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MEMORANDUM FOR: R. Dale Smith, Director
Uranium Recovery Field Office, RIV

FROM: Ralph S. Heyer, Project Manager
Licensing Branch 2
Uranium Recovery Field Office, Region IV

SUBJECT: POSSIBLE APPLICATION OF EPA VICINITY PROPERTY
SUPPLEMENTAL STANDARDS TO TITLE II URANIUM MILLING
FACILITIES

Background

On November 8, 1978, Congress enacted Public Law 95-604, the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). UMTRCA required that every reasonable effort be made to "provide for stabilization, disposal, and control in a safe and environmentally sound manner of such tailings in order to prevent or minimize radon diffusion into the environment and to prevent or minimize other environmental hazards from such tailings." UMTRCA established two programs, one for inactive sites (not under license) and one for active sites (then under license). The Environmental Protection Agency (EPA) was charged with the task of developing general standards for the two programs.

The "tailings" at the inactive (Title I) uranium milling sites are defined in UMTRCA as residual radioactive materials. The program for inactive sites covers disposal of the tailings and the cleanup of onsite and offsite locations contaminated with residual materials.

The "tailings" at active (Title II) uranium milling sites are defined in UMTRCA as uranium byproduct materials. This program covers final disposal of tailings and the control of effluents and emissions after milling operations cease.

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The EPA set standards for vicinity properties associated with inactive tailings sites requiring remedial action under Title I UMTRA on January 5, 1983. The EPA standards under 40 CFR 192.12 (Subpart B) state, in part, that remedial actions at inactive sites should be conducted so as to assure that the concentration of radium-226 in soil in open lands averaged over areas of 100 m² shall not exceed the background level by more than 5 pCi/gm averaged over the first 15 cm of soil and 15 pCi/gm averaged over any succeeding 15 cm depth interval. However, in recognition that the health and safety implications associated with residual materials may not always warrant remedial action to these levels the EPA developed a basis for the application of supplemental standard to be applied on a site specific basis.

Title 40 CFR 192.21 entitled "Criteria for Applying Supplemental Standards," basically lists four major criteria which may be used to justify the application of a supplemental cleanup standard. This regulation states that the implementing agencies (DOE) may apply an alternate standard if the remedial action required to satisfy Subpart B would: (a) pose clear and present risk of injury to workers or public notwithstanding reasonable methods to limit damage; (b) directly produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near the site, now or in the future; (c) result in an estimated cost of remedial action which is unreasonably high relative to the long-term benefits, and the residual radioactive materials do not pose a clear, present, or future hazard, or; (d) result in an unreasonably high cost of cleanup of a building relative to the benefits.

On September 30, 1983, the EPA promulgated generally applicable regulations (effective date of December 6, 1983) governing the disposal (closure) requirements for uranium and thorium byproduct materials at active sites. The Title II standard stated that the site closure requirements specified in Section 192.32(b)(1) would not apply to any portion of a site which does not contain concentrations of Ra-226 in soil which exceed levels equivalent to those specified in 40 CFR 192.12 for inactive sites. EPA stated that the intent of the standard was to distinguish "disposal areas" for byproduct materials from other land areas of licensed sites that are not sufficiently contaminated by byproduct materials to require application of the disposal standards of 192.32(a) or transfer of the property for perpetual care. The Title II EPA standard did not specifically address the issue of a supplemental standard. The active site EPA standards have already been incorporated into NRC's Appendix A to 10 CFR Part 40 (effective November 15, 1985).

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Discussion

A public reaction at the time EPA first proposed its active site rule was to request that EPA should also issue standards for the cleanup of any offsite land and buildings that may contain byproduct materials from licensed activities yet would not be included in the final "disposal area". The EPA responded that the supplemental standards (under 40 CFR 192, Subpart B) were issued for the Title I program and "would be suitable for application to off-site contamination from active mills" (Federal Register, Vol. 48, No. 196, dated October 7, 1983, Pg. 45940). However, EPA did not make special provisions for similar supplemental standards in the final form of the active site rule.

