NRC FORM 374

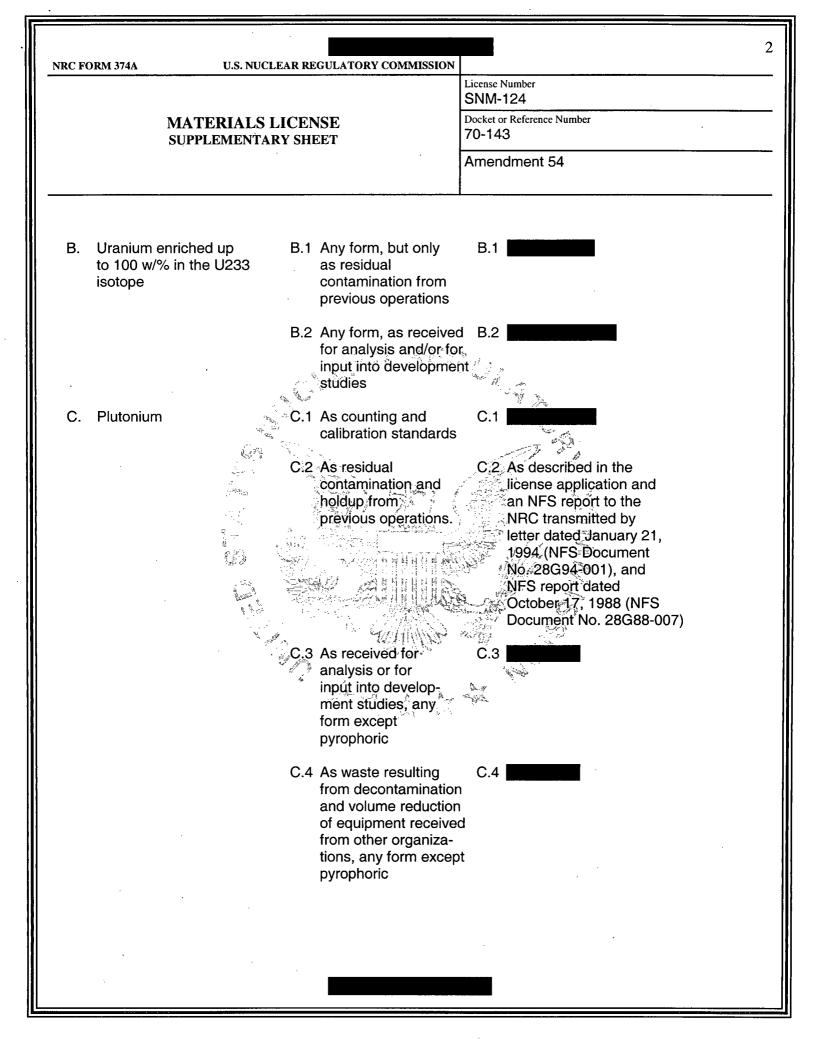


U.S. NUCLEAR REGULATORY COMMISSION

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

	Licensee	
1. Nu	clear Fuel Services, Inc. 05 Banner Hill Road win, TN 37650-9718	3 - License Number SNM-124, Amendment 54
2. 120	05 Banner Hill Road	4. Expiration Date ໌ ຢູບົ່ໄງ 31, 2009
En	win, TN 37650-9718	5. Docket No. 70-143
	win, TN 37650-9718	Reference No.
	roduct Source, and/or 7. Chemical and/or Pro-	May Possess at Any One Time
A.	Uranium enriched up to 100 w/% in the U2355 isotope which may contain up to an average of $10^{-6}$ grams plutonium per gram of uranium, 0.25 millicuries of fission products per gram of uranium, and $1.5 \times 10^{-6}$ grams transuranic materials (including plutonium), per gram of uranium, as contaminants.	n A Under This License



3 NRC FORM 374A U.S. NUCLEAR REGULATORY COMMISSION License Number **SNM-124** Docket or Reference Number MATERIALS LICENSE 70-143 SUPPLEMENTARY SHEET Amendment 54 **D.** Transuranic Isotopes D. As waste resulting D. from processing enriched uranium E. Fission Products E. As waste resulting E. from processing enriched-uranium-Authorized place of use: The licensee's existing facilities in Unicoi County, Tennessee, as described in 9. the referenced application. This license shall be deemed to contain two sections: Safety Conditions and Safeguards Conditions. These sections are part of the license, and the license is subject to compliance with all listed 10. conditions in each section. THE NUCLE AR REGULATORY COMMISSION Ð By: Date: October 29, 2004 Gary S. Janosko, Chief **Fuel Cycle Facilities Branch Division of Fuel Cycle Safety** and Safeguards Washington, DC 20555

