

**The Florida West Coast
Section of the IEEE**
Serving over 2,300 members in Charlotte,
Citrus, DeSoto, Hardee, Hernando,
Hillsborough, Lee, Manatee, Pasco, Pinellas,
Polk, and Sarasota Counties



THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Volume 51 — No. 2

<http://www.ieee.org/fwcs>

February 2008



Inside this Signal...

Page 2

- * *Moving On*
- * *LightningMaster*
- * *I&CPS Conference*

Page 3

- * *Celebration Banquet*

Page 4

- * *State Science and
Engineering Fair*
- * *Siliconexion*
- * *PE/IA Seminar*

Page 5

- * *μWave Antennas in
Medical Applications*

Page 6

- * *George McClure*
- * *2008 Transmission &
Distribution Conference*

Page 7

- * *Engineer's Week
Luncheon*
- * *Student Branch Sparks
Interest*

Page 8

- * *Color-Book Series*
- * *Humans Marry Robots?*

Page 9

- * *Brain Teaser Challenge*
- * *Nolan Power*
- * *PE/IA Transformer
Seminar*
- * *PES General Meeting*



This Month's Meetings

Celebrate Engineering Banquet

Friday, February 15th, 2008

The 8th annual Florida West Coast Engineering Alliance's Celebrate Engineering Banquet will be held at the fabulous A La Carte Pavilion on Friday, February 15th, 2008. Dick Crippen, a popular former Tampa Bay television sports anchor, has signed on to be this year's Master of Ceremonies. [For more, see p. 3]



Engineer's Week Luncheon

Nuclear, Renewable and Emerging Issues

Friday, February 22nd, 2008

Speaker: Dale Oliver, Vice President of Transmission Operation and Planning, Progress Energy Florida

Nuclear Energy is experiencing a resurgence due to many factors. Mr. Oliver will discuss key drivers and development plans Progress Energy Florida is evaluating. [For more, see p. 7]



Microwave Antennas for Medical Applications

Speaker: Dr. Koichi Ito – Chiba University, Japan

Tuesday, February 26th, 2007, 6:00 PM.

In recent years, various types of medical applications of antennas have widely been investigated and reported. Typical recent applications are: 1) Information transmission, 2) Diagnosis, and 3) Treatment. In this presentation, three different types of antennas which have been studied in our laboratory are introduced. [For more, see p. 5]

Moving On (Editor's Column)

Well, it's been a gratifying run being your editor since mid 2005; over 30 issues had been put to bed. We have had several major IEEE events locally and many chapter and group meetings. The Signal has varied in size from 8 to 10 pages and has been published every single month.

I could not have done this without support from many of you who have provided the content without which there would be no newsletter. Thank you all. I particularly thank Jim Howard, Jim Anderson and Jim Beall for their continuous support, advice and counsel. Donna Howard gets a special thank you for her critical reading of the draft versions. Donna, you helped keep me accurate and grammatical.

Now I turn the reins over to Richard Sanchez, your new Editor. Richard has already worked for the Signal having helped create this current issue. I am certain he will carry on well and most likely add his own touches to the future issues. Welcome Richard and "Break a leg." You can reach Richard at rsancz@verizon.net —PS

2008 IEEE EXECUTIVE COMMITTEE FLORIDA WEST COAST SECTION

CHAIR: Jim Anderson 813-425-2467
jim.anderson@ieee.org

VICE CHAIR: Serge Beauzile, Progress Energy,
727-344-4123 or 727-409-1242 sbeauzil@yahoo.com

SECRETARY: Serge Beauzile, Progress Energy,
727-344-4123 or 727-409-1242 sbeauzil@yahoo.com

TREASURER: Ralph Painter,
Tampa Electric Co. (813) 228-4685 rdpainter@ieee.org

SIGNAL EDITOR: Dr. Paul Schnitzler,
USF PS&A (813)-974-5584 paulschn@ieee.org

Richard Sanchez rsancz@verizon.net (in March)

