CONTRACT STATUS REPORT
FOR
MHD RESEARCH AND DEVELOPMENT
AND
OPERATION OF THE MHD
COAL FIRED FLOW FACILITY

For The Month Ending
July 31, 1995

Work Performed Under Contract No. DE-AC02-79ET10815

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

For
The United States Department of Energy

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PROJECT STATUS REPORT

1. CONTRACT OBJECTIVE - No change since last report.

2. TECHNICAL APPROACH CHANGES - None

3. CONTRACT TASKS - In this report, UTSI reports on the status/progress by program tasks identified in Chapter 3 (Work Plan) of the draft Contract Management Plan for the FY95 period, which was submitted to DOE February 17, 1995.

TASK I - CONTRACT MANAGEMENT AND CLOSEOUT

In response to a DOE/PETC letter of 5/23/95, a follow-on contract proposal package for "UTSI/CFFF MHD Program Completion and Related Activity" was submitted to DOE/PETC.

According to latest cost accounting data, UTSI consumed its total funding as of the end of July 1995 and has hereby ceased work and charges on the contract. Residual actions remaining on the contract will be resumed on a follow-on contract with DOE/PETC should it be consummated.

The contract status report for June 1995 was issued to DOE.

Personnel staffing for the month was 19.2 equivalent full-time (EFT) personnel versus a planned level of 26.3 EFT.

TASK II - FACILITY AND PROPERTY DISPOSITION

Facility activities this month were confined to the continuation of preventative maintenance and repairs required to maintain the Coal-Fired Flow Facility (CFFF) in a standby condition.

The reconditioning of the CFFF process water cooling tower continued. An interior protective polyurethane coating was applied on the bottom of each cooling tower quadrant.

Semi-annual maintenance on the fire protection system was initiated.

Control of government property and the maintenance of records were continuing.
**TASK III - DATA REPORTING AND ARCHIVING**

Preparation of topical reports pertaining to the MHD POC test program continued.

Preparation of a topical report on the findings for measurements and evaluations of corrosion from superheater test module tube samples from test section 1 and 2 continued.

All data and documentation developed thus far on the MHD/CFFF project and identified for archiving continued to be maintained for archiving storage.

**TASK IV - SITE ENVIRONMENTAL COMPLIANCE AND REMEDIATION**

Under a subcontract for the first round of groundwater samples which will be used as a screening technique to verify what parameters must be analyzed in the other six wells that will be installed. This technique will save funds by eliminating all groundwater pollutants except those detected above drinking water standards.

Groundwater compliance monitoring work has basically come to a halt due to severe funding limitations.

Monitoring of the holding pond effluent continued in order to comply with the UTSI water discharge permit. Water is checked for pH, temperature, flow rate, oil and grease content, total dissolved solids, and total suspended solids. All parameters continue to be measured by the UTSI chemistry lab. Any changes in CFFF operation might require monitoring of additional parameters.

4. **OPEN ITEMS**

A. **DOE:** The following reports/documents were in DOE review for comments and/or approval as of July 31, 1995.

   - FY1995 Management Plan
   - UTSI ltr 02/17/95

B. **UTSI:** The following actions were in process or preparation as of July 31, 1995.

   - Superheater/Air Heater Tube Corrosion Studies
     - Est. Completion 09/30/95
   - \( \text{NO}_x \) Formation and Control, Topical Report
     - Est. Completion 10/31/95
   - Western Coal Processing System, Topical Report
     - Est. Completion 08/31/95
   - Western Coal 1,000 Hr POC & Final Summary Report
     - Est. Completion 10/31/95
5. SUMMARY STATUS ASSESSMENT AND FORECAST

The CFFF continues in standby condition and efforts on the preparation of topical reports are being held in abeyance pending the consummation of the follow-on contract with DOE/PETC.

No further monthly status reports on this contract are anticipated.

DISCLAIMER

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## Milestone Schedule and Status Report

1. **Contract Identification**
   - OPERATION OF THE COAL-FIRED FLOW FACILITY

2. **Reporting Period**
   - July 1, 1995 - July 31, 1995

3. **Contract Number**
   - DE - AC02 - 79ET10815

4. **Contractor: Name, Address**
   - THE UNIVERSITY OF TENNESSEE SPACE INSTITUTE
   - TULLAHOMA, TENNESSEE 37388

5. **Contract Start Date**
   - September 30, 1995

6. **Contract Completion Date**
   - October 1, 1995

### Reporting Category: Contract Line Item or Work Breakdown Structure

<table>
<thead>
<tr>
<th>Element</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
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</tbody>
</table>

### FY 95 Costs

- **Accrued**: 180
- **EAC**: 290
- **Costs**: 456
- **EAC**: 250
- **Costs**: 463
- **EAC**: 850
- **Costs**: 304
- **EAC**: 600

**Total Costs**: 1403 2000

### Remarks
- Costs appear in Thousands based on MIS Reporting System, and are cumulative for the FY95 Program.
- *EAC - Estimate at Completion of September 30, 1995.*
- ▼ PLANNED
- ▼ COMPLETED
- ◊ RESCHEDULED
## MILESTONE LOG

<table>
<thead>
<tr>
<th>I.D. NO.</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td><strong>TASK I - CONTRACT MANAGEMENT &amp; CLOSE OUT</strong></td>
<td></td>
</tr>
<tr>
<td>I A</td>
<td>Issue Management Plan for FY95</td>
</tr>
<tr>
<td>I B</td>
<td>Issue Monthly Reports</td>
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<tr>
<td>I C</td>
<td>Issue Quarterly Reports</td>
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<tr>
<td><strong>TASK II - FACILITY &amp; PROPERTY DISPOSITION</strong></td>
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<tr>
<td>II B</td>
<td>Complete all Engineering Drawings</td>
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<tr>
<td>II C</td>
<td>Annual Government Property Inventory</td>
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<tr>
<td><strong>TASK III - DATA REPORTING &amp; ARCHIVING</strong></td>
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<tr>
<td>III A</td>
<td>Identify Data for Archiving</td>
</tr>
<tr>
<td>III B</td>
<td>Prepare data/documentation for archiving</td>
</tr>
<tr>
<td>III C</td>
<td>Issue Superheater/Air Heater Tube Corrosion Studies</td>
</tr>
<tr>
<td>III D</td>
<td>Issue Topical Report - Western Coal Processing System</td>
</tr>
<tr>
<td>III E</td>
<td>Issue Topical Report - NOx/SOx Formation &amp; Control</td>
</tr>
<tr>
<td>III F</td>
<td>Issue Western Coal 1000 Hr POC &amp; Final Program Summary Report</td>
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<tr>
<td><strong>TASK IV - SITE ENVIRONMENTAL COMPLIANCE &amp; REMEDIATION</strong></td>
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<tr>
<td>IV A</td>
<td>Complete Removal of Asbestos in the CFFF Cooling Tower</td>
</tr>
<tr>
<td>IV B</td>
<td>Install additional groundwater wells for monitoring</td>
</tr>
<tr>
<td>IV C</td>
<td>Issue Monthly Water Discharge Monitoring Reports</td>
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## U.S. DEPARTMENT OF ENERGY
### COST MANAGEMENT REPORT

**Preliminary**

1. **Contract Identification**
   - Operation of the MHD Coal-Fired Flow Facility

2. **Reporting Period**
   - July 1-31, 1995

3. **Contract Number**
   - DE-AC02-79ET10815

4. **Contractor (Name and Address)**
   - The University of Tennessee Space Institute
   - B. H. Goethert Parkway
   - Tullahoma, Tennessee 37388-8897

