

Task 10 - Technology Development Integration

**Semi-Annual Report
November 1, 1996 - March 31, 1997**

**By:
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19980313 077

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For

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Office of Technology Development
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Washington, DC 20585

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ACKNOWLEDGMENT

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	OBJECTIVES AND ACTIVITIES	1
3.0	ACCOMPLISHMENTS/WORK PERFORMED	2
4.0	WORK PLANNED FOR NEXT 6 MONTHS	2
WASTE POLICY INSTITUTE MONTHLY REPORT TO THE EERC, OCTOBER 1996		Appendix A
WASTE POLICY INSTITUTE MONTHLY REPORT TO THE EERC, NOVEMBER 1996		Appendix B

TASK 10 - TECHNOLOGY DEVELOPMENT INTEGRATION

1.0 INTRODUCTION

The Energy & Environmental Research Center (EERC) in conjunction with the Waste Policy Institute (WPI) will identify and integrate new technologies to meet site-specific environmental management (EM) requirements at contaminated sites appropriate to U.S. Department of Energy (DOE) interests. EM technologies offered by developers will be evaluated to determine their complementary contribution to new cleanup systems focused on particular characterization and remediation problems at specific EM sites. The technology clusters identified will provide EM cleanup capabilities that are significantly faster, better, safer, and cheaper than systems that are currently available. Work will be performed under the DOE-EERC EM Cooperative Agreement (EMCA), which includes provisions "to develop, demonstrate, and commercialize technologies that address environmental management needs of contaminated sites 'together with' management activities which accelerate transfer of technologies." The effort began July 1, 1995.

2.0 OBJECTIVES AND ACTIVITIES

This task will develop new approaches for evaluating technology focus areas and other research and development technical programs and activities. This includes creating technology development scenarios and formulating streamlined technical approaches that will expedite technology focus area initiatives, other technical programs, and projects. In addition, this task is designed to validate technologies and systems through all phases of research, development, demonstration, testing, and evaluation and ensure public involvement during the development process.

The work is divided into three activities. In Task 10.1, Technology Management, technical reviews of requirements, needs, and assessments related to waste characterization, containment, in situ and ex situ treatment, waste storage, disposal, robotics handling, monitoring, laboratory analysis, and site characterization and remediation will be performed. The activities include but are not limited to the following: development of systems, experimental design, and plans; verification of technology performance; establishing regulatory documentation and intermediate products required for testing, demonstration, and validation; and preparation of review documentation. In addition, studies will be performed in various focus areas to facilitate rapid deployment of waste management technologies to the specific DOE sites and transfer to the private sector.

In Task 10.2, Project Management, the participants will conduct reviews and analyze and develop strategies for program management systems to integrate and control programs, projects, tasks, and documentation. This includes financial and technical management systems; decision analysis tools and program-planning software; and cost or schedule variance analysis and related software. In addition, the following activities will be carried out: conduct project reviews, public hearings, meetings, and public briefings; develop technical briefings; prepare related materials; plan for the transportation of hazardous waste, including acting as a liaison with the public on routes, safety, and preparedness; provide emergency management plans, training, and exercises for

facility and transportation preparedness; and develop protocols for collecting, handling, analyzing, and shipping environmental samples.

As part of the Task 10.3, Technology Integration, activities to the private sector, criteria for identifying risks to public health and safety posed by conditions at weapons complex facilities will be established; the extent of these risks will be evaluated; the urgency and priorities for eliminating or minimizing the risks will be determined; and the cost of activities required to meet applicable compliance agreements will be assessed.

3.0 ACCOMPLISHMENTS/WORK PERFORMED

- A packet of information on EMCA technologies was sent to Mr. Paul Rudnick of the Pacific Rim Enterprise Center (PREC, formerly Environmental Technology Partnership) in Seattle, Washington. PREC responded with several questions on the technologies, and the EERC is dealing with these inquiries. PREC is supported, in part by EM-50, to facilitate technology deployment at Hanford and in other technology-marketing activities.
- The EERC provided administrative support for the Waste Policy Institute (WPI) subcontract. The WPI subcontract ended in November of 1996. The WPI activities are dealt with in detail in the October and November monthly reports attached.
- Requests were placed for a number of program source materials, including the draft 10-year plans, background on the Rapid Commercialization Initiative, and the 1995 Waste Database. These materials were received and made available to the project managers.
- The report from Van Ness Feldman, Attorneys-at-Law, entitled "Integration of Innovative Technologies at Federal Waste Sites," examines 1) existing cleanup and waste remediation programs at federal facilities, 2) efforts to improve the implementation of innovative environmental technology programs by the federal government, and 3) options through which existing government processes can be improved to encourage and advance the development of innovative technologies. A copy of the report is attached.

4.0 WORK PLANNED FOR NEXT 6 MONTHS

The EERC will continue to identify technologies to DOE for integration into the EM Program.

APPENDIX A

**WASTE POLICY INSTITUTE MONTHLY
REPORT TO THE EERC, OCTOBER 1996**

**UNIVERSITY OF NORTH DAKOTA
ENERGY AND ENVIRONMENTAL
RESEARCH CENTER**

**Monthly Report
October, 1996**

**TECHNOLOGY DEVELOPMENT
INTEGRATION
WPI SUBCONTRACT NUMBER
359636**

WPI
Waste Policy Institute
A Virginia Tech Affiliated Corporation



1224 Pineview Drive • Morgantown, WV 26505
Telephone (304) 598-9383 • Telefax (304) 598-9392

November 15, 1996

Mr. John G. Hendrikson
Assistant to the Director
Energy and Environmental Research Center
University of North Dakota
15 North 23rd Street
Grand Forks, ND 58203

Subject: UNDEERC Fund No. 4624-0936, Technology Development Integration
WPI Subcontract No. 359636

Dear Mr. Hendrikson:

The Waste Policy Institute (WPI) is pleased to submit the enclosed report of activities conducted during the period of October 1, 1996 through October 31, 1996, in compliance with Article VI and Appendix A of Subcontract Number 359636. A list of products developed during this period is provided as Attachment A to the activities report.

Through October 31, WPI has expended \$13,614,769. Our monthly cost and labor report provides the details of our costs to date.

Please do not hesitate to call me if you have any questions or require additional information.

Sincerely,

A handwritten signature in dark ink, appearing to read "John S. Wilson", is written over a circular stamp that is partially visible.

John S. Wilson, Program Manager
Waste Policy Institute

cc: L. D. Eyman
C. Roberson

Operations Offices:

Aiken • Blacksburg • Chicago • Dayton • Gaithersburg • Idaho Falls
Morgantown • Moscow • Richland • San Antonio • Washington, DC

Corporate Office: Blacksburg, VA



A Virginia Tech Affiliated Corporation

SUBCONTRACT NUMBER: 359636

Report Period: 10/1/96-10/31/96

CONTRACTOR NAME: Waste Policy Institute
555 Quince Orchard Road
Suite 600
Gaithersburg, MD 20878-1437

CONTRACT PERIOD: 6/28/95 -12/01/96

1. SUBCONTRACT DELIVERABLES:

This report is submitted in fulfillment of requirements specified for the University of North Dakota Energy and Environmental Research Center (UNDEERC) Subcontract Number 359636. A list of products developed under this subcontract is provided as Attachment A.

2. SUMMARY OF ACTIVITIES:

WPI team members continued to provide support in the review activity involved with the Ten Year Plans during October. Additionally, a significant level of effort was expended in preparation for and support during the Kick-Off Meetings in Atlanta, GA early in the month.

