PROJECT ADMINISTRATION DATA SHEET

Project No. A-3289
Project Director: W. A. Hendrix
Sponsor: Office of Planning and Budget/Office of Energy Resources; Atlanta, GA

Type Agreement: Unnumbered contract dated 6/7/82
Award Period: From 7/1/82 To 6/30/83
Sponsor Amount: $400,000
Cost Sharing: N/A
Title: Industrial Energy Extension Service (FY83)

ADMINISTRATIVE DATA

1) Sponsor Technical Contact:
   Mr. Phil Whitlow
   Georgia Office of Energy Resources
   270 Washington St., S.W.
   Atlanta, GA 30334

2) Sponsor Admin/Contractual Matters:
   same

OCA Contact: Leamon R. Scott

Defense Priority Rating: N/A

Security Classification: N/A

RESTRICTIONS

See Attached DOE 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 none proposed

COMMENTS:

COPIES TO:

Administrative Coordinator
Research Security Services
Research Property Management
Reports Coordinator (OCA)
Accounting
Legal Services (OCA)
Procurement/EES Supply Services
Library

FORM OCA 4-721

EES Public Relations (2)
Computer Input
Project File
Other GTRI
Project Title: Industrial Energy Extension Service (FY83)
Project No: A-3289 (Subproject is E-19-665/ChE)
Project Director: W.A. Hendrix
Sponsor: Office of Planning and Budget/ Office of Energy Resources

Effective Termination Date: 6/30/83
Clearance of Accounting Charges: 6/30/83

Grant/Contract Closeout Actions Remaining:

- [X] Final Invoice and Closing Document
- [ ] Final Fiscal Report
- [ ] Final Report of Inventions
- [ ] Govt. Property Inventory & Related Certificate
- [ ] Classified Material Certificate
- [ ] Other

Assigned to: TAL (School of Industrial and Labor Relations)

COPIES TO:

- Administrator Coordinator
- Research Security Services
- Accounting
- Procurement
- EES Public Relations (2)
- Computer Input
- Project File
- Other

FORM OCA 10:781
Mr. Phil Whitlow  
Georgia Office of Energy Resources  
Trinity-Washington Building  
270 Washington Street  
Atlanta, Georgia 30334  


Dear Mr. Whitlow:

This summarizes activities on Research Project A3289, for the Third Quarter, 1982. This quarter marks the beginning of the 1982-1983 Program Year.

Quarterly Goals

1. Continue energy audit and technical assistance program for industry.

2. Develop and document case studies and special reports on specific technology areas as scheduled.

3. Print and mail third quarter issue of the Conserver.

4. Continue work on computer programs for use in evaluating industrial energy conservation measures.

5. Finish printing of revised Energy Tips.


7. Continue program promotion, follow-up, and evaluation.

8. Begin work on updated IEES slide show presentation for use in promotion.
Quarterly Activities

1. Statistics for in-plant activity:

<table>
<thead>
<tr>
<th></th>
<th>Quarter</th>
<th>1982-83 Cumulative</th>
<th>1982-83 Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Industry Contacts</td>
<td>59</td>
<td>59</td>
<td>N/A</td>
</tr>
<tr>
<td>New Industry Contacts</td>
<td>34</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Plant Visits</td>
<td>18</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>New Audit/TA Plants</td>
<td>16</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>Unsolicited Requests</td>
<td>11</td>
<td>11</td>
<td>N/A</td>
</tr>
<tr>
<td>Reports Sent</td>
<td>18</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>Case Studies</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Completed TA's*</td>
<td>2} 17</td>
<td>2} 17</td>
<td>60</td>
</tr>
<tr>
<td>Completed Audits</td>
<td>15} 17</td>
<td>15} 17</td>
<td></td>
</tr>
</tbody>
</table>

*In-plant activity in a specific energy conservation area which culminates in a written report to company management.

2. Published Conserver using new masthead, colors, and layout. The third quarter issue of the Conserver was mailed to 5,800 business and industry representatives as well as 40 copies to EES extension offices. A copy is attached.

