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April 2003

## Tour of Lakeland's New Peaking Generators

Presented by PES/IAS Chapter



Location: 1200 Airport Road, Lakeland, Florida

Date/Time: Thursday, April 17th, 2003, 6PM

Contact: Jim Howard at (863) 834-6506  
Art Nordlinger [a.nordlinger@ieee.org](mailto:a.nordlinger@ieee.org) or 813-630-6203



You will have the opportunity to tour Lakeland Electric's new units that went into operations at the Winston substation in December, 2001.

The twenty 2.5 MW units are Lakeland Electric's first effort at using "distributive" peaking generation, those that are specifically designed to run during peak energy periods when demand for electricity is highest or when other power plants units are off line during outages or for repairs.

Unlike main power plant generators, the Winston units can be put into full operation in less than a minute, making them a valuable backup system during outages or emergency situations.

The new compact-sized units have the capacity to generate an additional 50 megawatts of electricity – enough to power 15,000 residential homes.

In addition to increasing reliability during outages or peak energy periods, the new generators also come with another benefit – they run diesel fuel but have the capability to be converted to natural gas.

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## Chair's Comment

By John Conrad

I managed to get into trouble this month. I decided to transfer the semi-automatic section e-mail service from my home PC to the IEEE majordomo server. I thought the transition went well. I copied the 1500 e-mail addresses and sent out the notification that the Signal was ready to download. Unfortunately, two days later I received a duplicate message. An hour later I received a third copy of the e-mail. I was beginning to panic. I had visions of my e-mail bouncing around the server generating 1500 copies on every bounce. I was convinced that the situation would be categorized as a Denial-of-Service attack by a cyber-terrorist.

I deleted various suspect e-mail addresses, changed a couple of set-up parameters, e-mailed the help desk and called Section Relations at Piscataway. The bouncing stopped and calm returned.

I apologize to all those that received these multiple e-mails. I am aware of the seriousness of generating irritating spam and I will make every effort not to repeat my mistakes in the future. For those of you who did not receive my multiple e-mails, I say it is time that you subscribed to the Section e-mail list.

Send an e-mail to [majordomo@majordomo.ieee.org](mailto:majordomo@majordomo.ieee.org) with SUBSCRIBE fwcs-section your\_email\_address as the first line in the body of the message. The subject line is ignored.

On a more positive note, there continues to be an array of local conferences, technical meetings and other events for your entertainment and education. Please join me in thanking all the volunteers that make these events possible.

## Hillsborough Science Fair Winners



IEEE-FWCS Chair John Conrad presented the Awards to Rene Chen of Wharton High School and Robert Parrish of Adams Middle School at the 23<sup>d</sup> Annual Hillsborough Regional Science Fair.

# IEEE/PES Surge Protective Devices Committee Meeting

## St. Pete Beach, Florida

### 12 May - 15 May 2003

**You are invited to participate in the activities of the IEEE/PES SPD Committee.**

#### **The SPD Committee**

The surge protective devices committee is a committee of the Power Engineering Society. The purpose of the committee is to develop standards for low, medium and high voltage surge protective devices of all types and applications. The meeting agenda consist of all aspects of surge protection. Experts from industry, academia, and users attend regularly and openly share their knowledge and experience with everyone involved.

#### **Location:**

The Trade Winds Beach Resort Hotel is located on 12 acres of natural beachfront on the Gulf of Mexico. For more information on the Trade Winds Beach Resort, visit their web page at [www.tradewindsresort.com](http://www.tradewindsresort.com). For more information on St. Petersburg, go to <http://www.stpete.org/>. Meeting details will be posted on our website at <http://grouper.ieee.org/groups/spd/> by the end of March. The agenda will be similar to the Fall 2002 meeting agenda with meetings all day Monday through Thursday. On Thursday, a luncheon is held with a speaker discussing aspects of surge protection.

#### **Travel:**

Tampa International and the St. Petersburg/Clearwater airports are less than an hour drive from St. Pete Beach. Transportation from the airport by Super Shuttle will cost approximately \$19 one way. [www.supershuttle.com](http://www.supershuttle.com) or 1-800-622-2089) Taxi service runs approximately \$48 to \$75 US from the Tampa International Airport.

