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Task 8 - Management and Reporting

**Semi-Annual Report
April 1 - September 30, 1997**

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TASK 8 – MANAGEMENT AND REPORTING

1.0 INTRODUCTION

The task of addressing the environmental needs of nuclear defense complex sites under the U.S. Department of Energy (DOE) Environmental Management (EM) Program requires the timely availability of appropriate cleanup technologies. Fostering the commercialization of these technologies is the mission of EM-50, the EM Program Office of Science and Technology. DOE's Federal Energy Technology Center (FETC) pursues activities integral to the EM-50 mission through its Cooperative Agreement with the EM Office of Science and Technology.

On the road to commercialization, technologies must overcome significant barriers with respect to technical issues, proof of performance, partnering, capitalization, and regulatory acceptance. The Energy & Environmental Research Center (EERC), a not-for-profit, contract-supported organization focused on research, development, demonstration, and commercialization (RDD&C) of energy and environmental technologies, is completing the third year of a Cooperative Agreement with FETC designed to 1) overcome commercialization barriers through technical support, real-world demonstrations, and partnering; and 2) support the integration and deployment of "winner" technologies at EM sites. Table 1 lists the task name and number, period of performance, and total cost for Years 1–3 of the FETC–EERC EM Cooperative Agreement.

2.0 OBJECTIVES

The primary objective of Task 8 is to ensure the effectiveness of the EMCA. This is accomplished through 1) the coordination of internal EMCA activities and coordination with the FETC contractor's representative, 2) the coordination and expansion of the EMCA, and 3) effective technical transfer.

3.0 ACCOMPLISHMENTS

Accomplishments during the reporting period include:

- Sent out mailing providing information on the services available under the FETC–EERC EM Cooperative Agreement (EMCA) to over 30 new FETC Industry Program participants identified from a review of the April 1997 set of Technology Development Data Sheets (TDDS). This mailing was followed up by telephone contact with industry partners who responded to the mailing and with other industry partners with technologies having a good match to EERC core capabilities.

TABLE 1

FETC–EERC Environmental Management Cooperative Agreement
Comprehensive Task Summary for Years 1–3¹

Task No.	Task Name	Period of Performance	Total Cost, \$
1	Provide Information Required for Compliance with the National Environmental Policy Act (NEPA)	Sept. 1994 – Sept. 1995	5K
2	Extraction and Analysis of Pollutant Organics	Sept. 1994 – Jan. 1997	383K
3	Pyrolysis of Plastic Waste	Sept. 1994 – Dec. 1997	590K
4	Stabilization of Vitrified Waste by Enhanced Crystallization and Development of a Protocol to Predict Long-Term Stability	Sept. 1994 – Sept. 1995	80K
5	Extraction of Hazardous Metals from Mixed Solid Wastes by Chelation and Supercritical Fluid Extraction ²	NA	NA
6	Subcritical Water Extraction of Organic Pollutants ²	NA	NA
7	Demonstration of a Low-Temperature Plasma Remediation Technology ²	NA	NA
8	Industrial Outreach, Management and Reporting	Sept. 1994 – Dec. 1997	245K
9	Centrifugal Membrane Filtration	Sept. 1994 – Dec. 1997	463K
10	Technology Development Integration	July 1995 – Dec. 1997	14,443 ³
11	Systems Analysis of Environmental Management Technologies	April 1996 – Dec. 1997	507 ³
12	Laser Cleaning of Contaminated Painted Surfaces	Sept. 1995 – Dec. 1997	210K
13	Cone Penetrometer for Subsurface Metal Detection	Dec. 1996 – Dec. 1997	190K
14	Bubbleless Gas-Transfer Technology	Dec. 1996 – Dec. 1997	140K
15	Remediation of Organically Contaminated Soil Using Hot/Liquid (Subcritical) Water	Dec. 1996 – Dec. 1997	174K
16	Preparation of Sampling/Analysis and Availability Assurance Plans for the Vortec Vitrification Demonstration Plant	Dec. 1996 – Dec. 1997	40K
17	Use of Acoustic Energy and Humic Acids to Mobilize DNAPLs in the Subsurface	June 1997 – Dec. 1997	43K
	Total		\$17,513,000

¹ This information reflects the revision for Tasks 2, 15, and 17 requested on June 17, 1997.

² Initially proposed but not funded.

