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THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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Joint Section & PES/IAS Meeting

Engine Room Tour of "American Victory" Ship

Moored behind Florida Aquarium on Channelside Drive

Date: November 6th, 2001

Time: Supper at 5:30; Presentation 6:00; Tour 6:30

Cost: $15.00 for Members and their Guests;
$25.00 for Non-Members

Reservation: Art Nordlinger at (727) 596-9319
or Email Nordlinger@hotmail.com

This will be a special evening tour arranged especially for the IEEE. It will cover only the engine room. The ship is driven by a 6000 horsepower cross-compound steam turbine with dual reduction gears driving a single screw. The electrical system is 600 kW, 120/240 Volt Direct Current. All the auxiliaries are either steam or DC. We will see the twin boilers, the oil burners, turbines, reduction gears, shaft alley, many pumps and blowers. There is also an on board machine shop. Victory class ships were cargo ships built late in World War II. They were manned by the Merchant Marine and defended by the Navy Armed Guard. They were larger and faster than the earlier Liberty class ships. This is a tour of a real operational ship, so don't wear good clothes and be sure to have non-skid shoes. The passageways are narrow and the ladders (stairways) are very steep.

The rest of the ship is open for tours from 10:00AM to 5:00PM Monday to Saturday and noon to 4:00PM Sunday; $6 for adults and $3 for children.

Inside this issue of the Suncoast Signal:

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.

All material for THE SUNCOAST SIGNAL is due by the Friday following the 1st Thursday of the month preceding the issue month. Address all correspondence to:

Quang Tang - Seminole Electric Cooperative, Inc.
P.O. Box 272000, Tampa, Florida 33688-2000
Voice: (813) 739-1222 Fax: (813) 264-7906
E-MAIL: q.tang@ieee.org

Chair's Comment

By Quang Tang

Thanks to our member volunteers, we presented two in-service programs in October. One in Pinellas and the second program in Hillsborough county. The next one is set up for November 15th again in Pinellas county. Our section in-service program has been the model for other sections around the country. I have been invited to present the program at Sections Congress 2002 in Washington DC next year.

We have submitted nominations for Florida Council (all Florida Sections) Outstanding Engineering Educator, Outstanding Engineer and Outstanding Service Awards. Award winners will be notified in February 2001. These nominations will also be submitted for Region 3 (all of the Southeast US) level Awards as well.

Students' Corner

By Ruben Gomez, IEEE Student Branch Secretary
rgomez@eng.usf.edu

The semester is at its halfway point and even though a lot is going on around us our IEEE chapter is growing bigger and better everyday. With all the national and worldly events of the past month, it is hard to put a lot of importance in the little thing we do everyday but as leaders, of our society here at USF we must strive to help in any way possible and live up to the responsibilities we have committed ourselves to for the College of Engineering and the community here at USF.

With this said I would like to announce our IEEE Charity Golf Tournament that will be held at the USF Golf Course on Sunday November 11th and we hope to see you there to help support one of the many local or national worthwhile charities that we will announce in the near future. With all the participation from our student and professional chapters am sure we will make a difference to whom ever receives our first annual golf tournament benefits.

As for our on going projects, the Monday morning bagel breaks are becoming the buzz of the college of engineering. Student-faculty interaction is at its best when there are a bagels in the mix just check our website photos for the evidence. We also started our bi-weekly recruiting cookouts on October 1st, which has helped us sign up a majority of our one hundred new members that we have recruited in only about five weeks.

So come on out and join us for our tournament or one of the many other activates we have planned. Our website http://org.eng.usf.edu/IEEE-EE is up to date with times and details for all our activities.

Lightning Seminar

Presented by your PES/IAS Chapter

DATE/TIME: Tuesday, November 6, 2001 8:30am- 3:30pm

LOCATION: Tampa Electric's Energy Control Center - 8030 Palm River Road, Tampa, FL 33619

RESERVATIONS: Reservations required by Monday, November 5th. Contact John Stankowich at 727-796-8012 or johns060@ieee.org

COST: $50 Members, $200 Non-Members**, $10 Student Members
Special - $30 for Members with a completed IEEE Senior Member Application or for Senior Members with a completed Senior Member Nomination form for someone they know*

*That is qualified for Senior Membership **Includes IEEE membership for 2002

We will have two distinguished speakers to share with us their knowledge on this very interesting subject. They will answer questions and discuss topics such as -

Basic Lightning Physics
- What is cloud to cloud versus cloud to ground lightning?
- How is lightning formed or what causes it?
- What is the difference between flashes and strokes?
- Details of lightning formation from first clouds to charge transfer to ground objects.
- Anatomy of a thunderstorm (cumulonimbus) cloud.