AWARDS & BYLAWS: Richard Beatie, PE, Lightning Master
(727) 580-3598 r.beatie@ieee.org

EDUCATION: Dr. Rudolf E. Henning and Zhen Tong
(813) 974-4782 or (727) 328-8777 (Ext: 333)
henning@eng.usf.edu or tong@ieee.org

MEMBERSHIP: Tom Blair, TECO Energy,
813-228-4407 tom_blair@ieee.org

TEACHER IN-SERVICE: Sean Denny, Venner20@aol.com

PES/IAS CHAPTER: Tom Blair, TECO Energy,
813-228-4407 tom_blair@ieee.org

MTT/AP/ED CHAPTER: Ken A. O' Connor
kenoconnor@ieee.org

COMP/AESS CHAPTER: James S. Lumia (813) 832-3501,
jlumia@ieee.org

EMBS: Engineering in Medicine & Biology: Dr. Ravi Sankar:
813-974-4769 sankar@eng.usf.edu

SP/COMM CHAPTER: Hüseyin Arslan USF (813) 974-3940,
arslan@eng.usf.edu

WIE: Women in Engineering: Suzette Presas (813) 974-4851
spresas@mail.usf.edu

LIFE MEMBER AFFINITY GROUP: TBD

GOLD: Tim Doolittle, tdoolittle@tmdvault.fastmail.fm

PACE: Scott Haynes, Honeywell (727)-539-3358,
scott.haynes@ieee.org

James S. Lumia (813) 832-3501, jlumia@ieee.org
Richard Sanchez rsancz@verizon.net

STUDENT BRANCH CO-ADVISORS:

Dr. Paul Schnitzler, USF PS&A (813)-974-5584
pauls@eng.usf.edu

Dr. Chris Ferekides, USF, (813) 974-4818
ferekide@eng.usf.edu

Dr. Srinivas Katkoori, USF, (813)-974-5737
katkoori@ieee.org

STUDENT BRANCH BRANCH MENTOR: Jim Howard,
Lakeland Electric (863) 834-6506 j.howard@ieee.org (H) (813)
876-1748

STUDENT BRANCHES:

Manuel Bravo IEEE, mbravo@mail.usf.edu

Upavan Gupta, IEEECS (813)-974-1348, ugupta@csee.usf.edu

CONFERENCES: Jim Beall, j.beall@ieee.org

WEB PAGE: <http://www.ieee.org/fwcs>

WEB MASTER: Michelle Chang, michelle.chang@ieee.org

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due in electronic form by 1st Friday after the 1st Tuesday of the month preceding the issue month. Address all correspondence to:

Dr. Paul Schnitzler, P S & A USF
30612 Nickerson Loop, Wesley Chapel, FL 33543
Telephone: (813) 994-2297; (813) 974-5584
E-MAIL: paulschn@ieee.org
The Signal, Copyright 2007



LightningMaster
Corporation

Richard E. Beatie, P.E.
Director Of Engineering
Structural - Bonding/Grounding - Surge

1351 N. Arcturas Ave. (800) 749-6800 Voice
Clearwater, FL 33765 (727) 580-3598 Cell
(727) 499-0138 Fax

www.LightningMaster.com RBeatie@LightningMaster.com

[Web Site](#) [Email Me](#) [Map to Us](#)



Advance notice of a May 2008 Conference

The Industrial & Commercial Power Systems Technical Conference

Returns to the Tampa Bay area May 4 – 8, 2008. It is again being held at the Sheraton Sand Key on Clearwater Beach. See the web page at: www.ieee.org/icps2008.

What is I&CPS?

For those that are new to the scene, it is the **Industrial and Commercial Power Systems** Department of the IEEE Industry Applications Society. It is a group of Power Engineers, some from Tampa Bay, Serving Industry and Commerce. These engineers write IEEE Standards, the Color Book series, used by Industrial and Commercial customers of the Power companies. They hold an annual Technical Conference every May. They also write and present Technical Papers and Tutorials of interest to engineers in this field. This is the fourth time the I&CPS has met in the Tampa Bay area..