³ Tasks 10 and 11 include a Waste Policy Institute (WPI) subcontract – Task 10 for \$13,768,740 and Task 11 for \$16,227.

- Coordinated preparation for the Technical Project Review held September 9 at the Morgantown, West Virginia, office of FETC. Materials included slides, overheads, and presentation binders. An agenda and a list of action items from the meeting are attached.
- Preparations were initiated for the annual Industry Partnerships to Employ Environmental Technology meeting scheduled to be held at the Morgantown, West Virginia, office of FETC October 21–23. The EERC is scheduled to give a presentation on the Year 3 activities in the EMCA program.
- A new task, Task 17 – Use of Acoustic Energy and Humic Acids to Mobilize DNAPLs from the Subsurface, was given preliminary approval by FETC in June.
- Contact was established with the new FETC program managers. The FETC program managers were updated with respect to the status and projections for EMCA activities.
- EERC representatives attended the 4th Annual Nuclear Decommissioning Decision Makers Forum in Chicago June 24–27, 1997.
- A review of Year 3 activities and an assessment of the results of program outreach was undertaken as a basis for developing the Year 4 program plan. The proposed list of tasks for Year 4 is shown on Table 2. It is proposed that five technical tasks (9, 12, 13, 15, and 17) continue and that three new technical tasks (18, 19, and 20) be initiated. Further, technology integration activities will be expanded as a way to enhance coordination among stakeholders and ensure relevance of EMCA activities to the DOE program.

4.0 WORK PLANNED FOR NEXT 6 MONTHS

Efforts during the period October 1, 1997, through March 31, 1998, will focus on the following: 1) update TDDS quarterly, 2) continue to identify commercial partners' promising technologies and outreach opportunities, 3) continue efforts to team with EM sites to match needs with technologies and provide demonstration venues, 4) continue enhancement of Task 8 effectiveness, 5) complete materials for the FETC Industry Partnership meeting, 6) attend the Industry Partnership meeting at FETC (Morgantown) and other select meetings, and 7) facilitate progress on the action items from the September 1997 project review meeting.

TABLE 2

Proposed Year 4 Tasks for the FETC-EERC EM Cooperative Agreement

Task No.	Task Name Task Description	1998 Funding Request, \$
Task 8	Industrial Outreach, Management, and Reporting An active program of outreach and coordination will be continued to perform joint venture brokering, technical support, and systems engineering assessment in support of EM technology commercialization. Limited exploratory tests may be conducted under this task.	100K
Task 9	Centrifugal Membrane Filtration – Technology Partnering Evaluation of the feasibility of combining the technologies of two FETC industry partners (SpinTek centrifugal membrane filtration and 3M Empore™ filters) to create a more effective system for removal of radionuclides from liquid mixed wastes.	100K
Task 12	Laser Cleaning of Contaminated Painted Surfaces Distribute, assess user input, and, if needed, recommend revisions to the computer cost model developed in 1997 for comparing surface-cleaning methods; perform air sampling and analysis.	40K
Task 13	Cone Penetrometer for Subsurface Metals Detection Complete laboratory calibration and validation; provide technical support for field-testing; and develop procedures for data collection, reduction, and analysis.	210K
Task 15	Remediation of Organically Contaminated Soil Using Hot/Liquid (Subcritical) Water Address issues related to reactor plugging, extraction of polar and nonpolar organics, and wastewater quality cleanup; undertake a field test; and complete an economic assessment.	170K
Task 17	Use of Acoustic Energy and Humic Acids to Mobilize DNAPLs in the Subsurface Complete a laboratory-based assessment of DNAPL mobilization using Weiss's acoustic excitation technology coupled with the EERC's humic acid surfactant.	80K
Task 18	Carbon Sorbent Optimization and Evaluation for High Levels of Mercury Contamination Laboratory-based performance testing of EERC mercury sorbents under MRS process conditions.	170K
Task 19	Sampling, Analysis, and Vitrification Study for the Thermochem Steam Reformer Treatment Technology Development of sampling and analysis plans, analysis for material stability and composition, and development of temperature and viscosity profiles for waste products.	90K
Task 20	Prevention of Chloride Corrosion in High-Temperature Waste Treatment Systems Development of a technology to separate and recover chlorine from unsorted mixed wastes for incorporation into GTS Duratek incineration and vitrification systems.	40K