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**THE**

**SUNCOAST**

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***This Month's Meetings***

***May 5th: EXCOM Meeting***

***Meeting starts at 5:30PM At TECO Plaza***

***Register online at <http://time2meet.com/fwcs-excom/index.html>***

***Meeting is open to all FWCS members and guests***

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***Florida System Disturbance and Underfrequency Load Shedding Event***

***Friday, May 22<sup>nd</sup>, 2009***

***Location: FRCC, 1408 N. West Shore Blvd. Suite 1002***

***See page 4***

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***The SmartGrid***

***May 29th, 2009***

***Location: Seminole Electric***

***16313 North Dale Mabry Hwy, Tampa 33618***

***See page 6***

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***Upcoming Events***

***Distribution and Power Seminar Including the New D.O.E Standards***

***Thursday, June 11, 2009***

***Location: Sand Key Sheraton, 1160 Gulf Blvd.***

***See page 5***



## This Month... (Editor's Column)

### 2008 IEEE EXECUTIVE COMMITTEE

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All material for THE SUNCOAST SIGNAL is due in electronic form by 1<sup>st</sup>

Friday after the 1<sup>st</sup> Tuesday of the month preceding the issue month.

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I'm sure everyone has heard of the many social networking sites on the Web, such as Facebook, YouTube and MySpace. There is one more that is gaining prominence and that is Twitter. It is a kind of instant messaging service that seeks to answer the question "what are you doing now"? I became aware of it and saw how it can be used through my involvement with MOSI in Tampa. A person or organization establishes a presence on Twitter, which takes a few minutes, and then the postings are "followed" by other Twitter users to keep informed on what's going on. The postings are limited to 140 characters so the messages are to the point. Members can use keywords to find persons/organizations of interest. I felt that the FWCS could make use of this service and I ran it by Jim Anderson and he agreed. So, the FWCS will be on Twitter starting next month. Go to <http://twitter.com/ieeefwcs> to follow the postings. It will be on the website as a link and the EXCOM members will do the posting. This is another way for the Section to have a presence on the Web, besides the website. Google is in the final stages of acquiring Twitter so it will be around for a while and continue growing. The best part is that it is free! Thanks to all the contributors this month.




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## *International Electric Machines and Drives Conference*

The International Electric Machines and Drives Conference will be held in Miami, Florida USA May 3-6, 2009. This major International Conference is sponsored by IEEE Power & Energy Society, IEEE Industry Applications Society, The IEEE Power Electronics Society and the IEEE Industrial Electronics Society. The conference theme this year is “Renewable Energy Systems for Today and Tomorrow”

The Conference will feature daily plenary on Large Wind Integration into the Power Grid, Electric Drives for Aerospace Applications and Hybrid Electric Drives. About 300 peer reviewed papers from 49 countries will be presented in 36 oral sessions and more than 30 interactive poster sessions.

A large scientific/industrial/Sponsorship exhibition will be conducted during the three full days of the conference. Also a number of tutorials are planned on May 3, 2009 with two of them offered free of charge to conference registrants. Please contact the Conference Chair for further information about sponsorship levels and exhibitions

(<http://www.iemdc2009.org/index.php?pid=8>).



## *EMBS Seminar 04/16/2009*

The Engineering in Medicine and Biology Society chapter of the Florida West Coast Section held its first Seminar for the year 2009. The subject of the event was “P300 Brain Computer Interface (BCI) – the brain as a finger” presented by Dr. Yael Arbel who holds the MS and PhD degrees in Human Development and Communication Sciences and Disorders from the University of Texas at Dallas. For the past six years she has been conducting research in the Cognitive Psychophysiological Laboratory, directed by Dr. Emanuel Donchin in the Psychology department at USF.

A Brain Computer Interface (BCI) is a device that allows users to communicate with the world without utilizing voluntary muscle activity (i.e., using only the electrical activity of the brain). Several BCI programs have been established with a focus on developing new augmentative communication and control technology for those with severe neuromuscular disorders.



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BCI systems utilize what is known about electrical brain activity to detect the message that a user has chosen to communicate. These systems rely on the finding that the brain reacts differently to different stimuli, based on the level of attention given to the stimulus and the specific processing triggered by the stimulus. Described by

Farewell and Donchin in 1988, the P300 based Speller is one such BCI system that relies on a brain response known as the P300, whose attributes have been studied for over four decades.

The P300-based BCI emulates a keyboard, giving the user the ability to choose from a finite number of options—the keys on a keyboard—and allowing the patient to construct, letter by letter, words and sentences, thus establishing communication with the world outside.

Further information on this subject can be found at the website of the American Speech Language Hearing Association.