TASK A-TECHNOLOGY ASSESSMENT

TANKS FOCUS AREA (TFA)

SUBSURFACE CONTAMINANTS FOCUS AREA (SCFA)

The WPI team reviewed the draft milestone report from TTP#: RL-36-LF-32, Work Element E titled: Waste Form Development for a DC Arc Furnace. The report seemed to meet the requirements for milestone E1, and there were no significant issues identified.

Staff members developed printouts and a diskette to meet a recurring need to supply data that related TTPs to certain technology categories and needs categories. Although developed independently of the EM-50 Decision Support System (DSS), these tables will become a part of the DSS and represent current SCFA projects. The lists of categories will also be valuable to the site needs description process for FY97.

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

In response to a METC request, the WPI team reviewed a letter from Lockheed-Martin regarding METC's decision to discontinue funding of the Microspi Project. The review asserted that the contents of the letter were not sufficient to affect a decisional change.

In response to a METC request, the WPI team compiled information regarding concrete scabbling methods from the Preferred Decommissioning Technologies Guide, the Decommissioning Handbook, and internet resources.

Team members performed a cursory review of the draft Preferred Alternatives Matrix for Characterization. The review determined that there were no major technological flaws in the document in regards to D&D activities.

A WPI staff member attended a meeting of the Fernald Plant-1 Large-Scale Demonstration (LSDP) Integrating Contractor (IC) Team on October 3, 1996. A meeting record was prepared for delivery to METC.

The WPI team prepared a draft conference paper, entitled "Assessment of DOE Radioactive Scrap Metal Disposition Options," and a draft briefing for presentation at Beneficial Reuse '96 in Knoxville, Tennessee, October 22-24, 1996. Mr. Steve Bossart, DOE-METC, made the presentation. Preparation of the paper stemmed from research and analysis performed by the WPI team for an issue paper on the same subject.

MIXED WASTE FOCUS AREA (MWFA)

TASK B-PROJECT ASSESSMENT

TANKS FOCUS AREA (TFA)

A draft presentation for the Tanks Focus Area (TFA) Kickoff Meeting held in Atlanta, Georgia was prepared by the staff. The presentation was a report on the Post Workshop Task Groups from the TFA Denver Meeting in June 1996. Also included in the presentation were talking points for DOE-RL on policy and communication within the TFA.

A Statement of Non-Federal Participation for the TFA was prepared by the staff and sent to DOE-RL and DOE-HQ for inclusion in the FY1997 Performance Plan.

Staff prepared a draft memorandum to introduce the TFA to the Council of Energy Resource Tribes (CERT) Tribal Working Group members. This memorandum also transmitted the *Radioactive Tank Waste Remediation Focus Area Technology Summary* (Rainbow Book) and the *Hanford Tank Clean Up: Guide to Understanding the Technical Issues* primer.

Verification that the TFA completed FY1996 Performance Plan Measures 50-01 and 50-02 was done by the staff and transmitted back to DOE-HQ. Also verified were the completion of all demonstrations and technologies available for transfer. This information was to be used in a briefing to Clyde Frank, DOE-HQ.

Agendas for all October TFA Teleconferences and the Updates and Actions from the previous weeks' calls were prepared by the staff and electronically distributed to the attendees. This task involves attending the call and taking detailed minutes and recording actions as assigned by the TFA Lead. This office also serves as a point of contact for distribution of information to the attendees of any TFA-related material that is pertinent to the call.

Staff prepared the TFA Business Review using budget information as of July 31, 1996. This briefing is an update of the TFA with regard to budget and program management and also highlights any major accomplishments and/or issues that need to be reported to DOE-HQ.

The team responded to a request from DOE-RL to help in answering a call for information from DOE-HQ listing reports, plans, data input, etc. that goes from the Field Offices to DOE-HQ on a regular basis.

DOE-RL's Legal Department had reviewed the PNNL Call for Proposals for the TFA and made numerous comments concerning the document. The WPI staff then consolidated the comments into a comprehensive report, as requested by the TFA Lead.

Staff members prepared an informal memorandum to the TFA Site Representatives, PNNL Technical Team, and DOE-HQ transmitting copies of the Hanford Tanks Initiative (HTI) Plan and the HTI Technology Demonstration and Waste Retrieval Acquisition Strategy and made the distribution.

SUBSURFACE CONTAMINANTS FOCUS AREA (SCFA)

Members of the team prepared draft briefing slides for the Kick-Off Meeting in Atlanta, GA on October 8-9, 1996. Topics covered were: FY96 Carryover and Carryover disposition, FY96/97 TTP Crosswalk table and guidance.

The WPI team prepared a draft memo providing a summary of the EM-50 Decision Support System (DSS). The report focused on the identification of system capabilities and links and the identification of those system components that require immediate or routine maintenance. The initiation of system maintenance will provide for full implementation of the DSS throughout SCFA in FY97.

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

Team members completed a review of the EM-40-developed Preferred Decommissioning Technologies Guide. Following the review, they prepared a suggested response to the Guide's issuance primarily regarding the treatment of innovative technologies.

The WPI team reviewed the proposed Large-Scale Demonstration (LSDP) Projects for their impact on the draft Ten Year Plans. The review provided insight as to the potential commonality of LSDP Proposal activities and those activities cited in the Ten Year Plans.

Team members assisted DOE in developing communication to LSDP Projects regarding the creation of communication plans.

The WPI team continued the development of the D&D Technology Development Investment Opportunities Assessment for the focus area. This assessment will support the strategic planning effort for technology investment by the focus area and was approved by the D&D Focus Area lead. A formal project plan will be delivered in late November. The assessment is being performed along two concurrent research paths. The first path will clearly define the DOE D&D program using the site Ten Year Plans. The second path assesses baseline and commercially available technologies, and technologies in development to address D&D program problem areas. The result of the assessment will be identification of the gaps in and opportunities for technology development to support the D&D program.

A WPI team staff member attended the FY97 LSDP kickoff meeting and IC Team information exchange to be held in Cincinnati, Ohio on October 4, 1996. A meeting record was prepared and delivered to METC for delivery under a DOE cover letter to the meeting participants and other interested parties.

MIXED WASTE FOCUS AREA (MWFA)

TASK C-TECHNOLOGY INTEGRATION

Members of the staff produced the latest update to the FY96/97 crosswalk table sent from the Chief Financial Office, DOE-HQ. The table was issued at the Atlanta Kick-Off Meeting. Assistance will be given to update the list and provide an electronic file for transmittal to DOE-HQ.

The WPI team produced the draft July Monthly Business Review for Landfill and Plumes Focus Areas, including detailed information on Financial Plans, cost variances and overdue milestones.

A member of the staff facilitated the SCFA FY97 Kickoff Meeting held on October 8-9, 1996, in Atlanta, Georgia. The purpose of the meeting was to inform managers of the FY97 budget picture and to understand how to point SCFA toward meshing with the EM Ten Year Plan.

Staff members provided support to the Office of Science and Technology stand-alone Ten Year Plan (TYP) which included devising a schedule for the TYP, and development of an outline and thesis statement.

Staff members assisted in compiling data for the 12 sites on applicable OST technologies to support site visits by the Army Corps of Engineers in support of the TYP. Staff members also assisted with assembling of site briefing books for the visits.

WPI team members provided assistance with the review of Table 1 from the field to verify applicability of OST technologies to specific projects in the TYP.

TASK D- SYSTEMS ENGINEERING

A member of the staff reviewed three Systems Engineering papers presented at INCOSE by INEL Systems Engineers.

Staff continued support of project participants vis telephone, fax and e-mail messages.

ATTACHMENT A

PRODUCTS DELIVERED: TASK A - TECHNOLOGY ASSESSMENT

TANKS FOCUS AREA (TFA)

SUBSURFACE CONTAMINANTS FOCUS AREA (SCFA)

- Review of Draft Milestone Report from TTP #: RL-46-LF-32
- Technical Database of SCFA Tasks Including Fields to Answer Queries

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

- Review of Microspi Project Discontinuation Rebuttal (10/2/96)
- Concrete Scabbling Methods (10/2/96)
- Draft Conference paper entitled, "Assessment of DOE Radioactive Scrap Metal Disposition Options" and briefing for presentation at Beneficial Reuse '96 Conference in Knoxville, Tennessee, October 22-24, 1996

MIXED WASTE FOCUS AREA (MWFA)

PRODUCTS DELIVERED: TASK B: PROJECT ASSESSMENT

TANKS FOCUS AREA (TFA)

- Post Workshop Task Groups Presentation
- Statement of Non-Federal Participation for the Tanks Focus Area
- Draft Council of Energy Resource Tribes Memorandum
- Verification of completion of FY96 Tanks Focus Area Performance Measures
- Agendas for the Tanks Focus Area Teleconferences and Updates/Actions from previous calls for the period of October 1-15, 1996
- Tanks Focus Area Business Review
- List of DOE-HQ plans, reports, and data input provided by the Tanks Focus Area
- Call for Proposal comments

- Draft DSI (informal memorandum) regarding the Hanford Tanks Initiative Plan and Technology Demonstration and Waste Retrieval Acquisition Strategy

SUBSURFACE CONTAMINANTS FOCUS AREA (SCFA)

- Briefing Slides for the Atlanta Kick-Off Meeting, October 8-9, 1996
- EM-50 Decision Support System Summary

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

- Suggested response to the Preferred Decommissioning Technologies Guide issuance.
- Assessment of LSDP Proposals against Ten-Year Plans
- Meeting Record- Large-Scale Demonstration Program Integrating Contractor Team Information Exchange, October 4, 1996

MIXED WASTE FOCUS AREA (MWFA)

PRODUCTS DELIVERED: TASK C: TECHNOLOGY INTEGRATION

- Updated Crosswalk Table for FY96/97 TTPs
- Delivery of August FY96 Monthly Business Review
- Delivery of July FY96 Monthly Business Review
- Trip Report from the SCFA FY97 Kickoff Meeting held on October 8-9, 1996, in Atlanta, Georgia.
- Draft schedule for the Ten Year Plan (TYP).
- Draft outline and thesis statement for the Ten Year Plan (TYP).
- Richland and Chicago site briefing books for the Army Corps of Engineers site visits.

PRODUCTS DELIVERED: TASK D: SYSTEMS ENGINEERING

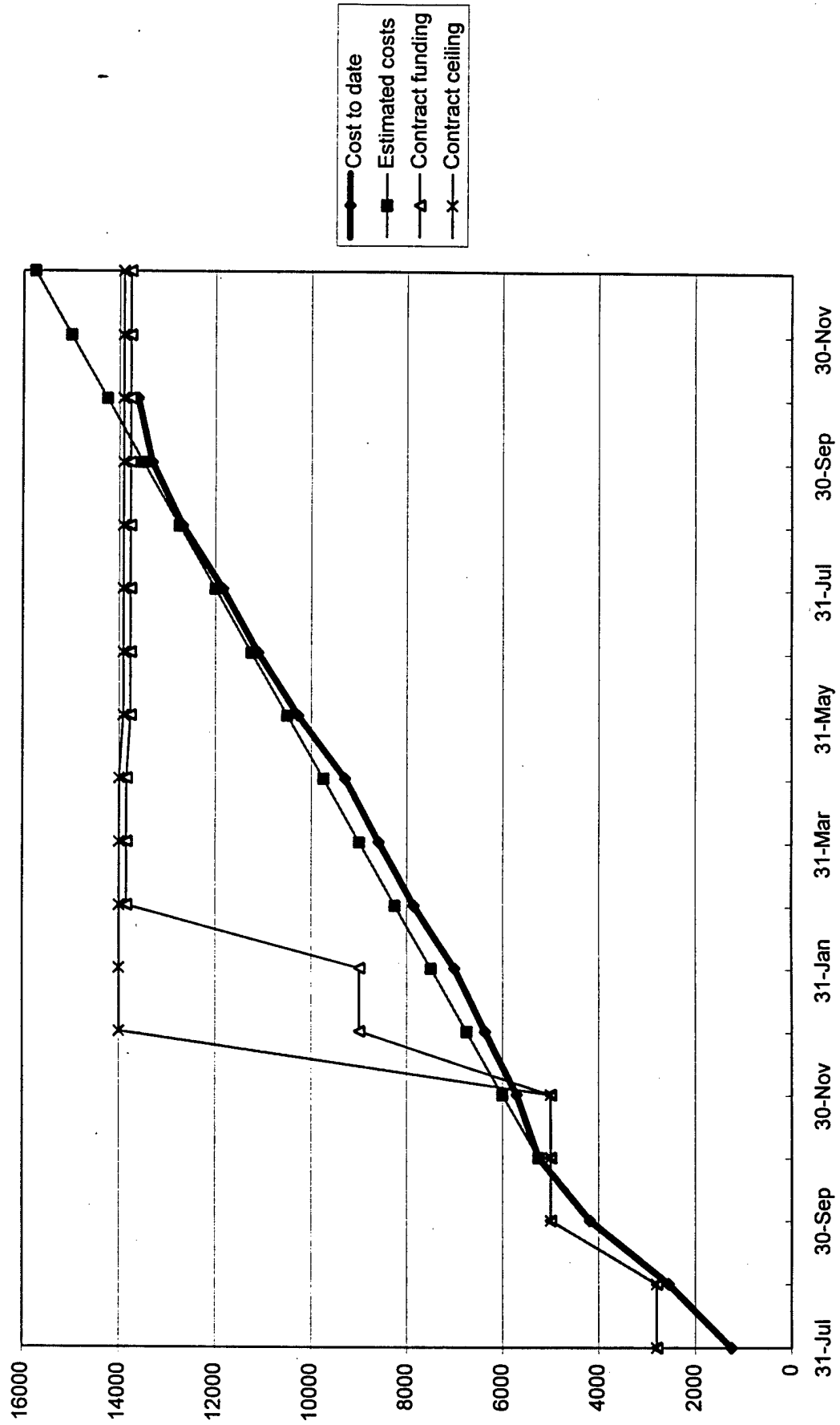


**MONTHLY
COST AND LABOR
REPORT**

**UNIVERSITY OF NORTH DAKOTA
ENERGY AND ENVIRONMENTAL RESEARCH CENTER**

**Subcontract No. 359636
October, 1996**

WPI Subcontract--EERC Coop. Agreement (\$x1000)



PROGRAM SUMMARY

Waste Policy Institute Project Summary

Subcontract No. 359 636
Actuals through Oct 96

11/11/96
3:42 PM

WBS: 1043 EERC

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide assistance to EERC's conduct of technology development integration activities.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	3,325	-3,163	179,788	161,569	18,219	179,950	161,731	18,219
Price:	21,420	298,981	-277,561	14,123,403	13,614,769	508,634	14,144,823	13,636,189	508,634

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	149	15,710	17,723	19,161	10,639	6,367	6,669	6,932	8,057	8,562	8,653	11,408
Cumu Hours:	149	15,859	33,582	52,743	63,382	69,749	76,418	83,350	91,408	99,970	108,623	120,031
Monthly Price:	8,492	1,240,210	1,300,381	1,628,866	1,072,629	508,957	674,480	577,622	844,119	734,699	707,388	982,181
Cumu Price:	8,492	1,248,702	2,549,083	4,177,949	5,250,578	5,759,535	6,434,015	7,011,637	7,855,755	8,590,455	9,297,843	10,280,023
Budget:												
Monthly Hours:	1,437	18,428	22,308	10,570	10,506	10,506	10,506	10,506	10,506	10,506	10,506	10,669
Cumu Hours:	1,437	19,865	42,173	52,743	63,249	73,755	84,261	94,767	105,273	115,779	126,286	136,954
Monthly Price:	89,294	1,251,829	1,454,843	1,381,982	818,078	818,078	818,078	818,078	818,078	818,078	818,078	839,498
Cumu Price:	89,294	1,341,124	2,795,967	4,177,949	4,996,027	5,814,106	6,632,183	7,450,261	8,268,339	9,086,417	9,904,494	10,743,992

WBS: 1043 EERC
Start Date: 6/27/95
End Date: 12/1/96
Task Description: Provide assistance to EERC's conduct of technology development integration activities.

