(22)

## ROUTING AND TRANSMITTAL SLIP

Date 3/25/82

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REMARKS

Attached are pp. 5.7-20 and -21 of draft 3/19/82 Amendment XIII to the ER. These include the Pu & U isotopic compositions. As you can see the Pu is like FFTF and the U is natural. I believe these were selected as basis for ER to maximize fuel cycle environmental effects.

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| Homer Lowenberg | 380 Willste |
| | Phone No. 7-4142 |

5041-102

U.S. GPO: 1980-341-529/20

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Draft Amendment XIII
3/19/82

## 5.7.1.4 DOSES FROM CRBRP FUEL CYCLE

Doses from Facility Operations CRBRP fuel fabrication (core fuel) requires about 65% of the SAF line operational schedule (15 of every 24 months). Thus, the environmental impact of CRBRP fuel fabrication is a portion of the SAF line impact, which is a portion of the FMEF impact. The FMEF annual 50-year dose commitments to maximum individuals and the general population within 50 miles of the FMEF are as follows:

Total FMEF not just SAF

| Organ | Maximum Individual Dose (millirem) | Population Dose (Man-rem) |
|---|---|---|
| Whole Body | $1.5 \times 10^{-3}$ | $4.6 \times 10^{-3}$ |
| Thyroid | $2.2 \times 10^{-4}$ | $9.0 \times 10^{-4}$ |
| Lung | $2.9 \times 10^{-3}$ | $1.1 \times 10^{-2}$ |
| Bone | $9.5 \times 10^{-3}$ | $4.0 \times 10^{-2}$ |
| Liver | $5.3 \times 10^{-3}$ | $2.1 \times 10^{-2}$ |

Natural background and medical exposures would give an annual average exposure to individuals of about 150 millirem. The annual whole body population doses due to natural radioactivity would be about 25,000 man-rem for the year 2000 population within 50 miles of the FMEF.

Accidental release of radioactivity and resulting consequences are given in Reference 7. Routine atmospheric releases of plutonium from the SAF line are given in the following table.

* MT/yr Pu

| Isotope | Annual Release (Ci/yr) | Isotopic Composition (%) |
|---|---|---|
| Pu-236 | $2.0 \times 10^{-9}$ | $8 \times 10^{-6}$ |
| Pu-238 | $3.4 \times 10^{-6}$ | 0.5 |
| Pu-239 | $2.2 \times 10^{-6}$ | 72. |
| Pu-240 | $2.2 \times 10^{-6}$ | 20. |
| Pu-241 | $3.0 \times 10^{-4}$ | 6. |
| Pu-242 | $3.0 \times 10^{-9}$ | 1.5 |

These releases are based on the above isotopic composition, a throughput of 4.0 MT/yr of plutonium, release factors (from the SAF line) of $10^{-3}$, and cleanup factors of $1.25 \times 10^{-8}$* (for 3 HEPA filters in series, where each HEPA filter would have a separate tested efficiency of 99.95%). There are no liquid radioactivity releases associated with SAF line operation.

Routine atmospheric releases of uranium (throughput of 6.0 MT/yr of uranium) and other radionuclides from the SAF line were calculated on essentially the same basis and are given below.

6 MT/yr thruput

| Isotope | Annual Release (Ci/yr) | Isotopic Composition (%) |
|---|---|---|
| U-232 | - | - |
| U-234 | $5.8 \times 10^{-11}$ | $5 \times 10^{-3}$ |
| U-235 | $2.5 \times 10^{-12}$ | 0.72 |
| U-236 | - | - |
| U-238 | $5.4 \times 10^{-11}$ | 99.27 |
| Th-231 | $<2.5 \times 10^{-12}$ | - |
| Th-234 | $<5.4 \times 10^{-11}$ | - |
| Pa-234 | $<5.4 \times 10^{-11}$ | - |

Blanket fuel fabrication for the CRBRP will be carried out at a yet-to-be selected commercial facility. For purposes of this assessment, it is assumed that the commercial facility selected will have three stages of HEPA filters (with an efficiency of 99.9% per stage), yielding an overall confinement factor of $10^9$. Atmospheric releases for blanket fuel fabrication calculated on this basis are given in the following table.