Engineers Week / February 17-23, 2008

Celebrate Engineering Banquet

Friday—February 15th, 2008

—ENGINEERS—

Making Life Better for All

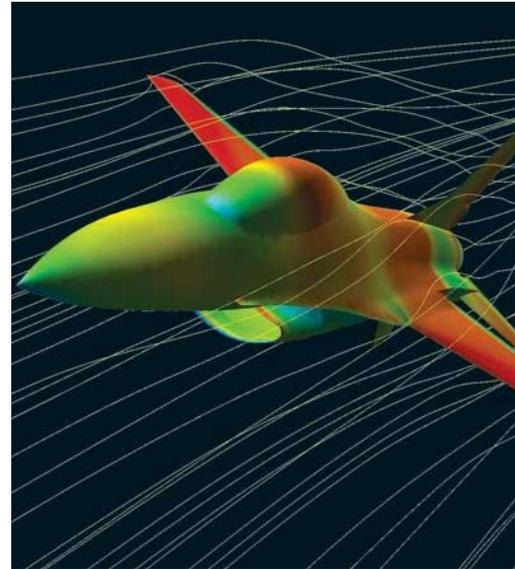
Come Spend an Evening in Elegance with New Friends

The Florida West Coast Engineering Alliance will be holding its 8th annual “Celebrate Engineering” Awards Banquet on Friday, February 15, 2008, at the spectacular A La Carte Pavilion (4050 Dana Shores Drive, Tampa, 33634)

The Master of Ceremonies will be Dick Crippen with the Tampa Bay Rays and Former WFLA Sports Director

This premier event brings together local leaders and engineering professionals to recognize the outstanding achievements of Engineers, Science Teachers, Math Teachers, and Students in our community.

Be sure to show up early to enjoy our Celebrate vendor’s booths in the Reception area!



- Who:** Engineers of Florida’s West Coast, Family and Friends
- Where:** A La Carte Event Pavilion
- Time:** Vendor Expo and Cocktail Reception (Cash Bar) 5:30pm – 7:00pm
Dinner, Speaker, Awards 7:00pm
- Cost:** \$35 per person
- RSVP:** Register online at:
<http://www.acteva.com/booking.cfm?bevaaid=144486>



This Engineer’s Week Banquet is a joint event with the following professional organizations



State Science and Engineering Fair

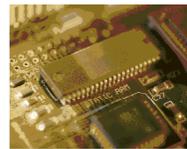
The 53rd State Science and Engineering Fair of Florida will be held at the Lakeland Center in Lakeland, Florida April 16th – 18th, 2008.

We invite you to share your professional expertise as a Judge for the State Science and Engineering Fair (SSEF) of Florida on Thursday, April 17th, 2008 at the Lakeland Center. In order to facilitate the Judging process efficiently, we need more than 400 Judges who have exemplary credentials in their area of science research.

The evaluation and recognition of student research are the most important aspects of the SSEF, and we welcome your willingness to serve. Approximately 900 outstanding student science research projects will be entered in one of two Sections of the SSEF: Senior (9-12 grades) and Junior (6-8 grades). Students will compete for Place Awards, Special Awards, Scholarship Awards, Opportunity Awards, and Grand Awards. Each project will be placed into one of 14 Categories established in each Section:

REGISTER for JUDGING

by going to our website www.floridassef.net to register online. You will receive a confirmation for Judging and several updates as the time nears for Judging. Please mark your calendar.



Siliconexion, Inc.

FPGA Design and Verification Experts

Siliconexion offers robust, on-time electronic design consulting services by experienced senior level professionals.

