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REMOVAL SITE EVALUATION REPLACEMENT OF FEMP ELECTRICAL POWER FEEDERS NO. 1 AND NO. 4 JULY 1993

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REMOVAL SITE EVALUATION

REPLACEMENT OF FEMP ELECTRICAL POWER FEEDERS NO. 1 & NO. 4

FERNALD SITE OFFICE

U.S. DEPARTMENT OF ENERGY

JULY 23, 1993

1.0 INTRODUCTION

The replacement of FEMP Electrical Power Feeders No. 1 and No. 4 Project is a project to replace approximately 60,000 linear feet of the 100,000 linear feet of the existing 13.2 kv power feeder cable throughout the entire Fernald Environmental Management Project (FEMP) site. These two feeders consist of 350kcm (thousand circular mils) cable routed through an existing underground conduit duct bank system. They are a part of a radial system that supply primary and secondary power to all unit substations, a feed system that ensures the availability of power to all unit substations at all times.

The cables, installed in 1952, are over 40 years old and the system has unacceptable reliability. It was determined that eighty percent of the current site load is being supplied by Feeder Cables No. 1 and No. 4 and this provides the basis for selecting Cables No. 1 and No. 4 for replacement. The current load distribution is expected to be maintained during the FEMP Site Remediation mission. This project will replace Feeder Cables No. 1 and No. 4 and all cables between the main substation secondary bushings and the switchgear.

The waste estimated to be generated for the total project includes: Approximately 60,000 linear feet of electrical cable manufactured by the General Cable Corporation under the designation of "Gencorone" as 350kcm, 27/64 inch Gencorone insulation with 5 mil thick copper shielding, tape, and 1/64 inch asbestos cloth jacket; 35-40 cable splices with associated asbestos contaminated insulation and fireproofing material; quantity of miscellaneous metal associated with terminations: and waste water due to the pumping of the manholes to allow entry. All waste is potentially contaminated with uranium products.

This Removal Site Evaluation (RSE) has been completed by the DOE under authorities delegated by Executive Order 12580 under Section 104 of CERCLA and is consistent with Section 300.410 of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). This RSE addresses a construction project involving removal and replacement of FEMP Electrical Power Feeders No. 1 and No. 4 and has been completed to support the decision as to whether the project conditions warrant a removal action.

2.0 SOURCE TERM

Consistent with 40 CFR 300.410 (a), this RSE includes a removal action preliminary assessment which is based upon readily available information as described in 40 CFR 300.410 (c). A RCRA Determination/Radiological Characterization was issued on July 21, 1993 to characterize the waste to be generated from this construction activity (attached). This information was used to help complete this RSE.

> Ref: M:ESH:EP:93-572, J.P. Erfman To Monroe Thompson, "RCRA Determination and Radiological Characterization for The Sitewide Power Feeder Replacement Project."

The 350kcm cable being removed was manufactured in the early 1950's with a 1/64 inch asbestos cloth jacket. In addition, 15-20 ft of asbestos containing fire proofing tape was applied to the splices and exposed cable in each manhole. Samples were taken from the cloth jacket on the cable and the fireproofing tape. Analysis of the cloth jacket material indicated 42% chrysotile asbestos and the fireproofing tape contains 50% chrysotile asbestos. The fireproofing tape is currently friable and the "pulling-out" operation is likely to cause the cable sheathing to become friable. The condition of these asbestos materials will create a working environment that releases asbestos fibers that are hazardous when inhaled.

The cable is installed in underground ductwork which is located in the process areas. During the years of process operations it was potentially exposed to radioactive material through accumulation of water build-up in the manholes as well as the duct work. The source of the water is through seepage as well as stormwater surface runoff from the process area. Waste water from the manholes will be collected using an industrial vacuum loader truck (Supersucker) per SOP 43-C-413 entitled "Industrial Vacuum Loader Truck (Supersucker) Operation" and transferred to the Plant 8 General Sump. The Plant 8 Water Treatment System is currently not operational but is schedule to resume operation 2/94. During this interval the waste will be drummed (one drum per manhole) pending transfer to Plant 8.

The potential for hazardous chemical contamination was mitigated by performing sampling and analysis. The 13.2 kv copper wire was sampled and analyzed for: Total volatiles, TCLP Volatiles, Total Semi-Volatiles, and TCLP Semi-Volatiles. Analytical results indicated that no RCRA constituents were present.

