

PROJECT ADMINISTRATION DATA SHEET



ORIGINAL



REVISION NO. _____

Project No. E-21-A02 (R6059-OA3)GTRC/~~EXX~~DATE 10 / 24 / 85Project Director: Dr. Atif DebsSchool/~~Lab~~Electrical Engr.Sponsor: Georgia Power CompanyType Agreement: Letter of Acceptance Task A1 under BOA 95Award Period: From 9/18/85To ~~6-30-86~~
12/31/85

(Performance)

6-30-86
12/31/85

(Reports)

Sponsor Amount:

This Change 7/30/87

Total to Date

Estimated: \$ 13,409\$ 13,409Funded: \$ 13,409\$ 13,409Cost Sharing Amount: \$ NoneCost Sharing No: N/ATitle: End Use Study of the Pulp and Paper Industry in Georgia

ADMINISTRATIVE DATA

OCA Contact

R. Dennis FarmerX4820

1) Sponsor Technical Contact:

Gary L. Birdwell

2) Sponsor Admin/Contractual Matters:

Same as 1)Georgia Power Company333 Piedmont Avenue, NE (20th Floor)Atlanta, Georgia 30308526-7359Defense Priority Rating: N/AMilitary Security Classification: N/A(or) Company/Industrial Proprietary: See Below

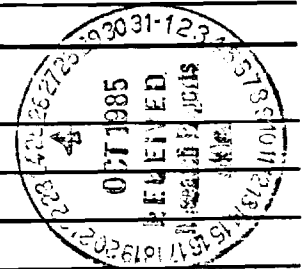
RESTRICTIONS

See Attached N/A Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval — Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with Sponsor

COMMENTS:

A Non-Disclosure Agreement has been negotiated.

COPIES TO:

SPONSOR'S I. D. NO. 02.256.000.86.002Project Director
Research Administrative Network
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AccountingProcurement/GTRI Supply Services
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Research Communications (2)GTRC
Library
Project File
Other A. Jones

GEORGIA INSTITUTE OF TECHNOLOGY

OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date 2/24/88

Project No. E-21-A02 School EE

Includes Subproject No.(s) E-21-A09

Project Director(s) A. S. Debs GTRC/GIF

Sponsor Georgia Power Co.

Title End Use Study of the Pulp and Paper Industry in Georgia

Effective Completion Date: 7/30/87 (Performance) 7/30/87 (Reports)

Grant/Contract Closeout Actions Remaining:

- ☐ None
- ☐ Final Invoice or Copy of Last Invoice Serving as Final
- ☐ Release and Assignment
- ☒ Final Report of Inventions and/or Subcontract:
Patent and Subcontract Questionnaire
sent to Project Director ☒
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other _____

Continues Project No. _____ Continued by Project No. _____

COPIES TO:

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GEORGIA POWER COMPANY GENERAL PURCHASING AGREEMENT

TECHNOLOGY DEVELOPMENT CENTER TASK STATEMENT - BOA 95 - TASK A1

PROJECT NAME: End Use Study of the Pulp and Paper Industry in Georgia

PRINCIPAL INVESTIGATOR: Atif Debs, Electrical Engineering

FINAL STATUS REPORT: Fall Quarter 1985

Introduction

The following tasks were accomplished:

1. The EPRI/BPA pulp and paper computer program was acquired and installed on the Georgia Tech Cyber system. A preliminary investigation was performed to establish the needs for linking the program to the Georgia Tech EZLP linear programming package.
2. Two additional computer packages were also acquired for future use with the EPRI/BPA program. The first is an economic sensitivity analysis package developed by the U.S. Department of Commerce to assess the economic value of new investments. And the second is the ASCON II program for assessing the effectiveness of adjustable speed drives at various stages in the pulp and paper process. The existing MAPPS package at the School of Chemical Engineering may also be of future value in the process of model tuning and validation.
3. All pulp and paper plants in Georgia were identified, together with needed data sources for the running of the above programs (see Table I).
4. Literature surveys were carried out in the following two areas:
 - a. Industrial process modeling for the pulp and paper industry
 - b. Potential applications of electrotechnologies with specific reference to microwave, radio frequency, and infrared drying processes.

5. A few visits were conducted to pulp and paper plants and an engineering design house. Technical discussions were also carried out with visiting industrial representatives and EPRI.

Project Participation

In addition to the PI, the following students participated in the project:

- Mr. Joel Dehhico (GRA), who was involved mainly in software installation, literature review, and a plant trip to Valdosta, Georgia (16% time).
- Mr. Bill Blackstock (Senior, EE), who was involved with data collection on pulp and paper plants, and literature survey on microwave drying for pulp and paper applications. (No cost to project.)
- Mr. Issam Bulmouna (Graduate, EE), who participated as an observer, and carried out literature surveys in anticipation of future involvement in follow-up work. (No cost to project.)

The Project Team solicited inputs from Professor Jeff Hsieh (Chemical Engineering) and participated in some of his group discussions. They coordinated with him on the implementation of ASCON package attributes in the MAPPS program.

Brief Technical Discussion

1. EPRI/BPA Program: Implementation, testing, and validation of this program is a priority item in the work done, and to be performed. Figure 1 below (reproduced from EPRI's report on the subject) describes the inputs, processes involved, and outputs (demands) of the pulp and paper industry. By properly selecting the cost criterion, the parameters of the processes involved, demand factors, and financial factors, the model

is capable of predicting the most effective course of action to be carried out by the industry. This does not mean that such a course of action is the most likely to be carried out. Factors such as technological breakthroughs, risks associated with new technologies, international competition, and others, need to be included. Inclusion of such factors in the model is possible via two approaches:

- a. Modify the cost criterion to reflect such factors, or
- b. Perform a multi-objective tradeoff analysis and select the best "compromise" among competing alternatives.

A key expected result is the level of electric power purchases from the utility, given various pricing schemes. Another expected result is that of the impact of technological innovations on production costing.

2. Other Computer Packages: These and a few others to be either developed or purchased, will be used primarily to evaluate:

- a. Improvements in specific process efficiencies for typical loading profiles using adjustable speed drives and other technologies;
- b. Economic sensitivity analysis relationships involving such factors as financing rates and tax rates; and
- c. Risks associated from implementing technological changes, or alternatively, staying behind without timely improvements. Most of the results here will produce figures to be used in the main body of the analysis as discussed above.