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OPERABLE UNIT #4 ARARS

3-4-92

USEPA/DOE

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LETTER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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REPLY TO THE ATTENTION OF:

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

HRE-8J

RE: Operable Unit #4 ARARs

Dear Mr. Craig:

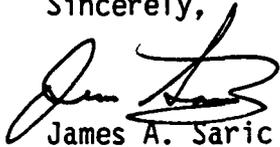
The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) letter regarding Applicable or Relevant and Appropriate Requirements (ARARs), specifically 40 CFR 191, for Operable Unit (OU) #4. In that letter U.S. DOE argues that Section 191 Subpart B should not be evaluated as an ARAR or To-Be-Considered (TBC) criteria for the K-65 waste. U.S. EPA disagrees, and reiterates its position that 40 CFR 191 Subpart B is a potential TBC for OU #4.

CERCLA Section 121 sets forth two essential criteria for remedial action conducted under the statute. First, remedial actions must protect human health and the environment, and second, any hazardous substances left on-site must attain applicable or relevant and appropriate Federal or State environmental or public health requirements. U.S. EPA implements these mandates, in part, by requiring on-site actions to satisfy ARARs and appropriate TBC criteria. TBCs are broadly defined as criteria, advisories, guidance, and proposed standards that are not legally binding, and are necessary to protect human health and the environment. CERCLA Compliance with other Laws Manual; EPA/540/G-89/006.

Despite the arguments raised in U.S. DOE's November 18, 1991 letter, U.S. EPA finds that 40 CFR Section 191 Subpart B is a potential TBC for on-site disposal of the K-65 waste. Because Section 191 Subpart B has been repealed for procedural reasons, it is not a promulgated standard and cannot be considered an ARAR. Nevertheless, as described in the attached comments, application of Section 191 Subpart B may be necessary to ensure protection of human health and the environment. Accordingly, U.S. EPA finds that 191 is a potential TBC for any on-site remedial alternative. Although ARARs and TBCs do not apply off-site, all remedial alternatives must be protective. Thus, while Section 191 Subpart B is neither an ARAR nor a TBC for off-site disposal alternatives, it may be necessary, and as such an essential part of the Feasibility Study.

The attached comments address the specific points raised in your November 18, 1991 letter. Please contact me at (312/FTS) 886-0992 if you have any questions.

Sincerely,



James A. Saric
Remedial Project Manager

Enclosure

cc: Graham Mitchell, OEPA-SWDO
Pat Whitfield, U.S. DOE-HDQ

U.S. EPA COMMENTS ON THE OPERABLE UNIT 4 - APPLICABLE OR RELEVANT AND
APPROPRIATE REQUIREMENTS (ARARs)

GENERAL

1) U.S. DOE proposal does not adequately address the fundamental points raised in our memorandum of January 21, 1991, and appears to be predicated on the assumption that the disposal criteria selected must a priori permit on-site disposal. Specifically, U.S. DOE argues that the disposal longevity appropriate to the low activity uranium mill tailings wastes regulated under 40 CFR Part 192 are adequate for the K-65 wastes (which exhibit approximately 1000 times greater level of radioactivity), and that "...application of longer control periods...would unnecessarily limit the range of on-site alternatives being considered, and may necessitate the application of deep geologic repository technology." U.S. EPA disagrees. Under CERCLA policy, a full range of alternatives, from no action to actions which provide full human health and environmental protection appropriate to the hazard must be analyzed. U.S. DOE's concerns are pertinent to the selection of the remedial action not to the choice of those ARARs and TBCs that should be examined.

2) The 40 CFR Part 191 regulations were designed for radioactive materials comparable in degree of human hazard to the K-65 wastes. Conversely, the 40 CFR part 192 regulations were not designed for materials of the K-65 level of radioactivity. Further, the alternatives proposed by U.S. DOE either do not contain quantitative requirements, (e.g. U.S. DOE Order 5820.2A Chapter 3) or are not designed for wastes with the level of hazard exhibited by the K-65 residues (e.g. 10 CFR Part 61 for Class C wastes). The range of alternatives considered should therefore encompass the full range from no action to conformance with all ARARs and TBCs identified by U.S. EPA, including specifically 40 CFR Part 191.

3) The analyses supporting 40 CFR Part 191 were generic studies, which included radioactive materials similar to the principal radioactive constituent of the K-65 residues, radium-226, in physical, chemical, and radiological characteristics. Further, although these analyses considered best available technology (BAT), 40 CFR Part 191 applies to any disposal technology. U.S. DOE contends that "...the characteristics of the waste material must be recognized in the site-specific evaluation of a range of disposal technologies." U.S. EPA agrees. However, that evaluation must include such technologies as geologic disposal, and the sites considered should include those where BAT can be applied. It is clearly not appropriate to arbitrarily limit consideration of sites to the present location of this material, or to exclude any viable technology.

