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**IEEE**

**SIGNAL**

*THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.*

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Volume 46 - No. 8

August 2003

## **Substation - Electrical Operation Audit**

**PES/IAS FWCS**



Date/Time: Thursday, August 14, 2003, 11:45 AM – 1:00PM

Speakers: Charlie Grose, P.E.

Location: TECO Hall, 702 N. Franklin Street, Tampa, Downtown Tampa

Cost: \$10 for Members, \$20 for Non-Members, and \$5 for Students

Reservations: On-line at [http://www.ewh.ieee.org/r3floridawc/pes\\_titles.html](http://www.ewh.ieee.org/r3floridawc/pes_titles.html) or Call Ghaff Khazami at (813) 960- 0990, E-mail [gkhazami@ieee.org](mailto:gkhazami@ieee.org)



The speaker will cover recommendations and improvements to existing equipment and operation procedures. The presentation will provide guides and hints to your existing overall reliability of substation operation, documentations and enhance your knowledge in the area of area of expertise to reduce accidents and unplanned outages.

### **Speaker:**

Charlie Grose has been working in the Electrical Utility field since 1958 and is presently semi-retired living in Palm Harbor, Florida. He attended Purdue University with a major in Electrical Engineering – Power. His first job was a construction engineer on the Niagara Power Project (2600 MW Hydro Electric Facility) with responsibility for the equipment in the Niagara Switchyard (115, 230, & 345 kV) and the start-up the switchyard and generating equipment. He began work at the New York Power Authority's, Niagara Power Project as the Electrical Superintendent with responsibility for both power plants & the switchyard and Authority's transmission line to Central New York State.

He advanced to Superintendent of Power with responsibility for all operation and maintenance of the Niagara Project Power Plants, switchyards and transmission line systems. In 1978, he was transferred to the project management department as a Senior Project Manager (VP) with responsibility for all high voltage construction including transmission lines and station. He served as the project manager for construction of the Authority's 765 kV system, six 345 kV lines and cable projects, four 230 kV lines projects, two 115 kV lines and cable projects, 4 new stations, and upgrading of 6 stations. He retired in 1990 and moved to Florida.

After his retirement, he was the Field Project Engineer and Construction Manager for the Seminole Electric's JEA 230 kV Project. He also worked on several small engineering projects and startups in the U.S. and New Zealand. In 2001, he returned to the NYPA to install and start-up 11 peaking gas turbines to prevent brownouts in the NYC area.

He is a licensed Professional Engineer in the States of Florida, New York and Massachusetts. He is senior life member of IEEE and is active in T&D committee. He has served as chair of IEEE Standard 516 (Guide of Maintenance of Energized Power Lines) for the past 25 years. He has served as an IEEE representative on NESC and is presently an emeritus member of SC-8 (Work Rules).

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## Chair's Comments

By John Conrad

As I told you last month, Quang has decided that it is time for him hand over responsibility for the Signal. After performing an outstanding job for a number of years, he will only be producing one more newsletter after this one. Fortunately we have

found a worthy replacement. In good time so that we can arrange a seam less transition.

Srinivas (Sri) Katkoori has agreed to take over the reins of the October newsletter (and all subsequent editions for many years to come!). He has pledged to maintain or exceed the high standards set by Quang.

Dr. Katkoori has been an assistant professor in the Computer Science and Engineering Department at USF since 1997. He obtained his bachelor's degree at Osmania University in Hyderabad, India and his doctorate at the University of Cincinnati. In addition to his teaching duties at USF, Sri has participated in the organization of IEEE conferences, workshops and review panels on VLSI and MEMS.

I am sure that you will all join me in welcoming Sri onto the Florida West Coast EXCOM and in offering our assistance to him in his role as Signal Editor.

## 2003 Review Seminars for PE Electrical & Computer and EIT / FE October 24 and 25 Examinations

**Review seminars for the PE (Electrical and Computer) and Engineer In Training / Fundamentals of Engineering (EIT/FE) exams will be held:**

Mondays, July 28 thru October 6 for the EIT/FE Exam & Thursdays, July 24 thru October 16 for the EE Exam.

Seminars are conducted from 7-10 P.M. (Monday or Thursday) for ten weeks. The registration fee is \$350 and includes text. The seminars will be held on the main USF campus in Tampa and **will also be available via Internet.**

To register, contact: Alan M. Keith, P.E., PO Box 14042, (EC37), St Petersburg, FL 33733.

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Pinellas Chapter, Florida Engineering Society

*No matter what you've done for yourself or for humanity,  
if you can't look back on having given love and attention to  
your own family, what have you really accomplished?*

*Lee Iacocca  
Automobile Executive*

# Tour of Progress Energy Florida's Energy Control Center

## PES/IAS FWCS

Date: Wednesday, August 20, 2003  
Time: 4:00PM  
Location: 6565 38<sup>th</sup> Avenue N., St. Petersburg, FL  
Register at: <http://www.weiquality.com/fwcs-meetings/>  
Limited to 20 participants.



