

April 6, 2007

ATTN: Document Control Desk
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3
Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Report of Type B Shipping Cask Discrepancy

The attached Packaging and Transport of Radioactive Material Report describes a condition involving a noncompliance with a cask drawing specifically referenced in the Certificate of Compliance (C of C) for a Type B shipping cask. In accordance with NEI 99-04, the regulatory commitment contained in this correspondence is to restore compliance with the regulations. The specific methods that are planned to restore and maintain compliance are discussed in the report. If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,



Michael J. Massaro
Plant Manager
Peach Bottom Atomic Power Station

MJM/djf/IR 592478

Attachment

cc: PSE&G, Financial Controls and Co-owner Affairs
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
S. Collins, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
US NRC, Senior Resident Inspector
P. L. Paquin, Duratek

CCN 07-34

MJMSO1

10CFR 71.95 Packaging and Transport of Radioactive Material Report

Type B Shipping Cask Hold-down Strap Fastener Locations not in Accordance with Certificate of Compliance (C of C) Referenced Drawing

Brief Abstract:

During a pre-shipment inspection of loaded CNS 3-55 package (C of C No. 5805, Rev. 23), an NRC Inspector identified that the hold-down strap fastener hole locations on one of the four tie-down legs that secure the hold-down straps were not aligned similarly to other fasteners in the remaining three tie-down legs. The NRC Inspector reviewed the C of C referenced drawing (MOD-124, Rev D) for these bolts and questioned the Exelon Shipping Specialist as to the adequacy of the actual bolt alignment on the cask tie down straps. The drawing shows four bolts on each hold down strap tie down leg and listed a bolt separation distance (top to bottom) of 6.00" (on center). The actual bolts were approximately 6" apart (on center) on one side of the hold down strap in question and approximately 5 and 5/8" apart (on center) on the other side. The drawing called for the boltholes being 6.00" on center with no tolerance specified. Shipping activities were suspended pending vendor evaluation. The cause was apparently due to a manufacturing error and not properly specifying tolerances in C of C referenced drawings. The C of C was revised and NRC approved the revision on 2/28/07 (C of C No. 5805, Rev. 24).

Description of the Event:

On 2/16/07 at approximately 1130 hours during a pre-shipment inspection of loaded CNS 3-55 package (C of C No. 5805, Rev. 23), an NRC Inspector noticed that the hold down strap fastener hole locations on one of the four tie-down legs were not aligned similarly to other fasteners in the remaining three tie down legs. The NRC Inspector reviewed the C of C referenced drawing (MOD-124, Rev D) for these bolts and questioned the Exelon Shipping Specialist as to the adequacy of the actual bolt alignment on the cask tie down straps. The drawing shows four bolts on each hold down strap tie down leg and listed a bolt separation distance (top to bottom) of 6.00" (on center). The actual bolts were approximately 6" apart (on center) on one side of the hold down strap in question and approximately 5 and 5/8" apart (on center) on the other side. The drawing called for the boltholes being 6.00" on center with no tolerance specified.

Status of Components / Systems that were Inoperable at the Start of the Event and that Contributed to the Event:

All components systems involved with the packaging were operable throughout the period of non-compliance.

Dates and Approximate Times of Occurrences:

The condition was discovered on 2/16/07 at approximately 1130 hours resulting in halting further shipping activities for this particular cask.

The cask C of C holder applied for a C of C revision on 2/26/07.

The NRC approved the C of C revision on 2/28/07.

The cask was shipped on 3/08/07.

The Cause and Discussion of Each Component / System Failure or Personnel Error, if Known:

The cause was apparently due to a manufacturing error and not properly specifying tolerances in C of C referenced drawings. The hold-down strap / shipping cradle was manufactured in the late 1960's.