3.0 Evaluation of the Magnitude of the Potential Threat

The objective of this construction project is to remove the Feeder Cables No. 1 and No. 4 and therefore results in a major disturbance of the asbestos containing material. The work will be accomplished with strict adherence to the Site Procedures for asbestos to minimize release of the fibers. The removal will be planned, supervised, and conducted by AHERA certified "Asbestos Hazard, Abatement Contractor/Supervisor" and certified asbestos workers. This planning will define the required personal protective equipment for the workers. Current planning provided for the following:

1. Penetration encapsulant will be applied to the friable fireproofing material; allowed to solidify; encapsulated section of cable will be wrapped in plastic, sealed with tape; then cut through the plastic with a shearing device; remove the entire section of cable which is insulated with the fireproofing tape; bagged; and labeled as asbestos.

2. During the pulling operation a HEPA ventilated shroud will be placed at pulley mechanisms and other points of substantial abrasion to the cable.

This will minimize the release of the asbestos fibers and the threat from this material is mitigated.

The potential radiological contamination will be mitigated by a thorough examination of all work areas by a radiological technician prior to entry by the workers. Personnel protection clothing will be determined based on this examination. Total personnel protective clothing/equipment will be determined based on the requirements for the asbestos environment and the radiological contamination. Subsequent to removal of the cable from the duckwork, it will be monitored for radiological contamination and disposition will be determined by adherence to the WEMCO Safety Procedure SP-P-35-010, "Unrestricted Release of Materials from FEMP," dated March 13, 1990.

Additional protective measures to be taken in support of this project include placing physical barriers around the work area to prevent unauthorized access and migration of materials.

All activities performed in support of this project will follow applicable site policies and procedures written to control such activities. These procedures include, but are not limited to, the following:

SSOP-0044, "Management of Soil, Debris, and Waste from a Project".
SP-P35-010 "Unrestricted Release of Materials from FMPC".
Removal Action 26, "Asbestos Removals (Asbestos Program)".
Removal Action 17, "Improved Storage of Soil and Debris".

4.0 ASSESSMENT OF THE NEED FOR REMOVAL ACTION

Consistent with 40 CFR 300.410 of the NCP, the DOE shall determine the appropriateness of a removal action. Eight factors to be considered in the determination are listed in 40 CFR 300.415(b) (2). Based on the data presented above, the following of the eight criteria listed in the NCP applied to this project.

40 CFR 300.415 (b) (2) (i)
Actual or potential exposure to hazardous substances or pollutants or contaminants to nearby populations, animals, or food chain.

40 CFR 300.415 (b) (2) (ii)
Actual or potential contamination of drinking water supplies or sensitive ecosystems.

As discussed previously, the preventive measures taken in the field during this construction activity mitigate the threat of a release. Therefore while the above criteria can be applied to the Removal/Replacement of FEMP Electrical Feeders No. 1 and No. 4, the level of threat is negligible and a removal action is not required.

5.0 APPROPRIATENESS OF A RESPONSE

Based on the evaluation of all the above factors, it has been determined that a removal action will not be necessary and this project should be continued as a planned maintenance activity in support of the CERCLA remediation process. Furthermore, the controls planned in conjunction with this construction activity are adequate to mitigate any hazards at this site and to prevent deterioration of existing site conditions.

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Restoration Management Corporation

INTEROFFICE MEMORANDUM

To:	Monroe Thompson	Date:	July 21, 1993
Location:	MS 16	Reference:	Listed Below
From:	Jerry Erfman	FERMCO #:	M:ESH:EP:93-572
Location:	MS 46	Client:	DOE DE-AC05-920R21972
Extension:	6085	Subject:	RCRA DETERMINATION AND RADIOLOGICAL CHARACTERIZATION FOR THE SITEWIDE POWER FEEDER REPLACEMENT PROJECT

Ref: 1. WEMCO Site Standard Operating Procedure, SSOP-0044, "Management of Soil, Debris and Waste From a Project", dated June 19, 1992

2. WEMCO Safety Procedure SP-P-35-010, "Unrestricted Release of Materials from FEMP", dated March 13, 1990

3. Environmental Compliance Spill/Release Incident Tracking Report

4. Upset Condition Documentation, dated September 18, 1990

5. Site-Wide Characterization Report, dated August 1992

c: File Record Storage Copy 106.4.9.2
James Clements — RCRA Operating Record
Matthew Frost — WC Files
Sue Hoskins
Darryl Howe
Lori Hurst
Harold Knue
Dan Meyer
Carlyle Rieman
Renae Thiel
Frank Thompson
Carolyn Waugh

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This memo transmits the RCRA determination and radiological characterization for the waste to be generated during the replacement of the Sitewide Power Feeder Project. The waste to be generated from this project consists of copper cable, PPE's and misc. materials (i.e. wood, metal, paper, plastic, etc.).