<http://www.asha.org/about/publications/leader-online/archives/2007/070904/070904d.htm>



## *Florida System Disturbance and Underfrequency Load Shedding Event*

**Date:** Friday, May 22, 2009  
**Time:** Meeting: 11:30am-1:00pm (includes Lunch)  
**Cost:** \$10 IEEE Members, \$15 Non-Members, \$5 Students  
**Speaker:** Eric Senkowicz, Manager of Operations, FRCC  
**Location:** Florida Reliability Coordinating Committee (FRCC)  
1408 N. Westshore Blvd., Suite 1002, Tampa, FL, 33618  
**RSVP:** Online at: <http://time2meet.com/fwcs-pes1/index.html>  
**Space limited to the first 45 registrants!!!**  
**Questions:** Donna Howard at 813-207-7966 or [DHoward@FRCC.com](mailto:DHoward@FRCC.com)

On Tuesday, February 26, 2008, the FRCC Bulk Electric System experienced a system disturbance that was initiated by delayed clearing of a three-phase transmission system fault that developed on a 138 kV switch located at one of FPL's Miami area substations. Isolation of the fault led to the following event:

- The opening of 22 transmission lines
  - 6 - 230 kV lines
  - 15 - 138 kV lines
  - 1 - 69 kV line
- The disconnection of approximately 1350 MW of customer load in the vicinity of the fault
- The loss of approximately 2500 MW of generation near the fault location
- The additional loss of approximately 2300 MW of distribution-level customers dispersed across the southern part of Florida by the region's automatic underfrequency load shedding program
- The loss of an additional 1800 MW of generation across the Region

### SPEAKER BIOGRAPHICAL INFORMATION

**Eric Senkowicz** is the FRCC Manager of Operations. His primary responsibilities include facilitator and liaison to various operating committees and reliability groups within the FRCC structure. Eric is also active in representing FRCC reliability within the NERC standards development process and has been active on various drafting teams and working groups.

Eric has been working in the utility industry for over 14 years. His experience includes nuclear plant design engineering, systems engineer, component failure analysis specialist and protective relaying installation and maintenance. Eric's experience also includes five years in grid operations with various responsibilities including load forecasting, system dispatch, transmission operations, operations planning and system operator for the FPL system ( $\approx 20,000$  MW peak).

Prior to joining the FRCC staff, Eric worked for FPL, the FRCC RC Agent, and spent three years as an on-shift FRCC Regional Reliability Coordinator based out of Miami, Florida.

Eric holds a degree in Electrical Engineering and is a NERC Certified System Operator, Reliability area. Eric is also a registered Professional Engineer in the State of Florida.





## *Brain Teaser Challenge Solution - February 2009*

*Butch Shadwell*

My astrophysics blog was wondering about the hollow earth theory, and came up with this question, "... what kind of gravitational forces would one feel in this hollow earth scenario? Imagine the sphere is relatively small, say eight feet in diameter."

I didn't get any correct answers this month. Some folks assumed that if the earth is a homogeneous sphere and the void is a concentric sphere, that there would be a net zero gravity at the center. This is true as far as it goes, but I asked what forces a person would feel in this place. The net force due to gravity is only zero exactly at the center of the empty sphere in the middle. Also, a spherical homogeneous object centered at this point would have equal forces pulling in all directions. However, most people are neither spherical nor homogeneous. Parts of you that happened to be closer to the walls of this void would feel forces tugging at them and denser parts would have greater tugging than less dense parts. So if your center of mass was at the center of this void, your extremities would be pulled away in each direction. Before very long, you would end up lying against the wall. But I bet you already knew that.

### *Brain Teaser Challenge – March 2009*

These brain teasers get printed in newsletters around the world. In some of these places English is not the first language. I don't think anyone is doing an official translation. So I sometimes wonder if those readers having to translate it for themselves have a hard time making sense of my stories and humor. To be fair I have considered sending out the column alternately in Hindi, German, Chinese, etc., so as not to show favoritism to the native English speakers. Then I remembered that I am not really fluent in all of these languages and I don't even own an English-Chinese dictionary.



Anyway, let's get to the problem. I attended a conference on weather modeling the other day, a very interesting physics and math problem domain. These calculations are sometimes done in order to predict the path of hurricanes and tornadoes. So, after a 100 pound woman is airborne, how long does it take her to get from 0 to 30 MPH if she has a constant net horizontal accelerating force from the wind of 100 pounds(force). Obviously the wind is building during her entire flight. You can ignore wind drag and all other forces for this problem. I am using English units in order to add to the challenge, maybe metric next time.

