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REVISED REMOVAL ACTION 16 - COLLECT UNCONTROLLED PRODUCTION AREA STORMWATER RUNOFF WORK PLAN

07/08/92

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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REPLY TO THE ATTENTION OF:

HRE-8J

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

RE: Revised Removal Action 16-
Collect Uncontrolled Production
Area Stormwater Runoff Work Plan

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) revised Removal Action 16-Collect Uncontrolled Production Area Stormwater Runoff Work Plan.

U.S. DOE has satisfactorily responded to the majority of U.S. EPA's comments. Therefore, U.S. EPA hereby approves the Work Plan pending incorporation of the enclosed comments.

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
Dennis Carr, WMCO

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TECHNICAL COMMENTS

REVISED REMOVAL ACTION NO. 16 WORK PLAN
COLLECT UNCONTROLLED PRODUCTION AREA STORM WATER RUNOFF

SPECIFIC PREVIOUS COMMENTS

Previous Comment No. 13 Attachment 1, Section 5.0, page 3. None of the randomly selected depths presented in Table 1 are below a depth of 3 feet. The work plan should describe how samples will be collected if the excavation is advanced below 3 feet.

Previous Comment No. 14 Attachment 1, Section 5.0, page 3. The installation of 12-inch-diameter reinforced concrete pipe (RCP) will require excavation; however, the work plan does not address soil sampling in these areas. The work plan should either add sampling in these areas or explain why no sampling is planned.

Previous Comment No. 15 Attachment 1, Table 2.0, page 6. The work plan does not provide specific rationale for selecting sample locations for hazardous substance list (HSL) analysis. The work plan should provide specific rationale for selecting some locations over others for HSL analysis.

GENERAL COMMENTS

General Comment No. 1 The removal action (RA) work plan references waste disposition protocol proposed in the RA No. 17 work plan. EPA notes that the RA No. 17 work plan approach has not been finalized. It might be more appropriate to outline an approach for determining waste disposition in this revised work plan, parallel to the approach described in RA No. 17.

COMMENTS ON THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
"COLLECT UNCONTROLLED PRODUCTION AREA STORMWATER RUNOFF
REMOVAL ACTION NUMBER 16 WORKPLAN"
MAY 1992

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General Comments

The assumption in this document that the predominant dose derives from uranium isotopes may not be valid. The document's assumption that contaminants are in natural ratios makes the following information relevant.

Using a generic uranium ore found in EPA's background information document for the 40 CFR 192 standards (Final Environmental Impact Statement for Standards for the Control of Byproduct Materials from Uranium Ore Processing [40 CFR 192}, Volume I, EPA 520/1-83-008-1) and dose conversion factors derived by Eckerman et al of Oak Ridge National Laboratory (Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion, Federal Guidance Report NO.11 EPA 520/1-88-020), relevant calculations can be made. The generic ore concentration is:

U-238 Series	490 pci/g
U-235 Series	23
Th-232 Series	2

In the two attached tables, derived using this ore (natural ratios), U-238 + D represents a subseries of U-238 plus all its immediate decay products with half lives less than 1 year. Dose conversion factors are the sum of all the individual dose conversion factors for the subseries.

The attached tables demonstrate that for some lung classes a substantial fraction of the dose could originate from other than U-238, U-234 or U-235. Little of the ingestion dose originates from these uranium isotopes.

Consequently, dose assessments should be based upon the full contingent of radionuclides, not just a select few. Concentrations should be measured unless there is sufficient data to support the assumed ratios.

Specific Comments

1. Section 1.0 Page 1 of 23, para. 4--Appendix L of the Site-Wide Quality Assurance Plan has been changed to Attachment I. The reference to Appendix L should be corrected.

2. Section 2.0 Page 14 of 23, para. 1--Provide justification why the analysis methods for soil samples taken at the 38 sample locations did not include Radium-226.

3. Section 2.3 Page 16 of 23, para. 1--The underlying groundwater has been determined to be contaminated with inorganic and organic chemical compounds. Have radionuclides been found to be part of the groundwater contamination via infiltration along the stream bed? If so, this should be discussed.

4. Section 7.0 Page 22 of 23, para. 1--Data quality objectives for sampling and analysis activities should be presented in this section.

5. **Attachment 1 Page 3, para. 7**--Indicate the number of trip and rinsate blanks that will be collected.

6. **Attachment 1 Page 3, para. 8**--Appendix L of the Site-Wide CERCLA Quality Assurance Plan has been changed to Attachment I. The reference to Appendix L should be corrected.

7. **Attachment 2 Page 1, para. 3**--What measures will be taken to prevent and monitor radon emissions from the edges of the tarpaulins?

EPA GENERIC NATURAL URANIUM ORE
INHALATION

RADIONUCLIDE		LUNG DOSE CLASS D	LUNG DOSE CLASS W	LUNG DOSE CLASS Y	EFFECTIVE DOSE CLASS D	EFFECTIVE DOSE CLASS W	EFFECTIVE DOSE CLASS Y
		(MREM/G)			(MREM/G)		
U-238+D	1	0.51	25.82	464.52	1.20	3.46	57.82
U-234	2	0.58	29.01	539.00	1.34	3.86	64.68
TH-230	3		29.20		0.00	159.74	128.38
RA-226+D	4	0.05	0.02		0.01	0.00	0.00
PB-210+D	5	1.90	24.35		11.27	4.30	0.00
	6						
U-235+D	7	0.03	1.26	23.46	0.06	0.17	2.83
PA-231	8		1.46	63.48		29.44	19.73
AC-227+D	9	0.01	9.25	134.09	154.10	40.02	30.13
	10						
TH-232	11		0.11	6.96	0.00	3.28	2.30
RA-228+D	12		0.05	0.00	0.00	0.01	0.00
TH-228+D	13	0.00	0.75	5.12	0.00	0.51	0.68

EPA GENERIC NATURAL URANIUM ORE
INGESTION

RADIONUCLIDE		MAJOR ORGAN DOSE * (MREM/G)	EFFECTIVE DOSE (MREM/G)
U-238+D	1	1.83	0.13
U-234	2	2.05	0.14
TH-230	3	6.52	0.27
RA-226+D	4	0.00	0.00
PB-210+D	5	39.30	3.56
	6		
U-235+D	7	0.09	0.01
PA-231	8	6.14	0.24
AC-227+D	9	5.98	0.34
	10		
TH-232	11	0.14	0.01
RA-228+D	12	0.04	0.00
TH-228+D	13	0.03	0.00

* BONE SURFACE