*This is a conservative assumption. Actual cleanup factors would range from $10^{-9}$ to $1.25 \times 10^{-10}$.

## ROUTING AND TRANSMITTAL SLIP

Date Wed. March 24, 1982

| TO: (Name, office symbol, room number, building, Agency/Post) | Initials | Date |
|---|---|---|
| 1. Homer Lowenberg | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

| | | | | | |
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REMARKS

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| Jerry J. Swift | AR 5011 |
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5041-102

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included to account for potential systematic uncertainties in the extrapolation of the heterogeneous plate-geometry ZPPR-7 $K_{eff}$ bias to the nearly homogeneous pin-geometry of the CRBRP.

CRBRP criticality calculations are performed in hot-full-power geometry with cross-sections corrected for nominal Doppler reactivity feedback. The nominal hot-full-power temperature defect of about 1.7% $\Delta k$ from Doppler and core expansion effects is therefore implicitly included in the criticality calculations. The $1\sigma$ uncertainty in the Doppler and expansion feedback reactivity between room temperature and hot-full-power conditions results in a $\pm$ 0.19% $\Delta k$ uncertainty in the hot critical state of the reactor.

The tolerance on batch fissile content, arising from variations in plutonium isotopic composition, fuel enrichment, and pellet dimensional and density tolerances, results in an uncertainty in the reactor critical state of $\pm$0.15% $\Delta k$ ($1\sigma$ equivalent). The manufacturing tolerance on the core pellet stack height and the relative position of each fuel rod with respect to the average core height results in a $\pm$0.1% k uncertainty in core reactivity. Additionally, the worst combination of pellet and steel impurities results in a potential reactivity deficit of less than 0.1% $\Delta k$.

The total excess reactivity requirement of 1.76% $\Delta k$ at the beginning of cycle one in Table 4.3-3 is obtained from the difference between the two-cycle burnup reactivity swing and the mid-term refueling worth, plus the root-mean-square sum of the uncertainties. The fuel loading requirements for the first core in CRBRP are determined by searching the plutonium enrichment to an
54 eigenvalue ($k_{eff}$) equal to 1.0 plus $k_{excess}$ less the ZPPR criticality bias. The resulting plutonium enrichment is 32.8 w/o $\frac{Pu}{Pu+U}$ which corresponds to a fissile plutonium ($Pu^{239+241}$) loading of 1498 kg. Due to the characteristics of the batch core refueling scheme, the equilibrium enrichments of 33 w/o $\frac{Pu}{Pu+U}$ are only slightly higher than the first core values because of the longer burnup interval. The heavy metal mass inventories at the beginning and end of the first five cycles are summarized in Table 4.3-4.

#### 4.3.2.1.2 Fuel and Blanket Management

Annual refueling is planned for all operating cycles. The first cycle is based on operation at 975 MWt for one calendar year (365 days) at 35% capacity (128 equivalent full power days). The capacity factor is increased to 55% (200 equivalent full power days) during the second cycle and further to 75% (275 equivalent full power days) during the third and subsequent cycles.

The CRBRP fuel management is a batch refueling scheme with a 2-year lifetime for fuel and inner blanket assemblies. Under equilibrium conditions, the fresh fuel batch is burned for one cycle (275 fpd), at which time six inner blanket assemblies are replaced by six fresh fuel assemblies in order to add sufficient additional excess reactivity for the next 275 fpd burnup cycle. The six refueled assemblies are of the same enrichment as the preceeding feed batch. The entire fuel and inner blanket batch is replaced at the end of the second cycle and the scheme is repeated in two-year intervals. The radial blanket assemblies reside in-place (that is, no shuffling or rotation) for four and five cycles, respectively, in the first and second "rows".

