

April 11, 2012
REL:12:019



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 Involving Receipt of a Foreign-Owned Model 30-B UF₆ Cylinder that Violated the Requirements of its Model UX-30 Overpack; AREVA NP Inc. Richland Facility

Attached please find information as required by 10 CFR 71.95(c) pursuant to AREVA NP Inc.'s (AREVA's) receipt of a Model 30-B UF₆ cylinder that violated the conditions of Certificate of Compliance 9196, Revision 26 for its Model UX-30 overpack. The non-compliance was due to the UF₆ cylinder having inadequate valve thread engagement per ANSI N14.1-2001. COC 9196 requires that any UF₆ cylinder being shipped within the overpack comply fully with the requirements of ANSI N 14.1-2001.

Discovery of the inadequate valve thread engagement was not made until the valve was removed as part of AREVA's cylinder washing operation. It should be noted that there is no evidence that the valve connection leaked either during the cylinder's trans-Atlantic shipment or during its processing (vaporization) within AREVA's Dry Conversion Facility. The pertinent details as to the cylinder's usage history immediately preceding its receipt in Richland are provided in the attachment. As indicated therein, neither the owner/filler of the cylinder nor the shipper were NRC licensees.

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

Very truly yours,

A handwritten signature in cursive script that reads "R. E. Link".

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

2145501

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Attachment

Event Information Required by 10 CFR 71.95(c) Relative to Receipt of a 30B Cylinder with Inadequate Valve Thread Engagement in a UX-30 Packaging (NRC COC 9196)

(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.

January 20, 2011, URENCO cylinder 21150115 shipped full of 4.22% enriched UF₆ in a UX-30 overpack from URENCO Gronau, Germany to AREVA NC Pierrelatte, France.

January 31, 2011, AREVA Pierrelatte, France shipped the UX-30 containing full URENCO cylinder 21150115 to AREVA NP Richland, WA.

March 14, 2011, URENCO cylinder 21150115 received full (in a UX-30 overpack) with 4.22% enriched UF₆ from the AREVA Pierrelatte, France enrichment facility.

October 3, 2011, URENCO cylinder 21150115 processed in Richland UF₆ autoclave with no problems being reported.

On February 14, 2012, the URENCO cylinder was washed in the AREVA cylinder wash facility. After removing the valve from the cylinder, the wash technician noted that the thread indications on the valve showed that it only had five threads engaged while it was in the cylinder. A minimum of seven threads engaged is a requirement of ANSI N14.1-2001, "Uranium Hexafluoride Packaging for Transport," Section 6.10.6. Conformance to this standard is required by Condition 6 of NRC Certificate of Compliance 9196 Revision 26 for the Model UX-30 transportation package. URENCO cylinder 21150115 was shipped by AREVA Pierrelatte, France to AREVA NP Richland, WA with more than seven valve threads exposed, indicating that less than a minimum of seven threads were engaged. A nonconformance with a condition of the Certificate of Compliance in making a shipment is reportable under 10 CFR 71.95(a)(3).

AREVA NP Richland, WA is making this report to the NRC since it is the licensee who received the shipment. The shipper of the packaging (AREVA Pierrelatte, France) is not an NRC licensee.

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) 9196 Revision 26 for the Model UX-30, Condition 6, requires that 30B cylinders

be fabricated, inspected and maintained in accordance with American National Standard N14.1-2001. As stated above, AREVA NP discovered that URENCO cylinder 21150115 had inadequate valve thread engagement and did not meet the ANSI standard. One 4.22% enriched UF₆ shipment in 30B cylinder 21150115 within a Model UX-30 packaging was made from AREVA Pierrelatte, France to AREVA NP's Richland, Washington site in violation of COC 9196.

- (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 enriched UF₆ in a 30B cylinder in a Model UX-30 overpack with noncompliant valve thread engagement in the cylinder. Despite the inadequate valve thread engagement, no leakage at the valve coupling of the cylinder was reported.

- (ii) Dates and approximate times of occurrences;

January 31, 2011, AREVA Pierrelatte, France shipment of full cylinder 21150115 with 4.22% enriched UF₆ in a UX-30 overpack to AREVA NP, Richland, WA. March 14, 2011 the UX-30 containing cylinder 21150115 was received.

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

The exact cause is unknown; the valve in question was a Descote valve. AREVA Pierrelatte, France stated they did not change the valve in URENCO cylinder 21150115. The valve appears to have been installed by URENCO or one of its suppliers prior to filling and shipping the cylinder to AREVA Pierrelatte, France.

- (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, AREVA NP Richland, WA discovered the inadequate thread engagement in cylinder 21150115 during the removal of the valve during the cylinder wash operation.

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

The cause for the inadequate thread engagement for URENCO cylinder 21150115 is unknown since AREVA NP did not install the valve.

(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 of cylinder 21150115 were 2,231 kg of 4.22% enriched UF₆.

(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. At no time was there an indication of leakage of UF₆ during transport or during processing. AREVA NP is not aware of any reports of cylinder valve leakage due to thread engagement issues during transit for any foreign or domestic user of the UX-30 overpack. Even though the valve thread engagement in cylinder 21150115 was outside the required seven to twelve thread range, the valve installation performed its intended safety function and there were no safety consequences.

(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;

- AREVA NP installed a new valve in cylinder 21150115 on March 20, 2012.
- URENCO has been informed of the incident.

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

Since April 2011, AREVA NP is aware of numerous instances where NRC licensees have identified 30B cylinders that had inadequate valve thread engagements. This is the only instance where AREVA NP has discovered a cylinder on site with an inadequate thread engagement. On February 29, 2012, AREVA NP filed a 10 CFR 71.95 report (REL:12:014) concerning inadequate thread engagement in AREVA-owned cylinder EX775.

(6) The name and telephone number of the person with 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.