PROGRESS REPORT FOR THE
KANSAS DOE/EPSCoR PLANNING GRANT
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REPORTING PERIOD: 30 SEPTEMBER 1991 THROUGH 29 SEPTEMBER 1992

SUBMITTED TO
U.S. DEPARTMENT OF ENERGY

TITLE: "KANSAS ENERGY 2000"

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MASTER
I. EXECUTIVE SUMMARY

The state of Kansas during the year 30 September 1991 to 29 September 1992 has accomplished a variety of objectives in its DOE/EPSCoR planning process. As a new EPSCoR state, it has had to develop its management organization. This has been accomplished, with the result that EPSCoR is under the aegis of a body charged with planning the economic development of the state.

An inventory of research assets and needs was performed and a report of the results of that inventory was produced. A DOE/EPSCoR Steering Committee, including both academic and industry representatives, was formed. This working committee met at least twice a month in the spring of 1992 doing strategic planning as well as giving guidance for the traineeship proposal recently funded. This committee identified certain priority areas for development by the DOE/EPSCoR project: Environment, Geology, Materials Science, Nuclear Science and Engineering, Alternate Sources and Efficiencies in Power Generation, Basic Sciences, and the Educational Pipeline.

A call for proposals from state research groups has resulted in thirty-nine proposals in these priority areas. These proposals will be peer-reviewed on the weekend of November 14, 1992. The best of them will then be selected for inclusion in the state's implementation plan and proposal.

The inclusion of industry representatives on the DOE/EPSCoR Steering Committee has resulted in developing cooperations and collaborations -- not only between the Ph.D.-granting institutions of Kansas State University, The University of Kansas, and The Wichita State University, but also including other academic, governmental, and industrial institutions in the state.
II. SUMMARY OF ACTIVITIES DURING THE PLANNING GRANT PERIOD

A. Management Structure

One of the challenges facing Kansas in the past year was the development of a state management plan for EPSCoR. In 1989, Kansas ranked 33rd among the states in federal research and development support. In 1991, Kansas became the 18th state eligible for EPSCoR support; we responded quickly to calls for planning proposals from the DOE, NSF, and EPA. While the agency EPSCoR Projects were off to timely starts, the state was grappling with the problem of providing the EPSCoR Projects with a strong management with real influence in the state’s political process.

Measured by the progress of other states that have been EPSCoR states for five or ten years longer, the state’s response has been dramatic. We have obtained a commitment from the state to the proposition that a strong research base in science and engineering underpins long-term economic development.

Kansas Inc. was created by legislation in 1986 as a quasi-public corporation together with its sister corporation, the Kansas Technology Enterprise Corporation (KTEC). These two corporations were charged with fostering economic development for the state of Kansas. Kansas Inc. was charged with being the strategic planner, central guidance mechanism, and the oversight entity of this process. KTEC was charged with fostering technology transfer from the state universities to state companies. Both of these corporations have been extremely
successful in their assigned roles; KTEC is acknowledged to be a model state technology-transfer agency and Kansas Inc. has overseen and planned well for Kansas.

The board of Kansas Inc. includes the Governor of Kansas, the Speaker of the House, the President of the Senate, and the Minority Leaders of both Houses, together with the Secretary of Commerce. Obviously, when Kansas Inc. speaks, Kansas government listens. It is clear also that the board of Kansas Inc. cannot serve as the Kansas EPSCoR Committee. A permanent EPSCoR committee under the guidance of Kansas Inc. has been set up. The agency EPSCoR Project Directors serve under this committee, coordinating the state's research and development policy. A management plan for the Kansas EPSCoR projects is shown in Table 1. A DOE/EPSCoR Steering Committee (Appendix A) was set up and served as a strategic planning committee for energy-related research and education in the state of Kansas. It also made major contributions to a traineeship proposal which was recently funded. It will continue to establish policy for management of the Kansas DOE/EPSCoR Programs. Although this committee often met biweekly during the past year, we anticipate that the frequency of these meetings will decrease to quarterly or possibly even semiannually.

