



# THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

<http://ewh.ieee.org/r3/floridawc>

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July 2001

## July Joint Section & PES/IAS Chapter Meeting Current Status of Regional Transmission Organization Development



**Date/Time:** Thursday, July 12, 2001 at noon

**Location:** Energy Technology Resource Center (ETRC)

**Speaker:** Mr. John Boucher  
Vice President, RTO Business Area  
KEMA Consulting

**RSVP:** Please reserve by Tuesday, July 10 with  
Art Nordlinger at [Nordlinger@hotmail.com](mailto:Nordlinger@hotmail.com)  
or Phone at (727) 596-9319

**Cost:** Members \$10, non-members \$15



Deregulation of electricity markets has been a major transition for all of us in the energy industry. However, the California crisis has now placed the risks of deregulation on the front page of newspapers around the world. John will share with us the current status of Regional Transmission Organization development and recent filings with the FERC in response to Order 2000.

How does what is happening in Florida compare with other regions of the U.S.?

What are the major issues being addressed and what are choices being made around the country? What are regions doing to avoid another California situation?

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## **Chair's Comment**

**By Quang Tang**



For those of you missed the historical event, The IEEE Milestone Ceremony, was held on Friday, May 25, 2001 at Kennedy Space Center, Florida, check out pages 5 & 6 of this issue for Ceremony details and photos.

For our joint Section & PES/IAS meeting this month we will be picking up the second half of the Regional Transmission Organization (RTO) presentation by Mr. John Boucher, Vice President, RTO Business Area - KEMA Consulting.

Frontline investigative report is main topic for the second PES/IAS July meeting. Art Nordlinger will lead a discussion of this issue after viewing the report if time permits. PES/IAS Chapter is extremely active with two meetings lined up this month and next month. In August, we will have a representative from Hillsborough Area Regional Transit (HART) presenting their new Advanced Vehicle Systems (AVS) hybrid-electric bus. Also in August, we will have a meeting on status of Gulfstream Pipeline Project. Thanks to Art Nordlinger and Ghaff Khazami for their energetic effort.

Congratulations to James S. Lumia and Daniel Faria. James has been appointed Computer/Aerospace & Electronics Systems Society (COMP/AESS) Chapter Chair and Daniel has been appointed Graduates Of the Last Decade (GOLD) Chair.

## **ATTENTION Retired Engineers!**

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Every 2<sup>nd</sup> Wednesday of the month from 9am - 11am  
Next event will be on **July 11, 2001**  
Future Dates: August 8  
You can find us at

**6300 Tower Lane, Suite 12**  
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**Ask for Brian Stumm**

# July PES/IAS Chapter Meeting

## Blackout: A FRONTLINE and The New York Times Investigative Report



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

**Date/Time:** Friday, July 20, 2001  
Lunch will begin at 11:45. FRONTLINE viewing at 12:00

**Cost:** \$10 for members, \$15 for non-members to cover luncheon

**RSVP:** Please contact Ghaff Khazami at (813) 739-1221 or  
Email [GKhazami@seminole-electric.com](mailto:GKhazami@seminole-electric.com)

PBS recently aired an excellent report on the California energy crisis in their FRONTLINE series. If you missed it, here's an opportunity to see this timely program. Your local PES/IAS Chapter has received permission from FRONTLINE to show this one-hour program at our luncheon meeting on July 20. "As an engineer who is intimately involved with national regulatory issues, I found the interviews and analysis to be extremely interesting and comprehensive," says Art Nordlinger, PES Chair who previewed the show. "I would note in particular that the report is NOT "dumbed down" for the masses as are many programs on technical matters." Correspondent Lowell Bergman goes head to head with energy industry CEOs and state and federal officials to uncover what's at the heart of the growing energy crisis, and who's profiting. Among those interviewed for the one-hour documentary are: Vice President [Dick Cheney](#); California Governor [Gray Davis](#); Enron CEO [Jeff Skilling](#); [Curt Hebert](#), chairman of the [Federal Energy Regulatory Commission\(FERC\)](#); and consumer advocates. Art will lead a discussion of this issue as time permits following the show.

---

## Nominations for IEEE/ABET Evaluators Now Open

PISCATAWAY, NJ, 18 June 2001. Contribute to the engineering professional and public good. The IEEE Educational Activities Board seeks engineering professionals from industry, government, and academe to serve as program evaluators for accrediting engineering and engineering technology programs at U.S. universities. Nominations will be accepted through 31 October 2001.

The Accreditation Board for Engineering and Technology, Inc (ABET) provides a peer review of university programs that is vital to the continuing quality of the engineering and engineering technology professions. Aside from supporting the health of the profession, there are more tangible rewards for evaluators and their employers. The evaluators are trained in the Quality Process and are able to hone their decision-making skills. By virtue of being on campus, evaluators come in contact with the next wave of future innovators and industry leaders. "The training helps to keep you up to date with all the changes being made every year in the criteria," said William Boley, Litton Guidance & Control Systems. "The campus visits are a great opportunity, to see first hand, the different approaches being taken in engineering education."