Manager: Dr. John S. Wilson

Cost Performance Summary:

Current Period				Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	3,325	-3,163	179,788	161,569	18,219	179,950	161,731	18,219
Price:	21,420	298,981	-277,561	14,123,403	13,614,769	508,634	14,144,823	13,636,189	508,634

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	8,782	10,309	11,071	8,052	3,325	0						
Cumu Hours:	128,813	139,122	150,192	158,244	161,569	161,569						
Monthly Price:	829,253	740,287	835,492	630,733	298,981	0						
Cumu Price:	11,109,276	11,849,563	12,685,055	13,315,788	13,614,769	13,614,769						
Budget:												
Monthly Hours:	10,668	10,668	10,668	10,668	162	162						
Cumu Hours:	147,622	158,290	168,958	179,626	179,788	179,950						
Monthly Price:	839,498	839,498	839,498	839,498	21,420	21,420						
Cumu Price:	11,583,490	12,422,988	13,262,486	14,101,983	14,123,403	14,144,823						

TASK A

**Waste Policy Institute
Task Area Summary**

Subcontract No. 359 636
Actuals through Oct 96

WBS: 1043.01.01 Technology Management

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Perform technical reviews of requirements, needs and assessments related to waste characterization, containment, in-situ and ex-situ treatment, waste storage, disposal, robotics handling, monitoring, laboratory analysis, site characterization and remediation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	*Variance	Budget	Estimate	Variance
Hours:	0	566	-566	87,456	63,161	24,295	87,456	63,161	24,295
Price:	0	81,691	-81,691	5,423,585	5,815,821	-392,236	5,423,585	5,815,821	-392,236

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	50	6,255	7,504	7,961	6,453	4,330	3,138	2,600	3,300	3,479	2,963	4,168
Cumu Hours:	50	6,305	13,809	21,770	28,224	32,553	35,691	38,291	41,591	45,069	48,032	52,200
Monthly Price:	2,574	533,931	582,189	738,970	657,545	359,376	316,660	247,333	406,806	323,669	246,524	383,670
Cumu Price:	2,574	536,505	1,118,694	1,857,664	2,515,209	2,874,585	3,191,245	3,438,578	3,845,383	4,169,052	4,415,577	4,799,247
Budget:												
Monthly Hours:	328	7,196	8,711	5,534	5,474	5,474	5,474	5,474	5,474	5,474	5,474	5,474
Cumu Hours:	328	7,525	16,236	21,770	27,244	32,718	38,191	43,665	49,139	54,613	60,087	65,561
Monthly Price:	14,090	498,386	570,555	774,636	297,160	297,160	297,160	297,160	297,160	297,160	297,160	297,160
Cumu Price:	14,090	512,477	1,083,032	1,857,668	2,154,828	2,451,988	2,749,148	3,046,308	3,343,467	3,640,627	3,937,787	4,234,946

Waste Policy Institute Task Area Summary

Subcontract No. 359 636
Actuals through Oct 96

WBS: 1043.01.01 Technology Management

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Perform technical reviews of requirements, needs and assessments related to waste characterization, containment, in-situ and ex-situ treatment, waste storage, disposal, robotics handling, monitoring, laboratory analysis, site characterization and remediation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	566	-566	87,456	63,161	24,295	87,456	63,161	24,295
Price:	0	81,691	-81,691	5,423,585	5,815,821	-392,236	5,423,585	5,815,821	-392,236

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	3,099	2,743	2,528	2,026	566	0						
Cumu Hours:	55,299	58,041	60,569	62,595	63,161	63,161						
Monthly Price:	317,399	219,262	250,563	147,660	81,691	0						
Cumu Price:	5,116,646	5,335,908	5,586,471	5,734,130	5,815,821	5,815,821						
Budget:												
Monthly Hours:	5,474	5,474	5,474	5,474	0	0						
Cumu Hours:	71,034	76,508	81,982	87,456	87,456	87,456						
Monthly Price:	297,160	297,160	297,160	297,160	0	0						
Cumu Price:	4,532,106	4,829,266	5,126,426	5,423,585	5,423,585	5,423,585						

TASK B

**Waste Policy Institute
Task Area Summary**
Subcontract No. 359 636
Actuals through Oct 96

1043.01.02

WBS: 1043.01.02 Project Management

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Conduct reviews, analyze and develop strategies for program management systems for integration and control of programs, projects, tasks and documentation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	1,345	-1,345	57,993	69,454	-11,461	57,993	69,454	-11,461
Price:	0	107,607	-107,607	5,177,640	5,401,232	-223,592	5,177,640	5,401,232	-223,592

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	98	8,116	8,247	9,084	3,578	1,588	2,868	3,297	3,561	3,631	3,321	4,024
Cumu Hours:	98	8,214	16,462	25,545	29,123	30,711	33,578	36,875	40,436	44,067	47,388	51,412
Monthly Price:	5,779	599,758	566,591	719,936	341,971	108,114	275,047	255,073	319,577	306,696	269,945	315,382
Cumu Price:	5,779	605,537	1,172,128	1,892,064	2,234,035	2,342,149	2,617,196	2,872,269	3,191,846	3,498,542	3,768,486	4,083,869
Budget:												
Monthly Hours:	309	6,643	8,042	10,551	2,704	2,704	2,704	2,704	2,704	2,704	2,704	2,704
Cumu Hours:	309	6,952	14,994	25,545	28,249	30,953	33,657	36,361	39,065	41,769	44,473	47,177
Monthly Price:	21,034	453,804	527,559	889,666	273,798	273,798	273,798	273,798	273,798	273,798	273,798	273,798
Cumu Price:	21,034	474,838	1,002,397	1,892,063	2,165,861	2,439,659	2,713,457	2,987,255	3,261,053	3,534,852	3,808,650	4,082,448

**Waste Policy Institute
Task Area Summary**
Subcontract No. 359 636
Actuals through Oct 96

1043.01.02

WBS: 1043.01.02 Project Management
Start Date: 6/27/95
End Date: 12/1/96
Manager: Dr. John S. Wilson
Task Description: Conduct reviews, analyze and develop strategies for program management systems for integration and control of programs, projects, tasks and documentation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	1,345	-1,345	57,993	69,454	-11,461	57,993	69,454	-11,461
Price:	0	107,607	-107,607	5,177,640	5,401,232	-223,592	5,177,640	5,401,232	-223,592

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	3,151	4,572	5,327	3,649	1,345	0						
Cumu Hours:	54,562	59,134	64,461	68,110	69,454	69,454						
Monthly Price:	276,057	305,344	361,463	266,893	107,607	0						
Cumu Price:	4,359,925	4,665,270	5,026,733	5,293,625	5,401,232	5,401,232						
Budget:												
Monthly Hours:	2,704	2,704	2,704	2,704	0	0						
Cumu Hours:	49,881	52,585	55,289	57,993	57,993	57,993						
Monthly Price:	273,798	273,798	273,798	273,798	0	0						
Cumu Price:	4,356,246	4,630,044	4,903,842	5,177,640	5,177,640	5,177,640						