PROCESS KNOWLEDGE

This project involves the replacement of all feeder lines throughout the plant from the main transformer to the main feeder. All cable will be replaced from manhole to manhole and substation to substation. Thirty-three manholes are included in the scope of work.

The cable was installed in 1951, and was manufactured by General Cable Corp. The distribution cable for 13.2 KV is "Gencorone" and shall be rated 15 KV ungrounded between phases. Gencorone is a high voltage, ozone-resistant insulation of the oil-base type which has ample margins over the requirements of the I.P.C.E.A.
The cable is single conductor, 350 MCM 27/64 in. "Gencorone" insulation with 5 mill thick copper shielding, then tape and 1/64 in. Neoprene jacket O.D. of 1.91 inches and consist of 37 strands.

An attempt was made to contact General Cable Corp. for additional information, especially concerning the possibility of PCB's, but the company no longer exists. WC then contacted CG&E in an attempt to gather additional information about this cable, however, CG&E did not have any information in their files covering this product. They did advise however, that this was RCRA excluded under 40 CFR 761.3.

SAMPLING AND ANALYSIS

In January, 1993, sampling was performed on the scrap copper wiring. A total of six samples were taken on the 13,200 KV copper wire which will be generated from this project.

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The analyses requested includes: Total Volatiles, TCLP Volatiles, Total Semi-volatiles, and TCLP Semi-volatiles. Analytical results indicated that no RCRA constituents are present.

RADIOLOGICAL CHARACTERIZATION

The waste will have to be monitored by radiological safety group prior to disposal. Based on these radiological readings and FEMP standard practice governing waste generated from controlled areas, the waste and must be managed in accordance with WEMCO Site Standard Operating Procedure SSOP-0044.

RCRA DETERMINATION

The scrap copper wiring generated from this project is RCRA non-hazardous (a.k.a. non-RCRA) based on the analytical data. The scrap copper is scheduled for recycling and should be managed in accordance with the Scrap Copper Pile Project Removal Action 15. The copper wiring generated from this project will fall under the guidelines of 40 CFR 761.3; PCB-Contaminated, Electrical Equipment and 40 CFR 261.2(c)(3); Reclamation.

The protective clothing (Anti-C's, rubber gloves, etc) to be generated is RCRA non-hazardous (a.k.a. non-RCRA), if it meets the conditions specified in MEF Number 1722, dated June 25, 1992.

Using SOP 20-C-625 the following waste streams can be evaluated using checklists. Only trained personnel can be used for checklists.

Scrap metal will be managed under MEF # 1088 and the metal checklist # FS-F-3464.

Scrap wood will be managed under MEF # 905 and the wood checklist # FS-F-3465.

Scrap plastic, rubber, paper, fiberglass, and rope will be managed under MEF # 1539 and checklist # FS-F-3580.

If any of the material fails the checklists, a new MEF must be generated and forwarded to Waste Characterization for evaluation.

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No materials have been identified that would cause the waste to meet any of the hazardous waste listings under OAC 3745-51 (in lieu of 40 CFR 261, Subpart D) or exhibit any of the hazardous waste characteristics under OAC 3745-21 to 24, (in lieu of 40 CFR 261.21 to 24) or the revised Toxicity Characteristic under 40 CFR 261.24.

SUMMARY

It is Waste Characterization's (WC) intention to provide radiological and RCRA determinations of construction waste prior to its generation. WC believes that these determinations properly represent the waste or waste streams discussed herein.

The determinations apply only to waste listed on the Construction Waste Identification/Disposition (CWID) Form dated July 28, 1992. Any additional waste must be evaluated independently and requires the issuance of a separate determination letter.

The waste, will have to be monitored by the Radiological Safety Group for proper radiologically disposition per Reference Numbers 1 and 2.

If there are any questions, please call me at extension 6085 or C. S. Waugh at extension 6777.

JPE:tmk