Applications Include:

Telecommunications / Data Communications
Aerospace and Military
Embedded Computer Systems

Services Include:

FPGA / CPLD Design and Verification
ASIC to FPGA Conversions
Training for FPGA Design, VHDL, Test Benches
Digital and Analog Board-level Hardware Design
Embedded Systems Software Development
High Speed Signal Integrity Analysis

Cost Effective sub-system or turnkey product development

Phone: 727 596-1990

E-mail: info@siliconexion.com

www.siliconexion.com

PE/IA Seminar—A Great Success

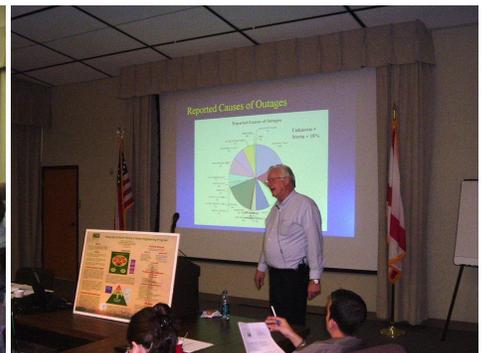
On Friday, January 18th the PE/IA Chapter hosted another outstanding conference on Distribution System Reliability & Solutions. Charlie Williams did a great job of describing what impacts system reliability and what mitigation options are available to address these issues. With 37 members and non-members combined attending this seminar at Seminole Electric the PE/IA Chapter presented this opportunity to learn from someone with over 35 years of experience in the industry and to ask questions and have open discussion on the different approaches that can be utilized to improve and maintain reliability. Our appreciation goes out to S&C Electric, who allowed Charlie Williams to present this seminar for us and to Seminole Electric for allowing us to host the seminar at their facilities. Be watching for our upcoming meetings and seminars in the Signal newsletter.



Dr. Ralph Fehr discussing the new 6 Year Power Program available at USF with the attendees.



Attendees paying close attention as Charlie Williams, the instructor, talks about ways to mitigate outages and increase reliability for electric systems.



Charlie Williams discusses the many aspects for Reliability with the attendees.



Microwave Antennas for Medical Applications

MTT/AP/ED and EMB Joint Chapter Meeting

Speaker: Dr. Koichi Ito – Chiba University, Japan

Date/Time: Tuesday, February 26th, 2007, 6:00 PM

Abstract:

In recent years, various types of medical applications of antennas have widely been investigated and reported. Typical recent applications are:

- (1) Information transmission:
 - RFID (Radio Frequency Identification) / Wearable or Implantable monitor
 - Wireless telemedicine / Mobile health system
- (2) Diagnosis:
 - MRI (Magnetic Resonance Imaging) / fMRI
 - Microwave CT (Computed Tomography) / Radiometry
- (3) Treatment:
 - Thermal therapy (Hyperthermia, Coagulation, etc)
 - Microwave knife

In this presentation, three different types of antennas which have been studied in our laboratory are introduced. Firstly, a pretty small antenna for an implantable monitoring system is presented. An H-shaped cavity slot antenna is a candidate for such a system. Some numerical and experimental characteristics of the antenna are demonstrated. Secondly, some different antennas or “RF coils” for MRI systems are introduced. In addition, SAR (specific absorption rate) distributions in the abdomen of a pregnant woman generated in a bird cage coil are illustrated. Finally, after a brief overview of thermal therapy and microwave heating, coaxial-slot antennas and array applicators composed of several coaxial-slot antennas for minimally invasive microwave thermal therapies are introduced. Then a few results of actual clinical trials by use of the coaxial-slot antennas are demonstrated from a technical point of view. Other therapeutic applications of the coaxial-slot antennas such as hyperthermic treatment for brain tumor and intracavitary hyperthermia for bile duct carcinoma are introduced.

BIOGRAPHY:

KOICHI ITO received the B.S. and M.S. degrees from Chiba University, Chiba, Japan, in 1974 and 1976, respectively, and the D.E. degree from the Tokyo Institute of Technology, Tokyo, Japan, in 1985, all in electrical engineering.

