

FINAL REPORT

for

Site/Systems Operations Maintenance and Facilities
Management of the Department of Energy (DOE)
Atmospheric Radiation Measurement (ARM) Southern Great
Plains (SGP) Cloud and Radiation Testbed (CART) Site

DOE Contract No. DE-AC02-95CH10635

for the Period

September 15, 1995 through April 30, 1998

Submitted to

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Office of Intellectual Property Law

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8/31/05
Date

July 20, 2005

ERC
INCORPORATED

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ARM Program, Southern Great Plains, Clouds and Radiation Testbed
Site/Systems Operations and Maintenance and Facility Management
Support.

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Final Report

Period: September 15, 1995 through April 30, 1998

1.0 INTRODUCTION

This report is the Final Report submitted by ERC, Incorporated under DOE Contract No. DE-AC02-95CH10635. It is submitted to the US Department of Energy, in fulfillment of the reporting deliverable obligations as defined in the contract.

This report provides a summary of activities at the ARMS CART Site in its Systems Operation, Maintenance and Facility Management for the entire contract period of September 15, 1995 through April 30, 1998.

A total of thirty one (31) Monthly Status Reports were submitted including the following contract deliverables:

- Technical Progress Report
- Milestone Schedule/Status
- Contract Labor and Cost Summaries

Each of these elements was contained in independent report sections.

In addition two (2) annual reports for the period of September 15, 1995 to September 30, 1996 and October 1, 1996 to September 30, 1997 were submitted. A management report was submitted at the beginning of the contract.

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 DESCRIPTION.....	2
3.0 TECHNICAL REPORT SUMMARY.....	4
4.0 MILESTONE SCHEDULE SUMMARY	5
5.0 TOTAL LABOR AND COST SUMMARY	6

2.0 DESCRIPTION

The Atmospheric Radiation Measurement (ARM) Program was initiated to provide scientific information and meteorological data needed to improve General Circulation Models capable of predicting the timing and magnitude of greenhouse gas-induced global warming, and the regional effects of such warming. The ARM Program will contribute to this endeavor by improving the treatment of cloud radiation forcing and feedback in General Circulation Models.

The Southern Great Plains (SGP) Cloud and Radiation Testbed (CART), is operational under Argonne National Laboratory technical management and it is the facility operated, maintained by ERC under this contract.

The SGP CART site covers an area of approximately 50,000 square miles of mostly flat land that stretching across eastern to mid-Oklahoma and into eastern and mid-Kansas. The site has a Central Facility that is located near Lamont, Oklahoma. The Central Facility consists of approximately 160 acres located on undisturbed farmland. It houses seven trailers, three locations for instrument development, an instrumented 60m tower, locations for the 915 and 50 MHz radar wind profilers with Radio Acoustic Sounding Systems (RASS), and instrument clusters deployed in site open areas. The Central Facility site also includes storm shelters for use by personnel during severe weather conditions.

The manned sites consists of trailers to shelter instruments and site activities. These trailers facilitate connection to site computers and provide communication lines to the Central Facility. Fiber optic links and power lines are routed to each trailer with lines being buried in independent conduit leading to each of the trailers. Special connection ports to fiber optic lines for the Central Facility field data ingestors are available in the trailers. A phone/intercom system is also used to provide trailer-to-trailer communications.

Functionally coupled to the central site are boundary and extended facility sites. These sites are at remote, strategic locations over the SGP CART area. Extended sites consist of deployed instruments and instrument clusters – the boundary sites are located along the four sides of the area perimeter. These are daily manned as needed and are designated as launch sites for daily balloon radiosonde soundings.

All ERC personnel that were assigned to perform under the terms of this contract were physically located within a 180 mile radius of the ARM Southern Great Plains CART Central Facility located near Lamont, Oklahoma.

The principle work location for the CART on-site staff was:

DOE/ARM SGP Central Facility
Rural Route 1, Box 70
Billings, Oklahoma 74630

As included in full operations of the CART, other work locations encompass the following un-staffed or part-time staffed facilities: six (6) auxiliary and twenty-two (22) extended facilities located in north central Oklahoma and south central Kansas.

3.0 TECHNICAL REPORT SUMMARY

ERC successfully completed all technical requirements of the contract as listed below:

1. Provide site implementation support
2. Develop and provide operations and maintenance training
3. Develop, validate, and implement site/system operations, maintenance, and repair schedules and procedures
4. Develop, validate, and implement site/system certification, acceptance, and hands-off procedures
5. Develop, validate, and implement site/system documentation and document maintenance
6. Provide integrated logistics support, including staffing, budget, and property management
7. Provide oversight of the site safety program including implementation of the Argonne National Laboratory Environmental Safety and Health (ES&H) requirements

In addition to these seven cited work efforts, ERC assisted (as requested by the DOE functional teams) in the following implementation activities:

- Site/System installation and checkout
- Site/System integration, testing and review, including development schedules
- Documenting and maintaining the physical plant configuration
- Developing and documenting the operator interface with the site data system
- Establishing and operating the site infrastructure
- Defining requirements and procedures for site/system inventory and configuration management

With relation to the site technical requirements, the existing and planned SGP CART Site instrument systems were covered under ERC technical management and operations. These instruments are designed for acquiring scientific mission data and require contractor operation and maintenance.

5.0 CONTRACT TOTAL LABOR AND COST SUMMARY

The following table provides tabulated labor and cost information for the entire contract period September 15, 1995 through April 30, 1998.

CONTRACT DE-AC02-95CH10635 TOTAL LABOR AND COST SUMMARY SEPTEMBER 15, 1995 THROUGH APRIL 30, 1998

ITEM	CUMULATIVE
Direct Labor Hours	131,324.8
Direct Labor Cost	\$ 1,934,009.00
Subtotal – Direct Labor	\$ 1,934,009.00
Other Direct Costs	
Travel	\$ 47,104.00
Other	\$ 119,467.00
Total Labor plus ODC	\$ 2,100,580.00
Total Indirect Costs	\$ 1,163,499.00
Fee	\$ 249,004.00
Total Cost Plus Fixed Fee	\$ 3,513,083.00

Total Funded Contract Value \$3,513,083.00