

March 12, 2004

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

SUBJECT: NUCLEAR FUEL SERVICES' FINAL STATUS SURVEY REPORT FOR A
SURVEY UNIT LOCATED AT THE NORTH SITE RADIOLOGICAL BURIAL
GROUND (TAC L31802)

Dear Ms. Moore:

We have completed our review of your Final Status Survey (FSS) Final Report for a survey unit located at the North Site Radiological Burial Grounds dated December 15, 2003 (Nuclear Fuel Services No. 21G-03-0282). Overall, we found this survey to be a good survey report. However, there are several items shown in the enclosure for which you should provide additional information. These items will be required should you request partial site release. Since you did not request partial site release we consider this action closed.

If you have any questions concerning this letter please contact me at (301) 415-8139 or by e-mail at mxl2@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA/

Michael A. Lamastra, Project Manager
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket 70-143
License SNM-124

Enclosure: Comments on FSS for RGB-1

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Enclosure: Comments on FSS for RGB-1

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*see previous concurrence

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OFC	FCFB		FCFB		FCFB	
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DATE	3/12/04		3/5/04		3/12/04	

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COMMENTS ON FSSR FOR RBG-1

1. Because the North Site (NS) will remain on the license for some time into the future, and the Nuclear Fuel Services (NFS) will continue to operate, and perhaps use the NS area, NFS should propose a method by which they can demonstrate compliance with release criteria at the time it releases the NS.
2. In §2.1, NFS stated that it constructed the Blended Low Enriched Uranium project in reference area; in §3.1.4, it states that if a larger sample size is needed, more samples can be taken in the reference area. NFS should verify the availability of undisturbed zones in the reference area.
3. In §3.1.5.2 NFS states Paragon Analytics analyzed control samples. NFS should verify that Paragon has a current certification for this work.
4. Subsection 3.2.3.1.3 states that NFS scanned the **accessible** land, and §4.2.1 states that NFS scanned the accessible area of RBG-1. NFS should specify what percent (or other measure) of each area it did not scan?
5. Subsections 3.1.4., 3.1.2., and 5.2.2 address isotopes not considered. We do not agree with the decision to eliminate transuranics from the sum-of-fractions (SOF) calculation and subsequent data evaluation where the collective dose was less than 10 percent of the total when it was based on the final status survey data. NUREG-1757, Volume 2, Appendix O states that "...during the characterization of a facility, if a profile contains radionuclides that collectively contribute less than 10 percent of the dose criterion, those radionuclides may be deselected from the list." Appendix O also states "In addition, the licensee should note that they are required to comply with the applicable dose criteria ... and thus the **dose contribution from the insignificant radionuclides must be accounted for** in demonstrating compliance with the dose criteria."

Using the mean pre-remediation characterization concentration for each radionuclide that was provided in Tables D-1 through D-6 of the document, an independent calculation determined the dose contribution for each radionuclide. The collective pre-remediation contribution from the transuranics was 18.5 percent. NFS should carry the final status survey transuranic data, using the modified Am-241 derived concentration guideline, through the data quality assessment (DQA) process. NFS did include an evaluation of the SOF calculation for each sample that included transuranics and Tc-99, but did not include this value in the Wilcoxon Rank Sum test. The final DQA should include the full SOF calculation because transuranics initially exceeded 10 percent of the dose and to better demonstrate that NFS has accounted for the insignificant radionuclides in demonstrating compliance. NFS should revise its report to reflect these calculations.

6. Subsection 3.2.3.3.3, page 3-18: The Type I error is not the determining factor in rejecting the null hypothesis or when to perform an elevated measurement comparison as stated. NFS should provide additional information to clarify the meaning of the second and third sentences on this page.
7. Subsection 5.2.2.7: In this section, NFS states that it ruled out all subsurface sampling because all final status survey SOFs minus the average reference area SOF was less than one. The necessity for subsurface sampling should be determined at the time of field investigations at locations where surface scans identify anomalies that required additional sampling. NFS should further explain the relevance of the statement. Also, it should specify if the potential for subsurface contamination was investigated at these types of locations (e.g., SA-10 as shown in Figure A-13).
8. Subsection 3.1.1.5, Equation 3-1 and related sample spacing determination: we note a minor discrepancy in NFS' approach for determining sample spacing for a triangular pattern. Equation 3-1 is correct for calculating the distance L , between sample locations on the X-axis. The distance between sample rows, the Y-axis, should be calculated as $0.866xL$ in accordance with MARSSIM. As laid out, both the X and Y axes are equal to L . The same comment also applies to the sample spacing calculation in §3.2.2.4.1. This comment is for consideration in future final status survey designs and does not impact the conclusion of the report.
9. Subsection 5.2.2.5 discusses the elimination of a reference area sample from the DQA so that there were an equal number of samples from the reference area and from the survey unit. Having a larger reference area data set is acceptable and even desirable. The net result is added power for the statistical test. This comment is for consideration in future final status survey data evaluations, and does not impact the conclusion of the report.