Several NRC licensees have incurred, due to past operations, a clean-up situation regarding windblown byproduct materials contamination at licensed Title II uranium milling facilities where the direct utilization of the EPA Supplemental Standards (Title I) philosophy may be reasonably justified, in that the contamination levels, its spread, and potential impacts often parallel conditions evidenced at inactive sites. There are numerous NRC licensed facilities which have extensive areas of windblown contamination where conformance to the implied 10 CFR 40, Criterion 6 cleanup standard may not be technically possible, or at least practicable from a risk/benefit basis. Some examples of such facilities are : 1) the Atlas Mill in Moab, Utah, which has identified byproduct material contamination in excess of Criterion 6 levels on the canyon wall area west of the mill; 2) the Anaconda Minerals Mill in Grants, New Mexico, also has extensive windblown contamination in an area of Malpais (volcanic basalt); and 3) the TVA Edgemont facility, located in the Pine Hills area of Fall River County, Edgemont, South Dakota, which has an area of 41 acres in the Pine Hills area, which is approximately 19% forested. For all the above cases decontamination may prove very costly, it may involve unwarranted risk to workers, and it may be more detrimental to the environment than leaving the byproducts materials in-situ. Also, in most situations there is no practical technology to afford cleanup of the area without undue environmental impact.

In Section 84(c) of the Atomic Energy Act it states that in cases of sites at which ores are processed primarily for their source material

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content or which are used for the disposal of byproduct material as defined in Section 11e(2), a licensee may propose alternatives to specific requirements, adopted and enforced under the Act. The Act also states that the Commission may consider such alternatives as long as "such alternatives achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety and the environment from radiological and nonradiological hazards associated with such sites, which is equivalent to the extent practicable, (emphasis added) or more stringent than the level which would be achieved by standards and requirements adopted and enforced by the Commission", in accordance with Section 275. This flexibility to consider alternatives to the standard is also clearly stated in the Introduction to Appendix A of 10 CFR Part 40.

It would appear reasonable, therefore, that a licensee could request as an alternative to Criterion 6, that certain off-site areas which did not meet the 5 pCi/gm and 15 pCi/gm limits not be included in the disposal area. Furthermore, if this request demonstrated the Title I criteria for justifying the use of supplemental standards were met, then it could be concluded that the alternative is equivalent to the extent practicable to the requirements of Criterion 6. The practicability of cleanup to Criterion 6 requirements would be determined on the basis of a) risk of injury to workers or the public, b) environmental harm exceeding health benefits, and/or c) unreasonably high costs relative to risks or benefits.

Conclusion

Since the EPA cleanup requirements for open lands for Ra-226 (40 CFR 192.12) are similar in intent to the NRC standard (10 CFR 40, Criteria 6 of Appendix A) it could be concluded based upon EPA's regulatory position as addressed in the final active site rule, that the application of the Title I cleanup standard philosophy would allow the NRC to consider application of EPA supplemental standards criteria to its facilities. In addition, as long as the intent of Section 275 of the Atomic Energy Act and Section 206 of Public Law 95-604 of UMTRCA of 1978 is met, there would be no apparent regulatory conflict. Also, if the final decision does not pose a potential and significant radiation hazard to the public and every reasonable effort is made by the licensee to provide for stabilization, disposal and control of the byproduct materials then the licensing action taken by the NRC in response to a

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licensees proposal to apply the supplemental standards criteria may be judged appropriate.

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Ralph S. Heyer, Project Manager
Licensing Branch 2
Uranium Recovery Field Office
Region IV

Approved by: 15/

Harry J. Pettengill, Chief
Licensing Branch 2
Uranium Recovery Field Office
Region IV

OFC	: UREO	: URFO	:	:	:	:
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