The revision of the referenced drawing issued in 1977 was determined to be inadequate, in that, no specific dimensioning tolerances were given for the placement of the boltholes. As such, the separation distances shown on the drawing were given in inches and taken to two decimal places. Based on the dimension convention shown in the drawing, the tolerance in the bolt separation distance could only be assumed to be +/- 0.01 inches (consistent with standard engineering drawing conventions). The actual separation distance was approximately 3/8 inches short of the dimension stated on the drawing. Therefore, the location of the bolthole was out of the assumed tolerance specified in the C of C documentation. As a result of the significant length of time that has elapsed since the design drawing was generated, additional cause investigation is not possible.

The Failure Mode, Mechanism, and effect of Each Failed Component:

There were no failed components involved with this event.

A List of Systems or Secondary Functions that were also Affected for Failures of Components with Multiple Functions:

There were no failed components involved with this event.

The Method of Discovery of Each Component or System Failure or Procedural Error:

An NRC Region 1 inspector discovered this issue during routine inspection activities.

The Manufacturer and Model Number (or other identification) of each Component that Failed During the Event:

There were no failed components involved with this event.

For Events Occurring during Use of a Packaging, the Quantities and Chemical and Physical Form(s) of the Package Contents:

The physical form was solid. The chemical form was metal oxides and metal. The package that was loaded when the issue was discovered contained a total activity of 3.71 E+08 MegaBecquerels (1.00 E7 milliCuries) consisting of the following primary isotopes: Co-60, Fe-55, Mn-54, Ni-63, Pu-238. Previous packages shipped using this particular package contained similar materials.

Assessment of Safety Consequences and Implications of the Event:

There were no actual safety consequences associated with this event. When discovered, the package had not yet been transported. Transportation preparatory activities were halted until further vendor analysis could be performed.

The cask C of C holder evaluated the safety significance of the bolt placement and concluded that the actual position of the bolts did not affect their safety function. The only forces that the bolts were subject to during transport were shear forces that were not affected by bolthole location.

As analyzed in the Safety Analysis Report Section 2.4.4, the hold down straps are subjected to tensile loading during transportation. This loading subjects the 16 total bolts (four for each of the

four legs) to shear loading only. Vendor analysis determined that spacing of the bolts is not a factor in the transfer of the load within the bolted connection between the hold down straps and the skid cradle. Furthermore, it was determined that there is sufficient edge distance in the connected steel to develop the shear strength to prevent "tear-out" of the steel. Therefore, there were no actual safety concerns with the offset bolt location.

Corrective Actions Including Actions Taken to Reduce the Probability of Similar Events in the Future:

Upon discovery of this issue, shipping preparatory activities were suspended until the issue could be evaluated and resolved. Site shipping personnel were promptly informed of this event and the package was secured at the low-level radwaste facility.

The package responsible vendor was engaged with this issue and performed prompt evaluations of the condition. The arrangement of bolts was evaluated by the vendor and by the station site-engineering department and determined to not be significant from a structural capability standpoint.

The vendor applied for a revision to the C of C (5805) on 2/26/07. This revision incorporated a revised drawing, MOD-124 (that includes dimensioning tolerances that allow the current bolting arrangement). Hold-down strap boltholes were given a 5/8" tolerance to dimensions given on the drawing.

The NRC issued Revision 24 of the C of C on 2/28/2007. The drawing revision number was changed in the actual C of C and the drawing was modified as described above. The information has been reviewed by the Shipping Specialist at Peach Bottom and is acceptable.

The package was subsequently shipped on 03/08/07.

Previous Similar Events:

The CNS Model 3-55 cask has been licensed under Certificate number 5805 for over approximately 35 years. The two existing casks have been operated safely during this time.

It is estimated that this particular cask has been used approximately 8 times at PBAPS since 1998.

Contact for Event:

Francis L. Jordan, Peach Bottom Atomic Power Station, 717-456-3608

The Extent of Exposure of Individuals to Radiation / Radioactive Material:

There was no additional radiation exposure to individuals as a result of this event.