4) U.S. DOE proposes to consider only applicable requirements with respect to off-site disposal alternatives. Although U.S. EPA policy is that applicable requirements must be met for off-site disposal of wastes generated in cleanup of a Superfund site, this policy does not in any way preclude proper consideration of hazards that are not addressed by applicable regulations. Section 121 of CERCLA and Section 300.425 of the National contingency Plan expressly provide that all remedial actions must be

protective of human health and the environment. This standard is considered a "threshold criterion" which all remedial alternatives must satisfy in order to receive further consideration in the detailed screening portion of the Feasibility Study (FS). See 40 CFR 300.425 (f)(1)(i)(A). U.S. EPA believes that application of Section 191 may be necessary to ensure that disposal of the K-65 materials protects human health and the environment. Thus, although Section 191 is neither an ARAR nor a TBC for remedial alternatives which include off-site disposal, Section 191 may be an essential part of the detailed screening conducted in the FS.

5) U.S. DOE points out that some hazards, specifically radon, are not addressed by the 40 CFR Part 191 regulations. This is true, but not significant; that deficiency is addressed by a separate ARAR, 40 CFR Part 61, Subpart Q. U.S. DOE is quite familiar with the basic environmental criteria underlying the 40 CFR Part 191 regulations, having analyzed and commented on these regulations in great detail. Therefore U.S. DOE should be able to readily propose alternatives which satisfy those criteria for consideration in the remedy selection process.

SPECIFIC COMMENTS ON KEY POINTS

1) U.S. DOE argues that a 200 to 1000 year control period is adequate for wastes three orders of magnitude more hazardous than uranium mill tailings, and that longer control periods are not demonstrable. U.S. EPA disagrees. As pointed out previously, these wastes are capable of generating dose rates in excess of one thousand rem per year, and the incremental risk of cancer death from such an annual dose is on the order of one in two. Clearly, regulations designated for the much lower hazards of uranium mill tailings are inadequate. Further, geologic repositories have a design life in excess of 10,000 years, and U.S. DOE has developed extensive capability in the design of this type of repository.

2) U.S. DOE agrees that intrusion protection requirements beyond those in 40 CFR Part 192 are reasonable. Those of 40 CFR 101 should be considered in addition to those U.S. DOE lists.

3) There appears to be no disagreement.

4) U.S. EPA agrees that 40 CFR Part 61 should be considered in addition to 40 CFR Part 191, Subpart A, so as to address radon emissions. However, 40 CFR Part 61 is already an ARAR. ARARs should be considered for any interim storage on site. 40 CFR Part 192.41 is an inappropriate ARAR, it does not apply to uranium byproduct materials; the relevant ARAR is 40 CFR Part 192.32(a), which should be considered to the extent that it adequately addressed the hazards posed by the K-65 residues, such as those to groundwater. However, 40 CFR Part 192.32(a) contains surface impoundment provisions inappropriate for these high activity wastes. Finally, U.S. EPA does not understand the objection of U.S. DOE to 40 CFR Part 191 Subpart A in light of its proposal to use 10 CFR Part 61.41, which is essentially identical.

5) U.S. DOE contends that application of 40 CFR Part 191 Subpart B will limit the range of viable on-site alternatives. U.S. EPA disagrees. A full range of alternatives must be examined, including those that do not meet Part 191, and U.S. DOE can analyze any alternative it chooses to consider. U.S. DOE should evaluate all viable on-site or off-site disposal options that satisfy 40 CFR Part 191 Subpart B. This would satisfy CERCLA requirements to examine a full range of alternatives, including those that address completely the hazards posed by these wastes.

Although U.S. DOE contends that geologic disposal is not appropriate for the K-65 wastes, they have provided no justification of this assertion. Analysis of this alternative is the appropriate mechanism for U.S. DOE to demonstrate the validity of their claim.

The alternative requirements proposed by U.S. DOE do not apply to the hazards posed by the K-65 residues. Specifically, the K-65 residues do not qualify as Class C wastes under 10 CFR Part 61. The closest applicable criterion is that for alpha-emitting transuranic radionuclides with half-lives greater than five years. (Radium-226 is an alpha-emitting chemical and radiological neighbor of the transuranics with a half-life of 1600 years.) The K-65 wastes clearly exceed the criterion of 100 nanocuries per gram for qualification in the Nuclear Regulatory Commission's highest category of waste eligible for near surface disposal. The requirements of 40 CFR Parts 192 and 264, and U.S. DOE Order 5820.2A are even less relevant, or lack quantitative requirements.