Table 4.3-5 summarizes the essential features of the CRBRP batch fuel management scheme throughout the first five cycles of operation. The initial core load (see Figure 4.3-1) contains 156 fuel assemblies, 82 inner blanket assemblies, and 126 radial blanket assemblies. At the end of the first cycle (128 fpd), three inner blanket assemblies in alternating row 6 corner positions (60° removed from the row 4 control channels in Figure 4.3-1) are replaced with fresh fuel assemblies for the second burnup cycle (200 fpd). At the end of the second cycle, all the fuel and inner blanket assemblies are discharged and replaced with 156 fresh fuel assemblies and 82 fresh inner blanket assemblies. At the end of the third burnup cycle (275 fpd), six inner blanket assemblies in row 6 corner are replaced by six fresh fuel assemblies, and a fourth burnup cycle of 275 fpd follows. At the end of the fourth cycle, all the fuel and inner blanket assemblies are again discharged and replaced with a fresh load. The fuel and inner blanket management scheme for cycles 5-6, 7-8, and subsequent repeats that for cycles 3-4. The first row of radial blanket assemblies are discharged and replaced with fresh assemblies at the end of cycle four and every fourth cycle thereafter. The outer row of radial blanket assemblies are replaced at the end of cycle five and every fifth cycle thereafter.

#### 4.3.2.1.3 Delayed Neutron Fraction and Neutron Lifetime

Delayed neutron data are required for the evaluation of the reactor core transient (Chapter 15) and stability (Section 4.3.2.8) characteristics. The six delayed-neutron group parameters are calculated by weighting the isotope-dependent delayed neutron yields by the relative fission rates in CRBRP. Table 4.3-6 shows the resulting effective delayed neutron fraction and decay constants by precursor group. $\beta_{eff}$ varies less than 1% over the first four cycles.

The prompt neutron lifetime, $\ell^*$, is the mean time from the birth of a neutron until it is absorbed or leaked out of the system. $\ell^*$ ranges from $0.34 \times 10^{-6}$ to $0.41 \times 10^{-6}$ seconds for beginning-of-life and end-of-life conditions, respectively. The increase in $\ell^*$ is due to a softening of the average core spectrum with burnup.

TABLE 4.3-5

CRBRP FUEL MANAGEMENT SCHEME

| | |
|---|---|
| SØC1: | Charge 156 fresh fuel assemblies, 82 fresh inner blanket assemblies and 126 fresh radial blanket assemblies. |
| EØC1 (128 fpd) | Discharge 3-Row Six Corner (3-R6C) inner blankets. |
| | Charge 3 fresh fuel assemblies in R6C. |
| EØC2 (200 fpd) | Discharge entire core (159 fuel assemblies) and inner blanket (79 blanket assemblies). |
| | Charge 156 fresh fuel assemblies and 82 fresh inner blanket assemblies. |
| EØC3 (275 fpd) | Discharge 6-R6C inner blankets. |
| | Charge 6 fresh fuel assemblies in R6C. |
| EØC4 (275 fpd) | Discharge entire core (162 fuel assemblies), inner blanket (76 blanket assemblies) and first row radial blanket (60 blanket assemblies). |
| | Charge 156 fresh fuel assemblies, 82 fresh inner blanket assemblies and 60 fresh row 1 radial blanket assemblies. |
| EØC5 (275 fpd) | Discharge 6-R6C inner blankets and outer row radial blanket (66 radial blanket assemblies). |
| | Charge 6 fresh fuel assemblies in R6C and 66 fresh row 2 radial blanket assemblies. |

## TABLE 4.3-4

## HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket[a] | Radial Blanket[a] | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-First-Cycle | | | | | |
| Pu-239 | 1468. | --- | --- | --- | --- |
| Pu-240 | 199.7 | --- | --- | --- | --- |
| Pu-241 | 34.0 | --- | --- | --- | --- |
| Pu-242 | 3.4 | --- | --- | --- | --- |
| U-235 | 7.6 | 16.7 | 25.7 | 4.3 | 4.3 |
| U-238 | 3476. | 8253. | 12681. | 2108. | 2108. |
| Fission Products | --- | --- | --- | --- | --- |
| Total Heavy Metal | 5188.7 | 8269.7 | 12706.7 | 2112.3 | 2112.3 |
| End-of-First-Cycle | | | | | |
| Pu-239 | 1384. | 60.5 | 48.5 | 8.6 | 5.0 |
| Pu-240 | 217.7 | 0.6 | 0.3 | 0.1 | --- |
| Pu-241 | 32.9 | --- | --- | --- | --- |
| Pu-242 | 3.9 | --- | --- | --- | --- |
| U-235 | 6.9 | 15.6 | 24.8 | 4.1 | 4.2 |
| U-238 | 3432. | 8184. | 12629. | 2099. | 2102. |
| Fission Products | 108.5 | 9.1 | 4.4 | 0.6 | 0.4 |
| Total Heavy Metal | 5185.9 | 8269.8 | 12707.0 | 2112.4 | 2111.6 |

*Heavy metal excludes oxygen.
(a) Including axial extensions.

