



**ADMINISTRATIVE RECORD
FOR THE MADISON SITE
MADISON, ILLINOIS**

**Remedial Investigation Documentation and
Feasibility Study-**

**IDNS Comments on the Draft Remedial Investigation,
Feasibility Study and Proposed Plan for the Madison
Site**



**US Army Corps
of Engineers
St. Louis District**

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

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January 11, 2000

Ms. Sharon R. Cotner
FUSRAP Program Manager
U.S. Army Corps of Engineers
St. Louis District
1222 Spruce Street
St. Louis, Missouri 63103-2833

Dear Ms. Cotner:

The Illinois Department of Nuclear Safety (Department) appreciates the opportunity to provide comments on the Regulatory Review Draft of the *Remedial Investigation Report, Feasibility Study, and Proposed Plan for the Madison Site*, dated December 1999. The report describes the investigation into remedial actions necessary to clean up residual uranium contamination associated with the Formerly Utilized Sites Remedial Action Program (FUSRAP) established by the U. S. Atomic Energy Commission, a predecessor of the U.S. Department of Energy. The U. S. Corps of Engineers (Corps) has been authorized to implement this work under the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) pursuant to Public Law 106-60. This Illinois site is presently occupied by Spectrulite Consortium, Inc. The Department offers the following comments:

1. The proposed Alternative 4 – Decontamination of Overhead Surfaces is the appropriate remedial action for the site. However, the report inappropriately applies “as low as reasonably achievable” (ALARA) as a justification to not address the contaminated areas at the high bay (45 to 60 ft.) levels. These higher levels should be decontaminated.

NRC Draft Regulatory Guide DG-4006, *Demonstrating Compliance With Radiological Criteria for License Termination*, dated August 1998, indicates that “a licensee must demonstrate that the dose criteria... have been met and must demonstrate whether it is feasible to further reduce the levels of residual radioactivity to levels below those necessary to meet the dose criteria... (ALARA)”. The Guide indicates that ALARA methods are used for determining when it is feasible to further (emphasis added) reduce concentrations of residual radioactivity to below the concentrations necessary to meet the dose criteria. ALARA analyses can not be used to eliminate contaminated areas from being remediated.



The upper levels represent nearly 50% of the contaminated areas. No data (characterization) has been collected in these areas and a basis for the assumption used to evaluate the cost and residual risk has not been demonstrated. The Department feels this area has not been adequately addressed and does not support the approach taken.

2. In regard to the future building demolition assessment, several modifications should be considered. The dose factors used were from the Concrete Recycle and Disposal scenario in NUREG 1640. The Department believes it would be more appropriate to use the Recycle of Steel Scrap dose factors in NUREG 1640 because after demolition the building material may be free released. These dose factors are nearly 14 times higher and will increase the total dose.

The report also assumes a residual activity of 1000dpm/100cm² for the remediated accessible areas and this value is used in the building demolition risk assessment. There is no information in the report describing how this level will be demonstrated. The Department recommends that the final report on remedial action include a requirement to re-assess a post-remediation demolition scenario using measured values from the cleanup activities to confirm the residual risk of future building demolition.

Other factors that should be considered involve the spread of contamination that will occur during post-remediation demolition from the contamination left on the upper areas. Additional structural materials are likely to be affected and at these residual activity levels, scrap yards will not accept these materials. Considering the current national issues being debated for release of slightly contaminated solids, the end result may be an overall increase in the volume of contaminated material to be disposed of as radioactive waste.

Finally, the demolition risk assessment assumes that water sprays and respirators will be used during demolition activities. However, once the facility has been remediated and released for unrestricted use, these controls in all likelihood will not be employed when future demolition occurs. Worker doses beyond those estimated in the report will result.

3. The multi-agency radiation survey and site investigation manual (MARSSIM) approach is acceptable; however, there are several areas in the report where the Department believes MARSSIM guidance is being mis-applied. For example, all impacted areas are required to be separated into survey units (up to 100m² for structures), and each survey unit is evaluated to determine whether the average concentration in the survey unit as a whole is below the derived concentration guideline level (DCGL) and ALARA. The upper level contaminated beams will not be addressed in this manner under the proposed plan. The Department would like to review the remedial design and final survey plan to have an opportunity to address these issues with the Corps.

Ms. Sharon R. Cotner
U.S. Army Corps of Engineers
January 11, 2000

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As an Agreement State, the Department has the authority to establish rules and regulations regarding the health and safety of the people of Illinois. The Department expects to adopt comparable standards to the NRC dose standard for decommissioning as defined in 10 CFR 20, Subpart E soon. NRC has adopted a level C capability designation for Subpart E that allows the Department to adopt a rule that achieves the same or better goal.

32 Ill. Adm. Code 330.320(d)(1)(B) requires that radioactive material licensees, prior to license termination, "Remove radioactive contamination to a level authorized in 32 Ill. Adm. Code 340.Appendix A, to the extent practicable." In addition, 32 Ill. Adm. Code 340.110(b) requires a licensee (or registrant) to maintain doses that are ALARA for workers and members of the public.

The Department expects all reasonable attempts be made to remediate all contaminated surfaces. Achieving the 32 Ill. Adm. Code.Appendix A guidance for radioactive cleanup projects in Illinois will ensure unrestricted release in the future.

I look forward to the Corps of Engineers' response to the above comments and a prudent cleanup effort at the Madison Site in Illinois. If you have specific questions, please contact Gary McCandless at (217) 782-1329.

Sincerely,


Joseph G. Klinger, Chief
Division of Radioactive Materials

cc: Paul Lake, IEPA
Spectrulite Consortium, Inc.