Southeast Missouri State University
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August 16, 2010

Mr. Kevin Null
USNRC Region III
2443 Warrenville Road
Suite 210
Lisle, Illinois 60532-4352

Dear Mr. Null:

This letter is to formally communicate the results of our phone conversations regarding the request for a license amendment to our NRC license No. 24-09296-02 with respect to soil sampling near the bunker area of Magill Hall. Therefore, please find attached the responses to the NRC comments on the soil sampling component of the *Decontamination Survey Plan -- Magill and Rhodes Hall*. These comments and responses reflect our phone conversation of Aug 16, 2010.

Thanks again for your assistance to us.

Sincerely,

Walt W. Lilly
RSO

Response to NRC Comments on the Soil Survey Plan for Surface Soils Outside Magill and Rhodes Halls (Rev 1) dated July 2010

Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response
1	General	The FIDLER appears to be the instrument of choice for your scan survey, provide the information regarding the scan MDC, confirm that a 100% scan survey will be performed. If you, still wish to use a 2x2 meter, it will need to be demonstrated that it can satisfy the scan MDC.	MM	As discussed on the teleconference conducted on August 16, 2010 with Dr. Peter Lee of NRC, Southeast agrees that the FIDLER is a better instrument for detection of low energy gammas and is being planned for use on the project in addition to a NaI 2"x2" gamma scintillation detector. Southeast commits to conducting a 100% gamma walkover survey of the 24 m^2 Class 1 area being investigated adjacent to the radiological storage bunker. The gamma survey for this project will be conducted using both a NaI 2"x2" scintillation detector and a FIDLER detector.
2	General	Agree to performing biased sampling for areas that exceed your investigational level.	MM	Biased sampling will be performed for areas that exceed the investigation level during the gamma walkover survey. Also, if any sampling result exceeds the screening level DCGL, additional samples will be collected to bound the size of the area of elevated activity.
3	General	Clarify the grid structure used for survey, rectangular or triangular. Also, table indicates 9 samples, but map indicates 12, 10 systematic and 2 biased?	MM	As discussed on the teleconference referenced above, Southeast agreed with Dr. Peter Lee of NRC that samples will be collected at the samples located on a triangular grid pattern as shown on the attached figure below. The additional biased samples near the structure were planned as requested by Mr. Kevin Null of NRC.
4	General	Provide the sample procedures to be used to collect the samples, laboratory to be used to analyze the samples. The procedure should	MM	Section 2.3 in the Decontamination and Survey Plan for Magill and Rhodes Halls (last paragraph) describes that: "Survey activities will

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		have general information relating to QA, and Chain of Custody.		be conducted in accordance with standard operating procedures of Southeast and/or SAIC." Southeast will revise this section of the plan to include references to applicable SAIC QA procedures to be used during sampling projects, including chain of custody procedures. As discussed during the teleconference, Dr. Lee agreed that the analytical laboratory did not need to be included in the plan.
5	General	The proposed systematical sampling does not appear to be consistent with MARSSIN. MARSSIN uses a randomly generated starting point and sample collection points, and typically uses a triangle grid. The proposed sampling locations are only at edge of the grassy area.	PL	See response to comment #3.
6	General	The proposed scan MDC of 31.5 pCi/g is based on NaI(2x2) detector. In the survey design, NaI(2x2) and Fidler will both be used for scan. Instead of using area factor to justify 31.5 pCi/g, the scan MDC should be based on Fidler, which the scan MDC is about several pCi/g.	PL	Agree that the MDC_{Scan} for the FIDLER is probably about several pCi/g; however, there is little to no published technical information available to calculate this value. See response to comment #1.

MM: Mike McCann
PL: Peter Lee

Southeast
Missouri State University

FAX COVER SHEET

TO: Kevin Null

FAX NUMBER 630 829 9787

FROM: Walt Lilly

DATE: 8/18/10 No. of pages 4 (including cover sheet)

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Special notations: