

EDO Principal Correspondence Control

FROM: DUE: 09/16/08

EDO CONTROL: G20080570
DOC DT: 08/14/08
FINAL REPLY:

Christine Tipton, et al.,
Erwin Citizens Awareness Network

TO:

Comm. Jaczko

FOR SIGNATURE OF :

** GRN **

CRC NO: 08-0450

Weber, NMSS

DESC:

ROUTING:

Nuclear Fuel Services, Inc. (NFS) Erwin
(EDATS: SECY-2008-0492)

Borchardt
Virgilio
Mallett
Ash
Ordaz
Cyr/Burns
Reyes, RII
Morrell, OEDO

DATE: 08/26/08

ASSIGNED TO:

CONTACT:

NMSS

Weber

SPECIAL INSTRUCTIONS OR REMARKS:

NOTE: Petitioners not processed in ADAMS per
request of Erwin Citizens Awareness Network (Erwin
CAN).

EDATS

Electronic Document and Action Tracking System

EDATS Number: SECY-2008-0492

Source: SECY

General Information

Assigned To: NMSS

OEDO Due Date: 9/16/2008 5:00 PM

Other Assignees:

SECY Due Date: NONE

Subject: Nuclear Fuel Services, Inc. (NFS) Erwin

Description:

CC Routing: Region II

ADAMS Accession Numbers - Incoming: NONE

Response/Package: NONE

Other Information

Cross Reference Number: G20080570, LTR-08-0450

Staff Initiated: NO

Related Task:

Recurring Item: NO

File Routing: EDATS

Agency Lesson Learned: NO

Roadmap Item: NO

Process Information

Action Type: Letter

Priority: Medium

Signature Level: NMSS

Sensitivity: None

Urgency: NO

OEDO Concurrence: NO

OCM Concurrence: NO

OCA Concurrence: NO

Special Instructions: Note: Petitioners not processed in ADAMS per request of Erwin Citizens Awareness Network (Erwin CAN).

Document Information

Originator Name: Christnie Tipton, et al.,

Date of Incoming: 8/14/2008

Originating Organization: Erwin Citizens Awareness Network

Document Received by SECY Date: 8/26/2008

Addressee: Commissioner Jaczko

Date Response Requested by Originator: NONE

Incoming Task Received: Letter

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

Date Printed: Aug 25, 2008 13:00

PAPER NUMBER: LTR-08-0450 LOGGING DATE: 08/21/2008
ACTION OFFICE: EDO

AUTHOR: Christine Tipton
AFFILIATION: TN
ADDRESSEE: Gregory Jaczko
SUBJECT: SNM License-124, Nuclear Fuel Services, Inc (NFS), Erwin, TN; Docket 70-143

ACTION: Direct Reply
DISTRIBUTION: SECY to Ack

LETTER DATE: 08/14/2008
ACKNOWLEDGED No
SPECIAL HANDLING: Note: 08/07/08 letter request that the petitions not be added into ADAMS

NOTES:
FILE LOCATION: ADAMS (less petitions)

DATE DUE: ¹⁶09/15/2008 DATE SIGNED:

EDO --G20080570

Erwin Citizens Awareness Network (Erwin CAN)
P. O. Box 1151, Erwin, TN 37650

August 14, 2008

Commissioner Gregory Jaczko
Nuclear Regulatory Commission (LETTER AND ENCLOSURES SENT VIA FED-EX)
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Dear Commissioner Jaczko:

Ref: SNM License-124, Nuclear Fuel Services, Inc. (NFS), Erwin, TN; Docket 70-143

1. The Erwin Citizens Awareness Network (Erwin CAN) respectfully requests that this letter be entered into your ADAMS database.
2. The attached letter, dated August 7, 2008, was in the process of being signed by members of the Erwin Citizens Awareness Network, when the sale of Nuclear Fuel Services, Inc., to Babcock and Wilcox, was announced on August 12. However, the attached letter still stands, and we want you to know that residents of Erwin, TN, are still concerned, perhaps even more so, about their health, safety, and environment regarding the NFS site.
3. As you so well know, NFS has a long history of accidents, willful acts; noncompliance, procedural and license violations, equipment malfunctions, and safety equipment control failures. We will continue to be concerned about how the new company will operate, and hope that they will not continue unsafe business as usual at NFS. We would hope that they stop, as long as required, to establish a robust safety culture and make equipment and facility repairs/replacements before continuing operations. Unfortunately, we saw no mention of safety first in the recent news articles about the acquisition.
4. The February 16, 2008 Safety Culture Board of Advisors (SCUBA) report stated, in part:
 - The NFS organization has become accustomed to tolerating recurring equipment problems, operational burdens and workarounds, degraded equipment conditions and degraded infrastructure issues.
 - Insufficient financial resources have been applied to meet NFS's facility infrastructure needs. The current physical condition of the facility is considered to be deficient when compare to industry standards and norms.
 - While it appears that NFS has sufficient engineering resources to support safe operations of its nuclear facilities, these resources are frequently diverted to support new business opportunities

- The SCUBA team observed degraded conditions, some of which create industrial/personnel safety risk and some of which create risk to continued production.
- Equipment problems have become accepted on the basis of a "run to failure" philosophy. NFS has a reactive approach to preventive maintenance and tends to operate equipment until it fails. The preventive maintenance program for Safety Related Equipment (SRE) and Items Relied on for Safety (IROFS) is also reactive in that functional testing failure determines when SRE and IROFS will receive maintenance attention.
- Supervisors' primary focus is production and quality issues. Very little time is spent on establishing and reinforcing safety performance standards, including procedural compliance.
- Procedural compliance is a significant problem at NFS-Erwin. The site has a history of NRC violations associated with procedural adherence deficiencies, and procedural non-compliance.
- Supervisory oversight focused on production. Safety (nuclear and industrial) is not emphasized in the work practices or work orders. The workforce often describes the environment as a production-oriented environment where workarounds are rewarded if they can "save a run."
- Operators have been instructed to operate outside of procedure scope by supervisors. Supervisors are often present when procedural violations occur, yet violations go unreported or undetected.
- NFS does not have a comprehensive work management process/system to identify, prioritize, plan, schedule, manage risks and execute work.

5. NOW is the time for the NRC and Babcock and Wilcox to halt operations and fix all of these problems for the safety of the public and the employees. The NRC needs to hold accountable the past, present, and future ownership of this company.

6. We are watching and will continue to watch. We expect to see positive changes, and an openness on the part of the licensee, the NRC, and the DOE.

We look forward to your response.

Respectfully,

Christine Tipton
Wanda Kelley *Cassandra Rice-McCalf*
Willa Early *Don Perkins* *John C. Kelley*
Erwin Citizens Awareness Network
Andrea A. Neal *Marianne Crowe*

Erwin Citizens Awareness Network (Erwin CAN)
P. O. Box 1151, Erwin, TN 37650

August 7, 2008

Commissioner Gregory Jaczko
Nuclear Regulatory Commission (LETTER AND ENCLOSURES SENT VIA FED-EX)
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Dear Commissioner Jaczko:

Ref: SNM License-124, Nuclear Fuel Services, Inc. (NFS), Erwin, TN; Docket 70-143

1. The Erwin Citizens Awareness Network (Erwin CAN) respectfully requests that this letter and attachments (less the petitions) be entered into your ADAMS database.

2. Enclosed are 48 pages of a petition that states that, until NFS has a safety culture at its Erwin Tennessee facility, it should not be allowed to store and process additional quantities of bomb-grade uranium here. (Attachment A) With 366 residents of Erwin willing to put their names to this petition, and an additional 216 or so home and business owners from Unicoi County, surrounding counties, and even from other states joining in, there is unprecedented opposition here to expansion of NFS's possession limit, and of additional storage and processing of highly-enriched uranium (HEU) in Erwin. Nuclear Fuel Services has been declared a **Public Health Hazard** by the Agency for Toxic Substances and Disease Registry (ATSDR) in its May 29, 2007 Public Health Assessment. (Please also add the "Public Health Assessment for Nuclear Fuel Services, Inc., Erwin, Unicoi County, Tennessee, EPA Facility ID: TND003095635" -- <http://www.atsdr.cdc.gov/HAC/pha/NuclearFuelServices/NuclearFuelServicesPHA052907.pdf> -- to ADAMS.) Following are some reasons for our community's unwillingness to continue to be subjected to accident-prone NFS.

- NFS is under a Confirmatory Order, and is supposedly also receiving enhanced NRC oversight following the 37-liter spill of HEU on March 6, 2006 -- an accident covered up for 13-months during NRC's three-year OUC policy. (See Accession Number ML071990558 in the NRC's ADAMS database)
- NFS admitted to a lack of safety culture and agreed to the appointment of an independent Safety Culture Assessment Team. (See minutes of closed meeting between the Commissioners, Region II, and NFS, May 30, 2007 and Discussion of Security Issues). (ML071930389).
- NFS once again deceived the public through the media when a company spokesperson was quoted in a November 26, 2007 Johnson City Press article saying that "NFS proves it has a safety culture every day." (Attachment B)
- Yet, the NRC continues to allow NFS to store and process highly-enriched uranium (HEU) without a safety culture which, according to an NFS News Release, will not be instituted until 2011. (Attachment C) Further, the April 22, 2008 Safety Culture Board

of Advisors (SCUBA) report revealed that NFS is not meeting safety expectations in nine of the 13 categories and the company is only partially or minimally meeting NRC expectations in the other four areas. Still, your agency continues to grant this government contractor license amendments for increased possession limits.

- NRC's apparent willingness to relax Section V.3.B of the Confirmatory Order dated February 21, 2007 (ML073231216), and extend the timetable for achieving a safety culture at NFS. Now, it seems that NFS will not have a safety culture in place until 2011, if then. So, that leaves us, the public, vulnerable in the meantime. (It was interesting to learn that Patrick Card -- National Nuclear Security Administration-Naval Reactors, who initially recommended the OUO policy to the NRC -- is SCUBA's subject matter expert and advisor). (ML072820542).
- The public awareness that NFS frequently does not seem to know the amount of product it has in inventory and must constantly request more time to complete "receipt measurements" and/or "physical HEU inventory" and/or to use "shipper's quantities" when there are shipper-receiver differences. This observation is supported by Amendments 3, 7, 16, 21, 35, 41, 42, 46, 53, 55, 57, 70, 71, 74, 76 and 81 of SNM-124 -- 16 requests in fewer than 8 years! (ML073090651). Two thirds of the inventory-measurement amendments -- which do not include the numerous amendments to NFS's Fundamental Nuclear Material Control (FNMC) plan, by the way -- were granted since NFS & Framatome/AREVA started up the Blended Low-Enriched Uranium (BLEU) project.
- The fact that NFS' SNM License-124 has been amended 82 times (including the aforementioned) since August 3, 1999. In the majority of these amendments, the environmental assessments done by the Licensing Branch seem to be poorly-researched cut-and-paste jobs from licensee reports that result, without exception, in Findings of No Significant Impact (FONSIs) or Categorical Exclusions. It is relevant to Erwin citizen concerns that these Categorical Exclusions were used in the amendment approvals for NFS in 2004-2006, even though the NRC Rulemaking Notation Vote instituting them did not occur until July 2, 2007. (ML071330008)
- Discovery of DOE/EIS-0240-SA1 dated October 11, 2007, buried on the DOE website, which addresses the 17.4 metric tons (mt) of HEU. This Supplement Analysis of the 1996 programmatic EIS on DOE's disposition of surplus HEU was signed by William Tobey on October 11, 2007, **AFTER** the material began arriving in Erwin in August 2007, which was still during the OUO period. Much to the public's disappointment (but not surprise), NRC representatives claimed no knowledge of this NNSA document, although it involves two of your licensees -- NFS and BWXT.
- Arrival in Erwin of an additional 1.3 metric tons of HEU, and approximately 19 thousand mt of LEU, Natural Uranium, Depleted Uranium, and Thorium from Italy -- "ETA December 5/6, 2007" -- without any public notification, import license application, or public comment opportunity. (ML073610337)

- Fitness-for-duty questions and possible criminal charges against an NFS executive. See subpoena issued to NFS Attorney (Daryl M. Shapiro, Esq.), December 3, 2007, by NRC Office of Investigations (ML080150036), and CLI-08-06 Memorandum and Order, served 03/27/08, NRC Investigation No. 2-2006-17 (ML080870303), and FOIA request dated May 12, 2008, regarding "an investigation and report on an allegation involving the chief executive officer of the Nuclear Fuel Services in Erwin, Tennessee." (ML081350030).
- NFS continues to violate the terms of SNM-124 and violations are increasing in number with each inspection report. See Update of Nuclear Fuel Services, Inc. 2008-04-07: "NFS' current performance, as indicated by the number of violations identified since mid-2007 has not significantly improved since the last licensee performance review (LPR). The violations continue to indicate that NFS needs to improve its management oversight to ensure adherence to operational, radiological protection, and engineering procedures. This area for improvement is longstanding as indicated by two of the previous three LPRs". (ML080580192)
- The May 12, 2008 issuance of 25 NFS Event Reports, 2004-2007, reveals that the March 6, 2006 spill of highly-enriched uranium was actually 37 liters and not the 35 stated by NFS in the media. The Event Reports that NRC recently made public also revealed a failure of safety controls to "prevent a hydrogen explosion"; criticality alarm system failures; failure of safety systems resulting in SNM in unfavorable geometry vessels; fitness-for-duty problems due to "failure to adhere to five-hour alcohol abstinence requirements," and a "non-licensed supervisor tested positive for illegal drugs" -- just to name a few "events" at NFS that threaten our community's health and safety.
- The enclosed 103-page Summary of "known" NFS failures, license violations, accidents and other "events", withheld from the public from August 2004 to August 2007, plus additional documents through the present (August 2008), further supports the public's rationale for: (1) opposing more HEU storage and processing in Erwin, TN, (2) opposing further licensing of additional amendments, such as UF6 processing in the new Commercial Development Line, and (3) opposing renewal in 2009 of Special Nuclear Material License-124.

3. In addition to the 13 items listed above, we question the relationship between the licensee (NFS) and members of your staff in Region II, and especially the practices of the Fuel Cycle Facilities Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards. The following is but one example: NFS applied for a possession and storage limit increase on **May 15, 2007**. According to a Federal Register notice, the public could request a hearing by **December 17, 2007**. On June 29, 2007, NNSA awarded a contract to NFS to downblend 17.4 metric tons of HEU. The material began arriving at NFS in **August 2007** (per DOE/EIS-0240-SA1, dated **October 11, 2007**), and NRC granted license Amendment 79 on **November 23, 2007**. On December 5/6, 2007, an additional 1.3 metric tons of HEU, plus approximately 19 thousand mt of LEU, DU and Thorium arrived at NFS from Italy. **In short, not only did the DOE start sending NFS more HEU before the Possession Limit Increase**

(Amendment 79) was granted, but the NRC also granted to NFS License Amendment 79 before the public had a chance to request hearing on the issue.

4. In the NFS request to increase its HEU possession limit, it states:
- "There will be no change in the types, or increase in the amounts of radioactive material that may be released off-site as represented in NFS' current Environmental Report;
 - "There will be no significant increase in individual or cumulative occupation radiation exposures;
 - "There will be no significant increase in the potential for or consequences from radiological accidents.
 - "There will be no changes in the nuclear criticality, industrial, fire, radiation, or environmental safety programs." (ML072550166).

This is a stark contradiction to the increases reported by the NNSA in DOE/EIS-0240-SA1: "a 50 percent increase in risk to workers and 20 percent increase in risk to the public." The SA also addresses the "addition of radionuclides (U-232, U-234 and U-236)," and a huge increase in risk from a filter fire accident. Bottom line, the SA states that the "largest calculated Maximally Exposed Individual (MEOI) dose from downblending activities would occur at NFS primarily due to the much closer proximity of the MEOI."

5. We will return to the discussion of Amendment 79 and the additional radioactive materials from Italy, and discuss now the newly-discovered 2007 Supplement Analysis (SA) to the 1996 DOE EIS-0240. This supplement, DOE/EIS-0240-SA1, reflected "substantial changes" and "significant new circumstances," regarding the disposition of surplus highly-enriched uranium at NFS, BWXT, Y-12 and SRS -- two of which are NRC licensees. This Supplement Analysis was never made known to this community; we discovered it on the DOE website. It addresses the original DOE/EIS-0240, which is 12 years old, and should have been revisited seven years ago for the National Environmental Policy Act (NEPA) to have been honestly abided by. Regardless of how small these changes might seem to the NRC, NNSA or DOE, they are extremely important to us because they affect our health and safety on a daily basis. We trust that you can understand that.

6. We became very concerned when we read on page 8 of this Supplement that: **"the resource areas likely to be impacted include human health risk, facility accidents, transportation risk, and waste management."** The SA also addresses potential impacts occurring as a result of sabotage or terrorism. Table 4.2-2 on Page 11 comparing the Latent Cancer Fatalities (LCF) for the four sites indicates that the risk is significantly higher at NFS than the other sites. **It states: "This SA's calculated offsite population risk is equivalent to the following increased annual risk of an LCF occurring in the total offsite population: 1 chance in 357 for Y-12; 1 chance in 4,545 for BWXT; 1 chance in 71 for NFS; and 1 chance in 416 for SRS."** This makes sense due to the "much closer proximity" of private residences, municipal facilities of the Town of Erwin, schools, churches, nursing homes, retail stores, and the hospital.

7. When confronted with this NNSA/DOE document on February 28, 2008, at a License Performance Review meeting in Erwin, it appeared that NFS became highly defensive, seemed to take ownership of the information, and apparently contacted the co-author, Hitesh Nigam, who said the 1 chance in 71 for LCF due to NFS downblending was really one in 85 million. Nigam eventually told the Erwin Record, "well the footnote **isn't incorrect**." The NRC representatives

at the meeting said they had no knowledge of the document and would get back to us. It appears that Mr. Robert Pierson was the ranking NRC official at that meeting.

8. On March 12, 2008 Mr. Pierson sent a letter to the three Mayors saying the 1 in 71 LCF was really 1 in "71 years" and went on to say, "it is less than the risk of a person being struck by lightning, which is about one in a million." (ML080700043; ML080700118, ML080700092). However, John Broehm, NNSA spokesperson, told the Erwin Record, "that's not accurate." (Attachment D)

9. On April 2, 2008, the NRC, NNSA, and SAIC (i.e., the contractors hired by DOE to belatedly do the SA) representatives came to Erwin for a public meeting to tell us in person that the LCF risk from NFS downblending was (A) one in 85 million (DOE version), (B) one in 71 years, and/or (C) one in a million (NRC versions). A community member asked the panel: if the "71" means years, then it must mean that there would be one latent cancer fatality in "357 years" for Savannah River; one latent cancer fatality in "416 years" for Y-12 and one in "4,545 years" for BWXT. The NRC representatives looked at the DOE and SAIC reps, shrugged their shoulders, and said "yes." At that point, what were we suppose to do, pick one of the three ridiculous answers and be happy with it?

10. In the 1996 Record of Decision (ROD) for the Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement, it states: "For postulated facility accidents, there are also differences among the sites based on different **proximities** and concentrations **and nearby populations...**" **"The greatest impacts to the public from accidents would be experienced at Y-12 and NFS, at both of which the involved facilities are relatively close to site boundaries and population centers."** (Federal Register/Vol. 61, No. 151/Monday, August 5, 1996, Section V).

11. In the 1996 DOE/EIS-0240; Vol. 1, Page 2-35, Paragraph 2.2.3.5, it states "the gloveboxes would be under negative pressure at all times to *ensure* that material is not released into the worker area." However, several spills happened, including the 37-liter spill on March 6, 2006 when SNM was piped into an unsafe-geometry glovebox, the drains for which were partially occluded by debris. It is also interesting to note that on **March 1, 2006, only five days before the spill, a meeting was held at NRC Region II, "the purpose of this meeting is to discuss the apparent violation associated with the failure to consider how credible abnormal process conditions could degrade or defeat the function of glovebox drains (redacted). An additional issue associated with the apparent violation involves the failure to report the glovebox vulnerability to the NRC under 10 CFR 70, Appendix A. The issue was not reported for approximately three weeks."** (Letter dated Jan. 26, 2006, from NRC Region II to Kerry Schutt, President, NFS, ML081500553. See attached Summary – Attachment E -- 10/02/05-11/12/05, Inspection Report 2005-10, dated Dec. 16, 2005, ML081480307).

12. We may be country people, but we are not stupid, and we deserve better. This community has been deceived and taken advantage of for 50 years, and it needs to stop now. We are confident in saying that no one at the April 2nd meeting believed anything the NNSA, DOE, or NRC reps said. The only response we received from Mr. Michael Tschlitz that evening was "gee

we're sorry you don't agree with us." Many of the community members attending the meeting said "it appeared to them that the NRC favored the licensee instead of the public." That certainly has been the experience of the Erwin Citizens Awareness Network members. In the NRC Weekly Information Report (Week Ending April 11, 2008), no mention was made regarding the "public's disagreement" with the NRC/NNSA responses (SECY-08-0051 and ML081130391). Suffice it to say, the meeting caused an increased loss of credibility and trust for the NRC and NNSA/DOE -- and at taxpayers expense. Both agencies have become a laughing stock and the butt of jokes in this community, as evidenced by the enclosed selected examples of recent news coverage. The attached cartoons and Mrs. Kelly's letter to the editor sum up Erwin's opinion of the DOE, the NNSA, and the NRC. (Attachment F)

13. Throughout the discussion of the DOE/EIS-0240-SA1, the NNSA and SAIC reps pointed out many mistakes in the supplemental analysis. That is reason enough to redo the document for public comment, and do it properly -- not a flimsy 23-page report. Needless to say, there has been no follow-up from the DOE or the NRC. Erwin CAN sent a letter to Mr. William Tobey, NNSA, asking for (1) a community health assessment funded by DOE and conducted by East Tennessee State University, and (2) a proper EIS covering NFS' involvement in the disposition of surplus HEU. A copy of that letter is enclosed as Attachment G.

14. Now that you can better appreciate the public's stand on DOE/EIS-0240-SA1 dated **October 11, 2007**, let us return to the timeline of Amendment 79. On **October 25, 2007**, Mr. Kevin Ramsey, one of the **4 authors** of a **3-page** Safety Evaluation Report for this amendment, wrote and published the EA/FONSI for the possession limit increase. On **November 23, 2007**, Amendment 79 was approved -- three weeks before the deadline for the public to request a hearing (December 17, 2007). Could it be that Mr. Ramsey was in a big hurry because he knew about DOE/EIS-0240-SA1, with the 17.4 metric tons coming from DOE sites, and right on it's heels another 21 thousand tons of HEU, LEU, etc. en route from Italy?

15. Now that this SA has surfaced, the increased material from Italy has arrived, the event reports and at least some of the three-year OUC documents have been released, **with this letter, stack of petitions, news articles, event reports and summary of four-plus years of violations and unsafe practices previously withheld from the public, the Erwin Citizens Awareness Network respectfully requests that the Commissioners:**

(1) Revisit SNM-124 Amendment 79 and do not allow any more HEU into Erwin.

(2) Deny approval of NFS's License Amendment Request (LAR) for Processing UF6 in the "new" Commercial Development Line requested on August 31, 2007 (ML073090651). The process, or some of the equipment for it, appears to already exist since it is being inspected. However, to the best of our knowledge this amendment has not been approved and we do not want it to be approved. (ML073040221). From an ordinary concerned citizen's interpretation, the NFS answers to the questions posed by the NRC regarding processing UF6 in the CD Line appear insufficient, shallow at best, and it appears to be impossible to guarantee safety for this process (ML081790147), especially given NFS' admitted lack of a safety culture.

(3) Support Erwin CAN's request to DOE/NNSA for a full health assessment of Erwin and Unicoi County.

(4) Unseal the court records involving the lawsuit between Impact Plastics and NFS and make them public if NRC really believes in openness and transparency. If everything is/was really OK and above board at NFS, then why were the records sealed? According to the NRC Performance and Accountability Highlights Report for FY 2007, the agency missed three output measure targets in its strategic goal of "Openness." Here is a great opportunity for NRC to improve.

(5) Reveal the extent of AREVA's involvement in the March 6, 2006 spill and in the BLEU project in general. Since the majority of the recently-released documents hidden from the public by the OUO policy have revealed failures and noncompliance in the commercial BLEU Project, we would like to know why AREVA (85% French-government-owned) is now managing BLEU, as reflected in the NRC Inspections Reports dated November 14, 2007 (ML073110391) and May 1, 2008 (ML081210590), and the SCUBA Team Report Executive Summary dated February 16, 2008. Perhaps they have been operating and managing BLEU from the beginning? If so, would this not be something American taxpayers should know? And when did AREVA become a part of NFS – or vice versa? Once again, it appears that DOE is running the show ... just like they were when Patrick Card, NNSA-NR, recommended that the OUO policy be established at NFS and BWXT. The NRC Communications Plan Rev. 1, stated, "NOTE: The NRC will not reveal that most BWXT and NFS public information was removed from public access due to concerns raised by DOE." (ML072900428). **Why is the NRC pandering to the French and DOE here?**

(6) Withhold renewal of SNM-124 until NFS has a Safety Culture. Based on the recently-released event reports and information that was previously withheld during the three-year OUO policy, we seriously question whether NFS should receive a renewal of SNM-124 in 2009, since they admit that it will take them until 2011 to establish a safety culture. What should the public do about our health, safety and environment in the meantime? Regarding safety and handling of Special Nuclear Material (SNM), of particular concern to our community was the statement in Enclosure 2 under "Issues to be discussed" which indicates to us that the BLEU process has been a nuclear nightmare (to use Representative Markey's 1980s term for NFS) from the get go, and that it should never have been licensed:

"From system startup in 1999 until May 14, 2004, an engineered control was unable to detect an undesired situation, was unable to implement corrective action without requiring human intervention, and was not capable of performing the criticality safety purpose for which it was specified." (ML081500428 & ML081430457).

16. The above **six-year failure** is a serious threat to the public's health and safety, not to mention the employees. Your Region II people knew about it -- and this is just one example of the many problems and failures outlined in the attached Summary. It seems that safety problems occur almost on a daily basis: e.g., on July 11, 2008 and July 14, 2008, two Events (Report #s 44344 and 44345) revealed that Items Relied on for Safety (IFOFS) were inoperable and that the calibration on the IROFS had not been accurate for perhaps as long as 10 months. (Calibration had expired in September 2007.)

17. Instead of being an organization with the mission to "License and regulate the Nation's civilian use of byproduct, source, and special nuclear materials **to ensure adequate protection of public health and safety**, promote the common defense and security, **and protect the environment**," from where we sit Mr. Commissioner, it appears that the NRC has simply become a rubber stamp -- not only for the DOE -- but for your licensee, NFS, as well.

18. The recently-released documents, redacted though they may be, paint a shocking and dismal picture of the NFS safety record and the seeming lack of NRC enforcement and discipline. The safety culture issues, configuration management, and engineered controls were being discussed between Region II and NFS even before the BLEU project began, but it appears that no improvements were ever made and NFS was still allowed to operate in an unsafe condition. It appears that Region II and headquarters staff simply "looked the other way."

19. It also appears that the NRC rarely, if ever, levies a monetary fine or holds NFS accountable for its lack of safety and compliance with the conditions of its license. Rather, NRC seems to issue a perfunctory "hand-slapping" at best to ceremoniously seem to be enforcing its own regulations. It appears to us that no matter what condition NFS is in, or whether it is capable of handling additional nuclear material or not, they get it anyway, and your agency helps them. That leaves us, the taxpaying public, with no one to look out for our health and safety.

20. We perceive a pattern of behavior here that has been going on since at least the 1980s: whenever NFS gets into trouble, they "reorganize", say they will do better next time, but nothing changes. Why should we think that SCUBA will make any difference now or in the future when it's always déjà vu all over again in Erwin? Now it's NRC's Confirmatory Order and the SCUBA report. In the mid-1980s, it was the Markey Hearing follow-ups. In short, we are not comforted by SCUBA. (SCUBA Report Excerpts, Attachment H).

21. The people here have little, if any, trust left in the NRC, especially after the April 2nd public meeting debacle. Additionally, several members of this community requested a hearing regarding the March 6, 2006 spill of highly-enriched uranium at NFS, the 13-month cover-up of the accident (with NRC help), and the three-year OUO policy. Hearing petitioners were bombarded with letter after letter containing nonsensical legalese from the NRC and NFS attorneys, and, of course, were denied a hearing. As a result of having our participation in NRC's decision-making processes denied by our own government, a substantial group of concerned citizens has formed Erwin Citizens Awareness Network. Erwin CAN is growing every day and since July 18, 2007, we have been watching and learning 24/7. We will continue. We have gained considerable knowledge and research experience as evidenced by this letter, letters-to-the-editor by Erwin CAN members, and the enclosed Summary of events and documents withheld from the public during the OUO period, August 2004 to August 31, 2007, and beyond.

22. We believe that Erwin CAN has good reasons to exist: (1) daily threats to our health and safety, (2) government secrecy during the three-year OUO Policy, (3) 37-liter spill and 13-month cover-up, (4) denial of a hearing about the spill and OUO policy, (5) NFS revelation of the lack of a safety culture, unsafe practices and equipment at NFS as outlined in recently-released NRC documents and event reports, (6) the belief that some members of the NRC staff

(especially in Region II and the Licensing Directorate) are not doing an adequate job to protect the public's health and safety.

23. Additionally, in the many documents the NRC released recently, it appears that very little, if any, of the information, even the redacted portions, had anything to do with homeland security, national security or terrorism prevention. Instead, it appeared that the licensee and, unfortunately, some members of the NRC staff, as well as the DOE, were simply helping to cover up, from public view, a multitude of NFS problems.

24. It takes considerable time, effort, and money to research ADAMS and other websites, make copies of inspection reports, compile letters and summaries like these, and mail them. But we are committed. If we have to work and struggle to try and protect our health and safety on a daily basis, then that is what we will do. However, as taxpayers, we should not have to do any of this; it is what we pay your agency to do. We need the NRC to be on our side, but we do not believe it is.

25. We know that the Commission can order proceedings under Subparts H and O of 10 CFR Part II. However, we have tried an Atomic Safety & Licensing Board (ASLB) hearing petition before, and will no longer waste our time and money requesting a hearing. We believe the serious nature of these NRC/DOE/NFS issues is a matter more appropriately handled by Congress. Perhaps our hard work and research will be helpful to Senators, Representatives & their staffs, and that, inspired by this letter; Congress will get involved.

26. NFS may be a "privately-owned" company, but they are also a government contractor downblending HEU for commercial purposes for the DOE and TVA, and producing fuel for the Navy (DOD). As taxpayers, we have a right to know and ask questions because it is our money that is ultimately paying for this material. In our case, we are paying in too many ways -- our tax dollars, our personal funds, our health and safety, and increases in our utility bills thanks to TVA and its decision to throw ratepayer money down the nuclear black hole. It appears that this community and the surrounding areas have certainly not been well served by the NRC and DOE.

Thank you for your time. We look forward to your written response to this letter in as much detail as your busy schedule will allow.

Respectfully,

Christine Tipton

Marianne Crowe

Sam Pinkerton

Cassandra Rice-McHaff

Wanda Kelley

John C. Kelley

Willie Early

Members of Erwin Citizens Awareness Network
P. O. Box 1151, Erwin, TN 37650

Samuel A. Neal

Enclosures:

(A) 48 pages of petition signatures. NOTE: Some of the names on the enclosed petitions were taken by phone, since the paper copies went missing from several public locations

(B) Johnson City Press, 11/26/07

(C) NFS News Release

(D) Erwin Record

(E) Summary of NFS known failures and events, 2004 to present

(F) Selected newspaper articles, letters to the editor, and cartoons

(G) Erwin CAN letter to NNSA

(H) SCUBA Report Excerpts

Copies w/Enclosures B-H only:

Honorable John D. Dingell

Honorable Bart Stupak

Honorable Edward Markey

Honorable Henry Waxman

Honorable Bob Corker

Honorable David Davis

Honorable Phil Bredesen

Dr. David Lochbaum, Union of Concerned Scientists

Sierra Club Radiation Committee

We the People

Petition seeks to stop NFS uranium plan

By **JIM WOZNAK**
Erwin Bureau Chief
jwozniak@johnsoncitypress.com

ERWIN — A petition is circulating in the region in opposition to Nuclear Fuel Services' proposal to receive and store more high-enriched uranium at its plant.

Sue Kelley, a petition's leader, said Friday that the purpose is to keep NFS' uranium capacity at the same level because the company does not have a sufficient "safety culture." It is a reference to a comment made in a confirmatory order NFS and the Nuclear Regulatory Commission signed in February

that detailed a recurrence of violations of the company's license.

Company spokesman Tony Treadway said the plant is safe. As an example, he pointed to the choice this summer of Tim Lindstrom as general manager, saying one of his priorities is maintaining safety.

"NFS proves it has a safety culture every day," Treadway said.

On June 18, the NRC told NFS that the federal agency had found the application for more storage acceptable to start a technical review. According to a Nov. 7 notation in the Federal Register, the NRC concluded there was "no significant impact" when it conducted an environmental assessment on the NFS proposal. As a result, an environmental impact statement would not be prepared.

Kelley said opponents of the extra uranium would like an environmental evaluation that is independent of NFS and the NRC.

A fuel manufacturer for the Navy that also changes high-enriched uranium into low-enriched uranium, NFS submitted the request for more receipt and storage in May. Marie Moore, vice president for safety and regulatory, told the NRC that the new amount NFS would be able to store is consistent with the total allowed at BWX Technologies in Lynchburg, Va., a competitor.

By having more storage, NFS would no longer have a competitive disadvantage, Moore said.

NFS is not disclosing by how much it is increasing its storage capacity for security reasons.

An Erwin resident, Kelly said the petition has made the rounds at various public offices, around town and in other communities, such as Jonesborough. She does not know how signatures have been collected, but organizers have set a Dec. 1 deadline for people to add their names. People have until Dec. 17 to ask the NRC to hold a hearing on NFS' plan.

The petition says no more

bomb-grade uranium should occur at NFS until the NRC proves the company has an effective safety culture that protects workers and the public. Kelley's assessment is that if NFS does not have a safety culture in its plant, why is the NRC and the Energy Department "trusting them with this extra nuclear material?"

"They have a proven track record of not being able to keep their special nuclear material safe," Kelley said of NFS. "I question the wisdom, with all of the problems (in the past), of letting them store this much material. It's like we're getting a large 'X' drawn on us."

Treadway countered with protective measures he says are in place at NFS — two full-time NRC inspectors who are stationed at the plant and about 140 company employees who are assigned to safety. NFS is in the midst of security upgrades and has modernized its storage facilities, he said.

NFS needs the extra uranium so it can pursue new business ventures, such as supplying fuel to the extra Navy ships that might be built and enacting its new contract with the Department of Energy to convert more high-enriched uranium to a low-enriched form, Treadway said.

The NRC said other factors are also in play. For one, the DOE wants NFS to have six to 12 months worth of high-enriched uranium on hand to support that agency's programs.

"This would allow NFS to continue operating if an increased threat level or other incidents required shipments of HEU to be interrupted or curtailed," said Peter J. Habighorst, chief of the fuel manufacturing branch within the Office of Nuclear Material Safety and Safeguards.

Another issue is the Blended Low Enriched Uranium Preparation Facility, where conversion of high-enriched uranium takes place, has not processed as much material as was planned.

"Difficulties with BPF equipment and operations have caused delays and low processing rates," Habighorst said. "This has created a backlog of material in storage because material is being received faster than it is being processed."

proper frame of reference as to what other nuclear operations did to assure safety," explained Lindstrom. "We've already sent teams of NFS employees to other nuclear plants to observe and learn how those plants achieve excellence. We're incorporating several new improvements at the NFS plant from what they learned in their visits."

NFS will invest several million dollars in plant infrastructure and maintenance improvements. The investments will be to enhance engineered controls and reduce opportunities for human error in production facilities. Meanwhile, several new training and oversight personnel will be hired to increase the staff specifically assigned to assuring safety compliance. Teams with senior level oversight are already at work on program-specific tasks. The teams include union and salaried employees.

"NFS is not where we want it to be today because our goal is to be the best in the business in safety," concluded Lindstrom. "Our effort will take time, money and a consistent focus that will succeed."

(ENCLOSURE)

Letter by NRC backs NNSA's findings

THE ERWIN RECORD
MARCH 18, 2008
PAGE 1A

*But '71 years'
comment adds
to confusion*

By Mark A. Stevens

Publisher

mstevens@erwinrecord.net

The Nuclear Regulatory Commission has weighed in on a controversial report about cancer risks from operations at Nuclear Fuel Services Inc. of Erwin, but that report has only added more confusion to an already complicated matter.

According to a letter sent to Unicoi County Mayor Greg Lynch by Robert C. Pierson, director of the NRC's Division of Fuel Cycle Safety and Safeguards, cancer risks from NFS' downblending of highly enriched uranium are miniscule, but the letter went on to say cancer rates shouldn't be expected to increase over a time period of 71 years.

The explanation is the first time anyone has compared the risk in terms of years - specifically 71 years, and that explanation immediately drew the ire of the National Nuclear Security Administration.

"That's not accurate," said John Broehm, a NNSA spokesman, told The Erwin Record Monday afternoon. Broehm said he and his staff would be contacting the NRC to find out where that agency came up with its "71 years" explanation.

It was only two weeks ago that the NNSA had to do its own explaining after one of its own reports seemed to suggest that one in 71 people living near the NFS plant could develop a fatal cancer.

Please see NRC, Page 8-A

NRC

Continued from Page 1-A

In his letter to Lynch, Pierson says the original NNSA report "could have been explained better."

"We regret the concerns the estimate has caused," Pierson wrote. "NRC staff has reviewed the report and believes that the risk may be clearer when expressed as follows: The exposure of the entire population within 50 miles of NFS, to the annual doses estimated by DOE, for a period of 71 years, would be expected to result in more than one cancer death in the entire population. Please note that the actual releases from NFS are much less than those used in the calculation."

The NRC was responding to public concerns that developed after a National Nuclear Security Administration report came to light that seemed to suggest that there was a "1 chance in 71" of developing a fatal cancer due to NFS' downblending of highly enriched uranium.

The NNSA report titled "Supplement Analysis: Disposition of Surplus Highly Enriched Uranium" was released in October 2007. The 27-page report examined four sites in the United States, including NFS, and the health and environmental risks to areas surrounding those facilities. Underneath a graphic titled "Radiological Doses and Risks," a footnote read, "This (supplement analysis) calculated offsite population risk is equivalent to the following increased annual risk of a (latent

cancer fatality) occurring in the total offsite population."

For NFS, the footnote said the risk was "1 chance in 71."

When contacted by The Erwin Record, one of the authors of the report, Hitesh Nigam, said the footnote actually meant the risk was one in 85 million. His explanation also matched one issued by NFS.

Nigam, a senior environmental engineer in the NNSA's Office of Fissile Materials, said the one-in-71 annual risk of a latent cancer fatality discussed in the footnote actually meant that there is one chance in 71 that one additional person in this 50-mile radius population of 1,287,973 would contract and die from a fatal cancer over their lifetime.

That translates into an increase risk of 0.00000012, or one chance in 85 million of being that one additional cancer fatality.

While the NRC letter, sent to Lynch on March 12, also claims the risk is one in 85 million, it also goes on to say the risk is less than being struck by lightning, which is about one in a million.

Kevin M. Ramsey, a senior project manager at the NRC, said the 71 years was added to its explanation to help the public understand that the risk is "basically zero."

"Basically, if we were writing the report that that's how we would have explained it to the public," Ramsey said. "In an entire population, in that 70 years, if we were trying to

explain it, we would have explained in that way. One in 85 million is just a different way of stating the risk. ... This is another way to think of it."

Ramsey said, "It's sort of hard to grasp how low the risk is. That statistic, one in 85 million, the meaning gets lost. ... We were trying to convey how small the risk is in year after year, after a period of 71 years, out of all that time that's how small the risk is."

When asked if the "71 years" added more confusion to an already confusing mathematical equation, Ramsey said that was possible.

"Maybe we're causing more problems trying to explain it this way," he said. "For all practical purposes, the risk is zero. It's essentially zero, and that's what we're trying to get across. ... It would be easier for people to understand it to say this is a different way of thinking of it."

Because of the confusion, Ramsey said the NRC will hold a public meeting in Erwin to discuss the report and why this type of report is issued, even if the risk seems to be overwhelmingly miniscule. That meeting, he said, will probably happen the first week of April, but details were still not confirmed for an exact date.

"That's part of the reason we're arranging to have a public meeting in April, part of the reason why we want to sit down with people and explain all this," Ramsey said.

In the conclusion of his letter, Pierson said the risk of

developing cancer because of downblending operations at NFS is "less than the risk of a person being struck by lightning, which is about one in a million."

Lynch said he looks forward to hearing more from NRC officials at the upcoming public meeting.

"The one in 71 years did strike me as the first time I had heard that explanation," the mayor said. "That's kind of confusing, but I'm going on the part about the lightning. The 71 years really did throw me, but the 85 million number is good enough for me at this point."

"I hope they will get this explained better in the public meeting."

A local Sierra Club representative and members of the Erwin Citizens Awareness Network have questioned the validity of NFS and NNSA explanations about the controversial footnote.

In turn, the NNSA's Broehm called accusations against NNSA and NFS as "disingenuous" and "irresponsible."

Despite the renewed confusion over the "71 years," NFS Spokesman Tony Treadway said he was pleased to see that "another third party made up of numerous experts had looked at the figures (in the NNSA report) and came to the same conclusion that ... the numbers were taken out of context by the Sierra Club."

"I feel it was unfortunate that the Sierra Club chose to spread misinformation around," Treadway said.

Explanations add up to big fat zero

NFS: Nuclear Fuel Services.

NNSA: National Nuclear Security Administration.

DOE: Department of Energy.

NRC: Nuclear Regulatory Commission.

ECAN: Erwin Citizens Awareness Network.

IDK: I Don't Know.

LOL: Laugh Out Loud.

I figure I might as well get all the acronyms out of the way at the very beginning. It's confusing enough, peppered through a newspaper article.

Don't feel bad if you've been more than a little confused after reading the

FROM THE PUBLISHER'S DESK



By Mark A. Stevens

last two weeks of coverage about NFS and a report from NNSA.

First, there are way too many acronyms involved - NFS, the NRC, the NNSA, the DOE and ECAN, to name the top five. It's about as confusing to me as the "cyber" speak folks commu-

nicate with today on their iPhones, Blackberries and other digital devices - all machines smarter than I am.

If you've kept up with the NFS story, you probably know the gist of it: a footnote in a now-controversial NNSA report seemed to suggest that downblending operations at NFS could cause a fatal cancer in one out of every 71 people living in a 50-mile radius of the Erwin plant.

What it really says, apparently, is that one in 85 million could develop a fatal cancer.

The whole thing has been as clear as mud, and, truthfully, NFS has received a bad

rap throughout the whole thing.

Surprisingly, NFS' troubles stem less from ECAN and the Sierra Club, both of which have expressed concerns about the report, than from the organizations one would expect to offer some clear understanding of the situation.

That's not been the case. In fact, the NNSA, the NRC and the DOE's efforts to explain what the report meant in the first place has become confusing and muddled.

No one seems to be able to properly explain the one-in-85-million figure. That

Please see ZERO, Page 5-A

Continued from Page 4-A

doesn't mean that it's wrong. It simply means that once you try to explain the use of a number that for all practical purposes equals zero, you've got more explaining to do than if you had just said it in simple English the first time around.

NNSA says that its one-in-71 footnote was meant to convey that there is a one chance in 71 that one additional person out of the 1.28 million people living within 50 miles of NFS would die from a fatal cancer over their lifetime.

A few days after the NNSA came out with that clear-as-mud explanation, the NRC decided it would take its own stab at explaining what a zero chance actually meant in the way of numbers.

The NRC decided to add 71 years to the equation, saying it was still one in 85 million. That is, if you didn't pay attention to another correlation listed for the chances of getting cancer. The NRC said the chances would be akin to your chances of being struck by lightning, which is about one in a million.

Later, Kevin M. Ramsey, a senior project manager at the NRC, admitted that "maybe we're causing more problems trying to explain it this way."

Now that's a clear statement.

Last Monday, the NNSA said the NRC's explanation wasn't "accurate," but on Tuesday morning, even the NNSA had changed its mind, saying that the NRC, in its own clumsy way, was essen-

tially correct.

Really? Again, thanks for clearing that up:

The NNSA, the NRC and the DOE are made up of a lot of very smart people - scientists, physicists, mathematicians, to name but a few, but they sure do have a hard time explaining when their own math adds up to a big fat zero.

IDK about you, but I bet officials at NFS might say that with friends like the NNSA, NRC and the DOE, who needs enemies?

You've got to admit that if all this didn't surround such a serious subject, it'd be downright funny. Oh, who am I kidding? Go ahead, LOL.

Chances are just about zero that you can't help but laugh at these people.

LETTERS TO THE EDITOR: IN YOUR WORDS

Tuesday, April 8, 2008 | Page 4-A

Numbers total zero**To the editor,**

My hat's off to Mark Stevens for his many creative stories and editorials. The one entitled "Explanations Add UP To a Big Fat Zero," in the March 25 issue of The Erwin Record, really hit the nail on the head. If I might copy Mark's acronym list just one more time and add a new one to it - SAIC.

DOE (Department of Energy), NNSA (National Nuclear Security Administration - a part of DOE), NRC (Nuclear Regulatory Commission), NFS (Nuclear Fuel Services, Inc.), ECAN (Erwin Citizens Awareness Network), SAIC (Science Applications International Group), IDK, (I Don't Know), LOL (Laugh Out Loud).

If you've read Mark's stories about the DOE (NNSA) document

containing a footnote referring to 1 chance in 71 for Latent Cancer Fatalities in the area surrounding NFS, then you have the story.

For those of us who attended the meeting at Town Hall on April 2, hoping to hear a better explanation or sensible answers from our federal government officials, we might as well have gone on to prayer meeting. After all, the NRC and NNSA did choose to schedule the meeting on a church night - a fact not lost on ECAN.

We didn't learn a bit more than Mark had already covered in his newspaper articles. That's a shame really, because it's our government servants and tax dollars at work here - or not!

The NRCs and NNSAs had several IDKs and had to refer often to the two SAICs for answers, which were not really answers either. In the end, they said the substantial changes and significant new circumstances, one of which is to make and store nuclear reactor fuel for foreign countries, were really not substantial or significant after all.

A community member asked the NRCs, NNSAs and SAICs - If 71 equals years, then it's 1 chance in 71 years for NFS, 1 in 357 years at Oak Ridge, 1 in 416 years at Savannah River, and 1 in 4,545 years for BWXT. Is that correct? The NRCs and NNSAs looked at each other, then looked at the SAICs, shrugged their shoulders and said "yes." Now, I believe that's a definite LOL. Maybe we did learn something new after all.

Sorry guys, it's still a "Big Fat Zero" for me, and other ECAN members, too. And the NRC and NFS wonder why we're skeptical.

**Wanda S. Kelley,
Erwin**

Confusion mounts**To the editor,**

Any hope of clarification of the confusing DOE/NNSA Supplemental Analysis (SA) about our health and safety, cancer risks, accident scenarios and many other significant changes, left town when the NRC and NNSA did. Leaving at the same time was any shred of credibility in the NRC, NNSA, DOE and NFS.

Numerous questions were asked but very few could be answered. The NNSA didn't know what was in the original 1996 DOE/EIS, neither did the NRC. The NRC didn't know what was in the last LPR report about NFS and had to be told. These officials might have been in the same room, but they sure were on the wrong page.

The purpose of this meeting was to clarify substantial changes in the DOE/NNSA Supplemental Analysis. Instead, we only got "I don't know" and more confusion on top of an already complex and confusing document that affects our safety, health, environment, and that of our children and grandchildren. And all at taxpayer expense.

The NRC and NNSA officials were totally unprepared for this meeting. When the public is more informed than the so called "experts" we're in big trouble. If these officials couldn't answer our questions, someone should have been sent that could.

These are the same people telling us we are safe and have nothing to worry about, making serious decisions about our health and safety, not telling us about these decisions, and then are unable to answer questions concerning us on the decisions they made. Confused yet?

A thorough Environmental Impact Statement by the DOE was requested at this meeting. The DOE/NNSA Supplemental Analysis is based on assumptions with admitted errors. The only way to really know the risks to our health

and safety is for the DOE to do a complete and thorough Environmental Impact Statement with a health study that focuses on the workforce and residents of communities surrounding NFS. These studies have already been done at four DOE sites: Oakridge, Hanford Site and the Rocky Flats Plant. A State Health Agreement Program, managed by the DOE Office of Epidemiological Studies was agreed upon, with a grant awarded to the Medical University of South Carolina in 1991 to develop the Savannah River Health Information, to assess the health of populations surrounding SRS by tracking cancer rates and birth defects in the area.

The DOE is conducting these cancer studies because they know impacts are associated with DOE sites. The findings of these studies are in the 1996 DOE/HEU Final Environmental Impact Statement (Volume 1-Appendix E-Human Health). If DOE can do these health studies at other sites, we want to do one here. If not, the DOE can send the 174 tons of HEU to another site. If its so safe, I'm sure any site would love to have it. We don't want it here.

**Wanda Miller,
Erwin**

LETTERS TO THE EDITOR: IN YOUR WORDS

THE ERWIN RECORD
VIEWPOINT, MARCH 11, 2008
PAGE 4-A

Concerned about NFS

To the editor,

I am concerned about Nuclear Fuel Services' plans to expand downblending operations. A recent report from NNSA/DOE concerning risk of latent cancer fatalities in offsite population indicated 1 in 71 will be affected.

Several days after an NFS License Performance Review on Feb. 28, when questions were asked about the risks, a DOE representative issued a statement saying the figures were not presented accurately and now the risk is 1 in 85 million will be affected.

I don't understand where the new figure comes from, but I would very much like this clarified as the differences in the two ratings is astronomical, and suspicious.

NFS plans to expand production of its downblending operation converting highly enriched uranium into low-enriched uranium, and product will be sold to foreign countries to use in their nuclear facilities. Much water is used in the process. Considering all the risks involved, possible contamination of air and water due to accidents, storing highly enriched uranium (whatever amount) is a target for terrorists, and expanding a nuclear processing operation on very limited space with residential areas on three sides.

Do the citizens of Erwin and surrounding area really want NFS to expand operations? What do we stand to gain from this?

In the event of a fatal accident or attack, we have much to lose. If we are not comfortable with NRC granting a license to NFS to expand operations, we need to tell them.

**Mary Ann Crowe,
Erwin**

(Publisher's Note: As reported last week, the authors of the NNSA report have said that the 1-in-71 number was misinterpreted. According to NNSA, "the one in 71 annual risk of a latent cancer fatality means that there is one chance in 71 that one additional person in this 50-mile radius population of 1,287,973 would contract and die from a fatal cancer over their lifetime." That translates into the 1-in-85 million figure.)

Comments don't add up

To the editor,

This is in response to last week's headlines about the National Nuclear Security Administration document, DOE/EIS-0240-SA1. The comments supposedly made by Hitesh Nigam, co-author of the document, do not pass the common sense test.

I attended the meeting, and I have read the document and I believe the 1 chance in 71 latent cancer fatalities is correct, given the proximity of Nuclear Fuel Services to the population of Erwin and the surrounding areas. Keep in mind that Mr. Nigam said "the (footnote) ISN'T incorrect."

On the same page (11) as the controversial Table 4.2-2 and footnotes, at the bottom of the page it states that the largest calculated Maximally Exposed Offsite Individual (MEOI) dose from down-blending activities would

occur at NFS primarily due to the much closer proximity of the MEOI.

Additionally, I found that most of the changes stated in the document actually support the 1 in 71. On page 8, it states that the resource areas likely to be impacted include human health risk, facility accidents, transportation risk and waste management. Also, potential impacts exist as a result of sabotage or terrorism. Regardless of the 1 in 71, I believe these statements are just about all I need to hear.

NFS simply shows its obvious guilt and fear by attacking Mrs. Modica and the Sierra Club. She did not find this document, the Erwin Citizens Awareness Network did. She simply took the numbers in the document and related them to Erwin's population of 5,700. It's quite obvious that the impacts would be worse here than they would be 50 miles away. Perhaps she touched an NFS nerve.

Both the Sierra Club and Erwin CAN are trying to help the community, not hurt it. Honorable Louis Brandeis, a former justice of the Supreme Court, often made the comment that sunlight is a great disinfectant. All these folks are trying to do is shed some light and truth on an otherwise murky issue.

I believe this community has been in the dark too long. It's time we had some light. NFS may provide a few jobs, but money is nothing, if you don't have your health.

**Cassandra Metcalf,
Flag Pond**

EDITORIAL: IN OUR WORDS

The numbers don't lie, but do they mean anything?

After concerned citizens discovered a scary footnote in a National Nuclear Security Administration report that seemed to say that one in every 71 people could develop a fatal cancer because of Nuclear Fuel Services's downblending operations.

Turns out, that's not what it meant at all. In fact, one of the authors of the report told The Erwin Record that the actual figure is one in 85 million. It's little surprise, then, that some people just aren't buying NNSA's new math.

For us, the problem with NNSA's clarification is simply what it isn't: helpful, useful information. It's just more data in a public report that, quite frankly, means absolutely nothing to the general public.

We don't doubt NNSA's figures, but does it really aid the public to be informed about a one-in-85-million chance about anything?

And that's the problem with all these government reports about the nuclear industry. They're written so nuclear physicists can understand them, but it really doesn't aid the public at all.

These reports, it seems, aren't really written for the public good. It's just bombastic statistics.

If the federal government and the nuclear industry, too, want the public to ever start trusting these reports, they need to start providing details that make some sense.

Tell us in simple language why the industry is safe and forget the complicated math.

viewpoint

Tuesday, March 11, 2008 | Page 4-A

Join Erwin CAN

To the editor,

I attended the License Performance Review held by the Nuclear Regulatory Commission Feb. 28 at Nuclear Fuel Services' Training Center. When the LPR was done, one of our Erwin Citizens Awareness Network, or Erwin CAN, members asked about the Department of Energy document found by another member of Erwin CAN earlier in the month.

Dated October 2007, the report was Supplement Analysis DOE/EIS-0240-SA1 - an update of the June 1996 Disposition of Surplus Highly Enriched Uranium Final Impact Statement, DOE/EIS-0240.

The Supplement Analysis, or SA, clearly states (and I quote, by page number) that there are "substantial changes" and significant new circumstances compared to the 1996 EIS (page 1); that the enrichment of the HEU released by the DOE for down-blending had increased from 50 percent U-235 to 80 percent U-235 (page 7); and that "increases in the offsite population dose would also occur due to the higher assumed U-235 enrichment" (page 9).

"All risks resulting from normal operations would also increase because of the larger dose-to-LCF (Latent Cancer Fatality) risk factor used in this SA for both workers and the public" (Page 9).

The footnote of Table 4.2-2 on page 11 clearly states: "This SA's calculated offsite population risk is equivalent to the following increased annual risk of an LCF occurring in the total offsite population; 1 in 71 for NFS; 1 in 357 for Y-12; 1 in 416 for SRS; 1 in 4,545 for BWXT. ... The largest calculated Maximally Exposed Offsite individual (MEOI) dose from downblending activities would occur at NFS primarily due to the much closer proximity of the MEOI."

So, what's NFS' and DOE's problem with the fact sheets and press packets handed out at the Feb. 28 meeting? Is there too much truth in them?

Do they too accurately report numbers that the DOE itself calculated? Do those press packets make public some vitally important data that the DOE itself calculated? Do those press packets make public some vitally important data that the DOE wanted to hide so that the agency wouldn't have to do a new EIS on the down-blending program? Did Erwin CAN expose a report that the DOE intended to cover up? After all, we've already had one cover up by the NRC for NFS for three years. Would one more cover up from the DOE really matter?

Judging from the shoot-the-messenger-type irresponsible and disingenuous reactions of NFS and DOE, looks like Erwin CAN is on to something. In my opinion, this calls for a full and thorough investigation from Congress and the Government Accountability Office. As taxpayers, we pay for practically everything related to the nuclear industry, including nuclear fuel, and this is one time I wouldn't object.

Join us! With Erwin CAN, you'll learn more about NFS than you were afraid to ask.

Wanda S. Kelley,
Erwin

VIEWPOINT

Ridiculous responses

To the editor,

The Nuclear Regulatory Commission's response of "71 years" to the Unicoi County mayor regarding the one chance in 71 latent cancer fatalities (DOE/EIS-0240-SA1, page 11) sounds ridiculous to me.

It was also noted that the Department of Energy spokesman was quick to say, "That's not accurate," just like the author of the document said previously the "footnote isn't incorrect."

In the case of the NRC and the DOE, it appears that the right hand doesn't know what the left hand is doing, and furthermore, they don't agree. We may be country people, but we've got some common sense and so far, none of the responses I've heard pass the common-sense test.

When the four locations in the document are compared relative to the proximity of the offsite populations, unfortunately, the one chance in 71 latent cancer fatalities for the population near NFS makes sense.

BWXT in Lynchburg, Va., is located away from the population, so it makes

sense that the risk chance is one in 4,545. For Savannah River in South Carolina and Y-12 in Oak Ridge, their surrounding populations are closer - that is why their risks, and ours, are higher. We are closer in proximity than any of them.

A letter and a copy of the DOE document were hand-carried to U.S. Rep. David Davis' local office over a month ago.

Letters were faxed and mailed to U.S. Sens. Lamar Alexander and Bob Corker. No response.

Unfortunately, we may have to accept the fact that the document is what it is, and that the information is correct. And while it is never my intent to scare people, just about everybody I know has some type of cancer, or is a cancer survivor.

It's not surprising that the Cancer Outreach Associates of Tennessee set up an office here in Erwin recently.

In a letter to the editor on Nov. 6, 2007, Chris Tipton wrote, "The bottom line is that business looks out for business and the residents of Erwin need to look out for their own health, safety and environment. We cannot become complacent with someone else's promises or deceptions."

And, as Thomas Jefferson once pointed out, "The price of freedom is eternal vigilance."

**Barbara O'Neal,
Erwin**

**OFFICIALLY-DOCUMENTED SPILLS, RELEASES, FIRES,
EXPLOSIONS and PROBLEMS at NUCLEAR FUEL SERVICES,
USING FEDERAL AGENCY REPORTS**

(Note: (R) means word or text has been Redacted)

2003

- 11/24/02 Investigation completed by NRC Office of Investigation (OI) on July 25, 2003 to determine whether a Nuclear Fuel Services, Inc., (NFS) decommissioning supervisor deliberately falsified records related to the transfer of low-enriched uranium (LEU) solution. **The OI substantiated the decommissioning supervisor willfully authorized the transfer of LEU solution without conducting required verifications and reviews prior to and/or during the transfer**, but did not substantiate that records were deliberately falsified. Based on NRC review, it appears that a causal factor for the first line supervisor's willful actions was a lack of clear direction from NFS management which tasked this individual to perform multiple oversight activities and conflicting work assignments (in this case asbestos abatement activities and LEU solution transfer activities.) Further, **the decommissioning supervisor's documentation of the transfer resulted in the recording of inaccurate information pertaining to the transfer**. An apparent violation was identified and is being considered for escalated enforcement actions. NRC Office of Investigations Report # 2-2003-024 (NRC Inspection Report #70-143/2002-011, 1/16/04, **ML081500552**.
- 01/20/03- The previous LPR for NFS facility stated procedural compliance was
01/24/04 an area needing improvement and recognized that NFS has recently reorganized to more effectively address past procedure compliance issues. Incidents have occurred during the evaluation period where certain safety controls were not fully understood by workers. Since NFS facility heavily depends on administrative safety controls, more attention on communication of safety information to workers is warranted. The lack of management oversight to ensure implementation of process and safety controls in some areas suggested that additional attention in this area was warranted. NFS' performance and ongoing facility changes warrant increasing NRC oversight with additional inspections of the facility expansions, **continuing actions to improve safety performance, and the efforts for improving safety communications and management oversight. A detailed criticality safety analysis was not performed** when changes to existing equipment and procedure changes were made **in order to process licensed material where**

more than a safe mass existed and double batching was possible (Inspection Report (IR) 2004-001); Mass (R) limits for (R) containers of (R) were exceeded when material was moved from one (R) area to another by operators who did not know the NCS requirements for the (R) area; (R) containers of (R) exceeded the (R) H/X ratio established by NCS for a (R) area because no method of verifying the actual H/X ratio of the material prior to placing the material (R) had been established; Approximately (R) (Note: newspaper article from Elizabethton Star dated 4/21/04 stated 25 grams uranium metal shavings) ignited inside of a glass vial after being shaken while a sample was being extracted. In designing this process, NFS had only focused on whether or not the material was pyrophoric, and had not utilized available industry experience and procedures on combustibility. Also (R) had supplied recommendations to licensee which were not followed.

Storage of special nuclear material (SNM) containers in the (R) scanning facility without proper safety postings; Lack of supervisory oversight for a waste transfer operation in the (R) caused solution to be transferred from a favorable to an unfavorable geometry vessel that was over the allowed procedural concentration limit; the supervisor failed to properly check all lab results and equipment conditions before approving the transfer; a transfer of liquid process waste from the waste disposal (R) was performed that did not meet NCS limits for uranium concentration; the operator incorrectly recalled the release limit and informed the supervisor the sample results were satisfactory; the supervisor also recalled the limit incorrectly and approved the transfer; failure to maintain a control in the (R) process area according to configuration management control program led to a fire. Licensee Performance Review (LPR) of Licensed Activities for Nuclear Fuel Services, Inc., Docket #70-143, 3/12/04, (3 VIO), ML081440081.

04/22/03- Results of the NRC Agency Action Review Meeting (AARM).
04/23/03 The purpose of this memorandum is to inform the Commission of the results of the third AARM meeting held on April 22-23, 2003, in Annapolis, Maryland. AARM is an integral part of the evaluation process in the NRC reactor oversight program (ROP) to review the operational safety performance of reactor licensees. AARM was held to achieve five objectives, two of which are: #1-To ensure trends in industry and licensee performance are recognized and appropriately addressed; and #2-To allow NRC senior managers to review agency actions that have been taken for those fuel cycle and other materials facilities with significant safety and

safeguards issues and identify additional actions, as applicable. **Only those plants with significant performance problems are discussed at AARM. The plants discussed are those whose performance had resulted in them being placed in either the multiple/repetitive degraded cornerstone or unacceptable performance columns of the ROP action matrix.**

Under the ROP, NRC actions are taken as necessary to address plant performance issues as they are identified; that is, the agency does not wait for the annual review to take actions and allocate resources and provides for a range of actions for the NRC to implement to address plant performance issues. One of the measures to support the Agency's strategic performance goal to "maintain safety, protection of the environment, and the common defense and security" is no "statistically significant adverse trends in safety performance."

"Materials Licensee Discussions: Mr. Martin Virgillio, Director of the NRC Office of Nuclear Materials Safety and Safeguards (NMSS) provided a brief description of the process that NMSS employed in assessing licensee performance trends to arrive at which licensee would be considered to be discussed at the AARM. **Mr. Virgillio stated that NMSS worked with the Regional Administrators to perform a screening review and concluded that one facility, Nuclear Fuel Services (NFS) in Erwin, TN., needed to be discussed at the AARM.**

Mr. Luis Reyes led a discussion of Nuclear Fuel Services, Inc. The LPR identified the following areas as needing improvement: **ensuring procedural compliance (identified in each of the last three (3) years); implementation of material control and accounting (MC&A) program; and completeness of license amendment applications. Mr. Reyes discussed the uniqueness and importance of the facility, MC&A inspection findings which resulted in a Confirmatory Action Letter and an Office of Investigation (OI) investigation; unresolved items; and upcoming Licensee and NRC actions. As a result of these discussions, the senior managers concluded the performance of Nuclear Fuel Services, Inc. does not meet the criteria in SECY-02-0216 for discussion at the Commission briefing on the AARM. Memorandum from William D. Travers, Executive Director for Operations, Results of the NRC Agency Action Review Meeting, April 22-23, 2003, dated 5/2/03; ML031250269.**

11/30/03- The criticality accident and alarm system experienced **five**
01/24/04 **trouble alarms during the two-week period** from Dec. 26, 2003, to

Jan. 10, 2004; the in-line monitor system software required elevation of the investigate flag; the system would not permit receipt operations to proceed until a subsequent satisfactory test was conducted. On Dec. 31, 2003, NFS identified residual water in (R) tank when it was believed the tank contents had been transferred to the waste water treatment facility (WWTF) on the previous shift. Operators performing the required non-destructive assay survey after the transfer found more than expected activity, which led to an inspection of the tank and subsequent discovery of the residual water. The area supervisor directed the operator to recirculate and sample the tank contents in order to determine the level of (R) material present. **The supervisor subsequently discovered the discharge valve to the WWTF, (R) was open when it was required to be locked shut whenever a transfer to WWTF was not in progress.** This requirement was to prevent a transfer of waste solution to the WWTF which may have an unacceptably high level of (R) material.

Licensee investigated the event and found an inadvertent transfer had in fact occurred on July 17, 2002 under similar circumstances (See NRC integrated inspection report 70-143/2002-205, section 4.0, violation (VIO 70-143/2002/205-02). From September through December 2003, licensee had performed three repair actions on valve (R). A separate maintenance record existed for each repair but records did not document whether the valve had been replaced, repaired, or adjusted. Maintenance records did not identify what parts or equipment had been utilized for repairs or replacement. Interviews conducted with NFS maintenance staff indicated this was typical of maintenance department records. Although not an NRC violation, **the lack of information in maintenance records reviewed** was a potential weakness in that **the records did not provide support for trend analysis of SRE failures and also did not provide documentation to support the configuration control program.** Likewise, preconditioning performed as part of periodic testing of SRE would be considered a program weakness.

Failure to perform required reviews and verifications -- this issue concerns procedural violations which occurred on Jan. 12, 2003; Failure to perform a detailed criticality safety evaluation as required by section 4.1.2 of the license application, for a temporary operation which occurred from Sept. 9, 2002 through Jan. 12, 2003. (AV 70-143/2004-01-02 and 03), Inspection Report, 1/6/04, EA-03-178, ML040200552.

On January 8, 2004, a radiological technician (RT) had become contaminated with beta contamination. **The individual had**

responded to assess and survey liquid dripping out of a damaged ventilation duct. A small amount of liquid dripped on the individual's head, and a subsequent survey identified 98,000 disintegrations per minute per 100 square centimeters (dpm/100cm²) beta radiation. After being promptly decontaminated, his skin dose was estimated to be less than two milli-rad. The technician was assessed to have no internal dose from the event. **The damaged section of ventilation was temporarily repaired with a viton patch.** Inspection Report #70-143/2004-01, 2/23/04, EA-03-178 and EA-03-124, ML081440460.

12/15/03-
12/18/03

Licensee stored multiple SNM (R) containers in a location (R) which was neither designated for storage nor approved by a posted station limit card. The inspector observed the storage of multiple 55-gallon drums containing NDA standards in a location, which was not posted with a storage station limit card; the location was not designated for storage by licensee procedure NFS-HS-CL-13, which applied to the scanning facility. NFS was not maintaining copies of approved station limits, specifically, the position of (R) Facility Manager had not been established to maintain copies of the approved station limits; NFS failed to conduct the implementation of NCS-07-01 as described in licensee procedure NFS-HS-HS-A-62; "The Guide lines and Expectations for the Implementation of Nuclear Criticality Safety Evaluations" had not been established **prior to licensee conducting the implementation of nuclear criticality safety evaluation. (One Violation, with three examples was identified with implementing licensee's nuclear criticality safety program.)** An employee respirator malfunctioned (the filter cartridge separated from the mask unit) exposing the worker to Pu-239/240. Samples indicated slightly above licensee action limits. An intake of 1.73 E-5 μ Ci was added to the worker's dose record for calendar year 2003. This net impact is a CEDE of 7.4 mrem. **The inspector also verified if the required nuclear criticality safety inspections for every shift in the fuel manufacturing area were being performed and noted a few were missing over the last 2 months.** Inspection Report #70-143/2003-010 and Notice of Violation, 1/ 26/04, ML081440508.

2004

01/25/04- The LPR for the previous review period concluded management
01/22/05 oversight for certain operations needed improvement. Weakness in oversight and procedural compliance have continued into this LPR period and now have been found in new or modified operations. **Your prior corrective actions have not been effective. Our current review concluded improvements were needed in the development and documentation of nuclear criticality safety bases and the oversight of your (R) program. Licensee compromised an IROFS when they failed to demonstrate the concentration of the material in the (R) BLEU Preparation Facility was less (R) prior to discharge; Licensee compromised an IROFS when they failed to control (R) unfavorable geometry bags that were open and unattended (R); Licensee compromised an IROFS when they failed to remove an unfavorable geometry bag from the OCB process area after use; Licensee compromised an IROFS when they failed to remove an unfavorable geometry bag from (R); Licensee failed to verify the availability of a fire safety IROFS for the (R) system, (Non-cited Violation); Failure to follow fire safety procedures that involved new areas/modifications; Improper implementation of Letter of Authorization (R) for the (R) was not properly implemented and led to a fire (R); the NCS evaluation (R) failed to adequately demonstrate a k-effective below 0.95; an engineered control was not capable of performing the NCS purpose for which it was specified (Enforcement Discretion, (IR) 2004-04-02); the NCS evaluation for the (R) operation had been modified to replace an active engineered control with an administrative control. The (R) NCS evaluation lacked justification for replacing the engineered (R) control with an administrative sampling control in a human performance-challenged operating environment; The NCS Department failed to evaluate the use of a new (R) container (R) prior to use (NCV); A safety related equipment (SRE) process logic controller (R) was identified as being degraded; a fire resulted when the work request procedure was not adequately performed for the installation (R) due to a weakness in the licensee's procedure for implementing configuration control in Internally Authorized changes. (NOTE: The last two items are completely redacted). Licensee Performance Review for Nuclear Fuel Services, 3/22/05, ML081370278.**

01/25/04- **A spill of depleted uranium occurred in the (R) laboratory with a**
03/06/04 **notable delay in the safety office being informed; personnel involved and the area of the spill were not promptly surveyed by a qualified radiological control technician (RT); a second event**

occurred in the (R) laboratory and concerned use of a sealed glass ampule containing (R) of Plutonium 239; the ampule top snapped off but left a sharp edge which gave the chemist a small cut on the thumb. After reviewing laboratory precautions contained in SOP 387 there were no specific precautions for opening sealed glass ampules. **Special precautions or safety instructions were not issued. The chemist stated no special precautions or safety instructions had been provided for this work.**

NFS (in the process of decommissioning) has been shipping Contaminated soil and debris in intermodal shipping containers to the Envirocare disposal site in Utah, **(Vendor-MHF Logistical Solutions in Pennsylvania)**. On Jan. 15, 2004 licensee was notified by MHF that radiological contamination had been detected in several of the returned intermodals. The HP found maximum fixed contamination levels to be 804,000 disintegrations per minute (dpm) beta, and 408 dpm alpha. Smearable contamination levels were 1268 dpm per 100 square centimeter beta and 20 dpm/100² alpha. Out of a fleet of 471 containers, 194 had recently been sent to MHF. Of the 194, NFS determined 104 were shipped directly from NFS and the remaining 90 were shipped from Envirocare to MHF. An investigation by NFS concluded the contaminated intermodals had been surveyed by Envirocare and that Envirocare had shipped the intermodals to MHF at the direction of NFS. **This position was contradicted by a letter sent to Envirocare from NFS dated Jan. 16, 2004 requesting Envirocare investigate the issue.** This letter stated the intermodals were decontaminated and free released by Envirocare "prior to return to NFS" and that based on the free release criteria shipping documentation provided by Envirocare, NFS subsequently shipped the containers to MHF. **The inspector made licensee aware of the contradiction between the investigation conclusion and the Jan. 16 letter.** A URI was opened for contaminated intermodals returned to vendors. Inspection Report No.70-143/2004-02, 4/2/04, ML081440459.

02/23/04- Licensee failed to control unfavorable geometry bags with volumes
02/27/04 greater than (R). **Six plastic bags with volumes greater than 3.3 liters were opened and unattended** in the 800 area without having 1.5 inch openings cut in the bottom corners. **This had the potential for solution accumulation in excess of licensee's (R) volume limit.** Inspectors noted the approximately five-gallon bags contained construction related parts associated with ongoing equipment installation and were located in or adjacent to areas of the facility where enriched uranium was present and uranium (R) and non-uranium (R) solutions were normally processed. Liquid drainage

from five of the bags was provided through small holes cut in the bottom corners of the bags that were partially blocked by the contents of the bags. The sixth bag had no provision for liquid drainage (i.e., no holes). **Inspectors determined that in the event of a solution spill, the size and shape of the holes on five of the bags and lack of holes in the sixth bag would permit the accumulation of greater than (R) of solution.**

Licensee's CAS has had 27 trouble alarms since Nov. 2003 when licensee began substantial installation of new CAS equipment. Inspectors determined the likely cause of the trouble alarms was associated with the installation (i.e., placement, mounting, and wiring) of new CAS detectors and monitors. Severity Level IV Violations, Inspection Report #70-143/2004-201 and Notice of Violation, 3/11/04, ML081440450.

03/07/04-
04/17/04

From Sept. 9, 2002 through Jan 12, 2003, operations which involved more than a safe mass of licensed material where double batching was possible were performed under temporary procedures which involved changes to existing equipment without performing a detailed criticality safety analysis. Feb. 24, 2004 NFS work request 80896 was approved to replace an emergency light (R). The initiator failed to follow SOP-392 requirements as identified in the work request form and insure all "yes/no" fields were checked, failed to indicate or coordinate with Industrial Safety the work involved penetrating a firewall and failed to provide a detailed description of the work to be performed. These failures led to a penetration of a firewall that went undetected for several days, having inadequate compensatory measures in place to ensure the integrity of the firewall.

On March 16, 2004 a fire watch failed to maintain visual observation of the hot work activity at all times. Prior to March 19, 2004, new projects (R) had been in operation for approximately twelve months and six months, respectively. Licensee failed to incorporate these projects in the Pre-Fire Plan; Failure to maintain visual observation of hot work activities at all times; Failure to Comply with written procedures impacting fire safety.

May 15, 2004 the inspector noted a firewall penetration was not sealed. Licensee was not aware of the degradation in the firewall. The penetration was the result of a work request form to replace an old emergency light. The new model did not require connections to a power distribution box. The connections and conduits running through the firewall were removed (as well as the

distribution box) **leaving the penetration in the fire wall**; the work request form was not properly completed; the initiator **failed to determine the safety considerations** and; the work request did not indicate the work involved a firewall and was not coordinated with Industrial Safety as required; the work request form did not include a detailed description of the work to be performed as required. Failure to comply with written procedures impacting fire safety in that a firewall penetration existed without compensatory measures. Failure to comply with written procedures impacting fire safety for failure to develop a Pre-Fire Plan when two new projects were being designed, constructed and subsequently operated. Inspection Report #70-143/2004-03 and Notice of Violation, 5/17/04, ML081440458.

03/29/04 **NRC determined NFS employee engaged in deliberate misconduct.** Inspection conducted by NRC from Nov. 24, 2002 to Jan. 18, 2003 and an investigation completed by NRC Office of Investigations on July 25, 2003, concluded an **NFS supervisor failed to perform required reviews and verifications that sample results were within limits, failed to perform required verifications of valve positions and tank inspections, and failed to be present for the operation as required when he deliberately failed to verify by review of the At-Site Environmental Sample Assay System (AESAS) sample result that discard limits were met, failed to verify that calculated sample results agreed within (R), did not notify the nuclear criticality engineer the sample results were above the limits, did not perform required verification of valve positions and tank indications, and did not observe the transfer of low enriched uranium solution as required by licensee procedures. Furthermore, the NRC determined these actions constituted deliberate misconduct, which resulted in the transfer of low enriched uranium solution without required verifications being conducted prior to and during the transfer on Jan. 12, 2003.** This is a Severity Level III violation and caused NFS to be in violation of Safety Condition S-1 of Special Nuclear Materials License No. SNM-124, Section 2.7 of the License Application, and NFS Letter of Authorization (LOA)-8828-036, Handling Miscellaneous Solutions During the (R) D&D Projects. Letter to NFS employee, IA-04-001, Notice of Violation, Office of Investigations Report No. 2-2003-024 and Inspection Report #70-143/2002-11), 3/29/04, ML081500239.

03/29/04-06/18/04 As part of the safety program, licensee committed to establish management measures to maintain the reliability of IROFS. The inspectors noted **several deficiencies in the area of testing of IROFS**; An issue was noted with testing of the blend tank high-level

switch, the test did not have instructions for the operator to isolate the tank should the level switch fail to actuate; During observation of the test for process monitor (R), the inspectors noted **deficiencies in the test methodology. The functional test for the monitor did not adequately isolate the IROFS**, which was a hardwired interlock, **from the process controls**, controlled by computer software; The inspectors could not determine if the IROFS or the process logic computer had actuated the safety interlock. **On the same test, the inspectors noted the calibration standard used to actuate the monitor alarm circuitry was well above the limiting condition for operation specified in the ISA Summary, therefore, the test did not verify the monitor would alarm at the required setpoint.** One significant deficiency was identified in the (R), which was part of an IROFS. Fluctuations in the (R) measurements of the total (R) in the system enclosure prevented the system from passing the functional test. During review of the fire protection IROFS for the (R) system it was noted **the functional test of the (R) detection interlocks did not verify the (R) detector was in calibration prior to performance of the test. One test deficiency was identified in the IROFS tests that prevented backflow from the operations areas into the (R) chemical areas.** The inspectors noted the test for (R) used a pressure indicator (PI), but **PI was incorrectly located in the system** to provide the desired indication. The inspectors identified **several SRE tests, which were inadequate in that the tests did not properly verify the IROFS safety function and required significant modification.**

The inspectors found **the initial calculation for the nitrogen supply tank indicated very little safety margin or conservatism for the safety system to fully function.** The inspectors noted that several sole IROFS, which referred to the tank structure for (R) chemicals (R), had been deleted from the ISA that had been approved by the NRC licensing branch. Subsequent guidance from the NRC licensing branch indicated deletion of sole IROFS under these circumstances was acceptable.

Licensee discussed with the inspectors the ALARA goal for this calendar year. Based on licensee's calculations, **a limit of 500 mrem/yr for external exposure and 500 mrem/yr for internal exposure would be established for the BPF operations.** The inspector emphasized the need to readjust the action limits for the BPF operations in order to provide some level of notification to alert the radiation safety staff of some adverse trend developing. Licensee decided to set alarm limits of 20 mrem total dose on the electronic dosimeters but **no action limit was established for extremities in the BPF facility.**

The inspectors observed licensee's detector placement methodology employed a conservative source term based only on the prompt gammas emitted by primary fission events and observed the dose contribution from prompt neutrons, neutron-induced photons, and delayed fission/activation product photons **was excluded from the coverage analyses. Prompt gammas from secondary fission events** (due to neutron absorption in proximal non-critical uranium sources, e.g., adjacent areas) **were omitted**. NFS' emergency preparedness plan was applicable to the BPF. The inspectors reviewed the changes added. **The major concern was with rupture of the product transfer line from the BPF to other buildings.** The proper analysis was done to address this event and the necessary steps were described in the plan to mitigate the event **in case of a large spill**. The inspectors noted the gaseous and liquid effluent releases from the BPF were expected to cause a slight increase in NFS' releases. Inspection Report #70-143/2004-05, 8/02/04, ML081290542.

04/18/04-
05/29/04 Several deficiencies in the lockout/tagout notebook; Numerous entries were out of date, some closed items still appeared to be open, and the record was generally disorganized; **March 16 a transfer of waste solution containing (R) material had been transferred from favorable to unfavorable geometry without the required lab analyses; investigation identified the wrong sample result had been listed by the analytical lab (R); although no samples had been drawn on the waste solution which was transferred (R) indicated that samples had been received and analyzed. Operations personnel performed the transfer based on incorrect data in (R). Lab personnel failed, both on sample receipt and during sample analysis to verify the sample number on the sample containers against the listed number in (R); a bar code reader was available to scan sample container labels and accurately identify samples and record them in the (R) system but was not used because operators preferred a different method of using (R). Failure to verify (R) solution was a violation of NRC requirements but is being treated as a NCV because it is non-repetitive and licensee-identified and corrected.**

May 14, 2004, licensee reported a previously unidentified failure mode for a piece of safety related equipment (SRE) had been identified during review of an integrated safety analysis (ISA); the SRE item was a conductivity probe and was designed to detect and prevent the transfer of moderating materials (R). Testing verified the probe was not able to meet the specified performance criteria, in that the conductivity probe was not capable of detecting certain moderating materials that could be present in (R) material. The

operation was in a shutdown state when the problem was identified- **the condition had existed since system operation commenced in 1999. Addendum 2 of the NCSE for the area identified this conductivity cell as the only criticality control to prevent transfer of moderating material (R); the NCSE identified the presence of various types of moderating material and the potential for a process upset which could result in an undesirable transfer of moderating material not detectable by the conductivity probe to the (R). Only one criticality control remained fully in effect, which was geometry control on the (R). Failure of an engineered control to be capable of performing the criticality safety purpose for which it was specified is a VIO of NRC requirements and is identified as an Apparent Violation (AV).**

The inspector observed a 38% increase in the Deep Dose Equivalent (DDE) for CY 2003. NFS attributed the change to a 23% increase in the monitoring population for CY 2003, an increase in inventories, and activities associated with the Tennessee Valley Authority (TVA) project. Based on environmental dosimetry results as of April 2004, the maximum assigned public exposure closest to the fence line was 81 mrem/yr, which exceeded NFS's ALARA goal of 80 mrem/yr. NFS attributed this change to the storage of natural uranium oxide in drums in building 310. One deficiency was identified because of a poor ALARA evaluation, which involved the handling of material in and out of a dry glove box enclosure. The evaluation made incorrect assumptions concerning contamination in the dry glove box, the location of material inside the dry glove box, the position of stationary air samplers around the dry glove boxes, and the height of the individual performing the operation. These incorrect assumptions lead to an individual exceeding the derived air concentration (DAC) action levels in the area and unexpected contamination inside the dry glove box. Licensee's staff documented **unusually high contamination ranging from 100,000 disintegrations per minute (dpm) to 300,000 dpm inside a dry box enclosure located in the process area.** NFS had posted a temporary clean area inside of a radiologically controlled area and the posting was confusing; this was brought to the attention of the area supervisor and health physicist. Inspection Report #70-143/2004-04, 6/28/04, ML081440457.

04/18/04- Exercise of Enforcement Discretion refers to NRC Inspection
05/29/04 conducted on April 18-May 29, 2004 at NFS. The violation involved NFS's identification of a previously unidentified failure mode for a piece of safety-related equipment (SRE) during an ISA review. Because the instrument did not meet its performance criteria, only one credited criticality control (**two lines R**) was in place. **The amount of material available was sufficient to form a critical**

mass and the inability of the instrument to perform its specified criticality safety function under certain conditions constitutes a violation of Section 4.1.1.1 of NFS' License Application. It was determined the merits of this case warrant the exercise of discretion. To emphasize the importance of self-identified and correction of violations, after consultation with the Director, Office of Enforcement, to propose that neither a civil penalty nor Notice of Violation be assessed or issued in this case. Exercise of Enforcement Discretion, NRC Inspection Report #70-143/2004-04, EA-04-113, 10/6/04, ML081500427.

- 05/02/04-
05/04/04 **On April 28, 2005 the BLEU (R) ventilation system (R) so that double contingency was not established for scenario 4.1.3.** Notice of Violation, 6/2/04, Inspection Report 2004-203, ML081440203.
- 05/10/04 The Department of Energy (DOE) (P. A. Card, Director of Security, Naval Nuclear Propulsion Program) sent a memo to the NRC requesting they consider making information about the Navy fuel production at (NFS) Nuclear Fuel Services, Inc., and BWX Technologies (BWXT, which had previously been made publicly available by the NRC, should be considered, at a minimum, Official Use Only (OUO) on the basis that it constitutes sensitive, unclassified information (SUI). P. A. Card, Director of Security, Naval Nuclear Propulsion Program, Department of Energy, NR: EXT: PACard V#C04-01081, 5/10/04, to Mr. Glenn Tracy, Director, Nuclear Security, U.S. Nuclear Regulatory Commission; ML072540300.
- 05/14/04 **Loss of Criticality Safety Controls. Event #40750.**
- 05/30/04-
07/10/04 LEU operators and area supervisor were not cognizant of the multiple emergency (e-stop) functions nor their effect on system operations; LEU operators were unsure which of the multiple (four) e-stops to use; the LEU supervisor was unable to determine which LEU operations were affected by the various e-stops; both HEU and LEU e-stops had not been labeled; CO₂ tank below required minimum reserve. Inspection Report #70-143/2004-07, 8/9/04, ML081290541.
- 06/18/04 Letter from Glenn Tracy to Patrick Card responding to his request to withhold documents currently available to the public in the licensing files for NFS, Inc., in Erwin, TN and BWXT in Lynchburg, VA, and treating them as Official Use Only (OUO), ML072900407.
- 06/24/04 **Removable Surface Contamination Greater Than the Limits.** NFS received shipment of natural uranium (R) from CAMECO (R). One of the 55-gal.drums was found to be contaminated on the

bottom. Survey result was 455 (DPM/100 square centimeters). The limit is 220 DPM/100 sq. cm. Access to drum was restricted. Remaining drums being surveyed. Event #40840.

06/24/04- **Press inquires to the State of North Carolina and NFS related to**
06/25/04 **a transportation event of the previous day. Region II received initial notification of a leaking tanker truck from NFS on June 24, 2004. The tanker, containing natural uranium, departed the NFS site with a load of approximately 3000 gallons of natural uranium uranyl nitrate. On June 24, NFS learned the tanker had developed a leak and was parked at an Interstate 26 weigh station near Hendersonville, North Carolina. A tanker rupture disc was found to be ruptured, which allowed liquid to build up in the manway enclosure and drain to an overflow tank. Leakage was observed to have occurred at both the manway enclosure lid and connections to the overflow tank. The leak rate from the overflow tank drain was estimated to be 10 to 20 drops per minute. Three spots of uranium contamination were identified at the weigh station, the highest being 8000 dpm/100cm² alpha and 150,000 dpm/100cm² beta. The ruptured disc was replaced and other potential sources of leakage were tightened by the NFS response team. Licensee planned to remove the tanker truck pending inspection and approval by the North Carolina Motor Vehicle Division. (Preliminary Notification of Event or Unusual Occurrence, PNO-II-04-005, 6/25/04, ML041770515.**

07/11/04- On July 14, 2004 the inspector observed a spray release of water
08/21/04 and dilute sodium hydroxide solution from a flange in the feed piping (R). While the flange was being disassembled for maintenance which sprayed the supervisor in the chin and neck area below the face shield; the supervisor doffed the chemical resistant suit while the standby operator re-tightened the flange bolts; the supervisor then rinsed the affected area under the eyewash station. Investigation revealed the precautions taken to depressurize the system were inadequate, and also the chemical resistant suit should have been closed at the neck.

July 14, a lightning strike affected the site (R) criticality alarm system and caused an inadvertent criticality alarm and evacuation; the alarm was audible but not loud enough in the (R) of the BPF; July 24 a power interruption during (R) testing caused an inadvertent criticality alarm; August 2, a criticality alarm occurred due to momentary high readings on the (R) detector pair, NFS determined electrical interference from a malfunctioning circuit was the cause; August 2, a system alarm occurred but did not energize the speaker amplifiers to sound

an evacuation; a criticality accident alarm occurred but no site evacuation occurred.

July 26, a fire occurred (R); cause of the fire was determined to be (R). (Note: Details of the fire follow in Event Report #40901) (Note: Event report listed the event date as 7/27/04 with NRC notification on 7/28/04)

In response to the fire, NFS replaced damaged lexan panels and HEPA filters (safety related items); Review of test records noted the values obtained for the differential pressure across the filters **fell below the minimum expected value, but operation of the equipment continued due to the filters being newly installed; the test did not state what acceptable operating values were and did not clearly state required action if values outside expected values were obtained;** Failure to perform SRE test; Failure to follow an SRE test procedure. NFS planned to rewrite the SRE test to clearly set acceptable operating values for filters.

August 3; a ceiling **light fixture (R) caught fire;** at the time of this inspection, NFS had not established a project to replace the lamps which were a fire hazard.

August 8, 2004 an NFS supervisor failed to perform a daily nuclear safety inspection which was to be performed daily while the facility was manned by operations personnel. Failure to perform the daily supervisor nuclear criticality inspection when operating personnel were in the building, prior to receiving a shipment of uranyl nitrate was a violation of NRC requirements. This non-repetitive, licensee identified and corrected violation is being treated as a NCV.

From August 2003 to April 2004, stack (R) had frequently exceeded licensee established action points. Upon review of the action levels for ALARA, NFS indicated a re-evaluation of the technical basis for action levels in NFS-GH-40 be completed to determine if action levels should be increased; **Leaking roof in (R) facility.** Inspection Report #70-143/2004-08 and Notice of Violation, 09/20/04, ML081440246.

07/26/04-
07/30/04 Based on laboratory scale experiments performed in 1997 and 2004 and a **technical article published in 1968,** NFS determined the UNH tanks remain subcritical even when filled with the most reactive precipitate. Based on this conclusion, NFS is revising the underlying nuclear criticality safety evaluation (NCSE) and plans to revise the ISA summary and work procedures to eliminate controls after the NCSE is approved. **Inspectors were concerned that NFS had not**

considered how the elimination of controls on precipitating agents would affect assumptions for other aspects of the UNB operation.

The inspectors had observed in a technical article that UNH without free acid has the worst characteristics relative to density increase resulting from freezing, **specifically that during freezing, the UNH may exceed a critical density.** NFS had not implemented any changes at the time of the inspection.

A criticality alarm actuation and evacuation occurred on July 14, 2004 due to a lightning strike. During the evacuation, some participants stated they had been unable to hear the alarm or that the alarm annunciation was not loud enough. The problem was traced to a newly-installed amplifier with incorrectly set voltage. Inspection Report #70-143/2004-204, 8/27/04, ML081440201.

07/27/04 **Fire/Explosion in Off-Gas System.** Ignition of off-gas process line during disassembly of processing equipment. A small flame occurred for a period of several minutes inside ventilated containment. Slight damage occurred to plexiglass surface and prefilter element. Radiological hazard involved a quantity of HEU. Repairs are being made to the off-gas (R) involved and recovery is underway. Investigation being done to determine cause of fire. Event #40901. (Note: Inspection Report 70-143/2004-08 dated 9/20/04, states that the fire occurred on **7/26/04**).

08/09/04 Confirmation of Closed Meeting, Nuclear Fuel Services, Inc., scheduled for August 27, 2004 at the NFS facility to afford NFS, Inc. the opportunity to discuss the results or outcomes achieved thus far **in improving both safety culture and regulatory compliance, specifically, (R).** In addition, we anticipate your discussion will include the (R) criticality warning system issues, and new initiatives at NFS' facility. This meeting will be closed to the public due to the discussion of proprietary and sensitive material. **(Everything else (R).** Confirmation of Closed Meeting, Nuclear Fuel Services, Inc., Docket #70-143, 8/9/04, ML081290545.

08/16/04-
09/03/04 **Third phase of the Blended Low Enriched Uranium (BLEU) project approved for the Oxide Conversion Building (OCB) and Effluent Processing Building, (EPB), and determined to be adequate** for commencement of operations. Inspection Report #70-143/2004-11, 10/18/04, ML081440452.

08/22/04-
10/02/04

Failure of equipment containing SNM. On Sept. 21, licensee identified a pinhole in the (R) in the **BPF underneath a (R), which had experienced a failure.** Licensee concluded the most likely cause of the hole was electrical arcing. Minor levels of contamination were noted and corrected; the hole was weld-repaired. **Several personnel were contaminated while attempting to contain the material.** Highest level noted was approximately 565,616 disintegrations per minute per 100 square centimeters (dpm/cm²) on one arm, and 10-20 dpm/100 cm² in each nostril of same person. Bioassay samples collected from personnel in the vicinity were below investigation levels.

In down-blending areas, NFS noted an increase in the Deep Dose Equivalent (DDE), which was attributed to the radioactive material inventory and the nature of selective work activities, **including interaction with the BLEU material, which had an increased external gamma hazard. Unusually high incidence of radiological contamination problems in BPF were identified. Eight personnel contamination events were recorded for the month of August 2004.** One of these incidents occurred on August 26, 2004. A licensee operator cleaned up a **spill in the BPF facility.** A survey of the individual after decontamination showed contamination levels of 40,000 dpm/100 cm² on the lower portion of the individuals arms and both sleeves of the coveralls and 1100 dpm/100 cm² in the operators hair. A maximum activity of 65,659 dpm/100 cm² was detected on the workers right arm. Decontamination was successful and lapel and bioassay results showed minimal activity.

An emergency exercise was conducted. The inspector noted the following aspects of **licensee's performance was inadequate:** Poor command and control of activities at the incident scene as related to access control and contamination control; no briefing was provided to offsite response personnel at the incident scene or the Emergency Control Center (ECC); no dosimetry or radiological survey personnel was assigned to the offsite fire brigade for monitoring potential exposures and contamination to personnel and equipment; the response to provide triage to victims was delayed; and the failure to assign radiation protection personnel with survey equipment to accompany the contaminated accident victim to the hospital for assessing and advising medical personnel regarding contamination. Inspection Report# 70-143/2004-09,11/1/04, ML081440455.

09/13/04

Amendment 52: Remove Sampling Requirements for Banner Spring Branch. This branch, which previously cut across NFS

property, has been relocated and enclosed inside a pipe. Sampling requirements are no longer needed. Only inflow is now storm water runoff. EA or EIS categorically excluded per 10 CFR 51.22(c) (11). Amendment 52, Safety Evaluation Report, 9/13/04. (Note: Arsenic soil contamination, beryllium, mercury, antimony, lead and polycyclic aromatic hydrocarbon above the site-specific action levels has been detected in surface soil and sediment in Banner Spring Branch. Chemical constituents were detected in surface water samples above the Tennessee Water Quality Criteria, above site-specific action levels as defined by NFS or EPA drinking water maximum contaminant levels.

Cyanide, nitrate/nitrite, copper, and zinc were detected at elevated concentrations. One water sample contained nitrate/nitrite levels above site-specific criteria. In Martin Creek surface water, mercury was detected above the Tennessee Water Quality Criteria.

During the period from January 1990 to July 1996, a single chemical oxygen demand (COD), cadmium, lead, and copper concentration measurements exceeded the NPDES permit limit. Both of these streams flow into the Nolichucky River.

Groundwater contamination is also in the Alluvial Aquifer and the Bedrock Aquifer for both radionuclides and chemical contamination). Environmental Assessment for Renewal of Special Nuclear Material License No. SNM-124, U. S. Nuclear Regulatory Commission, Division of Fuel Cycle Safety and Safeguards, NMSS, January 1999. Effective 09/13/04, ML072630225.

09/20/04 **Amendment 58: Administrative Changes to NFS Air Sampling and Bioassay Programs** by letter dated Sept. 20, 2004. Changes considered administrative in nature and staff determined proposed changes do not adversely affect public health and safety or the environment and are categorically excluded from requirements to prepare site specific environmental assessment. EA or EIS not warranted for this action. Amendment 58, Safety Evaluation Report, TAC L31847, 01/13/05, ML072630198.

09/24/04 **Closed meeting at NFS site in Erwin, TN. on August 27, 2004**, to discuss information about (R) the criticality accident alarm system. Enclosure 2 provided the following: Section 4.1.1.1 of the License Application, Engineered Controls, states: Engineered controls detect an undesired situation and implement corrective action without requiring human intervention. Engineered Controls must be capable of performing the criticality safety purpose for which they are specified. **"From system startup in 1999 until May 14, 2004, an engineered control was unable to detect an undesired situation,**

was unable to implement corrective action without requiring human intervention, and was not capable of performing the criticality safety purpose for which it was specified." Predecisional Enforcement Conference Agenda, Nuclear Fuel Services, Inc., 8/27/04, Erwin, TN., Docket No. 70-143, ML081500428 and ML081430457 (9/24/04).

- 09/30/04 **LAR 57: Request for Time Extension to complete receipt measurements. Letter dated 9/30/04. More time needed to perform required receiving activities with larger shipment quantities. No EA or EIS warranted for this action. Amendment 57, Safety Evaluation Report, TAC L31864, Effective 1/10/05, ML072630207.**
- 10/03/04-
11/13/04 Uncontrolled geometry bags; failure to conduct safety function activities in accordance with written procedures; **a fire resulted (R) due to the temporary manifold mixing the flammable gases into the inert gas line**; Licensee temporarily shut down HEU operations in the BPF due to violations of operations and safety procedures in order to develop and implement performance improvement measures; **IROFS out of service due to operational errors**; procedural requirements not followed for temporary equipment; **failure to follow criticality safety requirements for discard of waste containing (R) material**; excessive accumulation of potentially contaminated trash overflowing onto the floor; licensee did not have an approved process for disposal of more than minor amounts of radioactive trash, and during an intense maintenance period, was initially unable to package and remove radiologically contaminated trash at the rate it was generated; one fire safety (IROFS) inoperable; failure to verify the rotameter valves were open prior to operations; The inspector informed licensee the lack of guidance for defining when a system is placed under configuration control was a weakness; removal of lamps which are a fire hazard not replaced; **failure to meet nuclear criticality safety limits for a transfer of liquid process waste; failure to maintain configuration control of temporary equipment. Inspection Report #70-143/2004-10 and Notice of Violation, 12/13/04, ML081440453.**
- 10/06/04 **Safety Related Needle Valves in Incorrect Position. Potential vulnerability to workers and public of a high consequence event involving failure of safety controls that were designed to prevent a hydrogen explosion in the BLEU Preparation Facility U-Aluminum Dissolution glove-boxes/ dissolvers. Needle valves were closed on the U-Aluminum dissolver to protect against a Hydrogen Explosion in the enclosure or at the dissolver/interface. Other controls were in place to partially mitigate a potential hydrogen explosion. Event #41097.**

- 10/15/04 **Amendment 53: Request for Time Extension to Perform Receipt measurements of material shipment for potential business opportunities.** Includes the categorical exclusion for EA or EIS per 10 CFR 51.22(c) 12, Amendment 53, Safeguards Evaluation Report, Effective 10/15/04, ML072630238.
- 10/20/04 **LAR 55: Submitted Oct. 20, 2004. Request for Modification of Material Inventory Measures. Request needed because of upcoming Nov. 2004 HEU physical inventory. No EA or EIS is needed per 10 CFR 51.22 (c) (12). Amendment 55, Safeguards Evaluation Report, Effective 11/05/04, ML072630248.**
- 10/26/04 **Failure of Safety System Causing Unfavorable Geometry.** NFS reported a transfer of low concentration HEU solution from favorable to unfavorable geometry initiated upon sampling data that was not representative of the solution. **The solution was determined to be above the transfer concentration limit.** Verification of HEU concentration is an administrative item relied on for safety (IROFS) for the accident sequence. **The failed control is administrative sampling and verifying the concentration is below the limit.** NFS states the solution will be reprocessed to lower concentration prior to discharge. Event #41149.
- 11/01/04-
11/05/04 Licensee did not store contaminated absorbent material in (R); licensee had an outdated posting displayed at the (R) warehouse receiving desk. Inspection Report 70-143/2004-206 and Notice of Violation, Docket No. 70-143, 12/9/04, ML081440245 & ML081440515.
- 11/01/04-
11/05/04 **March 9, 2004, Scenario 4.1.7 failed to ensure the introduction of the more reactive materials (R) would not result in a k-effective exceeding 0.95.** Specifically, Scenario 4.1.7's analysis did not consider optimal placement of the more reactive material; On **October 25, 2004, licensee released liquid waste effluent from the Caustic Discard hold columns without the demonstration that U235 concentration was less than (R);** December 14, 2004, licensee failed to comply with the unfavorable geometry bag handling requirements of NFS-HS-CL-27. Specifically, licensee did not close, modify, or remove the unfavorable geometry bag from the area upon completion of the activity which required the use of the bag. Inspection Report 07000143-2004-207, License No. SNM-124, Docket No. 70-143, Notice of Violation, 2/10/05, ML081440507.
- 11/14/04-
01/22/05 Failure to follow the posted criticality safety instructions. This non repetitive, licensee-identified and corrected violation is being treated as a non-cited violation (NCV); Letter of Authorization (LOA) 1953K-

006 was issued to improve a safety measure (R), and was effective on Dec. 21, 2004. On Jan. 5, 2005, the inspector found the information tags required by the LOA were installed as required, but the training for all supervisors and operators had not been completed. The LOA had not been entered properly into the training and qualification (T&Q) system as a job requirement. After the corrected entry was made, the inspector found that some operators were still assigned without having completed the required training. The inspector noted new procedures or changes are put into the T&Q system and the system puts qualified operators in a "disqualified" status until training is completed. Normal shift job assignments then cannot be made for those operators since they are in a disqualified status. This routine occurrence is dealt with by supervisors making the job assignments in a "training" status, until the operator completes required training which appears to diminish the effectiveness of the formal qualification system in place, in that **no strict control is in place to require operational and safety significant changes to be promptly reviewed.** License Application section 2.7.2, Operating Procedure Changes, required analyses, reviews, testing and training to be completed before procedural changes were implemented. Failure to complete training on LOA 1953K-006 prior to implementation was a violation of NRC requirements (VIO 70-143/2004-12-02).

Operational difficulties and system inaccuracies were apparent in the (R) system as the (R) system went through initial operation beginning in June 2004. Licensee addressed one issue of clogged instrument lines by making the instrument taps larger and of a different configuration. System problems were published in a detailed Error Analysis, which the inspectors reviewed. The analysis documented the errors and inaccuracies in the measurement system arising from the following areas: **variability of free acid in the solution; temperature effects and lack of temperature compensation; excessively long runs of instrumentation piping; lack of fine control on nitrogen purge flow; electrical errors including analog to digital signal conversion; an inaccurate SRE PLC software formula; and intrinsic instrument error.**

January 7, the inspector identified the Safety Related Equipment (SRE) Program Logic Controller (PLC) was carrying a negative holdup valve (R) and noted that in December 2004, the negative balance had been as high as (R). Licensee reviewed the PLC program and determined a negative balance would be added to the normal operational limit, and therefore the system would not control or limit the mass in the enclosure to specified values. The criticality safety mass limits were (R). The (R) system was operating in the (R)

mode when this issue was identified. The process was shut down until compensatory measures were implemented. Degradation of the safety function of the SRE PLC was an apparent violation (AV) and will be tracked as AV 70-143/2004-12-04, pending further NRC review.

The (R) system utilized a separate program in the same SRE PLC (R). The (R) system monitored total mass in the process enclosure and (R) by direct weight measurement of the entire enclosure and (R) using load cells. The inspectors found the system appeared to function properly, but that if the load cells signaled less than the initial empty weight of the enclosure, the software would simply zero the weight. This appeared to be a potential problem with the safety function, in that if the enclosure or connecting piping were modified such that the enclosure actually weighed less, it would be possible for the system to mask holdup of (R) material. Since the system had been shut down for an extended outage, no information was available indicating the system was degraded during the last operations conducted.

The inspector noted some mixing and sampling tests for BPF equipment required by 10 CFR 74.59, had not been completed satisfactorily at the time of this inspection. Acceptable results for the blend tank mixing and sampling test had been obtained even though two downblend batches had been completed. **Mixing and sampling tests on the (R) caustic waste storage columns had not been performed even though the system had been in use for the last six months.** This issue will be tracked as URI 70-143/2004-12-05.