From 1976 to 1979, he was a Research Associate at the Tokyo Institute of Technology. From 1979 to 1989, he was a Research Associate at Chiba University. From 1989 to 1997, he was an Associate Professor at the Department of Electrical and Electronics Engineering, Chiba University, and is currently a Professor at the Graduate School of Engineering, Chiba University. He has been appointed as one of the Deputy Vice-Presidents for Research, Chiba University, since April 2005. In 1989, 1994, and 1998, he visited the University of Rennes I, France, as an Invited Professor. Since 2004 he has been appointed as an Adjunct Professor to Institute of Technology Bandung (ITB), Indonesia. His main research interests include analysis and design of printed antennas and small antennas for mobile communications, research on evaluation of the interaction between electromagnetic fields and the human body by use of numerical and experimental phantoms, and microwave antennas for medical applications such as cancer treatment. He has co-authored over 100 journal papers with review and nine books including Handbook of Microstrip Antennas (IEE, 1989) and Antennas and Propagation for Body-Centric Wireless Communications (Artech House, 2006).

Dr. Ito is a Fellow of the IEEE, a Fellow of the IEICE (Institute of Electronics, Information and Communication Engineers, Japan), a member of the American Association for the Advancement of Science, the Institute of Image Information and Television Engineers of Japan (ITE) and the Japanese Society for Thermal Medicine (formerly, Japanese Society of Hyperthermic Oncology). He served as Chair of the Technical Group on Radio and Optical Transmissions, ITE from 1997 to 2001, Chair of the Technical Group on Human Phantoms for Electromagnetics, IEICE from 1998 to 2006, Chair of the IEEE AP-S Japan Chapter from 2001 to 2002, TPC Co-Chair of the 2006 IEEE International Workshop on Antenna Technology (iWAT2006) and Vice-Chair of the 2007 International Symposium on Antennas and Propagation (ISAP2007) in Japan. He currently serves as General Chair of iWAT2008 to be held in Chiba, Japan in March 2008, Vice-Chair of ISAP2008 to be held in Taiwan in 2008, and as an Associate Editor for the IEEE Transactions on Antennas and Propagation. He also serves as a Distinguished Lecturer and an AdCom member for the IEEE Antennas and Propagation Society since January 2007.

Looking Back—Two Eventful Years

It has been my pleasure working with you as your director for the past two years. Region 3 is such an outstanding group that at times I felt like the drum major leading a big parade with a band that was always playing the right notes.

We succeeded in getting the member directory restored, after a five-year absence. It will be on line in 2008.

We made progress on nine initiatives that are aimed at both increasing member value and helping our active volunteers in their roles.

2008 Director Bill Ratcliff played an instrumental role for two years in planning the conversion of the Regional Activities Board to the new Member and Geographic Activities Board.



The Teacher In-Service Program, which originated in Region 3, was adopted by the Education Activities Board and has spread to four other U.S. regions, with Region 6 coming on board in 2008. 31 presentations have been made, with 620 pre-university teachers participating, potentially reaching 63,000 students using some of 15 available lesson plans.

With support from our 41 sections, the active Region 3 Awards and Recognition program continues to increase the number of nominations offered. The annual SoutheastCons, at Memphis and Richmond, continued the upward trend in student participation with contests not only for the hardware and software competitions, but for best student papers, ethics essay, Website, T-shirt, and resume contests.

Student Professional Development Symposia and Student Professional Activity Conferences continued, and more are encouraged. The collection of section/chapter best practices is intended to offer templates from which other projects and events can be modeled.

For 2007, Sections Support Via Region contributed to funding for both publicizing a Region 3 entry in the DARPA Urban Challenge, the Insight autonomous robotic vehicle, on a post-contest tour of schools, and a Hoover High School project

The Jamaica Section was congratulated on the occasion of its 30th anniversary, with presentations made both by the IEEE Secretary and your director. Other notable anniversaries included the 75th for Jacksonville, and the 25th for both Tallahassee and Tri-Cities sections.

Student activity continues to grow, with 94 student branches and 22 student branch chapters thus far.

Looking forward to Engineers Week, a presentation has been prepared showing the resources available to celebrate that event, encouraging students to try engineering. One new resource now available is at www.TryEngineering.Org.



