



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
URANIUM RECOVERY FIELD OFFICE
BOX 25325
DENVER, COLORADO 80225

JAN 26 1993

URFO:PWM
Docket No. 40-WM039
040WM039700E

MEMORANDUM TO: Docket File No. WM-039
FROM: Paul W. Michaud, Project Manager
SUBJECT: APPLICATION OF SUPPLEMENTAL STANDARDS FOR VICINITY
PROPERTY NO. GJ-97015-OT

Background

The Radiological and Engineering Assessment for Vicinity Property No. GJ-97015-OT was originally submitted to the NRC on April 16, 1992, and proposed the application of supplemental standards for portions of the property. A revision to the REA was submitted on July 14, 1992, which clarified statements made in the original application.

A number of questions were raised by the NRC, the State of Colorado, and the City of Grand Junction regarding the proposed remediation plans. The NRC toured the property and met with representatives of DOE, Chem-Nuclear Geotech, and the Colorado Department of Health on July 27, 1992. In letters dated August 21 and September 3, 1992, the NRC informed DOE that the REA would have to be revised to address several outstanding issues before the NRC would concur with the application of supplemental standards for this property. DOE submitted a revised REA to the NRC on January 4, 1993.

Discussion

This property is the river bank and adjacent areas of the north channel of the Colorado River, between the former Climax Mill site to the east and U.S. Highway 50 to the west. The land is vacant with no habitable structures. All lands are either currently owned by the City of Grand Junction or properties which the city has expressed an intent to purchase to develop a waterfront park. Future land use will therefore be under the institutional controls of the City of Grand Junction or the River and Commission. Plans include construction of a proposed dike by the Army Corps of Engineers. The REA provides for complete remediation of the properties up to a line 10 feet south of the proposed dike, in order to allow for minor changes in the dike alignment. It is proposed that the areas between that line and the river bank will undergo partial remediation. This will include removal of all

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contaminated material in the top 24 inches, with the exception of isolated areas of the river bank, and within 5 feet of the existing Watson Island bridge, in order to maintain the bridge's stability. Remedial action will be performed on a 200-foot long section of the river bank located adjacent to the former mill site in order to reduce the gamma exposure rates. A 400-foot long section of the river bank west of the existing Watson Island bridge will be regraded to accommodate the City of Grand Junction's plans for the riverfront park. Additionally, two 10-foot wide utility corridors will have contaminated materials removed to a depth of 6 feet to accommodate future dike detention basin drain lines. Clean topsoil will be placed in the top 24 inches of areas where contaminated material was removed, stone erosion protection will be placed on 150 feet of river bank, and trees and other vegetation will be replaced.

The revised REA examined the options of total, partial, and no remedial action. DOE recommended partial remediation with the application of supplemental standards for residual radioactive material which will remain in place. The justification for applying supplemental standards is that the cost of complete remediation is unreasonably high relative to the long-term benefits. The estimated cost for complete remediation is \$703,541 and for partial remediation is \$205,164. Approximately 17,757 cubic yards of material would remain in place under the partial remediation alternative. The average Ra-226 concentration in the material which would remain in place if supplemental standards are applied is 89.8 pCi/y, all of which will be covered with 24 inches of clean topsoil.

The areas in which partial remediation will remove any contaminated soil in the top 24 inches will have their gamma exposure rates reduced to approximately background levels after the clean topsoil is placed. The highest residual gamma exposure rate after partial remediation is performed is estimated to be 34 microR per hour. If a person spent 24 hours a day in a 34 microR per hour radiation field, that person would receive 298 millirem in 1 year, which is less than 60 percent of the permissible annual exposure in unrestricted areas under 10 CFR 20.105. Due to the location and nature of the property, it is unlikely that any individual would spend any appreciable amount of time in the location of maximum exposure rate.

Conclusion

The location of the contaminated material, the radiation levels which will remain after partial remediation is performed, and the fact that the land use is not likely to change beyond the scope included in the REA, indicate the material does not present a clear present or future public health hazard. The cost to completely remove this material is unreasonably high when compared to the long-term benefits which would be achieved. The criteria of 40 CFR 192.22(c) for application of supplemental standards are therefore satisfied. Performing partial remediation as described in the REA, allowing residual radioactive material to remain in place is reasonable under the circumstances,

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and the requirements of 40 CFR 192.22(a) are also satisfied. The application of supplemental standards as described in the REA for Vicinity Property No. GJ-97015-0T are therefore acceptable and NRC concurrence should be provided.

for *Pete J. Garcia Jr.*
Paul W. Michaud
Project Manager

Case Closed: 040WM039700E

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