

SECTION IV. TASK 4. APPLICATION OF INTEGRATED CODES

OBJECTIVE

The objective of this task are to evaluate the integrated comprehensive codes for pulverized coal and fixed-bed reactors and to apply the codes to selected cases of interest to METC.

OUTLINE

This task will be accomplished in two subtasks, one for the entrained-bed lasting 45 months and one for the fixed-bed lasting 36 months. Each of these subtasks will consists of three components: 1) Simulation of demonstration cases on BYU computers; 2) Implementation on a work station at AFR (the Apollo DN580 workstation with "Turbo" has been chosen); and 3) Simulation of demonstration cases on the workstation.

IV.A. Subtask 4.a - Application of Generalized Pulverized Coal
Comprehensive Code

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OBJECTIVE

Implement the comprehensive entrained-bed code developed in Task 3 at AFR.
Simulate reactors of interest to METC.

ACCOMPLISHMENTS

Installation of PCGC-2 on a computer at AFR has proceeded as planned. ASCII FORTRAN code and test runs from BYU have been copied onto an Apollo DN580T with a floating point accelerator. Modifications to the code were implemented to make it compatible with Apollo's version of FORTRAN. This step has eliminated compiler errors.

Next, other idiosyncrasies in the code were altered to remove or fix run time and logical errors. The code now performs a test run within calculation accuracies for the particle and gas phase in about the same time as a VAX 750 or at about 0.2 msecs. The final pollutant calculations have not been fully debugged.

The section of code for introduction of AFR's Functional Group (FG) model has been identified and agreed upon with BYU. Progress is currently under way to make our software a callable routine from the PCGC-2 code.

PLANS

Continue installation and testing of PCGC-2 including the pollutant calculations.
Work on the integration of the FG/DVC model into PCGC-2.

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IV.B. Subtask 4.b. - Application of Fixed-Bed Code

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OBJECTIVE

Simulate coal conversion reactors of interest to METC.

ACCOMPLISHMENTS

No work scheduled.

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