September 9, 2009

Mr. S. E. Miller
Manager, Environmental, Health Safety, and Licensing
AREVA NP, Inc.
3315 Old Forest Road
P.O. Box 10935
Lynchburg, VA 24506-0935

SUBJECT: REVISION NO. 7 OF CERTIFICATE OF COMPLIANCE NO. 9252 FOR THE MODEL NO. 51032-2 PACKAGE

Dear Mr. Miller:

In December 2008, the staff notified you of discrepancies on fuel density and ambiguities on pellet dimensions in the Criticality Chapter of the Model No. 51032-2 package application. On July 7, 2009, you submitted a revised criticality evaluation that resolved those issues.

Changes made to the enclosed Certificate of Compliance No. 9252, Revision No. 7 are indicated by vertical lines in the margin. The staff's Safety Evaluation Report is also enclosed.

If you have any questions regarding this certificate, please contact me or Pierre Saverot of my staff at (301) 492-3408.

Sincerely,

/RA/

Eric Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9252

Enclosures:
1. Certificate of Compliance No. 9252, Rev. No. 7
2. Safety Evaluation Report
3. Registered Users

cc w/encls 1&2: R. Boyle, Department of Transportation
J. Shuler, Department of Energy
Registered Users

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SAFETY EVALUATION REPORT

Docket No. 71-9252
Model No. 51032-2 Package
Certificate of Compliance No. 9252
Revision No. 7

SUMMARY

By letter dated July 7, 2009, AREVA NP, Inc., submitted a revised Chapter 6 of the consolidated Safety Analysis Report for the Model No. 51032-2 package to resolve discrepancies on fuel density and ambiguities on pellet dimensions. The staff reviewed the revised Chapter 6 of the Safety Analysis Report and determined that the changes made did not affect the ability of the package to meet 10 CFR Part 71 requirements.

EVALUATION

By letter dated July 7, 2009, AREVA NP, Inc., provided a revised Chapter 6 of the consolidated Safety Analysis Report for the Model No. 51032-2 package to address two issues raised by staff, i.e., density discrepancy and pellet dimension ambiguity:

- Staff had noted that Section 6.4.3 of the Criticality Chapter of the application stated that "Fuel pellets with an average UO_2 density of 97.5% TD enriched to 5.05 wt.% U-235, including enrichment tolerances, were used for all BWFC fuel assembly criticality safety analyses." However, a density of 96.3%TD was mentioned in comments to the KENO input files, and the calculated number densities were consistent with a density of 96.2 %TD. Staff performed a few KENO runs and noted that the difference, although minimal, was outside of a standard deviation.

- Table 6-1 of the Criticality Chapter of the application gave nominal dimensions for the fuel assemblies including cladding minimum inner and maximum outer dimensions. In addition, Section 6.2 specifies that cladding thicknesses are not less than 0.02 inches. Therefore, Table 6-1 and Section 6-2 bind together the thickness of the cladding. Staff noted that the values used by the vendor in the KENO model were within these bounds. However, staff also noted that the most conservative values are usually obtained when the cladding is the thinnest, i.e., allowing for the most moderator. Staff was concerned that this ambiguity could raise the worst case scenario close to a K_{eff} of 0.95.

Based on the information provided by the applicant, and verified by the staff's own confirmatory analyses, the staff concluded that the changes made in the revised Chapter 6 of the application do not affect the criticality design features for the Model No. 52032-2 package.

Condition No. 5.(b)(1) was modified for the GEN1 fuel only (page 3 of the CoC, column 3 of the table): the maximum density of the active fuel stack length of 95%TD was replaced with 97.5%TD, and the nominal fuel assembly envelope of 8.25 in. was replaced by the footnote due to the variety of the dimensions for the 14x14, 15x15 and 16x16 GEN 1 fuel assemblies.

CONCLUSION

The changes made to the Criticality Chapter of the consolidated package application do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9252, Revision No. 7,
on September 9, 2009.