

DOE/PC/95231-32
DIST. CATEGORY UC-112
UTSI-01-1

**TECHNICAL PROGRESS REPORT
FOR
UTSI/CFFF MHD PROGRAM COMPLETION
AND RELATED ACTIVITY**

**For The Period
July 1, 2001 – September 30, 2001**

Work Performed Under Contract No. DE-AC22-95PC95231

**Prepared for:
The United States Department of Energy**

**Prepared by
The University of Tennessee
Space Institute
Energy Conversion Research and Development Programs**

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	iv
TASK 1 – FACILITY MAINTENANCE AND PROPERTY MANAGEMENT.....	1
TASK 2 – REPORTING AND ARCHIVING	1
TASK 3 – SITE ENVIRONMENTAL COMPLIANCE AND REMEDIATION.....	1
TASK 4 – SITE REACTIVATION.....	1
TASK 5 – DISASSEMBLY AND DISMANTLEMENT (D&D) OF THE CFFF	1
TASK 6 – ADVANCED TECHNOLOGY, RESEARCH, DEVELOPMENT AND ENGINEERING FOR OTHER FEDERAL OR DOE PROGRAMS	2
<u>Subtask 6.02 – Evaluation of Methods for Application of Epitaxial Buffer and Superconductor Layers....</u>	2
<u>Subtask 6.03 – Coated Conductor Development and Program Management</u>	2
<u>Subtask 6.04 – Optimum Coated Conductor</u>	2
<u>Subtask 6.05 – Cost/Performance Analyses of Potential Manufacturing Processes</u>	2
<u>Subtask 6.06 – Development of Real Time Process Control Using In-Situ Diagnostics</u>	3
OPEN ITEMS	2
SUMMARY STATUS ASSESSMENT AND FORECAST.....	3
ANALYSIS OF VARIANCE	4
JULY 1, 2001 – SEPTEMBER 30, 2001 QUARTERLY VARIANCE REPORT	4

EXECUTIVE SUMMARY

Maintenance work on the DOE CFFF facility and other related government property is no longer authorized under this contract in accordance with the DOE-UT Settlement Agreement.. Environmental remediation preservation of the facility continued. Government property has been transferred to UTSI as owner which frees up many items for proper disposal. Actions are underway to dispose of other wastes, and control pests and water at the DOE CFFF.

TASK 1 – FACILITY MAINTENANCE AND PROPERTY MANAGEMENT

In September 1998, a stop-work order was issued for work activity in the DOE Facility maintenance area. Work to administer government-owned property continued.

On September 22, 1999, Department of Energy and the University of Tennessee signed a SETTLEMENT AGREEMENT resolving all claims and property accountable under Tasks 1-5.

TASK 2 - REPORTING AND ARCHIVING

July, August and September 2001 Monthly Reports were submitted.

The Quarterly Key Staffing Report for the period April-June 2001, was submitted on July 24, 2001.

Quarterly Technical Progress Report for the period April-June 2001, was submitted on July 25, 2001.

TASK 3 - SITE ENVIRONMENTAL COMPLIANCE AND REMEDIATION

UTSI shall continue implementation and compliance with the State of Tennessee approved plan for groundwater remediation. UTSI shall remove from the site, and properly dispose of, all industrial type non-hazardous wastes. In addition, UTSI shall properly remove all asbestos-containing cooling water tower materials and dispose of these materials properly. In addition, UTSI shall continue the monitoring and treatment of holding pond effluent per the site Water Discharge Permit with the State of Tennessee.

- The Discharge Monitoring Reports (DMR's) for June, July and August, 2001, were prepared and submitted to the Tennessee Department of Environment and Conservation (TDEC). An agreement has been reached with the TDEC allowing UTSI to report "NO DISCHARGE" as long as there is no active testing at the CFFF. This agreement allows UTSI to discontinue monthly water sampling and testing.
- Bids to conduct the well drilling and sampling required by the Tennessee Department of Environment and Conservation for groundwater remediation related to CFFF operations were opened and reviewed. Paperwork to award the contract to the low bidder was initiated. A schedule for this work has not been established.