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	SAFETY CONDITION	ONS
S-1	For use in accordance with the statements, reprinting through 8 of the application submitted by letter of May 9 and November 14, 1997; March 13, March 19, October 21, October 22, October 23, Novem 20, November 24, December 18, and December 10, February 16, February 24, April 20, April 23, 30 (NFS No. 21G-99-0093), August 13, December 30, November 8, December 14, December 20, and March 30, May 11, June 29, October 5, and October 30, May 11, June 29, October 5, and October 23, 2002; January 23, February 10, February 9, and April 5, 2004; January 9, April 4, August 23, February 10, For the Blended Low-Enriched Uranium (BLEU). Conversion Building (OCB) and Effluent-Process October 11, October 16, November 8, land December 3, September 5, October 123 (Attacher December 5, and December 10, 2003, February 15, March 16, March 17, March 18, March 19, A	dated July 24, 1996, and supplements dated ch 25, June 23, July 23, August 7, August 14, mber 15, September 25, September 28, October nber 6, November 13, November 16, November r, 21, 1998; January 29, February 4, February May 21, July 30 (NFS No. 21G-99-0058), July ber 10, December 21, and December 29, 1999; st 23, September 1, November 3, December 5, December 27, 2000; January 11, January 12, tober 25, 2001; February 21, February 28, September 13, October 18, December 17, and February 14, February 27, March 3, March 6, July 31, September 26, and October 27, 2003;
S-2	NFS shall not operate the fuel manufacturing pro the license application until an Integrated Safety the appropriate nuclear criticality safety evaluation to the NRC, in addition to an application for ame the NFS planned restart of operations.	ocesses described in Sections 15.1 and 15.2 of Analysis (ISA) has been performed, including ons A summary of the ISA shall be submitted
S-3	Deleted by Amendment 5, dated May 2000.	
S-4	NFS shall not operate the LEU recovery facility of application until an ISA has been performed, incl evaluations. A summary of the ISA shall be sub- for amendment to the license, at least 90 days p	luding the appropriate nuclear criticality safety mitted to the NRC, in addition to an application
<b>S</b> -5	NFS shall not operate license application until an ISA has been perform safety evaluations. A summary of the ISA shall l to an application for amendment to the license, a of operations.	be submitted to the NRC, in addition

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S-6	Deleted by Amendment 2, dated February 2000	•
S-7	Deleted by Amendment 2, dated February 2000	
S-8	NFS shall conduct quarterly NCS audits of select SNM processing or storage areas are audited bit determine that: (a) site operations are conducted operating procedures, and posted limits, (b) adminished limits, (b) adminished limits, (c) equipment and operations complete to findings of NCS inspections are adequate.	iennially. The purpose of the audits is to ad in compliance with license conditions, ninistrative controls and postings are consistent
S-9	Subcritical parameter values based on experime 8 standards, shall be not less than that correspo in Section 4.2.3.1 of the license application may	onding to k of 0.98 or, alternatively, the factors
S-10	Notwithstanding the description of setting failure limits in Section 4.2.3.2 of the application, when determining subcriticality based on computer code calculations the failure limit shall be no greater than the value corresponding to: $k_{\rm eff} = 95$ for systems containing uranium enriched in <sup>235</sup> U above 20%, $k_{\rm eff} = 95$ for systems above 10% but below 20% enrichment that are not highly moderated, $k_{\rm eff} = 97$ for systems containing uranium enriched in <sup>235</sup> U above 20%, $k_{\rm eff} = 97$ for systems containing uranium enriched in <sup>235</sup> U less than 10%. As one acceptable method, the margin may be based on a validation against applicable benchmark experiments using a one-sided 95% tolerance limit at a 95% confidence level less an additional $0.015$ $M_{\rm eff}$ . The $k_{\rm eff}$ values of .95 and .97 above are exact limit values, and do not imply that compliance need only be shown to 2 significant figures. Compliance with them shall allow for purely calculational inaccuracies, such as Monte Carlo variance, by meeting the limit with a margin in the conservative direction of at least two standard deviations. Any rounding shall be in the conservative direction.	
S-11	Notwithstanding Section 4.2.4.7 of the applicatio unlikely, that critical masses or concentrations m favorable geometry or poisoned vessel, and the geometry, transfer shall be controlled by one of double contingency:	hay accumulate in a solution confined to a n be released to vessels of unfavorable the following three general provisions for
	(1) multiple engineered hardware controls capab	ble of preventing unsafe transfer; or
	(2) at least one engineered hardware control cap determination of safe conditions and actuation o	
	(3) a design requiring independent actions by tw action supported by independent measurements determination of safe conditions. In this case, pl	s of material to be transferred, and a

