Early Entrance Coproduction Plant

Phase I - Quarterly Report No. 5

Reporting period: October 1, 2000 – December 31, 2000 Principal Author: William K. Davis (Project Manager)

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DOE Cooperative Agreement No. DE-FC26-99FT40658

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Abstract:

The overall objective of this project is the three phase development of an Early Entrance Coproduction Plant (EECP) which produces at least one product from at least two of the following three categories: (1) electric power (or heat), (2) fuels, and (3) chemicals. The objective is to have these products produced by technologies capable of using synthesis gas derived from coal and/or other carbonaceous feedstocks.

The objective of Phase I is to determine the feasibility and define the concept for the EECP located at a specific site; develop a Research, Development, and Testing (RD&T) Plan for implementation in Phase II; and prepare a Preliminary Project Financing Plan.

The objective of Phase II is to implement the work as outlined in the Phase I RD&T Plan to enhance the development and commercial acceptance of coproduction technology that produces high-value products, particularly those that are critical to our domestic fuel and power requirements. The project will resolve critical knowledge and technology gaps on the integration of gasification and downstream processing to coproduce some combination of power, fuels, and chemicals from coal and/or other carbonaceous feedstocks.

The objective of Phase III is to develop an engineering design package and a financing plan for an EECP located at a specific site.

The project's intended result is to provide the necessary technical, economic, and environmental information needed by industry to move the EECP forward to detailed design, construction, and operation.

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The following figures were used in this report:

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II. Executive Summary

This is the fifth of five quarterly reports which summarizes the progress of Phase I of the development of the Early Entrance Coproduction Plant (EECP) concept covered by DOE Cooperative Agreement No. DE-FC26-99FT40658. The Phase I objective is to determine the feasibility and define the concept for the EECP located at a specific site, develop a Research, Development, and Testing (RD&T) Plan, and prepare a Preliminary Project Financing Plan. Phase I was completed by the end of year 2000, except for activities resulting from DOE comments on Phase I reporting. Phase II is to conduct the research as outlined in Phase I and is scheduled for two calendar years (2001 through 2002). Phase III is a one-year effort scheduled for the calendar year 2003 and is to develop an engineering design package and financing plan for the EECP. The overall project's intended result is to provide the necessary technical, economic, and environmental information needed by industry to move the EECP forward to detailed design, construction, and operation.

During this reporting period, all Phase I work was completed as scheduled. This included completion of conceptual process design, cost estimating, risk assessment, and marketing, environmental, and economic assessments. The Research, Development, and Testing Plan, which outlines work to be conducted in Phase II, was submitted and approved and work began as scheduled in January 2001. The Phase I Concept Report and the Preliminary Project Financing Plan were both submitted on December 28, 2000 for DOE comments.

III. Results, Discussion, and Preliminary Conclusions

Since the draft Phase I Concept Report was submitted on December 28, 2000, this abbreviated quarterly report is submitted primarily to report cost and schedule information for Phase I activities through December 31, 2000. Please refer to the Phase I Concept Report for a complete discussion of Phase I results.

Phase II activities (Research, Development, and Testing) began as scheduled in January 2001. Results of these activities will also be reported quarterly.

This is the fifth and final quarterly report for Phase I.

IV. List of Major Activities Accomplished in 4Q2000

The following list is provided as a quick reference for the work performed during this reporting period:

- Submitted Research, Development, and Testing Plan (RD&T Plan) to DOE for comments. Received DOE approval on December 28, 2000, to initiate Phase II work.
- Submitted draft Phase I Concept Report to DOE for comments.
- Submitted draft Preliminary Project Financing Plan to DOE for comments.
- Submitted draft 3Q2000 quarterly report to DOE for comments.
- All Phase I activities were completed with the exception of incorporation of DOE comments into the above reports and submittal of the 4Q2000 quarterly report, which will be submitted by February 28, 2001.