The inspector observed licensee's actions to address **elevated radiation levels measured in the (R) area of BPF. The source was believed to have been contaminants in the BLEU material in process in the building, as well as storage (R).** Measured radiation levels varied. Licensee had posted a map of radiation levels at the entrance to the space, trained individuals to minimize time in the area. **The inspector noted the elevated readings could cause some operators to reach their administrative limits sooner than licensee had anticipated.** Several occurrences of contaminated shoes of personnel (R) were noted. Elevated contamination levels, slightly above the 500 disintegrations per minute (DPM) limit, (R) on several occasions. An effort was made to reduce contamination levels, which reduced instances of excessive contamination but did not eliminate the problem. November 10th, licensee removed contaminated trash (R) without a contamination survey and without other controls such as enclosing the trash bag in a second, clean, plastic bag. NFS procedure GH-01

required items being removed from a controlled area to be surveyed before release. Failure to perform contamination survey. Inspection Report #70-143/2004-12 and Notice of Violation, 02/18/05, ML081440451.

- 11/15/04 **Wet Offgas (WOG) Line Calculation Not Performed.** The WOG line is specified as IROFS (R) and is listed as (R) in the Recovery Deionized Water Nuclear Criticality Safety Evaluation Risk Indexing Supplement. Setpoint analysis was believed to be completed on all Recovery WOG lines. It was determined this WOG line calculation was **not performed on Nov. 15, 2004. IROFS (R) was not reliable and available on (R) and (R) transfers to (R) which occurred on Oct. 28, Nov. 2, and Nov. 11, 2004. Event #41197.**
- 11/17/04 **LAR 60:** *Request for Updated Decommissioning Schedule for the North Site by letter dated Nov. 17, 2004. NFS submitted request to amend License SNM-124 to reflect updated decommissioning schedule for North Site and to include the changed pages to the license application. Soil remediation is still needed, plus final status survey must be performed. Categorical exclusion for EA or EIS. Amendment 60, Safety Evaluation Report TAC No. L31861 by letter dated Nov. 17, 2004, Effective 2/29/05, ML072630167.*
- 12/08/04 **Amendment 56: Revisions to Fundamental Nuclear Material Control Plan of LEU.** No EA or EIS warranted for this action per 10 CFR 51.22 (c) (12). Amendment 56, Safety Evaluation Report (TAC L31844), Effective 12/08/04, ML072630218.
- 12/13/04-
12/17/04 **Double contingency (R) of the NCSE for the Oxide Conversion Building Scrap Dissolver was not adequately established;** failure to comply with the unfavorable geometry bag handling requirements; failure to get NCS approval prior to storing (R) containers; tracking of licensee's actions to adequately justify the acceptability of replacing an engineered control with an administrative control; failure to ensure that k-effective values for credible abnormal conditions did not exceed the 0.95 limit; licensee **released liquid waste effluent from the caustic Discard (R) without the demonstration that the U235 concentration was less than (R); less than a safe mass of enriched uranium was involved in the transfer.** Inspection Report #70-143/2004-207 and Notice of Violation, 2/11/05, ML081440512 and ML081440511.
- 12/13/04-
12/17/04 On March 9, Scenario 4.1.7 of 54X-04-0001, "Nuclear Criticality Safety Analysis for Areas (R) Facility" Revision 0, failed to evaluate the parameter for a failed control (i.e. introduction of more reactive materials) at both the most reactive system location (R) and

with the parameter for the functional control (reflection) assumed at the most reactive value within its controlled range (R). **The parameter for the failed control was not evaluated at the most reactive system location, but rather it was evaluated at the top (R) water reflection.** Inspection Report #70-143-04-207 and Notice of Violation, EA 05-115, 6/10/05, ML081440456.

12/17/04 **Criticality Control event.** Materials were transferred to a storage area without being transferred through a particular device as required by Standard Operating Procedure (SOP) which prevents a more reactive/ incorrect material type from being transferred. Event Report #41274.

2005

01/05/05 Closed meeting between NFS and the NRC, Region II, to provide NFS the opportunity to discuss its performance and the results thus far in **improving both safety culture and regulatory performance**. Topics for discussion will include: organizational initiatives; status of actions to improve safety and equipment performance; root causes and commonalities among recent operational challenges associated with the blended low enriched uranium (BLEU) project; update on the Employee Sensitivity Study; and new business initiatives. Letter dated 12/16/04 from W. Gloersen for/David A. Ayers, Chief, Div. of Fuel Facility Inspection, Nuclear Regulatory Commission, Region II, to Kerry Schutt, President/General Manager, NFS, Inc. **ML081500236.**

Closed Meeting (1/5/05) Summary from NRC - Letter dated 1/27/05 from NRC Region II to NFS. "Meeting afforded you the opportunity to provide feedback to the NRC regarding your efforts to present the results of a recent employee sensitivity study and discuss your plans to improve several areas of employee relations. In addition, the meeting afforded you the opportunity to discuss other issues including safety performance, operational performance challenges, (redacted), new initiatives in procedural improvements, management programs and core values. **Meeting provided the NRC with an acceptable level of confidence of NFS' plans to improve the facility's performance in the above areas.**" Letter to Nuclear Fuel Services, Inc., from /RA/, David A. Ayers, Chief, Division of Fuel Facility Inspection, to Kerry Schutt, President/General Manager, NFS, Inc., 1/27/05, ML081370274.

01/06/05 NRC staff representing the Offices of Nuclear Security and Incident Response and Nuclear Material Safety and Safeguards met with NFS & the **Department of Energy Office (R)** at the NFS site in Erwin, TN. The purpose of the closed meeting was to discuss NFS procedures (R). It was agreed that NFS (R) and implement procedures (R). NRC staff will review any changes (R). **(All remaining has been redacted).** Nuclear Fuel Services, Inc., Meeting Summary, 1/6/05, RE: (R), 01/14/05, ML081500228.

01/07/05 **Faulty Programmable Logic Controller (PLC) For Oxide Dissolution Operation.** The Programmable Logic Controller (PLC) for the Oxide dissolution operation had a negative holdup value. **A negative holdup value in the PLC results in the PLC using an artificially high mass limit.** Event #41316.

- 01/10/05 **Amendment 57-Approve Time Extension to Perform Receipt Measurements, Effective 01/10/05, ML072630207.**
- 01/13/05 **Amendment 58-Approve Administrative Changes to Air Sampling and Bioassay Programs, Effective 01/13/05, ML072630198.**
- 01/23/05-03/05/05 Failure to verify the volume of the (R) did not decrease during a blend operation; **from process startup in June 2004 to Jan. 7, 2005 the safety related equipment process logic controller (SRE PLC) for the (R) process was not capable of performing the criticality safety purpose for which it was specified, in that the PLC was not capable of monitoring or detecting holdup of material in the process and would not properly control (R) material mass as required;** a weakness was identified in licensee's ability to formally communicate nuclear criticality safety instructions for abnormal situations; failure to operate in accordance with approved procedure. The effectiveness of a temporary instruction specifying safety instructions was decreased because **safety checks were not required to be recorded.** The event was also an example of poor operator awareness of safety system status during operation; an example of inadequate training on system modifications and procedural changes was identified; not all purge flow paths were independently verified; use of temporary equipment authorized by written instructions did not specifically control the fixture by addressing equipment dimensions; one example of **improper maintenance creating a fire hazard** was noted; **licensee audits identified deficiencies which were repetitive of past problems; licensee had not included the OCB and the UNB in the quarterly audits and monthly inspections; several fire dampers did not have protective screens.** Inspection Report #70-143/2005-01 and Notice of Violation, EA-05-032, 4/4/05, ML081440195.
- 01/23/05-02/04/06 **License Performance Review (LPR). Efforts to improve safety in BLEU processing operations not implemented or not effective (62 failures and areas of concerns including 37 violations, 10 NCV, 2 areas of weakness, 3 URIs, One Civil Penalty, and 6 Violations for Failure to properly control SSNM).**

A large number of deficiencies are in the BLEU processing operations, where your efforts to improve safety have either not been implemented or were not effective. In addition, BLEU operations continued to experience problems after the LPR period ended, that a Confirmatory Action Letter was issued on March 18, 2006. Based on the performance information reviewed, the NRC found areas needing improvement in four of the five

performance areas, including problems identified in the previous LPR period associated with implementing the criticality safety analytical process, implementing the safeguards program, management oversight of operations, consistency in the implementation of the radiological protection program, the quality assurance of transportation packages, the use of the corrective action program, facility configuration control, the reliability of the criticality alarm system, and control of strategic special nuclear material. The number and repetitive nature of elements of this LPR are indicators that further action to improve your safety culture is warranted.

Safety Operations: Failure to prohibit use of a positive bias in calculating upper safety limits (USLs); the method approved in the license assumes any positive values of bias to be equated to zero; Failure to discuss the actual safety limit based on a neutron multiplication factor of 0.98, where the license limited the neutron multiplication factor in such cases to 0.95; **Failure to implement/establish a criticality safety control identified in the safety analysis for the uranium-aluminum (U-Al) hydrogen dilution ventilation system;** Failure to establish an appropriate concentration safety limit for a non-uniform aqueous solution in the waste water treatment facility (WWTF); Poorly controlled modification of a process enclosure drain; Various inconsistencies and deficiencies found in validation reports and analyses involving verification of normality of benchmarks, definition of the area of applicability, and calculation of the upper safety limits (USLs); Failure to conduct downblending operations in accordance with approved temporary procedure due to **lack of awareness of disabled safety system;** Failure to remove danger isolation tags prior to system operation for testing on the HEU storage columns in building 333; **Failure to store SNM in its authorized location due to confusion over identical storage racks;** Failure to rework U-AL process caustic waste solution according to procedure led to a **transfer to the ventilation system;** Transfer of raffinate solvent extraction waste into a solvent extraction boil-down condensate storage area using a temporary hose, which was not covered by approved written procedures; Failure to place the lock and tag on the single energy isolation point, prior to performing work on the equipment; **Failure to have personnel present in the building during operation of the Uranium-Metal (U-M) dissolvers for approximately one hour,** contrary to procedural requirements; Failure to comply with criticality safety postings which restricted the number of drums stored in the QC vault; Failure to leak-test the Area 800 components when required by operating procedure; Failure to close an open container when it was left unattended; **Failure to**

comply with criticality safety instructions.

Radiological Controls: Failure to control work in contaminated areas with the BLEU Preparation Facility (BPF) with written procedures; Two examples of failure to properly control and release radiation work permit (RWP) areas, involving missing boundary tape in controlling an area and no final surveys before releasing an area; Failure to ensure an employee's urine sample was collected within the required time frame, **and to deny that employee access to the BLEU protected area**; Failure of plant staff to don full face respirators or evacuate according to procedure; Four examples of failure to comply with RWP instructions involving inadequate RWPs, incorrect personal protective equipment (PPE), improper postings of an area, and poor final close out surveys; Failure to post the RWP at the job site; Four examples of failure to follow RWP requirements involving failing to wear PPE; No radiation controls were established for excavation work adjacent to the WWTF, which had been controlled as a Radiologically Controlled Area when previously excavated and filled with fresh gravel; **Failure to perform audits of the Transportation QA program during the last three years addressing all applicable criteria** of Subpart H of CFR Part 71, using appropriately trained personnel not having direct responsibilities in the area audited; NFS issued PO0412052298 on 12/6/04 without prior QA approval of the requisition and without including the mandatory quality requirement for nonconformance disposition; PO0412052298 issued by NFS on 12/6/04 failed to specify the provisions of Part 21 applied to the procurement; Failure to adequately evaluate and qualify Century Industries for design, testing, and fabrication activities performed under PO0303038655.

Facility Support: Ineffective corrective actions, highlighted by a shallow root cause investigation, and failure to follow through on recommended evaluations and corrective actions; **No verification the discard block and bleed valve were locked shut prior to performing a transfer operation between banks**; No signature verification, the discard valve was shut and locked as required, **and no verification the valve lineup was correct prior to initiating recirculation of the system**; NRC and licensee-identified issues were not entered into the corrective action program until requested by inspectors. The inspectors noted **several issues which had been identified by NRC inspectors and discussed with licensee management which were not entered in PIRCS until inspectors made repeated inquires**. On each separate issue, **inspectors had to either make repeated requests for information or point out to senior management that no entry was yet made in PIRCS**; Two corrective action program entries related to radiation protection

issues were not made until requested by the inspectors. One entry resolved a RP violation by incorrectly documenting no violation occurred-corrected after the inspectors reviewed the item; The **design basis of the U-AI enclosure drain safety system was inadequate**, (EA 2006-018) in that enclosure vacuum was not considered; Failure of the safety related equipment program logic controller to be capable of performing the criticality safety purpose for which it was specified; **Failure to analyze required environmental effluent samples in the BLEU complex sewer**; Failure to maintain configuration control due to lack of use of engineering change notices; Failure to correctly set the 333 Building solvent extraction condensate **inline monitor to a non-conservative value**; Licensee discovered a criticality safety concern, in that the wet off gas line for the raffinate column in the uranium recovery area was not adequately sized to prevent pressurization of the system; **Only out-of-date configuration drawings were available in the BPF**; Licensee identified a **failure mode for an IROFS that was not recognized in the design process when the in-line monitor failed but the process continued to run**; The NRC identified a failure to recognize a potential NCS precursor during review of an internal event; An investigation identified potential **NCS control failures resulting in fissile solution accumulation in the BLEU U-AI dissolution process off-gas system**.

A large number of trouble alarms and false high radiation alarms due to electrical problems; New radiation monitors reset themselves to factory defaults and rendered one detector pair inoperable with no indication of system trouble or fault; Criticality alarm system inoperable in the NDA/Loading dock area due to detector failure (Retracted EN 42047); NRC EN 4226 involved a **relay failure for a criticality detector in the Oxide Conversion Building, which rendered the detector pair inoperable**.

Safeguards: Six examples of failure to properly control SSNM (AV 2005-202-01, EA 2005-093, SL-III/CP; VIO 2005-012-03; VIO 2005-009-01; AV 2005-009-02, EA 2005-180 and URI 2005-013-04). Licensee Performance Review (LPR) of Licensed Activities for Nuclear Fuel Services, Inc., Docket Number 70-143, 3/28/06, ML072490009. (Note: Confirmatory Action Letter issued 3/18/06, but it cannot be located on ADAMS).

01/28/05 ***Amendment 59-Approve Deletion of License Conditions S-2, S-4, and S-5, Effective 01/28/05, ML072630127.***

02/01/05 Letter to NFS from NRC Office of Investigation (OI) regarding the **failure to energize the speaker amplifiers during a**

troubleshooting event of the Criticality Accident Alarm System (CAAS). OI determined there was insufficient evidence to substantiate a deliberate violation of procedures occurred when the speaker amplifiers of the CAAS were not energized. Nuclear Fuel Services: Willful Failure to Energize Speaker Amplifiers While Troubleshooting Criticality Accident and Alarm System (Office of Investigations, Case No.2-2004-040/RII-2004-A-0082), 2/1/05, ML081360254.

- 02/02/05 Letter to NFS from NRC, Region II, confirming discussion between NFS staff and NRC advising no objections of Oxide Conversion Building (OCB) introducing low enriched uranium (LEU) into the OCB based on inspections of safety controls during inspections of Jan. 3-7 and Jan. 10-12, 2005. NRC staff reviewed equipment, startup test results, procedures, hazards and safety analyses and **conducted interviews with Areva/Framatome personnel who will be involved in the process, including employees in operations, technical support and management.** Letter to Nuclear Fuel Services, Inc., from /RA/ William D. Travers, Regional Administrator, Region II, Docket No. 70-143, Operations of Blended Low-Enriched Uranium Oxide Conversion Building, 2/2/05, ML081370404.
- 02/04/05 Letter to NFS from NRC concerning licensee Response to Notice of Violation 70-143/2004-206 dated Jan. 7, 2005. Licensee has not completely identified the corrective actions to prevent recurrence and date when corrective actions will be completed. **Corrective Action Step #5 identified the consideration of a procedure revision to allow low-level cleanup materials from glove-boxes to be collected in, and removed through, the bag out port sleeves without requiring the use of a (R).** NFS' response does not indicate whether Action Step #5 also identifies a commitment to perform a nuclear criticality safety review of the procedure revision prior to implementation but does not indicate if the applicable nuclear criticality safety evaluations will be revised (R) to remove reliance on the use of (R) as a criticality control. Licensee response must describe all planned corrective actions as well as a schedule for completing them. Letter to Nuclear Fuel Services, Inc., Kerry Schutt, President and General Manager, from Melanie A. Galloway, Chief, Technical Support Group, Division of Fuel Cycle Safety and Safeguards, Office of NMSS, Response to Notice of Violation 70-143/2004-206, 2/4/05, ML081440513.
- 02/09/05 **Response to Disputed Notice of Violation** to NRC inspection report on May 17, 2004. NFS denied a Severity Level IV violation concerning the failure to perform a detailed criticality safety analysis for a temporary operation that involved changes to existing

equipment. The violation was identified in Jan., 2003 and issued in Inspection Report #70-143/2004-03. From **Sept. 9, 2002 through Jan. 12, 2003, operations, which involved more than a safe mass of licensed material where double batching was possible were performed under temporary procedures which involved changes to existing equipment, without performing a detailed criticality safety analysis.**

The NRC staff review of licensee's safety basis documentation found the **NCS controls in place to prevent double batching to produce more than a safe mass were not sufficient to adequately prevent credible changes in process conditions that could lead to a criticality accident.** NRC staff review further found the administrative process controls NFS relied upon (R) were either not included in the Letter of Authorization (LOA) (procedure used by the operators), or were fundamentally flawed by the susceptibility to common mode failure (R).

The main concern for criticality safety for this operation was preventing more than a safe mass from getting in (R). Solutions pumped (R) had a concentration limit that was not to be exceeded, but administrative controls on concentration of solutions did not work and solution above the limit was (R) on at least one occasion. Response to Disputed Notice of Violation, Nuclear Fuel Services, Inspection Report #70-143/2004-03, EA-04-207, EA-03-178, 2/9/05, ML081360341.

- 02/09/05 ***Amendment 60: Approve Updated Schedule for North Site Decommissioning, Effective 2/09/05, ML072630167.***
- 03/07/05-
03/11/05 **Audits of the Transportation QA program not performed during last three years; Adequate quality in documents for procurement of material, equipment and services done without prior approval; Failure to adequately evaluate and qualify Century Industries for design, testing and fabrication activities. The inspector reviewed a sample of the acceptance tests for the Model No. CHT-OP-TU packagings purchased by AREVA (formerly Framatome, Inc.) for use by the BLEU project, a joint NFS-AREVA project.** Inspection Report #71-0249/05-201 and Notice of Violation; 4/25/05, ML051160008.
- 03/06/05-
04/16/05 Failure to remove danger isolation tags prior to system operation for testing; failure to lock shut a discard control valve. Implementation of corrective actions to prevent a recurrence of the event were not prompt. A procedural weakness was identified, which was not addressed by the nuclear criticality safety (NCS) flow-down. Poor

operational practices were identified which could bypass administrative safety controls and challenge engineered safety controls. **Procedural guidance relating to supervisory control of abnormal operations was not followed.** Extent of condition reviews for previous similar events was not applied to areas with identical vulnerabilities.

Licensee identified an **omission in environmental sampling requirements, in that insoluble activity in the BLEU complex sewer effluent was not analyzed. Monthly samples were required but not obtained for September, October, and November of 2004 and January, 2005;** (this non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation).

A spill occurred on March 21, when an operator, while attempting to unclog a transfer line caused a quick disconnect hose to come loose spilling approximately 10 grams of material; elevated air sample results from the (R) areas due to a seal malfunction; failure to control work in contaminated areas within the BLEU preparation facility by written procedures or Radiation Work Permit (RWP); Inspector reviewed criticality alarm system equipment and installation problems. The licensee revised their ALARA TED goal for the BPF area from 0.5 rem to 1 rem due to the external radiation challenges in the BPF area. Inspection Report #70-143/2005-02 and Notice of Violation, 5/16/05, ML081440509. (Note: The entire Section 7 Physical Protection is redacted).

- 03/24/05 **Loss or Degraded Safety Items-Equipment Piece for Storage Rack Not in Place for Safe Storage of SNM. Event Report, #41523; (Retracted on 04/06/05).**
- 04/14/05 Letter to Kerry Schutt, President, Nuclear Fuel Services, Inc., from NRC, Region II (//RA//David Ayres) concerning closed meeting at the NFS site on April 14, 2005. **The discussion concerned the NRC evaluation of NFS' performance in safety operations, radiological controls, facility support, licensing activities, and safeguards. The meeting provided the NRC with an acceptable level of confidence of NFS' plans to improve management oversight of safety performance. Closed Meeting Summary (Licensee Performance Review), Nuclear Fuel Services, Inc., 11/28/05, Docket #70-143, ML081440084. (Note: Letter from the NRC was eight months after the meeting was held).**
- 04/17/05-05/28/05 A fire occurred in an area which had undergone extensive repairs and was in a startup mode with no special nuclear material

(SNM) in process. Equipment damage due to the fire was minor. **An equipment deficiency was identified as the cause of the fire;**

Inspector reviewed the number and type of difficulties licensee continued to experience with the criticality alarm system. These problems included repeated trouble alarms and sporadic high radiation alarms by criticality alarm detectors. The number of trouble alarms and false high radiation alarms continued to be an area of concern.

On April 7, 2005 licensee attempted to rework (R) waste solution (R). The operation required manipulation of several manual valves, and the lineup was performed in error such that the waste solution was pumped to the off-service (R) column. The operation eventually filled the column, which overflowed into the (R), filled the process off-gas piping, and overflowed into the (R) dilution ventilation system on the roof. The operation was finally shut down when solution was discovered that had drained from the ventilation system onto the operating spaces floor. The event was reported to the NRC on April 29. (See EVENT #41651 below, and Inspection Report 70-143/2005-203, dated June 2, 2005) which included a notice of violation.

The event highlighted poor operational practices (R). In addition to the failure of the operator to follow procedure, the procedure **required supervisory verification of the valve lineup. This verification was not performed in an independent, thorough manner, which contributed to the event.** The (R) were instrumented with a level indication and alarm system. This system alarmed several times during the event, correctly indicating the column was full and automatically shutting down the transfer pump. **Due to interaction with the nitrogen purge system and other design issues, the alarms were able to be reset which allowed the operators to continue the operation. The operators assumed the alarms were meaningless since the (R) was not in service, and did not adequately investigate the alarms.** There was apparently no validation of expected system response to the operation in progress. When the full extent of the issue was realized on April 28, the (R) system was shut down for review and revision of the safety basis, and design and completion of physical modifications to the system.

On April 28, licensee identified a buildup of liquid waste in the (R) dilution ventilation system (R). Licensee did not maintain a record of system operation during this period and did not utilize a lock-out/tagout process to ensure the system was not

inadvertently operated.

During a routine stack sample collection on May 2, 2005, licensee determined the sample from the (R) dilution stack (R), BPF Process Exhaust (R) indicated an initial elevated reading of 53,961.90 disintegrations per minute(dpm) for alphas, and 192, 528.74 dpm for betas. The samples were held for 7 days and recounted by licensee to allow radon and its associated daughters to decay. After the 7-day decay count, the alpha reading indicated 3,381.48 dpm and the beta reading indicated 1,267.10 dpm. Licensee's action limit for alpha is 130 dpm and 5,000 dpm for betas. As of May 19, 2005, the alpha reading on the stack air filter was still above the licensee's action limit of 130 dpm. This issue will be tracked for further NRC review as IFI 70-143/2005-03-04, Elevated Isotopic Analysis on a Stack Sample Above Licensee's Action Limit. The liquid effluent activity for CY 2004 was: 63.6 microcuries (uCi) for U-235/236 and 17.9 uCi for technetium-99 at the WWTF; 209 uCi for U-235/236 at the sewer sampling point; 97.9 uCi for U-235/236 at Banner Spring down stream point; and 0.173 uCi for U-235/236 at the BLEU sewer sampling point.

On May 9, licensee identified a container stored in an unauthorized location (R) designed with several different types of shelves, and as noted on the NCS posting, different containers were allowed to be stored on each type of shelf. The similarity between shelves led to confusion on the part of the operators and supervisors and an incorrect decision resulted in a container being stored on an unauthorized location. Elevated stack samples still under investigation. Inspection Report #70-143/2005-03, EA-04-199, 06/27/05, ML081440517.

04/22/05 **Amendment 62: Request for Possession Limit increase for the NFS Site.** Letter dated April 22, 2005, request from NFS to increase possession limit of U235 because DOE began shipment of materials to NFS at an accelerated schedule over the past 12-18 months, and because of a lower than planned processing rate at the BLEU facility and request by DOE that NFS have from 6-12 month capacity on hand in case DOE is unable to ship material. Due to radiological effects to workers and public, the staff used its discretion and elected to perform an EA since NFS requested a large quantity of HEU. Results of EA contained in letter dated June 22, 2005. Amendment 62, Safety Evaluation Report, TAC L31887, Effective 06/28/05, ML072630137.

04/28/05 **Inadequately Controlled or Analyzed Pathway for Material Accumulation.** This event occurred in the Uranium-Aluminum

Hydrogen dilution system area. Licensee observed a **solution accumulated in a HEPA filter housing on the building (R) roof. Analysis of the solution determined the liquid to be a caustic byproduct of the process.** Further analysis indicated approximately 3 grams U-235 were in the HEPA housing and filter. Further reviews of the system design **identified potential pathways from the Uranium-Aluminum dissolution system that did not appear to be adequately controlled or analyzed.** The nuclear criticality safety of the system relied on the physical design to prevent uranium (R) materials from entering the Hydrogen Dilution System and the filter housing. The system also relied on a drain in the dilution system ductwork to prevent material from entering the filter housing. Event #41651.

05/02/05 - Criticality Safety Inspection. Review of an event on April 7, 2005
05/04/05 involving the discovery of uranium contaminated caustic solution of the (R) dilution system HEPA filter housing. Section 4.1.1 of the license requires that all process equipment and systems be designed to incorporate sufficient factors of safety to require at least two unlikely, independent, and concurrent changes in process conditions before a criticality is possible. Scenario 4.1.3 of nuclear criticality safety evaluation (NCSE) 54T-04-022, Revision 2, dated April 27, 2004, takes credit for (R) and a drain or two drains to prevent solution from backflowing into the ventilation system. However, **on April 28, 2005, the BLEU (R) dilution ventilation system had only one drain and no (R) so that double contingency for the backflow of solution into the (R) dilution process ventilation system is a Violation 70-143/2005-203-01.**

The inspectors noted that an assigned corrective action for the event was to evaluate instrument low points and HEPA filter housings for caustic hold up. **The inspectors noted that the corrective action was to be completed by April 29, 2005, which meant that more than three weeks had been assigned to accomplish the corrective action even though an accumulation in a HEPA filter housing would violate Nuclear Criticality System (NCS) controls.** The inspectors felt that the review of the event in question was weak since an NCS engineer with more than 2 years experience had participated in the initial review and assignment of corrective actions. **(Note: On Page 6, Figure 1 showing the BLEU (redacted) Systems is all redacted).** Inspection Report 70-143/2005-203, 6/2/05, ML081480315 (cover letter) and ML081480316 (report).

05/23/05 An inspection completed by the NRC on Jan. 24, 2004 and an Office of Investigation (OI) investigation was completed on March 3, 2005 concerning circumstances at NFS on Dec. 31, 2003 that a process

waste collection tank (WD tank) discharge valve to the waste water treatment facility (WWTF), (R), was open when it was required to be locked closed. NFS was notified by NRC staff on May 16, 2005 that the NRC was considering escalated enforcement for an apparent violation involving NFS' failure to follow Standard Operating Procedure (SOP) 401. NFS was also informed the NRC staff concluded the violation was due to the **deliberate misconduct of the process operator involved**. The violation was characterized as a Severity Level III. A base civil penalty of **\$32,500** was considered for this penalty and because **NFS facility has been the subject of escalated enforcement action within the last two years**, the NRC considered whether credit was warranted for identification and corrective action. Because NFS identified the issue, credit was warranted for the factor of identification. NFS' corrective actions in response to this issue included taking disciplinary action against the operator. To encourage identification and prompt and comprehensive corrections of violations, the NRC was authorized to propose that **no civil penalty be assessed in this case**. Notice of Violation (Nuclear Fuel Services, Inc., NRC Office of Investigations Report #2-2004-003), EA-04-199, 05/23/05, ML081500429.

05/29/05- On June 1, licensee employee transferred (R) waste into a (R)
07/09/05 storage area, which necessitated the use of a temporary hose, since piping was not installed between the points. The operation apparently was not addressed by approved, written procedures; Failure to utilize required respiratory protection.

During May 9 through May 20, the inspector noted several occurrences of high airborne contamination levels. **Due to the inherent time delay in detecting a high airborne condition, some exposure to employees resulted.** Review of licensee's dose assessment found eight employees were assigned doses of approximately 10-16 millirem (mRem). Licensee found the cause of the **high airborne condition to be due to poor maintenance practices, where components of certain equipment were reused in spite of being contaminated.**

Elevated isotopic analysis on a stack sample above licensee's action limit concerned an elevated result on a stack sample above licensee's action limit on May 2, 2005; The elevated stack sample result (R). The reading was above the plant action limits of 130 disintegrations per minute (dpm) for alpha and 5,000 dpm for beta. An investigation was unable to state how much material might have been vented out the stack. Since the system normally operated continuously and no system isolation or lockout was utilized, the inspector questioned how licensee

maintained control over the system; Poor maintenance practices resulted in increased exposure. NRC Inspection Report #70-143/2005-04, 8/05/05, ML081480303.

05/31/05 This letter refers to the apparent violation that occurred on **May 31, 2005, when a NFS acting building manager transferred raffinate (R) waste into (R) without procedural authorization. This event occurred in the BLEU Preparation Facility. This letter also refers to an investigation completed by the NRC Office of Investigations (OI) March 29, 2006.** The purpose of the OI investigation was to determine whether the above apparent violation occurred as the result of willful actions on the part of an NFS supervisor. Based on the evidence developed during the investigation. **The NRC concluded the supervisor's actions were willful.**

The evidence obtained by OI revealed the acting building manager involved in the transfer of (R) raffinate waste solution to the condensate waste storage area has been involved in several previous examples of procedural non-compliance at NFS. The NRC is concerned this individual may not possess the sensitivity to procedural requirements and the need to adhere to them. Such a sensitivity is **imperative for continued participation in activities than can affect nuclear safety at NFS in the future.** In addition, the NRC is concerned that NFS management has been ineffective in communicating proper safety and procedural compliance expectations to all members of its management team and staff. **Confirmation of Closed Pre-Decisional Enforcement Conference (NRC Inspection Report #70-143/2005-004 and NRC Office of Investigations, Report #02-2005-27. EA-06-141, 7/03/06, ML081500426.**

06/07/05 ***LAR 61: By letter dated June 7, 2005, NFS submitted request to amend Materials License SNM-124 to change the date for submitting annual updates to the safety demonstration section in Part II of its license application to January 30, of each calendar year. This would result in a one-time exemption of 6 months in the annual update of Part II of the license application. **Categorical exclusion for EA or EIS. Amendment 61, Safety Evaluation Report, TAC L31896, Effective 06/17/05, ML072630146.*****

06/10/05 Correspondence dated March 10, 2005 in reply to NRC Inspection Report and Notice of Violation (Notice) dated February 11, 2005, which identified the failure to ensure the introduction of more reactive materials (R) would not result in a k-effective (k_{eff}) exceeding 0.95. Specifically, the Notice was issued because NFS did not consider

optimal placement of the more reactive material. **Based on NRC review of NFS's analysis and the fact that reflection controls were already in place at the time of the inspection, NRC determined the introduction of more reactive materials (R) as stated in inspection report 70-143/2004-207 would not exceed k_{eff} of 0.95.**

"Based on information provided by licensee at the time of the inspection, the NRC has determined the Severity Level IV violation of NRC requirements in Inspection Report 70-143/2004-207 occurred. However, based on information provided by NFS on Jan. 7, 2005, we have concluded that we agree with your conclusion that k_{eff} did not exceed 0.95. However, **your original analysis failed to ensure the parameter for the failed control and all uncontrolled nuclear criticality parameters were at their most reactive combination of credible values.** The Severity Level IV violation is being cited because it was identified as the result of an event, and, is for the failure to evaluate a parameter for a control at its most reactive system location." Revised Notice of Violation for Inspection Report 70-143/2004-207, EA-05-115, 6/10/05, ML081440198.

- 06/17/05 **Amendment 61-Approve Revised Date for Annual Update of Safety Demonstration Section, Effective 06/17/05, ML072630148.**
- 06/20/05 **LAR 73: Exemption of Low-Level Waste shipments from Certain Physical Security Requirements. Letter dated June 20, 2005. SNM-124 amended to grant exemption from certain physical security requirements when shipped as a contaminant in low-level waste. Safety culture S-1 revised to include dates of NFS submittals and new transportation condition TR-1.2 has been added. License revised to reflect Revision 1 of the Site Security Training Qualification Plan. Safety Condition S-1 revised to include the date of 12/16/05. Staff prepared EA per 10 CFR 51 and conducted (FONSI) Finding of No Significant Impact on environment published in Federal Register (71 FR 31223) 6/01/06. Amendment 73, Safeguards Evaluation Report, TAC L31900, Effective 07/17/06, ML072630273.**
- 06/22/05 Nuclear Fuel Services, Inc., Environmental Assessment and Finding of No Significant Impact Concerning Request to Increase Possession Limit (TAC L31887). This EA is limited to the proposed possession limit increase and any cumulative impacts on existing plant operations. Existing conditions and operations for the Erwin facility were evaluated by the NRC for environmental impacts in a 1999 EA related to the renewal of NFS license and a 2002 EA related to the first amendment for the BLEU Project which assessed the impact of the entire BLEU Project using information available at that time. A

2003 EA (FONSI) and a 2004 EA (FONSI) related to additional BLEU Project amendments confirmed the FONSI issued in 2002. The proposed action will not result in any new or modified accident sequences. The Integrated Safety Analysis performed by NFS already considers all authorized (R). The NRC finds the safety controls to be employed in the proposed action appear sufficient to ensure planned activities will be safe.

NRC considered the impacts of the proposed action together with the known impacts of the existing facility. After reviewing the information provided, the **NRC concludes the cumulative impacts represent an insignificant change to the existing conditions in the area surrounding the NFS site. If NFS is unable to fulfill its (R) obligations, customers may transfer work to other facilities.** Based on an evaluation of the environmental impacts of the proposed license amendment, the **NRC has determined that the proper action is to issue a FONSI.**

On May 20, 2005, the NRC staff contacted the Deputy Director of the Division of Radiological Health in the Tennessee Department of Environment and Conservation (TDEC) concerning this EA. On June 7, 2005 the Deputy Director responded that TDEC had reviewed the draft EA and had "NO COMMENTS." Nuclear Fuel Services, Inc., Environmental Assessment and Finding of No Significant Impact (FONSI) Concerning Request to Increase Possession Limit (TAC L31887), 6/22/05, ML081410186.

- 06/28/05 ***Amendment 62-Approve Possession Limit Increase, Effective 06/28/05, ML072630137.***
- 07/01/05 July 1, 2005 Email from Bill Gleaves, BWXT Project Manager, to Patrick Card, DOE/NR, Subject: Communication Plan-Withholding of Information Concerning NFS and BWXT. Page 2 of the Communication Plan stated **"NOTE: The NRC will not reveal that most BWXT and NFS public information was removed from public access due to concerns raised by DOE/NR."** **ML072900428.**
- 07/09/05 **Fire/Explosion in Waste (Calciner) Furnace.** The (R) calciner was loaded with low-level contaminated scrap materials. The door gasket had a small leak and the operator attempted to stop the leak. This caused an increase in the leakage. **Air contacted the hot gases leaking from the calciner and the gases were ignited.** There was a brief flame in enclosure (R) from the calciner door. **A prefilter in the vent duct caught fire, the HEPA filter was damaged and part of the vent duct melted.** Event #41839.

07/10/05-
08/20/05

Two fires occurred at NFS, one of which was reportable. A **longstanding deficiency in equipment condition contributed to one event**. On **July 8**, a fire occurred in the (R), when the (R) developed an electrical fault. The fire self extinguished when electrical power was interrupted by automatic breaker action. Equipment damage was limited to the heater body. The heater design included an over-temperature sensor, but was not properly connected to the controller to provide protection. The local breaker supplying the heater controller opened on fault, but failed to interrupt electrical power due to the contacts subsequently re-closing or being welded shut. The (R) supply breaker subsequently opened and removed power (R). Licensee evaluated the cause of the breaker failure but determined no specific cause for the failure.

On **July 9**, a second fire occurred in the (R). Licensee reported the event to the NRC and also notified the senior resident inspector. The inspector noted the fire had quickly self extinguished and **some equipment damage occurred, including significant deformation of the PVC ventilation piping from the process**. The fire alarm was not sounded, due to confusion between the scene of the fire and the alarm station operator who received a verbal report from the scene. The fire brigade did not respond to the scene. The event demonstrated this aspect of system operations also increased the probability of a fire in the enclosure.

On July 20, inspectors noted work in progress to dismantle the top (R), at the (R) processing area, but the work area was only posted on the ground floor level, not where work was in progress on the second floor. Plant staff believed a "vertical envelope" was created by the posting on the ground floor, but since employees did not have to cross that posting to access the second floor work site, the ground floor posting was not an adequate posting for the second floor.

On **July 25**, the (R) process was in operation when hot (R) solution overflowed from the (R), into the enclosure overflow line and onto the floor. The hot solution caused the clear (R) lines to sag and deform. Licensee shut down the (R) process until evaluation of the event could be completed and found the event was caused by poor level control in the (R). **Design of the enclosure overflows did not foresee the possibility that solution at an elevated temperature would overflow (R)**. The system was still shutdown at the end of this inspection period.

On August 3, the inspectors toured (R) and observed open piping flanges and visible residue on pipes and on the floor (R). Work activities in the area were addressed by RWP #05-41-064 and an RT

had recently released the area and terminated the RWP. Plant staff responded to the inspectors inquiries by posting the area and performing monitoring and surveys which found transferable alpha contamination levels in the area above established action limits of 5,000 dpm/100 cm². **Surface contamination levels on the floor, piping, and inside the flanges ranged from 12,488 dpm/100 cm² to 99,112 dpm/100cm².**

On August 9, the (R) lost process ventilation when a short commercial power outage occurred. The ventilation outage lasted less than an hour. No elevated levels of airborne activity were detected. Two groups of personnel inside the (R) did not immediately evacuate or don full-face respirators. (R) stationed at the access control point were unaware a loss of process ventilation had occurred, and therefore did not don respirators. Plant staff performing operations at the loading dock check-weigh station were not supplied respirators, and were unable to leave the area due to (R).

The exposures, as of June 30, 2005, had increased due to some workers handling high levels of feed material for downblending areas, and also poor maintenance practices resulting in elevated exposures from high airborne activity.

Selected entries from the PIRCS, including corrective actions for previously identified events were reviewed. The inspectors noted **several issues, which had been identified by NRC inspectors and discussed with licensee management, which were not entered into PIRCS until inspectors made repeated inquiries.** An example was Violation 70-143/2005-07-03, described in paragraph 5.d of this report. **NRC inspectors identified the issue to licensee management and, although the issue was investigated and corrective actions were evaluated, the issue was not documented in PIRCS until NRC inspectors requested additional updates on resolution and proposed corrective actions. On each separate issue, inspectors had to either make repeated requests for information or point to senior management that no entry was yet made in PIRCS. NRC Inspection Report No. 70-143/2005-007 and Notice of Violation, 9/19/05, ML081480306. (Note: Physical Protection portion of report is all redacted).**

08/08/05- There were a number of inconsistencies and deficiencies in the
08/12/05 facility validation reports, involving treatment of experimental uncertainties, verification of the normality of the benchmarks, definition of the area of applicability (AOA), and calculation of upper safety limits (USLs). The most significant was the

violation regarding use of positive bias in calculating USLs applicable to highly enriched uranium (HEU) systems. Licensee established upper safety limits (USLs) using the 95/99.9 single-sided tolerance limit approach, but took credit for positive bias in several subgroupings of the data. This resulted in an over estimation of the USL for two of the HEU subgroupings and, in one instance, for the entire set of experiments analyzed. Use of positive bias resulted in a USL greater than the maximum allowed k_{eff} limit of 0.95 for abnormal conditions, when assuming positive biases to be zero would have resulted in a USL less than 0.95. VIO 70-143/2005-205-05 - Failure to prohibit use of positive bias in calculating USL values for HEU operations.

Inspector Follow Up (IFI) 70-143/2005-205-01 tracks licensee's revision of the (R) NCSE to clearly articulate the technical basis; IFI 70-143/2005-205-02 tracks determination of appropriate experimental uncertainties and the reason for the observed spread in k_{eff} (BLEU validations 54T-03-0054 and 54T-03-0009); IFI 70-143/2005-205-03 tracks the impact of non-normality of (R) experiments on the 0.97 limit for LEU operations (BLEU validations 54T-04-0043 and WRS-97-001); IFI 70-143/2005-205-04 tracks specification of which materials cover which portions of the AOA in the BLEU validation reports (BLEU validations 54T-03-0054 and 54T-03-0009); IFI 70-143/2005-205-06 tracks commitment to revise the validation reports to correctly calculate the USL (BLEU validations 54T-03-0054, 54T-03-0009, and any others affected); IFI 70-143/2005-205-07 tracks commitment to maintain the current prohibition on the use of positive bias in procedure NFS-HS-A-63, and to clarify license commitments regarding calculation of k_{eff} and the use of positive bias; IFI 70-143/2005-205-08 tracks licensee's determination of the appropriate bounds of the defined AOA in the validation reports covering HEU operations (HEU operation validations 54T-04-0043 and WRS-97-001); IFI 70-143/2005-reports and procedure, and correcting the methods used to verify adequacy of the margin (HEU operation validation 54T-04-0043 and WRS-97-001). **The licensee stated that this was due to the validation being performed by the BLEU contractor (Framatome ANP), rather than Nuclear Fuel Services (NFS). Inspection Report #70-143/2005-205 and Notice of Violation, 9/09/05, ML081490101.**

08/11/05 ***Amendment 63-Approve Revision 1 of the Physical Protection Plan, Effective 8/11/05, ML072630185.***

08/21/05-10/01/05 Sept. 8, 2005 licensee failed to document transmittal of design information and failed to maintain BLEU preparation facility design changes through the completion of an Engineering Change Notice;

an upset condition/overflow from the (R) system which identified a violation of NFS design procedures associated with the documentation for (R) system modifications performed by subcontractors. Licensee failed to provide written documentation after issuance of verbal work instructions to a subcontractor and did not provide the requisite engineering evaluations through the Engineering Change Notice process to ensure these design changes were in fact acceptable and completed as required. **Failure to maintain configuration control of facility design modifications;**

Licensee audits noted a significant number of corrective actions were overdue; Specific examples of **poor contamination control within radiologically controlled areas.** Areas noted as "above administrative control limits" were in generally accessible areas. One situation involved a **spread of contamination outside a maintenance area involving equipment replacement.** The other area was the (R) in the natural and LEU handling area, and no obvious cause was evident. These observations were evidence of poor work practices. Radiological control practices met regulatory requirements, but **poor control contamination work practices were noted inside radiologically controlled areas.**

On Sept. 12, an authorized employee failed to place the lock and tags on the single energy isolation point prior to performing work on the equipment. Inspection Report #70-143/2005-08 and Notice of Violation, Events #41197 & #41839, 10/31/05, ML081480305.

- 08/24/05 ***Amendment 64: Approve Changes to Certain Administrative Programs, Effective 8/24/05, ML072630199.***
- 08/31/05 Closed meeting at the NRC's Region II Office in Atlanta, Ga., on August 2, 2005 during which was discussed future licensed activities associated with processing SNM at the NFS facility. **Specifically discussed was tentative projects that NFS is pursuing (R) involving taking possession and processing radioactive material.** Letter: Meeting Summary-Closed, Nuclear Fuel Services, Inc.-Docket #70-143 from /RA/ D. Collins for David A. Ayers, Chief, Fuel Facility Inspection Branch 1, Division of Fuel Facility Inspection, 8/31/05, ML081360179.
- 10/02/05-
11/12/05 **Notice of Violation and proposed imposition of Civil penalty \$32,500 (NRC Inspection Report No. 70-143/2005-010).** This refers to the inspection conducted from Oct. 2, 2005 through Nov. 12, 2005 at Nuclear Fuel Services, Inc., facility. **The results of the inspection, including the identification of an apparent violation involving the failure to provide adequate assurance that items**

relied on for safety (IROFS) would be reliable and available to meet nuclear criticality safety performance criteria, were transmitted to you in Inspection Report No. 70-143/2005-010, dated Dec. 16, 2005. During NRC staff's review, an additional apparent violation was identified involving the failure to report the above described condition, as required by 10 CFR 70 Appendix A, paragraph (b) (1).

On March 1, 2006, a predecisional enforcement conference was conducted in the Region II office with you and members of your staff to discuss the apparent violations, their significance, root causes and your corrective actions. Based on the information developed during the inspection and the information you provided during the conference the NRC had determined that two violations of NRC requirements occurred. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report.

Violation A involves the failure to develop and implement a design for the (R) enclosure overflow system which provided adequate assurance that Items Relied on For Safety (IROFS) would be reliable and available to perform their function when needed. The (R) Facility (R) enclosure overflow system (designated as an IROFS) may not have functioned properly due to the elevation of the (R) drain. Violation B is interrelated, and involves the failure to report the above condition, as required by 10 CFR 70, Appendix A, paragraph (b) (1). The NRC has concluded that criticality is NOT highly unlikely, under the expected and bounding process conditions that existed in the (R) enclosure, due to the failure to install the enclosure drains at the correct height.

At the conference, NFS provided an overview of the (R) process, a timeline of events and NFS' response, its assessment of the significance of the issue from a risk perspective, and its corrective actions. NFS agreed with the characterization of the violations, and expressed its awareness of the importance of the issues raised. **However, NFS concluded that the design failure did not pose a substantial risk (i.e., criticality was not credible), and that the violations do not warrant escalated enforcement.** NFS concluded that these vacuum and solution concentration values would not exist under normal and credible abnormal conditions and suggested the NRC should exercise enforcement discretion to mitigate the violations, for reasons as discussed at the conference.

Although no actual consequences occurred as a result of the

On Oct. 25, 2005, personnel did not comply with RWP requirements, in that they were working inside an RWP area but not equipped with the personal protective equipment required by RWP #05-41-082.

On Oct. 28, 2005 the upper walk deck in the (R) process area, which was part of the work area controlled by RWP #11116, was not posted with RWP banner tape as required by procedure.

On Oct. 28, 2005 licensee failed to close and lock the block and bleed valves, and subsequently released approximately (R) of liquid waste effluent from (R) to unfavorable geometry tanks without confirmation of the U-235 concentration.

On Nov. 2, 2005, a Radiation Work Permit (RWP) area was found to be terminated prior to the monitoring results being verified to be within required limits, in that process piping and flanges were found to be contaminated above the action limits of 5000 disintegrations per minute per 100 square centimeters.

An apparent violation (AV) was noted for **failure to meet performance criteria relating to nuclear criticality safety. A poorly-controlled modification of a process enclosure drain, such that the drain may not have functioned due to lack of control of the elevation of the drain, since the IROFS mentioned were the only IROFS in an accident sequence leading to a criticality, and since those IROFS were subject to common cause failure, the potential consequences of this issue are severe**; Two examples of failure to provide adequate assurance that IROFS will be reliable and available to perform their function when needed was an apparent violation (AV) of NRC requirements **(Inadequate design basis of process enclosure drains to a common cause failure)**. Inspection Report #70-143/2005-10 and Notice of Violation, Event #42047, 12/16/05, ML081480307.

- 10/05/05 Memorandum to Those on Attached List from Robert C. Pierson, Director, Division of Fuel Cycle Safety and Safeguards, Subject: Update of Communication Plan for Withholding Information from the Public regarding Nuclear Fuel Services and BWX Technologies. **ML072540300.**
- 10/08/05 **Criticality Alarm System Inoperable in the NDA/Loading Dock Area Due to Detector Failure, Safety Related Equipment (SRE) Failure.** Event #42047; (Retracted on 11/04/05).
- 10/21/05 **Potential Degradation of Glovebox Overflow Drains Under Certain Vacuum Conditions (Loss or Degraded Safety Items).**

Notification to NRC on 11/10/05. **The NRC Resident Inspector questioned the impact of glovebox enclosure vacuum on the design and function of the glovebox overflow drains. Enclosure vacuum was not considered in the set-point analysis for these drains such that, under certain circumstances, the drains may not function as intended. The degraded safety scenario would involve HEU concentration solution entering the glovebox** (which is considered unlikely as the solution is typically low level caustic solution). The vacuum on the glovebox enclosure would have to exceed that which could result in the overflow drains being incapable of performing their functions (Licensee notes that vacuums on enclosures have not been observed which would cause the drains to not be capable of performing their function). The solution in the enclosure would have to exceed the height necessary for criticality. Event #42133;

10/28/05 **Discard of Caustic Solution to Waste Tank Without Sample and Analysis (SRE) Failure. Event #42089, (Note: NRC notified 11/10/05).**

11/08/05 **Exceeded Mass Limit Requirements (Unanalyzed Condition). Failure of IROFS for Environmental Safety Program. Event #42131.**

11/13/05-12/24/05 Inspectors determined that three (3) Severity Level IV Violations of NRC requirements occurred and are being treated as Non-Cited Violations (NCVs), consistent with Section VI.A of the Enforcement Policy. Violations concerned NFS procedure SOP 401, part 8-3, Section 8.3.4, which requires a leak test of certain components (R).

On Nov. 17, 2005, **the inspectors identified licensee failed to leak test these components when last required.** NFS exhibited initiative in identifying the circumstances and root cause of the events, and therefore, is granted identification credit for this event. Failure to perform a leak test was a violation of NRC requirements (NCV 70-143/2005-011-01). NFS improved the test methodology, performed the required tests, and improved documentation to track tests due and tests completed.

On Dec. 10, 2005, NFS identified a job requiring a Radiation Work Permit (RWP); cleaning the (R) scrubber, had been started without an RWP being posted. Failure to post the RWP at the job site was a violation of NRC requirements, NCV 70-143/2005-011-02. Corrective actions included briefing all operations supervisors on RWP responsibilities.

NFS procedure CL-26, section 4.6.3, requires all containers to be closed while unattended. On Nov. 17, 2005 a (R) was left open and unattended (R). Failure to close as unattended container was a violation of NRC requirements, NCV 70-143/2005-011-03.

Event No. 42131, 11/08/05, (Exceeded Mass Limit Requirements). On Nov. 9, 2005 NFS reported a violation of an environmental item relied on for safety (IROFS), in that (R) of uranium had been added to a waste tank, while the limit was (R). This limit was based on environmental effects of a release. The site drainage system was modified since the original limit was calculated, and licensee had analyzed the dilution resulting from the modifications and calculated the new limit to be (R). NFS implemented the new limit on Nov. 10, 2005.

The drainage modification had been made prior to the (R) limit being exceeded. This failure constitutes a violation of **minor significance** and is not subject to **formal enforcement** action.

Event 42191, 12/07/05, (Apparent Loss of Natural Thorium Shipment). On Dec. 8, 2005, NFS reported a lost shipment of thorium (TH). The shipment was subsequently found and licensee retracted the report. NFS identified the (R) shipment exceeded the allowed 15 pound weight for the 10 CFR 40.22 general license documented on the shipping papers. Since the shipment was found, NFS claimed an oversight, that the shipping papers should have cited 10 CFR 100.22, which used a (R) limit. Pending further NRC review, this is unresolved item (URI) 70-143/ 2005-011-04.