TASK C

Waste Policy Institute Task Area Summary

Subcontract No. 359 636

Actuals through Oct 96

WBS: 1043.01.03 Technology Integration

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide support in establishing criteria for identifying risks to the public health and safety posed by conditions at the weapons complex facilities, evaluate the extent of these risks, determine the urgency and priorities for eliminating or minimizing the risks, and access the cost of activities required to meet applicable compliance agreements.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	1,415	-1,415	33,367	28,947	4,420	33,367	28,947	4,420
Price:	0	109,682	-109,682	3,393,658	2,381,474	1,012,184	3,393,658	2,381,474	1,012,184

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	1	1,339	1,972	2,117	608	450	664	1,036	1,196	1,453	2,370	3,216
Cumu Hours:	1	1,340	3,312	5,428	6,036	6,486	7,150	8,185	9,381	10,834	13,203	16,419
Monthly Price:	139	106,521	151,601	169,960	73,113	41,466	82,773	75,216	117,736	104,335	190,919	283,077
Cumu Price:	139	106,660	258,261	428,221	501,334	542,800	625,574	700,790	818,526	922,860	1,113,780	1,396,857
Budget:												
Monthly Hours:	800	4,589	5,555	-5,515	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328
Cumu Hours:	800	5,388	10,943	5,428	7,756	10,085	12,413	14,741	17,069	19,398	21,726	24,054
Monthly Price:	54,170	299,639	356,729	-282,320	247,120	247,120	247,120	247,120	247,120	247,120	247,120	247,120
Cumu Price:	54,170	353,809	710,538	428,218	675,338	922,458	1,169,578	1,416,698	1,663,818	1,910,938	2,158,058	2,405,178

1043.01.03

Waste Policy Institute Task Area Summary

Subcontract No. 359 636

Actuals through Oct 96

11/11/96
3:42 PM

WBS: 1043.01.03 Technology Integration

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide support in establishing criteria for identifying risks to the public health and safety posed by conditions at the weapons complex facilities, evaluate the extent of these risks, determine the urgency and priorities for eliminating or minimizing the risks, and access the cost of activities required to meet applicable compliance agreements.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	1,415	-1,415	33,367	28,947	4,420	33,367	28,947	4,420
Price:	0	109,682	-109,682	3,393,658	2,381,474	1,012,184	3,393,658	2,381,474	1,012,184

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	2,533	2,993	3,210	2,377	1,415	0						
Cumu Hours:	18,952	21,945	25,155	27,532	28,947	28,947						
Monthly Price:	230,149	215,115	218,378	211,294	109,682	0						
Cumu Price:	1,627,005	1,842,120	2,060,498	2,271,792	2,381,474	2,381,474						
Budget:												
Monthly Hours:	2,328	2,328	2,328	2,328	0	0						
Cumu Hours:	26,382	28,711	31,039	33,367	33,367	33,367						
Monthly Price:	247,120	247,120	247,120	247,120	0	0						
Cumu Price:	2,652,298	2,899,418	3,146,538	3,393,658	3,393,658	3,393,658						

TASK D

1043.01.04

Waste Policy Institute Task Area Summary

Subcontract No. 359 636
Actuals through Oct 96

Manager: Dr. John S. Wilson

WBS: 1043.01.04 Systems Engineering

Start Date: 2/1/96

End Date: 12/1/96

Task Description:

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget		Variance	Budget		Variance	Budget		Variance
	Actuals			Actuals			Actuals		
Hours:	162	0	162	972	7	965	1,134	169	965
Price:	21,420	2	21,418	128,520	16,243	112,277	149,940	37,663	112,277

Monthly Financial Recap:

[illegible]

**Waste Policy Institute
Task Area Summary**
Subcontract No. 359 636
Actuals through Oct 96

1043.01.04

Manager: Dr. John S. Wilson

WBS: 1043.01.04 Systems Engineering

Start Date: 2/1/96

End Date: 12/1/96

Task Description:

Cost Performance Summary:

Current Period				Inception to Date			At Complete		
Budget	Actuals	Variance		Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	0	162	972	7	965	1,134	169	965
Price:	21,420	2	21,418	128,520	16,243	112,277	149,940	37,663	112,277

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	0	2	5	0	0	0						
Cumu Hours:	0	2	7	7	7	7						
Monthly Price:	5,648	565	5,089	4,887	2	0						
Cumu Price:	5,699	6,265	11,354	16,241	16,243	16,243						
Budget:												
Monthly Hours:	162	162	162	162	162	162						
Cumu Hours:	324	486	648	810	972	1,134						
Monthly Price:	21,420	21,420	21,420	21,420	21,420	21,420						
Cumu Price:	42,840	64,260	85,680	107,100	128,520	149,940						

APPENDIX B

WASTE POLICY INSTITUTE MONTHLY REPORT TO THE EERC, NOVEMBER 1996

**UNIVERSITY OF NORTH DAKOTA
ENERGY AND ENVIRONMENTAL
RESEARCH CENTER**

**Monthly Report
November, 1996**

**TECHNOLOGY DEVELOPMENT
INTEGRATION
WPI SUBCONTRACT NUMBER
359636**

WPI
Waste Policy Institute
A Virginia Tech Affiliated Corporation



1224 Pineview Drive • Morgantown, WV 26505
Telephone (304) 598-9383 • Telefax (304) 598-9392

December 13, 1996

Mr. John G. Hendrikson
Assistant to the Director
Energy and Environmental Research Center
University of North Dakota
15 North 23rd Street
Grand Forks, ND 58203

Subject: UNDEERC Fund No. 4624-0936, Technology Development Integration
WPI Subcontract No. 359636

Dear Mr. Hendrikson:

The Waste Policy Institute (WPI) is pleased to submit the enclosed report of activities conducted during the period of November 1, 1996 through November 30, 1996, in compliance with Article VI and Appendix A of Subcontract Number 359636. A list of products developed during this period is provided as Attachment A to the activities report.

Through November 30, WPI has expended \$13,890,508. Our monthly cost and labor report provides the details of our costs to date.

Please do not hesitate to call me if you have any questions or require additional information.

Sincerely,

A handwritten signature in dark ink, appearing to read "John S. Wilson", is written over a horizontal line.

John S. Wilson, Program Manager
Waste Policy Institute

cc: L. D. Eyman
C. Roberson

Operations Offices:

Aiken • Blacksburg • Chicago • Dayton • Gaithersburg • Idaho Falls
Morgantown • Moscow • Richland • San Antonio • Washington, DC

Corporate Office: Blacksburg, VA



A Virginia Tech Affiliated Corporation

SUBCONTRACT NUMBER: 359636

Report Period: 11/1/96-11/30/96

CONTRACTOR NAME: Waste Policy Institute
555 Quince Orchard Road
Suite 600
Gaithersburg, MD 20878-1437

CONTRACT PERIOD: 6/28/95 -12/01/96

1. SUBCONTRACT DELIVERABLES:

This report is submitted in fulfillment of requirements specified for the University of North Dakota Energy and Environmental Research Center (UNDEERC) Subcontract Number 359636. A list of products developed under this subcontract is provided as Attachment A.

2. SUMMARY OF ACTIVITIES:

This final period of the cooperative agreement was devoted extensively to support of the OST Ten Year Plan activities.

TASK B-PROJECT ASSESSMENT

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

The final deliverable, *Record of the Decontamination and Decommissioning (D&D) Workshop: Defining Research Needs* for the D&D Workshop held in Roanoke last summer was prepared and delivered. This deliverable consisted of a camera-ready single-sided copy for printing and an electronic file (in Acrobat PDF format) for posting on the client's website.

