

SIMULATED COAL GAS MCFC POWER PLANT SYSTEM VERIFICATION

Technical Status Report

for

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October 1998

For Work Performed Under DOE Contract No. DE-AC21-90MC27394

Presented to

Contractor Reports Receipt Coordinator
U.S. Department of Energy
Morgantown Energy Technology Center
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EXECUTIVE SUMMARY

Overview

This is the Technical Progress Report covering October 1998. All tasks have been completed, except for those discussed on the following pages. Unocal estimated the costs of dismantling and packaging the test facility for storage and shipment. The scope of work for the contract has been modified to accommodate the dismantling and packaging of the plant. An amendment to Sub-Contract No. MCP-9-UNO between M-C Power and Unocal has been executed which includes the Scope of Work in Unocal's cost estimate.

TASK 1. COMMERCIALIZATION

This task is complete.

TASK 2. POWER PLANT DEVELOPMENT

This task is complete.

TASK 3. MANUFACTURING FACILITIES DEVELOPMENT

This task is complete.

TASK 4. TESTING FACILITY DEVELOPMENT

Unocal continued maintenance of the 250-kW demonstration power plant. A contract for dismantling and relocation of the power plant has been issued.

TASK 5. STACK RESEARCH

This task is complete.

TASK 6. ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT

The individual final reports from the Illinois Institute of Technology, Texas A&M, and the University of Minnesota are being assembled into a complete final report.

TASK 4. TESTING FACILITY DEVELOPMENT

Subtask 4.2 Upgrading of Existing, U.S. Government-Owned, Test Facilities

Objective:

To upgrade the existing, government-owned 20-kW test facility to improve its reliability for long-term operation.

Discussion:

A contract was let to Total Western, Inc. of Paramount, California for the dismantling of the Unocal Test Facility. This work began during the month of October and is expected to be completed by the end of the 1998 calendar year. This work includes removing all existing equipment, shipping the equipment to Chicago, and restoring the site to original condition.

TASK 6. ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT

Subtask 6.2 Advanced MCFC Component Research

Objective:

To conduct research to resolve issues relating to the improvement of the efficiency and cost effectiveness of the MCFC by improving the following: protection of the current collector plate from corrosion; reduction of cathode over potential losses; understanding the effects of electrolyte basicity and oxygen reduction kinetics to reduce cathode over potential; and measuring the wetting angles of various electrolytes to reduce the electrolyte loss/migration during the MCFC operation.

Discussion:

Final reports have been received from IIT, UMinn, and Texas A&M. They are being assembled into a report for submittal to FETC.

**U. S. DEPARTMENT OF ENERGY
MORGANTOWN ENERGY TECHNOLOGY CENTER
CONTRACT REPORT TRANSMITTAL CHECKLIST**

Date: 12/1/98

Contractor: M-C POWER CORP.

Contract No.: DE-AC21-90MC27394

The following deliverables are submitted in compliance with the contract reporting requirements checklist:

Report/Plan	Form No.	Reporting Period	No. of Copies
A. GENERAL MANAGEMENT:			
<input type="checkbox"/> Management Plan	None		
<input type="checkbox"/> Status Report	None		
<input type="checkbox"/> Summary Report	1332.2		
B. SCHEDULE/LABOR/COSTS:			
<input type="checkbox"/> Milestone Schedule/Plan	1332.3		
<input type="checkbox"/> Labor Plan	1332.4		
<input type="checkbox"/> Cost Plan	1332.7		
<input type="checkbox"/> Milestone Schedule/Status	1332.3		
<input type="checkbox"/> Labor Management Report	1332.8		
<input type="checkbox"/> Cost Management Report	1332.9		
C. EXCEPTION REPORTS:			
<input type="checkbox"/> Conference Record	None		
<input type="checkbox"/> Hot Line Report	None		
D. TECHNICAL:			
<input checked="" type="checkbox"/> Technical Progress Report		OCT 198	10/01/98
<input type="checkbox"/> Draft for Review	None		
<input type="checkbox"/> Final for Approval	None		
<input type="checkbox"/> Topical Report			
<input type="checkbox"/> Draft for Review	None		
<input type="checkbox"/> Final for Approval	None		
<input type="checkbox"/> Final Technical Report			
<input type="checkbox"/> Draft for Review	None		
<input type="checkbox"/> Final for Approval	None		
<input type="checkbox"/> Software			
<input type="checkbox"/> Other (Specify) _____			
E. OTHER:			
<input type="checkbox"/> Property Inventories	See DEAR 945		
<input type="checkbox"/> Subcontracting	SF 284		
<input type="checkbox"/> Request For Patent Clearances For Release Of Contracted Research Documents	METC Form 1332.1	N/A	1