TASK 4 - SITE REACTIVATION

No work was scheduled or performed

TASK 5 - DISASSEMBLY AND DISMANTLEMENT (D&D) OF THE CFFF

No work was scheduled or performed

TASK 6 – ADVANCED TECHNOLOGY, RESEARCH, DEVELOPMENT AND ENGINEERING FOR OTHER FEDERAL OR DOE PROGRAMS

Subtask 6.02 Evaluation of Methods for Application of Epitaxial Buffer and Superconductor Layers

No Activity.

Subtask 6.03 Coated Conductor Development and Program Management

Discontinued effective September 30, 1999.

Subtask 6.04 Optimum Coated Conductor

No Activity.

Subtask 6.05 Cost Performance Analysis of Potential Manufacturing Processes

Discontinued effective August 31, 1999.

Subtask 6.06 Development of Real Time process Control using In-Situ Diagnostics

Discontinued effective September 30, 1999.

OPEN ITEMS

January 2000 Monthly Technical Progress Report
February 2000 Monthly Technical Progress Report
March 2000 Monthly Technical Progress Report
April 2000 Monthly Technical Progress Report
May 2000 Monthly Technical Progress Report
June 2000 Monthly Technical Progress Report
July 2000 Monthly Technical Progress Report
August 2000 Monthly Technical Progress Report
September 2000 Monthly Technical Progress Report
October 2000 Monthly Technical Progress Report
November 2000 Monthly Technical Progress Report
December 2000 Monthly Technical Progress Report
January 2001 Monthly Technical Progress Report
February 2001 Monthly Technical Progress Report
March 2001 Monthly Technical Progress Report
April 2001 Monthly Technical Progress Report
May 2001 Monthly Technical Progress Report
June 2001 Monthly Technical Progress Report
July 2001 Monthly Technical Progress Report
August 2001 Monthly Technical Progress Report
September 2001 Monthly Technical Progress Report
October –December 1999 Quarterly Technical Progress Report
January – March 2000 Quarterly Technical Progress Report

April – June 2000 Quarterly Technical Progress Report
July – September 2000 Quarterly Technical Progress Report
October – December 2000 Quarterly Technical Progress Report
January – March 2001 Quarterly Technical Progress Report
April – June 2001 Quarterly Technical Progress Report
Kevin Trembath's Thesis Topical Report, "Statistically Designed
Experimental Study of Sol-Gel Based Film Coating Scheme for High
Temperature Superconductors and Buffer Materials and Related
Manufacturing Process Cost Evaluation" submitted August 31, 2000.

SUMMARY STATUS ASSESSMENT AND FORECAST

Environmental restoration activities at the CFFF will continue and funding to cover these activities will be continued in accordance with the SETTLEMENT AGREEMENT.

Contract reporting requirements are being met on time. Future contract reporting requirements need to be reviewed and modified in accordance with the SETTLEMENT AGREEMENT.

JULY 1, 2001, THROUGH SEPTEMBER 30, 2001, QUARTERLY VARIANCE REPORT

Planned vs. Actual Expenditures

(thousands of dollars)

TASK	PLANNED	ACTUALS	VARIANCE
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	0.0	3.2	-3.2
TOTALS	0.0	3.2	-3.2
COST ELEMENT			
DIRECT LABOR	0.0	2.0	-2
FRINGE BENEFITS	0.0	0.2	-0.2
EQUIPMENT	0.0	0.0	0
EXPENDABLE MATERIAL	0.0	0.0	0
OUTSIDE CONTRACTS	0.0	0.0	0
TRAVEL	0.0	0.0	0
TOTAL DIRECT COSTS	0	2.2	-2.2
INDIRECT COSTS	0.0	1.0	-1
TOTAL	0.0	3.2	-3.2

Planned vs. Authorized Funding

Cumulative

Task	PLANNED	AUTHORIZED FUNDING
1	1496.4	
2	614.3	
3	558.3	
4	0.0	
5	0.0	
SUBTOTAL	2669.0	2606.5
6	3689.7	3820
TOTAL	6358.7	6426.5