TASK C-TECHNOLOGY INTEGRATION

Members of the team continued compiling a list of all technologies for which developmental funding was provided by the Office of Science and Technology from 1991 through the present. This list will be produced in spreadsheet form with associated information on focus area or crosscutting program relevance, applicable media for the technology, and documentation where further information on the technology can be found.

Staff members developed a full color presentation on the need for the Office of Science and Technology (OST) in the Ten Year Plan (TYP).

WPI team members assisted in the development of strategies for the OST Ten Year Plan.

Team members developed 12 Site Reference Books for use by the Army Corps of Engineers Site TYP review teams.

Staff members assisted in the refinement, editing and further development of the OST TYP annotated outline.

A review of the various Site TYP tables 1, 2, and 3 was conducted and a summary chart of parameters was developed from those tables.

WPI team members assisted in the development of TYP data for use in the OMB briefing on the FY98 budget.

Staff members assisted in the updating of TYP development guidance.

The WPI team provided technical support in the development of Deployment Fund strategies.

In support of the Technology Integration/Technology Assessment, Availability, Acceptance and Use Initiatives, WPI team members have provided the following support for the purpose of tracking the achievement of EM supported technologies and to classify these technologies according to the definition of key terms approved by Clyde Frank in March, 1996.

Team members assisted in the identification of additional EM-50 supported technologies. These technologies are additional in the sense of expanding the current list of about 200 technologies identified by such tools as the baseball cards, BEMR list, EMAB list, and technology summary books.

The WPI team assisted in the assessment of commercial availability and implementation status of five technologies commercialized during 1996. These technologies will be the focus of a future publication.

Staff members assessed the availability of EM-50 EMAB and BEMR technologies to the Department of Defense and the implementation status of these technologies at DOD locations. This information was collected for a presentation by Clyde Frank to DOD's SERDP Program.

Team members investigated the availability of EM-50 supported EMAB and BEMR technologies to DOE and their use as part of a true implementation, demo implementation, or a selection for implementation. The information for the technologies was organized by FA.

Staff members participated in a presentation to EM-50's Office of Technology Systems on OST's Technology Achievements.

The WPI team is currently revising our information gathering tool and has initiated a Phase 2 project which will target other commercially available technologies that have been implemented and used by DOE and/or non-DOE entities. The database for EM-50 supported technologies is being expanded.

The WPI team, in support of Core Business Team activities, attended weekly meetings. Emphasis was placed on prioritization of business processes to be included in the Core Business Team Process Book. A revised draft EM-50 master schedule was submitted on November 11, 1996.

Staff members supported the EM-50 program business review by providing information and organizational recommendations. They also developed draft slide overviews in support of the business review, which was submitted on November 26, 1996.

The WPI team provided recommendations for responses to OMB inquiries concerning Performance Measurement and the Internal Budget Review (IRB).

Team members supported the Performance Measurement analysis for the Secretary's Commitment to the President. Analysis covered the FY96 Annual Performance Plan by Program Area at the task plan level. Variances from planned performance levels were explained. A draft summary of the FY96 Performance Measurement Plan Year-End Actuals was submitted on November 6, 1996.

Members of the WPI team supported the documentation of Performance Measurement criteria for OST in the Ten Year Plan. Draft performance definitions of EM-50's performance measures, along with suggestions for illustrating/charting performance metrics were also recommended.

The team supported review of OST data for the QMR. An analysis of data presented in the draft QMR was made from a HQ perspective. A draft listing of QMR data discrepancies was submitted on November 20, 1996.

Technical assistance was provided by the team for the publication of the draft FY97 & FY98 Annual Performance Plans. Draft FY97 & FY98 Annual Performance Plans dated November 6, 1996 and November 27, 1996 were submitted. Listing of data quality issues associated with Program Area inputs into the Annual Performance Plan was submitted November 21, 1996.

Staff members supported a review of the top technology systems to be implemented in FY97. These technologies will be the major key drivers of success for EM-50 over the next fiscal year. Milestones and performance metrics will be closely monitored to ensure success.

The WPI team published draft minutes of the QMR teleconference held on November 21, 1996 and draft minutes of the TPO teleconference held on November 22, 1996.

ATTACHMENT A

PRODUCTS DELIVERED: TASK B: PROJECT ASSESSMENT

DECONTAMINATION AND DECOMMISSIONING (D&D) FOCUS AREA

- Record of the Decontamination and Decommissioning (D&D) Workshop: Defining Research Needs

PRODUCTS DELIVERED: TASK C: TECHNOLOGY INTEGRATION

- Draft FY97 & FY98 Annual Performance Plans dated November 6, 1996 and November 27, 1996
- Draft slide overviews in support of the business review submitted November 26, 1996
- Revised draft EM-50 master schedule submitted November 11, 1996
- Listing of data quality issues associated with Program Area inputs into the Annual Performance Plan - submitted November 21, 1996
- Draft listing of QMR data discrepancies - submitted November 20, 1996
- Draft minutes of the QMR teleconference held on November 21, 1996 - submitted November 21, 1996
- Draft minutes of the TPO teleconference held on November 22, 1996 - submitted November 22, 1996
- Draft assessment of five technologies commercialized in 1996
- Draft full color Ten Year Plan Presentation for OST
- 12 Site Reference Books/Army Corps of Engineers Site Ten Year Plan Reviews
- Ten Year Plan Annotated Outline
- Summary Chart of Tables 1, 2, and 3 of the Site Ten Year Plan
- Draft of EM-50 supported EMAB and BEMR technologies to DOE

