



June 05, 2009  
AET 09-0049

ATTN: Document Control Desk  
Mr. Michael F. Weber  
Director, Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**American Centrifuge Plant  
Docket Number 70-7004; License Number SNM-2011  
Submittal of USEC Inc.'s Revision to the American Centrifuge Plant License Amendment for  
Feed and Withdrawal System Design Changes Supplemental Information (TAC L32476)**

Dear Mr. Weber:

As a follow up to USEC Inc.'s letter AET 09-0036 (Reference 1), USEC Inc. hereby submits supplemental information for the revisions to the non-proprietary proposed changes to the License Application and the Environmental Report associated with the License Amendment Request Revision 1 for the American Centrifuge Plant Feed and Withdrawal System Design Changes submitted on May 18, 2009. Please exchange, add, or remove as necessary, the supplemental information contained in Enclosures 1 and 2 of this letter.

If you have any questions regarding this matter, please contact me at (301) 564-3470 or Terry Sensue at (740) 897-2412.

Sincerely,

Peter J. Miner  
Director, Regulatory and Quality Assurance

cc: J. Downs, NRC HQ  
J. Henson, NRC Region II (w/o enclosure)  
O. Siurano, HRC HQ  
B. Smith, NRC HQ

Enclosures: As Stated

References:

1. USEC letter AET 09-0036 from P.J. Miner (USEC) to M.F. Weber (NRC) regarding Submittal of USEC Inc.'s Revision to the American Centrifuge Plant License Amendment Request for Feed and Withdrawal System Design Changes (TAC L32476), dated May 18, 2009

USEC Inc.  
6903 Rockledge Drive, Bethesda, MD 20817-1818  
Telephone 301-564-3200 Fax 301-564-3201 <http://www.usec.com>

nmssol

**Enclosure 1 of AET 09-0049**

**Supplemental Information for the Revision to Proposed Changes to the License Application  
and the Environmental Report for the American Centrifuge Plant  
(Redline/Strikeout)**

construction and operation activities. At the south end of the corridor is a smaller structure/service area, known as the service module unloading area.

### 1.1.3.7 Cylinder Storage Yards (X-745G-2, ~~X-7746E, X-7746N~~X-745H, X-7746S, and X-7746W, ~~and X-7756S~~)

The uranium enrichment process relies on the use of cylinders to allow movement and storage of UF<sub>6</sub> material outside of the process. This method of material handling requires storage areas for cylinders. The ACP cylinder yards provide this storage for natural feed uranium, depleted (tails) uranium, and enriched (product) uranium awaiting shipment. UF<sub>6</sub> cylinders may be stored in any storage yard regardless of use, although cylinders of a certain type may be routinely stored in a particular yard. Figure 1.1-2 (located in Appendix B) depicts the ACP layout and depicts the location of the various cylinder yards.

There are ~~four~~~~six~~~~seven~~ cylinder storage yards that support the ACP. ~~Two~~~~Four~~ of the yards are located adjacent to the X-3346 building (~~X-7746N, X-7746S, X-7746E, and X-7746W~~ yards), ~~one is adjacent to the X-3356 building (X-7756S yard) in the southwest quadrant of the DOE reservation,~~ and the other two yards are located just north of the reservation Perimeter Road to the north of the GDP X-344 UF<sub>6</sub> Sampling Facility (X-745G-2 and X-745H yards). The ~~X-7746N, X-7746S, X-7746E, X-7746W, X-7756S, and X-745G-2~~ Cylinder Storage Yards provide approximately ~~136,000 ft<sup>2</sup>, 47,000~~~~33,000 ft<sup>2</sup>, 75,000 ft<sup>2</sup>, 132,000 ft<sup>2</sup>, 14,000 ft<sup>2</sup>, and 135,000 ft<sup>2</sup>~~, respectively. The nearest reservation boundary is to the west approximately 1,982 ft from the X-7746N, S, E, and W Cylinder Storage Yards, ~~3,010 ft from the X-7756S Cylinder Storage Yard,~~ and 2,827 ft from the X-745G-2 Cylinder Storage Yard.