5. **Cost Plan Date**
   - February 1995

6. **Contract Start Date**
   - October 1, 1978

7. **Contract Completion Date**
   - September 30, 1995

8. **Government Funding**
   - $105,842,540.00

9. **Contractor Funding**
   - $0

10. **Number of Invoices Billed**
    - Letter of Credit

11. **Frequency**
    - N/A

12. **Number Invoices Paid**
    - Letter of Credit

13. **Total Invoice Amounts Billed**
    - $105,842,540.00

14. **Total Payment Received**
    - $105,679,132.70

15. **Identification Number**
    - (e.g. contract line item or work breakdown structure element)

16. **Reporting Category**
    - Cash Basis**

<table>
<thead>
<tr>
<th>Category</th>
<th>During Reporting Period</th>
<th>Cumulative to Date</th>
<th>a. Actual</th>
<th>b. Planned</th>
<th>c. Actual</th>
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<td>Total Direct Costs</td>
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<td>91,382</td>
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<td>Total Overhead</td>
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<td>Total Direct Costs</td>
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<td>26</td>
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<td>91,347</td>
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<tr>
<td>Total Overhead</td>
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**Overhead Rate Effective 2/9/94 is 18% of TDC less capital equipment, outside contracts over $25,000, and GRA maintenance fees.**

**Actual costs are on cash basis and do not include outstanding costs listed in column 21.**

**Includes orders outstanding costs listed in column 21.**

**Total Contract Value**

19. **Total Contract Value**
   - $14,502

20. **Variance**
    - $0

21. **Unfilled Orders Outstanding**
    - $0

22. **Remarks**
    - Overhead rate effective 2/9/94 is 18% of TDC less capital equipment, outside contracts over $25,000, and GRA maintenance fees.
    - Actual costs are on cash basis and do not include outstanding costs listed in column 21.
    - Includes orders outstanding costs listed in column 21.

**THIS IS A PRELIMINARY REPORT PENDING FINAL CERTIFICATION OF COSTS BY THE CONTROLLER'S OFFICE FOR THE UNIVERSITY'S ACCOUNTING YEAR ENDING JUNE 30, 1995.**

24. **Dollars Expressed In:**
   - THOUSANDS

25. **Signature of Contractor's Project Manager and Date**
    - [Signature] Muehlhauser, PhD, Administrator
    - 8/27/95

26. **Signature of Contractor's Authorized Financial Representative & Date**

27. **Signature of Government Technical Representative and Date**

---

[Signature] Muehlhauser, PhD, Administrator
1. Contract Identification
Operation of the MHD Coal-Fired Flow Facility

2. Reporting Period
July 1-31, 1995

3. Contract Number
DE-AC02-79ET10815

4. Contractor (Name and Address)
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5. Cost Plan Date
February 1995

6. Contract Start Date
October 1, 1978

7. Contract Completion Date
September 30, 1995

8. Government Funding
$105,842,540.00

9. Contractor Funding

10. Number of Invoices Billed
N/A

11. Frequency
N/A

12. Number of Invoices Paid
N/A

13. Total Invoice Amounts Billed
$105,879,132.70

14. Total Payment Received

15. Identification Number

16. Reporting Category
(e.g. contract line item or work breakdown structure element)

17. Accrued Cost
Cash Basis FY1994
a. Actual b. Planned c. Actual d. Planned

<table>
<thead>
<tr>
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18. Estimated Accrued Costs
a. Subsequent Reporting Period

19. Total Contract Value

20. Variance

21. Unfulfilled Orders Outstanding

22. TOTAL

23. REMARKS: Approximately $214,138 of this amount accounts for the liquidation of prior years' outstanding obligations. Cumulative plan and actual cost distributions for October-December 1994 have been revised to be in accordance with new Management Plan issued in February 1995.

24. Dollars Expressed In:

25. Signature of Contractor's Project Manager and Date
J. W. Muehlhauser, PhD, Administrator
8/27/95

26. Signature of Contractor's Authorized Financial Representative & Date

27. Signature of Government Technical Representative and Date