## TABLE 4.3-4 (Cont.)

## HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket[a] | Radial Blanket[a] | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-Second-Cycle | | | | | |
| Pu-239 | 1412. | 58.2 | 48.5 | 8.6 | 5.0 |
| Pu-240 | 221.5 | 0.5 | 0.3 | 0.1 | --- |
| Pu-241 | 33.6 | --- | --- | --- | --- |
| Pu-242 | 3.9 | --- | --- | --- | --- |
| U-235 | 7.0 | 15.0 | 24.8 | 4.2 | 4.3 |
| U-238 | 3498. | 7885. | 12629. | 2139. | 2143. |
| Fission Products | 108.5 | 8.8 | 4.4 | 0.6 | 0.4 |
| Total Heavy Metal | 5284.5 | 7967.5 | 12707.0 | 2152.5 | 2152.7 |
| End-of-Second-Cycle | | | | | |
| Pu-239 | 1291. | 141.4 | 116.7 | 21.7 | 12.9 |
| Pu-240 | 246.7 | 3.5 | 1.8 | 0.4 | 0.1 |
| Pu-241 | 32.5 | --- | --- | --- | --- |
| Pu-242 | 4.5 | --- | --- | --- | --- |
| U-235 | 6.1 | 13.5 | 23.5 | 3.9 | 4.1 |
| U-238 | 3432. | 7779. | 12551. | 2124. | 2134. |
| Fission Products | 266.2 | 29.7 | 13.8 | 2.2 | 1.2 |
| Total Heavy Metal | 5279.0 | 7967.1 | 12706.8 | 2152.2 | 2152.3 |

*Heavy metal excludes oxygen.

(a) Including axial extensions.

## TABLE 4.3-4 (Cont.)

## HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket[a] | Radial Blanket[a] | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-Third-Cycle | | | | | |
| Pu-239 | 1477. | --- | 116.7 | --- | --- |
| Pu-240 | 200.9 | --- | 1.8 | --- | --- |
| Pu-241 | 34.2 | --- | --- | --- | --- |
| Pu-242 | 3.5 | --- | --- | --- | --- |
| U-235 | 7.5 | 16.7 | 23.5 | 4.3 | 4.3 |
| U-238 | 3465. | 8253. | 12551. | 2108. | 2108. |
| Fission Products | --- | --- | 13.8 | --- | --- |
| Total Heavy Metal | 5188.1 | 8269.7 | 12706.8 | 2112.3 | 2112.3 |
| End-of-Third-Cycle | | | | | |
| Pu-239 | 1308. | 118.1 | 208.5 | 17.6 | 10.6 |
| Pu-240 | 236.1 | 2.2 | 5.9 | 0.2 | 0.1 |
| Pu-241 | 32.2 | --- | --- | --- | --- |
| Pu-242 | 4.3 | --- | --- | --- | --- |
| U-235 | 6.2 | 14.5 | 21.8 | 3.9 | 4.1 |
| U-238 | 3377. | 8113. | 12438. | 2088. | 2096. |
| Fission Products | 218.2 | 22.2 | 33.0 | 1.6 | 1.0 |
| Total Heavy Metal | 5182. | 8270.0 | 12707.2 | 2111.3 | 2111.8 |

*Heavy metal excludes oxygen.
(a) Including axial extensions.

TABLE 4.3-4 (Cont.)

HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket(a) | Radial Blanket(a) | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-Fourth-Cycle | | | | | |
| Pu-239 | 1363. | 109.4 | 208.5 | 17.6 | 10.6 |
| Pu-240 | 243.9 | 2.1 | 5.9 | 0.2 | 0.1 |
| Pu-241 | 33.5 | --- | --- | --- | --- |
| Pu-242 | 4.4 | --- | --- | --- | --- |
| U-235 | 6.5 | 13.4 | 21.8 | 4.1 | 4.2 |
| U-238 | 3509. | 7519. | 12438. | 2169. | 2177. |
| Fission Products | 218.2 | 20.6 | 33.0 | 1.6 | 1.0 |
| Total Heavy Metal | 5380.5 | 7664.5 | 12707.2 | 2192.5 | 2192.9 |
| End-of-Fourth-Cycle | | | | | |
| Pu-239 | 1216. | 206.8 | 285.6 | 34.9 | 21.2 |
| Pu-240 | 273.5 | 8.0 | 11.3 | 0.9 | 0.3 |
| Pu-241 | 32.7 | --- | --- | --- | --- |
| Pu-242 | 5.2 | --- | --- | --- | --- |
| U-235 | 5.4 | 11.6 | 20.3 | 3.8 | 4.0 |
| U-238 | 3421. | 7381. | 12334. | 2149. | 2165. |
| Fission Products | 414.2 | 55.2 | 55.7 | 4.4 | 2.4 |
| Total Heavy Metal | 5368.0 | 7662.6 | 12706.9 | 2193.0 | 2192.9 |

1764.5
279.
32.7
5.2
45.1
27,450
531.9 FP
30,123.4 kg

*Heavy metal excludes oxygen.

(a) Including axial extensions.

TABLE 4.3-4 (Cont.)

HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket[(a)] | Radial Blanket[(a)] | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-Fifth-Cycle | | | | | |
| Pu-239 | 1471. | --- | 130.1 | --- | --- |
| Pu-240 | 200.0 | --- | 4.9 | --- | --- |
| Pu-241 | 34.1 | --- | --- | --- | --- |
| Pu-242 | 3.5 | --- | --- | --- | --- |
| U-235 | 7.6 | 16.7 | 23.1 | 4.3 | 4.3 |
| U-238 | 3474. | 8253. | 12531. | 2108. | 2108. |
| Fission Products | --- | --- | 18.1 | --- | --- |
| Total Heavy Metal | 5190.2 | 8269.7 | 12706.9 | 2112.3 | 2112.3 |
| End-of-Fifth-Cycle | | | | | |
| Pu-239 | 1301. | 119.7 | 224.7 | 17.6 | 10.6 |
| Pu-240 | 235.8 | 2.3 | 8.7 | 0.2 | 0.1 |
| Pu-241 | 32.1 | --- | --- | --- | --- |
| Pu-242 | 4.3 | --- | --- | --- | --- |
| U-235 | 6.2 | 14.5 | 21.4 | 3.9 | 4.1 |
| U-238 | 3382. | 8111. | 12416. | 2088. | 2096. |
| Fission Products | 219. | 22.6 | 36.1 | 1.6 | 1.0 |
| Total Heavy Metal | 5180.4 | 8270.1 | 12706.9 | 2111.3 | 2111.8 |

*Heavy metal excludes oxygen.

(a) Including axial extensions.

TABLE 4.3-4 (Cont.)