Driving directions: From Tampa International and I-4, take the lane to I-275 South, "to St. Petersburg." Exit I-275 South at the Pinellas Bayway (Exit 4) to St. Pete Beach. Turn right on Gulf Blvd.; Trade Winds Island Resorts are on the left about 1.5 miles north.

#### **Tentative Schedule:**

##### Monday, 12 May

Working Group Meetings 8am – 5pm  
Registration in Hosp Suite 5pm – 8pm

##### Tuesday, 13 May

Working Group Meetings 8am – 5pm  
Registration in Hosp Suite 5pm – 8pm

##### Wednesday, 14 May

Working Group Meetings 8am – 5pm  
Registration in Hosp Suite 5pm – 8pm  
Evening Social Event – Time TBD later

##### Thursday, 15 May

Meetings 8am – 12 noon  
Luncheon 12 noon – 2pm  
Main Committee Meeting 3pm – 5pm

*Attire for the meetings is business casual.*

#### **Registration:**

Basic Registration waived for local participants.

Wednesday Event	\$35 US
Companions	\$35 US
Thursday Luncheon	\$25 US
Companions	\$25 US

#### **Events:**

A luncheon, with invited speaker, is planned for Thursday, 15 May 2003, at the Trade Winds Beach Hotel. The Wednesday evening social event will be an evening dinner cruise on the intercostals waterway.

# Seminar Advanced Notice

## NFPA 70E Electric Safety Requirements for Employee Workplaces and IEEE 1584 Guide for Performing Arc Flash Hazard Calculations

Presented by PES/IAS Chapter



Date/Time: Thursday, May 29, 2003  
Registration 8:00 AM - 8:30 AM  
Seminar 8:30 AM to 2:00 PM  
Continental breakfast and lunch provided

Speakers: NFPA 70E – James E. Bowen, PE  
Member, IEEE  
Technical Director, Powell Electrical Manufacturing Company

IEEE 1584 – Thomas H. Blair, PE  
Senior member, IEEE  
Consulting Engineer, Tampa Electric Company



Location: Tampa Electric Company  
Production Services Center (PSC)  
6944 U.S. Hwy 41 North  
Apollo Beach, FL 33572-1500

Cost: IEEE members, \$50      Non-members, \$100  
Please make your check payable to: IEEE-FWCS

RSVP: Online at: [http://ewh.ieee.org/r3/floridawc/pes\\_titles.html](http://ewh.ieee.org/r3/floridawc/pes_titles.html)

Questions: Art Nordlinger [a.nordlinger@ieee.org](mailto:a.nordlinger@ieee.org) or 813-630-6203

**4 PDH**  
Will Be Awarded

For Florida Professional Engineers:

Four (4) professional development hours (PDH's) will be awarded applicable to the State of Florida's continuing education requirements for PE renewal upon completion of the seminar. Be sure to include your license number and your name as it appears on your license with your reservation. Florida provider number EXP 00015.

Space is limited to 40 attendees. To ensure your reservation, please send your check in advance to Art Nordlinger, 1480 Gulf Blvd. #906, Clearwater, FL 33767.

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## Congratulations to New Senior Members

**Timothy Badger**  
Power Engineering Society

**Lawrence Rodriguez**

**John Stankowich**  
Computer Society  
Industry Applications Society  
Power Engineering Society

**David R. Figueroa**  
Circuits & Systems Society  
Signal Processing Society  
Solid-States Circuits Society

**William S. Spees**  
Computer Society

# April Computer Society/AESS Chapter Meeting

## Software and IT Operations:

### "Tour of the Progress Telecom Network Operations Center"

**Date/Time:** Tuesday, April 29 at 7:30 PM.

**Location:** Progress Telecom Network Operations Center  
100 Central Avenue, Downtown St. Petersburg, FL

**RSVP:** Dennis Trask [d.trask@ieee.org](mailto:d.trask@ieee.org) , Phone: 727-773-4685

Please meet with your colleagues for a pre-tour dinner at 6:15 PM at the Midtown Sundries Restaurant located nearby at 200 1<sup>st</sup> Avenue South. (Separate checks)

This tour is limited to 20 people so please respond early. The first 20 responses will take the tour. Later responders will be on a stand-by list.

