the components. The recalibration of the scale was performed by an approved vendor and the weight of each wooden protective jacket, using the recalibrated scale, was appropriate for the weight range of the jackets.

***(c) (2) (ix) For events occurring during use of a packaging, the quantities and chemical and physical form(s) of the package contents.***

Packages shipped using the wooden inner protective jackets in question contained a maximum of 15,000 curies of cobalt-60 or 3,500 curies of cesium-137.

***(3) An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event.***

There were no failures of packaging components during the shipments/event, and no safety consequences resulting from the nonconformance. Weighing of the wooden inner protective jackets is one indicator of the condition of each component. The jackets are visually inspected, inside and outside, for damage and material loss annually and significant weight gain/loss would be noticed during these inspections. There were no other wooden inner protective jackets available for shipments since all were weighed with the same scale.

***(4) A description of any corrective actions planned as a result of the event, including the means employed to repair any defects, and actions taken to reduce the probability of similar events occurring in the future.***

Nonconformance 2012-006 was initiated on November 29, 2012. All wooden inner protective jackets were weighed using a scale calibrated to full range before being used for shipments of

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U. S. Nuclear Regulatory Commission  
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January 25, 2013  
Page 4 of 4

radioactive materials. Corrective action CA-2012-RT-003 will include revisions to purchasing and receiving inspection procedures to specifically require calibration to full range and verification during receiving that scales were calibrated to full range.

These changes will also apply to other calibration services for equipment used for shipping radioactive materials under our QA program.

***(5) Reference to any previous similar events involving the same packaging that are known to the licensee or certificate holder.***

None of which we are aware.

***(6) The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information.***

Jerry L. Fogle, QA Manager for Radioactive Transportation – 304 725-7041

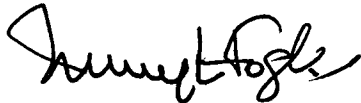
***(7) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.***

There was no exposure to radiation or radioactive materials to any individuals beyond normal handling as a result of this nonconformance.

We believe that this letter fulfills the requirements of 71.95, Reports. If you require any additional information, please contact me at 304 725-7041 or at [neutrontele@frontiernet.net](mailto:neutrontele@frontiernet.net). If I am unavailable at this phone number, I can be reached through our main office at 301 349-5001.

Respectfully submitted,

Neutron Products, Inc.



Jerry L. Fogle, Q. A. Manager  
For Radioactive Transportation

Copy via electronic mail to: [michele.sampson@nrc.gov](mailto:michele.sampson@nrc.gov)