

January 29, 2008
REL:08:007



U. S. Nuclear Regulatory Commission
Mr. Merritt N. Baker, Project Manager
Mail Stop T8 F42
Fuel Manufacturing Licensing Branch
Division of Fuel Cycle Safety and Safeguards
Rockville, MD 20852

Dear Mr. Baker:

Subject: HF Exposure at Cylinder Wash Reanalysis; License No. SNM-1227; Docket No. 70-1257

As required by regulation, AREVA NP Richland submitted an ISA Summary to the NRC on October 18, 2004. Although the performance requirements of 10CFR70.61 were met, the NRC's chemical safety reviewers expressed concern over the use of two administrative items relied on for safety (IROFS) to protect against a potential exposure to hydrogen fluoride (HF) during uranium hexafluoride (UF6) cylinder washing operations. To resolve this concern, AREVA agreed to further decrease the risk of HF exposure by reducing the reliance upon administrative IROFS for accident scenarios 065-41 and 065-42.

The attachment to this letter provides a summary of the changes being made to fulfill this commitment. These changes are not listed in the 2007 update of the AREVA ISA Summary because, although the cylinder wash operation was shut down in 2007 for modifications, the changes are not expected to be completed until mid February 2008.

AREVA would like to reiterate that the original IROFS associated with the cylinder wash process met the acceptance criteria as defined by 10CFR70.61 and that the redesign of IROFS to further decrease risk of HF exposure is indicative of AREVA's commitment to employee safety.

If you have any questions regarding this issue, please feel free to call CD Manning of my staff. He can be reached via telephone at 509-375-8237.

Very truly yours,

A handwritten signature in black ink, appearing to read 'R. E. Link', followed by a large, stylized flourish or initial.

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

AREVA NP INC.

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Attachment

Note: Changes from the Year 2006 ISA Summary are highlighted in yellow.

065-41 Accident Sequence Description:

A UF6 cylinder containing > 35 kg UF6 is misidentified in the DCF as a normal-heel cylinder and sent from the DCF to the UF6 storage pad for weighing. At the UF6 scale the net weight is incorrectly recorded in the "Manufacturing Data Base" as an acceptable heel. The cylinder is subsequently transported to the cylinder wash facility, where it is washed with ≤ 5 gal water, causing high temperature and pressure in the cylinder with potential catastrophic release of HF and/or UF6 to the room and personnel exposure.

Notes:

1) Items that could potentially fail under the high pressure developed include the water supply tank, the connecting hoses and fittings, and possibly the UF6 cylinder itself. 2) Gas release through the PRV on the washing tool is directed away from the operator and would be rated consequence category "B". (See Accident Sequence 065-50.) Catastrophic release, such as from a cylinder breach, would rate consequence category "D" because the operator could be endangered by a single intake of breath. 3) The hoist at the Cylinder Wash Facility dock cannot lift a "full" cylinder (one that weighs > 4,000 lb). Plant history indicates that < 10 cylinders per year are available anywhere on site that have a gross weight < 4,000 lb and that also contain > 120 kg UF6. 4) Calculated cylinder failure pressure is approximately 2,000 psia at 367°F. For this accident sequence, a conservative failure pressure has been assumed at 400 psig, the cylinder recertification test pressure. With the full normal initial charge of wash water inserted, a cylinder would have to contain > 120 kg UF6 to generate an internal pressure of 200 psig. 5) The water reservoir is also rated at > > 400 psig. Failure of other components in the wash system would lead to no more than a "B" consequence. 6) The "Manufacturing Data Base" will flag entry of a tare weight < 595 kg for further inspection and verification.

Further Notes: 1) The SOP requires that each high-heel UF6 cylinder removed from the DCF be identified with a corresponding information tag (Defense 822). 2) Each UF6 cylinder to be stored at the heel cylinder area is weighed at the UF6 scale house and the net weight entered into the "Manufacturing Data Base" (Defense 823).

Uncredited defense: Manual keyboard entry of the cylinder number at the Cylinder Wash Facility must match the barcode entry to open the fill/drain valve XCV-24510.

