

MEMORANDUM

To: Board of Regents
From: Board Office
Subject: New Center for Power System Engineering Research
Date: March 3, 2003

Recommended Action:

Receive the report of a new center to be called the Power System Engineering Research Center (PSerc).

Executive Summary:

Focus on Electric Power Industry	Iowa State University has established the Power System Engineering Research Center within the Department of Electrical and Computer Engineering and the College of Engineering. One of thirteen PSerc member universities, ISU will work with industry to conduct research on challenges facing a restructured electric power industry and to educate the next generation of industry professionals.
A Multi-university Effort	<ul style="list-style-type: none">➤ Specifically, this Center will draw on the expertise of academic researchers at multiple universities across the U.S. who specialize in power systems, applied mathematics, non-linear systems, power electronics, control theory, computing, operations research, economics, industrial organizations and public policy analysis.➤ Faculty with the Center will collaborate with industry members from business and government organizations that have an interest in seeing that electricity customer needs are met through an economical, reliable and environmentally acceptable supply and delivery of electricity.
NSF Funded	This joint effort is supported by \$207,500 funding from the National Science Foundation (NSF) and from member companies. Continuation of the Center is dependent upon funding from the NSF and the member industrial companies. By Board policy, this Center will be terminated if external funding ceases.

There are no similar units at institutions within the State of Iowa.


Regent Questions
for New Centers

The University's responses to the Regent Questions on new centers and
institutes are attached.



Robert J. Barak

Approved:



Gregory S. Nichols

Power System Engineering Research Center (PSERC) Site An NSF Sponsored I/UCRC

1. What is the title of the proposed center or institute?

Power System Engineering Research Center (PSERC)

2. What is the administrative relationship of the proposed unit to other entities on campus, such as departments or colleges?

The Power System Engineering Research Center consists of faculty members in the Electrical and Computer Engineering department. The center is the site at Iowa State University for a national center that includes twelve other university sites. These include Cornell, University of California Berkeley, University of Wisconsin Madison, University of Illinois Urbana Champaign, Washington State University, Arizona State University, Texas A&M University, Georgia Tech, Carnegie Mellon, Colorado School of Mines, Wichita State University, and Howard University. The center focuses on research work related to electric power and energy systems sponsored by the industrial members of the center. With regard to work in this area the center also submits proposals for funding under various initiatives sponsored by the Department of Energy, National Science Foundation, Electric Power Research Institute, and other funding agencies. The center has a site director appointed by the Dean of the College of Engineering. The site director administers the site at ISU and serves as a liaison with the sites at the other universities, the industrial advisory board, and the NSF program director in charge of the center.

3. To whom will the administrative director of the unit report?

The site Director of PSERC at ISU will report to the Dean of the College of Engineering and a PSERC Industrial Advisory Board, which includes one representative from each member company. The site Director will manage the site at ISU and will also interact with an Executive Council composed of site directors of all 13 member schools.

4. Succinctly describe the basic purposes and objectives of the unit.

a. How will the activities of the unit relate to the general mission and teaching programs of the university?

PSERC member universities work with industry to conduct research on challenges facing a restructured electric power industry and to educate the next generation of industry professionals. Finding innovative and efficient solutions to those challenges requires an unprecedented level of expertise, communication and cooperation between universities and industry. As a National Science Foundation Industry/University Cooperative

Research Center, PSERC draws on the expertise of academic researchers at multiple universities across the US who specialize in power systems, applied mathematics, non-linear systems, power electronics, control theory, computing, operations research, economics, industrial organization and public policy analysis. It collaborates with industry members from business and government organizations with an interest in seeing that electricity customer needs are met through economical, reliable and environmentally acceptable supply and delivery of electricity.

b. How do they relate to the strategic plan of the department and/or university?

Iowa State University, Iowa's Land Grant Institution has the stated goal to be the "Best Land Grant University" in the nation. The electric power and energy systems program at ISU enjoys a national and international reputation for conducting research and education at the cutting edge of the field. PSERC includes the top universities in the nation in this specialty area. The center site at ISU gives the university and the program exposure at the national level and the opportunity to collaborate with the best in the field. The center also provides the opportunity to meet the following objectives:

Seek innovative solutions to challenges facing its members and the industry as a whole as the industry evolves toward more decentralized, market-based decision-making

- partner with industry to develop research projects to resolve industry problems
- use experienced and creative faculty who can provide objective perspectives on possible solutions to those challenges
- leverage industry support to resolve common problems
- use multidisciplinary skills and expertise across multiple universities through collaborative research
- provide opportunities for commercialization of research results

Prepare current and future professionals for the new power industry

- provide access to high quality students at the graduate and undergraduate levels
- encourage students to consider professions in the power industry
- sponsor short courses, workshops and other professional development education opportunities

Provide opportunities for direct interactions between industry and researchers

- stimulate productive interchange of ideas among university and industry professionals
- host industry-university meetings at which research needs and results are discussed
- conduct web-based forums involving industry and university students on current relevant topics
- facilitate communication with leading university researchers in the power industry

5. Do similar units exist at other public or private colleges or universities in Iowa? If so, how does the proposed unit relate to them?

There are no similar units at various institutions within the state of Iowa that work on the topic of electric power and energy systems.

6. What are the proposed sources and annual amounts of funding for the unit? Please itemize. (Include faculty, staff, and clerical salaries; supplies; equipment; travel; other costs).

Item	Sources	Amount
Site Director 1month salary, travel, supplies, and support of 1 graduate student	National Science Foundation	\$47,500
Funding of Research Projects – Student support, Travel, and Supplies	Member Companies	\$160,000

7. Which of the costs in item 6 represent new financial obligations to the general fund of the university?

The center is entirely funded by the National Science Foundation and the member industrial companies. There are no new financial obligations to the general fund of the university.