The in-line monitor failed but the process continued to run until an operator identified the failure. The in-line monitor was an IROFS in the downblend system, however, NFS had other IROFS in place to ensure a downblend accident could not occur, and met 10 CFR 70.61 performance criteria without the in-line monitor. Although not an NRC violation, this was a negative observation, in that a **failure mode for an IROFS was not recognized in the design process.** Licensee identified a criticality safety issue, in that a **source of potential over-pressure in the product (R) were not analyzed to ensure that no backflow into unfavorable geometry utilities could take place. Although the (R) were vented, a source of nitrogen was piped to the (R) and the effect of this pressure source was not previously considered.** As temporary corrective action, NFS isolated this pressure source from the (R) using lockout/tagout. An analysis was initiated to determine the potential safety issues (tracked as IFI 70-143/2005-011-05).

Letter to Mr. Kerry Schutt, President, General Manager, Nuclear Fuel

Services, Inc., from /RA/ David A. Ayres, Chief, Fuel Facility Inspection Branch 1, Division of Fuel Facility Inspection, NRC, Region II, Inspection Report #70-143/2005-011, Events #42131 & # 42191, 1/23/06, ML081480308.

- 11/16/05 **Amendment 65: Approval of Changes to Fundamental Nuclear Material Control Plan for HEU.** Staff determined proposed changes to facilities HEU FNMC Plan are adequate based on review and evaluation of NFS's submittals. Environmental review categorically excluded. **No EA or EIS is warranted for this action.** Amendment 65, Safety Evaluation Report, TAC L31890, L31891 and L31895, Effective 11/16/05, ML072630118.
- 11/28/05 **Amendment 66: Approve Changes to the Physical Protection Plan, Effective 11/28/05, ML072630090.**
- 12/07/05 **Lost/Stolen LNM>10X (Thorium). EVENT #42191.**
- 12/08/05 Letter confirming conversation between B. Marie Moore of NFS staff and Dan Rich of NRC concerning management meeting scheduled for Dec. 20, 2005 at the Region II Office in Atlanta, Ga. **to discuss safety (R) improvements.** Confirmation of Closed Meeting, Nuclear Fuel Services, Inc. - Docket #70-143, 12/8/05, ML081360257.
- 12/12/05 **Amendment 67-Approve Changes to Procedure Reviews by SSRC, Effective 12/12/05, ML072630079.**
- 12/12/05-12/16/05 Letter from Melanie Galloway, Chief, NRC Technical Support Group, Fuel Cycle Safety and Safeguard, **concerning additional information provided by NFS regarding use of concentration control for nonuniform solutions in large waste water tanks at licensee facility. It was determined that NFS' staff relied on ambiguous language in Safety Condition S-9 to support the use of a single parameter limit as a safety limit.**

As discussed in the report, NFS's use of the single parameter limit from a national consensus standard resulted in less than adequate subcritical margin. Corrective actions for the violations discussed in the inspection report should include amending the license to revise Safety Condition S-9. Specifically, Safety Condition S-9 should eliminate references to American National Standards Institute/American Nuclear Society (ANSI/ANS) series standards and clarify the meaning of "published experimental data." Based on the result of the inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. The first violation being cited is the inappropriate use of a single parameter limit as

a safety limit for the Waste Water Treatment Facility. The second violation is the failure to comply with license requirements for concentration control.

As of December 16, 2005, licensee relied on a safety limit of (R), a calculated single parameter limit from Table 1 of the consensus standard ANSI/ANS-8.1, for the concentration of (R) material in a nonuniform aqueous solution stored in unsafe geometry WWTF tanks without discussing or justifying the limit in criticality analysis for the tanks to demonstrate subcriticality for normal and credible abnormal conditions. Licensee failure to adequately justify in NCS analysis the safety limit on (R) concentration in WWTF tanks is VIO 70-143/2005-208-01.

Based on licensee submittal in Attachment 2 to this report, the inspectors determined that Safety Condition S-9 is ambiguous regarding the use of single parameter limits from ANSI/ANS-8.1 and concluded that Safety Condition S-9 should be corrected to eliminate references to ANSI/ANS series standards and clarify the meaning of "published experimental data." NFS' actions to amend Safety Condition S-9 will be tracked as IFI 70-143/2005-208-02.

As of Dec. 16, 2005, licensee relied on a safety limit of (R), a calculated single parameter limit from Table 1 of the consensus standard ANSI/ANS-8.1 for the concentration of (R) material in a nonuniform aqueous solution stored in unsafe geometry WWTF tanks. Failure to establish an appropriate concentration safety limit for WWTF tanks is Violation VIO 70-143/2005-208-03.

VIO 70-143/2004-207-05 concerned licensee's failure to ensure that k_{eff} values for credible abnormal conditions did not exceed the 0.95 limit. Licensee denied the violation, and the NRC is reviewing the denial.

IFI 70-143/2005-101-07 tracks licensee review of the failure of the RMS-3 monitor. The RMS-3 monitor was observed to be inoperable due to incorrect calibration values, which had been reset by the control system. The inspectors reviewed licensee compensatory measures in Section 3.0 above and noted the licensee was taking credit for the compensatory measure of discontinuing use of tracking software, which was believed to be responsible for resetting the calibration values. The inspectors also noted licensee has a long-term corrective action pending to change the monitor default settings, which would alleviate concern about resetting the values. Pending completion of licensee review and corrective actions, this item remains open. Letter to Mr. Kerry Schutt, President and General

Manager, NFS, with Inspection Report #70-143/2005-208 and Notice of Violation, 2/03/06, ML081490103.

12/21/05 **Amendment 68: Approval of Changes to Fundamental Nuclear Material Control Plan for HEU.** Banner Spring Branch no longer sampled. No environmental review needed due to 10 CFR 51.22 (c) (12). Amendment 68, Safety Evaluation Report, TAC L31909, and TAC L31916, Effective 12/21/05, ML072630072.

12/22/05 **Safety Equipment Failure** - While performing semi-annual criticality accident alarm system (CAAS) testing, one unit in a pair of detectors failed to initiate the site wide alarm. Event #42226.

12/25/05-02/04/06 Based on the results of this inspection, the NRC has determined three (3) Violations of NRC requirements occurred. Two violations are being treated as NCVs, consistent with Section VI.A.8 of the Enforcement Policy.

NFS procedure HS-CL-13-07 limits net container mass of containers in storage in the (R) area for criticality safety purposes. **On Dec. 16, 2005, licensee identified a container was stored in the area which exceeded the posted mass limit.** Standard Operating Procedure (SOP) 409, Section 22, requires two operators verify the container meets the posted limits prior to storage. Failure to comply with storage area mass limits was a violation of NRC requirements, NCV 70-143/2006-001-01. Licensee determined the excessive mass in the container was bounded by the area safety analysis and implemented adequate corrective actions, which consisted of review of storage of other containers and re-training operators on container storage.

License Application Section 2.12 requires management measures to ensure that items relied on for safety (IROFS) are available and reliable to perform their function when needed. NRC Event #42244 identified on **January 6, 2006, involved the failure to adjust the setpoint of the in-line monitor for the (R) discard system to the required value stated in the nuclear criticality safety evaluation (NCSE). This was a management measures failure in the area of configuration control.** Licensee reported the event because without the inline monitor, 10 CFR 61 performance criteria could not be met. Failure to implement and maintain an IROFS as necessary was a violation of NRC requirements, NCV 70-143/2006-01-02. Licensee implemented adequate corrective actions through the use of a modified NCSE verification checklist. During this inspection certain of your activities, as described below and/or attached were in violation of NRC requirements and are being cited. NRC Event

#42226 involving a relay failure for a criticality detector in the Oxide Conversion Building was adequately evaluated. Licensee replaced the defective component and augmented the testing schedule to monitor system performance. On Feb. 8, 2006, licensee submitted a 10 CFR 21 report to document generic concerns.

Deficiencies were noted in entering and resolving radiation protection (RP) issues in the PIRCS. Until the date of the inspector's exit meeting for this report, no PIRCS entry was made for the RP violation noted in this report which occurred on Jan. 11, 2006. Likewise, a PIRCS entry for the control of excavation noted in this report as IFI 70-143/2006-001-04 was not made until day of the exit meeting. Also, licensee identified an RP violation, which occurred on Jan. 19, 2006, but then erroneously documented in Apparent Cause Investigation 4531 that no violation occurred. All three issues were corrected after the inspectors requested clarification from the licensee.

A violation was noted with **four examples of failure to follow radiological protection requirements**, two of which were identified by the inspectors (VIO 70-143/2006-001-03). **The issue is repetitive** in that corrective actions for violation 70-143/2005-10-06 should have prevented a recurrence of personnel failing to wear required personnel protective equipment. The issues were documented as PIRCS events. **PIRCS #6895 was notable because the employee confused the black and yellow RWP boundary posting with an industrial safety boundary.** Although this type of boundary is commonly used in the (R), black is not a standard color for a radiation boundary.

No radiation controls were established for excavation work adjacent to the WWTF. This area had been controlled as a Radiologically Controlled Area when previously excavated and filled with fresh gravel. The area was subsequently released under NFS-GH-15. On Jan. 5, 2006, contractor personnel dug through the fresh fill with power equipment, into the earth, which had been previously controlled as a radiologically controlled area. In order to research licensee procedures and control for excavation this item will be tracked as IFI 70-143/2006-001-04. Inspection Report #70-143/2006-001 and Notice of Violation, 3/6/06, Events #42226 & #42244, ML081490104.

2006

- 01/05/06 **Loss or Degraded Safety Items (Monitor Setpoint Improperly Set). Event #42244.**
- 01/12/06 Letter to NFS regarding closed meeting at NRC Region II office in Atlanta, Ga., on Dec., 20, 2005 **discussing safety and compliance challenges, new facility start-up challenges, and specifically, NFS' Safety and Compliance Culture Policy, the NFS Safety and Compliance Conscious Work Environment Policy, NFS' successes with the PIRCS system and NFS' Business Process Improvement initiatives. The meeting provided the NRC with an acceptable level of confidence in NFS' plans to improve their facility's performance in the above areas.** Letter to Mr. Kerry Schutt, President and General Manager, Nuclear Fuel Services, Closed Meeting Summary, Nuclear Fuel Services, Inc., Docket #70-143, 1/12/06, M081360182.
- 02/01/06 Request for changes to certain administrative programs closed without prejudice (TAC L31904). NFS' application dated Dec., 3, 2004 and supplemental letter dated 06/22/05 proposed the following changes, in part, to administrative programs under Material License SNM-124: (1) Deletion of requirements for Safety-Related Equipment (SRE) and Configuration Controlled Equipment (CCE), and (2) Frequency of procedure reviews by the Safety Review Committee. On August 24, 2005, Amendment 64 was issued to approve other program changes, but these two changes remained open. On Sep. 27, 2005, the NRC concluded that this **information was inadequate** to approve the changes and identified the additional information needed. **No additional information was received.** NRC closed action without prejudice to resubmission with additional information. Letter to Ms. B. Marie Moore, Vice President, Safety and Rules, NFS, (TAC L31904) from /RA/ Kevin M. Ramsey, Fuel Cycle Facilities Branch, Office of Nuclear Material Safety and Safeguards, 2/01/06, ML081430428.
- 02/05/06-
03/18/06 **NRC Event #42393 involving an unintentional transfer of SNM from a (R) to an area not authorized to receive special nuclear material with a subsequent overflow to the floor. NRC event #42411 involved discovery of an unsafe geometry accumulation point, which was a pit under an elevator. These events were reviewed by an NRC Special Inspection Team and will be reported under NRC Report 70-143/2006-006.**

On Jan. 3, 2006 the licensee failed to comply with change control process during modifications to the (R) detector system in that:

1. Licensee failed to ensure that changes to the as-built condition did not impact the safety of the systems, structures and components (SSC), in that a **failsafe feature of the system was defeated by a change in system components.**
2. Licensee failed to verify that an active engineered control identified as SRE was properly installed upon completion of maintenance, in that the functional test did not test a system failsafe feature. This is a Severity Level IV Violation.
3. Licensee failed to obtain work acceptance approval and failed to obtain review and approval for changes for work completed under a Minor 2 work request prior to use of equipment.

On Feb. 13, 2006, while being escorted by the licensee, visiting personnel and licensee escorts failed to remove shoe covers and step across the line/barrier as required, in that they removed anti-contamination clothing inside the controlled area of the BLEU Preparation Facility with no step-off barrier established. This is a Severity Level IV Violation.

Inspectors identified that electrical schematics diagrams were not being controlled under licensee's configuration management program. This issue will be tracked as URI 70-143/2006-002-02; Inspectors identified that operators were not consistently trained on when to sound the fire alarm (R). **The number of RWP noncompliances in the last six months highlights a need for improvement in implementation of corrective actions;** Failure to comply with configuration control program requirements; Electrical schematic configuration control; Failure to comply with Entry/Exit procedure requirements from a controlled area; Review of contaminated Scaffolding.

Licensee's external exposure had almost reached the ALARA goal set for the year 2005, due to handling of higher radiation level material in the down blending areas; Scaffolding, which was used by the licensee and a contractor, **became contaminated during repair of waste water treatment tank; Licensee determined the contamination came from the site, and that it was either technetium 99 or uranium.** This issue will be tracked as URI 070-143/2006-02-04. (2 VIO, 2 URIs, opened, 4 VIOs closed). Inspection Report #70-143/2006-002 and Notice of Violation,

04/17/06 & 4/18/06, Events # 42393 & 42411, ML081490105 and ML081490350.

02/05/06-
10/13/06

Managers and staff in our Region II office, the Office of NMS and the Office of NSIR completed a review of the NFS facility's performance. We recognize the more significant issues in the LPR are based on findings early in the review period that may be affected by the results of an Alternate Dispute Resolution agreement. We also recognize there were fewer NRC-identified violations later in the period when you had limited operations with salaried personnel who had been re-trained as operators and maintenance staff. Recognizing these unique circumstances, the **NRC still has concern for the areas needing improvement noted in this report. All of the areas needing improvement are repetitive of areas identified in the last LPR. Two of these resurfaced primarily from the BLEU Preparation Facility (BPF) event of March 6, 2006. These areas are verification and implementation of equipment and controls identified in nuclear criticality safety analyses, and utilization of the problem identification and corrective action program. The other areas needing improvement are control of SSNM, and engineering design, verification, and configuration control.**

We believe continued improvements are warranted. **Given the number, significance, and repetitiveness of these issues, the confidence normally provided through a robust safety program is not evident, indicating that actions are still necessary to provide additional assurance that facility operations will be conducted safely. These issues are also indicative that further action to improve your safety culture is warranted. Results of our review will be discussed with you at your facility on Jan. 9, 2007. The meeting will be closed to the public and will discuss the material in the enclosure, which pertains to sensitive unclassified information.**

Trends indicated inadequate response to certain recurring issues; Failure to maintain dual Criticality Accident Alarm System detector coverage at waste water treatment facility; Use of a less-than-adequate configuration management system failed to ensure the safety impact of the partially installed and unisolated change per requirements of 10 CFR 70.72; Failure to provide adequate procedures for the operation of the enclosure components; Failure to correctly implement the configuration control program during modification of an active engineered control, in that a failsafe feature of the explosive gas detection was defeated; Electrical schematics of an active engineered controls not placed under configuration control and relied solely on post-maintenance testing to verify proper configuration;

Weaknesses identified in configuration management program. Licensee Performance Review (LPR) of Licensed Activities for Nuclear Fuel Services, (NFS) Inc., Docket #70-143, 12/01/06; ML071930522.

- 02/15/06 **Amendment 69: Approval of Final Survey Method for Subsurface Soils.** Material License SNM-124 amended to approve final status survey method added to North Site Decommissioning Plan for subsurface soils. Safety conditions S-1 revised to clarify NFS, Inc., may change commitments without prior approval from the NRC per 10 CFR 70.32. **Staff says no EA or EIS needed because of EA dated 05/16/01, plus clause 10 CFR 51.22 (c) (11).** Amendment 69, Safety Evaluation Report, TAC L31875, Effective 02/15/06, **ML072630064.**
- 02/28/06 **Nuclear Fuel Services, Inc., Review of Internally Authorized Changes 2005 Revisions to Integrated Safety Analysis Summaries for Calendar Year 2005.** (TAC L31928) Letter dated 2/28/06 to NFS from /RA/ Michael Lamastra, Project Manager, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguard, **ML081430426.**
- 03/01/06 **Closed pre-decisional enforcement conference** (NRC Inspection Report #70-143/2005-010) for **March 1, 2006 at the Region II Office in Atlanta, Georgia.** The purpose of the meeting is to discuss the apparent violation associated with the failure to consider how credible abnormal process conditions could degrade or defeat the function of glovebox drains (R). An additional issue associated with the apparent violation involves the failure to report the glovebox vulnerability to the NRC for approximately three weeks. Letter to Mr. Kerry Schutt, President, General Manager, NFS, Inc., Confirmation of Closed Pre-Decisional Enforcement Conference , Docket #70-143, from /RA/ Douglas m. Collins, Director, Division of Fuel Facility Inspection, NRC., Region II, dated 01/26/06, EA-06-01, Event # 42133, **ML081500553.**
- 03/06/06 **Accidental spill of 35 (37) liters of HEU in the BLEU Processing Facility with possibility of causing criticality and nuclear chain reaction. Reported to Congress 13 months later.** Letter dated 7/3/07 from Congressman John D. Dingell and Bart Stupak to Nuclear Regulatory Commission; NRC Inspection Report #70-143/2006-006, 6/9/06, **ML072630328.**
- 03/07/06 **Unanalyzed Condition of Criticality Controls (37 liters High Enriched Uranyl Nitrate (HEUN) spilled).** Event Report #42393.

03/09/06 **Fitness For Duty Report Involving Licensee Supervisor. (Alcohol) Event #42480. (Note: NRC notification 4/06/06, nearly one month later).**

03/10/06 Memorandum to William B. Gloersen, Leader, NFS Special Inspection Team (SIT) from William D. Travers, Regional Administrator, /RA/ D. Collins acting for. Memorandum confirming the establishment of a SIT to inspect and access the facts and circumstances of the inadvertent transfer of solution into an enclosure that was not approved for operation at NFS. The event occurred on March 6, 2006 at 17:00 EST, and was reported to the NRC on March 7, 2006, at 19:41 EST.

The foremost objective is to determine the safety implications and adequacy of licensee corrective actions for the sequence of events resulting in the **transfer of HEUN solution to an enclosure not approved for operation. The equipment, which was not approved for use, was connected to a solution transfer line in service. This allowed unintended transfer of 37 liters of solution to a process enclosure and led to the determination the existing safety analysis was not completed for the operation of this enclosure.**

NFS management failed to recognize the significance of the 3/6/06 HEU spill event. Specifically that the facility was operating in an unanalyzed condition without any approved controls to prevent a nuclear criticality accident. NRC notification was not made in accordance with the timeliness requirements of 10 CFR 70, Appendix A (APV 70-143/2006-006-01). The NRC Senior Resident Inspector's involvement was necessary to ensure event reporting and to protect the "as-found" condition of the enclosure and piping for further inspection and evaluation. During the BPF HEU spill event, sufficient fissile solution was transferred that could have resulted in criticality in either of two available collection points and no NCS controls were available to prevent accumulation of a critical system at either collection point. Eight (8) violations cited. NRC inspection Report No. 70-143/2006-006, 6/9/06, ML072630328. (Note: Report details (17 pages) not included in this report).

03/10/06 ***LAR 75: Request to Incorporate Changes to Chapter 3 of SNM-124 "Radiation Protection". Letter dated 3/10/06. SNM-124 amended to approve NFS changes to Chapter 3 "Radiation Protection." NFS requests change to Radiation Work Permit (RWP) Program to allow its health physicist to waive RWP requirements on a case-***

by-case basis. Safety condition S-1 revised to include dates of submittals 3/10/06, 11/08/06 and 12/13/06. License Condition S-24 amended to reflect Revision 10 of Emergency Plan. License SG-6.1 amended to reflect Revision 4 of Physical Protection Plan. License SG-6.2 and SG-6.3 amended to reflect Revision 1 of Safeguards Contingency Plan and Revision 1 of NFS Site Security Training and Qualification Plan. Region II inspection has no objection to proposed action. No EA nor EIS is warranted. Amendment 75, Safety Evaluation Report, TAC L31939, Effective 1/05/07, ML072630287.

- 03/13/06 **All Safety Items Unavailable** (Potential Unsecured Accumulation Point Detected). Event #42411.
- 3/13/06-
3/17/06 SIT inspection conducted to review causes and circumstances of 3/6/06 spill event into enclosure not approved for operation. **Significant safety concerns raised due to solution leaks in BPF are a credible abnormal condition.** Inspection Report #70-143/2006-06, 6/9/06, CAL NO. 02-06-003, Events #42393 & #42411, ML072630328.
- 03/18/06 **Confirmatory Action Letter No. 02-06-003 issued.** NRC Inspection Report No. 70-143/2007-002, 04/23/07, ML073060098. (Note: CAL cannot be located on NRC ADAMS).
- 03/19/06-
04/29/06 **Open unattended container found in building; Improperly uranium designed aluminum process overflows; Failure of an Administrative IROFS in the Environmental Safety Program (WWTF) caustic solution transfer made and mass limit was exceeded for uranium; IROFS failure block and bleed valves left open; 270 liters of unsampled caustic discard solution transferred.** Inspection Report #70-143/2006-003 and Notice of Violation, 05/23/06, ML073060269.
- 03/22/06 **Product Mass Different Than Analyzed.** Event #42442; (Retracted 4/13/06).
- 03/30/06 Closed meeting notice between the Nuclear Regulatory Commission and NFS in Rockville, Maryland on March 30, 2006. The purpose of this meeting is to obtain an understanding of the results of Nuclear Fuel Services, Inc., **(last two lines redacted (R)).** 3/23/06, ML081500234.
- 04/03/06-
04/07/06 **Weaknesses were identified in configuration management program.** Although licensee procedure NFS-GH-901 describes placing systems under configuration management, no guidance was provided in the procedure regarding boundaries. The inspectors

observed that the licensee relies to a great degree on process knowledge of the participating staff. This weakness led to a spill event in BPF when licensee staff failed to recognize that out-of-service equipment was, in fact, connected to an HEU solution line. Inspection Report No. 70-143/2006-203, 5/1/06, ML081490351. (Note: This is the last inspection report addressed to Kerry Schutt, President and General Manager).

- 04/03/06-
04/07/06 **AECs not placed under configuration control; independent verifications or auditing configurations not performed; Work request involving modification of carbon dioxide fire suppression system wiring never implemented; safety controls affecting two carbon dioxide system interlocks not tested; Design guidance for engineers vague or non-existent; No guidance on how to properly design a system to prevent backflow into a process vessel; No guidance to properly account for process upset conditions; Results from audit not formally captured in a commitment tracking system; Minor issues passed along to area owners and assumed to be addressed if resources available; Adverse trend regarding blockage resulting in routine actuation of an IROFS. Letter to Dwight Ferguson, President and CEO. NRC Inspection Report No. 70-143/2006-07, 05/04/06, ML073060347.**
- 04/13/06 ***Amendment 70: Extension of Safeguards Condition SG-4.34. Inventory exemption request for the BLEU Preparation Facility, one-time exemption from physical inventory deadline. License revised to effect Revision 3 of the North Site Decommissioning Plan. BLEU facility in shut-down mode per Confirmatory Action Letter No. 2-06-003 dated 3/18/06. Inadvertent material transfer event. Staff prepared EA in accordance with 10CFR Part 51. On 5/26/06 a Finding of No Significant Impact (FONSI) was published in the Federal Register (71 FR 30451). Safeguards license condition SG 4.35 of Material License SNM-124 added to incorporate one-time exemption. Amendment 70, Safeguards Evaluation Report, TACL31947, Effective 04/13/06, ML072630031.***
- 04/14/06 **Failure Of A Fitness For Duty Test (NFS Supervisor- illegal drugs). Event #42502.**
- 04/26/06 LPR meeting and a management meeting NFS requested has been scheduled for April 26, 2006 at the NFS facility in Erwin, TN. The purpose of the first meeting is to discuss the performance issues pertaining to our License Performance Review for your facility covering the period from Jan. 23, 2005 to Feb. 4, 2006. The purpose of the second meeting is to discuss additional

information and actions NFS is proposing for the safe restart of the BLEU Preparation Facility (BPF), including corrective actions and program enhancements that have been implemented or planned as a result of the BPF event that occurred on March 6, 2006. Both meetings will be closed to the public due to the discussion of proprietary information and the sensitive nature of information to be discussed pursuant to 10 CFR 2.390. Letter from /RA/ David A. Ayres, Chief, Fuel Facility Inspection Branch 1, Division of Fuel Facility Inspection, to Kerry Schutt, President, General Manager, NFS, 04/12/06, ML081440073.

- 04/30/06-
06/10/06 **Synopsis of NRC's (OI) report regarding NFS personnel willfully recorded incomplete and inaccurate information of transfer of containers of SNM; Event #42612 - Failure of CAS (criticality alarm system) due to lightning strike. Inspection Report # 70-143/2006-004, 7/7/06, OI Case No. 2-2005-028, Event #42612, ML073060562.**
- 05/15/06 Union workers went on strike at NFS. Approx 350 hourly workers, out of a total of 700, are affected. Closed session between NFS, NRC Region II, and the Nuclear Regulatory Commission, 5/30/07, ML071930389 and ML073060562.
- 05/23/06 **Notice of availability of Environmental Assessment and Finding of No Significant Impact (FONSI) concerning Request for Exemption from Nuclear Fuel Services, Erwin, TN. to exempt shipments of low-level radioactive waste contaminated with SNM from certain safety requirements. Memorandum to Michael T. Lesar, Chief Rules Review and Directives Branch, Division of Administrative Services, Office of Administration from Kevin M. Ramsey, /RA/ Fuel Cycle Facilities Branch, Division of Fuel Cycle Safety and Safeguards, Office of NMSS, 5/23/06, ML061220658.**
- 05/24/06 ***LAR 74: Use of Shipper's Quantities to Resolve Shipper-Receiver Difference. Application dated 5/24/06, SNM-124 is amended to approve one-time use of shipper's quantity to resolve shipper-receiver differences on three batches. Safety conditions S-1 revised to include date of submittal and new safeguards condition SG-4.36 has been added for BLEU facility. Changes requested related to safeguards matters. EA and EIS categorically excluded and unwarranted for this action. Amendment 74, Safeguards Evaluation Report, Effective 8/8/06, ML072630252.***
- 05/31/06 Office of Investigations Report #2-2005-029 and NRC Inspection Report #70-143/2005-004 refers to the apparent violation that occurred on June 22, 2005, involving the **failure of a production supervisor and maintenance mechanic to adhere to**

requirements documented in a radiation work permit (RWP). This letter also refers to an investigation completed by the NRC Office of Investigations (OI). The purpose of the OI investigation was to determine whether the above apparent violation occurred as the result of willful actions on the part of the NFS employees. Based on the evidence developed during the investigation, the NRC concluded the employees' actions were willful, in that the individuals (1) had received RWP procedural training; (2) were familiar with the procedure which requires all personnel read, comply with, and sign all RWPs; (3) had received annual refresher training related to the RWP procedure; and (4) stated they observed the posted RWP and yellow tape surrounding the RWP area. Based on these findings, this apparent violation is being considered for escalated enforcement action. Letter to Dwight Ferguson, President and Chief Executive Officer, Nuclear Fuel Services, Inc., Inspection Report #70-143/2005-004 and Office of Investigations Report #2-2005-029, EA-06-129, from /RA/ T. Decker, acting for Douglas M. Collins, Director, Division of Fuel Facility Inspection 5/31/06, ML081500430.

- 05/31/06 **Criticality Evacuation Alarm Failure (Safety Equipment Failure).
Event #42612; NRC notification 6/1/06.**

- 06/05/06- Safety Related Equipment (SRE) tags found on wrong equipment;
07/17/06 Testing of new sensors not complete; P&IDs for strip columns not
 updated to reflect new configuration; Level switches **out of service
for several months**; Numerous S/X equipment labeled "0" instead of
 letter "O"; **Roof Leaks-Standing liquid found on floor in DB. (Rain
water from leaks in BPF roof)**; Two locked closed valves not
 identified as locked; Inlet line not captured on P&ID; SOP missing in
 Process Logic Controller; Two instruments on P&ID in wrong
 location; SRE tests could not be performed; WR involving DB Loss-
 of-Function alarm changed categories multiple times before
 completion. Inspection Report #70-143/2006-11, 8/28/06;
CAL No. 02-06-003; Events #42393 and #42411, ML073060416.

- 06/06/06 ***Amendment 71-Approve One-Time Exemption From Physical
Inventory Deadline, Effective 6/6/06, ML072630040.***

- 06/11/06- **Level control problems with first and second SRE valves and
07/22/06 pumps (could have led to overflow problems - red oil issues);
Failures (two) to use required respirator protection. Inspection
Report #70-143/2006-009, 8/14/06, EA-06-129, ML073060396.**

- 06/16/06 ***LAR 72: Required Experience of Discipline of Vice-President. NFS
requested Amendment to Clarify Experience Requirements for a Vice***

President in Part 1, Chapter 2 of License SNM-124. Categorical exclusion per 10 CFR 51.22) (c) (11). Amendment 72, Safety Evaluation Report, Effective 7/3/06, ML072630058.

06/19/06-
06/23/06

On or before June 23, 2006, the criticality accident alarm system (R) which cover (R) of the Waste Water Treatment Facility (WWTF) only had one detector in service. The inspectors noted that (R) WWTF **Victoreen criticality detectors started to alarm after a recent electrical storm and could not be reset.** A work request was initiated to repair the detector but licensee was unable to get the detector to function properly, and the inoperable detector was placed in alarm status. **No further corrective actions were taken to replace or fix the detector; NFS stated this was because it did not have the parts to fix the detector, an old model that is no longer being manufactured.** The inspectors noted the inoperable detector had been in an alarm state since May 31, 2006 and also noted that no compensatory measures were taken during the time period in which there was only one function alarm in the area. Failure to have dual CAAS detector coverage is VIO 70-143/2006-205-01. Inspectors also noted that **during the same electrical storm, the audible alarm system for the BLEU complex CAAS was also disabled. This CAAS failure was not noted because the lightning strike had disabled both the alarm and the diagnostic panel that should have indicated alarm failure.** Since licensee was preoccupied with other effects of the lightning storm, **the alarm failure was not noticed for several days. The BLEU complex has lightning protection but the installed lightning protection failed to protect the CAAS equipment in this instance.** This will be tracked as IFI 70-143/2006-205-02. The mass flow meter often fails conservatively because it interprets air left in the line following a transfer as additional solution; **Inconsistency in the NCSE; IROFS on (R) were insufficient to protect against a second means of getting HEU solution (R).** The inspectors questioned whether this change should have resulted in an amendment under 10CFR 70.72 because it **caused the creation of a new accident sequence.** NFS stated that in its view, the splitting of an accident sequence into two or more accident sequences did not constitute a new sequence because the original sequence bounded any means of transferring additional solution. Splitting the downblending accident sequence into additional sequences will be tracked as URI 70-143/2006-205-03. **Modifications were made to the CAAS without an approved work order; The inspectors discussed NFS' actions to address the various validation-related issues. With one exception, NFS did not have any documentation it had completed work on these IFIs, 70-143/2005-205-02 through 09 remain open. Inspection**

Report #70-143/2006-205 and Notice of Violation, 7/21/06,
ML081490352.

06/29/06 A follow up to NRC letter of May 31, 2006 in which NFS was advised of the NRC identification of an apparent violation involving the failure of a production supervisor and maintenance mechanic to adhere to the requirements documented in a radiation work permit (RWP). During a telephone discussion between Marie Moore of NFS staff and Carolyn Evans of this office on June 27, 2006, we became aware of an **administrative oversight on our part concerning our failure to advise you of the availability of alternate dispute resolution (ADR) with the NRC as an additional means for resolving this issue.** Ms. Moore advised of NFS' desire to pursue ADR in this case. **ADR is a general term encompassing various techniques for resolving conflicts outside of court using a neutral third party.** The technique the NRC has decided to employ during a pilot program, which is now in effect, is mediation. Letter to Dwight B. Ferguson, President and Chief Executive Officer, Nuclear Fuel Services, Inc., Inspection Report #70-143/2005-004 and Office of Investigations Report #2-2005-029, EA-06-129, from /RA/ T. Decker acting for Douglas M. Collins, Director, Division of Fuel Facility Inspection, 6/29/06, ML081500431.

06/30/06 **NFS response dated March 24, 2006, to Confirmatory Action Letter (CAL) #02-06-003** and the additional information NFS provided at the meeting at NRC Headquarters on March 27, 2006, that discuss the details of our response. As mentioned at the meeting, **NRC continued to have concerns about the information you provided to demonstrate the safe operation of the HEU fuel manufacturing processes.**

"Your CAL response mentioned differences between the BPF and (R). You stated that processes in (R) had been at steady state for over five years and you also stated that (R) has been expanded over the past several years, primarily with duplications of well understood processes. **Although the BPF has had numerous design problems associated with new types of process equipment during its relatively short operational life, many of the problems that have occurred were associated with relatively simple, well-understood processes.** The event that occurred on March 6, 2006, was basically a well understood process of pumping a uranium (R) solution from one (R) to another for use as feed material for the solvent extraction system. Thus the lack of complexity as a design change should not be a key element in determining whether a change would impact safety".

"The second significant difference you mentioned was that (R) has a more experienced staff, and to strengthen the experience in BPF, personnel reassignments were made in 2005 to augment the BPF operation. We have noted that there have been relatively limited reassignments of more experienced staff to BPF and will continue to review the effects of such reassignments on the safety performance in (R). Another remaining issue is the amount of design guidance provided to the engineering staff for specific types of equipment with safety implications. **The results of the inspections showed that specific design guidance was lacking for engineering staff and design reviewers for many basic systems (piping, ventilation, electrical) as well as key safety-related issues such as backflow prevention**".

"NRC continues to have several concerns with the NFS configuration management program. Since the configuration management program is used throughout the facility, problems that surface during the BPF event could also affect (R). A good configuration management program includes proper review, approval, and documentation of the design, the as-built conditions, and the changes made to the facility. The NRC inspection of the BPF event and the subsequent inspection of (R) showed problems in each of these elements. The fact that most electrical drawings are not included in the existing configuration management program is a significant concern since many safety controls are electrically actuated."

"The response to the CAL did not fully address the concerns with the site-wide configuration management program. The inspection of the (R) conducted the week of April 3, 2006, reviewed the depth and breadth of the actions taken by NFS to verify the accuracy of your procedures and P&IDs. Overall, **the inspection found the independent review of P&IDs and the "vertical slice" of key operational areas in (R) consisted mainly of looking at six of the oldest P&IDs to see if they were accurate, assuming that these drawings would have the highest likelihood of inaccuracies because of their age. The inspection found this was not an adequate review of the configuration management program to make broad conclusions regarding the program at NFS because the drawings reviewed were for areas that had minimal changes over the years and three of them were of utility systems that had no associated safety controls. The inspection also found that your statement implying that the "vertical slice" also included a re-assessment of the (R) safety controls was inaccurate. Upon discussion with safety management, the NRC and you**

determined this re-assessment was for the BPF facility, not (R) as implied in your response”.

“NFS discussed the various items and programs in place to identify and address abnormal conditions in the facility. Specifically, the use of station limit cards (or no SNM allowed signs); the use of PIRCS; and the oversight provided by the NFS Quality Control organization are examples provided for this assurance. **The NRC had concerns about this response because: (1) a station limit card was originally posted on the glovebox in which the BPF event occurred, even though the station was not yet authorized for SNM; (2) after discovery of some type of solution in the glovebox in 2003/2004, the station limit card was replaced with a “no SNM allowed” sign, but subsequent discoveries of solution in the glovebox were not noted as a problem; (3) the PIRCS was not used to identify and correct the discovery of these events, and other concerns with the inconsistent use of the PIRCS program identified in previous routine inspections and the LPR; and (4) the oversight provided by the NFS Quality Control organization mainly deals with fuel quality issues, not quality of safety systems.** The SIT inspection identified the NFS procedure for implementing the Integrated Safety Analysis (ISA) process allowed the posting of the station limit card prior to final release of the system”.

“NRC continues to be concerned with the use of generic procedures in some areas to cover activities such as draining of systems that contain SNM. Since generic procedures cannot always provide enough detail to properly ensure the safety of the operation, their use should be supplemented with the appropriate details for specific situations. Since the ISA that was submitted in response to the Oct. 2004 due date, NFS has discovered occasional unanalyzed, credible accident sequences in both BPF and (R). This, combined with the number of ongoing changes within BPF and (R), can lead to further unanalyzed conditions and unidentified credible accident sequences”.

“NFS has not yet implemented fully management measures to assure that IROFS will be available and reliable. The inspection of the (R) conducted the week of April 3, 2006, **revealed at least two problems associated with management measures in (R) stemming from apparent lack of program oversight.** (R) The functional tests associated with this isolation valve were consolidated into one set of instructions and one of the key safety systems affected by the isolation valve was left out of the functional test instructions. Another instance involved the repeated plugging of a

vent line that caused frequent actuation of the safety controls to shut down the affected operation. **This repeated frequent challenge to a safety system was not addressed for several months and was NOT reviewed for its effect on the management measures associated with the control**".

"NFS must be diligent in guarding against the problems that occurred in BPF from happening in (R). The issues discussed above need to be fully addressed by NFS to maintain confidence in your ability to operate your facilities safely. The commitments NFS made for program improvements will be tracked by us until we are confident they are satisfactorily completed and will continue to be a major focus of future NRC inspection activities. We request that you provide a supplemental response to CAL #02-06-003 within 30 days of receipt of this letter addressing NRC request for additional information noted above". **Request For Supplemental Response to Confirmatory Action letter (Docket No. 70-143), CAL No. 02-06-003 to Dwight B. Ferguson, President, Chief Executive Officer, Nuclear Fuel Services, Inc., from /RA/ Douglas M. Collins, Director, Division of Fuel Facility Inspection, 6/30/06, ML081440078.**

- 07/03/06 ***Amendment 72-Approve Change to Required Experience of Discipline Vice President, Effective 7/03/06, ML072630058.***
- 07/17/06 ***Amendment 73-Approve Exemption of Low-Level Waste Shipments from Certain Physical Security Requirements, Effective 7/17/06, ML072630273.***
- 07/23/06-
09/02/06 Failure of diesel generator to assume electrical load from Uninterruptible Power Supply (UPS) following loss of offsite power was never identified in PIRCS; **Operability of diesel generator could have been affected for a period in excess of six months; License condition 6.3 requires emergency power for the criticality alarm system; emergency generators should be tested for operability on a weekly basis. Spill in building 302 on 8/31/06; Test results records for several LR-230 packages from Sept. and Oct. 2005 did not indicate date of inspection. Minutes of CY 2006 revealed licensing deficiency reports. Inspection Report #70-143/2006-010, 10/02/06, ML073040515.**
- 07/24/06-
07/28/06 Inspection of BLEU Preparation Facility (BPF), which was shut down after the March 6, 2006 spill of HEU. Temporary installation of heat-trace tape on two sections of U-AL process piping-tapes not connected; **Discrepancies between the as-built configuration, P&IDs and equipment labeling; Procedure discrepancies; SOP covered two different processes which used the same**

equipment and had similar steps; SRE number for drain on P&ID labeled SRE- 2 instead of SRE-1; One locked valve not identified as locked on P&ID; Two locked closed valves not identified as locked on P&ID. Inspection Report #70-143/2006-012 , 9/11/06, CAL No. 02-06-003, Events #42393 & #42411, ML073060434.

07/31/06 The NRC response to NFS letter dated June 23, 2003 requesting a waiver from requirements to conduct periodic (R) and NFS license. Given the untimely submittal of your letter, one week before the expiration (R), the NRC was not able to act on your request. Based on the NRC consideration of this information and an assurance by NFS that the violation will not recur, the NRC is exercising enforcement discretion and will not cite licensee's failure to conduct a (R) exercise during the (R). **The nature and timing of your request exhibits less than adequate planning and program management. The NRC encourages you to pursue aggressive preparations for the next (R) exercise.** While the NRC would consider additional requests for relief, they will have to be more timely and better supported. Nuclear Fuel Services, Inc., Enforcement Discretion for Exercises (TAC L31959), 7/31/06, ML081440080.

08/04/06 This letter refers to the apparent violations associated with the inadvertent transfer of (R) high enriched uranyl nitrate (HEUN) solution to a filter enclosure not approved for operation in the BLEU preparation facility (BPF), which subsequently spilled onto the (R) floor on March 6, 2006. The apparent violations were discussed in Inspection Report #70-143/2006-006. Based on the findings from the inspection report noted above, the apparent violations are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. Confirmation of Closed Pre-Decisional Enforcement Conference (Inspection Report #70-143/2006-006), Nuclear Fuel Services, Inc. - Docket #70-143, EA-06-179, CAL #02-06-003, Events #42393 and #42411, 8/04/06, ML081500432.

08/08/06 ***Amendment 74-Authorize Use of Shipper's Quantities to Resolve Shipper-Receiver Differences, Effective 8/8/06, ML072630257.***

08/17/06 "This is in response to your letter, 21G-06-0138, dated August 17, 2006, in which you requested the use of alternative dispute resolution (ADR) in an enforcement matter, specifically EA 06-179. As noted in your letter, EA 06-179 is based on an inspection rather than an investigation and therefore not within the scope of the agency's ADR program. The NRC considered your request to use ADR in resolving the matter. The ADR program scope was based on investigations because such matters typically involve judgments regarding

individuals' conduct, motives and intentions. The conclusions in such cases are frequently in dispute. Because inspections are an evaluation of a licensee's performance against established technical criteria, the likelihood of significant disputes is smaller.

Consequently the NRC staff is declining to expand the use of ADR in enforcement of these types of situations at this time". (Next 3 lines redacted). Letter to Nuclear Fuel Services, Inc., from James G. Luehman, Acting Director, Office of Enforcement, Docket #70-143, License #SNM-124, EA-06-179, 8/28/06; ML081500565.

08/22/06 Letter confirming conversation of August 17, 2006 between Marie Moore of your staff and William Gloersen of this office concerning the pre-decisional enforcement conference that has been scheduled for Sept. 5, 2006 in the Region II Office in Atlanta, GA. The purpose of the pre-decisional enforcement conference is to discuss the apparent violations associated with the inadvertent transfer of approximately (R) of HEU nitrate solution to a filter enclosure not approved for operation in the BLEU preparation facility (BPF), which subsequently spilled onto the (R) floor on March 6, 2006. We note that you formally requested the issues related to this event be resolved under the NRC Alternative Dispute Resolution (ADR) pilot program rather than our normal enforcement process. If we proceed with a conference using the ADR process, representatives of my staff will contact you to reach a mutually acceptable date and time for the conference. This meeting will be closed to the public due to the discussion of proprietary and sensitive material. Confirmation of Closed Pre-Decisional Enforcement Conference (NRC Inspection Report #70-143/2006-006), Nuclear Fuel Services, Inc., Docket #70-143, EA-06-179, CAL No. 02-06-003, Events #42393 and #42411, 8/22/06; ML081500425.

08/22/06 This letter confirms the conversation of August 17, 2006 between Marie Moore of your staff and William L. Gloersen of this office concerning a management meeting that NRC requested which has been scheduled for Sept. 5, 2006, at the Region II Office in Atlanta, Georgia. The purpose of the management meeting is to discuss additional information and actions that have been taken to justify the restart of the BPF, including corrective actions and program enhancements that have been implemented or planned as a result of the enhancements as a result of the BPF event that occurred on March 6, 2006. This meeting will be closed to the public due to the discussion of proprietary and sensitive material. Confirmation of Closed Management Meeting, Nuclear Fuel Services, Inc., Docket #70-143, CAL No. 02-06-003; Events #42393 and #42411, 8/22/06, ML081410187.

- 08/23/06 "On March 6, 2006, an event occurred at Nuclear Fuel Services, Inc., (NFS) in which high enriched uranium was inadvertently transferred to an unapproved location and spilled to the (R) floor of the BLEU preparation facility (BPF) building. On March 18, 2006, the NRC issued a Confirmatory Action Letter (CAL No. 02-06-003) that documented an agreement that NFS would maintain the BPF shutdown until you completed your investigation, developed corrective actions, discussed these items with the NRC, **and the NRC had no objection to restart. This letter confirms our discussion of August 23, 2006, during which you were advised the NRC has no objection to the processing of HEU currently held up in the (R) processing systems (R) and associated equipment in the BPF (evaluated in the Phase 2 ORR). This NRC position is based on the results of the NRC operational readiness review inspections conducted during the period July 24-28, 2006, and on the issuance of Amendment 71 to License #SNM-124 providing a one-time exemption from the physical inventory timeliness requirement.** This letter authorized only the processing of the material currently stored in the systems evaluated in the Phase 2 ORR in order to prepare for conducting a physical inventory of SNM in the BPF. Authorization for any processing of material held in the (R) systems and associated equipment in the BPF (evaluated in the Phase 1 ORR) was addressed previously in separate correspondence dated July 25, 2006. Program improvements need to be fully addressed by NFS and discussed with NRC management prior to NRC authorizing introduction of new material into the BPF process. This discussion is needed in order for us to maintain confidence in your ability to operate your facilities safely". Processing of Special Nuclear Material (R) in the BLEU Preparation Facility Phase 2 Systems, (Docket #70-143), CAL No. 02-06-003, Events #42393 and #42411, 8/23/06, ML081410194.
- 09/03/06- **Malfunctioning fire door in entrance to BPF; in line monitor at**
 10/14/06 **BLEU Complex would not perform intended safety function;**
several instances where issues not being properly identified in
PIRCS. Inspection Report #70-143/2006-013, 11/13/06,
ML073250382 & ML073050079.
- 09/06/06 Closed Meeting scheduled for Sept. 18, 2006 at U. S. Nuclear Regulatory Commission, Rockville, Maryland to obtain an understanding of (1) the results of Nuclear Fuel Services, Inc., (NFS) corrective actions since the Filter Glove-box event of March 6, 2006, and (2) **NFS' information and actions to justify approval to introduce new material into processes shut down after the event.** This meeting will be closed to members of the public because the staff has determined the topic involves sensitive, unclassified

information, 9/06/06, ML081410188.

09/11/06- Concern with regard to corrective actions associated with
09/13/06 Commitment ID2220; **Revision 3 of PR 5164 completion status was shown at 100% when Revision 3 was never issued; Commitment report never updated; No guidance on required actions before commitment closure or if they can be closed out on intent; Failure to perform required actions when issuing Revision 4 to NFS-GH-49, Implementing Procedure for Transportation QA Program. NRC Safety Inspection Report and Compliance Inspection, #71-0249/2006-201; 9/21/06; ML062710015.**

09/28/06 First alternate dispute resolution meeting held at Cornell University.
ML071990558.

10/09/06- Diffuse nature of configuration management program
10/16/06 contributed to BPF spill event; Outdated configuration control boundary postings on in-service piping; Signs were from previous method of identifying configuration control when equipment was installed several years previously; Configuration management did not assure all required aspects of facility changes be addressed; Failure to codify scope requirements of 10 CFR 70.72(a); Configuration management procedure NFS-GH-901 had been revised to control screening of facility changes against the requirements of 10 CFR 70.72(a); Electrical SRE drawings had not been maintained nor updated with no independent drawing review; **33 Safety Related Equipment (SREs) required special test**; No procedure nor checklist guidance was specified nor available to aid the Process Hazards Analysis (PHA) review for loss of power; Several health physics (HP) issues that met criteria not entered into PIRCS; Three optional issues not entered into PIRCS. **Inspection Report #70-143/2006-019, 11/29/06, ML073250411.**

10/14/06- Failure to implement lockout/tagout procedure, properly train the
07/28/07 users on the program and use appropriate checklist for testing of the UPS generator; **Failure to follow, maintain and develop fire protection procedures which led to two halon discharges; Failure to implement environmental sampling activities using approved NFS procedures; Failure to follow lockout/tagout process that led to the uranium centrifuge station in the BPF to possibly be energized without the appropriate shaft guard in place.** **License Performance Review (LPR) for NFS, Inc. Docket #70-143, 8/31/07, ML072430937.**

10/15/06- On Oct. 23, 2006, the BLEU Preparation Facility (BPF) resumed
11/25/06 operations following extended shutdown as a result of the March 6,

2006 spill of HEU. System locks, personnel locks, and tags removed from the breaker on the 1E01 centrifuge; **Shaft guard not reinstalled or extended to cover the shaft; Leak at a flanged connection located with a glovebox**; Inadequate verification of construction activities or startup testing; Several instances where issues not properly identified in PIRCS; Criticality alarm detectors not working; Licensee had to be prompted to generate a PIRCS; All required fire protection features not completed prior to startup of LA; Failure to properly secure material prior to leaving it unattended. Inspection Report #70-143/2006-014 and Notice of Violation, 12/21/06, ML073050171.

10/18/06 **NRC authorized full restart of NFS operations after spill of 37 liters of HEU on March 6, 2006. Report to Congress on Abnormal Occurrences, Fiscal Year 2007, U. S. NRC, ML071930389.**

11/07/06 This letter refers to NFS correspondence dated August 14, 2006, in reply to the NRC July 21, 2006 Inspection Report and Notice of Violation (Notice). The violation in the Notice concerned failure to have dual criticality accident alarm system (CAAS) coverage of an area in accordance with 10 CFR 70.24(a)(1). **Specifically the Notice was issued because NFS, CAAS for (R) which covers (R) of the Waste Water Treatment Facility, had only one operable detector in service for the period of May 31, 2006 to July 15, 2006. One operable detector covering an area for an extended period of time does not meet the intent of the regulation to ensure that reliable detector coverage for that area is maintained.**

By placing a detector in an "alarm" state for continued operation over an extended period of time does not meet the intent of the regulation to maintain two-detector coverage of the area. A violation occurs when one of the two detectors fails without timely implementation of compensatory measures. **The basis for the Notice is your decision to place a detector in an "alarm" state for continued operation over an extended period of time without taking compensatory measures or replacing the inoperable detector.** As specified in Section 3.2.4.2 of your license (SNM-124 "Criticality Detection and Evacuation Alarm System," the evacuation alarm system will meet the guidance established in ANSI/ANS 8.3-1986, "Criticality Accident Alarm System.

Placing the detector in alarm status on May 31, 2006, after resetting it without success and not completing repairs on the detector until July 15, 2006, without implementing compensatory measures, neither met the requirement of 10 CFR

70.24(a)(1) **nor your commitment to the ANSI/ANS standard.** Upon reconsideration and consultation with the Office of Enforcement, we have determined the cited violation is valid and requires corrective action to prevent recurrence. Response to Notice of Violation, 70-143/2006-205-01, EA-06-279 to Dwight B. Ferguson, President and CEO, NFS, Inc., from /RA/ Joseph G. Glitter, Chief, Special Projects and Technical Support Directorate, Division of Fuel Cycle Safety and Safeguards, NMSS, 11/07/06, ML081490354 .