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	system design which will prohibit either individua to be performed independently.	al from performing both of the actions intended
S-12	Prior to August 15, 1999, NFS will implement fire of fire, explosions, or related perils to process co an unacceptable release of hazardous material workers, the public health and safety, or the env license application.	ontrol and safety systems which could lead to related to SNM or radiation that would threaten
S-13	Deleted by Amendment No. 4, March 2000.	
S-14	The will be protected resistance rating.	ed by barriers with an equivalent two hour fire
S-15	Active and administrative controls for flammable area where flammable liquids and gases are pre	liquids and gasses must be operable in the fire sent during KAST processing.
S-16	Prior to August 15, 1999, KAST Process fire wa recommendations, as described in NFS Docume Request for Additional Fire Safety Information for	ent No: 21G-98-0198; NFS Response to
S-17	Prior to December 31, 1999, NFS shall protectly material vaults from lighthing by installing a light standard "Lighthing Protection Code," NFPA 780	ning protection system in accordance with the
S-18	Prior to August 15, 1999, fixed combustible gas capable of alarming locally and at a constantly m	detectors in the <b>management</b> shall be nanned ocation.
S-19	Prior to December 31, 1999, NFS will upgrade a constantly manned location.	$\mathcal{Z}_{\mathcal{A}}$
S-20	Deleted by Amendment 24, April 2001.	
S-21	NFS will maintain an industrial fire brigade in acc NFS will have a proceduralized method for the ra when sufficient fire brigade staffing is unavailabl	apid response of external firefighting resources
S-22	NFS shall perform the following steps as detailed (NFS Document 21G-99-0207).	d in the NFS Bulk Chemical Tank Analysis
	A. By July 31, 2001, for	, NFS shall:
	1. Perform a 100 percent visual internal ta	ank inspection.

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· · · ·	<ol> <li>Provide details of internal nozzle pene drawing, then recalculate estimated se</li> </ol>	
	3. Conduct liquid penetrant examinations	s of floor-to-shell welds.
	<ol> <li>Perform a magnetic flux leakage inspendence detect underside corrosion and pitting.</li> </ol>	
r.	B. By September 1, 2001, NFS shall provide inspection and testing of bulk chemical sto safety basis for bulk storage tanks.	a written plan that details the continued prage tanks that will provide a documented
	for wall thickness to be determined. The an internal inspection and a liquid penetra D. As required by code, each tank shall have	apermanent nameplate attached specifying Society of Mechanical Engineers, "Boiler and
S-23	NFS shall inform the NRC within 30 days of record Tennessee Division of Air Pollution of Water Por requirements of the state-issued National Pollut permit.	ollution Control, or receipt of modified
S-24	The licensee shall maintain and execute the res Revision 7, transmitted by letter dated June 3, 2 Emergency Plan to support the Blended Low Er Building (OCB) and Effluent Process Building (E revised by the licensee consistent with 10 CFR	2003, and the proposed revisions to the NFS nriched Uranium (BLEU) Oxide Conversion EPB) dated October 24, 2003, or as further
S-25	NFS may make changes (modifications, addition processes, systems, equipment, components, c without license amendment, provided that the p	computer programs, and activities of personnel
	<ol> <li>the creation of new types of accident seque exceed the performance requirements of 10 CF described in the ISA summary;</li> </ol>	ences that, unless mitigated or prevented, would FR 70:61 and have not previously been
	(2) the usage of new processes, technologies, experience;	or controls for which NFS has no prior
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8 U.S. NUCLEAR REGULATORY COMMISSION NRC FORM 374A License Number SNM-124 Docket or Reference Number MATERIALS LICENSE 70-143 SUPPLEMENTARY SHEET Amendment 54 1 (3) the removal, without at least an equivalent replacement of the safety function, of an item relied on for safety that is listed in the ISA summary; (4) the alteration of any item relied on for safety, listed in the ISA summary, that is the sole item preventing or mitigating an accident sequence that exceeds the performance requirements of 10 CFR 70.61; and (5) a change to the conditions of this license or Rart I of the license application. CAN NE( Proposed changes not, meeting all of the above criteria shall be deemed to require NRC approval by amendment." As part of the application for amendment, NFS shall perform an ISA for the change and submit either an ISA summary or applicable changes to a prior existing ISA summary. NFS shall also provide any necessary revisions to its environmental report. Proposed changes requiring revision of applicable safety or environmental bases, but not requiring an amendment to the license in accordance with the above criteria, shall be reviewed and approved by the NFS safety review committee. The internally authorized change documentation shall provide the basis for determining that the change will be consistent with the criteria (1)=through (5) above. For any internally authorized change implemented by NES without NRC approval pursuant to this license condition, NFS shall submit annually to the NRC applicable changes to the ISA summary of a prior existing ISA In addition, NES will submit annually a brief summary of all internally authorized changes not requiring prior NBC approval. NFS will submit by January 30th of each calendar year the revisions to the ISA summary and the summary of all internally authorized changes mot requiring NRC approval. Prior to engaging in the decommissioning activities specified in Section 1.6.6 of the license S-26 application dated November 16, 1998, NFS must determine the status of the procedures and activities planned with respect to 10 CFR 70.38(g)(1). If required, NFS must submit a decommissioning plan to the NRC for review and approval prior to initiating such actions. S-27 At not more than 1-year intervals from the issuance date of this license, the licensee shall update the demonstration sections of the license application to reflect the licensee's current operations and evaluations. The updates shall, as a minimum, include information for the health and safety section of the application as required by 10 CFR 70.22(a) through 70.22(f) and 70.22(i) and operational data or environmental releases as required by 70.21. S-28 Deleted by Amendment 31, October 2001. S-29 Deleted by Amendment 31, October 2001. S-30 Deleted by Amendment 31, October 2001.