3. Continued efforts to improve maintenance of mailing list.

4. The following special reports have been printed. Copies of each are attached.
   a. Improving Industrial Dryer Efficiency
   b. Energy Efficiency in Process Heating Systems

5. Electrical Energy Management workshop will be promoted and co-sponsored by Savannah Electric and Power Company.

6. Energy Tips 1 through 30 have been printed, and are ready for use.
Milestones Met During the Quarter

1. Evaluated results of IEES program through the third quarter of 1982 (see attachment). Estimated program energy savings by Georgia industries for the second quarter of 1982 was:

\[ 335.65 \times 10^9 \text{ BTU/yr} \]

This gives a cumulative total program savings in excess of

\[ 92.2 \times 10^{12} \text{ BTU/yr} \]

for a cost savings of $295.2 million/year. The energy savings goal for the 1982-83 program year is

\[ 8.0 \times 10^{12} \text{ BTU/yr} \]

The cumulative program energy savings goal by the end of 1983 is

\[ 99.6 \times 10^{12} \text{ BTU/yr} \]

2. Completed 15 audits, two TA's, and one case study.

Respectfully submitted,

Hank Jackson
Project Director

Attachments
TABLE 1 -- IEES ENERGY SAVINGS ESTIMATE
7/1/82 - 9/30/82 (Third Quarter 1982)

Actual Annual Savings (10^9 BTU's)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Audits</th>
<th>Workshops</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General*</td>
<td>135.65</td>
<td>-</td>
<td>135.65</td>
</tr>
<tr>
<td>Textiles</td>
<td>200.00</td>
<td>-</td>
<td>200.00</td>
</tr>
<tr>
<td>Chemical</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>Stone, Clay &amp; Glass</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>335.65</strong></td>
<td>-</td>
<td><strong>335.65</strong></td>
</tr>
</tbody>
</table>

* General industry sector now includes food and kindred products.
## TABLE 2 -- IEES ENERGY SAVINGS ESTIMATE
8/1/77 to 9/30/82

### Actual Annual Savings (10^9 BTU's)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Estimate through 2nd Quarter 1982</th>
<th>Estimate for 3rd Quarter 1982</th>
<th>Cumulative Estimate through 3rd Quarter 1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>19,194.53</td>
<td>135.65</td>
<td>19,330.18</td>
</tr>
<tr>
<td>Textiles</td>
<td>17,957.20</td>
<td>200.00</td>
<td>18,157.20</td>
</tr>
<tr>
<td>Chemical:</td>
<td>29,669.54</td>
<td>0.0</td>
<td>29,669.54</td>
</tr>
<tr>
<td>Stone, Clay &amp; Glass</td>
<td>25,037.23</td>
<td>0.0</td>
<td>25,037.23</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>91,858.50</strong></td>
<td><strong>335.65</strong></td>
<td><strong>92,194.15</strong></td>
</tr>
</tbody>
</table>

1 Reported in July memorandum from G. Thomas to W.A. Hendrix.
2 Shown in Table 1 of this report.
3 General industry group now includes food and kindred products.
STATE OF GEORGIA

INDUSTRIAL ENERGY EXTENSION SERVICE

Program Highlights 8/1/77 - 9/30/82

- Total Industry Contacts 1384
- Plant Visits 686
- Audits Completed* 296
- Workshops Conducted 54
- Total Workshop Attendees 1795
- Estimated Actual Energy Savings by Georgia Industry During Program Existence 92.19 trillion BTU's
- Estimated Actual Energy Cost Savings by Georgia Industry During Program Existence $295.2 million

* Includes in-plant technical assistance activity which is defined as work in a specific energy conservation area which culminates in a written report to company management.
Mr. Phil Whitlow  
Georgia Office of Energy Resources  
Trinity-Washington Building  
270 Washington Street  
Atlanta, Georgia 30334  


Dear Mr. Whitlow:

This summarizes activities on Research Project A3289, for the Fourth Quarter, 1982.