**Reply to Butch Shadwell at [b.shadwell@ieee.org](mailto:b.shadwell@ieee.org) (email), 904-410-9751 (fax), 904-410-9750 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. (<http://www.shadtechserv.com>) The names of correct respondents may be mentioned in the solution column.**



### *Distribution and Power Transformer Seminar Including the New D.O.E. Standards*

Date: Thursday, June 11, 2009  
Time: Registration: 8:00 A.M. Seminar: 8:30 A.M. - 12:30 P.M.  
Speaker: Don Duckett, P.E., IEEE Senior Life Member  
Location: Sand Key Sheraton, 1160 Gulf Blvd. Clearwater  
in conjunction with the Florida Electric Cooperatives Association (FECA)  
Cost: \$100 Members, \$150 Non-Members, \$25 IEEE Student Members  
PDH Credits: 4 professional development hours will be awarded. Be sure to provide your name as it appears on your Florida license and your license number to insure proper credit. Florida Provider #0003849 IEEE  
Reservations: Contact Ray Trusik at FECA 850-877-6166 Ext. 5 [fece@embarqmail.com](mailto:fece@embarqmail.com)

Back by popular demand is our Expanded Transformer seminar. This seminar will address the key portions of the new DOE 2007 Rule and its impacts on the size, weight, losses, and other criteria for distribution transformers. In addition, we will be discussing the basics of transformers and reviewing the sizing methods used in industry. At the end of each section, an in-class assignment will be given and reviewed.





## The SmartGrid

- Date:** Friday, May 29, 2009  
**Time:** Registration: 8:30am-9:00am  
**Seminar:** 9:00am-2:00pm  
**Cost:** \$100 IEEE Members, \$150 Non-Members, \$75 Students (lunch included)  
 Make checks payable to IEEE FWC and mail a check in advance to IEEE FWC Treasurer: Dr. Paul Schnitzler, 30612 Nickerson Loop, Wesley Chapel, FL 33543  
 PDH: 4 Professional Development Hours (PDH) will be awarded for Professional Engineers  
**Speaker:** John D. McDonald, PES Distinguished Lecturer  
**Location:** Seminole Electric, 16313 North Dale Mabry Hwy, Tampa, FL, 33618  
**RSVP:** Online at: <http://time2meet.com/fwcs-pes4/index.html>  
 Space limited to the first 45 registrants!!!  
**Questions:** Jim Howard at 863-834-6585 or [Jim.Howard@Lakelandelectric.com](mailto:Jim.Howard@Lakelandelectric.com)



We are very honored to have **John McDonald**, a Power & Energy Society (PES) Distinguished Lecturer and Past President to cover this state-of-the-art Seminar on SmartGrids.

Areas to be covered include: What defines a SmartGrid, Security of the SmartGrid, Advantages of a SmartGrids, How to Start your SmartGrid work, and many more details on the SmartGrids.

**Agenda** (summary) – (Full agenda is available on the Web registration page)

- 9:00 a.m. Participant Introductions and Opening Remarks
- 9:15 a.m. The Smart Grid
- 10:00 a.m. Introduction to Enterprise Data Management
- 10:45 a.m. Substation Automation and Smart Grid
- 11:30 a.m. Smart Grid Cyber Security
- Noon Lunch
- 12:30 p.m. Acquiring Operational and Non-Operational Data from Substation IEDs
- 1:15 p.m. Summary
- 2:00 p.m. Course Adjourns

### SPEAKER BIOGRAPHICAL INFORMATION

**John D. McDonald, P.E.**, is General Manager, Marketing for GE Energy T&D. In his 35 years of experience in the electric utility industry, John has developed power application software for both Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS) and SCADA/Distribution Management System (DMS) applications, developed distribution automation and load management systems, managed SCADA/EMS and SCADA/DMS projects, and assisted Intelligent Electronic Device (IED) suppliers in the automation of their IEDs.

John received his B.S.E.E. and M.S.E.E. (Power Engineering) degrees from Purdue University, and an M.B.A. (Finance) degree from the University of California-Berkeley. John is a member of Eta Kappa Nu (Electrical Engineering Honorary) and Tau Beta Pi (Engineering Honorary), is a Fellow of IEEE, and was awarded the IEEE Millennium Medal in 2000, the IEEE PES Excellence in Power Distribution Engineering Award in 2002, and the IEEE PES Substations Committee Distinguished Service Award in 2003. In his twenty-one years of Working Group and Subcommittee leadership with the IEEE Power & Energy Society (PES) Substations Committee, John led seven Working Groups and Task Forces who published Standards/Tutorials in the areas of distribution SCADA, master/remote terminal unit (RTU) and RTU/IED communications. *(Speaker Biography continued on following page...)*

*(Continued from previous page)*

John is Past President of the IEEE PES, is Co-Vice Chair of IEEE Standards Coordinating Committee (SCC) 36, is a Member of IEC Technical Committee (TC) 57 Working Groups (WGs) 3 and 10, is the VP for Technical Activities for the US National Committee (USNC) of CIGRE, and is the Past Chair of the IEEE PES Substations Committee. John is the IEEE Division VII Director in 2008-2009. John is a member of the Advisory Committee for the annual DistribuTECH Conference, is a member of DOE's Smart Grid Electricity Advisory Committee (EAC), is a member of NEMA's Smart Grid Task Force, and is on the Board of Directors of the GridWise Alliance.