Basic Lightning Detection
- Lightning signals, waveforms, and propagation.
- Magnetic Direction Finding techniques (MDF).
- Time of Arrival Techniques (TOA).
- 3D lightning location using TOA.
- The NALDN and worldwide networks.

Lightning and Power Systems
- Lightning and the effect on power systems.
- Why positive lightning can cause more damage.
- Analyzing lightning on power systems.
- Are there any foolproof mitigation techniques?

Speakers:

Ed Bardo - Ed is an engineer by education but has worked with Global Atmospherics for 9 years. In that time he worked in conjunction with major power utilities in developing the Fault Analysis and Lightning Location software. He also helped in the design of the current national lightning detection network. Currently he is working on lightning networks throughout the world including new 3D lightning location and imaging systems.

Mike Grogran - As the Utility Industry Manager for Global Atmospherics, Inc. Mike has assisted many power utilities in integrating both real-time and forensic lightning applications into their daily processes. Mike's sensitivity to clean, safe, and reliable power was developed during his years with Carolina Power & Light where he served as a Product Manager for their Power Protection Solutions product line. Mike has a BS in Electrical Engineering from Clemson University.

Don't miss this outstanding opportunity at this unbelievable low cost!!
Make your reservations NOW!! - Seating is Limited!!

IEEE Signal Processing/Communications Society Chapter Meeting

Frequency Selective RF Channel Simulator

Mr. Ron Brown, Raytheon Systems Company

Communications Society

IEEE Signal Processing Society

Date/Time: Thursday, November 8, 2001 at 6:00 PM

Location: Gill Robb Conference Room, Raytheon Systems Company
1501 72nd Street North, St. Petersburg, FL, 33710

Food: Refreshments provided at the meeting with a diner at members expense after the lecture at a local restaurant to be announced at the lecture.

Abstract:

Performance prediction for wide-band communications systems requires a realistic simulation of the RF channel time and frequency-varying characteristics. It is well known that a tapped-delay line filter with time-varying coefficients can be used to represent a frequency selective channel. However, generating the coefficients required to model various scintillation and multi-path conditions is not a simple task. This talk will describe a software frequency selective channel simulator and the basis for the channel effects modeled. The link simulator follows the commonly used large scale and small scale fading model. Small scale fading represents fading that occurs for user motion over a few wavelengths. The converse of small scale fading, large scale fading, refers to fluctuations in spatially-averaged received power due to shadowing and scattering of objects in the propagation environment. Large scale fluctuations occur when the receiver moves over many wavelengths. The simulator was developed in MATLAB using its user friendly graphical user interfaces (GUIs) capability to make it easy to create and manage link models. Examples of its use and a digital signal processing implementation.

Biography:

Mr. Brown is a Senior Staff Engineer at Raytheon Systems Company in St. Petersburg, Florida. He has previously worked at Texas Instruments and Litton Guidance and Control Systems, and has over 10 years experience with GPS related to receiver design, GPS/INS integration, GPS attitude determination for fire control applications and precise differential GPS for aircraft landing systems. He is currently involved with system analysis of the Sea Winds Ku-band scatterometer. The scatterometer, developed for JPL as a science instrument for Japan's ADEOS-II satellite, will measure radar backscatter from the ocean to derive wind speed and direction. Prior to his current assignment, he was responsible for a GPS receiver IR&D program to develop a GPS attitude determination receiver for fire control applications. Mr. Brown received B.S.E.E. and M.S.E.E degrees from The Ohio State University in 1969 and 1970 respectively. He has also completed PhD course work at the University of Texas at Dallas.

Reservations:

Please notify Bror Peterson (727) 302-4710 at Raytheon Systems Company at least 48 hours in advance if you are attending. You must specify if you are a US citizen. If not, special approval will need to be obtained. Bror_W_Peterson@raytheon.com.