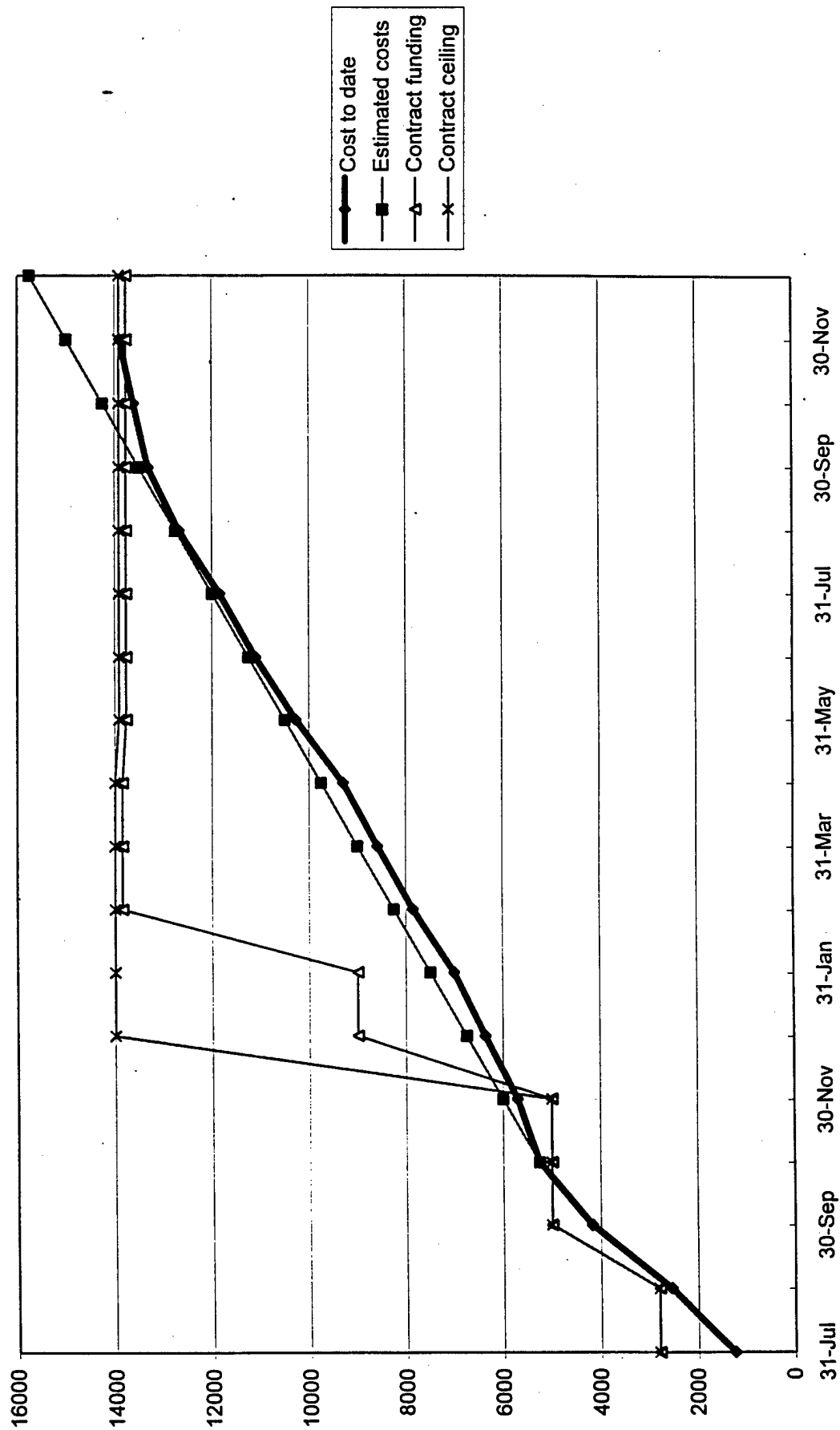


MONTHLY COST AND LABOR REPORT

UNIVERSITY OF NORTH DAKOTA
ENERGY AND ENVIRONMENTAL RESEARCH CENTER

Subcontract No. 359636
November, 1996

WPI Subcontract--EERC Coop. Agreement (\$x1000)



PROGRAM SUMMARY

Waste Policy Institute Project Summary

Subcontract No. 359 636
Actuals through Nov 96

12/12/96
8:52 AM

WBS: 1043 EERC

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide assistance to EERC's conduct of technology development integration activities.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	3,516	-3,354	179,950	165,084	14,866	179,950	165,084	14,866
Price:	21,420	275,739	-254,319	14,144,823	13,890,508	254,315	14,144,823	13,890,508	254,315

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	149	15,710	17,723	19,161	10,639	6,367	6,669	6,932	8,057	8,562	8,653	11,408
Cumu Hours:	149	15,859	33,582	52,743	63,382	69,749	76,418	83,350	91,408	99,970	108,623	120,031
Monthly Price:	8,492	1,240,210	1,300,381	1,628,866	1,072,629	508,957	674,480	577,622	844,119	734,699	707,388	982,181
Cumu Price:	8,492	1,248,702	2,549,083	4,177,949	5,250,578	5,759,535	6,434,015	7,011,637	7,855,755	8,590,455	9,297,843	10,280,023
Budget:												
Monthly Hours:	1,437	18,428	22,308	10,570	10,506	10,506	10,506	10,506	10,506	10,506	10,506	10,669
Cumu Hours:	1,437	19,865	42,173	52,743	63,249	73,755	84,261	94,767	105,273	115,779	126,286	136,954
Monthly Price:	89,294	1,251,829	1,454,843	1,381,982	818,078	818,078	818,078	818,078	818,078	818,078	818,078	839,498
Cumu Price:	89,294	1,341,124	2,795,967	4,177,949	4,996,027	5,814,106	6,632,183	7,450,261	8,268,339	9,086,417	9,904,494	10,743,992

Waste Policy Institute Task Area Summary

Subcontract No. 359 636
Actuals through Nov 96

12/12/96
8:52 AM

WBS: 1043 EERC

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide assistance to EERC's conduct of technology development integration activities.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	3,516	-3,354	179,950	165,084	14,866	179,950	165,084	14,866
Price:	21,420	275,739	-254,319	14,144,823	13,890,508	254,315	14,144,823	13,890,508	254,315

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	8,782	10,309	11,071	8,052	3,325	3,516						
Cumu Hours:	128,813	139,122	150,192	158,244	161,569	165,084						
Monthly Price:	829,253	740,287	835,492	630,733	298,981	275,739						
Cumu Price:	11,109,276	11,849,563	12,685,055	13,315,788	13,614,769	13,890,508						
Budget:												
Monthly Hours:	10,668	10,668	10,668	10,668	162	162						
Cumu Hours:	147,622	158,290	168,958	179,626	179,788	179,950						
Monthly Price:	839,498	839,498	839,498	839,498	21,420	21,420						
Cumu Price:	11,583,490	12,422,988	13,262,486	14,101,983	14,123,403	14,144,823						

TASK A

WBS: 1043.01.01 Technology Management
Manager: Dr. John S. Wilson

Start Date: 6/27/95
End Date: 12/1/96

Task Description: Perform technical reviews of requirements, needs and assessments related to waste characterization, containment, in-situ and ex-situ treatment, waste storage, disposal, robotics handling, monitoring, laboratory analysis, site characterization and remediation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	340	-340	87,456	63,500	23,956	87,456	63,500	23,956
Price:	0	31,300	-31,300	5,423,585	5,847,121	-423,536	5,423,585	5,847,121	-423,536

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	50	6,255	7,504	7,961	6,453	4,330	3,138	2,600	3,300	3,479	2,963	4,168
Cumu Hours:	50	6,305	13,809	21,770	28,224	32,553	35,691	38,291	41,591	45,069	48,032	52,200
Monthly Price:	2,574	533,931	582,189	738,970	657,545	359,376	316,660	247,333	406,806	323,669	246,524	383,670
Cumu Price:	2,574	536,505	1,118,694	1,857,664	2,515,209	2,874,585	3,191,245	3,438,578	3,845,383	4,169,052	4,415,577	4,799,247
Budget:												
Monthly Hours:	328	7,196	8,711	5,534	5,474	5,474	5,474	5,474	5,474	5,474	5,474	5,474
Cumu Hours:	328	7,525	16,236	21,770	27,244	32,718	38,191	43,665	49,139	54,613	60,087	65,561
Monthly Price:	14,090	498,386	570,555	774,636	297,160	297,160	297,160	297,160	297,160	297,160	297,160	297,160
Cumu Price:	14,090	512,477	1,083,032	1,857,668	2,154,828	2,451,988	2,749,148	3,046,308	3,343,467	3,640,627	3,937,787	4,234,946

WBS: 1043.01.01 Technology Management
Manager: Dr. John S. Wilson

Start Date: 6/27/95
End Date: 12/1/96

Task Description: Perform technical reviews of requirements, needs and assessments related to waste characterization, containment, in-situ and ex-situ treatment, waste storage, disposal, robotics handling, monitoring, laboratory analysis, site characterization and remediation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	340	-340	87,456	63,500	23,956	87,456	63,500	23,956
Price:	0	31,300	-31,300	5,423,585	5,847,121	-423,536	5,423,585	5,847,121	-423,536

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	3,099	2,743	2,528	2,026	566	340						
Cumu Hours:	55,299	58,041	60,569	62,595	63,161	63,500						
Monthly Price:	317,399	219,262	250,563	147,660	81,691	31,300						
Cumu Price:	5,116,646	5,335,908	5,586,471	5,734,130	5,815,821	5,847,121						
Budget:												
Monthly Hours:	5,474	5,474	5,474	5,474	0	0						
Cumu Hours:	71,034	76,508	81,982	87,456	87,456	87,456						
Monthly Price:	297,160	297,160	297,160	297,160	0	0						
Cumu Price:	4,532,106	4,829,266	5,126,426	5,423,585	5,423,585	5,423,585						

