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MODIFICATION OF REVISION 0.5 OF THE TECHNOLOGY SPECIFIC WORK PLAN FOR THE MIXED WASTE STABILIZATION PROJECT - TREATMENT OF MATERIAL EVALUATION FORM 1906 WASTES

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LETTER

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Department of Energy

Ohio Field Office
Fernald Area Office
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Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Thomas J. Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

MODIFICATION OF REVISION 0.5 OF THE TECHNOLOGY SPECIFIC WORK PLAN FOR THE MIXED WASTE STABILIZATION PROJECT - TREATMENT OF MATERIAL EVALUATION FORM 1906 WASTES

Change pages to Revision 0.5 of the approved Technology Specific Work Plan for the Mixed Waste Stabilization Project (MWSP) are enclosed. These change pages were prepared at the request of the Ohio Environmental Protection Agency (OEPA) to document the treatment of Material Evaluation Form (MEF) 1906 wastes under the MWSP. Waste contained in MEF 1906 was originally identified under the Ohio Mobile Stabilization System in the Fernald Environmental Management Project (FEMP) Site Treatment Plan (STP); however, since the waste contained both U134 and D007 codes it was omitted from consideration under the original scope of work for the MWSP.

The MEF 1906 waste stream consists of previously neutralized anhydrous hydrogen fluoride that meets the Land Disposal Restriction (LDR) treatment standards for U134 wastes promulgated in 40 CFR 268.40 and OAC 3745-59. However, sample results have shown that chromium concentrations in the neutralized waste exceed regulatory levels. Therefore, the waste is being treated under the MWSP to remove the D007 waste code prior to land disposal. All provisions of the approved MWSP Technology Specific Work Plan remain unchanged with respect to the treatment of MEF 1906 wastes, with the exception that the treated waste will be shipped for off-site disposal at a commercially permitted disposal facility rather than to the Nevada Test Site due to the U-listing.

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If you wish to discuss any aspect of this modification to the Technology Specific Work Plan, please contact Robert Danner at (513) 648-3167.

Sincerely,

Jack R. Craig
Director

FEMP:Danner

Enclosure: As Stated

cc w/enc:
P. Pardi, OEPA
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FERNALD MIXED WASTE STABILIZATION PROJECT

1.0 INTRODUCTION

This work plan describes the objectives and scope of work for the Mixed Waste Stabilization Project to be conducted at the U. S. Department of Energy's Fernald Environmental Management Project (FEMP). The Fernald Site is a government owned, former uranium processing facility located near Cincinnati, Ohio. The site was placed on the National Priorities List in 1989 and is currently undergoing remediation under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) in accordance with the 1991 *Amended Consent Agreement* (ACA) between the DOE and the U. S. Environmental Protection Agency (EPA).

The ACA requires the FEMP to submit an annual compendium of existing procedures and documentation for the site's Low-Level Radioactive Waste (LLRW) Management Program, in lieu of Removal Action Work Plans (RAWP). Additionally, the FEMP committed to submitting project specific work plans for certain projects, including Mixed Waste Stabilization, in Addendum No. 1 to the Removal Action (RA) No. 9 - Removal of Waste Inventories Work Plan. Submittal of this plan is intended to satisfy ACA and RA No. 9 driven requirements by incorporating the documentation and management of the project under RA No. 9.

Project plans for the Mixed Waste Stabilization Project are documented in this two volume set of project plans and procedures. Volume 1 contains the Project Specific Work Plan, Process Control Plan, Sampling and Analysis Plan, Quality Assurance Plan, and Health and Safety Plan for the project. Volume 2 of the set contains the working level practices, procedures, and instructions for work accomplishment and control. In combination, these documents demonstrate that the proposed project will be accomplished in compliance with applicable federal, state, and local regulatory requirements, DOE Orders, and site procedures.

Treatment of the Material Evaluation Form (MEF) 1906 waste waste stream was originally identified under the Ohio Mobile Stabilization System in the Site Treatment Plan (STP), however, since the waste contained both U134 and D007 codes it was omitted from consideration under the orginal scope of work for the Mixed Waste Stabilization Project MWSP. The waste consists of previously neutralized anhydrous hydrogen fluoride that meets the Land Disposal Restriction (LDR) treatment standard for U134 wastes promulgated in 40 CFR 268.40 and OAC 3745-59. However, sample results have shown that chromium concentrations in the neutralized waste exceed regulatory levels. Therefore, the waste will be treated under the MWSP to remove the D007 code prior to land disposed. All provisions of the approved MWSP Work Plan remain unchanged with respect to treatment of the waste, with the exception that the treated waste will be shipped for off-site disposal at a commercially permitted disposal facility rather than to NTS due to the U-listing.

1.1 OBJECTIVES

The objective of the Mixed Waste Stabilization Project is to safely treat approximately 1550 drums of characteristic mixed LLRW currently being stored at the Fernald Site. These wastes have been characterized as containing waste constituents regulated under EPA waste codes D004 through D011. The wastes will be treated for land disposal at the Nevada Test Site (NTS) using Best Demonstrated Available Technology (BDAT) to meet RCRA Land Disposal Restrictions (LDR) and NTS waste acceptance criteria (WAC) established under the *Nevada Test Site - Defense Waste Acceptance Criteria, Certification, and Transfer Requirements* (NVO-325, Rev. 1). BDAT will be accomplished using a cement based stabilization/solidification process that renders toxic heavy metals and radionuclides insoluble by precipitation, and locks them in a grout matrix.

On-site waste treatment processes will be accomplished by personnel from Perma-Fix Environmental Services, Inc. (PESI) and Performance Development Corporation (PDC) working in conjunction with DOE and Fluor Daniel Fernald personnel. Perma-Fix and PDC personnel will manage the on-site treatment process and will perform all waste treatment operations conducted at the site.

1.2 ORGANIZATION OF THIS WORK PLAN

This Work Plan is organized in the manner committed to by the FEMP in their letter to the Ohio EPA, dated January, 1995. This Work Plan and its attached appendices provide a complete description of how and where the proposed mixed waste stabilization project will be performed. The plan identifies the parties responsible for storage, handling, stabilization and disposal of mixed wastes, and those parties having oversight responsibilities for quality assurance, environmental compliance, and health and safety. Section 2.0 of the Work Plan provides a description of the mixed wastes to be stabilized, in terms of the Material Evaluation Form (MEF) characterization process. Appendix E provides detailed MEF information regarding wastes to be stabilized during this project. Section 3.0 describes bench-scale treatability and optimization tests aimed at developing and successfully applying design stabilization recipes tailored to each type of waste. Treatability tests have already been performed by Nuclear Fuel Services, Inc., whose report is included as Appendix F of this Work Plan. Section 4.0 provides a detailed description of the stabilization process and all of its ancillary and support activities, and Appendix A, the Process Control Plan provides additional detail regarding control of the process. This process description is presented in terms of the major work tasks and a Process Flow Diagram, Figure 4-2. Section 5.0 describes plans for disposition of stabilized waste. Section 6.0 describes the applicable or relevant and appropriate requirements for this project. Section 7.0 describes the health and safety program to be implemented during this project, with Appendix D, the Health and Safety Plan providing more detail. Section 8.0 describes the organization of the project team, and how the work and the project schedule will be managed. Appendix B is the Sampling and Analysis Plan, and Appendix C is the Quality Assurance Plan for this project.