Quarterly Goals

1. Continue energy audit and technical assistance program for industry.

2. Develop and document case studies and special reports on specific technology areas as scheduled.

3. Print and mail fourth quarter issue of the Conserver.


5. Continue program promotion, follow-up, and evaluation.

6. Complete IEES slide show for use in promotions.
Quarterly Activities

1. Statistics for in-plant activity:

<table>
<thead>
<tr>
<th></th>
<th>Quarter</th>
<th>1982-83 Cumulative</th>
<th>1982-83 Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Industry Contacts</td>
<td>47</td>
<td>106</td>
<td>N/A</td>
</tr>
<tr>
<td>New Industry Contacts</td>
<td>33</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>Plant Visits</td>
<td>11</td>
<td>29</td>
<td>N/A</td>
</tr>
<tr>
<td>New Audit/TA Plants</td>
<td>8</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td>Unsolicited Requests</td>
<td>4</td>
<td>15</td>
<td>N/A</td>
</tr>
<tr>
<td>Reports Sent</td>
<td>4</td>
<td>22</td>
<td>N/A</td>
</tr>
<tr>
<td>Case Studies</td>
<td>0</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Completed TA's*</td>
<td>1</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Completed Audits</td>
<td>4</td>
<td>5</td>
<td>19</td>
</tr>
</tbody>
</table>

*In-plant activity in a specific energy conservation area which culminates in a written report to company management.

2. The fourth quarter issue of the Conserver was mailed to 5,800 business and industry representatives as well to EES extension offices. A copy is attached.


5. Completed work on IEES slide show, and performed trial-run for EES Industrial Extension Division area office personnel at planning meeting on November 5.

6. Began work on two technical briefing reports.
Milestones Met During the Quarter

1. Evaluated results of IEES program through the fourth quarter of 1982 (see attachments), including two workshops. Estimated program energy savings by Georgia industries for the fourth quarter of 1982 was:

   \[ 1.3 \times 10^{12} \text{ BTU/yr} \]

This gives a cumulative total program savings in excess of

   \[ 93.5 \times 10^{12} \text{ BTU/yr} \]

for a cost savings of $310.1 million/year. The energy savings goal for this year was

   \[ 8.0 \times 10^{12} \text{ BTU/yr} \]

to result in a cumulative program savings of

   \[ 99.6 \times 10^{12} \text{ BTU/yr} \]

Reported actual savings are below this objective for the year. The current economic plight of industry in the U.S. has served to reduce the rate of implementation of energy conservation equipment. Profits at many firms have been down for so long that any gains have been used to pay off debts and to make investments essential to plant maintenance. An upturn in the economy should hopefully bring a return of the energy conservation results of years past.

Respectfully submitted,

Hank Jackson
Project Director

mro

Attachments
TABLE 1 -- IEES ENERGY SAVINGS ESTIMATE
10/1/82 - 12/31/82 (Fourth Quarter 1982)

Actual Annual Savings (10^9 BTU's)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Audits</th>
<th>Workshops</th>
<th>Expanded Workshop Savings</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General*</td>
<td>1.92</td>
<td>18.025</td>
<td>424.975</td>
<td>44.92</td>
</tr>
<tr>
<td>Textiles</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chemical</td>
<td>0.0</td>
<td>17.28</td>
<td>407.411</td>
<td>424.691</td>
</tr>
<tr>
<td>Stone, Clay &amp; Glass</td>
<td>151.1</td>
<td>11.42</td>
<td>269.249</td>
<td>431.769</td>
</tr>
<tr>
<td></td>
<td>153.02</td>
<td>46.725</td>
<td>1101.635</td>
<td>1301.38</td>
</tr>
</tbody>
</table>

*General industry sector now includes food and kindred products.
TABLE 2 -- IEES ENERGY SAVINGS ESTIMATE