Initiating Event: A UF6 cylinder containing > 35 kg UF6 is misidentified in the DCF as a heel cylinder and sent from the DCF to the UF6 storage pad for weighing and storage. Freq Index: -1

Consequence 2: Potential personnel exposure to UF6 and/or HF vapor.

Notes: None

Severity Category: D Uncontrolled and Unmitigated Risk: I CEI: -7

Defense 1 IROFS #: 819 Description: PFOD Index: -3 Mass control: An interlock prevents, except in the case of approval and interlock override by the Product Center Manager (or delegate), the addition of water to any cylinder in the Cylinder Wash Facility that contains > 9 kg UF6. This interlock is based on information stored in the "Manufacturing Data Base" and read at the Cylinder Wash Facility from the cylinder barcode.

Defense 2 IROFS #: 821 Description: PFOD Index: -3 Mass control: An interlock is based on the cylinder gross weight read by a scale at the Cylinder Wash Facility dock. This interlock prevents, except in the case of approval and interlock override by the Product Center Manager (or delegate), addition of water to any cylinder in the Cylinder Wash Facility that contains > 90 kg UF6.

065-42 Accident Sequence Description:

A UF6 cylinder containing > 35 kg UF6 is incorrectly picked up (from any cylinder storage area) and transported to the cylinder wash facility, where it is washed with ≤ 5 gal water, causing high temperature and pressure in the cylinder with potential catastrophic release of HF and/or UF6 to the room and personnel exposure.

Notes:

1) Items that could potentially fail under the high pressure developed include the water supply tank, the connecting hoses and fittings, and possibly the UF6 cylinder itself. 2) Gas release through the PRV on the washing tool is directed away from the operator and would be rated consequence category "B". (See Accident Sequence 065-50.) Catastrophic release, such as from a cylinder breach, would rate consequence category "D" because the operator could be endangered by a single intake of breath. 3) The hoist at the Cylinder Wash Facility dock cannot lift a "full" cylinder (one that weighs > 4,000 lb). Plant history indicates that < 10 cylinders per year are available anywhere on site that have a gross weight < 4,000 lb and that also contain > 120 kg UF6. 4) Calculated cylinder failure pressure is approximately 2,000 psia at 367°F. For this accident sequence, a conservative failure pressure has been assumed at 400 psig, the cylinder recertification test pressure. With the full normal initial charge of wash water inserted, a cylinder would have to contain > 120 kg UF6 to generate an internal pressure of 200 psig. 5) The water reservoir is also rated at > 400 psig. Failure of other components in the wash system would lead to no more than a "B" consequence. 6) The "Manufacturing Data Base" will flag entry of a tare weight < 595 kg for further inspection and verification. 7) Uncredited defense: Manual keyboard entry of the cylinder number at the Cylinder Wash Facility must match the barcode entry to open the fill/drain valve XCV-24510.

Initiating Event: A UF6 cylinder containing > 35 kg UF6 is inadvertently transported from any cylinder storage area to the cylinder wash facility. **Freq Index:** -1

Consequence 2: Potential personnel exposure to UF6 and/or HF vapor.

Notes:

None

Severity Category: D **Uncontrolled and Unmitigated Risk:** I **CEI:** -7

Defense	IROFS #:	Description:	PFOD Index: -3
1	819	Mass control: An interlock prevents, except in the case of approval and interlock override by the Product Center Manager (or delegate), the addition of water to any cylinder in the Cylinder Wash Facility that contains > 9 kg UF6. This interlock is based on information stored in the "Manufacturing Data Base" and read at the Cylinder Wash Facility from the cylinder barcode.	

Defense	IROFS #:	Description:	PFOD Index: -3
2	821	Mass control: An interlock is based on the cylinder gross weight read by a scale at the Cylinder Wash Facility dock. This interlock prevents, except in the case of approval and interlock override by the Product Center Manager (or delegate), addition of water to any cylinder in the Cylinder Wash Facility that contains > 90 kg UF6.	