For additional information, contact Art Nordlinger, [a.nordlinger@ieee.org](mailto:a.nordlinger@ieee.org), 813-630-6203.

Progress Energy Florida has graciously agreed to allow us to tour their state-of-the-art control center. From this location, the company controls over 10,000 MW of power flowing to 1.4 million customers throughout west-central and north Florida over 32,000 miles of transmission and distribution lines.



### **Jim V. Leonard, P.E.**

### **2003 IEEE-USA President**

### **President's Column, July/August 2003**

IEEE-USA, created 30 years ago to promote the career and public-policy interests of the IEEE's U.S. members, is an organizational unit of the IEEE. I'd like to highlight some of our professional activities on behalf of the IEEE's 235,000 U.S. members.

Volunteer leaders serving on the IEEE-USA Board of Directors and committees work closely with IEEE-USA staff to represent what we feel are the best interests of our U.S. members. We know that with such a large and diverse membership, we can't please everyone. But we hope the majority agrees with our positions and the direction we seek to lead the organization.

IEEE-USA's position statements are passed by our Board of Directors and serve as the basis for our lobbying and public-relations efforts. IEEE-USA also acts as an adviser to Congress. For example, we led a technological and legislative briefing on nanotechnology for congressional staffers on Capitol Hill in June. Our volunteers visit Washington, D.C., and home-district congressional offices, and invite you to join us.

Last year we submitted an *amicus curiae* brief before the Supreme Court that served as the basis of its ruling in a landmark patent rights case. This year we filed another brief before the high court in support of reverse engineering.

IEEE-USA promotes engineering awareness and public understanding by actively participating in National Engineers Week each February. Next year we will spearhead IEEE's role as lead society, and will increase Future City Competition participation by sponsoring three additional teams' trips to Washington for the national finals.

In the career-enhancement area, we'll soon present the findings of our latest salary survey. With our most respondents ever, we believe the data is the best collected and analyzed. It serves as the basis of the new IEEE-USA Salary Database. We're also offering online leadership courses for the first time. For more information, visit our careers page at <http://www.ieeeusa.org/careers/>.

The depth of IEEE-USA activities cannot be summarized in this short space, so I recommend you visit our homepage at <http://www.ieeeusa.org/>. I also encourage you to vote in the upcoming IEEE elections. The ballots include some very capable candidates for IEEE-USA offices of President-Elect and Member-at-Large.

# County Science Fairs

By John Conrad

For many years our section has supported Science Fairs in Hillsborough and Pinellas Counties. Members such as Quang Tang, Jules Joslow, Ralph Painter, Richard Beatie and many others, have given their time and effort to these worthwhile endeavors. For those of you who are not familiar with Science Fairs, they are great events that encourage school kids to participate in math and science projects. The school kids spend a lot of time preparing their projects and bring a whole lot of enthusiasm to the event. In return they receive exposure to scientific techniques for problem solving, the advantages of teamwork and the pride that comes with achievement and peer recognition. Hundreds of excited kids participate in these functions.

Our contribution is to provide about half a dozen judges and to present certificates and prizes to some of the winners. We also talk to the kids and try and nurture their interest in science. Everyone concerned with these fairs feels that seeds of interest in science and math are being sown and that the benefits will be reaped for many years to come as students seek college degrees and careers in these areas.

As you can see from the masthead on the front of this newsletter, the catchment area for the Florida West Coast Section spans twelve counties, yet we only support two fairs. What is happening in the other ten counties? Fortunately we have a volunteer who has agreed to try and answer that question. Carlo Dionson has taken on the role of Science Fair Coordinator for the section. In that role he will ensure that we continue to provide effective support to the fairs in Hillsborough and Pinellas counties and he will explore the possibility of extending our support to other counties in our area.

If you have information about local fairs or would like to get involved with one, or if you would just like to offer encouragement, please contact Carlo at (813) 621-5935 or [carlo@dionson.com](mailto:carlo@dionson.com).



*2003 Hillsborough Regional Science Fair Winners.*

# Access IEEE Xplore from the USF Library

By Ralph Painter, Treasurer FWCS

All IEEE members have on-line access to Spectrum and to the publications of the societies to which they are members. However, electronic access to all IEEE magazines, journals, transactions and conference proceedings and to current IEEE standards is available to anyone who visits the USF library. Just use one of the computer terminals on the first floor of the library to gain full access to IEEE Xplore. Begin by bringing up the USF library home page through the following keystrokes: Click on "Start," then "Programs," then "Startup," then "USF Libraries." Once the USF library homepage is up, click on "Electronic Journals" under the "Find an Article" heading on the left-hand side of the library home page. Type in "IEEE" and click on "Search." A list of IEEE journals will appear. Click on any of the journal titles to go to the IEEE Xplore web page. The Xplore web page is easily navigated to gain access to abstracts or full text versions (PDF format) of articles from IEEE journals, transactions, magazines or conference proceedings. Full text versions (PDF format) of current IEEE standards are also available. Generally, all articles published from 1988 forward are available along with selected material going back to 1950.

