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November 16, 2005

Ms. B. Marie Moore, Vice President  
Safety and Regulatory  
Nuclear Fuel Services, Inc.  
P.O. Box 337, MS 123  
Erwin, TN 37650

SUBJECT: NUCLEAR FUEL SERVICES, INC. - AMENDMENT 65 - APPROVAL OF  
CHANGES TO FUNDAMENTAL NUCLEAR MATERIAL CONTROL PLAN FOR  
HIGH-ENRICHED URANIUM (TAC L31890, L31891, AND L31895).

Dear Ms. Moore:

In accordance with your applications dated April 22, April 29, and May 31, 2005, and supplement dated July 18, 2005, and pursuant to Part 70 to Title 10 of the Code of Federal Regulations (CFR), Materials License SNM-124 is hereby amended to approve changes to the fundamental nuclear material control plan for high-enriched uranium. Accordingly, Safety Condition S-1 has been revised to include the dates of April 22 (ML051260178), April 29, May 31, and July 18, 2005. In addition, Safeguards Conditions 4.6, 4.7, and 5.1 have been revised to read as follows:

SG-4.6 Deleted by Amendment 65, dated November 16, 2005

SG-4.7 Deleted by Amendment 65, dated November 16, 2005

SG-5.1 In order to achieve the performance objectives of 10 CFR 74.51(a) and maintain the system capabilities identified in 10 CFR 74.51(b), the licensee shall follow its "Fundamental Nuclear Material Control Plan" (Plan) with respect to all activities involving strategic special nuclear material (SNM), except as noted in Condition SG-5.5. This Plan, as currently revised and approved, consists of:

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General Discussion -----	Rev. 8 (dated April 2005)
Section 1 -- Process Monitoring -----	Rev. 18 (dated July 2005)
Section 2 -- Item Monitoring -----	Rev. 7 (dated July 2005)
Section 3 -- Alarm Resolution -----	Rev. 6 (dated October 2004)
Section 4 -- QA & Accounting -----	Rev. 15 (dated April 2005)
Annex A -----	Rev. 5 (dated March 2003)
Annex B -----	Rev. 1 (dated August 1998)
Annex C -----	Rev. 1 (dated August 1998)
Annex D -----	Rev. 2 (dated October 2000)

Revisions to this Plan shall be made only in accordance with, and pursuant to, either 10 CFR 70.32(c) or 70.34.

In addition, Safeguards Condition 5.2 has been revised to reflect the changes we accepted in our letter dated July 8, 2005. The revised condition reads as follows:

SG-5.2 In order to achieve the performance objectives of 10 CFR 74.31(a) and maintain the system capabilities identified in 10 CFR 74.31(c), the licensee shall follow its "Fundamental Nuclear Material Control Plan (Plan) for SNM of Low Enriched Uranium" with respect to all activities involving SNM of low strategic significance. The Plan, as currently revised and approved, consists of:

Section 1 -----	Rev. 5 (dated October 2003)
Section 2 -----	Rev. 4 (dated August 2004)
Section 3 -----	Rev. 6 (dated January 2005)
Section 4 -----	Rev. 5 (dated January 2005)
Section 5 -----	Rev. 4 (dated January 2005)
Section 6 -----	Rev. 4 (dated August 2004)
Section 7 -----	Rev. 2 (dated January 2002)
Section 8 -----	Rev. 3 (dated January 2005)
Section 9 -----	Rev. 1 (dated February 1993)
Annex -----	Rev. 5 (dated January 2005)

Revisions to this Plan shall be made only in accordance with, and pursuant to, either 10 CFR 70.32(c) or 70.34.

All other conditions of this license shall remain the same.

Enclosed are copies of the revised Materials License SNM-124 (Enclosure 1), and the Safety Evaluation Report (Enclosure 2).

If you have any questions regarding this matter, please contact Kevin Ramsey of my staff at (301) 415-7887 or via e-mail to [kmr@nrc.gov](mailto:kmr@nrc.gov).

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This letter and its enclosures contain sensitive, unclassified information, and are therefore deemed Official Use Only. They will not be placed in the Public Document Room nor will they be publicly available in the NRC Agencywide Document Access and Management System (ADAMS).

Sincerely,

/RA/

Gary S. Janosko, Chief  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 70-143  
License No.: SNM-124  
Amendment 65

Enclosures:

1. Materials License SNM-124
  2. Safety Evaluation Report
- [REDACTED]

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1. Materials License SNM-124
2. Safety Evaluation Report

**Closes TAC L31890, L31891, and L31895**

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**ML053180562**

<b>OFC</b>	FCFB	FCFB	FCFB	FCFB
<b>NAME</b>	K.Ramsey	V.Cheney	J.Lubinski	G.Janosko
<b>DATE</b>	11/14/05	11/14/05	11/15/05	11/16/05

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DOCKET: 70-143

LICENSEE: Nuclear Fuel Services, Inc.  
Erwin, Tennessee

SUBJECT: SAFETY EVALUATION REPORT FOR NUCLEAR FUEL SERVICES, INC. -  
AMENDMENT 65 - APPROVAL OF CHANGES TO FUNDAMENTAL NUCLEAR  
MATERIAL CONTROL PLAN FOR HIGH-ENRICHED URANIUM (TAC L31890,  
L31891, AND L31895)