Directions:

From Tampa, take I-275 South to I-275 south across Tampa Bay to EXIT 12 (22nd Ave. N.) From Sarasota, take I-75 North to I-275 north over the Sunshine Skyway Bridge to Exit (22nd Ave. N.). Turn west on 22nd Ave. past Tyrone Mall to 72nd Street N. Turn left at the traffic light to the Engineering Building. Park in the lot farthest south of the complex. GILL ROBB CONFERENCE ROOM – 2ND FLOOR – ENGINEERING BUILDING.

Continuing Education for Professional Engineers

By Art Nordlinger, PE

Dr. Mel Anderson, past chair of the Florida Board of Professional Engineers and a professor at USF, presented the Board's then proposed Continuing Education Requirements for Professional Engineers (PEs) on September 11. These requirements, formally rule 61G15-22 Florida Administrative Code (F.A.C.), were passed by the Board on September 19 and are now in effect. All PEs licensed in Florida, except for those whose licenses are retired or inactive, must earn eight Professional Development Hours (PDHs) in each two-year licensure period. Four PDHs must be of a technical nature in the licensee's area of practice. The other four must be related to Chapter 471 Florida Statues and rules of the board, Chapter 61G15 F.A.C. PDHs may not be carried over from one licensure period to the next. All PEs must earn eight PDHs prior to the next license renewal in February, 2003.

PDHs in the licensee's area of practice may be obtained in a number of ways including attending technical presentations and seminars from approved providers, college courses in the area of practice, teaching technical courses, authoring or publishing papers or articles, obtaining patents, or holding office in a technical society. The IEEE, and many other technical societies, are "Exempt Providers". This means that the IEEE is approved to sponsor technical presentations and seminars that count toward a licensee's PDH requirements. Other providers who are not Exempt Providers must apply with the Board to become approved. However, the IEEE can only give PDH credit for programs that qualify according to the Boards rules and these programs will be advertised as such. Activities that do not qualify for credit include self-generated courses, courses that the licensee takes or teaches more than once, programs of a non-technical nature or not in the licensee's area of practice, demonstrations, trade shows, tours, and one's regular employment. The PES/IAS Chapter sponsored a Power Quality Seminar on October 19 that was the first to allow attendees to earn PDHs, six in this case, presented by the local Chapter.

The other four PDHs relating to the rules of the board can be obtained in a number of ways as well. These include taking a course online (not yet available), taking a course presented by an approved provider, or attending one full day or eight hours of a board meeting at which disciplinary hearings are conducted. These meetings are held quarterly at different locations throughout the State.

More information, including the text of this new rule and frequently asked questions, is available on the Florida Board of Professional Engineers web site: http://www.fbpe.org/.

Fort Myers September Joint Luncheon Meeting

Our September, 2001 meeting was held at Florida Gulf Coast University (FGCU) with 25 attendees. Administrative support was coordinated by Ms. Dewie Robinson of FGCU. She did a great job organizing our lunch, seating and audio visual. From sunspots to The FGCU Renaissance Academy to hand-me-down technologies, our September meeting attendees were fascinated by the speakers who know and love their subjects. Dr. Michael Fauerbach explained the current sunspot activity and then led us outside where we viewed the sunspots through his 6 inch telescope. During lunch, Dr. Jack Crocker introduced us to FGCU Program for Continual Learning and the Renaissance Academy offerings. After lunch Dr. Jerome Jackson described several examples of how hand-down obsolete technology finds its way to kids and its importance to learning with a hands-on approach.

Mark your calendar. We are looking to January 22, 2002, as our next meeting date and our subject to be telecommunications.

Mark Your Calendar!!!
PES/IAS December Meeting - Elevator Technology

Join us for a meeting in Early December for a presentation by Mr. Richard Dolson of Otis Elevator on the Otis Product Line and a preview of the new Otis GEN2 system. The meeting will be at TECO Hall with the date and time to be announced in the December Signal. Please let me know to-day if this announcement is acceptable.