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S-31	Deleted by Amendment 31, October 2001.	
S-32	Deleted by Amendment 31, October 2001.	
S-33	Deleted by Amendment 31, October 2001.	
S-34	Deleted by Amendment 31, October 2001.	
S-35	Deleted by Amendment 31, October 2001.	
S-36	Deleted by Amendment 31, October 2001.	2 CLAZ
S-37	Deleted by Amendment 31, October 2001.	
S-38	Deleted by Amendment 31, October 2001.	
S-39	For individual fire areas in the complete a nuclear criticality safety analysis den from a credible fire, analyzed in the Fire Hazard suppression activities is highly unlikely. This is criticality resulting from an accident sequence in or (ii) demonstrating that a major fire is highly unpotentially affected by the installation of automa facility modifications to determine their effect on this safety condition; a major fire is defined as o Areas in	s Analysis, or from the consequences of fire- bay be done by: (i) demonstrating that a litiated by a major fire would be highly unlikely, likely. NFS shall also review all NCSAs tic fire suppression systems and associated the safety basis. For the analyses specified by
S-40	By December 31, 1999, for KAST process struct items relied on for nuclear criticality safety as eit equipment. Safety-related equipment (SRE) is a controls that are relied on to prevent nuclear crit contingency principle, and whose operation can might not perform its function. Configuration-co structures, systems, or components for which eit (i) some characteristic is relied on for double cor with time as a result of accidents identified in the	ther safety-related or configuration-controlled defined as active or passive engineered- icality in accordance with the double change with time such that the equipment ntrolled equipment (CCE) is defined as ther:
	(ii) the control is supplemented by one or more of principle.	controls as one leg of the double contingency

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	For SRE items, maintenance, calibration, testing accordance with written, approved procedures to performance. SRE that has undergone mainten inspected (as applicable) prior to restart.	o assure continued reliability and functional
	CCE will be functionally tested, maintained, calib accordance with written, approved procedures, w	
	CE that has no credible mechanism to fail beyon normal case does not require functional testing,	d the conditions assumed in the bounding calibration, or preventive maintenance.
	CCE that is tested by every use and that is used reliability does not require functional testing or p that degrade over time.	reventive maintenance, unless it contains parts
	CCE items will be inspected after initial-installation	on, replacement, and by periodic NCS audits.
S-41	Deleted by Amendment 32, February 2002.	
S-42	Deleted by Amendment 5, dated April 2000.	
S-43	Deleted by Amendment 22; dated March 2001	
S-44	Deleted by Amendment 22, dated March 2001.	S S
S-45	Deleted by Amendment 32, February 2002.	
S-46	By August 1, 2000, NFS shall submit a Criticality for review and approval. This CSUP shall addre	
	<ol> <li>All Nuclear Criticality Safety Analyses (NCSA shall be upgraded as follows:</li> </ol>	As) performed or revised after May 1, 2000,
; ,	<ul> <li>(a) the criticality safety basis shall be consol document;</li> </ul>	idated in a single integrated and self-consistent
	<ul> <li>(b) all engineered structures, systems, and one meet the double contingency principle sh sequence leading to criticality;</li> </ul>	components and operator actions relied on to all be clearly identified for each accident
	(c) the basis for double contingency shall be documentation of the independence and	•