#### BACKGROUND

By cover letter dated April 22, 2005, Nuclear Fuel Services (NFS) submitted revised sections of the Fundamental Nuclear Material Control Plan for high-enriched uranium (HEU FNMC Plan) under the provisions of 10 CFR 70.32. By cover letter dated April 29, 2005, NFS submitted additional revisions to the HEU FNMC Plan under the provisions of 10 CFR 70.32. By letter dated May 25, 2005, the Nuclear Regulatory Commission (NRC) informed NFS that certain changes in Section 1 of the HEU FNMC Plan could not be accepted under 10 CFR 70.32 and had to be submitted for NRC approval under 10 CFR 70.34. This letter also requested additional information about certain changes. By cover letter dated May 31, 2005, NFS provided additional information and resubmitted Section 1 of the HEU FNMC Plan without the changes requiring prior NRC approval. By cover letter dated July 18, 2005, NFS submitted changes to the HEU FNMC plan for NRC approval under the provisions of 10 CFR 70.34.

#### DISCUSSION

The May 31, 2005, submittal included Section 1, Revision 17 of the HEU FNMC Plan. This section was revised to incorporate acceptable changes under the provisions of 10 CFR 70.32. This revision reflects those previous changes that the NRC had determined were acceptable by a letter dated May 16, 2005.

In addition, the July 18, 2005, submittal affects both Sections 1 and 2 of the HEU FNMC Plan. The July revision included updated clarification and revised texts to specifically address the request for additional information (RAI) issued by the NRC staff. Both sections were resubmitted in their entireties with new effective dates and revision numbers under the provisions of 10 CFR 70.34 which require NRC approval prior to implementation to ensure there would be no decrease in effectiveness of the licensee's material control and accounting (MC&A) program. The staff reviewed the changes and found that the licensee appropriately addressed the RAI issues.

Upon review of all updated changes, the staff found that the proposed changes are consistent with the regulatory requirements in Subpart E of 10 CFR Part 74, and the guidelines given in NUREG-1280, Rev.1, "Standard Format and Content Acceptance Criteria for the MC&A Reform Amendment." The HEU FNMC Plan changes are summarized as follows:

[REDACTED]

Section 1 - Process Monitoring

- [REDACTED]
- Clarified the use of process difference components to be expressed in terms of U-235 content;
- Revised a section to address other substitution materials in the processing areas, including related control measures and criteria for non-credible substitutes;
- [REDACTED]
- Added a description to address investigation and corrective action with regard to significant shipper-receiver differences for external scrap receipt measurements;
- Revised the table for material categories processed at NFS and clarified the difference between Category IA and Category IB materials;
- Revised the measurement tables to add control units CU-30 and CU-35, new cumulative significant quantity for CU-35, and potentiometric titration and gravimetric analysis methods to the list of measurement applications.

Section 2 - Item Monitoring

- [REDACTED]
- Revised the affected sections to define permanently controlled access areas associated with the material category, storage, item monitoring test, and security measures associated with these areas;
- [REDACTED]
- Added a reference to NFS Security Department procedures with regard to the accessibility of vaults and permanently controlled access areas;
- Changed the on-line Item Control System to the NuMAC Network.

Based on the review and evaluation of the licensee's submittals, the staff has determined that the proposed changes to the facility's HEU FNMC Plan are adequate and continue to provide an effective MC&A program at NFS. Approval of the revised HEU FNMC Plan is recommended.

ENVIRONMENTAL REVIEW

The staff has determined that the changes requested are related to safeguards matters which are categorically excluded from the requirements to prepare a site-specific environmental assessment. Therefore, in accordance with 10 CFR 51.22(c)(12), neither an environmental assessment nor an environmental impact statement is warranted for this action.

CONCLUSION

The staff concludes that the revised HEU FNMC Plan contains appropriate and necessary commitments to meet applicable MC&A requirements stipulated in 10 CFR Parts 74.51-59, and

that approval of the revised Plan does not reduce the effectiveness of the licensee's safeguards system. Therefore, the existing Safeguards License Condition SG-5.1 should be reissued to reflect the revised HEU FNMC Plan as follows:

SG-5.1 In order to achieve the performance objectives of 10 CFR 74.51(a) and maintain the system capabilities identified in 10 CFR 74.51(b), the licensee shall follow its "Fundamental Nuclear Material Control Plan" with respect to all activities involving strategic special nuclear material, except as noted in Condition SG-5.5. This HEU FNMC Plan, as currently revised and approved, consists of:

General Discussion -----	Rev. 8 (dated April 2005)
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Revisions to this Plan shall be made only in accordance with, and pursuant to, either 10 CFR 70.32(c) or 70.34.

Additionally, on October 26, 2004, NFS submitted a revision to Section 4, which was accepted by the NRC in May 2005. This revision removed Material Balance Area 5 (MBA-5). As such, Safeguards Conditions SG-4.6 and SG-4.7 should be deleted, since they both related to activities associated with MBA-5. The licensee has no objection to these additional changes as noted in their November 7, 2005, email to Kevin Ramsey.

PRINCIPAL CONTRIBUTORS

Thomas N. Pham