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U.S. Nuclear Regulatory Commission
Director, Spent Fuel Storage and Transportation Division
Office of Nuclear Material Safety and Safeguards
Attn: Document Control Desk
Washington D.C. 20555-0001

Subject: Report of Non-Compliance with Requirement in Certificate of Compliance USA/9319/B(U)F-96 for the Model MAP-12 Licensed Shipping Container (Failure to Perform Surveys on Accessible Areas of Flatbed Trailer Prior to Departure); AREVA Inc. Richland, WA Facility

Attached please find information as required by 10 CFR 71.95 (c) pursuant to shipments of enriched uranium-containing fuel assemblies in Model MAP-12 licensed shipping containers. NRC Certificate of Compliance (COC) 9319 Revision 6 for the Model MAP-12 and MAP-13 licensed shipping containers states in Condition 6 (a) that the package shall be prepared for shipment and operated in accordance with the Package Operations in Section 7 of the application as supplemented. Furthermore, Section 7.1.3.2 of Chapter 7 of the MAP Safety Analysis Report (SAR) requires the conduct of direct alpha surveys on both the packages and the accessible areas of the flatbed. While Richland has performed all USDOT-required radioactive contamination and radiation dose surveys on all of its MAP-12 shipments since initial use of the container in July of 2010, the SAR-required direct alpha surveys of accessible areas of the flatbed trailer have not been performed.

The requirement in Section 7.1.3.2 of Chapter 7 of the MAP-12 SAR is a holdover from when the containers were utilized at AREVA's Lynchburg, VA facility where the trailers were brought indoors for loading. This is inconsistent with Richland practice where fully surveyed MAP-12 packages are loaded onto the trailers outdoors; the trailers never enter a radiation zone or radioactive contamination area (this is true for all fuel assembly shipments departing the Richland site). Richland AREVA Fuels staff were unaware of the trailer survey requirement.

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There is no safety significance related to this failure to comply in that the MAP-12 packages have consistently received all USDOT-required radiation surveys and the trailers do not enter a radiation zone or contaminated area while at Richland. Trailer surveys have been initiated since the non-compliance was discovered in conjunction with the April 3, 2014 loading of a MAP-12 shipment. Trailer surveys will continue to be performed until such time that the SAR can be revised to remove the unnecessary survey requirement. The issue has been effectively managed within AREVA's formal corrective action program.

If you have any questions, please feel free to contact me at 509-375-8409.

Very truly yours,



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Attachment

Event Information Required by 10 CFR 71.95(c) Relative to Shipments of MAP-12 Packages (NRC COC 9319) in Which a Condition of the Certificate of Compliance Was Not Followed

(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.

On April 3, 2014, while performing an observation during the loading of MAP-12 packages onto a trailer at AREVA's Richland, Washington site, it was observed by an AREVA TN employee that the direct alpha surveys on the accessible areas of the flatbed required by Section 7.1.3.2 of Chapter 7 of the MAP PWR Fuel Shipping Package Safety Analysis Report were not conducted. After discussing the issue with the Nuclear Material Shipping & Receiving Supervisor (NMS&R) and the Health and Safety Technician (HST), the trailer was surveyed and released for shipment.

A review of Richland operating procedures has determined that the requirement to perform a trailer alpha survey when shipping MAP-12 packages has not been incorporated in any procedure and that Richland Fuels personnel were unaware of the requirement.

The MAP-12 package was first used at AREVA's Lynchburg, VA site in 2008. At the Lynchburg site the packages were loaded onto flatbed trailers inside of the fuel fabrication building, thus surveying the trailers before exiting the building had a technical basis. In 2010 AREVA started to transition all of its US fuel manufacturing activities to the Richland, WA site. The first shipment of six MAP-12 packages left Richland on July 7, 2010; there is no evidence that the trailer was surveyed prior to the shipment as required by Section 7.1.3.2 of the SAR. It should be noted that at the Richland site, appropriately surveyed fuel assembly packages are always loaded outdoors onto trailers that have never been inside of a contaminated building on the Richland site. Thus surveying trailers loaded with fuel packages is not the normal practice in Richland. Since mid-2011, all MAP-12 shipments have originated in Richland and the trailers have not been surveyed as required by Section 7.1.3.2 of the SAR. The deviation from the trailer survey requirement is not a safety issue since the trailers are never in a contaminated area while at the Richland site and the packages have received all required surveys prior to the placement on their trailers.

For discussion of corrective actions resulting from this event, see discussion under (4), below.