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·	(d) normal and credible abnormal operating	conditions shall be clearly identified; and
	<ul> <li>(e) all assumptions credited for criticality saf consisting of a technical demonstration or reliance on engineering judgement or his</li> </ul>	of the adequacy of the assumptions rather than
2.	By August 1, 2001, management procedures upgraded to the following standards: (c) the NCSAs consist of self-contained safe permit independent reconstruction of res specialist without reliance on additional s	ults by a knowledgeable criticality safety
	(d) the standard technical practices used in sufficient detail to ensure that the resultir	designing calculational models are specified in ng NCSAs are uniform with respect to modeling of moderation, treating interactions, accounting
	safety and criticality safety-into account:	otential interaction between fire and chemical
	(e) the applicability of code validation(s) to the including a determination of the adequac	ne-specific cases being modeled is evaluated, by of the subcritical margin;
	ensuring criticality safety, wherever pract	
	(g) the basis for using administrative instead of the NCSA; and	$\frac{2}{3}$
	effective corrective actions and lessons li implementing documents. This program	ram and criticality controls, and to ensure that earned are flowed down into appropriate
-	/ July 31, 2001, NFS shall submit to NRC for a orth Site Decommissioning Plan:	pproval the following information related to the
	(a) area factors for volumetrically-contaminat	ted soils and the technical basis for those area

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	(b) actual Minimum Detectable Concentratio technical basis for those MDCs,	ons (MDCs) for the Nal detector and the
	(c) appropriate investigation levels (ILs) for s be performed in impacted areas.	static and scan survey measurements that will
S-48	Notwithstanding the Derived Air Concentration ( Appendix B to 10 CFR Part 20, the licensee may values specified in International Commission of (Annals of the ICRP Volume 24, No.4).	y use adjusted DAC values and adjusted ALI
S-49	NFS shall utilize, for setpoint determinations, confor safety limits, instrument and system accuraci manufacturer's data and operating experience. formal calculation and shall be documented for e	ties, response times, instrument drift, The analysis for each safety setpoint shall be a
S-50	By February 13, 2004, NFS shall submit a revise that incorporates changes resulting from NRC re dated September 3, September 5, October 31, N December 10, 2003.	eview questions documented in NFS letters
S-51	The licensee shall submit a revised OCB/EPB h incorporates all changes to date, at least fifteen Readiness Review. SAFEGUARDS COND	(15) days prior to the NRC's Operational
Section-1.0	- ABRUPT LOSS DETECTION (For SSNM Only):	N- N
SG-1.1	Notwithstanding the requirement of 10 CFR 74.5	
	for each unit process, the process units listed in Condition SG-5.1 shall be exempt from such det monitoring system shall be comprised of the con	tection capability, and the licensee's process
	sections therein) of the above mentioned Plan.	
Section-2.0 ITEM MONITORING (For SSNM Only):		
SG-2.1	Notwithstanding the requirement of 10 CFR 74.5 categories except those identified by 10 CFR 74 Section 2.3.3 of the Plan identified in Condition S	1.55(c), and notwithstanding statement #8 of
	from physical inventory requirements.	. Such standards are not, however, exempted

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<u>Section-3.0</u>	ALARM RESOLUTION		
SG-3.1	The licensee is authorized to continue material p and 15 under process monitoring alarm condition operations, the measures contained in Section 3 shall be implemented.		
<u>Section-4.0</u>	QUALITY ASSURANCE (SSNM & LEU):	_	
SG-4.1	Notwithstanding the requirements of 10 CFR 74 SSNM to maintain a system of measurements to isotope content of all SNM received, inventoried licensee for U-233, U-235, or Pu-239 by non-de measured for total element if the calculated eler content which, in turn, is traceable to an isotopic generation.	o substantiate both the element and fissile I, shipped or discarded, SNM measured by the structive assay techniques need not be nent content is based on the measured isotope	
SG-4.2	Notwithstanding the requirement of 10 CFR 74.59(e)(8) to establish and maintain control limits at the 0.05 and 0.001 levels of significance for all HEU related measurements, the licensee may use one and two scale divisions as being equivalent to the 0.05 and 0.001 control levels, respectively, for mass measurements.		
SG-4.3	Notwithstanding Section 45.1 of the Plan identified in Condition SG-5.1, which states that a physical inventory of SSNM is conducted at an interval of at least every six calendar months with no more than 185 days elapsing between any two consecutive inventories, the licensee is granted an extension of time from April 3, 2000, to June 2, 2000, for conducting its SSNM physical inventory. This condition automatically expires on June 5, 2000.		
SG-4.4	Notwithstanding the requirement of 10 CFR 74. physical inventory, any in-process SSNM for wh been assured by tamper-safing, the licensee ma	ich the validity of a prior measurement has not	
	measurements performed prior to the sta	ess holdup quantities determined by NDA art of an inventory, in accordance with the and 4.5.2.3.2 of the Plan identified in Condition	
	(2.) pre-listed feed material to the prior to the start of an inventory, in accor 4.5.2.3.2 of the Plan identified in Condition	process that is introduced into process dance with the controls described in Section on SG-5.1; and	

