RAS 13318

NRC STAFF EXHIBIT 8

LA-3605-0001

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USNRC

March 27, 2007 (11:30am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Docket No. 70-7004-ML

# License Application

## for the American Centrifuge Plant
### in Piketon, Ohio


Revision 17

Deleted: 4

Deleted: March

Docket No. 70-7004

August 2006

Information contained within
does not contain
Export Controlled Information

Reviewer: G. Peed
Date: 08/30/06

U.S. NUCLEAR REGULATORY COMMISSION
In the Matter of USEC Inc.
Docket No. 70-7004 ML Official Exhibit No. Staff 8
OFFERED by: Applicant/Licensee Intervenor
NRC Staff Other
IDENTIFIED on 3/15/07 Witness/Panel
Action Taken: ADMITTED REJECTED WITHDRAWN
Reporter/Clerk DW

TEMPLATE = SECY-027

SECY-02

**Table 1.2-1 Possession Limits for NRC Regulated Materials and Substances**

| | Type of Material | Atomic Number | Physical State | Chemical Form | Possession Limit | Description |
|---|---|---|---|---|---|---|
| A. | Source Material [d,f,h] | 92 | Solid, liquid, and gas | $UF_6$, $UF_4$, $UO_2F_2$, oxides, metal and other compounds | 215,000 Metric Tons Uranium (MTU)[a] | Uranium (including normal, depleted, and reprocessed), daughter products, process contaminants, and wastes<br><br>Laboratory chemicals<br>Analysis of samples[e]<br><br>Instrument calibration and check sources |
| B. | Source Material | 90 | Solid and liquid | Soluble and insoluble chemicals, metal | 10 curie (Ci) | Laboratory chemicals, instrument calibration sources, plated metallic sources, instrument check sources<br>Analysis of samples[e] |
| C. | Special Nuclear Material, [b,c,d,f] | 92 | Solid, liquid, and gas | $UF_6$, $UF_4$, $UO_2F_2$, oxides, metal and other compounds | 4,000 MTU | Uranium (including reprocessed) enriched in isotope 235 up to 10 percent by weight, uranium daughter products and process contaminants and wastes, to include: (1) laboratory chemicals, (2) analysis of samples[e], (3) instrument calibration and check sources, or (4) material that may be held up in facilities and equipment from previous operations |
| | | 92 | Solid, liquid, and gas | $UF_6$, $UF_4$, $UO_2F_2$, oxides, metal and other compounds | 10,000 grams (g) $^{235}U$[g] | Uranium enriched to isotope 235 from 10 percent up to 20 percent by weight, to include: (1) material that may be held up in uninstalled equipment and facilities from previous operations and in equipment received from other facilities; (2) laboratory chemicals; (3) analysis of samples[e]; or (4) instrument calibration and check sources. |

**Table 1.2-1 Possession Limits for NRC Regulated Materials and Substances**

| | Type of Material | Atomic Number | Physical State | Chemical Form | Possession Limit | Description |
|---|---|---|---|---|---|---|
| | | 92 | Solid, liquid, and gas | $UF_6$, $UF_4$, $UO_2F_2$, oxides, metal, and other compounds | 1,000 g $^{235}U$[f] | Uranium enriched in isotope 235 to 20 percent and up to 98 percent by weight, to include: (1) material that may be held up in uninstalled equipment and facilities from previous operations and in equipment received from other facilities, (2) laboratory chemicals, (3) analysis of samples[e], or (4) instrument calibration and check sources. |
| | Special Nuclear Material | 94 | Sealed Source | | 5 Ci | Instrument calibration sources, NDA |
| | | | Unsealed source | | 0.5 Ci | Laboratory chemicals<br>Analysis of samples[e] |
| | | 94 | Any | Any | 0.5 Ci | Process contaminants and wastes, material held in cylinders from previous operations or from processing FSU or recycled uranium. |
| D. | By-Product Material | 1-89, 91 | Sealed source | | 1 Ci with no single isotope to exceed 100 millicuries (mCi), except as noted below | Calibration, Instrument internal source<br>Instrument calibration and check sources |
| | | | Unsealed source | | 1 Ci with no single isotope to exceed 100 mCi, except as noted below | Laboratory chemicals<br>Analysis of samples[e] |
| | | 27 Co-57 | Sealed Source | | 1 Ci | Calibration, internal<br>Instrument standard, NDA |

**Table 1.2-1 Possession Limits for NRC Regulated Materials and Substances**

| Type of Material | Atomic Number | Physical State | Chemical Form | Possession Limit | Description |
|---|---|---|---|---|---|
| | 27 Co-60 | Sealed Source | | 10 Ci | Calibration, NDA, Process sources |
| | | Unsealed Source | | 0.5 Ci | Laboratory chemicals<br>Analysis of samples[e] |
| | 28 Ni-63 | Sealed Source | | 10 Ci | Process sources, internal instrument Standards |
| | 38 Sr-90 | Sealed Source | | 0.5 Ci | Calibration |
| | 43 Tc-99 | Sealed Source | | 10 Ci | Calibration |
| | | Unsealed Source | | 5 Ci | Laboratory chemicals,<br>Analysis of samples[e] |
| | | Any | Any | 180 Ci | Process contamination and wastes, material held in cylinders from previous operations or from processing FSU or recycled uranium. |
| | 55 Cs-137 | Sealed Source | | 10 Ci | Calibration, NDA Process sources |
| | | Unsealed Source | | 0.5 Ci | Laboratory chemicals<br>Analysis of samples[e] |
| | 70 Yb-169 | Sealed Source | | 5.0 Ci | Calibration, NDA |
| | 81 Tl-207 | Sealed Source | | 1.0 Ci | Calibration |
| | 88 Ra-226 | Sealed Source | | 1 Ci | Calibration |
| | 93, 96, 97, 99, 100 | Sealed source | | 0.5 Ci | Calibration |
| | | Unsealed source | | 1.0 Ci | Laboratory Chemicals<br>Analysis of samples[d] |

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**Table 1.2-1 Possession Limits for NRC Regulated Materials and Substances**

| Type of Material | Atomic Number | Physical State | Chemical Form | Possession Limit | Description |
|---|---|---|---|---|---|
| | 93, 95-100 | Any | Any | 0.5 Ci | Process contaminants and wastes, material held in cylinders from previous operations or from processing FSU or recycled uranium. |
| | 95 | Sealed source<br>Unsealed source | Oxides, metals<br>Oxides, metals, Solutions | 15 Ci<br>0.5 Ci | Calibration, process source<br>Analysis of samples[e]<br>Laboratory chemicals |
| | 98 | Sealed source<br>Unsealed source | Oxides, metals<br>Oxides, metals, Solutions | 10 Ci<br>0.5 Ci | Calibration, NDA<br>Analysis of samples[e]<br>Laboratory chemicals |

a. MTU – Metric Tons Uranium

b. See 10 CFR Part 70 definitions: Special nuclear material means: (1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of Section 51 of the act, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched in any of the foregoing, but does not include source material.

c. FSU material meets the ASTM Standard C996, Standard Specification for Uranium Hexafluoride Enriched to Less Than 5 percent $^{235}U$: $UF_6$ for enrichment meets the ASTM Standard C787, Standard Specification for Uranium Hexafluoride for Enrichment.

d. Reprocessed uranium includes the feed and processing of Paducah Product and any uranium stockpile $UF_6$ transferred from DOE to USEC for enrichment.

e. "Analysis of samples" includes the activities required to obtain samples for analysis whether on-site or off-site, and the potential subsequent return of this material for disposition (waste, utilization).

f. Uranium to be fed to the enrichment plant will meet the requirements of ASTM Standard C996, "Standard Specification for Uranium Hexafluoride Enriched to Less Than 5% $^{235}U$" or ASTM Standard C787, "Standard Specification for Uranium Hexafluoride for Enrichment" for reprocessed $UF_6$. All other uranium that does not meet the requirements of ASTM C996 or C787 for reprocessed $UF_6$ may be accepted for storage and subsequent dispositioning but will not be introduced to the enrichment process, with the exception of small amounts (e.g., 50 pounds $UF_6$) associated with sampling, sub-sampling, and analyses required to establish receiver's values.

g. These possession limits do not include DOE material held up in installed equipment not leased.

FSU – Former Soviet Union