Y-12

OAK RIDGE Y-12 PLANT

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MANAGED BY
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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Project Accomplishment Summary for Project Number 91-Y12P-049-A1

Regional Manufacturing Technical Development

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Lockheed Martin Energy Systems, Inc.
Various State Agencies and Businesses

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PROJECT ACCOMPLISHMENT SUMMARY

Title: Regional Manufacturing Technical Development
DOE TTI No.: 91-Y12P-049-A1
Partners: Various State Agencies, and Businesses

BACKGROUND

Before 1991, most small manufacturers throughout the country did not have easy access to government technical resources at national laboratories or major DOE production facilities, and generally the mechanism that did provide access cost a lot of time and money. Most small manufacturers lack both. In addition, collaboration with a national laboratory usually was directed toward long-term research and development, not a high priority for most small manufacturers.

In 1991, Lockheed Martin Energy Systems approached the State of Tennessee Department of Economic and Community Development and the University of Tennessee Center for Industrial Services about developing an effective way to serve small manufacturers. While both organizations had agents scattered throughout the state to assist small manufacturers, in actuality, the primary technical help came from the university professors, supplemented by such organizations as the Tennessee Space Institute, NASA Huntsville, and the Tennessee Valley Authority. Based on the state's existing outreach program and the manufacturers' need for expertise that existed at the Y-12 Plant, an agreement was made. Energy Systems organizations would work with the State to provide assistance for small manufacturing companies. The State would advertise to the manufacturers the availability of the manufacturing expertise at Y-12, focus the resulting problem statements, and present those statements to Energy Systems for action. Energy Systems agreed to provide up to four workdays of effort to address the problems while creating as little paperwork as possible. That combination of quick response to address day-to-day manufacturing problems coupled with a non-bureaucratic business system turned out to meet many of small businesses' needs.

In 1993, an additional CRADA was initiated with the state of Tennessee through the Tennessee Technology Foundation for support of economic development within the state. Also in 1993, a CRADA with the state of Florida was initiated, which was patterned after the original outreach CRADA with the state of Tennessee. Another CRADA was initiated in 1991 with Coors Technical Ceramics Company to develop nondestructive testing techniques for ceramic components.

DESCRIPTION

This project covers four CRADAs which were initiated in 1991 and 1993. The two CRADAs with the state of Tennessee and the state of Florida were to provide technical assistance to small manufacturers in those states and the CRADA with the Tennessee Technology Foundation was to engage in joint economic development activities within the state. These three CRADAs do not fit the traditional definition of CRADAs and would be administered by other agreement mechanisms, today. But in these early days of

technology transfer efforts, the CRADA mechanism was already developed and usable. The third CRADA with Coors Ceramics is a good example of a CRADA and was used to develop nondestructive testing technology for ceramic component inspection.

The technical assistance projects with Tennessee and Florida were formalized through Cooperative Research and Development Agreements. These CRADAs defined the specific tasks to be performed by the states' extension services, such as routine interactions with businesses, advertising, coordination of meetings, and collection of follow-up information; and by Energy Systems, such as the number of workdays of effort to address the problem and the provision of a short report with recommendations to solve the problem.

The economic development project with the Tennessee Technology Foundation allowed Energy Systems to participate in areas of economic development which were of interest to both the state of Tennessee and the DOE. Several successful recruitments were made, but the largest (Mercedes Benz) was unsuccessful.

The CRADA with Coors Ceramics not only allowed the development of several nondestructive testing techniques for ceramic components, but also generated data useful in making manufacturing improvements.

ECONOMIC IMPACT

Collaboration with the extension services resulted in some 462 requests for technical assistance. All of these requests are closed, and feedback from the manufacturers indicates a high level of satisfaction with the results. More than 90% of the companies receiving assistance indicate that they obtained useful information and would use the service again. One small-company official from Memphis said that it's handy to have a phone number like Oak Ridge; a small company can't afford to have a resident wizard.

Economic impact is difficult to measure in terms of dollars or job creation, though those questions are asked of manufacturers who receive assistance through the ORCMT. Response numbers are astonishing, but they measure only a small part of the total impact. Private sector impact reported indicates more than \$60 million and over 700 jobs either retained or created. Results, as measured by money or jobs, may not show up in the short term, but responses indicate that some business growth has occurred and some laid off workers have been rehired because difficult technical problems were solved or recruitment efforts were successful. At least six companies have either relocated or started up in the East Tennessee Region because of joint recruiting efforts.

BENEFITS TO DOE

Projects to share government-sponsored expertise benefit DOE mission by (1) leveraging existing capabilities at the laboratory and at the plant, (2) using equipment and knowledge to address technical problems which would not normally be available to the private sector, (3) keeping engineers and scientists up to date on technology developments that may be required to solve problems, (4) keeping analytical equipment

maintained and serviceable, (5) using these interactions to help to maintain core competencies necessary to meet future DOE missions, (6) bringing new knowledge from the private sector into the government facilities that could lead to more efficient operation, and (7) keeping expertise in the region by helping to develop companies with similar technical needs. Many interactions over the past several years have resulted in CRADAs, Work for Others projects, and User Facility agreements that might not have occurred without the technical assistance program.

A DOE goal is to develop mechanisms to ease the transfer of technology to the private sector. Outreach activities through CRADAs inform business and industry of technical R&D activities at the national laboratories.

PROJECT STATUS

This project is complete.

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PROJECT EXAMPLES and INFORMATION RELEASE

Some success stories have been released which may be found in the attached booklet. Additional releases may be granted upon request to the individual companies involved.

DISTRIBUTION:

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Ray Ford, MS 8084, 9203 (RC)

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