

Center for Power Systems Studies – Fall Meeting
COORDINATOR'S REPORT
October 20, 2008

To: Members of Center for Power Systems Studies
Associate Members of Power Systems Studies
Guests in attendance

The Center for Power Systems Studies is entering its 41st year of operation. This is the 10th year that I have been privileged with responsibilities as the Coordinator of the CPSS. Below is a summary of some of the past years' power-related activities and events, since the spring meeting.

I. Summer 2008: Faculty and Student Summer Projects/Research Update

Hietpas

- a. As Electrical Engineering Program Coordinator
 - i. worked on orientation with students during June and part of July
 - ii. worked on program assessment matters
 - iii. began preparation for our 2009 ABET (accreditation) visit.
 - iv. new building design tasks
- b. Conference committee planning for 2008 CPSS South Dakota Regional Power Conference.
- c. Supervised one MSEE graduate student in the design of an FPGA Based Induction Motor Drive
- d. Supervised one MSEE graduate student in the design of a Permanent Magnet AC Motor Drive
- e. Supervised one MSEE graduate student on power fault location for distribution systems, in collaboration with Cooper Power.
- f. Panelist member at ONR/EPRI/AEP-Sponsored Faculty Summer Workshop
- g. Continuing to serve on the board for the South Dakota Electrical Council
- h. Served as a paper reviewer for IEEE Transaction on Education, IEEE REPC, IEE, and ASEE.

Ropp

- a. Wind Resource Assessment Network, 11 operational sites, working on a new proposal to secure long-term funding and possibly a different structure for the WRAN.
- b. Helped to establish the Wind Applications Center (WAC) at SDSU, and continue to assist in its operations.
- c. Supervising one power-related MSEE graduate student, and the first Ph.D. graduate power student.
- d. Advised one power-related Senior Design Project ("Backcountry PV Battery Charger"); currently involved in three more ("Ultracapacitor Storage for PV"; "PV-powered Hand Tool Battery Charger"; "Power Line Event Monitor").
- e. Completed another PV in the Parks project; now working on the next one (Spring/Summer 2010).
- f. Completed the Department of Energy Renewable Systems Integration (RSI) Project. Currently participating in three DoE Solar Energy Grid Integration Systems (SEGIS) projects. Will shortly initiate a project funded under the Xcel Energy RDF program.
- g. Published one journal paper ("Development of a MATLAB/Simulink Model of a Single-Phase Photovoltaic Inverter", to appear in the IEEE Transactions on Energy Conversion). Published five conference papers in the May 2008 IEEE Photovoltaic Specialists' Conference and two conference papers in the July 2008 IEEE Power Engineering Society meeting.
- h. Will present at the Minnesota Power Systems Conference in November 2008.
- i. Continuing to serve on the board of the South Dakota Energy Infrastructure Authority.

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II. Power-Faculty Course Update

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Fall 2008:

- EE420/420L (3-1 cr) *Electronics III and Lab*, 7 students
- EE430/430L (3-1 cr) *Electromechanical Systems and Lab*, 21 students

Spring 2008:

- EE221 (3 cr) *Circuits II*
- EE315 (3 cr) *Linear Systems*

Ropp

Fall 2008:

- EE320/320L (3-1 cr) *Electronics I and Lab*, 16 students

Spring 2008:

- EE434/434L (3-1 cr) *Power Systems and Lab*

III. Scholarship Activity

Recipients for Fall 08

Seniors	Juniors	Sophomore	Freshmen
Kirby Wicks*	Steve Cozine	Fistum Mekuria	
Aric Lowe	Tyler Duffy		
Todd Bockorny	Joseph Dold		
Corey Kramer			
Christopher Graff			
Derrick Galinat			
Eric Boese			
Tyler Wulf			
Jay Groninger			

* Indicates recipient of the \$3000 Center for Power Systems Studies Award. Spring 09 applications are being submitted within the next six weeks.

IV. Status of Power Students

I. Power Graduates Update

Student	Graduated	Place of Employment
Cisar, Patrick	Fall 2007	Larson Binkley, Overland Park, KS
Dolney, Lowell	Fall 2007	NPPD
Greenfield, Curtis	Fall 2007	Interstates Engineering
Halgerson, Russell	Fall 2007	Peoples Cooperative Services, MN
Houck, Molly	Fall 2007	WAPA, Huron

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Student	Graduated	Place of Employment
Howard, Trevor	Fall 2007	WAPA, Huron
Jensen, Ryan	Fall 2007	NPPD
Derek Bryant	Spring 2008	NPPD
Aaron Giddings	Spring 2008	ABB
Matthew Tesch	Spring 2008	Ulteig Engineers (Fargo)
Derek Bryant	Summer 2008	NPPD

Of the 29 students that graduated in 2007-2008, 10 obtained employment in the power sector, which is 34% of this graduating class. Since the spring of 2000 to present, 50 of 232 (approximately 22%) of SDSU EE graduates either obtained or have pursued a career in the power industry.

II. Power Engineering Student Internships, Cooperatives, and Expected Graduation

Student	Summer Place of Employment	Expected Graduation
Chris Graff	No plans this summer	Fall 2008
Steve Grantz	Patrick Energy Services (Chicago, IL)	Fall 2008
Kirby Wicks	Malloy Electric	Spring 2009
Tyler Wulf	Raven Industries (Sioux Falls)	Spring 2009
Aric Lowe	Power Engineers (Billings)	Spring 2009
Jon Aus	ECI (Billings)	Spring 2009
Jay Groninger	Augusta Systems (Sioux Falls)	Spring 2009
Eric Boese	Sencore	Spring 2009
Brady Nesvold	Monticello Nuclear Power Plant, Xcel Energy	Spring 2009
Joshua Cahill	Daktronics	Spring 2009
Corey Kramer	Sanford Health System (Sioux)	Spring 2009
Todd Bockorny	DGR	Fall 2009
Steve Cozine	Cozine Electric	Spring 2010
Tyler Duffy	Daktronics	Spring 2010
Joseph Dold	Larsons (Brookings)	Fall 2010
Matthew Bult	MRES	Spring 2011
Fistum Mekuria	uncertain	Spring 2011

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V. Review of CPSS Impact

1. CPSS scholarships – immediate attraction and attention getter
2. Internship and/or Cooperative opportunities -- can have a positive or negative effect depending on the challenges provided to the student
3. Power Systems Analysis and Lab (EE434/434L) -- First course dedicated just to power
4. Applied Photovoltaics and Lab (EE436/436L) -- Alternative energy is appealing to a broad set of students
5. Power Technology Tour – great exposure to a variety of power-related industries.
6. PV in the Parks Field Trip – a fantastic hands-on experience
7. Biannual Regional South Dakota Power Conference – An excellent professional setting that introduces power students to the big picture
8. Mini-Power Job Fair – special attention given to students and immediate connection between industry and just power students
9. CPSS-Sponsored Design Project – hands on challenging designs
10. Fall Awards Banquet – A glimpse into the future for our students and shows importance of remaining connected to academia

VI. Membership Activities

- Currently 10 member companies and 18 associate members
- Ulteig Engineers became associate members starting 2008-2009
- Over the last year have been in discussion with
 - Minnesota Power – Frank Kornbaum
 - ABB -- Pete Famighetti

Respectfully submitted,

Steven M. Hietpas, Ph.D., P.E.
Coordinator, Center for Power Systems Studies