10/1/82 to 12/31/82

Actual Annual Savings \((10^9 \text{ BTU's})\)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Estimate through 3rd Quarter 1982 (^1)</th>
<th>Estimate for 4th Quarter 1982 (^2)</th>
<th>Cumulative Estimate through 4th Quarter 1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>19,330.18</td>
<td>444.92</td>
<td>19,775.1</td>
</tr>
<tr>
<td>Textile</td>
<td>18,157.20</td>
<td>0.0</td>
<td>18,157.20</td>
</tr>
<tr>
<td>Chemical</td>
<td>29,669.54</td>
<td>424.691</td>
<td>30,094.231</td>
</tr>
<tr>
<td>Stone, Clay &amp; Glass</td>
<td>25,037.23</td>
<td>431.769</td>
<td>25,468.999</td>
</tr>
<tr>
<td>TOTALS</td>
<td>91,858.50</td>
<td>1301.38</td>
<td>93,495.53</td>
</tr>
</tbody>
</table>

\(^1\)Reported in October memorandum from G. Thomas to H. Jackson

\(^2\)Shown in Table 1 of this report.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Total Industry Contacts</td>
<td>1,431</td>
</tr>
<tr>
<td>Plant Visits</td>
<td>697</td>
</tr>
<tr>
<td>Audits Completed*</td>
<td>301</td>
</tr>
<tr>
<td>Workshops Conducted</td>
<td>56</td>
</tr>
<tr>
<td>Total Workshop Attendees</td>
<td>1,843</td>
</tr>
<tr>
<td>Estimated Actual Energy Savings</td>
<td>93.5 trillion BTU's</td>
</tr>
<tr>
<td>by Georgia Industry During Program Existence</td>
<td></td>
</tr>
<tr>
<td>Estimated Actual Energy Cost Savings</td>
<td>$310.1 million</td>
</tr>
<tr>
<td>by Georgia Industry During Program Existence</td>
<td></td>
</tr>
</tbody>
</table>

*Includes in-plant technical assistance activity which is defined as work in a specific energy conservation area which culminates in a written report to company management.
LIBRARY DOES NOT HAVE

Quarterly Progress Report, January 1983 through March 1983
Mr. Phil Whitlow  
Georgia Office of Energy Resources  
Trinity-Washington Building  
270 Washington Street  
Atlanta, Georgia 30334

Subject: Industrial Energy Extension Service Program Quarterly Progress Summary Report for EES/GIT Research Project A3289 for Period April 1, 1983 to June 30, 1983

Dear Mr. Whitlow:

This report summarizes activities on Research Project A3289, for the Second Quarter, 1983.

Quarterly Goals

1. Continue energy audit and technical assistance program for industry; complete last of 60 in-plant energy management surveys and furnish reports to management.

2. Develop and publish last five technical briefing reports on important energy technology areas.

3. Print and mail second quarter issue of the Conserver.


5. Continue program promotion, follow-up, and evaluation.
Quarterly Activities

1. Statistics for in-plant activity:

<table>
<thead>
<tr>
<th></th>
<th>Quarter</th>
<th>1982-83 Cumulative</th>
<th>1982-83 Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Industry Contacts:</td>
<td>142</td>
<td>299</td>
<td>N/A</td>
</tr>
<tr>
<td>New Industry Contacts:</td>
<td>10</td>
<td>103</td>
<td>100</td>
</tr>
<tr>
<td>Plant Visits:</td>
<td>12</td>
<td>74</td>
<td>N/A</td>
</tr>
<tr>
<td>New Audit/TA Plants:</td>
<td>11</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Unsolicited Requests:</td>
<td>7</td>
<td>27</td>
<td>N/A</td>
</tr>
<tr>
<td>Reports Sent:</td>
<td>32</td>
<td>65</td>
<td>N/A</td>
</tr>
<tr>
<td>Case Studies:</td>
<td>0</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Completed TA's*:</td>
<td>7</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Completed Audits:</td>
<td>25</td>
<td>52</td>
<td>65</td>
</tr>
</tbody>
</table>

*In-plant activity in a specific energy conservation area which culminates in a written report to company management.

