

[REDACTED]

September 15, 2005

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION CONCERNING REQUEST FOR
APPROVAL OF FINAL STATUS SURVEY METHOD FOR SUBSURFACE
SOILS (TAC L31875)

Dear Ms. Moore:

This letter is in reference to your response regarding the focus group questions, dated June 13, 2005, concerning the alternate Final Status Survey methods supporting the decommissioning of the North Site. Our review has identified that additional information is needed before final action can be taken on your request. The additional information, specified in the enclosure, should be provided within 30 days of the date of this letter. Please reference the above TAC No. in future correspondence related to this request.

If you have any questions regarding this matter, please contact me at (301) 415-7887 or via e-mail to kmr@nrc.gov.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

M. Moore

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[REDACTED]

Sincerely,

/RA/

Kevin M. Ramsey, Project Manager
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

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

Enclosure: Request for Additional Information

[REDACTED]

M. Moore

[REDACTED]

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NAME	BReilly		KRamsey		VCheney		/RA by WGleaves Acting for/ JOlivier	
DATE	09/12/05		09/13/05		09/14/05		09/15/05	

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[REDACTED]

[REDACTED]

Request for Additional Information
Nuclear Fuel Services, Inc.
Final Status Survey Methods

Performance Assessment

1. Volume Factor [REDACTED]

Provide volume factors for [REDACTED] or a basis for why they are not needed.

Surface soil derived concentration guidance levels (DCGLs) for thirteen radionuclides, [REDACTED], are specified in Table 2-1 of the Technical Basis Document entitled "Development and Application of Subsurface Soil DCGLs," dated February 2005. Volume factors for each of the radionuclides should be developed in order to derive subsurface soil DCGLs. The volume factors [REDACTED], however, were not developed. Please submit volume factors for [REDACTED] or a basis for why they are not needed.

Decommissioning

2. Use of Reference Area Data from Multiple Layers for WRS Test

Clarify the use of reference area data in the DCGL_w Statistical Compliance Test, when the tests are used for layers below the top layer of soil. If you intend to use multiple samples from the same borehole to represent the distribution for the reference area, provide justification that these multiple samples can be considered independent samples.

While the response to the focus group meeting questions (dated June 13, 2005) provides justification that reference area samples from multiple layers do not need to be weighted for the Wilcoxon Rank Sum (WRS) test comparison, it remains unclear as to how the reference data will be used in the WRS tests, especially for the combinations of layers (e.g., for the test for layers 1,2, and 3 combined). Additionally, your response explains that vertically weighting the reference data results in lower statistical power for the WRS test. The NRC staff is concerned that you may intend to use reference area data from multiple layers to represent separate data points for the WRS test. The staff understands that the data used to represent a reference area in the WRS test should be independent samples. It appears that multiple samples from the same borehole would not represent independent samples.

[REDACTED]

Enclosure

[REDACTED]

3. Determination of Reasonable Maximum Concentrations for Determining Corehole Density

Section 3.3 of proposed Appendix B, dated February 2005, describes the method proposed to adjust corehole sampling density in each survey unit to account for potential elevated areas and comply with local area average DCGLs. This discussion was expanded by the responses to the focus group meeting questions.

Provide the following information to demonstrate that the approach for estimating the "reasonable maximum concentrations" for determining corehole (i.e. borehole) density will assure adequate protection from residual radioactivity in subsurface soil:

- (a) Justification that the proposed approach to estimating "reasonable maximum concentration" provides sufficient protection for potential exposures to the residual radioactivity that exists at higher concentrations (i.e. greater than the estimated reasonable maximum concentration).

The proposed approach for estimating the "reasonable maximum concentration" for a given survey unit is based on the 90th percentile value or the mean value from the existing data for the survey unit, whichever is greater, rather than the maximum value. Concentrations higher than the mean or 90th percentile value will exist within the survey unit. But, a corehole density calculated on the mean or 90th percentile may be insufficient to locate all significant volumes of higher concentrations. While the proposed approach appears to the NRC staff to be protective primarily against potential exposures to small volumes with typical or average concentrations, it may not be protective against potential exposures to small volumes at the highest concentrations. Provide an explanation of how the approach would protect against potential exposures to the highest concentrations, including: (1) the likelihood of, and (2) the dose consequences of potential exposures to small volumes at concentrations higher than the "reasonable maximum concentration."

- (b) Justification of the appropriateness of not considering existing data from the overall area and data from historical site assessment in determining the "reasonable maximum concentration" for determining corehole sampling density.

The proposed approach for estimating the reasonable maximum concentration is based on using only existing data for the individual survey unit under consideration. The existing data for each survey unit has not been described. The lack of specificity makes it difficult for the NRC staff to determine the acceptability of the proposed approach. Characterization or remedial control survey data from nearby survey units that are generally similar in terms of contamination may provide additional, pertinent data. In addition, the historical site assessment may provide information on the origins of contaminants in the area that could assist in estimating the maximum expected concentrations. These other sources of data and information should be considered, in addition to the data for the individual survey unit, in estimating the expected maximum concentrations. Please provide justification for not considering other data from the overall area and historical site assessment in the approach for determining corehole sampling density.