Remember to bring with you several blank diskettes or to download the material you need. Typically only two or three journal articles will fit on a single diskette. Both black and white and color printers are available in the USF library for a nominal fee, however one must first download the material onto a diskette and go to a second computer that is connected to a printer. If you forget to bring a blank diskette, the librarian may be kind enough to give you one, (that was my experience) or diskettes can be purchased on campus if you have time for the twenty-minute round trip to the bookstore.

One-day parking passes are available at the drive-through at the main Fowler Avenue entrance for \$2.50 or one can park at one of the metered spaces in the library parking lot.

If visiting the USF campus is not convenient, a subscription to the IEEE Digital Member Library provides at home access to the most recent five years of IEEE journals, magazines, letters and conference proceedings. However, the number of downloads is limited to twenty-five articles per month and IEEE standards are not included. The subscription price for the IEEE Digital Member Library is \$35 per month.

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## Call for RAB Award Nominations

The strength of IEEE is the work of the volunteer at the local level. Without the efforts of the local volunteer, IEEE would not be able to promote the understanding of the influence of technology on the public welfare. These volunteers need to be recognized for their efforts, we don't recognize the local volunteers enough for their work or the impact they have on society.

The RAB Awards and Recognition Program seeks to honor the outstanding efforts of some of the most invaluable IEEE Volunteers who have made substantial Regional contributions through innovative projects, exemplary leadership, service, and by fulfilling the goals as related to Transnational Activities. Each prestigious award has a unique mission and criteria, and offers the opportunity to honor distinguished colleagues, inspiring teachers and corporate leaders. We are currently accepting nominations for the following RAB Awards:

- \* **RAB Achievement Award**
- \* **RAB Innovation Award**
- \* **RAB Leadership Award**
- \* **RAB Larry K. Wilson Transnational Award**

These awards, the most prestigious RAB has to offer, are designed to recognize outstanding efforts by IEEE volunteers. These are NOT technical achievement awards. The deadline for nominations is **15 October 2003**. You can submit award nominations online by visiting the web page <http://www.ieee.org/rabawards.html>.

As the nomination process, and the requisite documentation, takes its own time, I would recommend an early start.

If you have any queries please do not hesitate to contact Hans Peek, Chair - RAB Awards & Recognition Committee, at [rab-awards@ieee.org](mailto:rab-awards@ieee.org).

# Awards and Recognition Nominations Solicited!

By Richard Beatie, P.E.

FWCS Awards/Recognition Chair

[r.beatie@ieee.org](mailto:r.beatie@ieee.org)

813-289-0252

We need your help to nominate worthy FWCS Section member candidates for a variety of awards and recognition that are available through IEEE sponsorship! Let's all take the time to review the award qualifications, and nominate our peers, based on their achievements and contributions to the IEEE, the engineering profession, and society, to help recognize their contributions.

**Due dates for FWCS Section and Florida Council awards are November 1. For Region 3 it is December 1.** We need adequate lead times before these deadlines to process the applicants' records and prepare them for submission to the respective awards review committees, so start the selection and nomination process now!

The Florida West Coast Section, the Florida Council, and Region 3, all a part of the IEEE network, have a series of similar awards. Many times, the candidate nominated for the FWCS award is also submitted for consideration for the Florida Council; and Region 3 awards!

Nominations are being sought for the following awards:

## **Outstanding Engineering Educator Award**

**Purpose:** To recognize a member of the Section, Florida Council or Region 3 who has shared technical and professional abilities through teaching in industry, government, or in an institution of higher learning and in so doing has made an outstanding contribution to the electrotechnology profession.

## **Outstanding Engineer Award**

**Purpose:** To recognize a member the Section, Florida Council or Region 3 who, through technical and professional abilities, has made an outstanding contribution to the electrotechnology profession.

## **Outstanding Service Award**

**Purpose:** To recognize a member the Section, Florida Council or Region 3 who, through service to the Region and to the Institute, has made an outstanding contribution to the electrotechnology profession.

More details on the qualifications, and appropriate nomination forms are available from the Florida Council website at [www.ewh.ieee.org/r3/fc/awards.htm](http://www.ewh.ieee.org/r3/fc/awards.htm).

Please contact me with your nomination intentions and for any information or help in nominating worthy candidates for the above awards.

