

January 15, 2013  
REL:13:002



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

Gentlemen:

**Subject: 10 CFR 71.95 Report for Receipt of a Fuel Assembly Return Shipment Violating the Requirements of NRC Certificate of Compliance (COC) 9248 for the Model SP Fuel Assembly Shipping Container**

Attached please find information as required by 10 CFR 71.95(c) pursuant to AREVA NP Inc.'s (AREVA's) receipt of a fuel assembly return shipment from an overseas customer that violated the requirements in NRC COC 9248, Revision 19. The NRC COC is the underlying certificate for USDOT Competent Authority Certificate USA/9248/AF Rev. 21. Specifically, an AREVA overseas customer returned a single BWR fuel assembly to AREVA's Richland facility using an SP outer container that had damage to two plywood side panels that exceeded the criteria in Chapter 8 of EMF-1563 Revision 12A, the applicable safety analysis report (SAR) for the Model SP containers. It should be noted that the fuel assembly was contained within a fully compliant Model SP-3 inner shipping container.

As noted in the attachment, the safety consequences of this event are judged to be low. The damage to the plywood of the SP outer container did not materially affect its safety function of providing protection and cushioning of the fully compliant SP-3 inner container. AREVA's customer has been informed of the non-compliant condition and the issue has been entered into, and is being addressed within, AREVA's formal corrective action program.

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

Very truly yours,

A handwritten signature in black ink, appearing to read 'Robert Link', with a stylized flourish at the end.

R. E. Link, Manager  
Environmental, Health, Safety, & Licensing

AREVA NP INC.

KIMSS01

cc: Mary Thomas  
Fuel Facility Inspection Branch 3  
Division of Fuel Facility Inspection  
USNRC Region II  
245 Peachtree Center Avenue, Suite 1200  
Atlanta, GA 30303-1257

Stan Echols  
US Nuclear Regulatory Commission  
11555 Rockville Pike  
Mail Stop EBB2-C40M  
Rockville, MD 20852

Bernard H. White  
Office of Nuclear Material Safety and Safeguards  
Division of Spent Fuel Storage and Transportation  
6003 Executive Blvd.  
Mail Stop E3 DM2  
Rockville, MD 20852

/mah

## Attachment

### Event Information Required by 10 CFR 71.95(c) Relative to Receiving a Shipment of One SP-3 Package in an SP Outer Packaging That Did Not Meet the Requirements of Chapter 8 of SP-1, SP-2, SP-3 Safety Analysis Report EMF-1563 R12A for NRC COC 9248

(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.

*During the receipt inspection of Kousheng Unit #1 reload KSH1-23 at Taipower in Taiwan it was discovered that one of the fuel bundles had some spacer damage that would need to be repaired at AREVA's Richland, Washington site. In January 2012 AREVA personnel assisted Taipower personnel in loading the damaged bundle into SP-3 inner container RI3731. At a later date, Taipower personnel were to load RI3731 into an empty SP outer container and ship the loaded SP outer container to Richland with a load of empty SP-2 and SP-3 inner and outer containers at the end of January 2012.*

*At the end of January 2012, Taipower personnel at the Kousheng site shipped all available SP outer containers back to Richland, leaving no SP outer container available to pack RI3731 into. (Taipower had decided that RI3731 with the damaged bundle could not ship with these empty containers because there was not enough time to get the necessary permits.)*

*On June 6, 2012 AREVA Richland shipped two empty damaged SP outer containers (RO0081 and RO0033) in a 40' sea/land container with ten acceptable loaded SP-1, SP-2, and SP-3 containers to Taipower Kousheng Unit #1 for reload KSH1-24. The two damaged outer SP containers were being used as spacers (dunnage), since a 40' sea/land container holds twelve SP-1/SP-2/SP-3 shipping containers. The damaged areas of the two damaged outer containers were marked on the outside with red paint.*

*Sometime during the July through September 2012 timeframe, Taipower personnel at Kousheng Unit #1 loaded SP-3 inner container RI3731 containing the damaged bundle into SP outer container RO0081, despite the fact that RO0081 was visibly damaged. On October 15, 2012, Taipower personnel shipped RO0081/RI3731 with empty outer container RO0033 and a number of empty SP-1/SP-2/SP-3 inner shipping containers in a 20' sea/land container.*

*On November 20, 2012 the 20' sea/land container with RO0081/RI3731 arrived in Richland and was unloaded. On November 21, 2012 it was discovered by AREVA personnel that SP outer container RO0081 had two red "Xs" painted on the side and that two of the plywood panels were damaged. Later that day, RI3731 was removed from RO0081 and it could be seen that the damage to the plywood was worse on the inside of the container than on the outside.*

*The damage to the two side plywood panels exceeded the damage allowed in Section 8.2.2 of Chapter 8 of EMF-1563 Revision 12A which states: "Replace plywood with punctures, separating laminations, or more than a square foot of missing lamination."*

*There was little to no safety impact due to the non-conforming condition of RO0081. Despite the two damaged plywood panels, the outer container was able to perform its safety function of cushioning the inner container.*

*For further 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) 9248 Revision 19 for the Model Numbers SP-1, SP-2, and SP-3 Section 10 (b) states that: "Each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Chapter 8 of the application dated September 5, 2003." As described above, outer SP container RO0081 was non-conforming to Section 8.2.2 of Chapter 8 when the shipment of the damaged enriched fuel assembly was made in violation of COC 9248.*

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

*As described above, the event involved shipping an enriched Type A BWR fuel assembly in a Model SP-3 packaging that was not compliant to Chapter 8 of the SAR. The noncompliance was minor and the package was fully operational during the shipment.*

(ii) Dates and approximate times of occurrences;

*SP outer shipping container RO0081 (containing SP-3 inner container RI3731), was used to ship one BWR fuel assembly from Taiwan to the AREVA Richland Washington site on October 15, 2012.*

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

*A human error was that Taipower personnel did not understand the significance of the red paint marks on container RO0081 and that the container was damaged and was not to be used for fuel shipments.*

(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.

*The conditions were found during an inspection of SP outer container RO0081 after it had been unloaded from the 20' sea/land container.*

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

*It is unknown why Taipower personnel failed to identify that SP outer container RO0081 was damaged and should not be used to ship product. The damage to the outer container should have been obvious when the inner container RI3731 was being placed into RO0081.*

(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;

*For the shipment, the contents consisted of one BWR fuel assembly, containing a maximum of 203 kg of  $\leq 5$  weight percent  $^{235}\text{U}$  solid uranium oxide pellets meeting the requirements of 5(b)(1)(ix) of COC 9248.*

(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 little or no safety consequences as a result of this event. The damage to the plywood of SP outer container RO0081 did not affect the safety function of the container and it was still able to perform the cushioning function of the inner SP-3 container.*

(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;

- *SP outer container RO0081 was taken out of service and will be reworked by replacing the damaged plywood sections.*
- *Taipower will be informed of the incident so that they can keep it from happening again.*
- *The AREVA procedure supplied to our customers for unloading and handling SP-1, SP-2, SP-3 shipping containers will be revised to add an appendix that covers the SAR Chapter 7 and 8 requirements for inspecting, maintaining, and loading SP-1, SP-2, and SP-3 containers for return fuel shipments.*

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

*AREVA NP is unaware of any previous similar events involving the SP-1, SP-2, and SP-3 packagings.*

(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.

*Robert E. Link, Manager  
Environmental, Health, Safety, & Licensing  
AREVA Richland Fuel Fabrication Plant  
(509) 375-8409*

(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.*