Joint PACE & PES/IAS November Meeting

Professional Ethics

DATE/TIME: Thursday, November 29, 2001 - Noon

LOCATION: Seminole Electric Cooperative Inc.
16313 N. Dale Mabry Hwy, Tampa

RESERVATIONS: Contact Quang Tang at 813-739-1222 or q.tang@ieee.org

COST: $10 Members, $20 Non-Members, $5 Student Members

SPEAKER: George McClure, A Life Fellow of IEEE, and recipient of both IEEE's Third Millennium Medal and Centennial Medal

George McClure, a past VTS president and current elected board member, observes that the last time VTS had a member of its board on the IEEE Board of Directors was in 1989-1990. That was Art Goldsmith, but because of a different arrangement of societies in divisions at that time, he represented the Engineering Management Society rather than VTS. George's current VTS assignments include the conference board, long-range planning committee, publicity and public relations, and assisting in member recruiting and retention, as well as in strengthening chapter relations, a priority recommendation from the 1999 Sections Congress.

George retired from Martin Marietta Corporation after more than 30 years in systems engineering and program management in aerospace and communications-electronics. The development of mobile military communications systems there led to commercial mobile telephone applications for which George received two patent awards.

Job Opportunity

Design Engineer

Responsible for the design and development of instrument transformers and related power equipment. Oversees product design process, from concept to manufacture. Working from customer-generated specifications, uses engineering skills to design products that meet technical requirements. Work with colleagues in manufacturing, marketing and other functions to design products and resolve issues. Responsible for designing products that meet technical requirements, cost targets and launch dates. Bachelors degree in electrical engineering or equivalent combination of education and experience. Strong analytical, multi-tasking and project management skills. Power engineering experience. For more information, please contact:

Instrument Transformers, Inc
Kent Jones
Phone (727) 442-0414; Fax (727) 441-8066
Email kent.jones@indsys.ge.com

Job Opportunity

Electrical - Marketing Engineer

Local growing company is seeking an Electrical – Marketing Engineer with BSEE degree. Account management or tech support experience desired with excellent verbal & written skills. Knowledge of electronics or electrical power systems helpful. Will support multiple sales forces and handle special projects. Salaried position, bonus program, 401k, plus benefits. Mid Pinellas, excellent opportunity in a growing company. Send resume to:

Advanced Protection Technologies
Louis Farquhar
Fax (727) 524-6178 or
Email lfarquhar@apttvss.com.

Brain Teaser Challenge Column

By Butch Shadwell

October BTC Solution

I hope you all found last month's column intelligible in spite of the two typos. I've got to take more time to review these things. In any case I did get a couple of correct responses. From the periodic table one can see that both carbon and silicon have the same number of valence electrons. Research with Fullerines is leading to many interesting new technologies.

November BTC

Recent events in New York and Washington have moved my interest toward the defense industry. I can only pity those individuals and governments that have chosen to make an enemy of the United States. I can tell you without reservation that our electronic warfare capabilities are years ahead of the nearest competitors. In their wildest dreams, people like bin Laden can not imagine what American ingenuity has created.

On another subject, some years ago I was a faculty adjunct at Jacksonville University. I used to enjoy technical discussions with some of the other physics and engineering faculty between classes. I recall one particular discussion that seemed strange in that there was no consensus among all of the very bright people involved in the exchange. We were discussing which was the more important specification for a laser weapon, having a "high power" emission or a "high energy" emission. In this discussion the weapon was expected to do damage by heating and destroying the whatever it was aimed at. The discussion took many interesting turns as to exactly how a relatively narrow beam would disable a machine. Even though our collection of very learned professors was unable to make the definitive statement on the subject I bet that one of my readers has the answer. (Definition: In this discussion the word energy did not refer to the wavelength of the laser beam.) I would love to hear from as many readers as possible as to which spec they think is more important and why.

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 (email), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. http://www.se.mediaone.net/~butchs/

November 2001 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 *PES Lightning Seminar at 8:30; Section &PE/IA Meeting Victory Ship at 6:00pm*	7 *EXCOM Mtg TECO Center At 5:30 PM Guests Are Always Welcome!*	8 *SP/COMM Frequency Selective RF Channel Simulator@ 6pm*	9 *Material Due For Next Month's Suncoast Signal Newsletter*	10
11	12	13	14	15 *Section In-Service Program at 6:30PM in Pinellas County*	16	17
18	19	20	21	22	23	24
25	26	27	28	29 *PACE and PES/IAS Meeting – Professional Ethics at Noon*	30	

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