TASK B

Waste Policy Institute Task Area Summary

Subcontract No. 359 636
Actuals through Nov 96

WBS: 1043.01.02 Project Management

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Conduct reviews, analyze and develop strategies for program management systems for integration and control of programs, projects, tasks and documentation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	453	-453	57,993	69,907	-11,914	57,993	69,907	-11,914
Price:	0	43,943	-43,943	5,177,640	5,445,175	-267,534	5,177,640	5,445,175	-267,534

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
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Actuals:

Monthly Hours:	98	8,116	8,247	9,084	3,578	1,588	2,868	3,297	3,561	3,631	3,321	4,024
Cumu Hours:	98	8,214	16,462	25,545	29,123	30,711	33,578	36,875	40,436	44,067	47,388	51,412
Monthly Price:	5,779	599,758	566,591	719,936	341,971	108,114	275,047	255,073	319,577	306,696	269,945	315,382
Cumu Price:	5,779	605,537	1,172,128	1,892,064	2,234,035	2,342,149	2,617,196	2,872,269	3,191,846	3,498,542	3,768,486	4,083,869

Budget:

Monthly Hours:	309	6,643	8,042	10,551	2,704	2,704	2,704	2,704	2,704	2,704	2,704	2,704
Cumu Hours:	309	6,952	14,994	25,545	28,249	30,953	33,657	36,361	39,065	41,769	44,473	47,177
Monthly Price:	21,034	453,804	527,559	889,666	273,798	273,798	273,798	273,798	273,798	273,798	273,798	273,798
Cumu Price:	21,034	474,838	1,002,397	1,892,063	2,165,861	2,439,659	2,713,457	2,987,255	3,261,053	3,534,852	3,808,650	4,082,448

**Waste Policy Institute
Task Area Summary**
Subcontract No. 359 636
Actuals through Nov 96

1043.01.02

Manager: Dr. John S. Wilson

WBS: 1043.01.02 Project Management

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Conduct reviews, analyze and develop strategies for program management systems for integration and control of programs, projects, tasks and documentation.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	453	-453	57,993	69,907	-11,914	57,993	69,907	-11,914
Price:	0	43,943	-43,943	5,177,640	5,445,175	-267,534	5,177,640	5,445,175	-267,534

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	3,151	4,572	5,327	3,649	1,345	453						
Cumu Hours:	54,562	59,134	64,461	68,110	69,454	69,907						
Monthly Price:	276,057	305,344	361,463	266,893	107,607	43,943						
Cumu Price:	4,359,925	4,665,270	5,026,733	5,293,625	5,401,232	5,445,175						
Budget:												
Monthly Hours:	2,704	2,704	2,704	2,704	0	0						
Cumu Hours:	49,881	52,585	55,289	57,993	57,993	57,993						
Monthly Price:	273,798	273,798	273,798	273,798	0	0						
Cumu Price:	4,356,246	4,630,044	4,903,842	5,177,640	5,177,640	5,177,640						

TASK C

WBS: 1043.01.03 Technology Integration

Manager: Dr. John S. Wilson

Start Date: 6/27/95

End Date: 12/1/96

Task Description:

Provide support in establishing criteria for identifying risks to the public health and safety posed by conditions at the weapons complex facilities, evaluate the extent of these risks, determine the urgency and priorities for eliminating or minimizing the risks, and access the cost of activities required to meet applicable compliance agreements.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	2,723	-2,723	33,367	31,670	1,697	33,367	31,670	1,697
Price:	0	200,496	-200,496	3,393,658	2,581,970	811,688	3,393,658	2,581,970	811,688

Monthly Financial Recap:

	Jun 95	Jul 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95	Jan 96	Feb 96	Mar 96	Apr 96	May 96
Actuals:												
Monthly Hours:	1	1,339	1,972	2,117	608	450	664	1,036	1,196	1,453	2,370	3,216
Cumu Hours:	1	1,340	3,312	5,428	6,036	6,486	7,150	8,185	9,381	10,834	13,203	16,419
Monthly Price:	139	106,521	151,601	169,960	73,113	41,466	82,773	75,216	117,736	104,335	190,919	283,077
Cumu Price:	139	106,660	258,261	428,221	501,334	542,800	625,574	700,790	818,526	922,860	1,113,780	1,396,857
Budget:												
Monthly Hours:	800	4,589	5,555	-5,515	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328
Cumu Hours:	800	5,388	10,943	5,428	7,766	10,085	12,413	14,741	17,069	19,398	21,726	24,054
Monthly Price:	54,170	299,639	356,729	-282,320	247,120	247,120	247,120	247,120	247,120	247,120	247,120	247,120
Cumu Price:	54,170	353,809	710,538	428,218	675,338	922,458	1,169,578	1,416,698	1,663,818	1,910,938	2,158,058	2,405,178

Waste Policy Institute Task Area Summary

Subcontract No. 359 636
Actuals through Nov 96

1043.01.03

Manager: Dr. John S. Wilson

WBS: 1043.01.03 Technology Integration

Start Date: 6/27/95

End Date: 12/1/96

Task Description: Provide support in establishing criteria for identifying risks to the public health and safety posed by conditions at the weapons complex facilities; evaluate the extent of these risks, determine the urgency and priorities for eliminating or minimizing the risks, and access the cost of activities required to meet applicable compliance agreements.

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	0	2,723	-2,723	33,367	31,670	1,697	33,367	31,670	1,697
Price:	0	200,496	-200,496	3,393,658	2,581,970	811,688	3,393,658	2,581,970	811,688

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	2,533	2,993	3,210	2,377	1,415	2,723						
Cumu Hours:	18,952	21,945	25,155	27,532	28,947	31,670						
Monthly Price:	230,149	215,115	218,378	211,294	109,682	200,496						
Cumu Price:	1,627,005	1,842,120	2,060,498	2,271,792	2,381,474	2,581,970						
Budget:												
Monthly Hours:	2,328	2,328	2,328	2,328	0	0						
Cumu Hours:	26,382	28,711	31,039	33,367	33,367	33,367						
Monthly Price:	247,120	247,120	247,120	247,120	0	0						
Cumu Price:	2,652,298	2,899,418	3,146,538	3,393,658	3,393,658	3,393,658						

TASK D

Subcontract No. 359 636
Actuals through Nov 96

Manager: Dr. John S. Wilson

End Date: 12/1/96

Cost Performance Summary:

Monthly Financial Recap:

Actuals:

Budget:

WBS: 1043.01.04 Systems Engineering

Manager: Dr. John S. Wilson

Start Date: 2/1/96

End Date: 12/1/96

Task Description:

Cost Performance Summary:

	Current Period			Inception to Date			At Complete		
	Budget	Actuals	Variance	Budget	Actuals	Variance	Budget	Estimate	Variance
Hours:	162	0	162	1,134	7	1,127	1,134	7	1,127
Price:	21,420	0	21,420	149,940	16,243	133,697	149,940	16,243	133,697

Monthly Financial Recap:

	Jun 96	Jul 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96	Jan 97	Feb 97	Mar 97	Apr 97	May 97
Actuals:												
Monthly Hours:	0	2	5	0	0	0						
Cumu Hours:	0	2	7	7	7	7						
Monthly Price:	5,648	565	5,089	4,887	2	0						
Cumu Price:	5,699	6,265	11,354	16,241	16,243	16,243						
Budget:												
Monthly Hours:	162	162	162	162	162	162						
Cumu Hours:	324	486	648	810	972	1,134						
Monthly Price:	21,420	21,420	21,420	21,420	21,420	21,420						
Cumu Price:	42,840	64,260	85,680	107,100	128,520	149,940						

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