

Center for Power Systems Studies
Semiannual Meeting -- Huron, SD
COORDINATOR'S REPORT
May 1, 2003

To: Members of Center for Power System Studies
Associate Members of Power System Studies
All those in attendance at meeting

We are now at the close the Center for Power Systems Studies' 35th year of operation. We are also recognizing the department's celebration of its 100th graduating class this spring semester! The following is a summary of the last six months of activity within the department of electrical engineering that is related to the CPSS.

I. Projects/research/academic activities during fall 2002 and spring 2003 terms

a. New Energy Laboratory – Complete.

In the fall of 2002 the completed energy lab was used on average 25 hours per week by Circuits I, Circuits II, and Energy Conversion. We were all very pleased that we only experienced about 1-2 hours of interruption due to a small 100 V/ 100 W power supply failure in the main power processing (power distribution) system (PPS).

We have again used the lab for Circuits I and Circuits II in the spring semester without a glitch. The success of this laboratory can in great part be attributed to the numerous undergraduate participants since back to 1999! A plaque has been placed on the PPS to honor them and their contributions. Below is a picture of the plaque.

b. Otter Tail's Distribution Project

Successfully completed the power system modeling project with graduate student Sudeep Pyakuryal. This project was co-advised by Drs. Hietpas and Ropp. The purpose of this project was to model a power system using the ATP software, for use with future wind generation impact studies.

c. Courses taught spring semester

Steve Hietpas

1. Taught EE615 (3 cr) *Advanced Linear Systems*, 11 graduate students
2. Taught EE221 (3 cr) *Circuits II*, 23 students, ~ 4/15 students look interested in power systems.
3. Advised EE692 (3 cr) Special Topics in Motor Drives, 1 graduate student

Michael Ropp

1. Taught EE415 (3 cr) – *Linear Control Systems*, 24 undergraduate students
2. Taught EE321 (3 cr) – *Electronics II*, 27 undergraduate students

Sudeep Pyakuryal

1. Taught EE432 (3 cr) *Power Systems Analysis*, 14 undergraduate students

II. Other scholarly/research activities

Steve Hietpas

1. Serve on the paper review committee for IEEE Rural Electric Power Conference. Reviewed papers for the upcoming conference in Colorado Spring, CO, May 5-May 7, 2002. Will attend conference.
2. Serve on the review committee of IEEE Transactions on Industrial Applications associated with the Rural Electric Power Conference.

Center for Power Systems Studies
Semiannual Meeting – Huron, SD
COORDINATOR'S REPORT
May 1, 2003

3. Attended and presented poster on new energy lab at an NSF Sponsored Workshop for Faculty on “Teaching Power Electronics and Electronic Drives” Tempe, AZ, Jan., 2003
4. Advised five graduate students on design and thesis papers and research/scholarly related activity involving: development of PV array, DC motor drive, and DC submersible pump system, the processing system (PPS) for the new energy conversion laboratory, the modeling and simulation of a portion of the Otter Tail distribution, design of a 3-hp V/Hz 3-phase Induction Motor Drive using a dSPACE rapid-prototype system.

Michael Ropp

1. --Obtained an NSF-CAREER award to fund two photovoltaics projects over the next five years (\$400,000).
2. Initiated a new photovoltaics project in Yellowstone park, to be installed in summer 2004, and acquired the PV array for the project (paid for by an UNPEPP grant). The PV array is 7.6 kW, and the modules are in the Park at present.
3. Continuing four power-related graduate student projects (renewable energy topics).
4. Completed a two-semester CPSS-sponsored Senior Design project involving a bidirectional AC<->DC power converter. This project will likely be continued next year.
5. Completed a two-semester senior design project involving power system modeling and assessment of wind turbine impacts.
6. Continued to operate the Wind Resource Assessment Network.

III. Scholarship Activity

Continued the offering of *scholarships* to:

Freshmen level (less than approximately 50 credits completed)
Sophomore level (less than approximately 80 credits completed)
Junior level (less than approximately 110 credits completed)

Recipients for Spring 03

Seniors	Juniors	Sophomore	Freshmen
Jonathan Kennedy	Mike McBride	Daniel McMahan	
Adam Graff	Nate Jones	Tung Nguyen	
Cody Kinsley	Paul Woodruff	Jared Clark	
John Weber	Justin Dewald	Jesse Walter	
Jeff Renken			
Jesse Moser			

Recipients for Fall 03

Seniors	Juniors	Sophomore	Freshmen
Jonathan Kennedy	Daniel McMahan	Wes Wingen	Corey Kramer
Mike McBride	Adam Fenski		
Nate Jones	Jesse Walter		
Paul Woodruff	Justin Dewald		
Justin Brech			

Center for Power Systems Studies
Semiannual Meeting -- Huron, SD
COORDINATOR'S REPORT
May 1, 2003

IV. Graduating Power Students (Fall and Spring) and Summer 2003 Intern Positions

a. Fall 2002 Power Graduates:

Student	Place of Employment
Paul Konechne	Burns McDonnell
Keith Crago	Uncertain

b. Spring 2003 Power Graduates:

Student	Place of Employment
Adam Graff	Cannon Technologies (Sioux City)
John Weber	Missouri River Energy Services
Jeffrey Renken	TSP (formerly Spitznagel), Sioux Falls ?
Jesse Moser	Uncertain

Of 11 students graduating in the spring, 4 have declared power as their career path, which is 36% of the graduating seniors. From spring 2000 to present, 18 of 88, or 20.4% of SDSU EE graduates have either obtained or are pursuing a career in power.

c. Summer 2003 Power (and Possible Power) Student Interns.

Student	Place of Employment
Nate Jones	Brookings Municipal Utilities
Jon Kennedy	?
Kevin Doe	Bonestroo and Associates, St. Paul
Travis Hendrickson	Unknown
Justin Dewald	Fischer Electric
Adam Fenski	Summer Student
Wes Wingen	Energy Maintenance Service, Gary, SD
Jack Winter	Unknown
Mike McBride	Summer Student
Paul Woodruff	Rochester Public Utilities
Daniel McMahan	Unknown
Jesse Walter	Unknown
Robert Soper	Unknown
Michael Runck	Unknown

Center for Power Systems Studies
Semiannual Meeting – Huron, SD
COORDINATOR'S REPORT
May 1, 2003

V. Summer Activity

Steve Hietpas

1. Supervise Kala Meah and Ankur Singhal on design of 3-hp Volts/Hz AC Induction Motor Drive – controller approaches, and integration of dSpace.
2. Work for Dennis Helder in June (Assessment coordinator) and in July (Instrumentation design, AGE85 aircraft project)

Michael Ropp

1. Wind Resource Assessment Network
2. Supervising eight graduate students on numerous projects
3. Begin activities in support of the NSF-CAREER award

Respectfully submitted,

Steven M. Hietpas, Ph.D.
Coordinator, Center for Power System Studies
Associate Professor of Electrical Engineering