~~The X-745G-2 yard is the storage yard typically used for tails cylinders. The X-745H yard has been established for future use. The X-7746N yard is used for the storage of various types of approved UF<sub>6</sub> cylinders. The X-7746S yard typically provides storage for full and empty feed cylinders. The X-7746E yard is typically used for storage of product source cylinders, full and empty customer cylinders, and cylinder protective shipping packages. The X-7746W yard typically provides storage for feed and customer cylinders. The X-7756S yard is typically the staging area for product source cylinders filled in the X-3356 building. The Cylinder Storage Yards are designed primarily for storage of 2.5-ton, 10-ton, and 14-ton UF<sub>6</sub> cylinders.~~

### 1.1.3.8 X-2232C Interconnecting Process Piping

The X-2232C piping is any process piping that is external to the primary facilities. The X-2232C piping is the piping that connects the X-3346 building to the X-3001 building and the X-3002 buildings ~~to the X-3001 building to provide feed to the X-3001 and X-3002 buildings and return product and tails to the X-3346 building,~~ and the piping that connects the X-3001 and X-3002 buildings to the X-3356 building in the southwest quadrant of the DOE reservation. The nearest reservation boundary is 2,225 ft to the west of the X-2232C piping. Figure 1.1-10 (located in Appendix B) depicts the typical equipment and process flow for the X-2232C piping.

The X-2232C piping is typically located in a series of elevated enclosures or modules that run from the X-3346 building **Feed Area** to the X-3001 building valve house (approximately

Production of higher assay product at the same tails assay results in lower rates of tails generation. If the plant were to produce product at a maximum licensed assay of 10 weight percent  $^{235}\text{U}$ , the tails generation rate would be about 87.4 percent of the rate stated above (8,3217,342 MT of tails per year for 3.8 million SWU per year of plant capacity).

**Enclosure 2 of AET 09-0049**

**Supplemental Information for the Revision to Proposed Changes to the License Application  
and the Environmental Report for the American Centrifuge Plant  
(Revision Bars)**

the final assembly is evacuated and leak checked; and repairs are performed to the machine or subassemblies until the X-7725 facility is available for use. Then these functions will be performed in the X-7725 facility. The X-7726 facility will then be used as a backup manufacturing/assembly area and may also be used for select repair of failed centrifuge machines or for disassembly of failed machines for failure analysis. The X-7726 facility will continue to be used as a training area for centrifuge subassembly preparation, column assembly, and machine assembly.

An overhead crane system traverses the length of the X-7726 facility for movement of centrifuge machines or other large components.

There are various support areas throughout the building to provide the necessary ancillary support for the centrifuge assembly operations and personnel. These areas include mechanical equipment rooms; electrical equipment rooms; freight and personnel elevators; HVAC equipment rooms; maintenance areas; offices; restrooms; and shower/locker rooms.

#### 1.1.3.6 X-7727H Interplant Transfer Corridor

The X-7727H corridor is located in the southwest quadrant of the DOE reservation. The nearest reservation boundary is 2,480 ft to the west of X-7727H corridor. The X-7727H corridor measures approximately 30 ft in width, 59 ft in height, and 750 ft in length. There are 55 ft by 25 ft doors located where the corridor meets the X-7725 facility and X-3001 building. Figure 1.1-9 (located in Appendix B) depicts the typical equipment and process flow for the X-7727H building.

The X-7727H corridor is an elongated structure that connects the X-7725 facility with the X-3001 building. It provides a protected pathway to transport centrifuge machines from the X-7725 facility or X-7726 facility to the process buildings or back as necessary. The X-7727H corridor also serves as a shipping and receiving area for equipment and components during construction and operation activities. At the south end of the corridor is a smaller structure/service area, known as the service module unloading area.

#### 1.1.3.7 Cylinder Storage Yards (X-745G-2, X-745H, X-7746S, and X-7746W)

The uranium enrichment process relies on the use of cylinders to allow movement and storage of UF<sub>6</sub> material outside of the process. This method of material handling requires storage areas for cylinders. The ACP cylinder yards provide this storage for natural feed uranium, depleted (tails) uranium, and enriched (product) uranium awaiting shipment. UF<sub>6</sub> cylinders may be stored in any storage yard regardless of use, although cylinders of a certain type may be routinely stored in a particular yard. Figure 1.1-2 (located in Appendix B) depicts the ACP layout and depicts the location of the various cylinder yards.

There are **four** cylinder storage yards that support the ACP. **Two** of the yards are located adjacent to the X-3346 building (X-7746S, and X-7746W yards), and the other two yards are located just north of the reservation Perimeter Road to the north of the GDP X-344 UF<sub>6</sub> Sampling Facility (X-745G-2 and X-745H yards). The X-7746S, X-7746W, and X-745G-2 Cylinder Storage Yards provide approximately **47,000** ft<sup>2</sup>, 132,000 ft<sup>2</sup>, and 135,000 ft<sup>2</sup>,

Production of higher assay product at the same tails assay results in lower rates of tails generation. If the plant were to produce product at a maximum licensed assay of 10 weight percent  $^{235}\text{U}$ , the tails generation rate would be about 87.4 percent of the rate stated above (8,321 MT of tails per year for 3.8 million SWU per year of plant capacity).