2. The second quarter issue of the Conserver was mailed to 6,500 business and industry representatives as well to EES extension offices and Georgia State Legislators. A copy is attached.

3. Presented Creative Financing Workshop on April 20 in Atlanta, and two back-to-back workshops, Boiler Efficiency Improvement and Energy Measurement, on May 19-20 in Atlanta.

4. Updated mailing list with changes, additions, and deletions.

5. Delivered a talk on the IEES program at the Joint Convention of the Georgia and Florida Meatpackers Associations held at Ponte Vedra Beach, Florida, and received a very enthusiastic response.

6. Five more technical briefing reports published:

   -- "Solid State Motor Controls"
   -- "Computer Based Energy Management"
   -- "Coal Technologies for Georgia Industries"
   -- "High Pressure Nozzles"
   -- "Direct Digital Control"

Copies are attached.
Milestones Met During the Quarter

1. Evaluated results of IEES program through the second quarter of 1983 (see attachments). Estimated program energy savings by Georgia industries for the second quarter of 1983 was:

$$11.2 \times 10^9 \text{ Btu/yr}$$

This gives a cumulative total program savings in excess of

$$93.7 \times 10^{12} \text{ Btu/yr}$$

for a cost savings of over $310 million/year. The energy savings goal for this year is

$$8.0 \times 10^{12} \text{ Btu/yr}$$

to result in a cumulative program savings of

$$99.6 \times 10^{12} \text{ Btu/yr}.$$

Respectfully submitted,

Hank Jackson
Project Director

mro

Attachments
TABLE 1 -- IEES ENERGY SAVINGS ESTIMATE
4/1/83 - 6/30/83 (Second Quarter 1983)

Actual Annual Savings ($10^9$ Btu's)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Audits</th>
<th>Workshops</th>
<th>Expanded Workshop Savings</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>11.2</td>
<td>0.0</td>
<td>-</td>
<td>11.2</td>
</tr>
<tr>
<td>Textiles</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>Chemicals</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>Stone, Clay &amp; Glass</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>11.2</td>
<td>0.0</td>
<td></td>
<td>11.2</td>
</tr>
</tbody>
</table>
TABLE 2 -- IEES ENERGY SAVINGS ESTIMATE
8/1/77 to 6/30/83

Actual Annual Savings (10^9 Btu's)

<table>
<thead>
<tr>
<th>Industry Group</th>
<th>Estimate through 1st Quarter 1983</th>
<th>Estimate for 2nd Quarter 1983</th>
<th>Cumulative Estimate through 1st Quarter 1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>19,780</td>
<td>11.2</td>
<td>19,791</td>
</tr>
<tr>
<td>Textile</td>
<td>18,170</td>
<td>0.0</td>
<td>18,170</td>
</tr>
<tr>
<td>Chemical</td>
<td>30,094</td>
<td>0.0</td>
<td>30,094</td>
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<tr>
<td>Stone, Clay &amp; Glass</td>
<td>25,679</td>
<td>0.0</td>
<td>25,679</td>
</tr>
<tr>
<td>Totals</td>
<td>93,723</td>
<td>11.2</td>
<td>93,734</td>
</tr>
</tbody>
</table>

1 Reported by group coordinators in April memorandum to H. Jackson.
2 Shown in Table 1 of this report.
STATE OF GEORGIA
INDUSTRIAL ENERGY EXTENSION SERVICE

Program Highlights-8/1/77 - 6/30/83

- Total Industry Contacts 1,624
- Plant Visits 742
- Audits Completed* 344
- Workshops Conducted 60
- Total Workshop Attendees 1,941

- Estimated Actual Energy Savings
  by Georgia Industry During Program Existence 93.7 trillion Btu's

- Estimated Actual Energy Cost
  Savings by Georgia Industry During Program Existence + $310.1 million

*Includes in-plant technical assistance activity which is defined as work in a specific energy conservation area which culminates in a written report to company management.