2008 Transmission & Distribution Conference And Exposition

April 21-24, 2008, McCormick Place—Chicago IL

Millions of dollars worth of product innovation, technology and equipment will be on display

Powering Toward the Future has been selected as the theme for the event. The event has been created to provide attendees with information that concentrates on the world of transmission and distribution and all of its elements.

With the electric utility industry facing the continuing challenges of system reliability and the need to improve operating efficiencies, this year's event takes on added importance. Electric utilities are in need of the best technological and product solutions to allow them to improve their operating performance.

“By attending the 2008 event,” says Carl Segneri, conference chair, “attendees will be introduced to hundreds of manufacturers of transmission and distribution equipment and service—from the most advanced automation systems and components to other related suppliers and service companies. Every manufacturer who has something to offer will be at this year's event to introduce and explain their products.”

Besides exhibits, the event will feature plenary sessions, business and technical paper presentations and group panel discussions. The business and technical program will examine the impact of technical and business solutions, methods and procedures for operating, and maintaining power-delivery systems at peak levels.

This year's event will draw attendees from domestic and overseas-based power-delivery companies and organizations, including: investor-owned utilities; municipal electric utilities and rural electrics; federal power agencies; publicly-owned electrics; and more

For more information please access the event website at www.ieeet-d.org.



Thank you for affording me the opportunity to serve you. My best wishes go to Bill Ratcliff as he takes up the reins to further advance IEEE Region 3.

If I can be of further assistance please contact me at g.mcclure@ieee.org or 407-647-5092

George F. McClure



****ENGINEER'S WEEK LUNCHEON****

Nuclear, Renewable and Emerging Issues

- Date: Friday, February 22nd, 2008
- Time: Lunch Meeting: Registration 11:30-12 noon, Speaker 12 noon-1:30pm
- Speaker: Dale Oliver, Vice President of Transmission Operation and Planning, Progress Energy Florida
- Location: TECO Plaza (703 N. Franklin St)
- Cost: \$10 Members, \$20 Non-Members.
- RSVP: Online at: <http://time2meet.com/fwcs-pes2/index.html>
Make checks payable to: IEEE FWCS
- Send checks to: Ralph Painter, IEEE FWCS Treasurer
648 Timber Pond Drive, Brandon, FL 33510-2937
- Space limited to the first 50 registrants!!!
- Questions: Serge Beuzile at 727-344-4123 or Serge.Beuzile@pgnmail.com

Nuclear Energy is experiencing a resurgence due to many factors. Mr. Oliver will discuss key drivers and development plans Progress Energy Florida is evaluating.



J. Dale Oliver, Vice President, Transmission Operations and Planning, Progress Energy Florida

Dale Oliver is vice president of Transmission Operations and Planning for Progress Energy Florida. His responsibilities include overseeing the engineering, construction, maintenance, planning, operations, and regulatory policy of the company's 5,000 miles of transmission lines. There are more than 450 employees under his supervision who work to provide safe, reliable electric transmission service to the over 1.7 million customers in their retail and wholesale service territory. Dale's office is located in St. Petersburg, Fla. He resides in St. Petersburg, Fla. with his wife, Marie. Their son, Brian, is a sophomore at the University of South Florida in St. Petersburg.

Dale Oliver began his career with Progress Energy in 2001 as director, Transmission Engineering. He was later promoted to director, Commitment to Excellence, a three-year program designed to enhance Progress Energy's performance in the areas of service, reliability, generation and price. In that capacity, he oversaw transmission and distribution reliability improvement efforts and directed Florida's distribution resource management plan. He has served as a region vice president in both the South Central and South Coastal regions; responsible for distribution operations, customer service, community relations, and governmental affairs in the Orlando and St. Petersburg service areas.

Prior to joining Progress Energy, Dale was employed by Georgia Power nearly 2 decades. He held a variety of leadership roles in the transmission maintenance and operations areas.

Dale has a bachelor's degree in electrical engineering from the Georgia Institute of Technology and a master's degree in business administration from Georgia State University. He is a registered Professional Engineer in Florida and Georgia.