John teaches a SCADA/EMS course at the Georgia Institute of Technology, a SCADA/Substation and Feeder Automation course at Iowa State University, and substation automation, distribution SCADA and communications courses for various IEEE PES local chapters as an IEEE PES Distinguished Lecturer. John has published thirty-one papers in the areas of SCADA, SCADA/EMS, SCADA/DMS and communications, and is a registered Professional Engineer (Electrical) in California, Pennsylvania and Georgia.

John is co-author of the book Automating a Distribution Cooperative, from A to Z, published by the National Rural Electric Cooperative Association Cooperative Research Network (CRN) in 1999. John was Editor of the Substations Chapter, and a co-author, for the book The Electric Power Engineering Handbook, co-sponsored by the IEEE PES and published by the CRC Press in 2000. John is Editor-in-Chief, and Substation Integration and Automation Chapter author, for the book Electric Power Substations Engineering, Second Edition, published by Taylor & Francis/CRC Press in 2007.



## *NEWS from IEEE-USA*

### **STEM Workforce Researcher Honored by IEEE-USA for Furthering Engineering Professionalism**

WASHINGTON (1 April 2009) -- Richard A. Ellis of Carlisle, Pa., was recently honored by IEEE-USA with an Award for Distinguished Literary Contributions Furthering Engineering Professionalism. Ellis, a consulting sociologist who owns Ellis Research Services, has for more than 25 years made "substantial and sustained contributions that have significantly improved the understanding of science and engineering labor markets by professionals and public policymakers."

Ellis specializes in science, technology, engineering and mathematics (STEM) statistical research and analysis. His areas of expertise include STEM employment, enrollments and degrees, compensation and workforce trends. "Dick's work has been essential in assessing the job market for engineers in the United States," former IEEE-USA President Paul Kostek said. "Over the past 25-plus years he has spent more time and energy than anyone trying to understand the engineering job market. He has provided the data and unbiased analysis of the marketplace." Ellis, who served as director of research for the American Association of Engineering Societies' Engineering Workforce Commission from 1985-1996, has also conducted research for IEEE-USA, the American Chemical Society (ACS), the Society of Women Engineers, the United Engineering Foundation and the Commission on Professionals in Science and Technology (CPST).

Ellis served CPST as designer and principal analyst for the Alfred P. Sloan Foundation-funded IT and STEM Workforce Data Projects. The STEM project, which includes nine reports, white papers and links to detailed statistical tabulations, resulted in demographic information on more than 50 STEM occupations. He was lead author on six of the reports between June 2004 and October 2007, including the most recent, "Is U.S. Science and Technology Adrift?"

For more on the projects see [http://206.67.48.105/STEM\\_Report.cfm](http://206.67.48.105/STEM_Report.cfm) and [http://www.cpst.org/ITWF\\_Highlight.htm](http://www.cpst.org/ITWF_Highlight.htm).



## *Teacher in Service Report*

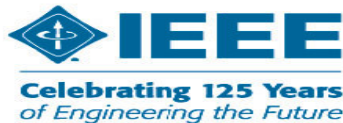
Sean Denny is leading a Teacher in Service Workshop at the Florida Education Engineering Conference at UCF in Orlando on May 1st. He will be giving an eight minute presentation on the history of Teacher in Service to 100 educators. He will also conduct a workshop on "Robot Arms". Bruce Furino has asked him to be a backup panelist. The event is open to everyone to attend and runs from 8:30 AM to 4:30 PM. Since 2006, has been a very big education venue and not to be missed. For more information or to participate, e-mail Sean at [venner20@aol.com](mailto:venner20@aol.com) or call at 727-678-0183



May 2009 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1 <i>Teacher in Service Workshop, see p 7</i>	2
3	4	5 <i>EXCOM meeting at TECO Plaza</i>	6	7	8	9
10. <i>Mothers Day</i>	11	12	13	14	15	16
17	18	19	20	21	22 <i>Fla. System Disturbance and Underfreq. See p 4</i>	23
24	25 <i>Memorial Day!</i>	26	27	28	29 <i>The SmartGrid See p.6</i>	30

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