

**LRC-I-3
PROJECT CFBC
The Design and Operation of a CFBC Test Facility to Generate Comprehensive,
Reliable and Accessible Data for Utility and Industrial Clients**

CONTRACTOR: Energy & Environmental Research Center

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PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share¹</u>
Empire State Electric Energy Research Corporation	\$ 100,000
Northern States Power Company	155,000
Electric Power Research Institute	105,000
Otter Tail Power Company	100,000
ARCO Coal Company	90,000
Consolidated Edison of New York	50,000
Premier Refractories and Chemicals	50,000
U.S. DOE/EERC JSR Program	365,000
Energy & Environmental Research Center	25,000
TU Electric	75,000
BNI Coal, Ltd.	5,000
ND Industrial Commission	<u>25,000</u>
Total	\$ 1,220,000

Project Schedule – 1 Year

Contract Date – 6/8/89
Start Date – 5/88
Completion Date – 1/31/89

Project Deliverables

Monthly Reports - ✓
Biannual Review Meetings - ✓
Final Report – 9/6/91 ✓

OBJECTIVE / STATEMENT OF WORK

Project CFBC was proposed as a multi-client study to design and operate a circulating fluidized-bed combustion (CFBC) test facility to provide comprehensive, reliable, and accessible data for utility and industrial applications. This project was proposed as a two-year study and scheduled to be completed in April, 1991. This project was extended to a three-year program and received funding under LRC-II-9 and LRC-VI-25.

As proposed under LRC-I-3, this program involved the following six tasks:

¹ Project CFB received grants of \$25,000 in Round I and Round II, LRC-I-3 and LRC-II-9. Project CFBC received a grant of \$50,000 in Round VI, LRC-VI-25. Total funds from the Industrial Commission for Project CFB is \$100,000. Certain sponsors provided coal and limestone which is not shown.

- Task 1 Technology Assessment. Compile a centralized data resource base on CFBCs, which included existing and planned, pilot plant scale, commercial and utility scale facilities, international locations, design data and operational information.
- Task 2 Design. A test facility was designed which could be used to demonstrate fuel flexibility and demonstrate lignite can be efficiently utilized in the CFBC.
- Task 3 Construction. Required supplies were procured. The CFBC test facility was constructed and fabricated.
- Task 4 System Shakedown. An orderly overall shakedown of the system was completed. Shakedown was done on selected coals.
- Task 5 Parametric Testing. Two additional coals were to be selected for parametric testing. Design of the parametric test matrix was completed. The unit was operated and test data collected.
- Task 6 Final Report.

STATUS

This program was extended an additional year and additional coals were added to the test matrix. The reader is referred to the summary of LRC-VI-25.