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		ed by the most recent NDA measurements, in in Section 4.5.2.3.1 of the Plan identified in
SG-4.5	Notwithstanding the requirements of 10 CFR 74 inventory all SSNM, the licensee may determine quantities in accordance with Section 4.5.3.5 of	e process exhaust ventilation system inventory
SG-4.6	The restriction of 10 CFR 74.51(d)(2) is hereby performance in MBA-6 acceptable to the NRC, is physical inventories in accordance with the requisit scrap recovery operations in MBA-5 are restricted inventory period.	the licensee is authorized to conduct HEU uirements of 10 CFR 74.59(f)(1), provided HEU
SG-4.7	Notwithstanding the requirement of 10 CFR 74.59(d)(1) to substantiate the uranium and U-235 content of SSNM transferred between areas of custodial responsibility, the licensee may transfer scrap materials from MBA-6 to MBA-5 on estimated values provided (1) such estimates are based on historical factors (with a unique factor foreach scrap category) which are updated at least once every six months, and (2)-that the estimated transfer values are corrected upon obtaining "first dissolution plus residue" measurements.	
SG-4.8	The SNM content of liquid waste discarded from collection tanks shall be analyzed and recorded at measured values. The measurement methods must-have a greater sensitivity than the concentration of the sample aliquot analyzed, except when the quantity discarded does not exceed 50 grams U-235 per month from Plant I (HEU) and does not exceed 10 grams U-235 per month from Plant I (HEU) and does not exceed 10 grams U-235 per month from Plant I (HEU) and does not exceed 10 grams U-235 per month from Plant I (HEU) and does not exceed 10 grams U-235 per month from Plant I (HEU) and does not exceed 10 grams U-235 per month from the sensitivity of the method.	
SG-4.9	Notwithstanding the statement in Section 5.9 of pertaining to bias corrections to inventory difference Section 4.3.1 of such Plan with respect to determ	ence (ID) values, the licensee shall comply with
SG-4.10	Notwithstanding the requirements of 10 CFR 74 replicate measurement data exceed a 0.001 con Section 4.4.1.7.3.4 of the Plan identified in Cond	ntrol limit, the licensee shall comply with
SG-4.11	Notwithstanding the requirement of 10 CFR 74. has been shown to be not significantly different licensee may pool data from equivalent scales v	on the basis of appropriate statistical tests, the
SG-4.12	Notwithstanding the requirement of 10 CFR 74.8 establish random error variances, limits for syste select a partial quantity of bulk measurement pr	ematic error, etc., the licensee may randomly

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	the Plan identified in Condition SG-5.1, provided from the total data population whenever the imp	
SG-4.13	Not withstanding the requirement of 10 CFR 74. each HEU inventory difference (ID) value, the lic 7 whenever its ID is less than 300 grams U-235.	censee need not determine such SEID for MBA-
SG-4.14	Notwithstanding the requirement of 10 CFR 74.3 standards for all measurement systems for the notwithstanding the requirement of 10 CFR 74.3 statistical control system to monitor such control measure nor monitor such control standards for regarded as bias free, a measurement system n measurements of a representative standard(s) e and the measurement value assigned to a given calibration.	Surpose of determining bias, and (c)(4) and of 74.59(e)(8) to maintain a standard/measurements, the licensee need not point calibrated, bias-free, systems. To be nust be calibrated by one or more each time process unknowns are measured,
SG-4.15	All SNM not in transit shall be physically located Condition SG-4.15.1.	within an MBA or ICA, except as specified in
SG-4.15.1	The requirement of Condition SG 4 15 shall not precipitated from, measured liquid or gaseous w	apply to HEU or LEU contained in, or aste discards.
SG-4.16	Solutions generated from the use of sinks revew etc., located within HEU MAAs shall be collected	vashers, safety showers, drinking fountains, gand measured prior to discarding.
SG-4.17	All HEU-bearing liquid effluents that are routed t shall be measured for total uranium in the WWT HEU input batch measurement shall serve as an accountability values. If for any material balance check value an investigation shall be conducted and docume taken, and the appropriate NRC safeguards lice after the start of the associated physical inventor system shall be subject to all appropriate require specified in Section 4.4 of the Plan identified in C	F prior to commingling with LEU. Each WWTF overcheck to the corresponding summation of e period, the WWTF total cumulative HEU over- neted as to the cause and corrective action nsing authority shall be notified within 30 days ry. The WWTF input overcheck measurement ements of the Measurement Control Program as
SG-4.18	Notwithstanding the requirement of 10 CFR 74.1 Form-741 for all SNM shipments, the licensee is Forms associated with waste burial shipments.	
SG-4.19	Whenever a SNM Material Superintendent or de MAA exit point to assist in resolving whether an i the protected Area, in accordance with the curre	item or container should be allowed to exit to

