

TELEPHONE CONVERSATION RECORD

PERSON CALLED: Dr. Walt Lily, Radiation Safety Officer
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NRC Region III, Division of Nuclear Materials Safety
Decommissioning Branch
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Date: October 10, 2006

SUBJECT: DECOMMISSIONING STAFF REVIEW COMMENTS REGARDING
SOUTHEAST MISSOURI STATE UNIVERSITY
"DECONTAMINATION AND SURVEY PLAN FOR MAGILL AND
RHODES HALLS" (Mail Control No. 315624)

On the above date, Dr. Lily was contacted and the following items were discussed.

Question One

0.21 Historical americium-241 Contamination

Discuss the University's commitment to perform characterization surveys in rooms being renovated, such that the surveys will identify and quantify the types and quantities of radiological materials found. It is understood, that americium-241 is the primary issue as a result of the past contamination incident, however, the University has been licensed for a long period of time for a large variety of radio nuclides. Therefore, since the proposed survey procedure will be used for final release of former use areas and areas impacted by the past incident, the initial investigation of these areas must include characterization surveys to identify and quantify the detected contamination.

Also, the plan should discuss release criteria for other radionuclides, which could be encountered during surveys of rooms being renovated. Appendix B-1 of NUREG 1757, volume 1 specifies screening values of acceptable release criteria. Also, for your reference NUREG/CR 5512, Vol. 3, page 5-45 @ 95%, cites an unrestricted release criteria of $2.39\text{E}+1$ dpm/100cm² for americium-241.

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Otherwise, provide the modeling data used to derive these release criteria. Regardless, of the approved release criteria, to address 10 CFR 20.1406, “minimization of contamination”, licensees typically adopt administrative release values, for example 10% of the approved release criteria.

Question Two

Regarding your proposed release criteria. After review of your RESRAD modeling information by NRC staff, we believe the proposed criteria is not sufficiently conservative to be acceptable as a general release criteria, as well as not speaking to how the University will insure releases are As Low as Reasonably Achievable (ALARA).

The University’s plan is specific to potential contamination, which may be discovered in previously inaccessible surfaces in rooms of Magill Hall. If the inaccessible areas become accessible due to the renovation, then the input parameters will be different from the current ones used to derive the release criteria. For example, when inaccessible areas become accessible, there will be a potential mechanical disturbance of the surface areas, which will significantly reduce the source lifetime from the current assumption of 5 years. The source lifetime may be reduced to one year depending on the degree of the mechanical disturbance of the surface areas, then the actual dose will be five times the current dose. The dose may be increased further if the removal fraction also increased due to the mechanical disturbance of the surface areas. Therefore, the release criteria could be well below the current value of 5676 dpm/100cm² for Am-241. Therefore, we request that you reconsider your modeling approach and provide a revised release criteria for consideration..

Also, please discuss the University actions to address ALARA. Regardless, of approved release criteria and dose, good health physics practice and ALARA encourage that whenever contamination is identified that it be removed if practical.

Question three

0.22 Previous Scoping Investigations

Please discuss those actions or findings, which would mobilize the University’s Radiation Safety staff to re-evaluate its previous scoping survey findings for ventilation and sewer discharge systems. Regardless, of past survey activities, licensees must ascertain the need for evaluation and characterization to insure past surveys are relevant and that the renovation activity will be adequately assessed. Also, scoping surveys may be of limited value, that is these surveys typically are a sampling and may not be sufficient to document a final release.

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Question four

The procedure appears to be limited to Magill and Rhodes Halls. Has the University considered using the plan as a generic procedure for any building where materials may have been used and contamination could exist?

No further items were discussed.

George M. McCann,
October 10, 2006