HEAVY METAL* MASS (KG) INVENTORY IN THE CRBRP

| | Fuel | Inner Blanket(a) | Radial Blanket(a) | Lower Axial Blanket | Upper Axial Blanket |
|---|---|---|---|---|---|
| Beginning-of-Sixth-Cycle | | | | | |
| Pu-239 | 1358. | 110.7 | 56.8 | 17.5 | 10.6 |
| Pu-240 | 243.5 | 2.1 | 0.7 | 0.2 | 0.1 |
| Pu-241 | 33.4 | --- | --- | --- | --- |
| Pu-242 | 4.4 | --- | --- | --- | --- |
| U-235 | 6.5 | 13.4 | 24.6 | 4.1 | 4.2 |
| U-238 | 3518. | 7518. | 12617. | 2169. | 2177. |
| Fission Products | 219.0 | 20.9 | 8.1 | 1.6 | 1.0 |
| Total Heavy Metal | 5382.8 | 7665.1 | 12707.2 | 2192.5 | 2192.9 |
| End-of-Sixth-Cycle | | | | | |
| Pu-239 | 1205. | 211.5 | 145.4 | 34.9 | 21.2 |
| Pu-240 | 274.4 | 8.5 | 3.0 | 0.9 | 0.3 |
| Pu-241 | 32.7 | --- | --- | --- | --- |
| Pu-242 | 5.2 | --- | --- | --- | --- |
| U-235 | 5.4 | 11.6 | 23.0 | 3.8 | 4.0 |
| U-238 | 3424. | 7374. | 12514. | 2149. | 2165. |
| Fission Products | 421.1 | 57.6 | 21.5 | 4.4 | 2.4 |
| Total Heavy Metal | 5567.8 | ~~8773.2~~ 7663.2 | 12706.9 | 2193.0 | 2192.9 |

*Heavy metal excludes oxygen.

(a) Including axial extensions.

1618
287.1
32.7
5.2
47.9
[illegible]
507
[illegible]

TABLE 4.3-7

FUEL AND INNER BLANKET POWER FRACTION SUMMARY*

| Time-In-Life | Fuel | INNER Blanket (36") |
|---|---|---|
| BOC1 | .8603 | .0720 |
| EØC1 | .8174 | .0989 |
| BOC2 | .8208 | .0967 |
| EØC2 | .7618 | .1330 |
| BOC3 | .8308 | .0683 |
| EØC3 | .7526 | .1190 |
| BOC4 | .7623 | .1129 |
| EØC4 | .6973 | .1536 |
| BOC5 | .8351 | .0690 |
| EØC5 | .7541 | .1214 |
| BOC6 | .7895 | .1195 |
| EØC6 | .7172 | .1639 |

51 * fraction of full operating power in central 36 inch high region.

# TABLE 4.3-9

## RADIAL BLANKET ASSEMBLY POWER* SUMMARY

## (MW)

| Cycle | Assembly Position 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 11 | 12 | 13 | Total Blanket Power |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOC1 | .658 | .389 | .502 | .492 | .466 | .347 | .222 | .142 | .206 | .197 | .171 | .132 | 40.9 |
| EOC1 | .805 | .498 | .626 | .612 | .574 | .438 | .298 | .192 | .284 | .268 | .230 | .178 | 52.1 |
| BOC2 | .815 | .505 | .614 | .609 | .577 | .443 | .302 | .194 | .279 | .267 | .231 | .180 | 52.3 |
| EOC2 | 1.017 | .657 | .765 | .760 | .718 | .568 | .410 | .267 | .378 | .361 | .312 | .246 | 67.3 |
| BOC3 | 1.096 | .706 | .878 | .859 | .800 | .623 | .439 | .284 | .426 | .400 | .341 | .266 | 74.2 |
| EOC3 | 1.309 | .880 | 1.064 | 1.041 | .966 | .772 | .573 | .379 | .560 | .524 | .446 | .353 | 92.4 |
| BOC4 | 1.222 | .821 | 1.021 | .995 | .916 | .726 | .537 | .354 | .535 | .499 | .422 | .332 | 87.4 |
| EOC4 | 1.383 | .956 | 1.143 | 1.118 | 1.035 | .838 | .641 | .430 | .629 | .589 | .502 | .401 | 100.8 |
| BOC5 | .664 | .411 | .521 | .511 | .484 | .370 | .668 | .445 | .663 | .619 | .524 | .416 | 67.3 |
| EOC5 | .955 | .630 | .770 | .753 | .702 | .556 | .764 | .516 | .752 | .704 | .600 | .480 | 86.7 |

* Total 64-inch blanket power per assembly (assembly positions from Figure 4.3-3).

TABLE 4.3-2

FUEL ISOTOPIC COMPOSITION

| Isotope | Weight Fraction |
|---|---|
| Pu238 | .0006 |
| Pu239 | .8604 |
| Pu240 | .1170 |
| Pu241 | .0200 |
| Pu242 | .0020 |
| Depleted Uranium | |
| U235 | .002 |
| U238 | .998 |

51