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	Superintendent or Custodian shall document the container to leave the area.	e basis for any decision allowing the item or
SG-4.20	The licensee is exempted from calculating the s measurement system biases associated with LE calculated inventory difference does not exceed	
SG-4.21	Notwithstanding Section 7.1 of the Plan identifie "confirmatory measurements of scrap receipts" term "scrap receipts" shall not apply to receipt in on the as-received-material by weighing, sampli uncertainty (at the 95% C.L.) of less than 2.00 p	re performed after the scrap is dissolved," the naterials whose SNM content can be determined ng and analyses with a measurement
SG-4.22	Notwithstanding the heading "Typical MC&A Pro Condition SG-5:2, all procedures listed in Table MC&A Procedures", and any revisions to these and approval requirements (as specified in Sect procedures.	3.5 shall be officially designated as "Critical proceedines shall be subject to the same review
SG-4.23	Notwithstanding statements contained in Section 42.4 of the Plan identified in Condition SG-5.2, if the normal minimum number of control standard measurements per week, day, or shift of system use (depending on type of measurement system) does not generate at least 25 control standard measurements for a given LEU measurement system during any inventory period in which the active inventory is greater than 9,000 grams U-235, the licensee shall nevertheless generate at least 16 control standard measurements for each key measurement system utilized during the inventory period.	
SG-4.24	Deleted by Amendment <sup>2</sup> 3, March 2000. This Co	ondition expired May 15, 1999.
SG-4.25	Deleted by Amendment 16, January 2001. This	Condition expired July 8, 2000.
SG-4.26	Deleted by Amendment 21, March 2001. This C	Condition expired February 11, 2001.
SG-4.27	Deleted by Amendment 28, June 2001. This Co	ondition expired April 14, 2001.
SG-4.28	Notwithstanding the commitments of Section 4.5 (FNMC) Plan identified in Condition SG-5.1 to su Material Physical Inventory Summary Report on start of the physical inventory, the licensee is ex and shall have 21 additional days to complete th condition automatically expires on July 23, 2002	ubmit a completed Strategic Special Nuclear NRC Form 327 not later than 45 days from the empted from the above stated requirements he May 2002 physical inventory report. This
SG-4.29	Notwithstanding the commitments in Section 4.7 (FNMC) Plan identified in Condition SG-5.1 to pe	

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	30 days, the licensee shall have until August 31, relative to the shipment of highly-enriched uranit request letter.	
SG-4.30	Deleted by Amendment 48, February 2004. This condition expired October 2003.	
SG-4.31	Deleted by Amendment 48, February 2004. This condition expired November 2003.	
SG-4.32	Notwithstanding the commitments in Section 4.7.2.1 of the Fundamental Nuclear Material Control Plan identified in Condition SG-5.1 to perform material receipt measurements from each material lot, the licensee may use the original receipt values with a limited confirmatory measurement relative to the received material identified in the October 1, 2004, request letter. This condition shall automatically expire on completion of the final shipment of the subject oxide material.	
<u>Section-5.0</u>	- FNMC PLANS AND SPECIAL ISSUES IN PLAN	IAPPENDICES:
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 License Condition SG-5.5. The Plan as currently revised and approved, consists of: General Discussion	
SG-5.2	In order to achieve the performance objectives of capabilities identified in 10 CFR 74.31(c), the lice Material Control Plan for SNM of Low Enriched L SNM of low strategic significance. The Plan, as Section 1Rev. 5	ensee shall follow its "Fundamental Nuclear Jranium" with respect to all activities involving currently revised and approved, consists of:
	Section 2Rev. 3	(dated January 2002)