11/08/06 This is response to your letter of October 31, 2006, **providing supplemental information on existing and future options that Nuclear Fuel Services, Inc., is pursuing to use the depleted uranium (DU) it is planning to import with other radioactive materials from the (R).** The U. S. Nuclear Regulatory Commission had previously concluded the import of (R) of DU (R) was not authorized under an NRC general license because options for using the DU were highly speculative and advised NFS to either submit an application and obtain a specific NRC license to import the DU (R) as radioactive waste, or to provide additional information to demonstrate with greater certainty that **projected uses for the DU have or will materialize for NRC to reconsider whether this import should be authorized under a general import license. Based on the more definite descriptions of existing and potential future uses of DU outlined in your Oct. 31, 2006 letter, we now believe there is a reasonable expectation that the DU to be imported (R) will be used and will not simply be managed (stored) for a period and disposed of as radioactive waste. The NRC thus concluded the import of radioactive materials including the (R) of DU (R) is authorized under an NRC general license pursuant to 10 CFR Part 110.27(a). We reiterate that should any of the materials imported (R) and/or Segrate (sic) under NRC general license not be used and require management or disposal as radioactive waste at a licensed facility, that would likely constitute a violation of NRC regulations, since imports of radioactive waste must be authorized by a specific NRC license.**

"If you elect to pursue similar opportunities involving imports of radioactive materials that are no longer needed or useful to foreign entities, you will need to contact us to determine whether such transactions are authorized under NRC general import license provisions or whether they would require obtaining specific NRC import licenses. **Given that each of these potential import transactions are likely to be unique, the details will need to be evaluated on a case-by-case basis as the licensing requirements will depend on various factors including domestic inventory and the extent to which options for use have or will**

materialize." Supplemental Information Requested by NRC Concerning Disposition of Depleted Uranium (Reference: 21G-06-0174), 11/8/06, ML081370426.

- 11/26/06-
12/31/06 **Non-functioning fire damper and associated ductwork non-operational for over a year replaced; electrical fire in a heat tract line; On Dec. 15, an electrical fire started in a heat trace line. Inadequate communication between the on-scene personnel and Secondary Alarm Station (SAS) operator resulted in the manual actuation for the Halon system being actuated instead of the fire alarm pull station. Supervision responded to SAS to address Halon system discharge. During attempt to reset Halon system and place alternate tank in service, the backup tank discharged; Inoperable Halon system (**both tanks fully discharged**) and required the addition of a manual portable fire extinguishing agent; Some SAS operators had not received the required portable extinguisher training. Inspection Report #70-143/2006-022, 1/26/07, ML073060497.**
- 11/30/06 **Second alternate dispute resolution meeting at Cornell University. ML071990558.**

2007

- 01/05/07 **Amendment 75-Request to Incorporate Changes to Chapter 3, Effective, 1/05/07, ML072630287.**
- 01/05/07 **LAR 76: Extension of Safeguards License SG-4.34. Material License amended to extend expiration date of Safeguards Condition SG-4.34 and revised. License revised to reflect Revision 5 to Physical Protection Plan for Category 1. Safety conditions S-1 revised to include dates of 10/18/06 and 1/05/07. EA and EIS categorically excluded per 10 CFR 51.22 (c) (12) and not warranted. Amendment 76, Safety Evaluation Report, TAC L32603, Effective 4/11/07, ML072630294.**
- 01/11/07 **Failure of Gamma Spectrometer Waste Monitor. Failure of this IROFS fails to meet the minimum performance criteria and may have been in a failed state for more than eight hours; System failed all calibration efforts including a self check. Event #43090.**
- 01/11/07-
01/26/07 Condensate monitor in BPF not working properly; Used half-face respirator laying in hallway (Unauthorized Masks). Corrected pages for NRC Inspection Report #70-143/2007-001, FCNMED No. 070008, Event #43090, 4/19/07, ML073060542.
- 02/11/07-
03/24/07 On March 1, an operational upset resulted in an excessive amount of fissile material to accumulate in a portion of a glove box location in area 800. The unusual amount of material found in an unexpected portion of the process was still considered a potential failure of an item relied on for safety (IROFS), and reported as Event #43204.
- On March 16, a caustic transfer made from HEU to LEU side of BPF facility with elevated uranium (U) content (Subsequent transfer was authorized by (LOA)-18771-205 for a one-time transfer) and raised setpoint for associated in-line radiation monitor from 0.0566 grams U per liter to 0.13 grams U per liter;
- On Feb. 22, a Fire occurred Area 800;
- Several anomalies noted in documentation including lockout/tagout reference isolations not signed off on, and signatures for removal of items not completed as required prior to permit closure;
- No officially approved procedures and documents at the test site for maintenance tests on the 306 diesel generator (an UPS and ABT); Document at test area used to perform and verify activities had not

been evaluated, reviewed and/or approved; Lockout/tagout control sheets not used; Deficiencies not generated until four days later, after prompting by the inspectors;

Testing of Nitrogen trickle flow system for UAL in BPF operations not on calibration frequency; **Management measures less than adequate**, Inspection Report #70-143/2007-002, NMED FC 070008, Event #43090 and #43204, 4/23/07, ML073060098.

- 02/21/07 Confirmatory Order Effective Immediately for Program Improvements issued to Nuclear Fuel Services, Inc., as followup to the Alternative Dispute Resolution (ADR) mediation sessions with the Nuclear Regulatory Commission on Sept. 28 and Nov. 30, 2006. Originally designated Official Use Only (OUO). Letter dated 7/18/07 from U. S. Nuclear Regulatory Commission, Region II, William D. Travers, Regional Administrator to D. B. Ferguson, Jr., President & CEO of Nuclear Fuel Services; ML071990558 & ML081410191.
- 02/21/07 Confirmatory Order modifying License No. SNM-124 reflected an agreement between the NRC and NFS that "NFS will conduct via a third party, an independent safety culture assessment which shall include the 13 safety culture components discussed in the NRC Regulatory Issue Summary (RIS) 2006-13, dated July 31, 2006 and the commitments NFS made at the management meeting with the NRC on Sept. 18, 2006." Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, 7/31/06, ML072820542.
- 03/01/07 **Potential Degradation of Safety Systems (Loss or Degraded Safety Items). Accumulation of fissile materials exceeding the controlled limit found in an enclosure; Failure of IROFS. Event #43204, 3/01/07 (Retracted 3/02/07).**
- 03/25/07-
05/05/07 Failure to conduct safety function activities in accordance with written procedures while performing required annual maintenance on the 306 generator and associated equipment. Three examples of failure to conduct safety function activities in accordance with written procedures. Inspection Report #70-143/2007-003 and Notice of Violation, 6/04/07, ML073060208.
- 03/26/07-
03/30/07 On Jan. 11, licensee notified the NRC of an event involving the (R) condensate In-Line Monitor System (ILMS). During the routine 6 month calibration of the ILMS, NFS observed the calibration could not be completed and the spectrum appeared to have wide, short peaks which were not normal. The in-line monitor is identified as an active engineered Items Relied on for Safety (IROFS) in the

Integrated Safety Analysis (ISA), and **the failure of this IROFS left only one IROFS in place.** Probable cause of the event was a partial failure of the voltage supply on the Multichannel Analyzer (MCA) Board. Inspectors noted that Safety Related Equipment (SRE) testing of the ILMS did not include testing of the new module. Licensee indicated that the module was tested to be operable prior to installation, but there were no plans in place to test the module further. **Appropriate management measures are required to be applied to all IROFS.** Inspection Report #70-143/2007-202, 4/27/07, Event #43090, ML081500187.

04/11/07 **Amendment 76: Approve Extension of Safeguards Condition SG-4.34, Effective 4/11/07, ML072630298.**

04/13/07 **LAR 77: Administrative Changes to Part 1 of Materials License SNM-124.** NFS, Inc. requested amendment to incorporate administrative changes to each chapter in Part 1 "License Conditions" of its application. Chapters were retyped to improve consistency of formatting and to establish electronic baseline in preparation of license renewal process, NFS explained. EA and EIS categorically excluded per 10 CFR 51.22 (c)(11). Region II staff has no objection. Amendment 77, Safety Evaluation Report, TAC L32630, Effective 5/09/07, ML072630330 & ML072630342.

04/27/07 NRC notified Congress of Abnormal Occurrences (AO) for Fiscal Year 2006, required by Section 208 of the Energy Reorganization Act of 1974 and the Federal Reports Elimination and Sunset Act of 1995. An abnormal occurrence is an unscheduled incident or event that the Commission determines to be **significant from the standpoint of public health or safety.** On March 6, 2006 Nuclear Fuel Services had an event where 35 (37) liters HEU leaked into a glovebox where criticality was possible and to the floor where criticality was also possible because of an elevator pit. If a criticality accident had occurred at the filter glovebox or elevator pit, **it is likely at least one worker would have received an exposure high enough to cause acute health effects or death.** Letter from NRC Chairman Dale E. Klein to VP Cheney, 4/27/07.

05/06/07-
06/16/07 Two instances of procedural non-compliance; **Transfer of waste water from a geometrically safe to an unsafe geometry; Operator failed to properly select correct tank at control panel and sent contents to wrong waste water tank. Issue deemed as low safety significance.**

Room exhaust and removal fans not running for 12 hours (considered IROFS); Failure to follow plant operating procedures a

Violation of NRC requirements (NCV); Leaking check valve not correct design; No indication licensee realized this should be evaluated further for review to determine the extent of condition, severity of design/installation issues and to understand significance of this particular issue;

During emergency exercise, the Emergency Information Message (EIM) Form transmitting the Protective Actions Recommendations (PARs) to offsite authorities was inconsistent with Table 5-2 of the Emergency Plan (EP);

Response to control contamination during the simulated accident considered an area of weakness. Several re-entry teams were observed entering and exiting potentially contaminated surveys performed on equipment; No step off pads or contamination-control zones established; Contamination concerns regarding vehicle and equipment also expressed by offsite support medical transport group. Inspection Report #70-143/2007-004, 7/16/07, ML073050514.

05/09/07 ***Amendment 77: Approve Administrative Changes to Part I of SNM-124, Effective 5/09/07, ML072630330.***

05/15/07 ***LAR 79: NRC received letter from NFS requesting license amendment to increase U-235 possession limit. Opportunity to request a hearing must be filed by Dec. 17, 2007. This increase in authorized possession limit is needed to utilize all of the existing storage locations, and to better align the number of storage locations with the maximum quantities of U235 allowed by Nuclear Criticality Safety (NCS) limits. It is also consistent with the maximum quantity allowed at the other Category 1 facility, thus providing equitable license basis for the competing businesses. Additional dose to workers handling material. No EA or EIS required. FONSI issued 11/07/07. (License approved Nov. 23, 2007 before time to request hearing expired). Amendment 79, Federal Register Notice: 11/18/07, Effective 11/23/07, ML073190647.***

05/22/07 Letter dated May 22, 2007 (document #21G-07-0073) NFS previously submitted: Information on the names and qualifications of the contractors who will perform the Independent third party Safety Culture Assessment, including the experience of these contractors in conducting safety culture assessment activities. This team of contractors is known as the NFS-Erwin Safety Culture Board of Advisors (SCUBA); and Revision 0 of the 2007 Independent Safety Culture Assessment (ISCA) plan, which was developed by SCUBA. Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, ML072820542.

05/24/07 Confirmation of May 24, 2007 with Marie Moore of NFS staff concerning a meeting that NRC requested, scheduled for May 30, 2007, in Rockville, Maryland. The purpose of the meeting is to **discuss the plan submitted by NFS to conduct a third-party independent safety culture assessment.** This meeting will be closed to the public due to the discussion of proprietary and sensitive material. Confirmation of Closed Management Meeting, Nuclear Fuel Services, Inc.-Docket 70-143, 5/24/07, ML081500232.

05/29/07 ATSDR (Agency for Toxic Substances and Disease Registry) conclusion to the Final Public Health Assessment: "There is a historical lack of both on-site and off-site sampling of atmospheric releases. ATSDR considers the site an **Indeterminant Public Health Hazard**. This category applies to sites where critical information is lacking (missing or has not yet been gathered) to support a judgment regarding the level of public health hazard from past exposure." "As previously stated, CERCLA legislation directing ATSDR activities excludes the evaluation of the radioactive materials released from this site. The conclusions of this public health assessment do not apply to the issues surrounding the use of radioactive materials by the Nuclear Fuel Services, Inc."

Members of the Erwin community and surrounding cities and towns have expressed a variety of concerns to ATSDR ranging from impacts on environmental quality (air, water) in Erwin, other towns in Tenn. and North Carolina, perceived increases in cancer rates and self-reported cancer including colon and multiple myeloma, thyroid disease, Alzheimer's Disease, multiple sclerosis, skin, and joint ailments. Concern was also raised regarding the firearms training facility located in Washington County. ATSDR, 05/29/07, Public Health Assessment for Nuclear Fuel Services, Inc., Erwin, Tenn.

05/30/07 NFS management and NRC Region II Officials met with NRC Commissioners. William Travers, Regional Administrator, Region II states the issues that have been occurring at NFS are in procedural adherence and operations, procedural adherence in material control and accounting, utilization of problem identification and correction, the corrective action program, engineering design, configuration management and Nuclear Criticality safety analyses have been at issue at this facility. "About June of 2004, when the BLEU facility began operations, we've noted an increase in these types of issues arising from the BLEU facility in this relatively new process that they have been doing at the BLEU facility (p. 8)." The most significant event occurred in March of 2006. (35 liters of high enriched uranyl nitrate spilled into a glovebox, then onto the floor within a few feet of an elevator pit they (NFS) were not aware of. **This was significant**

and two severity level 2 Apparent Violations because the configuration management controls that were not in place could have resulted in an inadvertent criticality in either the glove box or elevator pit (p.9) and ranked No. 2 on the INES Scale (p. 10).

“An additional resident inspector was added to the site in 2005 (normally a Category 1 facility has one senior resident inspector.) (p.11). A number of enforcement actions occurred over the last year or so. **Eight severity level 3 issues were identified at NFS. Several of these involved willful violations of NRC requirements (p.12).** Alternative dispute resolution (ADR) was offered to NFS. They accepted it. “We believe we’ve leveraged their willingness to agree that safety culture, configuration management, and areas of concern, including performance, procedural adherence, and corrective actions really were the issues that needed to be resolved through a great deal of **management attention.**” (p.13) Official Use Only (OUO) policy discussed (p.17-22). **“There is a requirement for NFS to do a safety culture survey within two years, but after that not for the life of the facility.”** (p.23).

Tim Lindstrom, Executive Vice President of HEU Operations stated **“We at NFS have found our performance as described by the staff as being unacceptable in the past. (p.25) Additionally, we found that we were not putting safety first.”** (p.27) Closed session between NFS, NRC Region II, and the Nuclear Regulatory Commission, 5/30/07, ML071930389.

- 05/30/07 Representatives of NFS and SCUBA met with the NRC staff in Rockville, Maryland to discuss the information submitted on May 22, 2007. Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, 9/24/07, ML072820542.
- 06/07/07-07/07/07 NRC staff briefed the House and Senate staffers concerning the spill of 35 (37) liters of HEU at NFS on March 6, 2006 **and the NRC policy for withholding information from the public.** Report to Congress on Abnormal Occurrences, Fiscal Year 2007, U. S. NRC., NUREG-0090, Vol. 30, 4/30/08, ML081300424.
- 06/17/07-07/28/07 **Activities of contractors not being implemented through approved procedure for environmental sampling; Failure to have approved procedures prior to performing sampling; Contractors did not demonstrate adequate knowledge of their own procedures; Inconsistencies noted in procedure implementation ranging from modifications to sample mixing times to changing of duties of radiation technicians; Sample entry forms not completed; Chain of custody process did not meet licensee’s requirements. (Note:**

Commissioner Jaczko visited NFS on July 11, 2007. Inspection Report No. 70-143/2007-005 and Notice of Violation, 8/27/07, ML073060138.

- 06/20/07 Mr. David Ayers of the NRC staff met with representatives of NFS senior management and with the SCUBA at the NFS-Erwin Site to provide the NRC Staff's comments on Revision 0 of the 2007 ISCA plan. Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, 9/24/07, ML072820542.
- 06/28/07 NFS management informed the NRC staff of NFS/SCUBA decisions and conclusions related to the NRC comments on Revision 0 of the 2007 ISCA plan. The 2007 ISCA assessment scope will include all safety related activities authorized or required at the NFS-Erwin site by License No. SNM-124, including nuclear material security and the activities at the BLEU Complex managed by AREVA. Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, 9/24/07, ML072820542.
- 06/29/07 NFS awarded contract for **17.4 metric tons HEU** with shipments beginning in August 2007. **To be overseen and managed by NNSA and will be eligible for IAEA inspection.** NNSA News Release, U. S. Dept. of Energy, 06/29/07; DOE/EIS-2040-SA1, Oct. 11, 2007, p.4. (Note: NFS still receives more bomb grade uranium when it is acknowledged that they are lacking a safety culture, have poor configuration management, and are still under a Confirmatory Order).
- 07/02/07 **Rulemaking Plan to Revise 10 CFR 51.22, "Criterion for Categorical Exclusion; Identification of Licensing and Regulatory Actions Eligible for Categorical Exclusion or Otherwise Not Requiring Environmental Review: (RM No. 644).** NEPA Task Force Report to the Council on Environmental Quality, "Modernizing NEPA Implementation", form the basis for the staff's proposed revisions to the U. S. Nuclear Regulatory Commissions Categorical Exclusion Regulations. Rulemaking Issue Notation Vote, Rulemaking Plan for Revising Categorical Exclusions in 10 CFR 51.22 (Enclosure) from Luis A. Reyes, Executive Director for Operations, Region II, to Commissioners, SECY-07-0108, 7/2/07 (Note: The Categorical Exclusion Rule for 10 CFR 51.22 was used on 25 OF 26 amendments during OUO from 2004 through 2007 BEFORE it became a rule.)
- 07/03/07 In July 2007, Congressman John D. Dingell (Chairman of the House Energy Committee) sent a letter to NRC Chairman Commissioner, Dale E. Klein, telling him that the public's rights were violated (under

the Atomic Energy Act, Section 189) when the Confirmatory Order was issued on 2/21/07 stating that the public had a right to request a hearing, but did not know because the Confirmatory Order itself was Official Use Only. As a result, the NRC reissued the Confirmatory Order on July 18, 2007. U. S. House of Representatives, Committee on Energy and Commerce, letter from Congressman John. D. Dingell; Congressman Bart Stupak, Chairman, Subcommittee on Oversight and Investigations to The Honorable Dale E. Klein, Ph.D., Chairman, U. S. Nuclear Regulatory Commission, 7/03/07, ML071870030.

07/18/07 **NFS Confirmatory Order reissued to Nuclear Fuel Services, Inc., for numerous issues including, a failure of NFS to meet the performance requirements of a July, 2000 Confirmatory Order Modifying License involving its safeguards contingency plan and the inadvertent transfer of HEU nitrate into an enclosure that was not approved for operation, published in Federal Register, Vol.72, No. 145, Monday, 07/30/07 and Office of Enforcement Notification of Significant Enforcement Action, 7/11/07; ML071910431.**

07/29/07-
09/08/07 **Leak test of valve in the fuel process could not be performed as written because instructions were missing specific steps; Two additional leak tests in the fuel process could not be performed as written. Leak tests performed last year although they could not be performed as written; Replacement of new pump revealed new motor operated at 50% speed of previous motor, thus altering pump curve. Work Requests (WR) included few details regarding the engineering analysis associated with this plant modification.**

An issue of forced overtime was addressed; Several individuals were having to work 16 hours per day due to new labor contract overtime requirements allocating all of overtime to the most junior member of the work group;

Work Instructions (WI) written and delivered to operators in the field for immediate implementation with unclear instructions; As a procedure or Letter of Authorization (LOA) change, this WI should have received review from criticality safety, radiation safety, industrial safety, and environmental protection review. The license required prior safety committee review of a procedure change, as well as adequate operator training prior to placing the procedure into effect;

Quality Control samples for Solid Waste Management Units (SWMU) were not collected at the time of the inspection nor during past sampling activities of Survey Units 11 and 17;

Transfer of waste solution into a storage area without procedural authorization; Failure to follow NFS approved procedures as outlined in the NFS Decommissioning Plan. Inspection Report #70-143/2007-006 and Notice of Violation, 10/05/07, ML072780519.

07/29/07-
12/31/07 License Performance Review (LPR). The NRC noted an upward trend in the number of procedural violations identified during this review period including eight violations in a five-month period. This increase in violations appears to be an indicator of declining regulatory performance in this area.

The review revealed the need for improvement in management oversight to ensure adherence to operational radiological protection, and engineering procedures. This area for improvement is particularly noteworthy as it is a longstanding area needing attention at NFS, as indicated by two of the previous three LPR's. For the remaining LPR period in which NRC did identify this as an area needing improvement, your facility was not running at full capacity. **At least one of these procedure violations involve failure to adhere to procedures implemented as a corrective action following the March 2006 incident involving the spill of HEU solution.** In light of NFS' plan for significant expansion of the BLEU facility in 2008, this area for improvement will continue to be a focus of NRC oversight. NFS' continued challenges in this area further underscore the importance of success in NFS' ongoing efforts. In addition, the NRC identified management oversight of planning and quality of licensing requests as another program area needing improvement. Several requests were ineffectively planned or of inadequate quality.

Several recent licensing requests have not adequately supported licensee's desired operational needs. Ineffective planning and quality resulted in documents that required multiple changes before providing sufficient information to support NRC's licensing activities. Examples include the following:

- (1) The request to increase its possession limit for HEU (TAC L32637).
- (2) The three revisions of the Fundamental Nuclear Material Control Plan for HEU submitted in July, November and December 2007 (TACs L32644, L32656 and L32662).
- (3) The major revision of the Physical Security Plan for HEU (TAC L32648).
- (4) The request to establish a Chief Nuclear Officer (TAC L32647).to

improve in both human performance and the related components of safety culture.

Program Areas Needing Improvement: Management oversight to ensure adherence to operational, radiological protection and engineering procedure; Failure to follow procedure due to storage and use of flexible pipe sections without formal approval from the nuclear criticality safety group; Failure to implement criticality alarm response procedures following a false alarm; Two examples of failing to follow procedures, one involving the use of an unapproved work request for operations, the other which led to the contamination and chemical exposure of an operator; Three examples of failing to follow Special Work Permits (SWPs) by not using the appropriate personnel protective equipment; Two examples of failing to follow SWP radiological control requirements; **Licensee implemented operational procedure changes without the required reviews and training;** Licensee failed to implement the "toll-gate" process that requires documented design goals and meetings to determine the requirements for engineering projects. Licensee Performance Review (LPR) of Licensed Activities for Nuclear Fuel Services, Docket #70-143, 1/30/08; ML080300451.

08/17/07-
08/27/07 Six individuals plus the Sierra Club Radiation Committee request a hearing concerning the Confirmatory Order issued to NFS and the "OUO" policy plus the 26 license amendment changes issued during the "OUO" period, before the Atomic Safety and Licensing Board. United States of America, Nuclear Regulatory Commission, Before the Presiding Officer, In the Matter of Nuclear Fuel Services, Inc., Docket No. 70-143.

08/07 **Shipments of surplus High Enriched Uranium (17.4 Metric tons) begin arriving at NFS. DOE/EIS-0240-SA1, (p. 4), 10/11/07.**

08/22/07 **SECY-04-0155 was designated as an OUO document because it referred to a classified U. S. Department of Energy request that NRC withdraw from public access certain information that could potentially be used to threaten national security.** The policy of withholding information concerning NFS and BWX was established by the Office of Nuclear Material Safety and Safeguards within the office of the Executive Director for Operations in consultation with the NRC offices listed below. The Commission was informed of the request and staff's actions in response. (Luis Reyes, Executive Director for Operations, Karen Cyr, General Counsel and Jesse Funches, Chief Financial Officer, retired). Letter dated 08/22/07 from NRC Chairman Dale E. Klein to Honorable Bart Stupak, Chairman, Subcommittee on Oversight and Investigations, Committee on

Energy and Commerce, ML071920242.

- 08/23/07 **LAR 80: Approval of Changes to Physical Protection Plan for Category 1, HEU.** In accordance with application dated Aug. 23, 2007 and supplemented by letters dated Dec. 4, 2007 and Feb. 11, 2008, SNM-124 is hereby amended to approve the remaining changes to the Physical Protection Plan for Category 1, high-enriched uranium. Some changes were approved previously in Amendment 78, issued on Oct. 18, 2007. Safety Condition S-1 has been revised to delete the exception listed after the date August 23, 2007, and to add the dates Dec. 4, 2007 and Feb. 11, 2008. Amendment 80, Safeguards Evaluation Report for Nuclear Fuel Services, Inc, TAC L32648. No EA or EIS is warranted for this action in accordance with 10 CFR 51.22(c) (12), ML072770050.
- 08/29/07 NRC issued a letter to NFS on the subject of "Upgrades to the Safety Culture Implementation Plan for Nuclear Fuel Services, Inc." This letter: (1) Documented NRC Staff's understanding of the NFS/SCUBA plans to modify the 2007 ISCA plan; (2) Requested NFS to confirm the modifications to the 2007 ISCA plan and to resubmit the plan for NRC review within 30 days of the date of the issuance of its letter and (3) Provided, as an enclosure to its letter, a list of additional comments provided by the NRC staff-based on its review of Revision 0 of the 2007 ISCA plan and the above-mentioned modifications to the plan. These comments were provided for consideration by NFS/SCUBA and were characterized as not representing requirements. Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule, 9/24/07, p. 3, ML072820542.
- 08/31/07 **LAR for "Processing UF6 in the CD Line Facility at the NFS Site". In its LAR, NFS states that "sublimation of the UF6 creates new types of accident sequences that have not been previously described in an ISA (Integrated Safety Analysis) Summary; thus, per License Condition S-25(1), an amendment is needed to approve this process."** Federal Register, 12/3/07, Vol. 72, #249, pp. 74352-74354, ML073090651.
- 08/31/07 "Revisions to Policy Governing Public Availability of Information Associated with Category 1 Fuel Facilities, Staff Requirements-SECY-07-0129. The Commission has approved implementation of Option 3, with some modification, to apply guidance for Sensitive Unclassified Non-Safeguards Information (SUNSI) to documents related to the Category 1 fuel facilities Nuclear Fuel Services and BWX Technologies to prepare and release redacted versions of documents containing SUNSI. The subject of documents should

include inspection reports, licensee performance reviews, enforcement actions (Non-Order), event reports, and other documents, which the staff determines to be relevant. The staff shall ensure the requirements of Section 189 of the Atomic Energy Act are met in making information regarding proposed license amendments and proposed Orders available to the public. Future documents associated with Category 1 fuel facilities containing SUNSI should be redacted and made publicly available." Memorandum to Luis A. Reyes, Executive Director for Operations, from Annette L. Vietti-Cook, Secretary, 8/31/07.

09/09/07-10/20/07 **Overflow of the BPF scrubber blowdown tank on Oct 16, 2007; Manual by valve associated with the blowdown line found cracked open; Audible alarm for the high level in the tank failed to annunciate; Cooling water problem with PSL-600 area equipment; Spill event in Area 500 that occurred in a transfer line required shutdown of production on Oct. 17; Several intermittent failures occurred on the BPF raffinate inline monitor between 10/13 and 10/18; Degrading Multichannel Analyzer (MCA) circuit board; Spare MCA board failed Safety Related (SRE) testing. Inspection Report #70-143/2007-007, 11/16/07, ML073230801.**

09/14/07 Since 2004, the NRC had had a policy that directed the staff to treat most NFS documents as "Official Use Only." Effective August 31, 2007, the Commission changed this policy by a staff requirements memorandum SRM-SECY-07-0129. The staff is directed to now apply NRC guidance for Sensitive Unclassified Non-Safeguards Information SUNSI to key regulatory documents related to Category 1 fuel facilities, and to prepare and release redacted versions of documents containing SUNSI. This new directive affects a subset of historical documents issued after Jan. 1, 2004. The staff will redact and reissue the following NFS documents:

1. License amendments and orders
2. Inspection Reports
3. Licensee Performance Reviews
4. Enforcement actions **other than Orders**
5. Event reports, and
6. Other documents staff determines to be relevant to give the public a record of NRC oversight of your licensed facility.

We anticipate that previously withheld NFS license amendments and Orders will be redacted and released in September 2007. The remainder of the retrospective NFS key documents will be screened for SUNSI as soon as possible, but expect the job will not be completed until May 2008.

(SUNSI): As defined in the NRC Policy for Handling, Marking, and Protecting Sensitive Unclassified Non-safeguards information, "SUNSI" means information of which the loss, misuse, modification, or unauthorized access can reasonably be foreseen to harm the public interest, the commercial or financial interests of the entity or individual to whom the information pertains, the conduct of the NRC and Federal programs, or the personal privacy of individuals.) Letter to Ms. B. Marie Moore, Vice President, Safety and Regulating, Nuclear Fuel Services, Inc., from Kevin M. Ramsey, Project Manager, Fuel Manufacturing Branch, Office of Nuclear Material Safety and Safeguards, 9/14/07, ML072570107.

- 09/19/07 Nuclear Fuel Services, Inc., requests all petitioners requesting hearing before the Atomic Safety and Licensing Board concerning "OUO" policy, 26 license Amendments and Confirmatory Order, be denied. United States of America, Nuclear Regulatory Commission, Before the Presiding Officer, In the Matter of Nuclear Fuel Services, Inc., Docket No. 70-143.
- 09/21/07 NRC Staff's Response to all petitioners requesting hearing before the Atomic Safety and Licensing Board concerning the "OUO" policy, 26 License Amendments and Confirmatory Order should be denied because of lack of standing. United States of America, Nuclear Regulatory Commission, Before the Atomic Safety and Licensing Board, In the Matter of Nuclear Fuel Services, Inc., Docket No. 70-143-CO.
- 10/09/07-10/12/07 This letter contains sensitive unclassified security-related information and **will not be available for public inspection in the NRC Public Document Room or from PARS components of NRC's document system ADAMS.** Inspection Report #70-143/2007- 404 with Attachment: Supplemental Information (OUO), 11/02/07, ML073060276.
- 10/15/07-10/19/07 Nuclear Criticality Safety Inspection. Tracking use of gapped reflector models of fissile systems; PIRCS entry indicated that no station limit had been violated when the overall entry implied a station limit **had** been violated; **Station Limit Cards not posted on all gloveboxes;** Inspection Report # 70-143/2007-207, 11/05/07, ML073040221.
- 10/15/07-10/19/07 **Staff of the NRC performed a routine and announced NCS inspection of the AREVA Erwin facility (Licensed under Nuclear Fuel Services, License No. SNM-124) in Erwin, TN. Inspection focused on risk-significant fissile material processing activities**

including the BLEU Oxide Conversion Building, the BLEU Uranyl Nitrate Building and the BLEU Effluent Processing Building. AREVA facility (licensed under NFS License No. SNM-124) produces uranium oxides from low-enriched uranium (LEU) liquid, conducts routine ammonia recovery process and liquid waste treatment at its Erwin, Tn., site. (Note: The CEA (France's Atomic Energy Commission) owns 78.96% shares, and the French Government owns another 5.19%. Therefore, AREVA is about 85% French-Government owned). Areva Website and Hoover Website)

Flexible piping stored in four locations inside the process area; No formal approval in place that stated which of the flexible lines were authorized for use in the OCB; SOPs did not identify which hoses were authorized; **Failure to have NCS approval in an SOP, LOA, or other formal method for flexible lines located in the OCB as required by procedure; Weakness with configuration control of local criticality alarm panel;** Issues not being properly identified in PIRCS. Inspection Report #70-143/2007-208 and Notice of Violation, 11/14/07, ML073110391, superceded by ML080670299 .

10/18/07 **Amendment 78: Partial Approval of Changes to Physical Protection Plan for Category 1, HEU (TAC L32648).** SNM-124 is hereby amended to approve some, but not all, changes to the Physical Protection Plan for Category 1, HEU. This partial approval is being issued in response to your request for an expedited review of the changes. Safety Condition S-1 has been revised to include the date of August 23, 2007 (except the fourth and sixth changes to the Physical Protection Plan). Amendment 78, Safeguards Evaluation Report for Nuclear Fuel Services, TAC L32648 by cover letter dated 8/23/07, Effective 10/18/07, ML072950170.

10/18/07 NRC publishes notice to the public that it can request a hearing regarding the License Amendment Request #79 for the NFS possession limit increase and storage of HEU in Erwin. Deadline for hearing is December 17, 2007. Federal Register, 1/18/07.

10/19/07 **Edlow International Company makes notification of upcoming shipment: Shipper: Edlow International Company for JRC ISPRA, Italy, 1666 Connecticut Ave., Suite 201, Wash., D. C., 20009; Receiver: Nuclear Fuel Services, 1205 Banner Hill Road, Erwin, TN. 37650.** Physical Description: 1,326.555 Kgs. HEU; 329,504.275 Kgs. LEU; 10,044,346.549 Kgs. Natural Uranium; 8,778,452.900 Kgs. Depleted Uranium; 118,498.000 Kgs. Thorium; Shipment Details: ETD JRC ISPRA on Nov. 11, 2007; ETA Naval Weapons Station in SC. 12/03/07, (Unload DOE Heat Sources); ETA Wilmington, NC. 12/04/07; ETA Erwin, TN., Dec. 5/6 2007.

Letter from Edlow International Company to U. S. Nuclear Regulatory Commission, 1154 Rockville MD., 20852-2738, 10/19/07, REF: NFSX-1172, ML073610337.

10/21/07-
12/01/07 Failure to follow site procedures during Emergency Criticality Evacuation; Breaker in incorrect panel de-energized four (two pair) criticality detectors activating the alarm; **Panel and individual breakers inadequately labeled and the affected site personnel were not adequately trained on its operation;**

On Oct. 30, 2007 the inspectors identified licensee personnel performing troubleshooting activities on the area 800 equipment with an unapproved Maintenance Work Request.

On Nov. 8, a **spill occurred in BPF operating area**; Clog within the U/AI system; SNM sprayed into cup operator was holding and splattered back up into the operator's face and body who had to be decontaminated and taken to the hospital emergency room; No specifics on how to locate an obstruction; Pressure gage would have aided operator in locating the obstruction but the needle for the gage had broken and fallen to bottom of face plate; No Work Request (WR) generated to fix the gage; Other process train had broken gage as well; Both gages last repaired in March/April 2007; **Inspectors noted an acceptance by the operators to tolerate deficient equipment conditions**; WR order not completed nor properly signed off to begin work;

On Nov. 20, criticality alarms sounded. Subsequently determined to be false and was caused by individual attempting to reset a tripped circuit breaker for the microwave oven in Building 107.

Additional smears not taken to define extent of contamination outward that **exceeded licensee applicable limits**; Area Supervision did not initial and date applicable survey form indicating notification and initiation of decontamination actions; During review of licensee's QA role in the decommissioning project, licensee had yet to perform verification and validation of the third party software going to be used with the sampling results. Inspection Report #70-143/2007-008 and Notice of Violation, 12/28/07, ML073620551 and corrected report dated 1/4/08, ML080080165.

11/07/07 ***NRC publishes an Environmental Assessment of High-Enriched Uranium (HEU) possession limit increase and storage, and issues a Finding of No Significant Impact (FONSI) for Amendment 79, Federal Register, 11/07/07.***

11/23/07 **Amendment 79: NRC approves NFS License Amendment Request #79 for the Possession Limit Increase and Storage of HEU before time to request hearing expired. Note: This is the third possession limit increase of U-235 since 2003, License Amendment #39 authorized use of UNB and Increased Possession Limit 7/07/2003, and License Amendment #62, Possession Limit Increase 6/28/05. Effective 11/23/07, ML073190647.**

11/23/07 **The U. S. Nuclear Regulatory Commission (NRC) granted a license amendment request by NFS that will increase the company's approved possession limit of uranium. The company was notified of the approval on Nov. 23, 2007. "The license amendment process is rigorous and must comply with a number of federal regulations. The process by the NRC began in June 2007 and included an environmental assessment that found that increasing the approved limit for uranium would not adversely impact or raise new environmental concerns. The review also found that all necessary safeguards were in place for safe operations."**

"In making the decision, the NRC found that there would be no significant increase in the potential for or consequences from radiological accidents. The NRC also determined there would be no increase in the amounts of radioactive material that may be released off-site".

"While the decision to approve an increase in the licensed possession limit of uranium for NFS has been granted, the opportunity for the public to comment on that decision remains. In an action separate and apart from the staff's review and approval of the increased license limit, any person whose interest may be affected and who desires to participate as a party must file a written request for a hearing and specify the reason for their request." NFS, Nuclear Fuel Services, Inc., NFS Press Release.

12/03/07-
12/07/07 **This letter contains sensitive unclassified security-related information and will not be available for public inspection in the NRC Public Document Room or from the PARS components of NRC document system (ADAMS). Nuclear Fuel Services, Inc., Inspection Report #07000143/2007- 405, 12/26/07, ML073600962.**

12/03/07-
12/31/07 **On Dec. 3, an operations supervisor directed discharge of waste material to waste treatment tanks that did not meet discharge criteria;**

Training instructor questioned clarity of overflow line. Walkdown of

process systems noted that several process components were not transparent; **Various process systems were shut down in order to effect repairs to questionable vents and drains; Some systems remained shut down until end of year;**

On Dec. 8, contamination found in one of the on-site warehouses (No postings to identify area as controlled); Licensee did not complete an Engineering-Project Tollgate Approval Form at each tollgate meeting and did not file forms in engineering design file for the BPF U-Metal Project which resulted in poor implementation of the Tollgate process and lead to design deficiencies that impacted process operation. Inspection Report #70-143/2007-009 and Notice of Violation, 1/28/08, ML080290115.

- 12/05/07-
12/06/07 **Nuclear Fuel Services Inc. receives shipment from ISPRA ITALY ETA Erwin, TN., Dec. 5/6 2007. Letter from Edlow International Company to U. S. Nuclear Regulatory Commission, 1154 Rockville MD., 20852-2738, 10/29/07, REF: NFSX-1172, ML073610337.**
- 12/13/07 All Petitioners requesting they be heard by the Atomic Safety and Licensing Board (regarding the July 18, 2007 Confirmatory Order and 26 new licenses granted while the OUC policy was in effect) are denied a hearing. U. S. Nuclear Regulatory Commission, Memorandum and Order, Office of the Secretary Rulemakings and Adjudications Staff dated 12/13/07; Served 12/14/07.
- 12/14/07 **NRC published Notice of Issuance of License Amendment (79) to NFS for HEU possession limit increase and storage in Erwin, TN. Federal Register, 12/14/07.**
- 12/17/07 Sierra Club submits request to NRC for hearing on NFS License Amendment Request for possession limit increase and storage. **Request denied.** U. S. Nuclear Regulatory Commission, letter dated 1/29/08.
- 12/21/07 **LAR 81: Extension of Safeguards Condition SG-4.34 for Receipt Verification. In accordance with application dated December 21, 2007, SNM-124 is hereby amended to approve an extension to the expiration date of Safeguards Condition SG-4.34. Safety Condition S-1 has been revised to add the date of Dec. 21, 2007. In addition, Safeguards Condition SG-4.35 has been revised. Upon issuance of this document, TAC L32660 will be closed. Amendment 81, Safeguards Evaluation Report, No EA or EIS is warranted for this action, ML080160456.**

- 12/27/07-
12/29/07 **Safety Equipment Failure of the Criticality Alarm System.** Two of 18 detector pairs did not generate an alarm signal in all modes; In the event of a criticality, 2 detector pairs may not have generated an alarm signal; Suspect equipment faults occurred during the time frame from Dec. 29, 2007 to Jan. 5, 2008 due to unknown cause. Event Report, #43883, 01/05/08, Docket #070000143; NRC notified Jan. 5, 2008.
- 12/31/07 NRC published a notice of **opportunity to request a hearing on NFS's License Amendment Request regarding the Processing of UF6 in the "new" CD (Commercial Development Line).** Deadline for requesting a hearing is Feb. 29, 2008. Federal Register, 12/31/07, pp. 74352-74354.

2008

01/01/08-
04/05/08

Since 2004, NFS failed to adequately test eight of the eleven process sleeves due to the inability to visually verify the condition of the process pipe and sleeve. This visual verification was prevented by the installation of fire grout between the process pipe and sleeve. In Nov. of 2007 inspectors performed various walkdowns of process sleeve penetrations in Building 333. These sleeves are installed around process piping that penetrates walls and are considered IROFS and serve to divert material away from the wall cavity to the outside of the wall in the event of a pipe failure since the inside wall cavity may present the potential for accumulation of an unsafe geometry.

The inspectors noted that in **eight out of a total of eleven sleeves (and penetrations) a fire sealant material (grout) covered the outside of the pipe such that it was not possible to determine the condition or existence of the sleeve.** This fire grout was installed for the purpose of maintaining the integrity of fire separation walls. The inspectors verified that some penetrations containing the fire grout were located in walls that were not considered to be fire-rated walls. The Safety Related Equipment (SRE) annual testing required a visual verification the HEU pipe was intact and the sleeve was present. Due to the installation of the fire grout, this was not possible. The inspectors informed licensee of this discrepancy.

Following a review of this issue, licensee noted the ISA addressed the issue of the fire grout, specifically, the ISA assumed that any leaking material from the process pipe (assuming a fault) would degrade the grout present between the inner and outer pipe and visually appear on either side of the wall before acid corrosion of the stainless steel sleeve could occur. Licensee determined the issue to be closed.

On Jan. 16, 2008, the inspectors noted PIRCS item #12283, written by a process engineer who had a concern regarding a similar sleeve located in a wall between buildings 302 and 303. Licensee noted the SRE test for this particular sleeve could not be performed as written and management decided to discontinue future operations through this sleeve. The inspectors noted the similarities between the two issues and brought this to the attention of NFS management. The inspectors also noted that in some sleeves the fire grout was so thick it could be possible for a leak of material to selectively corrode through the grout material and back into the wall cavity and never corrode to the outside wall. The corrosion path would effectively

“bypass” the installed sleeve. Following several discussions between the NRC and NFS, licensee determined the event to be reportable on (i.e. no material present in the annulus) and the sleeve was present. Jan. 28, 2008, as an unanalyzed condition where the performance requirements of 10 CFR Part 70.61 were not met. This was recorded in the Nuclear Material Events Database (NMED) as NMED #080056 and reported to the NRC as Event #43937. **The documented periodic inspection was not adequate to verify the continued reliability and availability of the sleeves. NFS also concluded the discussion in the supported safety analysis (ISA) was insufficient.** Long term corrective actions include a redesign of all the sleeves, relocation of others, and an update to the ISA.

Failure of the plant staff to adequately perform SRE testing of IROFS is VIO 70-143/2008-001-02. A NCV was identified as a result of Building 333 downblending in-line radiation monitor being in an operable but degraded state. A violation was identified dealing with the failure to adequately perform Safety-Related Equipment (SRE) testing on criticality control equipment; Failure of two Nuclear Criticality Detector pairs to properly generate an alarm when their trip point was exceeded.

The inspectors determined from a review of records and interviews with licensee representatives that **NFS had identified an upward trend in personnel contamination from the last quarter of 2007 to the first quarter of 2008.** NFS determined the trend may have been attributed to human performance and **safety culture; 18 proposed licensee corrective actions related to apparent violations; 8 APV closed.** Inspection Report #70-143/2008-001 and Notice of Violation, EA-06-179, Events #43883, 43937, 44104, NMED #080012, 080056 and 080185, 5/5/08, ML081270020.

01/07/08 Subpoena issued to Daryl M. Shapiro, Esq., by U. S. Nuclear Regulatory Commission Office of Investigation, commands Mr. Shapiro to appear at the NRC headquarters on Jan. 9, 2008 to provide testimony. **NFS is the subject of a Federal Investigation into alleged regulatory violations and hired Mr. Shapiro as outside counsel to investigate those alleged violations and to provide counsel on addressing the findings of his investigation.** The OI investigation began over 19 months ago. Counsel for NFS and Daryl M. Shapiro Esq., request the Commission to quash the Subpoena by NRC Office of Investigations (OI). United States of America, Nuclear Regulatory Commission, Before the Commission, In the Matter of Subpoena issued to Daryl M. Shapiro, Esq., in NRC Investigation No. 2-2006-017, Motion to Quash the Dec. 3, 2007 NRC Office of Investigations, 1/07/08, ML080150036 .

01/15/08 **Inadequate Inspections on Thru-Wall Piping Penetration Sleeves (Unanalyzed Condition).** The issue is associated with sleeve line penetrations thru walls. The documented inspection was not adequate to verify the continued reliability and availability of the sleeve. **The discussion in the supporting safety analysis was insufficient.**

During the two-year review of the safety-related equipment (SRE) test, it was determined the test could not be performed as written and that the test did not verify the continued reliability and availability of the sleeve. Event # 43937, 1/15/08; Reported to NRC, 01/28/08.

02/2008 **Copy of Supplement Analysis dated October 2007, DOE/EIS-0240-SA1 discovered on DOE Website for Disposition of Surplus Highly Enriched Uranium which states the following:**

1. Council of Environmental Quality (CEQ) regulations require Federal agencies to prepare a supplement to an environmental impact statement (EIS) when an agency makes **substantial changes to a proposed action that are relevant to environmental concerns, or when there are significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impact.** CEQ also recommends careful re-examination of EISs that are more than 5 years old. (p.1)

2. Supplement analysis evaluates the potential impact of **continued program implementation, and considers potential environmental impacts.** It proposes **new end-users, new disposal pathways, and down-blending additional quantities of HEU.** (p.1)

3. **Original 1996 HEU/EIS Record of Decision (ROD) specifically analyzed down-blending and subsequent management of a nominal 200 metric tons of surplus HEU.** (p.1)

4. **Contract for down-blending 17.4 metric tons of HEU (Bomb-grade) was awarded to NFS on June 29, 2007 (National Nuclear Security Administration (NNSA) News Release.** (p.4)

5. **In October 2007, DOE/NNSA made changes and issued a Supplement Analysis for the Disposition of Surplus HEU (DOE/EIS-0240-SA1) 12 yrs. after the original 1996 HEU/EIS, which involves changes the public in Erwin and surrounding cities and counties do not know about.**

6. **HEU feedstock now enriched to 80% U-235, instead of 50%**

(original 1996 EIS). (p.7)

7. Additional chemicals, triuranic octaoxide, or uranium trioxide will now be considered for use in down-blending (p.7)

8. Standard dose-to-latent-cancer-fatalities-risk has been revised. The resource areas likely to be impacted include human health risk, facility accidents, transportation risk, and waste management. Also, potential impacts occurring as a result of sabotage or terrorism (p. 8).

9. Change results in a 50% increase in risk to workers and a 20% increase in risk to the public from the same radiological exposures reported in the HEU EIS. Additional radionuclides (U-233, 234, and 236 added to already existing U-235 and U-238. Increases in the offsite population dose in a 50-mile radius would also increase because of the larger dose-to LCF- risk factor used in this SA for both workers and the public (p. 9-10).

10. This SA's calculated offsite population risk is equivalent to the following increased annual risk of an Latent Cancer Fatality occurring in the total offsite population: 1 in 71 for NFS; 1 in 357 for Y-12; 1 in 416 for SRS; 1 in 4,545 for BWXT (p. 11 footnotes for Table 4.2-2). The largest calculated MEOI dose from downblending activities would occur at NFS primarily due to the much closer proximity of the MEOI (p.11).

11. Radiological Doses from an Earthquake have increased 1,766% (p.14); (NFS sits on 2 fault lines with 5 fractures, per 1999 NRC EA). A criticality could be purposefully created, or high explosives could be used to damage buildings in the same way as an earthquake. The resulting radiological release and consequences to workers and the public would be similar, regardless of the nature of the initiating event (p.21).

12. Consultation with Union of Concerned Scientists, Nuclear Physicist, stated the LCF ratio should be no more than one tenth of one percent, per NRC rules, Federal Register, Vol. 51, No. 162, Aug. 21, 1986. DOE/EIS-0240-SA1, October 2007, ML081070196.

02/12/08

NRC to hold public meeting in the NFS Training Center on 02/28/08 to discuss regulatory safety performance at Nuclear Fuel Services, Inc., for the last five months of 2007, and will involve a review of the NFS regulatory safety performance for a period from July 29 though Dec. 31, 2007. The NRC noted an upward trend in the number of procedural violations identified during the review period, citing

eight violations in a five-month period, which the agency said appears to be an indicator of declining regulatory performance in the area. **NRC will also discuss NFS' management oversight of planning and quality of licensing requests as another program area needing improvement. Members of the public also discussed DOE/EIS-0240-SA1. NRC representatives said they were not aware of the document.** NRC News Release, Office of Public Affairs, Region II, 2/12/08, E-mail: opa2@nrc.gov

02/16/08 Team of expert consultants was assembled to serve as the NFS Safety Culture Board of Advisors (collectively known as the SCUBA Team) to **characterize any needs for improvement in safety culture** and establish an initial baseline of information on the NFS-Erwin organizational culture that can be used to support trending activities in the future.

With the exception of a few instances of apparent procedural non-compliance in the field, the SCUBA Team did not identify any areas where **minimum** NRC requirements were not met. The SCUBA Team did identify areas where NRC "regulatory expectations" (as implied by the information presented in NRC Regulatory Issue Summary 2006-13) **were either not being met or were being minimally met.**

Application of evaluation criteria **has led to the identification of a significant number of identified "Areas for Improvement" and "Areas in Need of Attention."** The model of Safety Culture set forth in NRC RIS 2006-13 includes 13 Safety Culture Components. The SCUBA Team identified that **most components of the NFS-Erwin Safety Culture failed to meet Safety Culture Components. Nine did not meet regulatory expectations** as set forth or implied by NRC RIS 2006-13) with three meeting minimum regulatory expectations and one partially meeting regulatory expectations. NFS-Erwin Site 2007 Independent Safety Culture Assessment Results Report, 15N080037, GOV0155504, SCUBA REPORT, 2/16/08

03/12/08 **Response to concerns regarding the DOE Supplement to the EIS for disposition of surplus HEU (DOE/EIS-0240-SA1).** (At the 2/12/08 LPR meeting at NFS the NRC was questioned about this supplement analysis. **NRC was not aware of this document but promised to check on it.**) Letter to Erwin Mayor states "DOE has informed us that the "1 chance in 71" estimate refers to the risk of a single latent cancer fatality in the entire population living within 50 miles of NFS based on one year of operation. NRC staff reviewed the report and believes the risk may be clearer expressed as follows: The exposure of the entire population within 50 miles of NFS, to the

annual doses estimated by DOE, for a period of 71 years would be expected to result in no more than 1 cancer death in the entire population." This also translates to an individual risk of 1 chance in 85 million of developing cancer as a result of downblending operations at NFS and is less than the risk of a person being struck by lightning, which is about 1 in a million. Letter from Robert C. Pierson, Director, Div. of Fuel Cycle Safety and Safeguards, Office of NMSS to Mayors Gregg Lynch, Johnny Lynch and Don William Lewis, ML080700118.

03/27/08

"This Matter is before the Commission on a Motion to Quash a Subpoena issued by the NRC Office of Investigations ("OI"). For reasons stated below, the Motion to Quash was denied.

During March 2006, the NRC received an allegation that an NFS executive may have violated provisions of the NRC Fitness-for-Duty regulations. On March 31, 2006, under the referral provisions of the NRC Allegation Management Program, the NRC referred the allegation to NFS and requested NFS to conduct an internal review of the events in question and report the result of that investigation to the NRC.

NFS hired Mr. Daryl Shapiro, an outside counsel, to conduct the investigation and prepare a report responding to the NRC request. In an undated letter, Mr. Dwight Ferguson, NFS' Chief Executive Officer, responded to the NRC request, attaching a report prepared for NFS by Mr. Shapiro. The report summarized information collected during the investigation.

OI opened an investigation into whether NFS or the executive in question deliberately violated any NRC regulations. In the process OI investigators interviewed numerous NFS employees under oath. Certain NFS employees made sworn statements that contradict some of the statements in the Shapiro Report. The contradictions are re-enforced by documents produced by NFS. The contradictions between the Shapiro Report and credible sworn testimony of NFS employees and documents produced by NFS suggest a violation of NRC regulations. **Violations of these regulations may be referred to the Department of Justice as possible criminal violations of federal statutes.**

The motion to Quash is denied, we decline to accept Mr. Shapiro's alternative offer, and we direct OI to establish a date for a formal interview with Mr. Shapiro so that Mr. Shapiro's testimony is taken within two weeks from the date of this Order." United States of America, Nuclear Regulatory Commission, Commissioners

Dale E. Klein, Chairman, Gregory B. Jaczko, Peter B. Lyons; In the Matter of Daryl M. Shapiro, NRC Investigation No. 2-2007-17, CLI-08-06, Memorandum and Order, Docketed 3/27/08, Served 3/27/08, ML080870303.