Student Branch Sparks Interest in IEEE

The IEEE student branch at Worcester Polytechnic Institute, in Massachusetts, knows how to make sparks fly. In November, the branch held its second annual Spark Party--so named because it features demonstrations of devices that generate electricity, along with lots of electric sparks. Read more at <http://bmsmail3.ieee.org:80/u/9246/00939637>

Watch for more Information

Color Book Study Series

For our members who are interested in the Color Book Series, there are 13 books dealing with aspects of power distribution, safety, and reliability. We will be offering one-day sessions for each of these books during the next year. Members will have the opportunity to earn PDHs (Professional Development Hours) on each of these subjects.

Similar courses have been offered at prices up to \$500; your Florida West Coast PES Chapter is planning to offer these courses at a fraction of that rate.

We have commitments from subject matter experts for four of these topics. The table below shows the color-book list and the current list of speakers including Tom Blair who presented his topic last year to kick off this project.

We need seven more and we will publish the schedule at that time. If you know of possible speaker please contact Jeff Basiaga, Jr. at Jeff.Basiaga@stantec.com.

We are looking forward to meeting you there. –

—Jeff Basiaga, Jr., P.E.

| | | |
|---------|---|---------------------------|
| Red | Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (<i>Already presented.</i>) | Tom Blair |
| Gray | Recommended Practice for Electric Power Systems in Commercial Buildings | Gerald Irvine (tentative) |
| Green | Recommended Practice for Grounding of Industrial and Commercial Power Systems | Eliot Rappaport |
| Emerald | Recommended Practice for Powering and Grounding Electronic Equipment | Doug Dorr |
| Orange | Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications | Andrew Hernandez |
| White | Recommended Practice for Electric Systems in Health Care Facilities | Hugh Nash or Walt Vernon |
| Blue | Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems | TBD |
| Buff | Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems | TBD |
| Bronze | Recommended Practice for Energy Management in Industrial and Commercial Facilities | TBD |
| Yellow | Guide for Maintenance, Operation and Safety of Industrial and Commercial Power Systems | TBD |
| Brown | Recommended Practice for Power Systems Analysis | TBD |
| Gold | Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems | TBD |
| Violet | Recommended Practice for Calculating Short-Circuit Currents in Industrial and Commercial Power Systems | TBD |



Marketplace of Ideas: Will Humans Marry Robots?

In a widely reported doctoral thesis, David Levy, an artificial-intelligence researcher at the University of Maastricht, in the Netherlands, holds that by 2050 there will be human-robot unions. Levy says that extremely realistic-looking robots will be programmed with attributes, including human-compatible characteristics, which could cause people to fall in love with them. He says that such programming will join with new attitudes about marriage.

Do you believe humans will marry robots someday? Weigh in at <mailto:institute@ieee.org>

Brain Teaser Challenge Column

—By Butch Shadwell

January BTC From my discussion with Uncle Gary concerning an electric toothbrush I got the following problem. "...can you tell me the maximum power output I can get from a 1.5 volt battery with an internal resistance of 0.1 ohms?"

One of the fun things I get to do once in a while is demonstrate to EE students that the maximum power transfer occurs when the load impedance matches the source impedance. You can use the second derivative of the power equation (with respect to the load resistance) to find the max point, and voila. I don't have room here for the math but you can take my word for it.

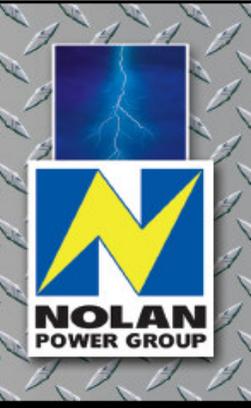
The way I would solve this one is to simply double the source resistance and calculate the current from a 1.5 volt supply. Then $P=I^2R$. Making the substitution we get 5.625 watts. But I bet you already knew that.