By now you will have received the July Spectrum and 2003 IEEE AWARDS SUPPLEMENT listing the 2003 award winners. There are a number of very prestigious Institute, RAB and USAB awards available to our members. To learn more about these awards and download application forms, go to [www.ieee.org/awards](http://www.ieee.org/awards). Let's put the Florida West Coast Section on the map and nominate our worthy members for some of these awards as well. Worthy candidates abound out there, but somebody needs to take the time to nominate them. Will it be you?

That's all I ask. Take the time to nominate a worthy candidate for any of the available awards and provide your colleague with the recognition they deserve!

# Competing With the \$800 (or less) a Month Engineer

By Paul Kostek

We hear plenty about the positive impact globalization is having on the marketplace. Unfortunately for many engineers and other high-tech professionals, the impact has been devastating.

Engineering jobs in all sectors of the economy are being contracted out and moved outside the United States at an alarming rate. By 2015, 3.3 million white-collar jobs - including more than 472,000 in information technology and mathematics - are expected to move to low-cost countries, according to Forrester Research Inc. analyst John C. McCarthy. The predicted loss in wages is a staggering \$136 billion. The loss to the U.S. economy is far greater.

To take advantage of much lower salaries in other parts of the world, major corporations are already building overseas design centers. For the CEO under pressure to improve the corporate bottom line, the economics are hard to beat. You can hire a skilled non-U.S. engineer for about \$800 a month, about what many U.S. engineering grads earn per week. The \$5,000-a-year software programmer is another global reality.

Business Week magazine recently reported that for \$650 a month you can employ an aerospace engineer in Russia with a master's degree in math or aeronautics. His U.S. counterpart makes about \$6,000 a month. So how do U.S. engineers compete in this new global marketplace? The answer has profound implications for the future of technical innovation in the United States, which sustains our nation's economic competitiveness, national security and overall standard of living.

Obviously U.S. engineers won't be able to compete on price by accepting salaries that are below U.S. poverty levels, leaving superior skills and proximity as their best hopes for maintaining a competitive edge. But even if the U.S. engineer enjoys a skills edge, how can an employer not take advantage of the increased productivity inherent in a salary differential that allows hiring 5-10 engineers overseas for the price of one here?

Is it an advantage for engineering functions to be performed close to the company site or in the same time zone? Many argue that companies prefer to keep their engineering design jobs close at hand in order to safeguard the company's intellectual property. But the offshore outsourcing trend clearly encompasses engineering design services. And what is proximate to the large global or virtual corporation that engages in 24-hour-a-day operations by moving work from time zone to time zone?

While jobs are being sent overseas, news on the home front is also discouraging. The unemployment rate for electrical engineers rose to an unprecedented 7.0 percent in the first quarter of 2003, according to the U.S. Department of Labor, Bureau of Labor Statistics, and stood at 6.4 percent for the second quarter. The most recent report also showed a 7.5 percent unemployment rate for computer programmers, 5.7 percent for computer hardware engineers and 5.6 percent for computer scientists and systems analysts. The rate for all workers was 5.6 percent.

Despite this record-high engineering unemployment, industry continues to defend increased outsourcing and the use of guest labor (such as H-1B and L-1 visa workers) by arguing that not enough U.S. students are entering engineering programs or pursuing technical careers. Government is starting to join the chorus as the large Cold War generation of government engineers reaches retirement age. But if all an engineering career can promise is job insecurity and low pay on one hand, or red tape and a government salary on the other, why would America's best and brightest choose engineering as a career path?

Lacking a clear edge in price, skills or proximity, what is the future for U.S. engineers? Do we just need to abandon certain areas and fields of engineering in the same way that the U.S. said good-bye to textiles and steel in the name of free trade? Will job opportunities be limited to government-related work or infrastructure-related industries such as electric power generation and transmission, or phone service where U.S. Citizenship or proximity is imperative?

As an engineer who has had to reinvent myself a dozen times during a 24-year career in order to stay competitive, I have to ask myself if an overseas competitor in Belarus, Beijing or Bangalore possesses the same skills that I do, and if proximity isn't important, and if they'll work for \$800 a month, then why hire me at \$8,000 a month? It's a question that is increasingly hard to answer. For the next generation considering a career in engineering, it will be even harder.

Paul Kostek is the 2003 Chair of the American Association of Engineering Societies and a past president of The Institute of Electrical and Electronics Engineers? United States of America (IEEE-USA). The views expressed here are his own.

## August 2003 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5 <i>IEEE FWCS EXCOM Meeting at 5:30pm TECO Plaza</i>	6	7	8	9
10	11	12	13	14 <i>PES/IAS Substation - Electrical Op. Audit at 11:45am TECO Plaza</i>	15	16
17	18	19	20 <i>PES/IAS Tour of Progress Energy Florida's ECC at 4:00pm</i>	21	22	23
24	25	26	27	28	29	30
31						

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