- 03/28/08 **Loss or Degraded Safety Items (Filters Not Scanned Properly for Activity Prior to Packaging):** Some contaminated cartridge filters were placed/packaged in two 55-gallon drums based on nominal values of U-235 content as opposed to measured values (i.e., some filters were not measured by the segmented scanning system). This is an IROFS. Not scanning some filters was a degradation of an IROFS. Written instructions were issued to operations personnel to package contaminated processing cartridge filters. Instructions indicated the filters had been previously scanned and the U mass values were listed in an attachment to the instructions. Some of the filters were not scanned and were assigned nominal U-235 mass values. **Approval of the instructions was based on the implication that all of the cartridge filters had been scanned.** Licensee notified the NRC Resident Inspector. Event # 44104.
- 03/31/08-
04/04/08 **Failure to demonstrate the adequacy of subcritical margin under normal conditions;** Failure to survey filter media prior to packaging for disposal. Inspection Report # 70-143/2008-202 and Notice of Violation, 4/24/08, ML081070390.
- 04/01/08 **Amendment 80: Approval of Changes to Physical Protection Plan for Category 1 HEU (TAC L32640), Effective 04/01/08, ML080670163.**
- 04/02/08 Office of NMSS staff participated in a public town hall meeting in Erwin, TN. The NMSS and Region II staff addressed public concerns regarding a U. S. Department of Energy (DOE) report. DOE's National Nuclear Security Administration (NNSA) issued its 2007 supplemental to the environmental impact statement (EIS) for the NNSA program to dispose of highly enriched uranium (HEU). **NNSA determined a new EIS was not required but included a footnote in the report characterizing the risk of cancer.** The public was concerned about the information in the footnote. The public asked questions concerning the data used by NNSA and the results presented in the report. The NRC staff addressed questions concerning the environmental monitoring program. Members of the public encouraged the NRC and NNSA to make more information available to the public and to hold more public meetings. Representatives from Senators Alexander's and Corker's offices attended the meeting with coverage by the local media. Office of Nuclear Material Safety and Safeguards (NMSS), Items of Interest,

Week Ending April 11, 2008, Public Meeting regarding National Nuclear Security Administration Report, Disposition of Surplus Highly Enriched Uranium, Supplemental Analysis, DOE/EIS-0240-SA1, Oct. 2007; ML081130391.

04/02/08 A public meeting was conducted in the Town Hall in Erwin, TN on April 2, 2008 to address public concerns with a report from the **National Nuclear Security Administration (NNSA) on the environmental impact of its program to dispose of highly enriched uranium (HEU)**. The concerns were first raised at a public meeting on February 28, 2008 after the License Performance Review (LPR) of Nuclear Fuel Services, Inc. The Nuclear Regulatory Commission (NRC) staff was unable to address the concerns at that time and committed to contact NNSA and obtain a response.

NNSA explained that the risk to an individual to develop cancer, as a result of its program, was extremely small. The public asked several questions concerning the data used by NNSA and the results presented in the report.

Some participants believed that NNSA should have prepared a full EIS instead of a supplement. Members of the public encouraged the NRC and NNSA to make more information available to the public and hold more public meetings. Public Meeting Summary, 4/02/08, Erwin, TN., Public Concerns Regarding National Nuclear Security Administration Report, Disposition of Surplus Highly Enriched Uranium, Supplemental Analysis, DOE/EIS, 0240-SA1, Oct. 2007; Memo to Michael D. Tschilitz, Deputy Director, Fuel Cycle Licensing Directorate, and Peter J. Habighorst, Chief, Fuel Manufacturing Branch, Division of Fuel Cycle Safety and Safeguards, Office of NMSS, from Kevin M. Ramsey, Senior Project Manager, Fuel Manufacturing Branch Office of NMSS, 4/29/08, ML081070173.

04/06/08- Three (3) noncompliances were identified as Severity IV violations.
07/05/08 In 2007, the licensee failed to adequately document and address the technical basis of a change of equipment. Specifically, the licensee's inadequate documentation and technical basis allowed a raffinate pump to be replaced with a model that had the incorrect motor speed.

On May 13, the licensee failed to adequately document and address the technical basis for removal of an item relied on for safety for a temporary modification. Specifically, sodium nitrate low flow switches from the Uranium Aluminum system were replaced with

compensatory measures without adequate technical documentation. These switches ensure the system maintains adequate flow of sodium nitrate to minimize the generation of nitrogen oxide fumes, which would present an asphyxiation hazard.

On May 21, licensee failed to perform the necessary procedural changes and training prior to implementing a change. Specifically, a plant change added two electrical disconnects associated with two electric motors. However, the licensee did not detail to the operators that the electrical disconnects affected only the motors, not all the equipment on the motor skids. Inspection Report No. 70-143/2008-002 and Notice of Violation, 8/4/08, ML082180089.

04/07/08 NFS did not meet the criteria established in SECY-02-0216 for discussion at this year's AARM (Agency Action Review Meeting). **NFS was discussed at last years AARM meeting, and Region II and NMSS recommend the status of the NFS improvement actions be discussed this year due to the unique aspects of NRC oversight at the facility. In particular the establishment of a Safety Culture and Configuration Management Improvement Oversight Panel that is evaluating NFS implementation of the Feb. 21, 2007 Confirmatory Order.**

NFS's current performance, as indicated by the number of violations identified since mid-2007, has not significantly improved since the last license performance review (LPR). The violations continue to indicate that NFS needs to improve its management oversight to ensure adherence to operational, radiological protection, and engineering procedures. This area for improvement is longstanding as indicated by two of the previous three LPRs. Update of NFS, Inc., Enclosure 4, 4/7/08, SECY-08-0048 and ML080580192.

04/21/08-
04/25/08 **Staff of the U. S. Nuclear Regulatory Commission (NRC) performed a routine and announced nuclear criticality safety (NCS) inspection of the AREVA Erwin facility (licensed under Nuclear Fuel Services, Inc. (NFS) License SNM-124, in the Erwin, TN. facility. The inspection included on-site review of the licensee programs involving the NCS program, inspections, audits, and investigations, plant operations, NCS event review and follow-up and open items. The inspection focused on risk-significant fissile material processing activities including the blended low-enriched uranium (BLEU) Oxide Conversion Building (OCB), the BLEU Uranyl Nitrate Building, and the BLEU Effluent Processing Building (EPB).**

Licensee procedure for monthly inspections, NFS-HS-A-C-16,

did not accurately represent the process that the licensee staff was using to document monthly inspections. Licensee staff stated they would review NFS-HS-A-C-16 and determine if the procedure needed to be updated. Inspection Report #70-143/2008-203, 5/1/08, ML081210590.

- 04/28/08 ***Amendment 81: Extension Safeguards Conditions SG. 4.34 for Receipt Verification, Effective 04/28/08, ML081010077.***
- 05/01/08 **First NRC Inspection Report of AREVA, who now manages the BLEU (Blended Low Enriched Uranium) Project. (Note: AREVA is 85% owned by the French Government). The public was never informed about this. NFS-Erwin Site 2007 Independent Safety Culture Assessment Results Report, 15N080037, GOV015504, SCUBA REPORT, 2/16/08.**
- 05/12/08 **Under the Freedom of Information Act, 5, U. S. C., Section 552, and Privacy Act, 5 U. S. C. 552A, request for **copies of all correspondence between the law firm Pillsbury Winthrop Shaw Pittman, Attorney Daryl Shapiro, the NRC staff and the Commission, regarding an investigation and report on allegations involving the chief executive officer of Nuclear Fuel Services in Erwin, TN, 5/12/08, ML081350030.****
- 05/12/08 **“NRC releases Event Reports for Nuclear Fuel Services (NFS) and BWXT Facilities for 2004-2007, which were previously withheld for security reasons. Fifty-Eight (58) Event Reports were posted 5/12/08 on the NRC Website home page at the Event Reports link. **Some sensitive information (primarily building identifiers) has been redacted.** More event reports may be released in the future as the agency continues redacting previously-withheld documents.**

From 2004 until last year, nearly all documents regarding NFS and BWXT were withheld as security sensitive information under a Commission policy established in response to issues identified by the Department of Energy's Office of Naval Reactors. Last September, the Commission reversed that policy and directed the staff to release redacted documents in order to achieve an appropriate balance in ensuring its regulatory process is open to the public while maintaining the secure use and management of radioactive materials.

Two of the event reports-EN 42393 and EN 42411 concern the March 6, 2006 spill of high-enriched uranium at NFS and the subsequent discovery of an uncontrolled elevator pit where the uranium might have accumulated and posed a criticality risk. The

spill was included in the annual report to Congress in April 2007 on abnormal occurrences at licensee facilities". NRC NEWS, U. S. Nuclear Regulatory Commission, Office of Public Affairs, Washington, DC., 05/12/08.

- 05/22/08 ***Amendment 82: Approval of Nuclear Fuel Services, Inc., Configuration Management Program, (TAC L32632), Effective 5/22/2008, ML080980314.***
- 05/23/08 Letter from the NRC in response to NFS' letter dated August 31, 2007, requesting a license amendment authorizing operations in the new CD line facility. **The existing reports fail to address contributions the new processing line will make to environmental impacts, (i.e, radiation exposures, effluents, etc.) and fail to address what alternatives are available for processing the material.** The request for additional information included a list of 30 questions NFS had failed to, or partially failed, to submit upon this license amendment request involving Uranium Hexafluoride (UF6), in which the **Integrated Safety Analysis (ISA) and Section (R) of the NFS Emergency Plan lists the airborne release of a UF6 as the worst UF6 accident.** (Note: NFS is situated on 5 fractures and two fault lines, the Appalachian Tectonic Belt, 1999 NRC Environmental Assessment, and the New Madrid Seismic Zone, the most seismically active area east of the Rocky Mountains. Unicoi County Emergency Plan, Unicoi County Emergency Agency, Erwin, 4/7/06.)

Question #18 considered fire safety in that an automatic sprinkler system, which is normally required by the Building Code, has not been installed at NFS because of criticality safety concerns; Question #24 concerns flooding because NFS has the potential for being flooded. Elevations of the building floors are between 1,640 and 1,670 feet. Based on the Flood Insurance Rate Map and flood profiles, 100-500 year flood plain elevations at the NFS site are 1, 639 and 1, 640ft. above mean sea level. Facilities in one area at the NFS Site have building floor elevations of approximately 1,642 feet above mean sea level, (Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement, Volume 1, June, 1996); and **question #25 concerned per site ISA Summary, Section (R), "without specified code protection there is a moderate to severe risk of facilities being damaged by lightning."** Nuclear Fuel Services, Inc., Request for Additional Information Concerning the CD Line Facility (TAC L32653),05/23/08, ML081560737.

06/04/08 At last year's AARM Commission meeting, staff identified a number of areas requiring improvements from successive LPR cycles dating back to 2002. **Mr. Victor McCree described the March 2006 spill of HEU as a "significant safety event."** Core inspection hours increased from 2500 to 3500 at NFS. **NFS' adherence to operational, radiological protection and engineering procedures are longstanding areas needing improvement. Several recent license amendment requests (LARs) were not adequately prepared. Tolerance of degraded conditions (Note: See Inspection Report 12/28/07, p.3) was one of 9 areas needing improvement. US NRC Briefing on the Results of the Agency Action Review Meeting, 6/4/08, ML081580430.**

06/25/08 NFS Reply to RAI Concerning NFS' CD-Line, **ML081790147.**

07/11/08 **Item Relied on for Safety (IROFS) Discovered Inoperable.** On July 11, 2008, it was identified that the calibration gas used to functionally test the NOX (nitrogen dioxide, nitric oxide, etc.) detector had expired. The calibration expiration date was September 2007. The prior functional test of the NOX detector was performed on January 24, 2008. Due to use of expired calibration gas, it was determined that the NOX detector (IROFS BPF-43) has been in a degraded condition since the last functional test (Jan. 08). Event #44344.

07/14/08 **Item Relied on for Safety (IROFS) Discovered Inoperable.** NOX (nitrogen dioxide, nitric oxide, etc.) is IROFS BUND-17 for the LEU (Low Enriched Uranium) portion of the BPF. This IROFS is one of the two controls used to prevent chemical occupational exposure to NOX emissions due to the U-natural dissolution operation. On July 11, 2008, it was identified that the calibration gas used to functionally test the NOX detector has expired. The calibration expiration date was September 2007. The prior functional test of the NOX detector was performed on January 11, 2008.

A 2nd IROFS is credited in the NOX accident sequence, but with degradation of IROFS BUND-17, the performance criteria of 10 CFR 70.61 were not met. **The event occurred due to a degraded management measure.** Event #44345.

(Note: This document is a product of the Erwin Citizens Awareness Network, P. O. Box 1151, Erwin, TN 37650).

-end-

ACRONYMS AND ABBREVIATIONS

ABT	Automatic Bus Transfer
ADAMS	Agency-wide Documents Access and Management Systems
AEC	Active Engineered Controls
ALARA	As Low As Reasonably Achievable
ALI	Annual Limit on Intake
Am-241	Americium 241
AOA	Area of Applicability
AV	Apparent Violation
AVL	Approved Vendor List
BLEU	Blended Low Enriched Uranium
BPF	BLEU Preparation Facility
CA	Corrective Action
CAF	Criticality Alarm Function
CAMS	Continuous Air Monitor Samplers
CAP	Corrective Action Program
CAS	Criticality Alarm System
CAAS	Criticality Accident Alarm System
CDE	Committed Dose Equivalent
CEDE	Committed Effective Dose Equivalent
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CM	Configuration Management
cm	Centimeter
cm ²	Square Centimeters
CMMS	Computerized Maintenance Management System
CMP	Configuration Management Program
CoC	Certificate of Compliance
CO ₂	Carbon Dioxide
CPM	Counts Per Minute
CY	Calendar Year
DAC	Derived Air Concentration
DDE	Deep Dose Equivalent
DOE	U. S. Department of Energy
DOT	Department of Transportation
dpm	Disintegrations per minute
DU	Depleted Uranium
EA	Environmental Assessment (also)
EA	Enforcement Action
ECC	Emergency Control Center

ECL	Effluent Concentration Limit
EIM	Emergency Information Message Form
EIS	Environmental Impact Statement
EP	Emergency Preparedness
EPA	U. S. Environmental Protection Agency
EPB	Effluent Processing Building
ER	Environmental Report
ERO	Emergency Response Organization
FHA	Fire Hazards Analysis
FNMC	Fundamental Nuclear Material Control
FONSI	Finding of No Significant Impact
FR	Federal Register
GU/l	grams uranium per liter
H ₂	Hydrogen
HEPA	High Efficiency Particulate Air
HEU	High Enriched Uranium
HEUN	High Enriched Uranyl Nitrate
HP	Health Physicist
HV	High Volume
HVAC	Heating, Ventilation and Air Conditioning
ICRP	International Commission on Radiological Protection
ID#	Identification Number
IFI	Inspector Follow-Up Item
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
IROFS	Item Relied on For Safety
ISA	Integrated Safety Analysis
keff	k-effective
kg	kilogram
LA	License Amendment
LAR	License Amendment Request
LCF	Latent Cancer Fatality
LEL	Lower Explosive Unit
LEU	Low Enriched Uranium
LEUN	Low Enriched Uranyl Nitrate
LLRW	Low Level Radioactive Waste
LOA	Letter of Authorization
LPR	License Report Review
LR	License Request and

LR	Liquid-Rad
LSA	Low Specific Activity
MCA	Multichannel Analyzer
MC&A	Material Control & Accountability
MDC	Minimal Detectable Concentration
MEI	Maximally Exposed Individual
MEOI	Maximally Exposed Offsite Individual
mrem	millirem
mrem/yr	millirem per year
MSA	Mine Safety Appliance
MSDS	Material Safety Data Sheets
NCS	Nuclear Criticality Safety
NCSE	Nuclear Criticality Safety Evaluation
NCSP	Nuclear Criticality Safety Program
NCV	Non Cited Violation
NDS	Non-Destructive Assay
NEPA	National Environmental Policy Act
NFS	Nuclear Fuel Services
NFO	Navy Fuel Operations
NRC	U. S. Nuclear Regulatory Commission
OCB	Oxide Conversion Building
OI	Office of Investigation
OJT	On-The-Job-Training
OPTU	Oxide Package Transport Unit
OSC	On-Scene Coordinator
OUO	Official Use Only
PARS	Protective Actions Recommendations (also)
PARS	Publicly Available Records
P&ID	Process and Instrumentation Drawings
PIRCS	Problem Identification, Resolution and Corrective Action System
PLC	Programmable Logic Controller
PHA	Process Hazards Analysis
PM	Preventive Maintenance
PPE	Personal Protective Equipment
POTW	Publicly-Owned Treatment Works
Pu	Plutonium
QA	Quality Assurance
QC	Quality Control
(R)	Redacted
RI	Resident Inspector

ROP	Radiological Control Procedure
RP	Radiation Protection
RT	Radiological Technician
RWP	Radiation Work Permit
SAS	Secondary Alarm Station
SAR	Safety Analysis Report
SCUBA	Safety Culture Board of Advisors
SDE	Shallow Dose Extremity
SIT	Special Inspection Team
SNM	Special Nuclear Material
SOP	Standard Operating Procedure
SRD	Self Reading Dosimeter
SRE	Safety Related Equipment
SRI	Senior Resident Inspector
SSNM	Strategic Special Nuclear Material
SSRC	Safety and Safeguards Review Council
SWMU	Solid Waste Management Units
SWP	Safety Work Permit & Special Work Permit
SX	Solvent Extraction
T&Q	Training and Qualification
Th	Thorium
Th-232	Thorium-232
TI	Temporary Instruction
TK	Tank
TVA	Tennessee Valley Authority
U	Uranium
U-AL	Uranium Aluminum
U-235	Uranium-235
U-238	Uranium-238
uCi	Micro-Curie
UF6	Uranium Hexafluoride
U-M	Uranium Metal
UN	Uranyl Nitrate
UPS	Un-Interruptible Power Supply
URI	Unresolved Item
USL	Upper Safety Limits
VAGAS	Versatile Automated Gamma Assay System
V&V	Verification and Validation
VIO	Violation
WI	Work Instruction
WIMS	Waste inventory Management System

WM	Waste Management
WO	Work Order
WOG	Wet Off Gas
WR	Work Request
wt%	Weight Percent
WWTF	Waste Water Treatment Facility

(ENCLOSURE F)

THE ERWIN RECORD

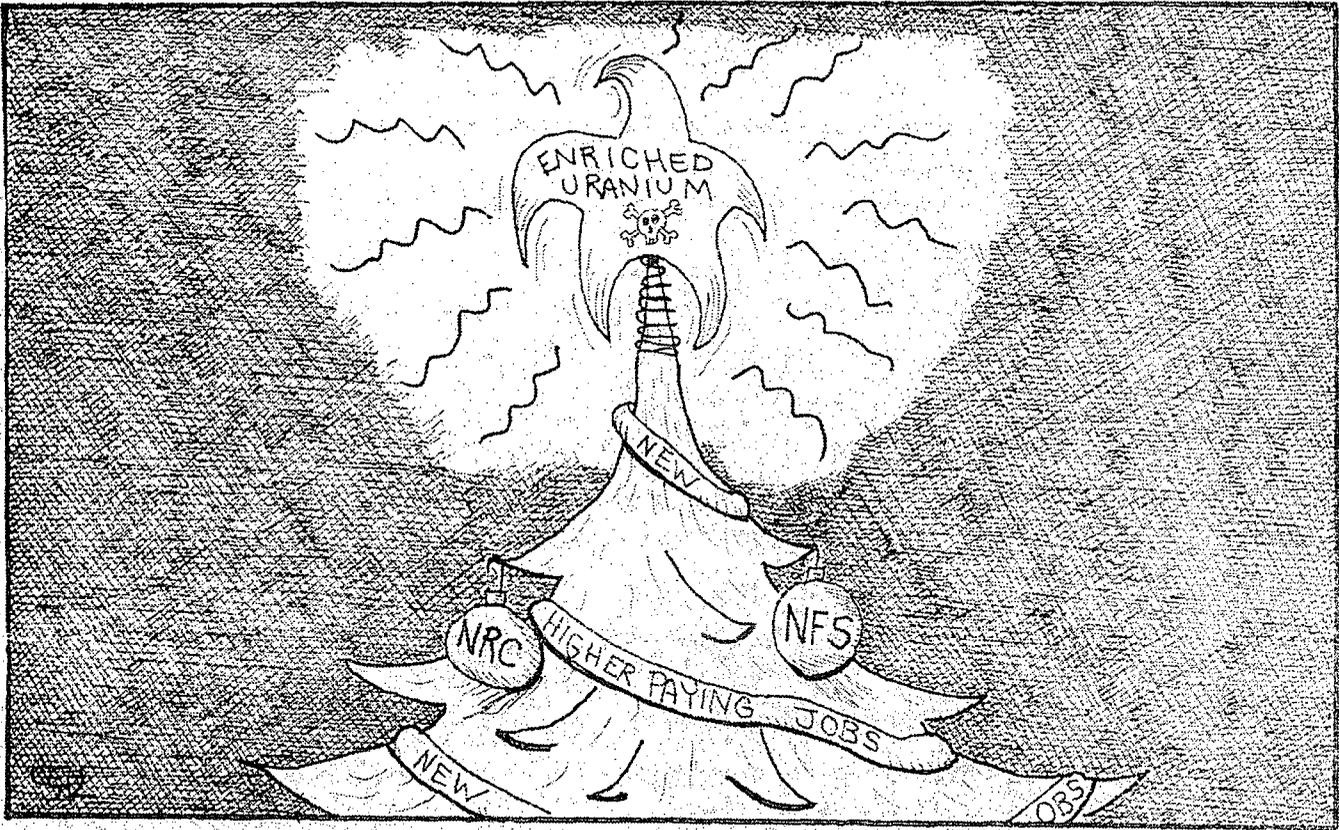
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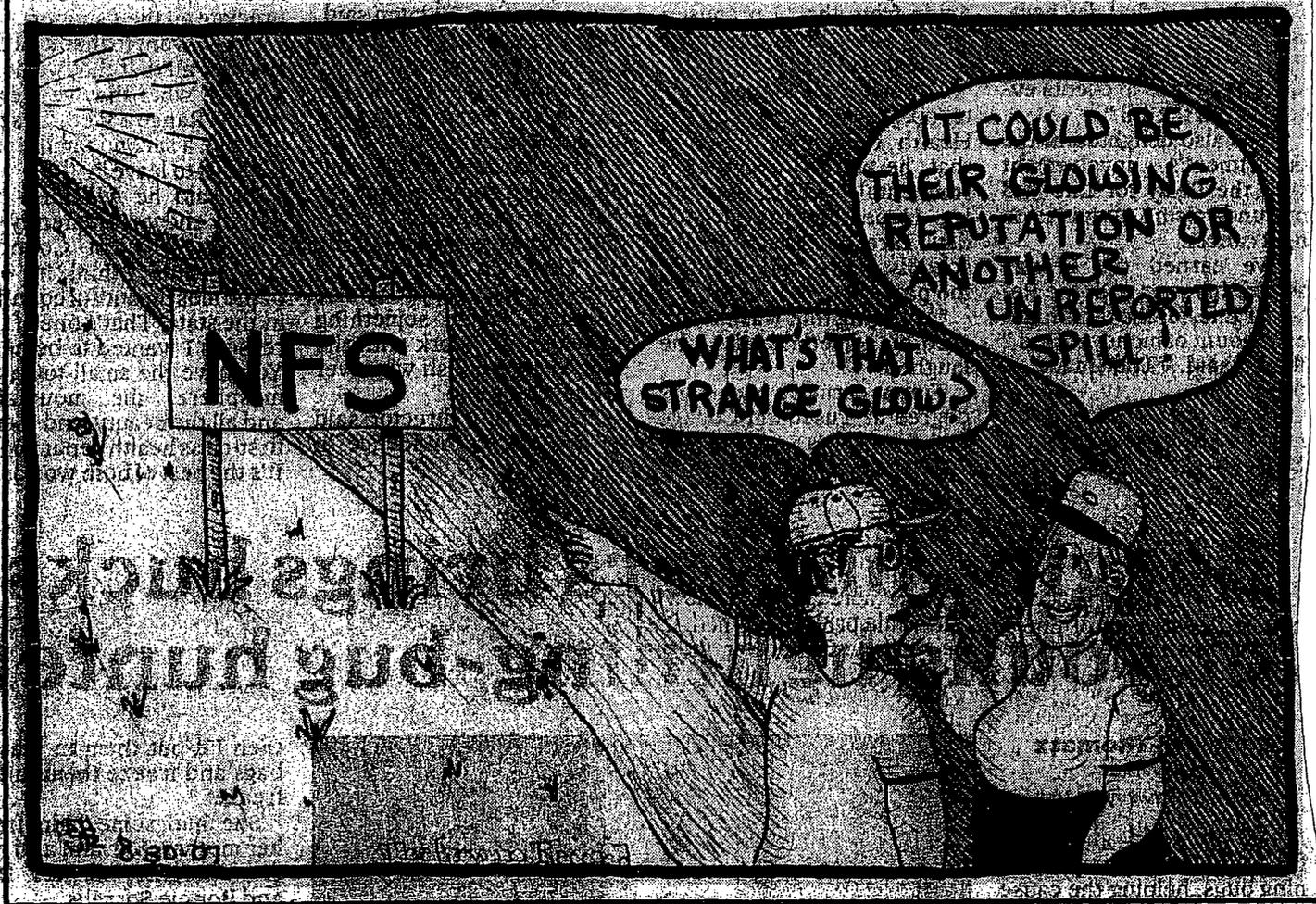
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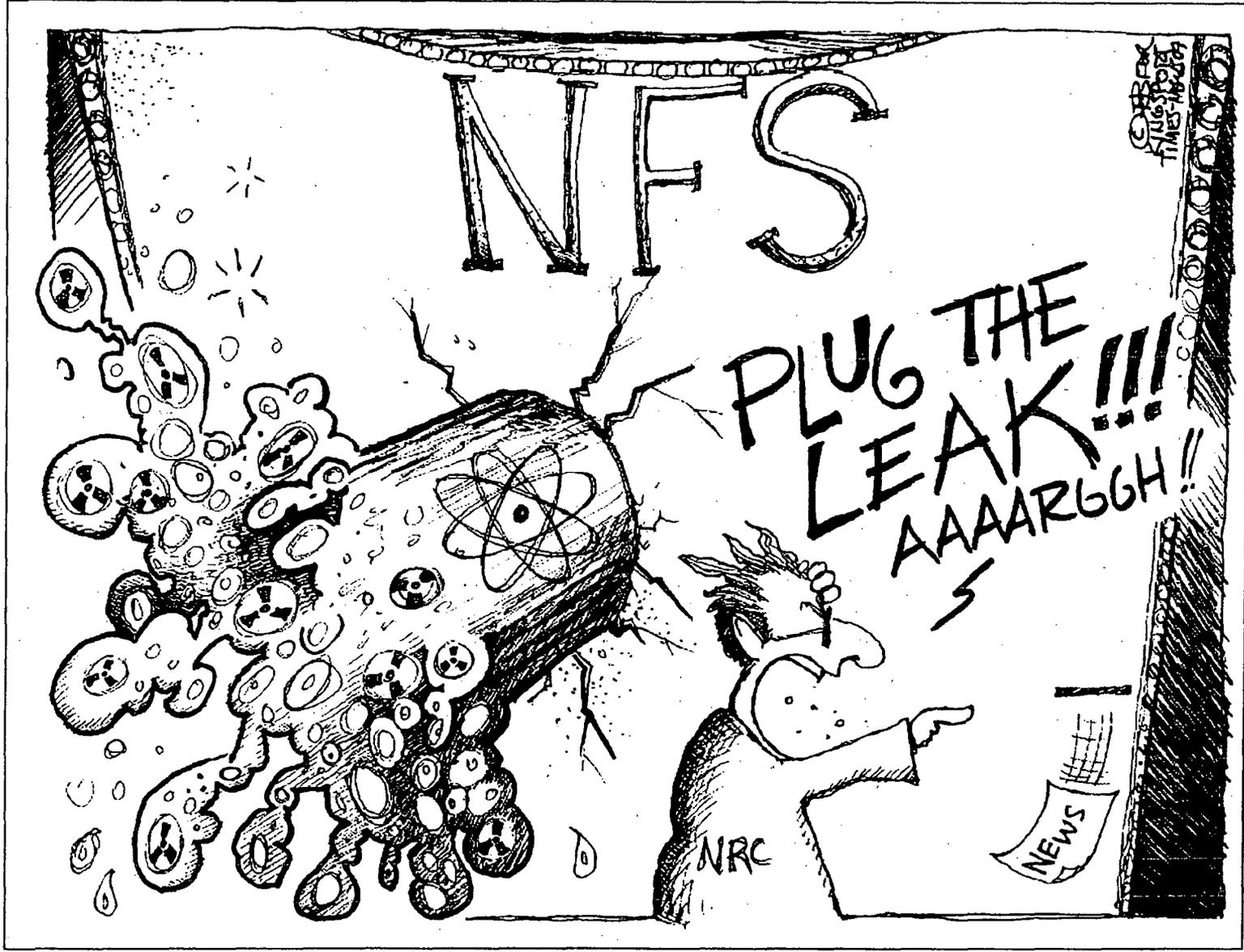


IS OUR SAFETY AT STAKE?

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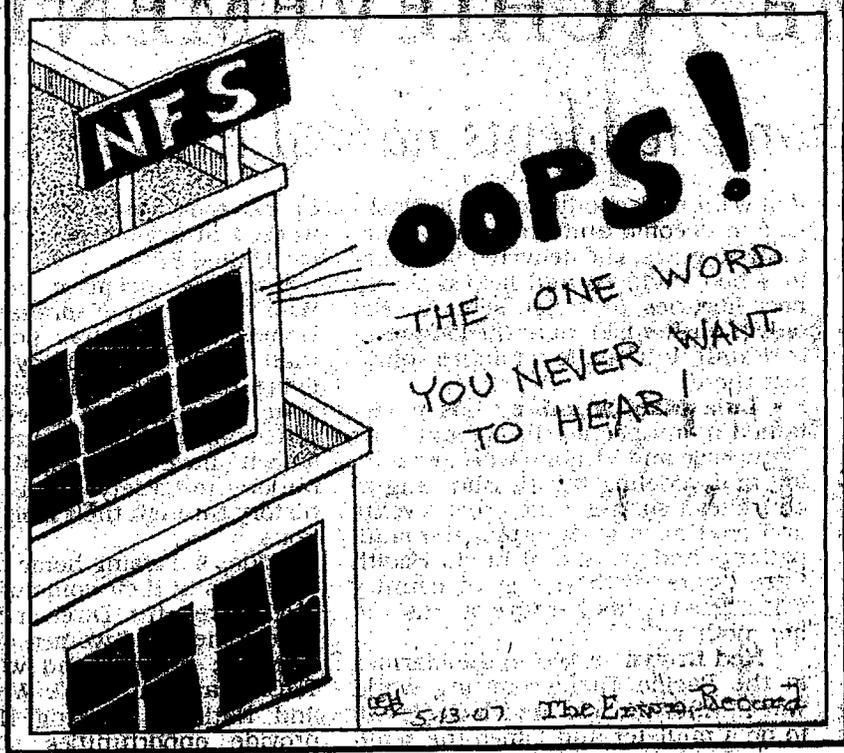


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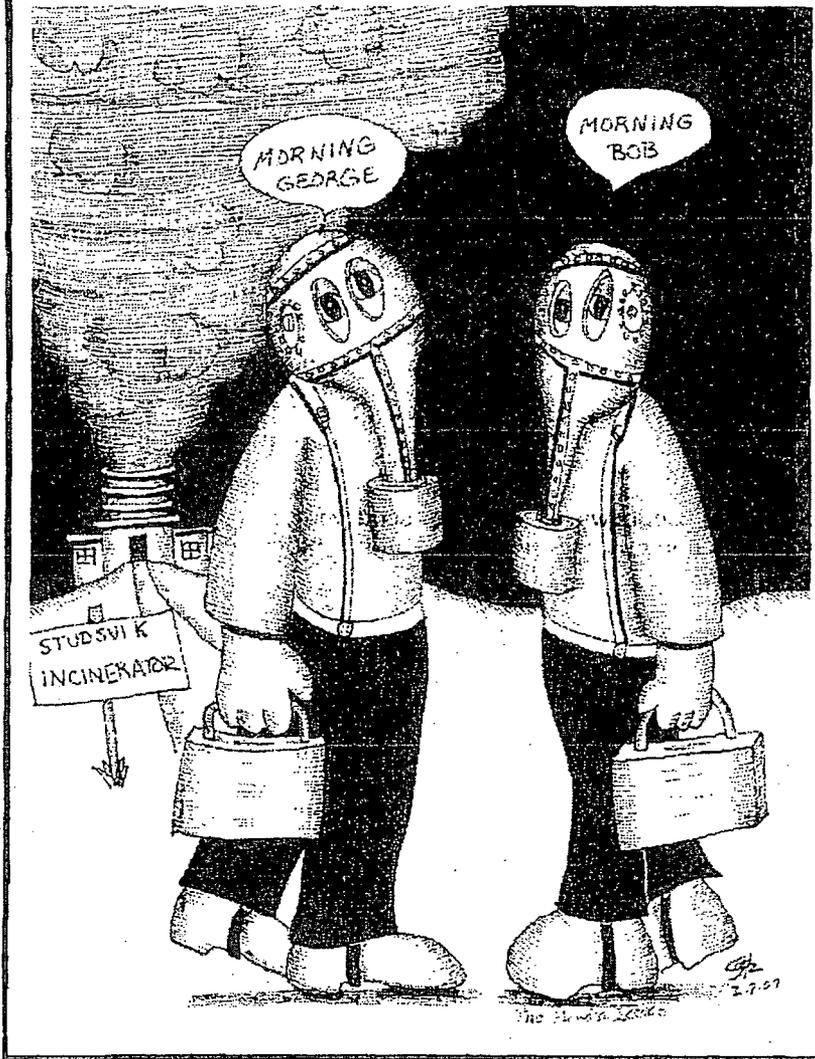
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with Charles E. Holt Jr.

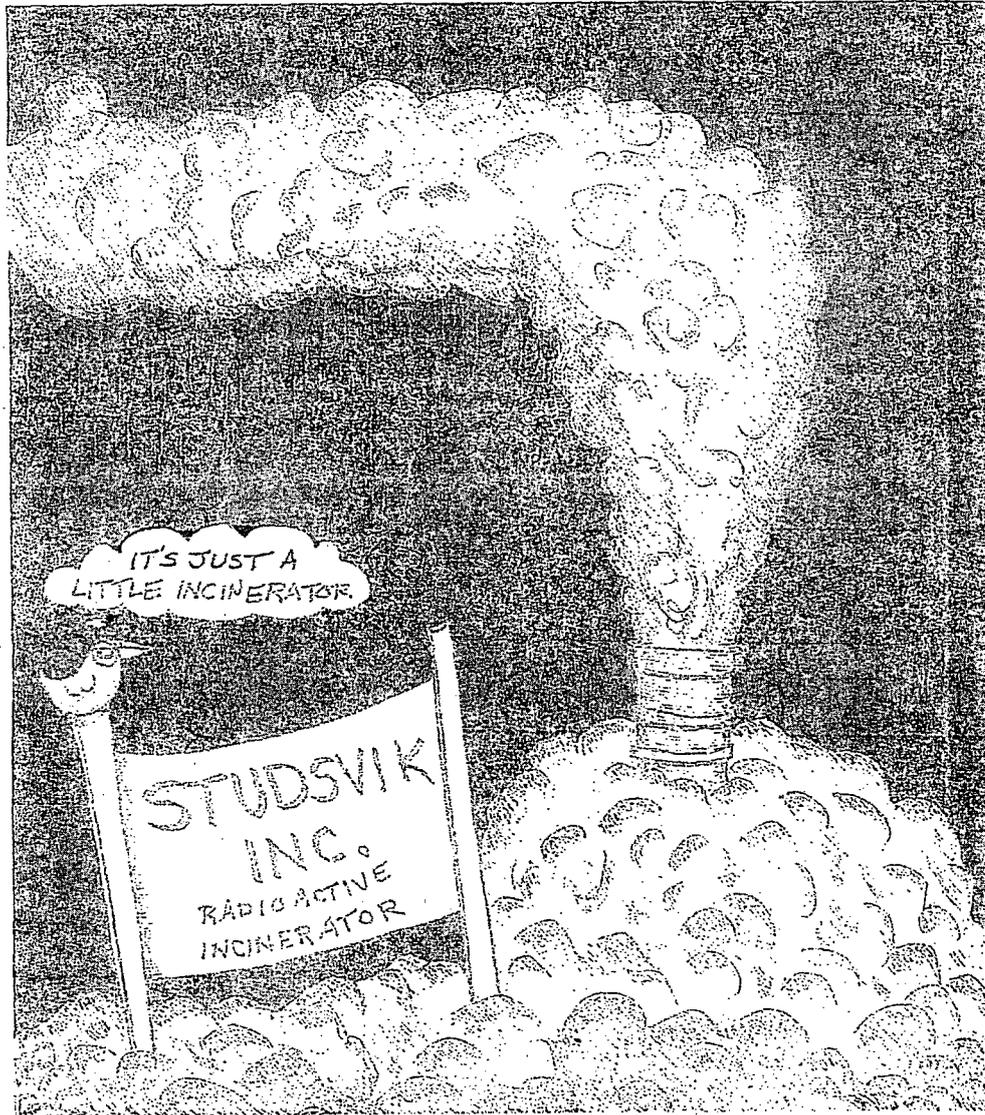


Viewpoint

On the Drawing Board with Charles E. Holt Jr.



OPINION/COMMENTARY



Wednesday

May 16, 2007

Erwin group takes issue with report that NFS chemicals pose no threat

■ Vocal audience also displeased with lack of information on 2006 spill.

By JIM WOZNAK

Erwin Bureau Chief

jwozniak@johnsoncitypress.com

ERWIN — A small, but vocal, crowd was displeased Tuesday with a federal report that concluded organic chemicals at Nuclear Fuel Services currently do not pose a threat to the community and is an "indeterminant" health hazard from activities of more than 20 years ago.

The group of about 12 people also was unhappy NFS did not inform the public about a spill of 35 liters of highly enriched uranium in 2006 that shut down a processing area for six months. Erwin Mayor Brushy Lewis said the company's decision not to disclose anything because of

national security did not sound right.

Representatives for the Agency for Toxic Substances and Disease Registry were in town Tuesday to present their public health assessment of NFS, which actress Park Overall spawned with a request to the agency. The conclusions remained essentially the same as what was presented in 2006.

Assessing past conditions, the ATSDR said NFS is an "indeterminant public health hazard" because critical information was not available. The agency said no verifiable information existed that groundwater was not used before the 1980s and that historic sampling of atmospheric releases is lacking.

Looking at current and future conditions, the ATSDR said NFS poses "no apparent public health hazard." The agency reached that conclusion because "there are no completed exposure pathways

▶ See NFS, Page 8A

NFS

◀ Continued from Page 1A

existing whereby the groundwater would be used as a source of public water. While it is possible there might be some exposure through atmospheric exposure pathways, they are not likely to affect health adversely.

In a news release, NFS spokesman Tony Treadway said the company agrees with the agency's determination that NFS poses no apparent health risk.

"The company and independent state and federal regulatory agencies regularly and consistently monitor air and water radioactive emissions from the Erwin plant and have found no emissions that could pose any risk to NFS employees, the public or the environment," he said.

Chris Tipton, an Erwin resident, told Paul Charp, who wrote the federal report, that he cannot honestly determine that NFS is safe because he did not have enough facts.

"That's what should not go to the public because it is a false sense of security that you have given the public with that particular statement," she said. "And I would have to say there's no validity to that statement whatsoever. You don't have enough facts

to make the public feel safe."

Charp agreed and suggested some possible wording changes that Tipton and fellow Erwin resident Barbara O'Neal said would need a disclaimer.

Referring to the recent disclosure in a Nuclear Regulatory Authority report to Congress of the spill, resident Sam Pinkerton wondered whether an explanation in The Erwin Record why the company did not disclose because of national security was legitimate.

Lewis, a retired NFS employee, said he did not see a connection to national security. He said that had never been an issue before but said it is possible NFS might have "come up with different scenarios that I don't know about."

Treadway told the paper that the company was forbidden to say anything under federal rules adopted in the wake of Sept. 11, 2001. Tim Lindstrom, NFS executive vice president of operations, said in a guest commentary in today's Johnson City Press that telling the media would have violated NRC rules.

Another meeting will be held tonight at the Johnson City Public Library at 6 p.m.

Saturday, June 30, 2007

(000 Policy Still in effect)

Erwin company gets uranium contract

■ Nuclear Fuels Services Inc. will dilute bomb-grade uranium.

THE ASSOCIATED PRESS

KNOXVILLE — The Department of Energy awarded a contract Friday to an Erwin company to convert 17.4 metric tons of bomb-grade uranium stored in Tennessee into low-enriched fuel for civilian reactors overseas.

The highly enriched material, now held at the Y-12 nuclear

weapons plant in Oak Ridge, will be diluted or "downblended" at Nuclear Fuels Services Inc. in Erwin. Then it will be shipped for storage to Westinghouse Electric Co.'s fuel fabrication plant in Columbia, S.C.

Westinghouse subsidiary Wesdyne International LLC will be the prime contractor. Wesdyne will be allowed to sell "a small fraction" of the finished product to cover the project's costs, according to DOE's National Nuclear Security Administration.

The 17.4 metric tons of highly enriched uranium, declared surplus after being removed from dismantled U.S. warheads, is

expected to produce about 290 metric tons of low-enriched uranium fuel worth about \$1 billion.

The downblended material will go into the NNSA's "Reliable Fuel Supply" program. Nations in good standing with the International Atomic Energy Agency will be able to buy fuel from the reserve at market rates for their civilian reactors in emergencies.

The goal is to "encourage the use of nuclear power but discourage weapons development," NNSA spokeswoman Julie Smith said.

The downblending work at NFS is to begin later this year and completed by 2010.

OPINION/EDITORIAL

Commission's actions prove gravity of spill

The Associated Press reported this week that the Nuclear Regulatory Commission has cited Nuclear Fuel Services Inc. for nine safety violations since 2005. The most serious of these citations was for a potentially dangerous spill that occurred at the Erwin plant last year.

While these incidents have earned NFS a reprimand from the NRC, which issued an order last month demanding improvements be made at the plant, no fines have been levied against the company. Our question to the NRC is: What will it take before the federal agency fines NFS for a safety violation? Must there be a deadly radioactive leak before the agency makes an offender pay for such lapses?

It has been equally disturbing to learn the public was never informed of these violations. As the AP reported Monday, NFS was shielded by national security when it came to revealing details of last year's leak of material, which NRC investigators say could have resulted in "criticality," or a sustained nuclear chain reaction that releases radiation.

Even though federal officials say the risk of radiation was confined to the plant, it's troubling to learn news of the accident might have never been made public had it not been for an entry by the NRC in an annual report it is required to make to Congress. The NRC — in a report published May 4 in the Federal Register — said just more than 9 gallons of highly enriched uranium solution was spilled at NFS on March 6, 2006.

It's no wonder that some members of Congress and activists from the Sierra

AS WE SEE IT

Club find it disturbing that the company and the NRC have kept the details of the accident a secret from the plant's neighbors.

Since 2004, the NRC has removed more than 1,740 documents from its archive. Some of these records include basic safety violations the agency has identified at NFS. Federal officials — citing national security in regard to the company's work with the Navy — have sealed every document related to NFS and BWX Technologies in Lynchburg, Va., the only two companies licensed by the agency to manufacture, possess and store highly enriched uranium.

Under the NRC policy, all the documents were stamped "Official Use Only," including information about the policy itself. Even so, the agency's commissioners listed the 2006 NFS leak in its report to Congress as one of three "abnormal occurrences" of license holders cited during the year. Apparently, the NRC leaders were so concerned by the incident in Erwin that they voted to skirt the "Official Use Only" rule so that NFS would be identified in the report as the site of the uranium leak.

This action speaks volumes as to the seriousness of that spill, and it calls into question the NRC policy that allowed the company to remain mum on its true safety record. People who live near the plant in Erwin are entitled to know this information.

(THIS ARTICLE WON A STATE AWARD)

ERWIN RECORD, AUG. 28, 2007, P 1

NFS secrecy under fire

Erwin's Nuclear Fuel Services has gained international media attention recently after the NRC kept a March 2006 spill under wraps.

By Mark A. Stevens

Publisher

mstevens@erwinrecord.net

Erwin resident Wanda Sue Kelley and her husband, John, want to know what all the secrecy is about between Nuclear Fuel Services and the Nuclear Regulatory

Commission.

"We know what NFS is, and we know what they do," Mrs. Kelley said. "So it's no secret to us."

But what Mrs. Kelley said she doesn't understand is the NRC's policy since 2004 to classify documents and inci-

Please see **SECRETS**, Page 6-A

INSIDE

U.S. Rep. David Davis and U.S. Sen. Lamar Alexander will tour the NFS facility Wednesday, Aug. 29. 6-A

Sierra Club asks NRC for public hearing. 6-A



David Davis



Lamar Alexander

what do we know?

The NRC began classifying NFS documents in 2004 at the request of the Department of Energy, but the secrecy policy is now under scrutiny from residents and the U.S. Congress.

what happens now?

Four NRC commissioners will decide, perhaps as early as this week, if the federal agency will reverse its policy on classifying documents about NFS and other nuclear facilities.

SECRETS

Continued from Page 1-A

dents at NFS in the name of national security.

"All this secrecy (at the NRC) has blown this into a problem," she said. "It's a nationwide issue now that is so gigantic and so unnecessary. This has caused a lot of stress for a lot of people that was not necessary."

Apparently, the NRC's staff agrees with folks like the Kelleys.

NRC spokesman David McIntyre told The Erwin Record Monday that the body's commissioners are considering the reversal of a policy it has held since 2004 that classified NFS documents, including reports on "abnormal incidents."

The change in the NRC's public policy was made due to a request by the Department of Energy Office of Naval Reactors.

Since that time, documents were classified as "official use only."

But the NRC's policy came under scrutiny when the agency itself reported to Congress earlier this year about a spill on March 6, 2006, of 35 liters of highly enriched uranium at NFS that shuttered the company's Project BLEU for nearly six months. The public was not informed of the incident until well over a year later.

Since 2004, hundreds of documents about NFS have been classified.

McIntyre, however, said the NRC staff was asked to propose revisions to the secrecy policy. According to an NRC report dated Aug. 3, "Congressional oversight committees raised concerns with NRC's policy of withholding information, particularly with regard to the NFS spill event in March 2006."

The NRC staff developed three options for commissioners and is recommending "Option 3," which would treat future information as "Sensitive Unclassified Non-Safeguard Information" and would prepare and release redacted versions of documents containing sensitive information.

If approved, the NRC would also release thousands of documents that were once publicly available but removed from the NRC's Web site after the 2004 DOE request.

The NRC's four commissioners - Peter B. Lyons, Edward McGaffigan Jr., Dale E. Klein and Gregory B. Jaczko - are expected to decide on the staff's recommendation as early as this week, McIntyre said. The NRC is usually headed by five commissioners, but one seat is currently vacant.

It was Commissioner Jaczko who insisted the NFS incident be included in the NRC's annual report to Congress and that the facility be named and not kept secret any longer.

"Under law, the report that we submit to Congress is to report the name of any facility where this sort of event happens, so it was decided that NFS should be identified," McIntyre said. "Does that go against the policy? Well, yes, it was definitely an exception."

As for the staff's recommendation that the policy now be reversed, McIntyre said, "Congress and the DOE have been informed." He added

that the DOE had "no objections."

The NRC has been petitioned by the Sierra Club and two private citizens, including an East Tennessee State University professor, to hold a public hearing about NFS and the NRC's secrecy policy. The Kelleys were granted an extension until Monday, Aug. 27, to submit their request.

McIntyre said while the spill incident last year at NFS never posed a problem for the community, the NRC staff felt that such incidents should not be kept from the public in the future.

"From a public health and safety standpoint, the spill never posed any danger to anybody off site," he said. "If certain things had happened in a different way, it could have been an issue for two people in the room."

But, McIntyre said, the federal agency needed to "draw a proper line about security while still being responsive as an agency that has always been proactive about being open."

McIntyre said Luis Reyes, who oversees the NRC, has said publicly that the agency "let the pendulum swing too far" when it classified thousands of documents.

The NRC does not have a history of secrecy, McIntyre said.

"We know the public is concerned and wants to know (that NFS) is operating safely," he said.

While no public mention of the NFS spill was made last year, McIntyre said the NRC did inform the Vienna, Austria-based International Atomic Energy Agency of the mishap.

"We did not name the facility," he said, "but we did inform them."

Mrs. Kelley said she and her husband will be pleased if a public hearing is granted, but she couldn't say if it would help with her concerns until she hears from the NRC itself.

"They should have been upfront with us," she said. "All the secrecy has made it a big deal. We really just want to know what's in our air, our water and in our environment."

"The people need to know. I think we would all feel better. It's like they think if they cover it up that we won't know, but you can't cover up a nuclear facility. We all know it's there."

Mrs. Kelley said until things change at the NRC and NFS, she doesn't "know whom to trust."

"It's very sad," she said. "The NRC was created to protect the people, but whenever they didn't tell us the things we should have known they violated our rights."

"These people at NFS work hard, and they don't deserve the attention that all this secrecy has brought. The trust has been broken by the NRC and NFS, and we need to know who to trust again."

ERWIN RECORD, Sep. 4, 2007
EDITORIAL PAGE 4A

No more secrets

To the editor,

I applaud The Erwin Record's in-depth coverage of "NFS secrecy under fire" and the excellent editorial titled "NFS should take lead on reversing secrecy at NRC." I agree.

Let's not forget, however, that the Department of Energy's skirts are not clean in this secrecy matter either.

It would seem to me that when the accident happened on March 6, 2006, that someone in NFS management would have had a conference call with the Nuclear Regulatory Commission and the DOE and simply said, "We have had a serious accident here and request you waive the "Official Use Only policy" so we can at least tell the local officials and the community."

Perhaps the local media would have carried a story or two, but it is doubtful that it would have gone nationwide like it has now.

It is ironic that cover-up of the March 2006 spill was done in the name of "security." NRC Commissioner Edward McGaffigan Jr., who recently resigned from the commission, said, "We don't want any security information out there that's going to help a terrorist."

However, more than 50 newspapers worldwide have now carried the story of the spill and the fact that it was withheld from the public. Commissioner Gregory Jaczko, who initially released the information to Congress, said, "We regulate on behalf of the public, and it's important for them to have a role."

I believe the NRC can't afford not to have a hearing in this area, because, in my opinion, public trust has been lost in NFS, the NRC and the DOE. This small community is doing more than its fair share for

the nuclear industry with the combination of NFS and its associate, Studsvik Inc.

We are human beings, concerned for our health and safety, and we do not deserve to be treated with such callous disregard.

No doubt there will be lots of finger-pointing going on between these agencies before it's over. The buck needs to stop somewhere, and only a hearing will hopefully let the facts emerge and help to prevent some of these recurrences in the future.

Additionally, if the building where the accident happened had to be closed down for six months, maybe that contributed to the strike and the subsequent loss of wages and benefits for the union workers. Perhaps all of those benefits should be restored.

The health and safety of the employees and the public is at stake here, folks, and as citizens we need to pay attention and get involved, if offered an opportunity for a hearing.

**Barbara O'Neal,
Erwin**

READY, WILLIS & ABLE



By Janice Willis-Barnett

Who's watching the watchdogs?