(Will you meet us for dinner or just attend the tour? Please include a phone number if you respond by email)

This is an open meeting. Non members and students are welcome.

#### **Your Tour Guide:**

Wes Ratliff – Shift Lead for Technical Problem Support. Wes's responsibilities at Progress include 1<sup>st</sup> level escalation of network problems. Wes also provides the interface between upper management and technicians.

Wes will show us various tools for network monitoring and problem diagnosis. He will also explain how Progress Telecom provides reliable high-speed connectivity to national clients.

#### **Directions:**

Operations Center: Take I-275 South to I-375 E. I-375 E becomes 4<sup>th</sup> Ave. N. Take 4<sup>th</sup> Ave. N to 4<sup>th</sup> St. N and turn right. Take 4<sup>th</sup> St. N to Central Ave. and turn left.

Midtown Restaurant: Take I-275 South to I-375 E. I-375 E becomes 4<sup>th</sup> Ave. N. Take 4<sup>th</sup> Ave. N to 4<sup>th</sup> St. N and turn right. Take 4<sup>th</sup> St. N to 1<sup>st</sup> Ave S and turn left.

#### **Parking:**

Parking is available on the street near the Operations Center. Also, Midtown Sundries Restaurant will validate your parking at their garage.

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## What's New @ IEEE for Members?

### IEEE-SA Releases Collection on Power Distribution & Regulating Transformers

The special edition CD-ROM of the IEEE Standards Collection, "Power Distribution & Regulating Transformers," has recently been released by IEEE-SA. The collection contains all IEEE and ANSI standards, plus erratas or interpretations, and approved IEEE drafts on power distribution and regulating transformers. These ensure safe and reliable electric power service to consumers worldwide. Topics covered include Class 1E transformers, oil-immersed transformers, overhead-type distribution transformers, underground type three-phase distribution transformers and sealed dry-type transformers. For more information: <http://shop.ieee.org/store/product.asp?prodno=SC111>

# April Joint Programmable Logic User's Group & Computer Society/AESS Chapter Meeting

## Hardware Digital Design

# "VHDL Coding for CPLDs and FPGAs"

Date/Time: Thursday 4/24/03, 6:00 PM to 7:30 PM

Location: Avnet – Cilicon  
380 Park Place  
Suite 170  
Clearwater, FL 33759

RSVP: Greg Sjoquist, [gregs@t-b-s-i.com](mailto:gregs@t-b-s-i.com) or 727-812-5555 ext 12

Mark Graham from Xilinx will be our featured guest. This presentation covers preferred VHDL coding styles for programmable logic, both CPLDs and FPGAs and when to use special constructs within the language. It also covers generic logic coding versus coding with Xilinx specific features in mind from the start and how to migrate ASIC code to target FPGAs.

This is an open meeting. Nonmembers and students are welcome. Complementary pizza and cold drinks will be provided.

Mark Graham has been a field application engineer for Xilinx for the past 7 years. Prior to Xilinx, Mark worked for 13 years as a high-speed digital designer for Lockheed Martin and for Texas Instruments. He graduated with a BSEE degree from the University of Tennessee.

Directions: The Avnet – Cilicon local office is between SR60 (Gulf-to-Bay) and Drew Street, just east of US19 (a few hundred yards behind Bennigan's and Key West Grill).

To get there from the west, go east on SR60. Turn left (north) at the second light after the US19 overpass (Park Place). Take your second left after the light (North Park Place in complex). The building will be a couple hundred yards ahead on the right side. Avnet's number is (727) 507-5000.

For information on the Programmable Logic Users Group see ([www.pl-ug.org](http://www.pl-ug.org))

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## What's New @ IEEE for Members?