B. Inventory

The first activity to be undertaken in this planning project was the inventory of energy-related teaching and research programs in the state. This inventory was completed by the
Survey Research Unit of the Institute for Social and Behavioral Research (ISBR) at Kansas State University, in cooperation with the Energy Research Center of the University of Kansas, the Center for Energy Studies of Wichita State University. Dr. James Franke directs the Survey Research Unit of the ISBR and assumed overall responsibility for completion of the inventory. The results of this inventory were reported in six volumes, copies of which accompany this report.

C. Strategic Planning

Upon completion of the inventory of energy-related programs, the steering committee embarked upon strategic planning for the state. This strategic planning process identified priority areas for the state DOE/EPSCoR project and called for proposals from groups in these areas. As a result, 39 proposals have been received in the priority areas of: Environment, Geology, Materials Science, Nuclear Science and Engineering, Alternate Sources and Efficiencies in Power Generation, Basic Sciences, and the Educational Pipeline.

The economy of Kansas is based at present largely upon agriculture, oil and gas, and manufacturing. In the agricultural sector, Kansas has been most heavily involved in production agriculture, especially the production of wheat and beef cattle, rather than in food processing or the manufacture of products from agricultural commodities or by-products. In recent years, increased knowledge has led to heightened awareness of problems all three areas may cause for the environment.
Kansas is a leading mineral producing state; all but two of its 105 counties have active extraction industries, and the total value of mineral production exceeds $3 billion. Crude oil and natural gas account for most of the total value. However, the largest active oil and gas producing fields in Kansas are mature by industry standards, and the state can expect to face declines in oil and gas production in the future. Kansas must strengthen its research in geology to extend the useful life of the state’s geological resources.

The manufacturing sector is the most rapidly growing of the three major components of the Kansas economy. While manufacturing employment rose nationwide by 5% during the decade of the 70’s, in Kansas manufacturing employment grew nearly 48% in the same time. Preliminary evidence suggests this rapid growth rate for manufacturing jobs in Kansas continued through the 80’s. Since 1980, the industrial categories creating the most jobs in Kansas have been food products, transportation equipment, electrical equipment, machinery, and fabricated metal products. Kansas needs strong research in basic sciences, materials science, and in alternate sources and efficiencies in power generation.

One aspect of power generation was singled out for special interest. Kansas has one of the last fission power reactors put into service in the U.S. Present indications that the state and the nation will need nuclear power in the future. Therefore, it
is clear that we need a strong research base in nuclear science and engineering.

Finally, the state shares with the nation the need to improve the rate of production of well-trained scientists, engineers, and technicians to maintain and improve the productivity of our economy while maintaining and improving the quality of life in Kansas. We must develop ways to improve the output of our educational pipeline.

A panel of peer reviewers, who do not live in Kansas or any other EPSCoR state, will convene on the weekend of November 14 to rate these proposals. The most meritorious projects, as determined by these peer reviewers, will be selected for inclusion in the state's proposal for an EPSCoR implementation grant. Note that some priority areas might not be included in the proposal if sufficiently high-quality proposals have not been received in that area.

III. Key Institutions and Individuals

We have not had time for a detailed analysis of the proposals received, but a cursory examination shows that most of the proposers are faculty from the state's three Ph.D.-granting institutions -- Kansas State University, The University of Kansas, and The Wichita State University. A number of proposals involve people from other institutions (e.g., the Kansas Geological Survey, Haskell Indian Junior College, and industrial laboratories).
Many, but not all of these institutions are represented on the DOE/Kansas Steering Committee (Appendix A). Although the development of the state plans is a work in progress, it is clear that the inclusion of industry representative on this working committee is doing a lot to foster cooperations and collaborations between academic scientists and industry researchers.

In summary, we have during this year of planning started a process which is continuing and which will result in a strong proposal for implementation of the plans and programs developed in the period of September 30, 1991, to January 15, 1993.
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