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	Section 3Rev. Section 4, 5 and 6Rev. Section 7 and 8Rev.	3 (dated January 2002)
	Section 9Rev. AnnexRev.	1 (dated February 1993)
	Revisions to this Plan shall be made only in acc 70.32(c) or 70.34.	cordance with, and pursuant to, either 10 CFR
SG-5.3	Notwithstanding the requirement of 10 CFR 74.59(f)(1)(i) to estimate the standard error associated with SSNM inventory difference values, and notwithstanding the requirements of 10 CFR 74.59(e)(3) through (e)(8), the licensee may, in lieu of said requirements, follow Appendix G of the Plan identified in SG-Condition 5.1 with respect to plutonium measurements and measurement control associated with the plutonium decommissioning project.	
SG-5.3.1	<ul> <li>5.3.1 With regard to the plutonium decommissioning project (described in Appendix G of the Plan identified in Condition SG 51), the licensee shall comply with the following:</li> <li>(a) For plutonium accountability measurements, the maximum measurement uncertainty (at the 95% confidence level) of measurement values equal to or greater than 100 grams Pu shall not exceed plus of minus 10.0%. For measurement values less than 100 grams Pu, but equal to or greater than 25 grams Pu, the maximum measurement uncertainty shall not exceed plus or minus 20.0% (at the 95% C.L.).</li> <li>(b) For net weight measurements utilized for establishing "nanocuries Pu per gram waste" values (which in turn are used for establishing the category of waste), the maximum measurement uncertainty (at the 95% C.L.) shall not exceed plus or minus 2.00%.</li> <li>(c) Sufficient control measurements shall be generated and documented so as to demonstrate compliance with 5.3.1(a) and (b) above. )</li> <li>(d) For each inventory period during which plutonium decommissioning activities are conducted, the measurement uncertainty associated with the total quantity of plutonium in item form generated and measured during the period shall be derived from all relevant measurement control data generated during that inventory period.</li> <li>(e) For each inventory period during which plutonium decommissioning activities are conducted, plutonium "additions to" and "removals from material in process" (ATP and RFP shall be calculated. Any measured Pu quantity, in item form, which is generated from</li> </ul>	
	existing residual holdup shall be regarded a measured Pu quantity, in item form, which i any additional processing (such as washing shall be regarded as an RFP upon obtaining	is an ATP at the time of its generation. Any s tamper-safe sealed and which will not undergo , compaction, etc.) prior to shipment off site

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	plutonium or (2) 10.0 percent of the larger of ATP or RFP.		
	(f) The licensee shall investigate any non-zero inventory difference, since a non-zero ID will be (for this operation) indicative of an item(s) discrepancy.		
SG-5.3.2	accordance with the commitments contained in the licensee's Plan identified in Condition SG-6.1.		
SG-5.4	5.4 Operations involving special nuclear material which are not described in the appropriate Plan identified by either Condition SG-5.1 or SG-5.2 shall not be initiated until an appropriate safeguards plan (describing all new and/or modified security and MC&A measures to be implemented) has been approved by the appropriate NRC safeguards licensing authority.		
SG-5.5			
the SG-5.1 Plan shall be in full force. <u>Section-6.0 PHYSICAL PROTECTION REQUIREMENTS FOR STRATEGIC SPECIAL NUCLEAR</u> <u>MATERIAL</u> SG-6.1 The licensee shall follow the physical protection plan entitled "NFS Physical Protection Plan for Protection Of Category 1 High Enriched Uranium (Strategic Special Nuclear Material), Revision 0,"			
dated October 26, 2004, and as it may be further revised in accordance with the provisions of 10 CFR 70.32(e).			

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SG-6.2	The licensee shall follow the safeguards conting Response Plan, Revision 0," dated October 26, accordance with the provisions of 10 CFR 70.32	2004; and as may be further revised in
SG-6.3	The licensee shall follow the guard training and qualification plan titled "NFS Site Security Training Plan, Revision 0," dated October 26, 2004; and as may be further revised in accordance with the provisions of 10 CFR 70.32(e).	
SG-6.4 <u>Section-1.0</u> TR-1.1	<ul> <li>A-6.4 Notwithstanding the above Safeguards License Conditions (SG-6.1, SG-6.2, SG-6.3), upon possession of less than Category I levels of special nuclear material, the licensee shall follow the measures described in the physical protection plans titled "Physical Security Plan for the Protection of Special Nuclear Material of Moderate Strategic Significance," Revision 5, dated June 23, 1994 (letter dated June 22, 1994), and Revision 6, dated February 6, 1996; and in the "Physical Security Plan for Special Nuclear Material of Low Strategic Significance," Revision 2, dated May 26, 2004; and as they may be further revised in accordance with the provisions of 10 CFR 70.32(e).</li> </ul>	

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## Receipt of Document Containing Classified/Safeguards Information

1. Date of Incoming Correspondence:\_\_\_\_October 29, 2004\_\_\_\_\_

2. Licensee/Originator: Nuclear Fuel Services, Inc.

3. Docket No:\_\_\_\_70-143

4. Classification Level of Document:\_\_\_

□ Safeguards Information

Confidential

□ Secret

Top Secret

X Other: \_Confidential/RD\_\_\_\_\_

5. Brief unclassified description of document: Safety Evaluation Report for Nuclear Fuel Services, Inc., License Amendment 54.

X Vault in NRC's Central File

Other:

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