# "Father of the Internet" to Give Keynote Speech at Communications Conference

Professor Leonard Kleinrock, creator of the basic principles of packet switching and reverently considered one of the "Fathers of the Internet," will give the keynote speech entitled "The Internet: A Pervasive Global Nervous System" at the 38th IEEE International Conference on Communications. The conference, being held in Anchorage, Alaska, USA from 11 to 15 May, will discuss the state-of-the-art research and development taking place in all areas of communications. For more information, visit: <http://www.icc2003.com/>

Don't miss the next conference you need for your career. IEEE sponsors more than 300 technical conferences and workshops each year, highlighting the latest technological advances. Find events through the IEEE ConferenceSearch Web site at <http://www.ieee.org/conferencesearch/>

# Brain Teaser Challenge Column

By Butch Shadwell

## March BTC Solution

Last month we talked about a woodworking problem that involved using a wedge, one example of a simple machine, to force a dado joint to seat properly. The joint needed 200 pounds of force to seat and we wanted the carpenter to have to apply only 25 pounds of effort. In this case there was no friction between the wedge and either surface. The first part of the question was "What is the angle at the tip of the wedge to produce this effect?" Since we are talking about an 8 to 1 mechanical advantage, the tangent of this angle must be .125 (i.e. 1/8). When one looks up the arctangent of this value we see that this angle is approximately 7.1 degrees. The second part of the question was to calculate how far the wedge had to be inserted to move the load 1 inch. As with all most simple machines we exchange and increase in force applied to the load for a proportionally lower amount of displacement. So, it would take eight inches of wedge movement to move the load one inch. But I bet you already knew that.

## April BTC

Humans consider themselves pretty highly evolved. After all, we are the masters of this planet, even if it is really only a spec of dust in the universe of matter. We get to run things around here.

Well I guess the laws of physics really get the last word as far as physical reality is concerned. If I have a bar magnet and I measure the lines of force 2cm from one end directly along the axis of the magnet, and I get 80 gauss, what should I read at 4cm if all other fields and influences are cancelled? For extra credit, how many gauss make a tesla?

Questions or comments to the Brain Teaser Challenge, please contact Butch Shadwell at 904-223-4465 (voice), 904-223-4510 (fax), [b.shadwell@ieee.org](mailto:b.shadwell@ieee.org) (email), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. <http://www.se.mediaone.net/~butchs/>

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## What's New @ IEEE for Members?

### **Book Helps Professionals with Business and Technical Reports**

Professionals in business, government and technical fields often need help in organizing and writing reports. Intended to be a quick-reference handbook, "Writing Reports to Get Results: Quick, Effective Results Using the Pyramid Method" offers expert tips and ideas for organizing thoughts, structuring reports, and adding spice to technical papers. The book, now being offered by Wiley-IEEE Press, also provides tips on a number of other topics, such as: constructing reference lists, the use of numbers, abbreviations and metric symbols, and preparing illustrations for insertion into a report. Available now: <http://www.wiley.com/remtitleinternational.cgi?isbn=0471143421> IEEE members: Receive a 15% discount on any Wiley-IEEE Press titles. Use code 18493 at checkout.

### **Backscatter: Engineers Can't Write? Says Who?**

One tired, old criticism of engineers is that they can't write. Writing comprehensible technical papers certainly isn't easy, but former IEEE Spectrum editor Don Christiansen thinks engineers can break some of the habits that too often yield inaccessible, abstruse documents that even other engineers can't understand. Visit <http://www.todayseengineer.org/Feb03/backscatter.asp>

## April 2003 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 <i>IEEE FWCS EXCOM Meeting at 5:30pm TECO Plaza</i>	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17 <i>PES/IAS Meeting at 6pm Tour of Lakeland New Peaking Generators</i>	18	19
20	21	22	23	24 <i>CS/AESS Meeting @ 6pm VHDL Coding for CPLDs and FPGAs</i>	25	26
27	28	29 <i>CS/AESS Meeting @ 6pm Tour of Network Operations Center</i>	30			

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