

**CERAMIC MEMBRANE ENABLING TECHNOLOGY**  
**FOR IMPROVED IGCC EFFICIENCY**

**QUARTERLY TECHNICAL PROGRESS REPORT**

**For Reporting Period starting July 1, 2004 and ending September 30, 2004**

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## ABSTRACT:

This quarterly technical progress report will summarize work accomplished for Phase 2 Program during the quarter April to June 2004. In task 7, reactor cost analysis was performed to determine whether OTM technology when integrated with IGCC provides a commercially attractive process. In task 9, discussions with DOE regarding restructuring the program continued.

## TABLE OF CONTENTS

A.	Executive Summary	Page 3
B.	Experimental Methods	Page 3
C.	Results and Discussion	Page 3
	C.1. Process Analysis and Economics	Page 3
	C.2. Program Management	Page 3
D.	Conclusion	Page

4

## **A. Executive Summary**

The objectives of the second year of phase 2 of the program are to construct and operate an engineering pilot reactor for OTM oxygen. Work to support this objective is being undertaken in the following areas in this quarter:

- IGCC process analysis and economics

## **B. Experimental Methods**

No experimental work was conducted during this period.

## **C. Results and Discussion**

### **C.1. Process Analysis and Economics Results and Discussion**

Using updated to produce cost targets for the packaged OTM, studies to determine actual cost of packaging ceramic OTM tubular and non-tubular elements were conducted.

Initial results show that the costs of packaging tubular OTM elements does not meet the cost requirements. Work is also continuing on non-tubular geometries. A topical report will be prepared that will detail these results separately.

### **C.2. Program Management**

Negotiations continued to determine the best method for the program to continue or be terminated.

## **D. Conclusion**

Economic analysis of OTM-IGCC appears unattractive. Further work will continue to verify this initial conclusion. If the analysis is verified, the program will be terminated at the mutual agreement of DOE and Praxair, Inc.