Picture a summer evening and a neighborhood with many small children. These children are having fun, running around playing tag and other games. Then slowly, the air around the children begins filling with a substance that smells like ammonia. It burns the children's eyes and noses and is so strong it nearly takes their breath. They run inside their homes to try to get away from it, but even with the windows down, the children and their parents still have to breathe the foul-smelling substance.

Does this sound like something you would expect in a third-world country today? Well guess what? The scenario I have just described is from my own childhood in the late 1950s here in Unicoi County.

After leaving Spivey Mountain in 1958, my family moved to Banner Hill within sight of Davison Chemical Co., later called Nuclear Fuel Services Inc. Whatever the breathing substance was that NFS released, it hung in big thick clouds above the plant and glowed in the light at night. I could see it from our back porch.

I would still like to know what the substances NFS released were and see what link they might have to some of the health issues I have had. That said, however, let me stress that I'm not against having a safely operated NFS in Unicoi County today. But I do think that the public has the right to demand that the Nuclear Regulatory Commission do its job by seeing that NFS and all nuclear facilities operate in a manner that protects the public and the environment.

If you look at the history of governmental regulation of the nuclear industry, you will see how important public input has been. Back in the 1950s, the Atomic Energy Commission regulated facilities such as NFS. But public outcry against the AEC's questionable performance in regulating the nuclear industry helped lead to its demise in 1974. This was when the newly established Nuclear Regulatory Commission became the watchdog of the industry.

I was shocked when I saw the list of violations the NRC had cited against NFS. The image of that yellow stream of nine gallons of high-enriched uranium "running into a hallway from under a door" is quite horrifying. It brought back memories of those clouds over NFS glowing in the light at night when I was a child. I doubt today's citizens would put up with air pollution like that. But back then, we didn't think we had a choice.

I have shared some of my memories of living near NFS in the '50s to remind folks what it was like before the environmental movement of the '70s resulted in governmental legislation that gave us the right to insist on clean air to breathe and clean water to drink.

However, as history has shown in the case of the AEC, the public still needs to keep an eye on those who are supposed to enforce those regulations. It pays for the public to do some looking out for itself when it comes to depending on regulating agencies affected by the environmental philosophy of whatever political party is in control in the government.

The Sierra Club and five individuals have requested a public hearing regarding NFS. A Sept. 4 story in The Erwin Record states that "NFS will oppose the hearing."

NFS spokesman Tony Treadway said the Sierra Club's petition held several mistakes. Inaccuracies he cited include a claim that "NFS negatively impacts the Nolichucky River."

Well, if NFS is in the clear, what's the worry? Let concerned citizens have a public hearing. Frankly, I'm glad these folks are second-guessing the regulators. I'd like to know for sure that the Nolichucky is not being negatively impacted by NFS. That river means a lot to me. So does the air I breathe.

NFS seeks to increase uranium capacity

■ Company asks NRC for license change to store more highly enriched uranium.

By **JIM WOZNAK**

Erwin Bureau Chief

jwoznak@johnsoncitypress.com

ERWIN — Nuclear Fuel Services has asked for a change in its license with the Nuclear Regulatory Commission so it can receive and store more high-enriched uranium at its plant here than it is currently allowed to have.

NFS spokesman Tony Treadway said he could not divulge the exact amount by which the company would increase its uranium capacity for security reasons. He said raising the limit would enable the company to increase its business in converting highly enriched uranium into low-enriched uranium and possibly pursue additional manufacturing ventures.

"We feel we are warranted in asking for this increase," Treadway said. "We feel it's important for the economy and the country."

The plan is under review with the NRC. According to a notation in The Federal Register on Thursday, the NRC notified NFS in a June 18 letter that it found the application acceptable to start a technical review. The NRC is conducting a safety evaluation report and an environmental assessment.

The register notice said the public can request, in writing, that the NRC hold a hearing on NFS's plan. The deadline is Dec. 17. NRC spokesman Dave McIntyre said publicizing the availability of a hearing is part of the federal agency's move toward more openness that has resulted in documents being released.

► See **URANIUM**, Page 4A

Uranium

◀ Continued from Page 1A

In May, the Federal Register said NFS requested the ability to receive and store more of the uranium.

Marie Moore, NFS vice president for safety and regulatory, said in a May 15 letter to the NRC's Office of Nuclear Material Safety and Safeguards, that the ability to receive and store more uranium "is needed to utilize all of the existing storage locations and to better align the number of storage locations with the maximum quantities of (uranium-235) by nuclear criticality safety limits."

She said the amount requested is consistent with the maximum amount allowed at BWX Technologies in Lynchburg, Va., which is the other Category 1 facility in the United States. If NFS is allowed to be at the same level as BWX, the business would no longer be at a competitive disadvantage, NFS contends.

According to Moore, the granting of this license change would not result in associated new construction or changes to processing equipment or facilities. She also said it would not lead to change in the types or an increase in the amounts of radioactive material that might be released off site.

"There will be no significant increase in individual or cumula-

tive occupational radiation exposures, and there will be no significant increase in the potential for or consequences from radiological accidents," Moore said.

Her letter also provides some insight into how this situation developed. She said the U.S. Department of Energy requested about a year after the Sept. 11, 2001, terrorist attacks that NFS make the necessary changes to support having an inventory of "strategic" quantities of special nuclear materials. These materials would allow for continuation operations for six to 12 months.

"NFS has since made the required arrangements to its security, safeguards and safety programs that would facilitate accommodating this request," Moore said. "Over the course of the past several years, NFS began receiving shipments of SSNM from DOE on an accelerated schedule. These shipments typically consist of approximately 500-600 kilograms of SSNM per month."

By having the extra capacity, NFS can accommodate the con-

tract it received from the DOE in June to convert 17.4 metric tons of high-enriched uranium to 290 metric tons of low-enriched uranium, Treadway said. After the downblending takes place, it will be sent to Westinghouse Electric Co.'s fuel fabrication plant in Columbia, S.C.

Treadway said the extra space also will allow NFS to participate in additional manufacturing of fuel to serve nuclear power facilities, which are predicted to increase in numbers in the coming years. He said as many as 30 new commercial nuclear reactors are expected to be in operation by 2050.

The extra space also would accommodate any other opportunities for conversion of high-enriched uranium or fuel manufacturing opportunities that might develop, Treadway said.

For those with concerns about the extra capacity, Treadway said NFS has "extraordinary" safeguards. He said NFS is confident it will be able to store, transport and manufacture the extra uranium safely.

ATTENTION – PAID BENEFITS

Current And Former Employees Of W.R. Grace (Currently Nuclear Fuel Services) 1958-1970

If you were employed at this site from 1958-1970, or if you are a survivor and the worker suffered a cancer – you may be eligible for the Energy Employees Occupational Illness Compensation Program Act for paid benefits.

WHAT ARE THE BENEFITS?

\$150,000 COMPENSATION FOR CANCER AND MEDICAL BENEFITS FOR COVERED ILLNESSES

A public meeting will be held Thursday, Nov. 1, 2007 from 1-5 p.m. at the USW, Local 9677 Union Hall located at 1206 Carolina Ave., Erwin, TN. Representatives from the Energy Employees Resource Center from Oak Ridge, TN will be present to provide information, answer questions, assist new claims and expediting previously filed claims for benefits.



NRC reviewing storage request

Company asks regulators to let it keep more highly enriched uranium onsite

By Andrew Eder

Tuesday, October 30, 2007

Nuclear Fuel Services Inc. has asked federal regulators to let it store more highly enriched uranium onsite, a move that is likely to spark new requests for a public hearing on the East Tennessee nuclear facility.

The Nuclear Regulatory Commission is reviewing the request and intends to document its findings in separate safety and environmental reports.

Company spokesman Tony Treadway said the increase is needed in part because of a contract awarded earlier this summer by the National Nuclear Security Administration, part of the U.S. Department of Energy.

Under that contract, privately held Nuclear Fuel Services will "downblend" 17.4 metric tons of surplus weapons-grade uranium into 290 metric tons of low-enriched uranium fuel for nuclear reactors. The contract is part of the "Reliable Fuel Supply" program, an effort to stockpile nuclear fuel for emergency use in foreign reactors.

Treadway said work on that contract is scheduled to begin in early 2008. Nuclear Fuel Services also has a contract with TVA to downblend highly enriched uranium for use in Browns Ferry Nuclear Plant, an effort that's expected to wind down by the end of 2008. The overlap between projects is one reason Nuclear Fuel Services needs an increase in its uranium storage limits, Treadway said.

He also said the company wants to have the same limits as a BWX Technologies facility in Lynchburg, Va. Nuclear Fuel Services and the BWXT plant are the only private facilities in the U.S. licensed to handle weapons-grade uranium.

"From a competitive environment situation, we want to be on the same playing field when we seek additional contracts," said Treadway, who added the facility does not keep uranium in long-term storage.

The request did not sit well with some of the activists and citizens who are already asking the NRC to hold a public hearing on the Erwin facility.

"If the NRC is concerned about public health and safety, they should have turned this request around and never even let it see the light of day," said Ann Harris, executive director of the nuclear worker support group We the People.

Nuclear Fuel Services was the subject of congressional and public scrutiny earlier this year when the NRC, in a report to Congress, revealed that the Erwin facility was the site of a March 2006 spill of about nine gallons of highly enriched uranium.

The incident wasn't revealed until a year after it occurred because of an NRC policy that kept information on several nuclear fuel facilities from the public since 2004. The agency reversed that policy in September and is currently reviewing nearly 2,000 documents that were kept from public view.

Harris and the Sierra Club sent one of six requests for a public hearing on a license amendment resulting from the March 2006 spill. The NRC and Nuclear Fuel Services have each filed documents opposing a public hearing. A three-judge panel will decide whether to grant a hearing.

Nuclear Fuel Services' request to increase its uranium storage limits presents another opportunity for the public to ask for a hearing. Requests must be received by Dec. 17, according to an NRC notice published in the Federal Register.

Harris said she intends to ask for a public hearing on the latest license amendment request. Linda Modica, a Jonesborough, Tenn., resident and chair of the Sierra Club's national radiation committee, said questions about the Erwin facility's safety need to be resolved before allowing the company to store more highly enriched uranium.

"It's germane to the issue we're dealing with now, which is whether NFS is capable of properly and safely handling dangerous materials," Modica said.

Business writer Andrew Eder may be reached at 865-342-6318.



NFS seeking increase in uranium limit

THE ERWIN RECORD
OCT. 30, 2007
P 1 + 7 A

By Jerry Hilliard

Associate Editor • jhilliard@erwinrecord.net

With an eye toward future downblending projects and the need to stay competitive, Nuclear Fuel Services Inc. of Erwin is seeking a license amendment allowing it to receive and store more highly enriched uranium.

The company's amendment request, dated May 15, was made public Oct. 18 in the Federal Register. It remains under technical review by the Nuclear Regulatory Commission, which will accept public requests for a hearing on the matter until Dec. 17.

In a letter to the NRC, Nuclear Fuel Services Vice President B. Marie Moore explained that the amendment was needed "to utilize all of the existing storage locations, and to better align the number of storage locations with the maximum

Please see LIMIT, Page 7-A

Continued from Page 1-A

quantities of 235U allowed by nuclear criticality safety limits."

In addition, Moore wrote, the change would make the company's receiving and storage limits the same as those of its lone competitor, BWX Technologies Inc. of Lynchburg, Va.

Several varieties of uranium exist, and "235" stands for the isotope count of the particular type handled by NFS for the past half-century. That is the primary uranium type used by the Erwin plant to manufacture both naval fuel and fuel for commercial nuclear reactors.

NFS spokesman Tony Treadway said Friday that the company was forbidden by federal rules in place at the time of the May 15 application from making its request public.

In addition, he said, "The typical approach for license amendments is for information to come from the NRC."

The exact amount of the requested increase in uranium capacity at the plant has not been revealed for security reasons.

Treadway said the request is being made at this time largely to prepare for a new government project that will

begin in about a year.

The company recently received a contract to downblend 174 metric tons of excess highly enriched uranium from the nation's nuclear weapons program. Known as the Reliable Fuel Supply Program, the new venture will create a strategic reserve of low-enriched uranium for use in commercial reactors in the United States and certain foreign nations.

The new project will use the facilities now involved in the BLEU (blended low-enriched uranium) project, in which NFS has produced fuel for Tennessee Valley Authority commercial nuclear reactors.

"NFS has very exacting standards of material control and accountability," Treadway said. "It must account for every gram of the material on a 24/7 basis."

In addition, he said, "The physical protection of the plant is at the highest level in its history."

The firm recently modernized the vault area where uranium is stored until being processed.

Treadway explained that about 24 acres of the plant's 65-acre site is considered a "protected area," and a security wall is under construction around it to provide yet

another safeguard.

"People should be assured that the material will be handled properly and safely," he said.

According to Treadway, the company will use the vault area only as a staging area as material awaits processing and "has no intention to store anything long term."

Although not expected to increase employment, Treadway said the license change and the new government contract will enable the company to continue approximately 130 jobs when the BLEU project is completed.

"In recent weeks, Unicoi County has had one major employer sold, and a second close," Treadway said. "The news about NFS is good economic news for the community. This is a vibrant employer that is winning new contracts and assuring a stable employment base."

Treadway added that the company has requested another license amendment that is under review by the NRC. That change would allow NFS to operate a new process line, known as the CD line.

Company officials hope the CD line will be operational in 2008. In it, materials would be separated out of highly enrichment uranium, which

then could go through the downblending process at the plant.

"NFS is the nation's leader in the service it provides, and it has to have opportunities to grow its business and maintain its jobs," Treadway said. "From a company standpoint, we want to have the same storage capacity (as BWX Technologies) so we will have a level playing field in future projects."

Meanwhile, Treadway said, NFS officials are continuing to explore opportunities to sell the company. About three months ago, they notified the firm's approximately 715 employees and community leaders that they would be considering the possibility of a sale to a select group of U.S.-owned companies.

At the time, Treadway said the exploratory process "could take six months to a year before a decision is made on whether to sell the company."

"If no bidder offers an appropriate price," he said, "the owners are perfectly willing to continue the current ownership and management of NFS."

The company's owners, headed by Paul Schutt, bought NFS from Texaco 20 years ago.

Against NFS plans

To the editor,

The increase and storage of Uranium-235 at Nuclear Fuel Services Inc. above and beyond what is licensed simply makes us more of a magnet for terrorists.

It also increases the probability of a serious accident resulting in off-site contamination that would adversely affect the health and safety of the community. I believe it will also negatively affect other possible development in the area, as well as the property values of existing homes.

It appears that this is not the first time NFS has had a possession increase. During the three-year secrecy period, according to the NRC, NFS received approval for a "possession limit increase" on June 28, 2005, (Amendment 62). This was only one of 26 license amendments during the cover-up period.

I believe these license amendments and all of NFS' future plans require in-depth Environmental Impact Statements, which have never been done. I have seen only one six-page Environmental Assessment that was done by two NRC employees in 2002, prior to the BLEU Project startup. Environmental Impact Statements are required by law to protect the environment and the public's health and safety.

Erwin is already a radioactive waste dump with NFS' buddy Studsvik dragging the stuff in from all over the country. We can thank the state of Tennessee for that, because it is an "agreement" state.

Now, we're going to become a storage area for high-level radioactive material, Uranium-235. NFS says it wants to have the same storage capacity as BWX Technologies (their competitor) in Lynchburg, Va. So, it appears they want to "keep up with the Joneses" at the expense of our health and safety.

Many homes along Banner Hill Road and Berkshire Drive have already been bought up by NFS. Is it their plan to eventually take over the entire community? Perhaps they will soon be your neighbor, if we don't speak up.

**Barbara O'Neal,
Erwin**

No more uranium

To the editor,

I'll get straight to the point. Do I, as a resident, want more uranium in the town of Erwin? No.

After considering many pros and cons, I always come back to the same answer, because I know that business operations do whatever they want to and deal with the consequences later. Where's the trust for safety, health and the environment in that scenario?

Nuclear Fuel Services has a record of safety failures and accidents, and the Nuclear Regulatory Commission has a record of not enforcing safety codes and covering up public knowledge of NFS developments and license amendments for three years. I simply cannot take any of this lightly.

The NRC that will have to approve the increase request by NFS for more uranium storage does not have any official control over ownership or management decision-making by any nuclear facility. Therefore, we cannot look to the NRC for ultimate protection.

Also, the NRC, the nuclear industry and parts of our federal government are so cozy and cuddled up in bed together in support of the so-called "nuclear renaissance" that they cannot be trusted with the public's welfare. God help us if our health and safety should get in the way of their agendas or their billion dollar contracts coming from taxpayer coffers.

The bottom line is that business looks out for business and the residents of Erwin need to look out for their own health, safety and environment. We cannot become complacent with someone else's promises or deceptions.

Apparently, NFS had every intention of becoming a major uranium storage site when they constructed buildings in anticipation of more uranium before informing the public. Apparently, this has been a done deal for a long time by the "powers that be" who left the public out of the equation.

Erwin is becoming a major high-enriched uranium storage site. Is this really what we want to be? We have a legal right to voice our opposition.

**Chris Tipton,
Erwin**

THE ERWIN RECORD

Nov. 6, 2007

PAGE 5A

VIEWPOINT

NFS REQUEST

NRC OKs uranium storage bid

By JIM WOZNAK

Erwin Bureau Chief

jwozniak@johnsoncitypress.com

ERWIN — The Nuclear Regulatory Commission granted Nuclear Fuel Services' request to increase the amount of high-enriched uranium it can receive and store, the company said Thursday.

NFS spokesman Tony Treadway hailed the news as positive for Unicoi County and the country. He said the desire to have more uranium on the grounds of the Erwin plant was primarily spurred by the Department of Energy awarding NFS a contract to change 17.4 metric tons of high-enriched uranium into 290 metric tons of low-enriched uranium.

"The granting of the company's request enables NFS to be more competitive in the uranium-fuel market and maintain existing high-paying jobs in Unicoi County," Treadway said Thursday in a statement. "The decision also enables NFS to play a greater role in helping America meet its energy needs and provide nuclear fuel for the U.S. Navy."

The permission the NRC has granted will allow NFS to maintain its employment level and possibly increase jobs long term, he said. One of the ways in which NFS potentially is looking at additional business is through an increase in naval ship construction.

Treadway said his understanding is NFS has had the green light to start accepting the higher total of uranium since Nov. 23, when the NRC notified the company the request had been granted. Treadway would not comment whether any of that increased amount has started to come to Erwin, saying, "We don't discuss shipments of material at the plant."

NFS also is not saying by how much the plant will increase its high-enriched uranium capacity for security reasons.

'The granting of the company's request enables NFS to be more competitive in the uranium-fuel market and maintain existing high-paying jobs in Unicoi County.'

— Tony Treadway,
NFS spokesman

The public still has a chance to request a hearing on the NFS proposal by Dec. 17, and Treadway said information developed in that process could possibly lead to changes in the NRC's ruling. A petition is circulating in the region opposing the increase, and Sue Kelley, one of the opponents, said she plans to ask for a hearing.

Another opponent, Barbara O'Neil, said she believes it was premature for the NRC to grant this license

◀ Continued from Page 1A

before the public had a chance to apply for a hearing. She contends the NRC is ignoring the public and exhibiting "total disregard for public safety." She said the NRC is a rubber stamp for NFS.

Treadway sees the situation differently. He said the process for

amending a company's license is rigorous and steeped in federal regulations.

NFS applied for the additional storage in May, and the NRC told the company in June that an initial examination had cleared the way for a technical review. A notation in the Federal Register said the NRC concluded there

was "no significant impact" when it conducted an environmental assessment on NFS' plan. As a result, an environmental impact statement would not have to be prepared.

The new license amendment will not lead to associated new construction or changes to processing equipment or facilities, Marie Moore, NFS vice president for safety and regulatory, told the NRC in May. She also said it

would not lead to a change in the types or an increase in the amounts of radioactive material that might be released off site.

Treadway stressed Thursday the increase does not mean NFS is interested in long-term storage but rather production of material.

By granting the extra storage, NFS will have the same capacity as its chief competitor, BWX Technologies of Lynchburg, Va.

OPINION/EDITORIAL

Page 2B, Johnson City Press

Sunday, December 23, 2007

NFS ignores concerns

The Nuclear Fuel Services plan to store more bomb grade uranium, with the Nuclear Regulatory Commission approving their request before public comments is just another example of how the Department of Energy, NRC and NFS have shoved the public's concerns and legal rights aside.

Concerned citizens will not be intimidated by these agencies or their marketing mouthpieces when it comes to our health, safety, environment and community, or our legal rights to question and participate in nuclear decisions.

I am tired of hearing the same old spin about the threat to jobs every time concerned citizens ask for a valid Environmental Impact Statement or the truth about safety failures and exposures. What about the threats radioactive facilities pose to the

rest of us who do not work there?

We, in Erwin, live in what some call a "sacrificial zone." Sacrificing our health and safety for the U.S. Navy's fuel is one thing, but expanded sacrifice for the commercial "nuclear renaissance" is too much.

With the addition of the BLEU and Studsvik facilities, both being volatile and experimental commercial processes, we are now living in a radioactive ground zero. Scientists have said there is no safe level of radiation.

So do I want more uranium storage? No. As far as telling that to the NRC, good luck. They're in bed with big business. Business looks out for business, and concerned citizens in this area will have to look out for themselves.

CHRIS TIPTON
Erwin

viewpoint

Tuesday, January 22, 2008 | Page 4-A

Citizens have right to know

To the editor,

In the Jan. 15, 2008, Erwin Record article about the latest NFS Inspection Report and numerous violations, one important fact was omitted regarding a broken pressure gage.

The inspection report states, "The inspectors (NRC) noted an acceptance by the operators to tolerate deficient equipment." According to the report, this broken gage was one of the contributing factors to yet another spill in the BLEU Processing Facility on November 8, 2007, in which special nuclear material splattered on the face and body of a worker.

One would think that a company as wealthy as NFS could provide better equipment to its workers, and one might also wonder why the NRC knows about the equipment deficiencies and

violations, yet continues to approve NFS' requests for increased limit possession and storage of Uranium 235, and will probably smile favorably on the latest request for a license amendment to process Uranium Hexafluoride (UF6) in yet another "new" commercial development line (which has nothing to do with Navy submarine fuel).

Regarding UF6, the Institute for Energy and Environmental Research fact sheet says "a major hazard in both the uranium conversion and uranium enrichment process comes from handling uranium hexafluoride, which is chemically toxic as well as radioactive." It reacts readily

with moisture, releasing highly toxic hydrofluoric acid.

Several accidents have occurred involving uranium hexafluoride. One such accident at Sequoyah Fuels in Oklahoma killed one worker, hospitalized 42 others, and approximately 100 residents."

Because of this, I am very concerned for nearby Love Chapel School with 350 children and 50 staff.

The Nuclear Information Resource Service fact sheet about uranium hexafluoride states that "it's most dangerous in a gaseous state, but also dangerous when exposed to heat." According to the National Institute for Occupational Safety and Health

(NIOSH), "people should avoid all contact with UF6." "The material decomposes on heating producing toxic fumes of hydrogen fluoride ... reacts violently with water and ethanol ... attacks many metals forming flammable/explosive gas ... attacks plastic, rubber and coatings." NIOSH adds, "exposure at low levels may result in death." "Fire at a UF6 site is a major concern for public safety and health - and it cannot be put out with water - that would make it worse."

Before the NRC grants license amendments to NFS, the public is rarely told about these hazards to our health and safety. As citizens, we have a right to know. We should demand that our elected officials investigate. Call them.

**Barbara O'Neal,
Erwin**

OPINION/EDITORIAL

Residents in Unicoi County have facts about Nuclear Fuel Services

This is in response to Jason Carter's assault on the intelligence of Unicoi County residents, calling us "poor misguided citizens" in a letter to the editor on Jan. 10. He's obviously the one who's "misguided" and has become a puppet of corporate propaganda.

Mr. Carter shouldn't think for one minute that we're not fully awake and watching that "awful NFS." The majority of Unicoi County residents have paid their mortgages and children's education without the help of NFS.

It may surprise him to know that only 100 people who work at NFS actually live in Unicoi County. If one stands at I-26 Exit 40 in the morning, they'd be run over by management and others who can afford to live upstream and upwind of NFS.

And to what scientists is he referring? The Agency for Toxic Substances and Disease Registry provided incorrect information to the media and public regarding the Public Health Assessment of NFS.

There's a vast difference in the conclusions from the May 18 version released to the public and the final version dated May 29, after some of us poor misguided citizens pointed out the errors to the "scientist," and he changed the report.

And last, but certainly not least, Greeneville's drinking water comes from the Nolichucky River, where NFS dumps its effluent on a regular basis. Enjoy.

Don't tell us to wake up, Mr. Carter. You don't have the facts. We do.

CASSANDRA METCALF
Flag Pond

J.C. Press, FEB. 12, 2008

Procedural violations up at NFS, NRC says

■ 'Declining regulatory performance,' need for management oversight cited in review.

(PIA)

By JIM WOZNAK

Erwin Bureau Chief

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ERWIN — Procedural violations at Nuclear Fuel Services are on the upswing and are a sign of "declining regulatory performance" in that facet of the company's operations, the Nuclear Regulatory Commission said in a recent letter.

Acknowledging where NFS fell short, spokesman Tony Treadway saw a positive side in the federal agency's latest license performance review. He said the company is showing "continuous improvement" in most elements of its operation.

The review covers the plant's activities from July 29 until Dec. 31. It showed there were no areas needing improvement in three of the five categories examined — safety operations, radiological controls and safeguards. But the review pointed to multiple areas in which management oversight was needed in facility support and licensing activities.

"During this review period, NFS continued to maintain safety and security for its workers and the public," Victor McCree, acting NRC regional administrator, said in a letter to President and Chief Executive Officer Dwight Ferguson. "However, the NRC noted an upward trend in the number of procedural violations identified during this review period. This increase in violations appears to be an indicator of declining regulatory performance in this area." According to the LPR, problems in facility support included not having formal approval from the nuclear criticality safety group with pipe sections, not implementing criticality alarm response procedures after a false alarm and an operator receiving a slight chemical exposure. There were three cases of not following special work permits by not using appropriate personnel protective equipment.

"This area for improvement is particularly noteworthy, as it is a longstanding area needing attention at NFS, as indicated by two of the previous LPRs," McCree's letter said. "At least one of these procedure violations involve failure to adhere to procedures implemented as a corrective action following the (March 6, 2006 incident)

▶ See NFS, Page 8A

Johnson City Press, Feb. 12, 2008, p 1A+8A

J.C. Press, p 8A

Tuesday, February 12, 2008

NFS

◀ Continued from Page 1A

involving the spill of (35 liters) of high-enriched uranium.

"In light of NFS' plan for significant expansion of the Blended Low Enriched Uranium facility in 2008, this area for improvement will continue to be a focus of NRC oversight."

NFS also needed to improve oversight in the planning and quality of license amendment proposals, according to the LPR.

"Several recent licensing requests have not adequately supported the licensee's desired operational needs," the document said. "Ineffective planning and quality resulted in documents that required multiple changes before providing sufficient information to support NRC licensing activities."

One example was NFS' request in 2007 to increase the amount of highly enriched uranium it can possess in the plant. The NRC approved that request in November, but the Sierra Club's Radiation Committee has asked

for a hearing.

Other cases where requests were insufficiently presented were three revisions of the Fundamental Nuclear Material Control Plan and a "major" revision to the Physical Security Plan, both involving highly enriched uranium, and a request to have a chief nuclear officer.

Treadway said NFS agreed continuous improvement is necessary in facility support and said NFS will continue working closely with the NRC on planning and oversights with license submittals.

"Our commitment to being a world-class nuclear operation is ongoing, and the fact that there were no findings in safety operations, radiological controls or safeguards is proof of that improvement."

A meeting between the NRC and NFS to discuss the review will be held at the NFS Training Center Feb. 28 at the corner of the Jackson-Love Highway and Carolina Avenue. It is open to the public.

THE ERWIN RECORD, FEB. 12, 2008, P 3-A

NFS partner wins major contract

By **Jerry Hilliard**

Associate Editor

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AREVA, a French-owned company partnered with Nuclear Fuel Services Inc. of Erwin in the downblending of highly enriched uranium, announced last week that it has won four major contracts.

Although a contract with the Tennessee Valley Authority is included, an NFS spokesman said production by the local firm will not be affected.

In its current blended low enriched uranium (BLEU)

project, Nuclear Fuel Services downblends material that eventually ends up in reactor fuel used at TVA's Browns Ferry nuclear plant in Alabama.

NFS spokesman Tony Treadway said the main change created by AREVA's new contract is that it will be providing fuel for one additional reactor at Browns Ferry, with delivery from 2010 to 2012.

By 2009, however, the BLEU project in Erwin is expected to end. Its facilities will be used for other projects, such as the downblending of

17.4 metric tons of material in partnership with Westinghouse. The main purpose of that endeavor will be to create a strategic reserve of fuel materials for commercial power plants.

The original contract for the BLEU project, which went into operation in 2004, called for NFS to downblend 33 metric tons of stockpiled highly enriched uranium. The total later increased to 40 metric tons when the Tennessee Valley Authority acquired additional material that was released by the federal government.

After being downblended into liquid form by NFS, the material goes directly to an AREVA facility at the Erwin plant to be converted to powder.

The powder is shipped to Richland, Wash., where it is turned into pellets that are transported to Lynchburg, Va., and loaded into fuel rods. The rods are then put into fuel assemblies, which AREVA ships to TVA's Browns Ferry site.

AREVA, a French-owned company, supplies fuel to more than 130 reactors in 15 nations.

Officials talk NFS safety

JOHNSON CITY PRESS
FEB. 29, 2008
PAGE 4A

■ NFS, NRC
discuss recent
review, strategic
plan for the plant.

By **JIM WOZNAK**
Erwin Bureau Chief
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ERWIN — Nuclear Fuel Services' general manager on Thursday said the company needs to get better in all components of the plant but said the company is taking steps to improve safety.

A recent review by the Nuclear Regulatory Commission that examined activities at the plant from July 29 until Dec. 31 showed a need for better management oversight in facility support and licensing activities.

The federal agency said it had "noted an upward trend in the number of procedural violations identified during this review period. This increase in violations appears to be an indicator of declining regulatory performance in this area."

NRC Acting Regional Administrator Victor McCree said facility support is a component that has long been an area of concern for the NRC at NFS. He said at least one of the violations was a lack of adherence to corrective measures put in place in the wake of a March 6, 2006, spill of 35 liters of highly-enriched uranium.

At a meeting Thursday between the NRC and the company, NFS General Manager Tim Lindstrom highlighted the safety culture strategic plan for the plant.

"Since we last met, we have completed development of that plan and begun implementation," he said. "We think that elements of that plan address all of the elements that were identified by the NRC as well as elements that have been identified by an independent group of nuclear safety experts who have done an assessment of NFS."

Lindstrom said NFS recently

promoted John Nagy to vice president and chief nuclear safety officer. He is in charge of overseeing regulatory safety and licensing activities. Lindstrom called Nagy an "independent watchdog" on the staff.

Lindstrom also cited the promotion of Gene Athon to vice president for applied technology.

"Gene's background is in operation of our fuel facility, which has had a long tradition and reputation of formality, discipline and accountability," Lindstrom said. "Gene is bringing those attributes and skills into the engineering department to ensure that we bring forth some of these changes with that same level of accountability."

Addressing the NRC findings, Lindstrom said NFS believes it needs to improve in all aspects of this operation. He said excellence is the objective and the company is not satisfied with its performance in any facet.

Referring to facility support, he said the eight violations are "unacceptable." As a response, he said NFS has in the short term increased supervisory and management observation and reporting and seen improvements in this area.

"We require our managers and supervisors to report all problems that they see," Lindstrom said. "We've seen an increased reporting and corrections of very low-level problems, which we feel is important in developing a culture where all problems are reported and corrected."

The NRC also concluded that NFS had supplied inadequate information in multiple license amendment requests, including a recently approved proposal to increase the amount of highly-enriched uranium it can possess in the plant.

Lindstrom said NFS was "a bit surprised" to see this area cited as a weakness. He said the company will continue to work with NRC management to understand the federal agency's expectations.

"We were not aware that our submittals were not up to the quality expected," he said.

NEWS

NFS, NRC meet/4A

The GM of NFS said at a Thursday meeting with the NRC that the company needs to improve in all aspects, but is taking steps to improve safety.

Sierra Club disagrees with NFS over cancer rate report

Linda Modica, who issued a news release highlighting cancer rates in relation to Nuclear Fuel Services, talks to Peter Habighorst, fuel manufacturing branch chief for the Nuclear Regulatory Commission, Thursday.



Jim Wozniak/Johnson City Press

By JIM WOZNIAK

Erwin Bureau Chief

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ERWIN — A U.S. Department of Energy division report that discusses the disposition of highly-enriched uranium has the Sierra Club and some people in the community disagreeing with Nuclear Fuel Services on the company's contribution to cancer rates.

Referring to the contents of a supplement analysis conducted in October, the Sierra Club's Linda Modica said in a news release Thursday that one in 71 residents in Erwin will die from a latent cancer due to NFS' conversion of highly-enriched uranium to a low-enriched form of the chemical. The document was compiled by the National Nuclear Security Administration.

"With a population of approximately 5,700, NNSA's analysis implies that NFS'

blended low-enriched uranium facility will cause 80 latent cancer fatalities per year in Erwin — 80 more cancer deaths per year than would have otherwise occurred” said Modica, chairwoman of the club’s Radiation Committee.

Comparing NFS to others in the nuclear industry, she said NFS was five times more deadly to its neighbors than the Y-12 plant in Oak Ridge, six times worse than the Savannah River Site and 64 times worse than BWXT in Lynchburg, Va.

NFS spokesman Tony Treadway said Friday that Randy Shackelford, nuclear safety manager for NFS, contacted the report’s author and learned the impact of NFS was much less dire than what Modica conveyed. The number NFS obtained is that there is a 1 in 85 million chance someone within 50 miles of NFS

will contract a latent cancer because of the downblending.

On Thursday, before the company received the new figure, NFS General Manager Tim Lindstrom said people needed to look closer at what the report said. He said it does not just talk about Erwin residents.

“It doesn’t say every person has a 1 in 71 chance,” he said. “It says the total population has a chance for one LCF of 1 in 71.”

The report said the off-site population risk “is equivalent to the following increased annual risk of a (latent cancer fatality) occurring in the total off-site population.” It then gave figures of 1 in 71 for NFS, 1 in 357 for Y-12, 1 in 4,545 for BWXT and 1 in 416 for Savannah River.

Treadway said the figures Modica cited are “inflammatory” and caused undue concern in the community. He said NFS regrets the misinterpretation of the facts by the Sierra Club and noted

Modica and the organization tried to prevent the company from starting the BLEU operation.

Modica contended the club did not make “any great leaps” in the figures it cited and said the figure Treadway cited was not in the report. She said she quoted figures that were in the report and that if she made a mistake, it was unintentional.

“I don’t think we made any mistakes,” Modica said.

Citing another section of the report, Treadway said NFS workers are less exposed than workers at the other plants. Modica highlighted a portion of the report that said the latent cancer fatality risk for NFS workers is up 51 percent since 1996.

The report was discussed briefly Thursday after the Nuclear Regulatory Commission met with NFS to discuss the federal agency’s latest review of the company’s performance. Doug

Collins, director of the division of fuel facilities inspection in the NRC’s Atlanta office, said his agency had not had a chance to examine the report.

“We will be doing that in the near future,” he said. “We’ll have our risk experts take a look at it and assess it, and then we will provide feedback to some people who have asked some questions about it earlier today.”

Erwin resident Chris Tipton asked the NRC what the risk is of a latent cancer fatality for the public from downblending.

“What we regulate are radiation dose levels — doses to the members of the public,” Collins said. “Our regulations limit the dose at this facility to any member of the public (at) 25 milirem. The effluents at this facility have typically been less than 1 milirem. The releases from this facility are significantly less than our regulatory requirements.”

NFS acknowledges violations, works on improvement

By David Thometz

Staff Writer • dthometz@erwinrecord.net

Nuclear Fuel Services needs to improve "all aspects" of its operations, according to General Manager Tim Lindstrom, but he added that the company is taking steps to improve safety at its Erwin plant.

The Nuclear Regulatory Commission met with NFS officials and the community in a public meeting Thursday in Erwin.

The NRC recently conducted a Licensee Performance Review, inspecting activities at the plant from July 29 until Dec. 31. Its report found a need for improvement in management oversight in facility support and licensing activities at the plant, which processes nuclear fuel for the U.S. Navy and converts surplus bomb-grade uranium into commercial reactor fuel for the Tennessee Valley Authority.

The federal agency reported "an upward trend in the number of procedural violations identified during the review period" at the plant, and said the "increase in violations appears to be an indicator of declining

regulatory performance".

At least one of the violations involved failure to adhere to corrective measures established in response to a March 6, 2006, spill of 35 liters of highly enriched uranium at the plant, according to NRC Acting Regional Administrator Victor McCree.

In a letter sent to NFS President and Chief Executive Officer Dwight Ferguson on Jan. 30, the commission noted, in the area of faculty support, eight separate violations of adherence to procedures and management oversight within a five-month period:

- Failure to follow procedure due to the storage and use of flexible pipe sections without formal approval from the nuclear criticality safety group

- Failure to properly implement criticality alarm response procedures following a false alarm

- Two examples of failing to follow procedures: one involving the use of an unapproved work request for operations, and the other which led to the contamination and a slight chemical exposure of an operator

- Three examples of failing to follow Special Work Permits (SWPs) by not using the appropriate personal protective equipment

- Failure to document and properly implement radiological decontamination procedures

- Two examples of failing to follow SWP radiological control requirements

- Implementation of operational procedure changes without the required reviews and training

- Failure to require documented design goals and meetings to determine the requirements for engineering projects

"We think eight violations in a five-month period is unacceptable," Lindstrom said, acknowledging the NRC review's concerns at the public meeting last week.

NFS believes it needs to improve in all aspects of its operations, he said, adding that the company has developed and begun implementing a safety culture strategic plan for the plant.

"What we do, we should do well," Lindstrom said.

He added that NFS has increased supervisory and management observation and reporting as a response to the NRC review, and said the company has "seen improvements in this area."

Lindstrom said the company recently promoted John Nagy to vice president and chief nuclear safety officer, putting him in charge of overseeing regulatory safety and licensing activities. Lindstrom called Nagy "the independent watchdog" of the company.

Lindstrom also noted the promotion of Gene Athon to vice president for applied technology. He cited Athon's background in the operation of the company's fuel facility, which, he said, "has had a long tradition and reputation of formality, discipline and accountability."

"Gene is bringing those attributes and skills into the engineering department to ensure that we bring forth some of these changes with that same level of accountability," Lindstrom added.

The NRC review also found that NFS on multiple occasions had not supplied adequate information when requesting license amend-

ments, including a recently approved plan to increase the quantity of highly enriched uranium the plant may possess.

"Several requests were ineffectively planned or of inadequate quality," the report noted.

Lindstrom expressed the company's surprise to see this area cited as an area needing improvement, but said NFS would continue to work with the agency to understand its expectations.

"NFS agrees with the NRC's evaluation that continued improvement is necessary in this area," NFS spokesman Tony Treadway said in a statement released before the meeting. "The company will continue to work closely with NRC management to enhance the planning and oversight associated with license submittals."

He said the company will not face any monetary penalties associated with violations found by the NRC review, and the plant will remain in full production.

The federal agency scheduled the next review to take place in approximately six months.

OPINION/EDITORIAL

NFS numbers are alarming

The March 2 Johnson City Press story regarding the Sierra Club disagreement with Nuclear Fuel Services over the cancer rate report omitted an important fact — the report number and date, (DOE/EIS-0240-SA1, Oct. 11, 2007).

Perhaps people would like to go to the Department of Energy Web site and read it.

The risk comparison of latent cancer fatalities between NFS in Erwin to those at BWXT in Lynchburg, Va., is shocking. The supplement indicates that the calculated offsite population risk is equivalent to the following increased annual risk of an LCF occurring in the total offsite population: One chance in 71 for NFS, compared to one chance in 4,545 for BWXT. Y-12 in Oak Ridge was one chance in 357 and Savannah River was one chance in 416. (Page 11, Table 4.2-2 and footnotes).

The numbers appear to reflect the close proximity of the population around NFS. BWXT is located away from the population, while in the case of NFS, some residents' yards actually adjoin their property. The city/county government offices, schools, hospital and nursing homes are all within a mile or less of NFS.

It appears that in 1996, the DOE gained the community's support to this disposition of highly enriched uranium under one set of circumstances and then later changed the circumstances and did not bother to tell the public about the changes.

Members of the Erwin Citizens Awareness Network found the document and became concerned. Attempts by NFS to discredit the Sierra Club for speaking up on behalf of local concerned citizens is unfair.

B.A. O'NEAL

Erwin

Claims by NFS

A girlfriend of mine once worked at Nuclear Fuel Services — at night and she never had to use a flashlight.

Seriously, I really feel for the citizens of Erwin. Of course, "the officials" (and PR) will tell 'em that everything's OK: Your health and safety is their No. 1 priority.

NFS is being totally honest about all the facts (insert snicker here). They are experts, you know. Latent cancer fatality: "One chance in 71 for NFS" was a misleading footnote. The Nuclear Regulatory Commission will, I'm sure, do a "full" investigation.

Do uranium down-blending operations at NFS lead to a higher danger of cancer? NRC claims no knowledge of such.

Well, they don't live in Erwin.

JERRY L. NORRIS

Afton

OPINION/EDITORIAL

Page 2B, Johnson City Press

Sunday, March 16, 2008

Johnson City Press

WHAT THE PEOPLE DON'T KNOW *WILL* HURT THEM

Putting 42 chemicals into river isn't polluting?

Who does Nuclear Fuel Services think they're kidding? They don't pollute the Nolichucky River? The Nuclear Regulatory Commission and NFS environmental reports (1999, 2001, 2002) tell a different story. I have read them numerous times.

The NRC's 1999 Environmental Assessment of NFS's re-licensing application states on page 3-26 that NFS contaminated Banner Spring Branch with cyanide, nitrates/nitrite, copper and zinc. Banner Spring Branch flows into Martin Creek, which flows into the Nolichucky.

Of course, NFS will say that was then and now they don't contaminate the Nolichucky, otherwise the 303-d list would have listed NFS as a polluter, right? Wrong. Keep in mind that the Tennessee Department of Environment and Conservation does not test for radionuclides, and NFS even admitted the maximum dose from drinking water from the Nolichucky is .004 millirem.

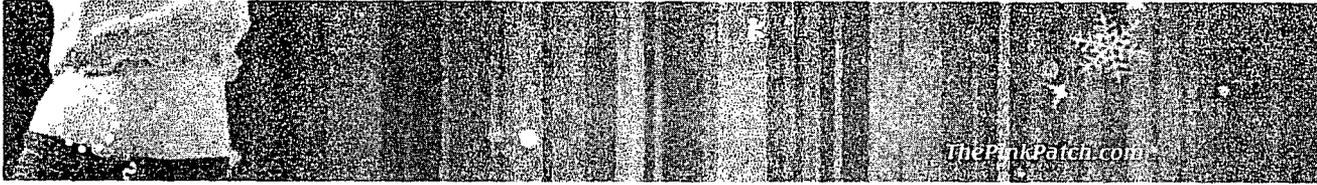
Why then does NFS have to report twice a year to the NRC on 21 different radioactive contaminants if they didn't discharge them into the Nolichucky — either directly or indirectly through the Erwin sewer?

The radionuclides that NFS have to report on include: four isotopes of plutonium (238, 239, 240 and 241), four isotopes of thorium (228, 230, 231 and 232), six isotopes of uranium (232, 233, 234, 235, and 238), technetium-99, americium-241, cesium-137, etc. If it's radioactive, NFS uses it.

Unfortunately, the NRC's secrecy policy is still being used to cover up the facts because the bi-annual Effluent Monitoring Reports for 2003-07 are still being kept from the public.

The NRC and TDEC may think it's acceptable for NFS to contaminate the Nolichucky with 21 radionuclides and 42 chemicals, but what do you say?

W.S. KELLEY
Erwin



SPECIAL REPORT: Nuclear Fuel Services, Beyond The Myths

Tuesday, May 13, 2008 - 11:00 PM Updated: 07:58 AM

By Nate Morabito
Reporter / Photographer
News Channel 11
E-mail | Biography



[Click Here To View Video Report](#)

It's one of the most heavily guarded, highly-regulated companies in the country and it's right in our backyard. Nuclear Fuel Services in Erwin is Unicoi County's largest employer. The facility powers all of the United State's Navy's submarines and most of its aircraft carriers. It also fuels many rumors about what happens at the plant and its effects on the community.

For decades, people have wondered exactly what happens behind the plant's barbed wire fences and gun-toting guards. With the word nuclear in its name, NFS garners plenty of negative publicity. The company says undeservedly so.

"One of the misconceptions about NFS is that nuclear warheads may be coming to the plant to be downblended, that's absolutely untrue," NFS Spokesperson Tony Treadway said. *Nobody believes that. What!*

Treadway says the company takes highly-enriched uranium and downblends it to a form of low-enriched fuel that can be used to make electricity. The material that comes into the plant is heavily guarded to protect it from a select few.

"It would be more useful if you had the capabilities to use it in the construction in a very sophisticated, very complicated form of nuclear weapon, which only a few countries in the world possess that capability," Treadway said.

In the end, NFS says it turns the uranium it collects into a material that has no value to terrorists. That said, Treadway says there is little risk for danger at the facility.

*BUT MOST HEAVILY-GUARDED
IN COUNTRY!?*

With unescorted clearance at NFS, Erwin Fire Chief/Fire Marshal Doc Bailey agrees.

"They're probably one of the safest facilities out of all of the places I have inspected," Bailey said.

Bailey dispels the myth that there could be a nuclear explosion at the plant. He also says there's little to no health impact for people who live nearby. Bailey's children play across the street every day.

"If I had any concerns whatsoever, I'm not going to allow my two children, who I love more than anything in this world, spend time across the street from that facility," Bailey said.

A recent U.S. government report concluded the biggest risk at NFS is a one in 85 million chance of getting cancer from the plant. That means people have a better chance of getting struck by lightning, but what about the remnants of what's in the ground there from decades ago?

NFS admits at one time, the ground was contaminated with plutonium from the 1970's as well as uranium.

STILL IS

"While there was some contamination in the area immediately around the plant, none of it impacted the public drinking water," Treadway said.

The company says 95% of those contaminated sites have now been cleaned up. NFS says the remaining 5% will also be contamination-free by the end of this year."

NFS says it is shipping all of its remaining contaminated material out west. Despite past contamination at the plant, NFS says even if you lived at the fence of the plant, you'd get more radiation from watching television during a year than you would from NFS. *what!*

"What it's doing to fuel more clean energy produced through nuclear power far outweighs any kind of risk it has to the environment or the public in Unicoi County," Treadway said. *WHAT AN INSULT!*

NFS is regulated on the local, state, and federal level. In fact, two Nuclear Regulatory Commission resident inspectors are on-site daily.

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Erwin Citizens Awareness Network
P. O. Box 1151
Erwin, TN 37650

May 15, 2008

Mr. Nate Morabito (Handcarry)
News Channel 11
338 E. Main Street
Johnson City, TN 37601/37605

Dear Mr. Morabito:

Several of us watched with interest your investigative news story at 11 p.m. on May 13, 2008: "NFS Beyond the Myths". We have always believed that there are two sides to every story. Unfortunately, we saw only one side – the corporate spin -- from your station in regards to NFS.

Could the reason be that the NFS spokesman was a former WJHL employee? Hopefully not. We believe that balanced reporting can still happen at your station regarding this company, and are writing to provide factual documentation that can, for the basis of a sequel, further help to debunk the myths about NFS.

The Erwin Citizens Awareness Network (Erwin CAN) would like to share some of those facts with you, along with the references from the Nuclear Regulatory Commission (NRC) ADAMS (Agencywide Documents Access and Management System) to help you with your investigative reporting. In most cases, we've even made copies for your convenience.

Erwin CAN also has several questions for WJHL:

- **Is it a myth that NFS has been under a NRC Confirmatory Order since February 21, 2007....made known to the public on July 18, 2007 at the direction of Congress? (ML071990558; Encl 1)** As you can see this Confirmatory Order involves safety, or lack thereof.
- **Is it a myth that NFS admitted to a lack of "safety culture" and agreed to an Independent Safety Culture Assessment Team?** See record of closed meeting between NRC Commissioners, NRC Region II, and NFS, May 30, 2007, M070530C Discussion of Security Issues. (ML071930389; Encl 2). This document is a must-read for any investigative reporter. Again, safety is the major issue here.
- **Is it a myth that NFS is under enhanced and increased NRC oversight with added inspectors for an undetermined time?** This fact is referenced in the above document.

- **Is it a myth that a Safety Culture Board of Advisors (SCUBA) will be working with NFS to try and establish a safety culture until 2010?** (ML073231216; Encl 3). Other SCUBA documents, not enclosed are "Modifications to NFS Erwin 2007 Independent Safety Culture Assessment Plan and Schedule" (ML072820542), and "Upgrades to the Safety Culture Implementation Plan for Nuclear Fuel Services" (ML072410378). NFS' first report to the NRC, based on SCUBA findings, was on April 22, 2008 (ML081000509). See "Platts Inside the NRC" article, April 28, 2008, regarding the April 22 NFS meeting with the NRC. (Encl 4)
- **Is it a myth that DOE/NNSA neither submitted the Supplement Analysis on the HEU disposition program for public comment nor released it to the media, or even made the NRC aware of its existence?** See DOE/EIS-0240-SA1 October 11, 2007, buried on the internet during the Official Use Only (OUO) three-year secrecy period. The SA is now on NRC's ADAMS, due, in part, to Erwin CAN's insistence that it be made public. (ML081070196; Encl 5)
- **Is it a myth that the Supplement Analysis, which addresses the downblending of 17.4 metric tons of HEU, was written AFTER the material began arriving in Erwin in August 2007?**
- **Is it a myth that the Supplement Analysis states on page 11 that "This SA's calculated offsite population risk is equivalent to the following increased annual risk of an LCF occurring in the total offsite population: 1 chance in 357 for Y-12; 1 chance in 4,545 for BWXT; 1 chance in 71 for NFS; and 1 chance in 416 for SRS"?** LCF is an abbreviation for latent cancer fatality.
- **Is it a myth that it was the DOE, with the help of the NRC, that put the public in the dark for three years and that the Blended Low-Enriched Uranium (BLEU) commercial reactor fuel process was never supposed to be part of the OUO -- only the Navy fuel production?** However, NFS applied it to everything... and the NRC allowed it. (ML07290048 and ML072900407; Encl 6). As an aside, Mr. Patrick Card (a civilian Navy employee assigned to the NNSA), the one who suggested the secrecy, is now an advisor to the SCUBA team.
- **Is it a myth that an additional 22 thousand tons of HEU, LEU, Natural Uranium, Depleted Uranium and Thorium from Italy arrived in Erwin on December 5/6, 2007 without any public notification, import license application, or public comment opportunity?** (ML03610337; Encl 7)
- **Is it a myth that at least one NFS executive faces fitness-for-duty and possible criminal charges?** See subpoena issued to NFS Attorney (Daryl M. Shapiro, Esq.), December 3, 2007, by NRC Office of Investigations (ML080150036), and CLI-08-06 Memorandum and Order, served 03/27/08, NRC Investigation No. 2-2006-17. (ML080870303; Encls 8 & 9).