February BTC The year was 2108 and Zorg was considering his New Year's resolution. Like every one of his past 40 New Years, he was spending far too much time thinking about a resolution that had virtually zero probability of being kept. But he thought, "Every new year is a chance to start over. I could become the person I've always wanted to be this time, if I would just commit myself to that end." Of course this wasn't the first time for this thought either. He had wondered what had held him back all of those times in the past when he had tried and failed to keep that promise to himself. Was he just too lazy or was there actually a reason why he could not allow himself to succeed? Oh well.

As the smoke cleared around his overheated brain, the answer came to him. This year he would complete his work on the new improbability drive for space propulsion. When he had set it aside last year he was stuck trying to lift his prototype contraption into the test stand to measure the output. It weighs 2000 pounds but Zorg is only able to pull with 100 pounds of force. If he uses a block and tackle system (multi-wheeled pulleys) and he pulls on the rope end coming down from the upper block, what is the minimum number of wheels each block needs (upper and lower) in order for him to be able to lift his device into position? The other end of the rope is fastened to the bottom of the upper block. Also, assume zero friction from the pulleys. This could be a little tricky for some.

What happens if we terminate the far end of the rope on the lower block instead of the upper one? Have fun.

For the BTC: Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328.



NOLAN POWER GROUP
Power Quality Specialists
Sales – Service

Batteries / Chargers / UPS
PM Service / Capacity Testing
Emergency Call Out

john.todora@nolanpower.com
Phone: 954-333-3040

Authorized EnerSys Representative



PE/IA Coming Transformer Seminar

March 28, 2008 8:30 – 3PM Seminole Electric

The DOE (Department of Energy) has put in place new efficiency requirements for liquid filled transformers. The new requirements go into effect on January 1st, 2010 and most current transformer designs will be to be replaced. Don Duckett, Senior Member, IEEE will present this seminar. For more information and registration go to <http://time2meet.com/fwcs-pes1/index.html>. or contact Jim Howard at Jim.Howard@Lakelandelectric.com. Note that space is limited! — And watch upcoming newsletters for more information on this and other meetings and seminars your PE/IA Chapter is planning for 2008.



2008 IEEE PES GENERAL MEETING SCHEDULE
JULY 20-24, 2008 IN PITTSBURGH, PA, USA

Focus: Conversion and Delivery of Electrical Energy in the 21st Century

The IEEE Power Engineering Society (PES) is pleased to announce that it has selected the city of Pittsburgh, Pa., a city rich in history and innovation, as the site for its 2008 General Meeting. The meeting locations in Pittsburgh are the David L. Lawrence Convention Center and Westin Convention Center Hotel.
(web site: <http://ewh.ieee.org/cmte/PESGM08>).

Supporting the theme, are papers and panel sessions addressing timely, preferred topics organized into a number of tracks, including: Track 1: Understanding and Responding to System-Wide Events, Track 2: Utilization of Energy Resources, Track 3: New Technologies, Track 4: Power Reliability, Quality and Safety, Track 5: Improved Measurement and Control Technologies and Track 6: New Market Structures.

February 2008 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 | 2 |
| 3 | 4 | 5 <u>5:30 pm</u> IEEE FWCS ExCom TECO Tampa | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 <u>5:30 pm</u> Celebrate Engineering Banquet Tampa p 3 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 <u>11:30 am</u> Engineers Wk Energy Issues Tampa p 7 | 23 |
| 24 | 25 | 26 <u>6 pm</u> Microwave Antennas in Med Apps Tampa p 5 | 27 | 28 | 29 | 1 |

Institute of Electrical and
Electronics Engineers, Inc.
Florida West Coast Section
3133 W. Paris
Tampa, Florida 33614



Florida West Coast Section, Tampa

| |
|---|
| NON PROFIT ORG U.S. POSTAGE PAID TAMPA, FL. PERMIT No. 1197 |
|---|

DATE SENSITIVE MATERIAL. DO NOT DELAY

Change of address? IEEE Web Contact Update <http://www.ieee.org/membership/coa.html>
Or send address changes including your name, IEEE Member number and all pertinent information to:
IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333
Or fax your address changes to (732) 562-5445