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

Portsmouth Gaseous Diffusion Plant (PORTS)
Docket No. 70-7002, Certificate No. GDP-2
10 CFR 71.95 – Type B(U)F Transportation Package Report (USA/9196/B(U)F-96)

Pursuant to 10 CFR 71.95(a)(3), United States Enrichment Corporation (USEC) hereby submits this report for shipment of a Model UX-30 overpack where a condition of the Certificate of Compliance was not met.

ABSTRACT

On March 25, 2010 the Portsmouth Gaseous Diffusion Plant (PORTS) shipped a 30B UF_6 cylinder in a UX-30 overpack to the Paducah Gaseous Diffusion Plant (PGDP). Upon receipt inspection it was noted that the cylinder nameplate did not have the required "U" code stamp. Condition 6 of the Certificate of Compliance for transportation package USA/9196/B(U)F-96 states the following:

> *The ANSI standard 30B, 30-inch diameter UF_6 cylinder, must be fabricated, inspected, tested and maintained in accordance with a) American National Standard N14.1-2001 or an earlier version of ANSI N14.1 in effect at the time of fabrication or b) American National Standard N14.1-2001 or an earlier version of ANSI N14.1 in effect at the time of fabrication and ISO 7195:1993(F). Cylinders must be fabricated in accordance with Section VIII, Division 1, of the ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code and be ASME Code stamped.*

The shipped UF_6 cylinder was manufactured by DePlaatijzerindustrie B. V. of Apeldoorn, Holland in accordance with the Dutch Boiler Code "Stoomwezen" for Urenco in 1981. The cylinder was received at the PORTS plant site from the Federal Republic of Germany in 1988. The cylinder has since been inspected, tested, and maintained so as to comply with the intent of ANSI N14.1.

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It has been determined that Condition 6 requirements while having been identified as being required, were not properly flowed into the PORTS site procedure(s) utilized in the shipment of 30B cylinders. Prior to any future shipment of 30B cylinders these site procedure(s) will have been revised to preclude any recurrence.

NARRATIVE

On March 25, 2010 the Portsmouth Gaseous Diffusion Plant (PORTS) shipped three 30B UF_6 cylinders in UX-30 overpacks to the Paducah Gaseous Diffusion Plant (PGDP). Upon receipt inspection it was noted that one of the cylinder nameplates did not have the required "U" code stamp, which provided the initial condition indicating non-compliance with Condition 6 of the Certificate of Compliance for the UX-30 transportation package USA/9196/B(U)F-96.

The shipped UF_6 cylinder, Serial No. 28576-12 was manufactured by DePlaatijzerindustrie B.V. of Apeldoorn, Holland in accordance with the Dutch Boiler Code "Stoomwezen" for Urenco in 1981. The cylinder had been re-hydro tested in 1985. The cylinder was received at the PORTS plant site from the Federal Republic of Germany in 1988 for processing. Concerns over the contained UF_6 material specifications prevented the cylinder from being processed at that time. The cylinder has remained in storage at the PORTS site until 2005 at which time it was sampled and placed back into storage. Enrichment operations at PORTS were shutdown by USEC in 2001. Customer order shipments continued to be processed at the PORTS site until 2005 at which time the bulk of USEC cylinder shipments were transferred to PGDP. As the PORTS site is preparing for Decontamination and Decommissioning it was necessary to transfer some of USEC's UF_6 material to PGDP for processing. It was determined that based on the previous sample data, the cylinder could be processed and as such was ultimately shipped to PGDP.

Since the non-compliance was discovered, several contacts have been made by USEC to the cylinder manufacturer and cylinder owner in an attempt to obtain copies of the original fabrication documents. To date USEC has not received any information that it had not already acquired from its own records and the cylinder nameplate other than DIN materials were used in the fabrication of the cylinder.

The cylinder nameplate data is provided with some items being converted ( ) so a direct comparison with the current ANSI N14.1 design requirements can be made.

Manuf.	DE Plaatijzerindustrie B.V.
Stoomwezen Register No.	572268
MFR Serial No,	28576-12
Urenco No.	C210
Design Temp	-40+125C (-40+257F)
Design Press	-1+13.8 BARGA (200 psig)
Post Weld Heat Treated	NUG
Model Type	30B
Tare Wt.	652.8 KG

Date of Last Pressure Test	8-81 9-85
Year Built	1981
Radiographed	100%
Hydr. Test	27.6 BARGA (400 psig)
Water Capacity	761 LTR (26.9 Ft^3)
Max. Net Wt. UF6	2277KG (5020 lbs.)

The investigation into this occurrence revealed that Condition 6 specified in the UX-30 Certificate of Compliance had not been adequately flowed into the implementing site procedure(s). As a result, when the cylinder and associated overpack were being inspected for transport there was no procedural guidance to look for the ASME code stamp. PORTS site procedure(s) as applicable will be revised to address Condition 6 prior to any future 30B cylinder shipments.

SAFETY SIGNIFICANCE

While in PORTS' possession the cylinder was inspected, tested, and maintained so as to comply with the intent of ANSI N14.1 and used within its original design limitations as stated on the nameplate. The cylinder was built in accordance with a European recognized pressure vessel code according to cylinder design parameters that met or exceeded the ANSI N14.1 standards and the cylinder passed two hydrostatic tests. The cylinder was 100% radiographed following fabrication which exceeded the extent of inspection required by ANSI N14.1 of one spot radiograph. The cylinder was inspected prior to shipment in accordance with ANSI N14.1, Appendix F to determine if there was any damage that could have affected the integrity of the cylinder. In addition, with a reduced net shipping weight of 4,813 lbs cylinder ullage at 250 °F calculates to be 12% compared to the minimum requirement of 5%. This provided some additional safety margin in the event the cylinder would have been in a fire scenario. The overall conclusion is that the cylinder in question was in good condition, its quality was assured and it was sufficiently robust to have performed comparably with an ASME coded and ANSI N14.1 compliant cylinder.

Any questions in regards to this report should be directed to Doug Fogel, Regulatory Affairs Manager at (740) 897-4561.

Sincerely,

Mark Keef
General Manager
Portsmouth Gaseous Diffusion Plant

cc: D. Hartland, Sr. Fuel Facility Inspector, NRC Region II
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