- **Is it a myth that NFS continues to violate the terms of its license, SNM-124, and that violations are increasing in number per inspection report?** See update of Nuclear Fuel Services, Inc. 2008-04-07, "NFS' current performance, as indicated by the number of violations identified since mid-2007 has not significantly improved since the last licensee performance review (LPR). The violations continue to indicate that NFS needs to improve its management oversight to ensure adherence to operational, radiological protection, and engineering procedures. This area for improvement is **longstanding** as indicated by two of the previous three LPRs." (ML080580192; Encl 10)

- **Is it a myth that in the event reports for NFS and BWXT released by NRC on May 12, 2008 that NFS had 25 events, all safety related, reported to the NRC from 2004-2007, during the OUO secrecy period?** (ML081330189; Encl 11- News Release & Encl 12 - Event Reports). Copies of those reports are attached and can be found on the NRC website under "Event Reports." A recap is as follows. We've highlighted just a few that caught our attention, and that might deserve further scrutiny.

<u>Date</u>	<u>Event #</u>	<u>NFS Event Reported to NRC</u>
05/14/2004	40750	Loss of Criticality Safety Controls
06/24/2004	40840	Removable Surface Contamination Greater than the Limits
07/27/2004	40901	Fire in Off-Gas System
10/06/2004	41097	Safety Related Needle Valves in Incorrect Position
10/26/2004	41149	Failure of Safety System Causing Unfavorable Geometry
11/15/2004	41197	Wet Offgas (WOG) Line Calculation was not performed
12/17/2004	41274	Criticality Control
01/07/2005	41316	Faulty Programmable Logic Controller (PLC) for Oxide Dissolution Operation (Loss or Degraded Safety Items)
03/24/2005	41523	Equipment Piece for Storage Rack Not in Place for Safe Storage of SNM (Special Nuclear Material) (Loss or Degraded Safety Items
04/28/2005	41651	Inadequate Controlled or Analyzed Pathway for Material Accumulation
07/09/2005	41839	Small Fire in Waste (Calciner) Furnace
10/08/2005	42047	Criticality Alarm System Inoperable in the NDA/Loading Dock area due to Detector Failure (Safety Equipment Failure)
10/21/2005	42133	Potential Degradation of Glovebox Overflow Drains Under Certain Vacuum Conditions (Loss or Degraded Safety Items)
10/28/2005	42089	Discard of Caustic Solution to Waste Tank Without Sample and Analysis (Safety Equipment Failure)
11/08/2005	42131	Exceeded Mass Limit Requirements
12/07/2005	42191	Apparent Loss of Natural Thorium Shipment
01/05/2006	42244	Monitor Setpoint Improperly Set (Loss or Degraded Safety Items)
03/07/2006	42393	Unanalyzed Condition of Criticality Controls (Spill was 03/06/2006- 37 liters of high enriched uranium; not reported until 03/07/2006)

03/09/2006	42480	Fitness for Duty Report Involving Licensee Supervisor (failure to adhere to a 5-hour alcohol abstinence requirement)
03/13/2006	42411	Potential Unsecured Accumulation Point Identified (<u>All Safety Items Unavailable</u>)
03/22/2006	42442	Product Mass Different Than Analyzed
04/14/2006	42502	Failure of a Fitness for Duty Test (non-licensed employee supervisor had a confirmed positive for illegal drugs during random test)
05/31/2006	42612	Criticality Evacuation Alarm Failure (Safety Equipment Failure)
01/11/2007	43090	Failure of Gamma Spectrometer Waste Monitor (<u>Only One Safety Item Available</u>)
03/01/2007	43204	Potential Degradation of Safety Systems (Loss or Degraded Safety Items)

And regarding contamination, let's not forget that NFS's industrial neighbor, Impact Plastics, won a settlement from them in 2005. The judge issued a gag order and the records were sealed. Did you ever investigate why? (See attached Johnson City Press articles, March 2, 2005, "NFS, Impact Plastics reach accord on lawsuit"; **Encl 13**)

Regarding your story, we certainly don't believe that nuclear warheads are coming to the plant. That is the first time we've ever heard such a statement. Nevertheless, the highly enriched bomb-grade uranium that is stored and downblended by NFS most definitely IS something a terrorist might want. If the nation's largest and most important nuclear lab, Lawrence Livermore National Laboratory, is vulnerable, then what about NFS? (See Time Magazine article, "Security Flaws Exposed at Nuke Lab," May 12, 2008; **Encl 14**)

As far as the one in 85 million chance of getting cancer from NFS, or that people have a better chance of getting struck by lightning, there is yet another explanation by the NRC -- "1 in 71 years." (See letters to the Mayors -- ML080700043, ML080700118, ML080700092; **Encl 15**). Neither of these explanations is satisfactory nor passes the common sense test. As a result, the Erwin Citizens Awareness Network is sending a letter to Mr. William Tobey of the NNSA/DOE, with copies to Congress, asking for a comprehensive health assessment for Erwin and a proper Environmental Impact Statement.

Through the foregoing, we believe you can now see why this Erwin citizens group has formed, why its growing membership is concerned, and why we do our research. This community has been deceived for many years, so we have worked hard to uncover the truth about NFS, NRC, and DOE.

To that end, and in service of the public's right to know, the Erwin Citizens Awareness Network asks WJHL to tell the truth to the public, expose the miserable violation history of NFS, and, with journalistic integrity, open the public record on NFS through a sequel to your "Beyond the Myths" story. Erwin CAN would be happy to open our voluminous files of public documents to you and your editor to facilitate your further investigative reporting on NFS.

Please respond to the address on this letterhead to arrange a time to meet with Erwin CAN's leaders.

Sincerely,

Chris Tipton
Anna L. Neal

for Erwin Citizens Awareness Network

15 Enclosures

cc; w/o enclosures:

WJHL Newsroom Editor
Bristol Herald-Courier
Erwin Mayor Brushy Lewis
Unicoi County Mayor Gregg Lynch
Unicoi Mayor Johnny Lynch
U.S. Representative David Davis



Nuclear Fuel Services missed safety standards

By Larisa Brass

Originally published 02:20 p.m., May 19, 2008

Updated 02:20 p.m., May 19, 2008

A safety analysis of the Nuclear Fuel Services plant in Erwin, Tenn., has found the nuclear materials processor and fuel fabricator fell short of industry "best practices" safety and performance standards in nine of 13 areas.

The safety analysis was conducted by a group of nuclear independent experts known as the Safety Culture Board of Advisors, or SCuBA, according to NFS, but whom have not been identified individually. The analysis follows a series of safety and security incidents in the plant from 2004-2006 including an incident that posed the threat of a nuclear criticality in March 2006.

The 2006 spill involved about 35 liters of highly enriched uranium solution that leaked into a protected glovebox, then onto the floor in a facility where highly enriched uranium is "downblended" to a lower enrichment for use in commercial reactors, including TVA's Browns Ferry Nuclear Plant in Alabama. NFS also manufactures fuel for the U.S. nuclear-powered submarines.

The safety breach did not come to light until it last year as part of the Nuclear Regulatory Commission's annual report to Congress because of a policy put into place following the Sept. 11 terrorist attacks that such documents be withheld from the public under a so-called "official use only" policy.

Following the disclosure and as part of a negotiation with the Nuclear Regulatory Commission over the incident, NFS officials agreed to a third-party safety analysis of the plant and work with the NRC to improve conditions.

According to the SCuBA report, the plant is operating within NRC minimum guidelines. "On the other hand," the report stated, "the SCUBA team identified that most components of the NFS-Erwin Safety Culture fail to meet (or only minimally meet) NRC regulatory expectations."

NFS said it is already working to correct the problems and, along with the SCuBA report provided a safety strategy to the NRC, outlining plans for improving operations at the plant. NFS has stated that improvements will be in place by 2011.

The report also follows a release by the NRC last week of event reports regarding safety and procedural issues at NFS's Erwin plant as well as at BWXT Technologies, a nuclear fuel fabrication plant in Lynchburg, Va.

Among the reports released were two fires, failure of safety controls to "prevent a hydrogen explosion" in the highly enriched uranium downblending portion of the facility, criticality system alarm failures and failure of other monitors and systems. Just weeks after the March 2006 spill, two incidents were reported involving drug and alcohol related incidents. In the first case, an unidentified facility supervisor was found in violation of fitness for duty due to "failure to adhere to five-hour alcohol abstinence requirements". In the second incident, just eight days later a "non-licensed supervisor" tested positive for illegal drugs.

More details as they develop online and in Tuesday's News Sentinel.



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More NFS documents released by government

■ Information details events at plant over three-year period.

By **JIM WOZNIAK**

Erwin Bureau Chief

jwozniak@johnsoncitypress.com

ERWIN — As Nuclear Fuel Services proceeds with plans to improve safety, the Nuclear Regulatory Commission has released previously withheld documents detailing incidents at the plant over a three-year period.

Earlier this month, the NRC released 58 event notification reports between 2004 and 2007. Twenty-four of the documents pertain to NFS, and 34 were associated with BWXT in Lynchburg, Va.

"Although many of the reports involve events of low safety significance, they help identify performance issues that can lead to more serious problems if left uncorrected," the NRC said in a news release. "(The) NRC's reporting requirements protect workers and the public by allowing the NRC to evaluate whether a licensee has taken proper corrective actions.

"Event reports also help the NRC identify generic safety concerns so other licensees can be alerted."

The NRC adopted a policy in 2004 to keep information about NFS and BWXT secret in response to post-9/11 concerns some publicly available documents contained sensitive security information. It reversed that policy after it disclosed in a report to Congress a March 6, 2006, spill of 35 liters of highly enriched uranium at NFS.

Two of the reports discuss events related to that spill but do not shed much new light on it. Another document details a fire in an off-gas system on July 27, 2004, that led to a small flame inside a ventilated containment for "several" minutes before it was extinguished. There was some damage but no injuries.

The apparent loss in 2005 of a 55-gallon drum of thorium shavings that contained 10 kilograms of natural thorium was the subject of another report. NFS had shipped the material to another company and concluded it subsequently had been lost. NFS later learned the package of thorium had been found, something the FBI confirmed, and requested that its earlier notification be retracted.

"Most of these are safety-related," Erwin resident Barbara O'Neal said. "That's a concern."

Particularly, she was worried about subjects raised in the reports, such as criticality issues, the fire, and two incidents of a supervisor not complying with fitness for duty regulations involving drugs and alcohol.

NFS spokesman Tony Treadway said the company has addressed the issues raised in the reports or is taking care of them. He said these incidents came at a time when NFS was engaged in starting up the Blended Low Enriched Uranium project. The company now has new senior management, primarily General Manager Tim Lindstrom, and is

focused on safety at the plant, he said.

NFS on May 16 submitted to the NRC an action plan that was developed in response to a \$1 million report from the company's Safety Culture Board of Advisers. NFS had to conduct a safety assessment as part of a confirmatory order NFS and the NRC signed in 2007 after the federal agency found multiple violations of the company's license in 2005 and 2006.

The plan, preliminary details of which were divulged in April, called for spending several million dollars on infrastructure and maintenance improvements. Among the expenses are additional automation to decrease the potential for human error with

equipment. Other components are the hiring of new training and oversight personnel to ensure safety compliance and improvements to the wastewater treatment and maintenance facilities.

Treadway said NFS has not heard back from the NRC whether the plan will be accepted.

NFS has a goal of becoming the best in the nuclear industry in safety and regulatory compliance by 2011.

"The company is already experiencing measurable improvements in enhanced safety culture," Treadway said in a statement. "Communications between workers and management in both directions regarding priorities and concerns has improved sig-

nificantly, and employees are proactively involved in early issue identification to improve worker safety."

"It seems to me they may have a good safety culture plan on paper, but is it working?" O'Neal asked.

THE ERWIN RECORD
JULY 1, 2008, PAGE 4A

LETTERS TO THE EDITOR: IN YOUR WORDS

Notice, please!

To the editor,

On Thursday, June 26, Nuclear Fuel Services had a drill for its security.

While we appreciate the security that is provided for the plant, this is usually

public knowledge, newspaper and radio, but we heard nothing about last night's drill.

We saw a van slow down and stop in front of our house. Five men got out, some in camo, some in black, all with rifles. Here it is, rainy and

dusk, dark. This was very scary and upsetting.

We didn't know if this was real or a drill. We contacted the Unicoi County Sheriff's Department, and we were told us it was a drill. Whoever is over security, please let us living close to NFS on

Carolina Avenue know of your drill dates and times. There are several elderly people living here, and we don't expect to see men running through our yards with rifles.

**Dot Webb,
Erwin**

Wednesday
June 18, 2008

Section B

Officials says NFS not sold

■ CEO says there is no signed agreement with another firm.

By JIM WOZNIAK

Erwin Bureau Chief

jwozniak@johnsoncitypress.com

ERWIN — A rumor Nuclear Fuel Services has been sold is circulating, but the company's president and chief executive officer said that is not the case.

The rumor first surfaced on Monday, and Erwin resident Kathy Thornberry cited it Tuesday during a talk by Unicoi County Schools Director Denise Brown on the proposed middle school.

NFS said in August that it was "reviewing strategic alternatives that could lead to a possible sale of the company." At the time, spokesman Tony Treadway estimated the process would take six months to a year.

"It hasn't been sold right now," President and CEO Dwight Ferguson said Tuesday. "We're still in the process, but there isn't anything (to report). And whether there will be, it's still hard to tell."

NFS makes fuel for the Navy and converts highly-enriched uranium to a low-enriched form of the chemical. The company also has worked on a number of off-site initiatives, such as the mixed-oxide program at Savannah River. It also is working on other projects, including an advanced fuel development laboratory that would take research on new fuels into the pilot development phase.

Asked whether a preliminary agreement had been reached on the sale of NFS with the details still being ironed out, Ferguson said he could not respond to that. He said NFS is still in the process of selling.

"We obviously have been working on it for quite a number of months, almost a year," he said. "It's moving, but it's not there yet."

He said there is no signed sales agreement, the first step in the process. That is followed by a transfer of NFS' license with the Nuclear Regulatory Commission and ensuring the deal has support from naval reactors.

Monday's rumor was that the naval fuel component of NFS had been sold to Babcock & Wilcox and the conversion of highly-enriched uranium had been sold to Westinghouse.

"I can't comment on who or what," Ferguson said. "There's always a rumor going around."

"We've made no secret we're trying to sell it. We're well into the process, but we don't have a signed agree-

ment. There's still a number of hoops to go through before we could get there. Even if we get a signed agreement, it still could go off track."

Treadway had a similar message Tuesday, saying he had not

been told the company was sold. Once NFS has reached an agreement with another company, he said he would be told about it.

"As far as I know, there's no official word on anything," he said. "Anything short of official is speculation, and I can't do that."

NFS to be sold

Deal to require regulatory approval; purchaser says closing not planned, layoffs not expected

By JIM WOZNIAK

Erwin Bureau Chief

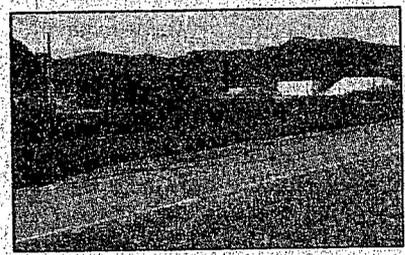
jwozniak@johnsoncitypress.com

ERWIN — Nuclear Fuel Services, which manufactures fuel for the Navy and converts high-enriched uranium to a low-enriched form for a nuclear power plant in Alabama, has reached an agreement to sell to

an affiliate of Babcock & Wilcox, the companies said Monday.

The deal, announced in the late afternoon, will put NFS in the hands of NOG-Erwin Holdings Inc. NFS employees were informed of the sale at 4 p.m., about an hour after the news was delivered to a variety of public officials in the community.

► See NFS, Page 7A



Jim Wozniak/Johnson City Press

Nuclear Fuel Services in Erwin

◀ Continued from Page 1A

Babcock & Wilcox declined to divulge the purchase price and other details of the deal. The two sides are working to finalize the purchase by the end of the year but need to obtain regulatory approval from the government and resolve other closing-related issues first.

"NFS is a great addition to the B&W portfolio of businesses, complementing the products and services we currently provide," John A. Fees, B&W chief executive officer, said in a statement. "B&W and NFS have been major contributors in both the government and commercial nuclear industries for the past five decades. This acquisition better aligns both companies in delivering the future applications of nuclear energy."

As for NFS, Chief Executive Officer Dwight Ferguson said in the same statement, "This partnership expands NFS' ability to provide enhanced services to our customers, adding greater value to our diverse stakeholders. NFS has worked alongside B&W for many years.

"We are pleased to add our capabilities to those of the B&W group of companies and believe this will allow NFS to better leverage the growth opportunities that are in today's market for the Erwin plant."

Among the issues B&W addressed Monday is that it does not plan to close the NFS facility and will continue current activities there. No layoffs are antici-

pated, and no changes will be made to the union contracts. It is unclear whether the facility here will continue to be known as NFS.

"One of the reasons for our acquisition of NFS is the ability to capitalize on our combined expertise, allowing us to grow the business and elevate our service to the customers," B&W said in a question-and-answer document Monday.

B&W would not comment on changes in management structure, but Erwin Mayor Brushy Lewis said Ferguson had previously told him he was going to retire in April. NFS spokesman Tony Treadway confirmed that and said Ferguson would stay on as CEO until then or until a new leader is appointed.

B&W might be better known in the region as BWXT, a competitor of NFS, but Babcock spokesman Steve Stultz said the company no longer uses that name.

NFS, which has operated in Erwin since 1957, began exploring a possible sale a year ago. It is the largest employer in Unicoi County with about 740 workers, with more than 300 being members of United Steelworkers, Local 9-677. The company's payroll in 2005 was \$48 million.

B&W is a subsidiary of McDermott International, which bought the company in the late 1970s. B&W, which has about 12,000 employees worldwide, is a publicly traded company on the New York Stock Exchange through McDermott, which has 17,000 workers in the world.

Babcock & Wilcox, an oper-

ating group of McDermott International Inc., works in advanced energy technology innovation and service, primarily in nuclear and fossil power. It has competed against NFS for Navy contracts. B&W said NFS' bidding success "enhanced its strategic value" and the new owner hopes the two companies' combined resources will help give B&W a "more formidable presence" in the Department of Energy service market.

Lewis, an NFS retiree, and Unicoi County Mayor Greg Lynch were comfortable with the sale.

"I think it's a good fit," Lewis said. "And it's a huge company. They've got a lot of assets. In case they want to do something else at the plant out there, they've got the money to do it with now. I think it'll be great for Erwin.

"It sounds like a good thing," Lynch said. "I feel pretty comfortable that they'll keep their operations pretty well intact or possibly even expand in some areas. Of course, they're going to be owned by a huge corporation, and things may be moving out and moving in, but I believe they're going to work with us well. I wouldn't say I'm excited, but I feel pretty comfortable that it's going to hopefully be status quo out there."

Representatives of B&W are expected to come to Erwin soon, but the agenda is uncertain, Stultz said.

NFS sold to Va. company

By Mark A. Stevens

Publisher • mstevens@erwinrecord.net

Nuclear Fuel Services Inc., a five-decade industrial institution in Erwin, has been sold to Lynchburg, Va.-based Babcock & Wilcox Co., a subsidiary of McDermott International Inc.

It was announced Monday that B&W has entered into a definitive agreement to acquire NFS.

An affiliate of B&W - Nuclear Operations Group - will be the actual purchaser of NFS, and the company will be operated under NOG-Erwin Holdings Inc.

"NFS is a great addition to the B&W portfolio of businesses, complementing the products and services we currently provide," said B&W Chief Executive Officer John A. Fees. "B&W and NFS have been major contributors in both the government and

commercial nuclear industries for the past five decades.

"This acquisition better aligns both companies in delivering the future applications of nuclear energy."

In a question-and-answer sheet that accompanied a news release, B&W said it had no plans to close the NFS facility and did not anticipate any layoffs.

NFS announced several months ago that a sale of the company was possible.

On Monday, NFS Chief Executive Officer and President Dwight Ferguson said, "This partnership expands NFS' ability to provide enhanced service to our customers, adding greater value to our diverse stakeholders. NFS has worked alongside B&W for many years. We are pleased to add our capabilities to those of the B&W group of companies and believe this

will allow NFS to better leverage the growth opportunities that are in today's market for the Erwin Plant."

Fees said the combined expertise of NFS and B&W, which have for many years been strong competitors for contracts and bids, should enhance opportunities for business growth.

"Moving forward," he said, "B&W's continuous improvement culture and proven safe conduct of operations will support and enhance NFS' regulatory performance initiatives."

B&W plans to continue existing activities at the Erwin, Tenn., facility. It was not clear if the plant would still operate under the NFS name.

The transaction is contingent upon obtaining regulatory approvals and satisfying other closing conditions. The transaction is expected to be completed by the end of 2008. Details of the financial terms will not be disclosed.

Citing that the deal was still in the "acquisition phase," B&W said there would be no comment on the future of the existing NFS management team.

"It is not appropriate to speculate on organizational issues at this time," the company was quoted in press material. "This is a significant investment for B&W, and we have fiduciary responsibility to our shareholders, which will dictate the presence of senior B&W executives at NFS after the closing."

The company said there are no plans to move any of the Erwin-based uranium processing operations, and there will be no changes to union contracts already in place for employees.

The press material also said B&W plans to be involved, like NFS has been, in community stewardship, calling it a core value that company adheres to at all its locations.

"We will uphold that value in the Erwin community," the press material said.

Several government approvals, both Fed-

ERWIN RECORD

AUG 12, 2008

PAGE 1A & 7A

eral and State, will be needed before the deal will be complete.

The Nuclear Regulatory Commission and the U.S. Department of Justice will weigh in on the sale.

B&W does not expect the merging of the two companies to raise any antitrust problems.

The company said the acquisition supports its strategic goal of being a leading provider of nuclear manufacturing and service businesses for government and commercial markets.

NFS Spokesman Tony Treadway said company officials met with community leaders Monday to inform them of the pending acquisition.

Company officials informed Congressional leaders, as well as state senators and representatives, on Monday through a conference telephone call.

Erwin Mayor Brushy Lewis, County Mayor Greg Lynch, Sheriff Kent Harris and Economic Development Board Executive Director Doris Hensley were invited to a 3 p.m. meet-

ing, where they were informed of the acquisition.

Director of Schools Denise Brown and Unicoi Mayor Johnny Lynch were also invited but could not attend.

NFS employees were informed at 4 p.m.

"It wasn't a huge surprise to employees because B&W had been in the plant many times doing due diligence," Treadway said.

Mayor Lewis called B&W a "good company, a real huge company."

"We think if they were going to sale, this is the best fit they could have gotten," Lewis said. "I know some people who work up (at B&W), and they say it's a very good company to work for."

The company that is now NFS opened in Erwin in August of 1957 as Davison Chemical.

Mayor Lewis was employed by the company from Jan. 26, 1959, until his retirement on Jan. 1, 2002.

"Over the years, it's always been a good company for Erwin," the mayor said.

Erwin Citizens Awareness Network
P. O. Box 1151
Erwin, TN 37650

(ENCLOSURE 6)

May 16, 2008

Mr. William Tobey
Deputy Administrator for Nonproliferation
National Nuclear Security Administration
Department of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

SUBJECT: DOE/EIS-0240-SA1, Disposal of Surplus Highly Enriched Uranium

Dear Mr. Tobey:

The purpose of this letter is to let you know that (1) we have had no follow-up from your representatives who came to Erwin, Tennessee on April 2, 2008 for a public meeting regarding DOE/EIS-0240-SA1, and (2) we want a comprehensive health assessment, and (3) Erwin needs a proper EIS done on the disposition of surplus highly enriched uranium.

The Erwin Citizens Awareness Network is not pleased with DOE's supplemental analysis of the program for disposing of surplus weapons-grade uranium. We voiced that opinion publicly to DOE's representatives and the NRC. They did not appear to really care stating something to the effect "we're sorry you don't agree with us." That is an understatement.

If Nuclear Fuel Services, Inc., Areva, and Studsvik are so important to NNSA (DOE), then we want you to provide the following to this community:

(1) An indepth comprehensive health assessment funded by your organization and conducted by a local group that we trust. This study should examine radionuclides in our air, water, and soil, not just volatile organic compounds as was done by the CDC's, ATSDR. We suggest East Tennessee State University to head the study. The study should develop primary data on all health impacts -- not just latent cancer fatalities -- from the emissions and discharges of Nuclear Fuel Services, Inc., Areva, Studsvik, and any other organization or business operating in conjunction with them and handling radioactive materials.

(2) A proper Environmental Impact Statement on the disposal of surplus highly enriched uranium in regards to Nuclear Fuel Services, Inc. Your NNSA and SAIC representatives admitted to lots of mistakes in the supplemental analysis. That is reason enough to redo the document, do it properly, and for public comment.

Please respond to address above. It would also be appreciated if you would send a copy to our Mayors. Their addresses are included in the copy furnished portion of this letter.

Respectfully,

Christa Tipton
Barbara Cooney

for Erwin Citizens Awareness Network

Copies Furnished:

Honorable John D. Dingell
Chairman, Committee on Energy and Commerce
U. S. House of Representatives
2328 Rayburn House Office Building
Washington, D. C. 20515

Honorable Bart Stupak
Committee on Energy and Commerce
Subcommittee on Oversight and Investigations
2125 Rayburn House Office Building
Washington, D.C. 20515

Honorable Gregg Lynch
Mayor of Unicoi County
P. O. Box 169
Erwin, TN 37650

Honorable William Don Lewis
Mayor, Town of Erwin
P. O. Box 59
Erwin, TN 37650

Honorable Johnny Lynch
Mayor, Town of Unicoi
P. O. Box 39
Unicoi, TN 37692

NFS – Erwin Site
2007 Independent Safety Culture Assessment
RESULTS REPORT—February 16, 2008
EXCERPTS

Decision Making: The site does not consistently meet regulatory expectations with respect to conservatism in decision making. In this regard the SCUBA Team has concluded that:

- Examples exist where the process was hurried or shortcuts were taken—particularly when continued production was at stake.
- NFS does not have a systematic, rigorous and formalized system for making operational decisions when risk-significant or safety-significant issues arise.
- Decisions are not consistently developed with the requisite degree of conservatism, particularly when a potential for personal injury is involved.
- **Communication of the bases for key decisions affecting safety is in many instances untimely, insufficient or lacking. (p.24)**
- **NFS lacks an appropriate focus on conservatism when making decisions. Too frequently, operations focus has come to be interpreted as production focus. The basic premise for going forward with any safety-significant or risk-significant activity should be that it has been shown it is safe to proceed as planned, rather than it is acceptable to proceed unless it can be proven it is unsafe to do so. (p. 25)** Reasons for significant decisions related to nuclear safety and safe facility operations are not effectively communicated to the workforce by management.

Personnel Interviews, Behavioral Observations, and Documentation Reviews: Some examples include—

- The site lacks a procedure that defines the operational decision-making process when risk-significant or safety-significant issues arise.
- **There are occasions when non-conservative decisions are made in the field in order to allow continued production.**
- **A recent decision, made on the part of a fuel area supervisor, was to continue a production run although he knew there was uncertainty as to whether there was a violation of operating procedures.** The motivation was to avoid jeopardizing the production run and the resultant loss of production.
- Information obtained from employee interviews indicates that employees rarely understand the basis for decisions involving risk-significant or safety-significant situations. This is due to the lack

A specific example is the venture scrubber in the fuel area that requires operators to make manual caustic additions for pH control because the automated system is not functional. This situation has existed so long the operating procedure has been modified to make the manual addition process the standard mode of operation. The original operating procedure only allowed manual additions for "off-normal" conditions." **This is clearly a case where industrial safety margin has been sacrificed in that operators must manually handle hazardous chemicals, and administrative controls have replaced engineered controls.**

✓ **The SCUBA Team has observed degraded conditions, some of which create industrial/personnel safety risk and some of which create risk to continued productions. An example of the former is the catastrophic failure of the waste water filter press, while an example of the latter is the HVAC fan system that services the MAA. In all cases, tolerance of these degraded conditions reinforce slower than desired management standards and contributes to a poor value system that has the potential to carry over into the nuclear safety culture. The SCUBA Team has observed:**

- Recurring equipment problems that have not been corrected in a timely manner, such as the false alarms that have plagued the criticality alarm system.
- Equipment problems that have become accepted on the basis of a "run to failure" philosophy, such as the frequent calciner high pressure interlock shutdowns in the fuel recycle area (approximately one week.)
- Numerous plant infrastructure needs include roof replacements, HVAC system component replacements, selective process equipment replacements, paving, etc. (p.32)

NFS developed an infrastructure Improvement Plan in August 2007 to aid in the development of capital budgets. The plan identified a long list of problems that need to be fixed. A key issue is prioritizing this list so that degraded conditions including security, nuclear safety, personnel safety, and production capability are addressed in a timely manner commensurate with risk. It will also be necessary to ensure that engineering resources are available to execute this plan. This will require a planned approach that will likely include:

- Increasing the project engineering and processing staffs
- Freeing up process engineers to focus on operations-related activities
- Establishing relationships with larger contractors and constructors to facilitate execution of major projects

Based on the integration of all sources of assessment input, the SCUBA Team concluded that several other key NFS program, processes and functions needed to support a strong safety culture are not sufficiently staffed for success or to meet regulatory expectations. Additional resources will be needed to effectively implement several new programs, processes or functions designed to improve both safety culture and safety performance. **NFS has a reactive approach to preventive maintenance and tends to operate equipment until it fails.** (p. 33)

- During maintenance of a scrubber assembly, several procedural violations, procedural omissions, and lapses in safety behavior were observed involving radiological safety and industrial safety
- After a scrubber chemical addition system failed, the chemicals were added manually via an open panel in the scrubber as a long term alternative to correcting the deficiencies of the addition system. These types of workarounds undermine procedural compliance. (46)

Based on the information presented above, it is the SCUBA Team's conclusion that organizational standards are principally focused on getting tasks completed to support production. There is inconsistent ownership and accountability for and reinforcement of procedural compliance in comparison to the focus on production. These behaviors reinforce the organizational perception that the current procedural compliance performance level is acceptable. Interim compensatory measures are needed to effect an immediate change in organizational focus and performance related to procedural adherence. **Sufficient and appropriate resources, with adequate time and focus, will be required to change the existing culture.** (p. 46)

Corrective Action Program: The Corrective Action Program (CAP) execution lacks rigor and insufficient management oversight and control. The effectiveness and timeliness of CAP investigations, corrective actions, and common cause analyses is lacking.

Problem Identification Reporting and Correction System (PIRCS) is not utilized as the only method and central repository for issue identification and resolution, a practice which is inconsistent with most nuclear industry corrective action programs. NFS needs to clearly define the types of issues that are required to be processed through the CAP using PIRCS. PIRCS is not currently being used to record every issue or problem that is identified at the NFS-Erwin site. (p. 49)

NFS needs to fully convert the commitment tracking process to the PIRCS system as intended. There are currently multiple processes, and unclear ownership for effectiveness of corrective actions. This diffusion of responsibility provides the opportunity for administrative error and could lead to an inadvertent lapse in regulatory compliance. The current commitment approval process does not systematically evaluate the effectiveness of corrective actions taken and allows commitments to be closed when work is merely scheduled, not completed. (p. 51)

Personnel Interviews, Behavioral Observations and Documentation Reviews: PIRCS Quality and Timeliness Issues: The Vice-President of Safety and Regulatory is responsible for assigning all Investigation Team Leaders, and Vice-Presidents must approve non-QA root cause analyses in their area of responsibility, per NFS-GH-922. **Root cause analysis training has not been systematically administered in the past ten years; and there are no annual or bi-annual re-qualification requirements for analysts or reviewers. No formal training is offered relative to the conduct of apparent cause evaluations.** The lack of periodic training on root cause analysis techniques limits effectiveness of this management oversight.

The CAP has not been effective in applying the corrective action needed to reverse adverse trends associated with safety-related issues. There are recurring issues associated with production-related components, involving business risk and the potential for personal injury.

- ✓ The failure to fix the automated caustic addition system on the MAA venture scrubber requires operators to manually handle hazardous materials on a regular basis – a practice that a number of members of management consider unnecessarily hazardous.
- ✓ A second example is the decision to cancel installation of a new wastewater filter press because an alternative solidification process supposedly made component replacement unnecessary. **The old press was run to catastrophic failure, and could have resulted in a serious, if not fatal, injury.** Again, there were members of management who considered the operation hazardous enough to warn operations personnel to stay away from the press when in operation.
- ✓ The site lacks a comprehensive self assessment tool, and the CAP has not received a self-assessment that would meet industry standards.
- ✓ Two commitments made to the NRC were overdue for completion until the due dates were successfully re-negotiated. The centrifuge U-AI bowl wash procedure and the U-Metal process were scheduled as pilots for full incorporation into the Configuration Management (CM) Program in the second and third quarters of 2007, respectively. The CM Specialist is actively working on both, but the site has taken the position that scheduled dates for these written commitments were only targets. Neither is yet complete although the NRC has subsequently agreed to extend the due dates into 2008.
- ✓ There are occasions when PIRCS commitments are closed to other commitments, with neither resulting in definitive action . (Problem Reports 3246, 4716, and 4865) This practice is considered to be unacceptable and is inconsistent with industry practice.
- ✓ Some PIRCS items that should be quality records (e.g., those pertaining to corrective actions following the BPF spill) were resolved by using informal memoranda or recorded in e-mail traffic. (Problem Reports 3237, 3292 and 3293.) (p.55-56)

Issue Trending: Trend data is available in paper form, but is not correlated in any systematic fashion to allow for intervention prior to a system fault. Procedure NFS-GH-56 refers. **Stated another way, Safety Related Equipment (SRE) and Items Relied on for Safety (IROFS) are run to failure. (p. 57)**

Operating Experience: The SCUBA Team has concluded that NFS does not meet regulatory expectations related to this Safety Component. NFS has no formal written internal or external Operating Experience (OE) program. With respect to use of internal operating experience, there have been ad hoc responses to significant or recurring events, but these tend to be narrowly focused. Examples include repetitive Radiation Work Permit (RWP) violations in 2005, a design problem relating to Nuclear Criticality Safety (NCS) in 2005, the March 6, 2006 spill, and the filter press event in 2007. NFS currently does not have a systematic, thorough and formal program/process in place for obtaining, evaluating and acting upon external operating experience. (p. 58)

Personnel Interviews, Behavioral Observations and Documentation Reviews: SCUBA interviews and procedure reviews indicate there is no formal written Operating Experience program at NFS, which at least partially explains why this Safety Component is not well understood throughout the organization. Some of the following information provides additional insights into NFS-Erwin processes related to OE:

- There is no systematic review of NRC inspection reports to identify trends other than numbers of violations.
- NFS uses the PIRCS system to collect internal operating experience from incidents and events. This process is neither systematic nor consistently used; events tend to be documented in isolation. "Similar Events" shown in PIRCS are rarely related. Until recently, looking for root causes did not consistently receive a high priority. Common cause investigations are inconsistent and not available yet in PIRCS options (p. 60)
- **Pre-job briefings are often cursory and provide little opportunity to communicate operating experience. By virtue of the recent initiation of human performance skills training, it is reasonable to presume this practice does not currently exist at NFS.**
- There has been no apparent attempt to incorporate Operating Experience (OE) into pre-job briefings, as is the standard in commercial nuclear power.
- **There is an underlying concern that some of the pitfalls encountered during the design and installation of the BLEU Processing Facility are still in existence as the Reliable Fuel Supply and Commercial Development Line projects near the same point in their design lives.** There has not been an effectiveness review conducted or a significant effort made to advertise lessons learned and conservatism applied from previous projects. The discussion at some planning sessions infers this doubt exists among senior managers. (p. 61)

Environment for Raising Concerns: In this regard, the SCUBA Team has concluded that: **The SCUBA assessment identified significant gaps between current NFS standards and practices and those in the nuclear power industry.** The trend seemed to rest on an absence of negative trend information instead of the presence of positive indicators. (p. 74)

Personnel Interviews, Behavioral Observation and Documentation Reviews:

- Offers of the opportunity for truly open and honest debate are viewed with skepticism by some employees.
- **In particular, reporting issues that pose a threat to continued operations or production are viewed as probable triggers for a negative management response. Some employees report signs of management anger or irritation when production is jeopardized. They cited examples of raising issues that affect production and a negative consequence (e.g., assignment of unpleasant work, lack of opportunity or promotion, etc.) for the individual viewed as "stopping production" and view this as an example of management saying one thing (safety over production), but signaling through their behaviors the real priority is different.**

- Alternate reporting processes are available at NFS. However, an **employee seeking confidentiality must contact the company's General Counsel. Interviewees said they would be willing to use that avenue if it was important enough, but expressed reluctance to go that high with a minor problem; they would just let it go. There have been only two instances of employees using that venue in the last two years. That is a statistical anomaly, compared to the number of confidential concerns received by the average Employee Concerns Program (ECP) in the nuclear power industry.**
- The lack of a truly independent reporting process (like the industry standard ECP model) may be a barrier to reporting certain kinds of relationship-based concerns, because the current reporting methods and alternatives are perceived as too public, too slow, or not sufficiently independent.
- Interviews with NRC Residents indicate the regulator has a high level of confidence in employee willingness to bring issues and concerns to their attention and attribute the low numbers of NRC allegations to the fact that NFS management responds well to informal discussion on employee concerns relayed by the Resident Inspectors. Resident Inspectors report no signs of reluctance or need for confidentiality on the part of NFS employees when it comes to speaking with the NRC. It is their view that employees clearly understand their rights and protections under the Whistleblower Act and employee interviews confirm this. (72-74)

Preventing, Detecting and Mitigating Perceptions of Retaliation: The SCUBA Team concluded this Safety Culture Components meets minimum regulatory expectations. NFS does not have sufficient policy guidance or demonstrate a proactive approach to preventing, detecting, and mitigating perceptions of retaliation. Employees receive some training on company expectations and available reporting processes. Discrimination claims are investigated, primarily by Human Resources (HR.) Union leadership participates in discipline decisions (above a certain level) affecting bargaining unit employees. Management administrative actions (adverse performance evaluations, demotions, transfers, promotions) are not routinely reviewed for potential chilling effects. The company does not have processes in place to evaluate and mitigate other actions and decisions (work assignments, changes to work or holiday routine, contractor decisions, etc) that have the potential to create the perception of retaliation. (p. 75)

Personnel Interviews, Behavioral Observations and Documentation Reviews: The SCUBA Team gained significant insights during interviews, observations, and documentation reviews: Responsibility for retaliation claims resides in HR. Some employees view this as a potential conflict of interest. Employees who lack confidence in HR's investigative performance may use the site General Counsel instead. This option is not widely understood, nor is it used with any frequency. Investigations do not always take place in a timely manner; there is no target time frame for investigations to be completed, as is the industry norm. Investigator training requirements are not established and investigative report quality is inconsistent. Guidance on specific investigation requirements (e.g., investigation plan, expert assistance, interview outlines) is non-existent. Feedback to employees is inconsistent and there is no process for tracking corrective actions or verifying their effectiveness. (p. 77) Interviews indicate a low level of management self-awareness when it comes to behaviors that could have a potentially chilling effect. Interviews also indicate employees have very low recognition/recall of attempts by management to mitigate chilling events.

Some employees perceive that negative management reactions (and, in some instances, retaliation) have occurred when issues or concerns that had the potential to interrupt production were raised. (p. 77-78)

Accountability: Performance is considered to be deficient with respect to commercial nuclear power plant industry best practices. It does not meet regulatory expectations in that accountability has not been systematically and consistently reinforced at the workforce, supervisor, or management levels. This conclusion is based on a number of significant deficiencies noted in NFS's accountability-related management practices. Historically, NFS management has not consistently demonstrated and promoted a questioning attitude. As a result, there is an embedded reluctance to raise issues or concerns that could potentially impact production or key organizational objectives that must be overcome and reversed. *A key factor seems to be the continuing perception that the burden of proof rests with the individual raising a concern or issue.* **Management ownership and accountability for regulatory commitments is deficient.** Follow-through to assure effectiveness of corrective actions occurs infrequently. Management does not consistently model high-accountability behaviors. Assignment of single point ownership and accountability is not an institutionalized organizational practice. (p. 79) This cultural attribute received one of the five lowest NFS-Erwin Site Composite numerical survey ratings. (p. 81)

Personnel Interviews, Behavioral Observations and Documentation: There are several specific concerns regarding (1) roles and responsibilities, and (2) management's reinforcement of safety standards and safety-related behaviors as an overriding priority. Management does not consistently exhibit or reinforce a questioning attitude. Most employees indicated they would always raise a concern if they felt they were dealing with an issue that presented an "imminent danger" to an individual or the organization. **Many employees, including members of management, expressed reluctance to raise a concern when confronted with an issue that presented the "potential for a safety problem."** This reluctance arose from the concern they might not be able to defend their position. **This perspective is reinforced by the observation that management will frequently proceed with a course of action unless it can be proven to be unsafe, as opposed to proceeding only if it can be proven that it is safe.** Management ownership and accountability for regulatory commitments is deficient. **There is minimal management oversight and control to assure corrective actions are completed in a high quality and timely manner, and effectiveness reviews are not systematically performed.** First line supervision and the training organization have a significant presence on the shop floor-particularly in the HEU areas. Their presence provides some reinforcement for the message that safety is an important priority. **However, most supervisors are much more production focused than safety focused. This leads to the perception held by some employees that production is more important than safety and undermines individual safety focus and accountability for same.** (p. 82)

Examples can be found where supervisors and/or managers proceed without understanding procedural requirements in response to perceived production pressures. There are also examples where management does not consistently follow administrative procedures. **The organization is extremely tolerant of degraded equipment/conditions and frequently develops workarounds to deal with them.** Many of these workarounds become formalized (via changes in operating procedures) in order to avoid

procedural non-compliance. The inconsistency between these practices and management statements that safety is the organization's overriding priority is not lost on the work force. **The message is that management does not hold itself accountable for fixing equipment problems. Vertical communication within the organization is poor. There is a tendency to communicate an issue once or twice and assume that communication will cascade throughout the organization without any loss of content or impact. As a result, many employees do not understand where the organization is headed from a safety perspective or why, thus undermining individual employee ownership and accountability.** NFS does not have an active formal performance management system for salaried or hourly employees. Performance objectives and reviews, and the associated rewards and sanctions, are not utilized to reinforce safety objectives or requirements. (p. 83) Accountability has not been systematically and consistently reinforced at the workforce, supervisor, or management levels. (p. 84)

Continuous Learning Environment: The Site does not meet regulatory expectations in that the organization is insular and has a poor frame of reference with regard to industry standards and best practices. NFS management does not sufficiently value opinions and suggestions from the workforce (particularly from shop-floor workers) to resolve problems and improve performance. There is variability between the work practice taught in the classroom and those observed at the work site once the technicians are qualified and comfortable with their job. On the job experience is allowed to replace procedural reference and this practice goes uncorrected by supervisors. The site administers an adequate "just in time" training program. There is essentially no professional development program for soft skills and leadership training. (p. 85) **NFS has developed a frame of reference that is based primarily upon its own experience as opposed to one based upon current nuclear industry standards and best practices.** This is largely due to organizational insularity, which appears to have developed as a result of the organizations sense of the uniqueness of its operations. (p. 86) Leadership skills at NFS have been suborned to technical competence and there is no current training program to address this gap. (p. 87)

Personnel Interviews, Behavioral Observations and Documentation Reviews: The SCUBA Team intended to monitor management meetings held to review progress against established standards and performance indicators. Such meetings are not held and performance indicators, though available within each functional area, are not used strategically to improve long-term performance against industry standards or close gaps to excellence as defined by NFS. The available tools are used to track production progress instead. Survey results and personnel interviews reveal a sense of frustration, particularly among the craftsmen, that opinions and suggestions to resolve problems have been neither solicited nor entertained by NFS-Erwin leadership. (p. 89)

Organizational Change Management: The SCUBA Team has concluded that Organizational Change Management does not meet regulatory expectations. NFS does not have a formal process to pre-identify and manage the safety impact of major change in organizational structures, organizational functions, leadership, policies, programs, and resources. No documents, standards/expectations, tools, or training are available with respect to Organizational Change Management; thus, there is no guidance as to what changes should be evaluated, or how these evaluations should be performed. Failure to manage the

safety-related impacts associated with organizational change can pose a risk to regulatory compliance, several examples of which were observed by the SCUBA Team. NFS does not have a formal organizational change management program. **Changes are not formally reviewed for potential safety or resource implications.** Major changes are not consistently or effectively communicated throughout the organization. **This safety culture component does not meet regulatory expectations, and is considered to be deficient when compared to industry standards. (p. 91)**

Safety Policies: *Personnel Interviews, Behavioral Observations and Documentation Reviews:* As discussed in other Safety Culture Component Sections of this Report, the SCUBA Team determined that:

The NFS organization has a number of weaknesses in its safety culture that, unless effectively addressed, serve to undercut the values, standards and expectations set forth in "Safety Strong." Findings related to acceptance of a "meet minimal regulatory requirements" approach, tolerance of degraded conditions, weaknesses in procedural compliance, lack of thoroughness of Corrective Action Program evaluations and insufficient focus on self-assessment and the continuous improvement of organizational culture and performance are particularly important in this regard, as the underlying cultural weaknesses do not reflect or reinforce desired organizational values, standards and expectations. Effective implementation of programs, processes and functions that support the "Safety Strong" concept are adversely affected by, lack of sufficient accountability and ownership (both individual and organizational), lack of effective management oversight and lack of effective organizational change management. The key programs, processes and functions in need of particular attention are:

- Corrective Action Program
- Nuclear Oversight
- Safety Conscious Work Environment (Alternate Reporting Channels)
- Industrial/Personnel Safety. (p. 97-98)

ASSESSMENT RESULTS—ADDITIONAL SCOPE: **Notices of Violation (NRC Confirmatory Order-2/21/2007) SCUBA Team Conclusion--Area for Improvement (AFI) NFS provided minimally adequate responses to the specifics identified in the NRC violations, but did not adequately address the underlying causes and associated cultural issues. This represents a deficiency when compared to commercial nuclear power plant industry best practices. This also is indicative of an organization that is satisfied with minimum regulatory compliance. (p. 99)**

NFS COMMITMENTS OF 9/18/2006: (NRC Confirmatory Order-2/21/2007) At a management meeting with the NRC on Sept., 18, 2006, NFS committed to completing 14 action items designed to improve the Corrective Action Program (CAP). Most have been met. A few have not. The SCUBA Team concluded that NFS standards and practices for regulatory commitment closure do not meet industry best practices or regulatory expectations. In this regard: (a) Commitments should not be closed unless the action has actually been completed (that is, it is not appropriate to close a regulatory commitment to a work request.) (b) Oversight requirements are not sufficiently formalized. (c) A formal or systematic approach for reviewing the effectiveness of corrective actions taken to meet commitments does not currently exist. (d)

Accountability and ownership for the regulatory commitment control process is unclear; there is evidence of multiple procedures, some of which are inactive. (p. 100)

CONFIGURATION MANAGEMENT: (NRC Confirmatory Order-2/21/2007) The SCUBA Team has concluded the CM Program improvement initiatives are not adequately resourced to ensure that regulatory commitments will be met. This situation represents an Area for Improvement. There is sufficient document evidence to confirm the programmatic elements necessary to comply with the stated objectives of the CM program are planned and that some are in place in final form. Draft guidance document (NFS-GH-901, Configuration Management), if appropriately augmented by supporting procedures that have been concurrently developed, should support effective implementation. The governing document must be finally reviewed, approved and tested. Significant milestone events still need to be completed in an expeditious manner in order to comply with the Confirmatory Order (and attendant commitments.) The timetable for some of these commitments, specifically those associated with data entry for selected components and systems, has been eased by obtaining the NRC's concurrence to extend deadlines from 2007 to 2008. It is imperative to train and dedicate the additional personnel needed to complete the work on time. The BPF Project is scheduled for full implementation in 2008, HEU in 2009 and the entire site in 2010; **the CM Manager estimates the workload at 26 man years.**

The SCUBA Team reviewed the status of existing documentation designed to ensure it would support development of the *new Reliable Fuel Supply (RFS) facility, pending full software automation, it became apparent that program implementation is currently facing schedule challenges and requires corrective action.* (p. 101)

NFS-ERWIN SELF-ASSESSMENT OF SAFETY CULTURE (June/July 2007) The overall accuracy of the NFS SCSA was affected by the lack of an adequate frame of reference for excellence in the nuclear industry. This fact became more evident during the SCUBA Team's review of individual Safety Culture Components. It is noteworthy that the NFS SCSA was considered as not being sufficiently self-critical for the three safety components that constitute Problem Identification and Resolution (Corrective Action Program, Operating Experience, and Self and Independent Assessments.) (p. 102)

OUTLIER ORGANIZATIONS BASED ON WORKFORCE SURVEY NUMERICAL RATINGS: Based on the workforce survey results, seven individual NFS Functional Organizations were identified by SYNERGY as Priority Level 1 or 2 "organizational outliers" due to having provided low numerical ratings for key cultural metrics (i.e., Overall NSC and Overall SCWE ratings.) These organizations are:

- BLEU Complex Operations (NFS Only) – Priority Level 1
- Analytical Services – Priority Level 1
- Health Physics (including Radiation Monitoring & Nuclear Measurements) – Priority Level 1
- Transportation & Waste Management – Priority Level 1
- HEU Fuel Fuel Production – Priority Level 1
- BPF Operations – Priority Level 2
- Other Operations Support – Priority Level 2

SYNERGY indicated Priority Level 1 and 2 designations correlate to the following recommended action levels:

- ✓ Priority 1= There is a potential need to take remedial action in the immediate future.
- ✓ Priority 2= There is a potential need to take remedial action in the near – term.

The SCUBA Team conducted confidential interviews with personnel from the Priority Level 1 and 2 “outlier organizations” to determine the underlying reasons for the lower ratings provided by those organizations. These interviews revealed the following:

- Survey results and interview results were in alignment.
- There are on-going communication problems between management and employees in several of the organizations.
- There are legacy issues, e. g. the strike, that continue to influence the relationship between management and some employees.
- Excessive overtime is a concern to some employees. (NFS has implemented interim compensatory measures to address overtime issues.)
- No NSC or SCWE problems or concerns were identified as a result of the focused interviews.

Based on the above results, the SCUBA Team has concluded that no independent corrective action is required for three of the outlier organizations. The SCUBA Team recommends management take remedial action with four of these organizations to proactively surface and resolve the issues identified through the workforce survey and the personnel interviews conducted by SCUBA. (p. 103)

SCUBA TEAM FINDINGS AND RECOMMENDATIONS: The workforce survey identified a number of organizations which were outliers from either a Nuclear Safety Culture (NSC) or Safety Conscious Working Environment (SCWE) perspective, indicating a potential need for management to take action in either the near-term or immediate future. These prompted the need for the SCUBA Team to conduct personnel interviews to identify the underlying issues which led to the low survey ratings. In this regard, the SCUBA Team recommends the following.

- BLEU Complex Operations (NFS Only): **NFS and AREVA Management should meet and develop solutions to the communication problems that currently exist between AREVA management and the NFS employees at the BLEU Complex.** Details are provided in the Confidential BLEU Complex Outlier Organization Report.
- Analytical Services: Near term management intervention is required to resolve work-related and strike-related environmental issues in the Analytical Services organization. Details are provided in the Confidential Analytical Services Outlier Organizational Report.
- Health Physics Monitoring & Nuclear Measurements: **The current radiation protection program, and the associated ALARA principles, needs to be explained to the senior Radiation Technicians (RT); the RTs should explain the program to the balance of the workforce.** RTs should also take part in work planning and pre-job briefs. Details are

provided in the Confidential Health Physics Monitoring & Nuclear Measurements Outlier Organization Report.

- Transportation & Waste Management: An overtime policy needs to be developed that ensures worker hours are reasonable. **The material condition of the Waste Water facility needs to be improved and workarounds corrected.** Details are provided in the Confidential Transportation & Waste Management Outlier Organization Report.

Management should ensure that the specific concerns of the remaining outlier organizations, as identified in the workforce survey, are successfully addressed as NFS progresses in implementing its Safety Culture improvement program. (p. 104)

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(Note: This is a product of the Erwin Citizens Awareness Network, P. O. Box 1151, Erwin, TN 37650)