

## Conference Call Summary

### Final Status Survey Report Surface Soil Characterization

#### DATE AND TIME

July 20, 2012. 1:30 PM (eastern)

#### CALL PARTICIPANTS

U.S. Nuclear Regulatory Commission (NRC)	Licensee
Christopher Ryder, NRC	Jennifer Wheeler, Nuclear Fuel Services (NFS)
Duane Schmidt, NRC	Christopher Morie, NFS
	Javid Kelly, AMEC
	Jeffrey Lively, AMEC
	Alex Lopez, AMEC

For this note, references to NFS include the contractor of NFS.

#### SUMMARY

The NRC staff stated that there is no discussion of the historical data in the March 2012 response to request for additional information (RAIs) (Ref. 1). In a 1999 characterization report of the North Site, the concentration of some hard-to-detect radionuclides (HTDs) was high. Since then, excavations have been done, but not documented for the NRC staff to review. In the final survey reports, the concentration of the HTDs is low. The NRC staff is missing an explanation of the change in the HTD concentrations.

NFS stated that the March 2012 letter is the response to the RAIs, not to the complete submittal. The report of the historical data dates back before the contractors began working for NFS. When looking at the historical data of the North Site, the reports of data that had been collected did not distinguish the reason for taking samples. Samples had a date and time, but no indication of whether the samples were taken before or after the excavation.

For the data base of the samples of the North Site, samples were evaluated based on the date, location, and elevation of the samples. Any sample that was within the volume of soil that was excavated in the North Site was removed from the data base, creating a secondary data base to represent the existing conditions at the site (i.e., after excavation). The secondary data set was entered into the Spatial Analysis and Decision Assistance (SADA) software to look for trends and hot spots. This secondary data set is what NFS considers the historical data.

NFS stated that the data on HTDs can be viewed in three ways:

- Existing surrogate method (i.e., DP method), in which case the results pass.
- Surrogate method using maximum values of surrogate ratios (i.e., worst case method), in which case the results pass.
- 10% sampling with full suite analyses (including HTDs) during final status surveys, in which case the results pass.
- Use of historical data (as described above), which also shows results pass.

Though the DP method of analysis was approved by the NRC staff, the statistical veracity of the results can be challenged.

When the worst case surrogate ratio method is implemented, the concentration of HTDs decreases. The correlation of HTDs and surrogates is low because of uncertainty. Thus, the DP method is more conservative than the worst case method.

NFS stated that the NRC staff wanted to know the concentration of HTDs across the entire North Site, changing the method to obtain spatially representative data for calculations of the HDRs. NFS stated that the use of the historical data is not appropriate because the data is not spatially representative. Some areas lack data. The spatially representative data is the correct data to use, as stated in the March 2012 response. The existing method of analysis is in the characterization work plan. Ratios for the HTDs are based on three surrogate radionuclides. Data indicated that because the concentration of the surrogate radionuclides is low, the concentration of the HTDs would also be low.

The secondary data was used to determine the number of samples that would be needed to characterize the North Site. The historical data are part of the calculations. The determined number of samples is compared to the number of samples that were taken in the final surveys.

The NRC staff stated that the response to the RAIs left them with a different impression. Questions remain, such as whether or not the secondary data set is documented. The licensee stated that the data set is documented in the characterization work plan. The work plan had been reviewed by the NRC staff. NFS is somewhat taken back that the NRC staff now has comments on the method that had been approved. The current method may not be the most rigorous scientific method, but it was nonetheless approved. NRC staff stated that NFS has not technically met the approved plan, as there is not a demonstration of a relationship between the measured and inferred (HTD) radionuclides.

The NRC staff acknowledged misunderstandings because the subject discussion is not in the March 2012 response. The report of the final surveys was reviewed, not the characterization work plan. NFS replied that they were unaware of the NRC staff's expectations.

## ACTIONS

- The NRC staff will prepare a summary of the conference call.
- The NRC staff and NFS will determine the need for a meeting to discuss the final surveys.

## PRINCIPAL CONTRIBUTOR

Christopher Ryder  
Duane Schmidt

## REFERENCES

1. Letter from M. Elliott, NFS, "Response to the Request for Additional Information Regarding Final Status Survey Report Surface Soil Characterization, Survey Units 1 and 2," March 1, 2012. ADAMS Accession Number ML12066A075.