V. List of Major Activities Planned for 1Q2001

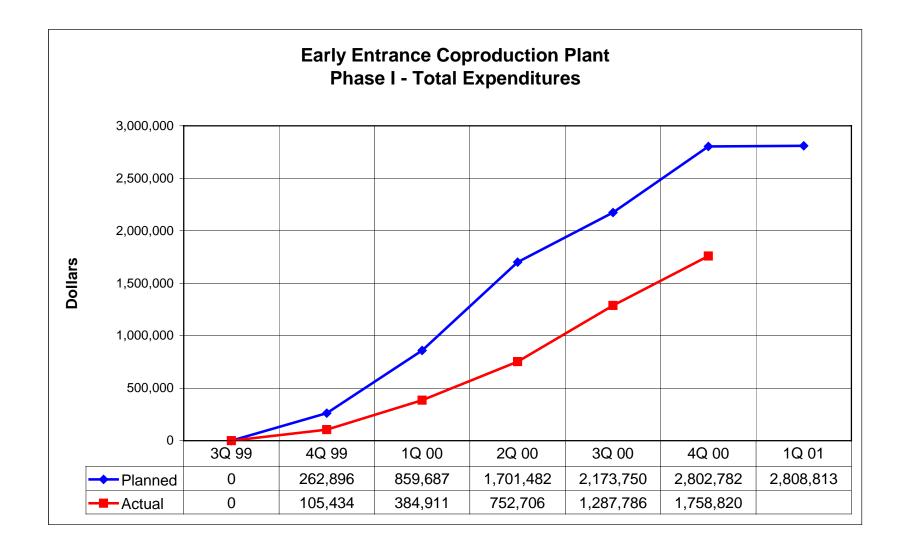
The following list is provided as a quick reference for the work planned for the upcoming quarter:

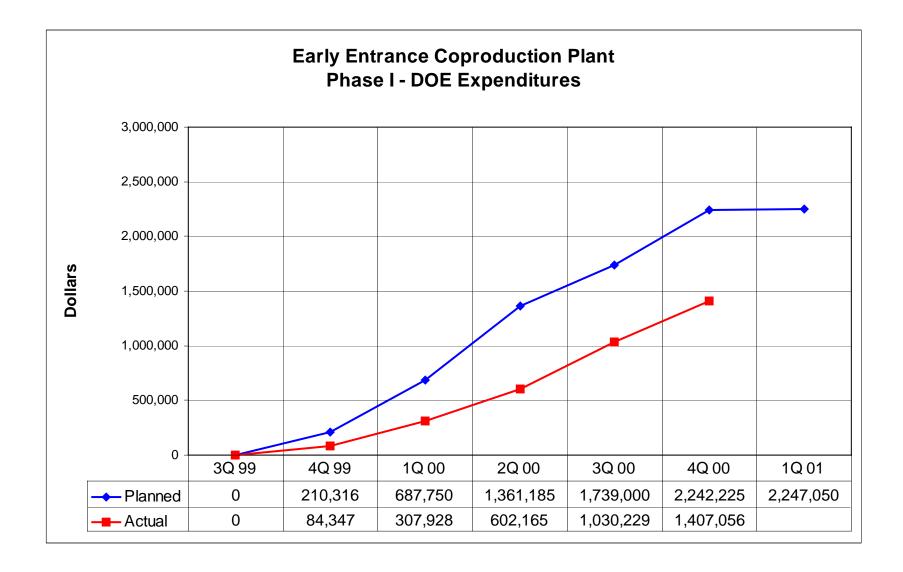
- Issue final version of Phase I Concept Report, Preliminary Financing Plan, and Quarterly Report No. 4, after receipt of DOE comments.
- Submit Quarterly Report No. 5. (Last quarterly report for Phase I.)
- Begin Phase II activities.

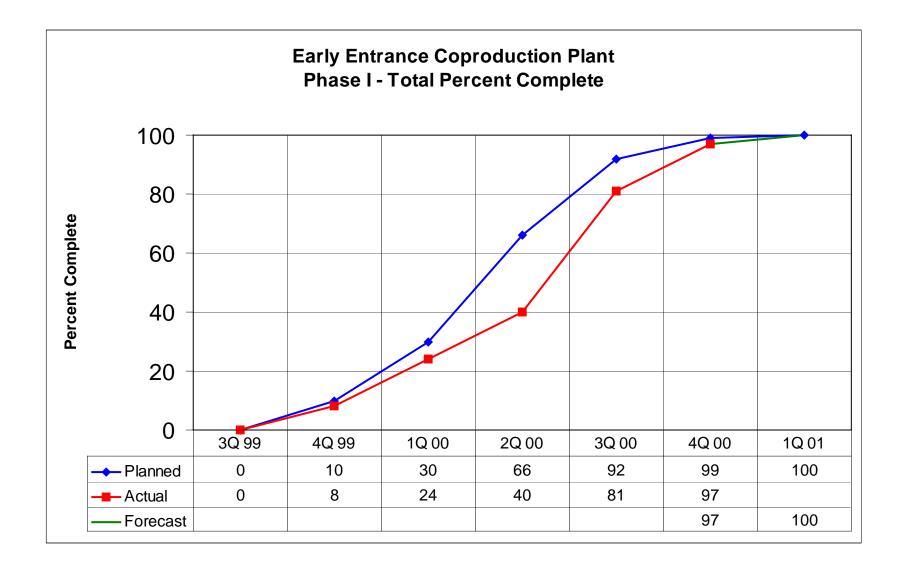
VI. Graphs

The following three graphs depict the financial status and progress of Phase I activities. The graphs are shown on the following three pages:

Planned vs. Actual Total Expenditures	. 11
Planned vs. Actual DOE Expenditures	
Total Project Percent Complete	





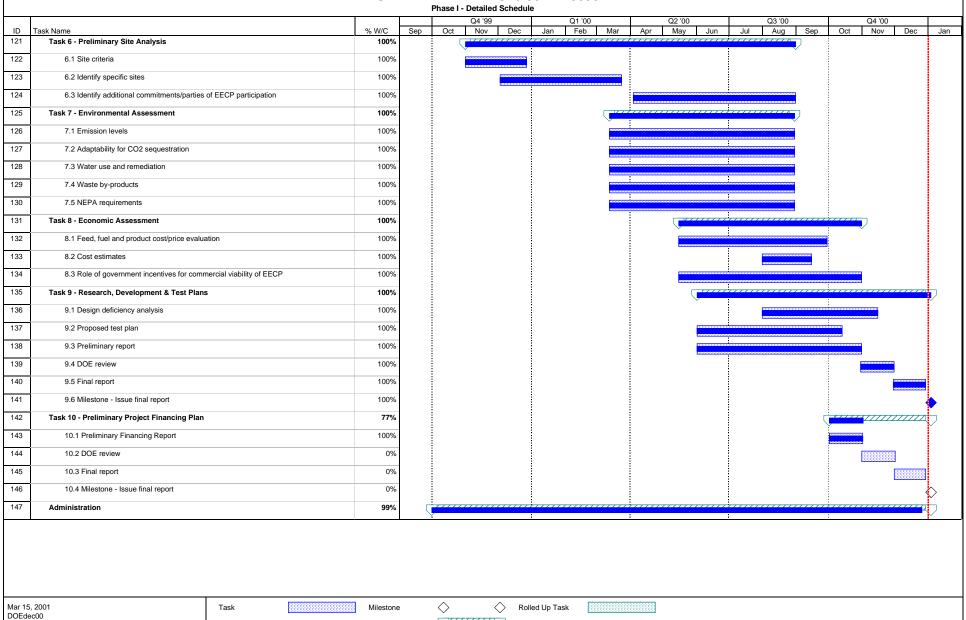


VII. Schedule

The following two pages depict the updated Phase I project schedule and show percent complete by task as of December 31, 2000. For a description of the work involved in each task, refer to the Cooperative Agreement. This schedule was prepared using Microsoft Project 98 software.

EARLY ENTRANCE COPRODUCTION PLANT DOE AWARD # DE-FC26-99FT-40658 Phase I - Detailed Schedule Q4 '99 Q3 '00 Q4 '00 Q2 '00 Apr May Jun % W/C Oct Nov Dec Jan Feb Mar Aug Sep Oct Nov Dec Phase 1:Concept Definition 97% 2 Task 1 - Project Plan 100% 3 1.1 Project Management Plan 100% Task 2 - Concept Definition, Development & Technical Assessment 92% 8 2.1 Overall concept definition & development 100% 54 2.2 Alternatives and options assessment and selection 100% 64 2.3 Preliminary Block Flow Diagrams with mass and energy balance 100% 69 2.4 Design considerations for advanced subsystems 100% 73 2.5 Preliminary report 100% 74 2.6 DOE review 0% 75 2.7 Final report 0% 76 2.8 Milestone - Issue final report 0% 77 Task 3 - Subsystem Technical Assessment 100% 78 3.1 ASU 100% 79 3.2 Gasification 100% 80 3.3 H2:CO ratio adjustment 100% 81 3.4 Fischer-Tropsch Synthesis 100% 82 3.5 Gas Turbine 100% 83 3.6 Steam system 100% 84 3.7 Fischer-Tropsch product upgrading to market identifiable products 100% 85 Task 4 - Subsystem Design Specifications 100% 86 4.1 Fischer-Tropsch synthesis 100% 92 4.2 Gas Turbine 100% 99 4.3 Fischer-Tropsch product upgrading to market identifiable products 100% 106 4.4 Risk assessment of integrated advanced subsystems 100% 107 4.5 Design specifications for proven technologies 100% 115 Task 5 - Market Assessment 100% 116 5.1 Market analysis of products 100% 117 5.2 Market analysis of technology 100% 118 5.3 Product slate and quantities 100% 120 5.4 Full scale commercial plant 100% Mar 15, 2001 Task Milestone Rolled Up Task DOEdec00 Progress as of 12-31-00. Progress Rolled Up Progress

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Rolled Up Progress

Progress as of 12-31-00.

Progress