(2) A clear, specific, narrative description of the event that occurred so that knowledgeable readers conversant with the requirements of Part 71, but not familiar with the design of the packaging, can understand the complete event. The narrative description must include the following specific information as appropriate for the particular event.

A narrative of the event was provided under (1), above. NRC Certificate of Compliance (COC) 9319 Revision 6 for the Model MAP-12 and MAP-13, Condition 6 (a) states that the package shall be prepared for shipment and operated in accordance with the Package Operations in Section 7 of the application as supplemented. Since Section

7.1.3.2 of Chapter 7 of the MAP SAR requires: "Conduct direct alpha surveys on both the packages and the accessible areas of the flatbed."; and since the surveys were only conducted on the packages and not accessible areas of the trailers, all MAP-12 shipments from the AREVA Richland, WA site since July 7, 2010 were made in violation of COC 9319.

(i) Status of components that were inoperable at the start of the event and that contributed to the event;

No components were inoperable..

(ii) Dates and approximate times of occurrences;

The first shipment of six MAP-12 packages left the AREVA Richland, WA site on July 7, 2010 and numerous shipments were made until the condition was discovered and corrected on April 3, 2014.

(iii) The cause of each component or system failure or personnel error, if known;

The personnel error was due to unawareness on the part of Richland personnel. The surveying of trailers that were never in a contaminated area is inconsistent with Richland standard practice.

(iv) The failure mode, mechanism, and effect of each failed component, if known;

No failed components were involved in this event.

(v) A list of systems or secondary functions that were also affected for failures of components with multiple functions;

There were no component failures associated with this event.

(vi) The method of discovery of each component failure or procedural error.

As stated above, the failure to perform the required trailer surveys was discovered by AREVA TN personnel during an observation of the loading of MAP-12 packages onto a trailer.

(vii) For each human performance-related root cause, a discussion of the causes and circumstances;

Per 49 CFR 173.441(a) each package (on a non-exclusive use vehicle) of Class 7 (radioactive) materials offered for transportation must be designed and prepared for shipment, so that under conditions normally incident to transportation, the radiation level does not exceed 2 mSv/hour at any point on the external surface of the package and the transport index does exceed 10. There is no requirement in the regulations to perform trailer surveys for non-exclusive use shipments. Also, since at Richland the trailers are always loaded outdoors and have never been in a radiation zone or contamination area, there is no reasonable technical basis for requiring a survey of the trailers. The requirement in Section 7.1.3.2 of Chapter 7 of the SAR to survey the trailer is a holdover from when the trailers were loaded indoors in Lynchburg. Richland personnel were

unaware of the MAP SAR trailer survey requirement, and that is why the required surveys were not performed.

(viii) The manufacturer and model number (or other identification) of each component that failed during the event;

There were no component failures associated with this event.

(ix) For events during the use of a packaging, the quantities and chemical and physical forms(s) of the package contents;

The contents of this package were one or two PWR fuel assemblies, with each assembly containing a maximum of 574 kg of ≤ 5 weight percent ^{235}U solid uranium oxide pellets.

(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 safety consequences as a result of this event. The direct alpha surveys of the trailers required by the SAR are not required by DOT regulations. The required surveys of the packages per DOT regulations were always conducted.

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

Until the SAR can be revised to remove the required trailer surveys, the accessible areas of the flatbed trailers loaded with full MAP-12 packages will have direct alpha surveys performed on them.

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

There have been eight previous 10 CFR 71.95 reports submitted to the NRC on the MAP-12 package by AREVA NP; the previous reports were dated March 26, 2009; June 26, 2009; November 18, 2009; September 13, 2010; January 2, 2012; February 10, 2012; April 4, 2012; and February 7, 2014. The first report dealt with making a shipment using a non-compliant ball lock pin. The second report dealt with discrepancies between the MAP-12 fabrication drawings and the license drawings. The third report dealt with shipping a MAP-12 package with a missing ball lock pin. The fourth report dealt with some minor errors in the actual license drawings which had to be revised. The fifth report dealt with missing non-safety related washers on five MAP-12 packagings. The sixth and seventh reports dealt with a small partial fillet weld found on two packages. The eighth report dealt with the discovery cracking and buckling in the base spacer weldments on the first 70 MAP-12 packages. This report is not similar to any of the other reports in that it deals strictly with a SAR Chapter 7 requirement and not any actual problem with the packages.

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

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

This event did not involve the exposure of individuals to radiation or radioactive materials.