The IEEE members selected will attend a one-day training seminar on the IEEE/ABET accreditation process. After training, these program evaluators are dispatched in teams, one evaluator to a program, to visit engineering and engineering technology departments across the country on behalf of the IEEE and ABET. Evaluation sessions take place each fall and generally run for two to three days.

Read comments from a first-time evaluator at [www.ieee.org/organizations/eab/apc/news5.htm](http://www.ieee.org/organizations/eab/apc/news5.htm). Information packages, including the application and nomination forms, are available on the web at <http://www.ieee.org/organizations/eab/apc/ceaa/engapplication.htm> (engineering programs) and [www.ieee.org/organizations/eab/apc/ctaa/techapplication.htm](http://www.ieee.org/organizations/eab/apc/ctaa/techapplication.htm) (engineering technology programs). For more program information, contact <eab-accred@ieee.org>.

Lynn Murison, Outreach Administrator, IEEE Educational Activities – (732) 562-6526 [www.ieee.org/organizations/eab/](http://www.ieee.org/organizations/eab/)

# August PES/IAS Chapter Meeting

## Presentation of Hartline's AVS Hybrid-Electric Bus



<b>Date:</b>	<b>August 8, 2001</b>
<b>Location:</b>	<b>TECO Hall, Tampa Electric 702 N. Franklin Street, Tampa</b>
<b>Time:</b>	<b>Dinner 6:00, presentation will begin at 6:30.</b>
<b>RSVP:</b>	<b>Please reserve August 6<sup>th</sup> with Quang Tang at (813) 739-1222 or <a href="mailto:g.tang@ieee.org">g.tang@ieee.org</a></b>
<b>Cost:</b>	<b>\$10.00 for members, \$15 for non-members</b>

Join us for a special evening in downtown Tampa when Hillsborough Area Regional Transit (HART) presents their new Advanced Vehicle Systems (AVS) hybrid-electric bus. The unique feature of this new vehicle is that a **CapStone MicroTurbine™** engine running an on-board generator supplements the main battery power delivery system. This hybrid system allows for significantly increased range when compared to all-electric buses.

The turbine engine used in this bus is extremely clean burning, achieving emission levels that are 88% to 96% below the 2003 EPA standards for diesel engines. The electric motors, of course, produce no pollution in operation. The combination of the two technologies produces an exceptionally clean vehicle with superior performance characteristics.

HART is in the process of receiving and field testing 10 of the new AVS-22 buses. The 19 passenger buses are intended for shorter routes in neighborhoods or congested areas.

The evening will include dinner, a slide presentation, an opportunity to "peek under the hood", and a short ride around downtown. Reserve early as we are expecting a full house.

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## Upcoming Meetings and Tours provided by Florida West Coast PES/IAS Chapter

- August 22, 2001 – Gulfstream Gas Pipeline Project
- September 2001 – Electric Vehicles
- September 2001 – Board of Professional Engineers Presentation on PDHs
- October 2001 – Engineering Ethics
- November 2001 – Lightning Detection Presentation
- November 2001 – Liberty Ship Tour and Meeting
- December 2001 – Utility Load Management Systems



If you have interesting topics or like to tour any facilities, please drop us an email.  
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# IEEE Milestone Ceremony

## Kennedy Space Center

### May 25, 2001

On May 25, 2001 the Canaveral Section of the IEEE hosted a ceremony honoring those individuals involved in the development of electronic technology that enabled mankind to land on the moon and return safely to earth. An IEEE Milestone plaque was presented to the Kennedy Space Center in their honor:

### Electronic Technology for Space Rocket Launches, 1950-1969

*The demonstrated success in space flight is the result of electronic technology developed at Cape Canaveral, the J. F. Kennedy Space Center, and other sites, and applied here. A wide variety of advances in radar tracking, data telemetry, instrumentation, space-to-ground communications, on-board guidance, and real-time computation were employed to support the U.S. space program. These and other electronic developments provided infrastructure necessary for the successful landing of men on the moon in July 1969 and their safe return to earth.*

The ceremony was held at the Dr. Kurt H. Debus Conference Center at the Kennedy Space Center Visitor's Complex and was sponsored by the Institute of Electrical and Electronics Engineers (IEEE), IEEE-USA, IEEE Region 3, and the Canaveral Section of IEEE. Among the special guests attending were:

Allen	Bob	State Representative
Ball	Randy	State Representative
Brogan	Frank	Lieutenant Governor of Florida (via video tape)
Chase	Brian	District Director, Office of Congressman Dave Weldon
Fancher	Col. Samuel	US Air Force
Gormel	Ed	Executive Director Spaceport Florida
Hairdopolos	Mike	State Representative
Howard	Jim	IEEE Region 3 Director-Elect
McClellan	Capt. Marshall	CCAFS (Chaplain)
Morgan	JoAnn	NASA-KSC
Needelman	Mitch	State Representative
Nelson	Bill	United States Senate (via video tape)
Posey	Bill	State Senator
Riddle	Richard	IEEE Region 3 Director
Rinehart	Kathryn	IEEE Canaveral Section
Sauthoff	Ned	IEEE Section 3
Sloan	Dr. Martha	IEEE History Committee Chair
Snyder	Joel	IEEE President

The Milestone Ceremony, which was attended by over 200 honorees and guests, also featured a video excerpt of President Kennedy's "Special Message to the Congress on Urgent National Needs", in which he first urged Congress to fund a program to land men on the moon before the end of the decade of the 1960's. The Milestone Ceremony was held on the 40<sup>th</sup> anniversary of this speech (Video courtesy of John F. Kennedy Library Foundation).

Representing Florida West Coast Section at the Ceremony are Quang Tang, Jules Joslow, Richard Beatie, Bob Ashley, John Stankowich, and Joey Duval. Check out the photos on the next page. Thanks to the Canaveral Section for these photos. For details of the Milestone Ceremony and additional photos, check out web site <http://www.ewh.ieee.org/r3/canaveral/aftermile.html>

**IEEE Milestone Ceremony  
Kennedy Space Center  
May 25, 2001**



*Presentation of the Colors*



*The Milestone Plaque*



*Joel Snyder – IEEE President*



← *Joel Snyder  
presented the  
Milestone Plaque*



*Joel Snyder and →  
Florida State  
Senator Bill Posey*

*Joel Snyder and →  
IEEE Region 3  
Director Richard  
Riddle*



*From IEEE FWCS – (l to r) Jim Howard, John Stankowich, Jules Joslow, Bob Ashley, Joey Duvall, Richard Beatie, and Quang Tang*



*Bob Ashley and Quang Tang*

## James S. Lumia Appointed COMP/AESS Chapter Chair



Jim graduated from Georgia Tech with a BSEE degree in 1969. After graduation, he worked as a hardware systems and design engineer in the fields of flight computers, communications, and automated analog and digital test equipment design. During this period, he took postgraduate courses at USF in business and computer science. He then consulted in analog and digital computer simulation for five years. Later Jim joined an emerging silicon valley firm in the early days of computer aided engineering to open sales and support in the eastern United States for capture and simulation design tools. This led to his work as a technical marketing engineer in San Jose, CA. specializing in analog and mixed signal simulation for board and IC design.

In 1993, Jim returned to Florida to join AT&T Paradyne, which is now Paradyne Corporation. There, he managed all the hardware design tools and development for schematic capture, board layout, ASIC and FPGA design with VHDL, Process Data Management tools for change orders and integration with the manufacturing ERP (Electronic Resource Planning) system. He also managed software tools for version control and development. Jim's computer experience spans mainframe, UNIX workstation and PC systems. He has been a member of IEEE since his student days at Georgia Tech and was active in the program committee for the IEEE computer society a few years ago.

Jim lives in Tampa with his wife Sharon. They have been married for 32 years. He has one son Chris who will be starting college at Stetson University this fall. Jim enjoys traveling, hiking and playing golf. His favorite destinations are the NC mountains, northern California, and Florida beaches.

He looks forward to chairing the computer society for the next year.



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

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



## Fort Myers June Joint Section & Life Member Luncheon Meeting

Our long awaited IEEE Fort Myers meeting became a reality at the Landings in the Helm Club. We received 36 enthusiastic responses to our advertisements in the Signal, e-mail and *News-Press*, of which 25 were able to attend.

### Dr. Bob Ashley receives IEEE Region 3 Award for Outstanding Service

We started our meeting with informal networking, giving us a chance to meet new friends and see some old ones. Prior to lunch, we introduced ourselves, giving a brief resume of our professional and leisure activities. Looks like we may have some potential speakers for future meetings. A delicious buffet lunch was served and talk became more localized. As coffee was being served, Al Rosenheck presented Dr. Bob Ashley with the IEEE Region 3 award for outstanding service. Dr. Bob is our sections current Life Member Chapter Chair and was instrumental in starting the chapter. A well deserved award!



### Doug Gorham spoke on Pre-College Technological Literacy

Doug Gorham, Ed.D. gave an interesting talk describing the IEEE approach to supporting pre-college education and technical literacy and the role sections can play in support of teacher in-service education. He empathized the need to bring together educators and engineers at all levels to exchange views. In response to audience questions relating to the need for technology, science and mathematics tutoring, Doug was very empathic about educators needing volunteer help from knowledgeable members of the community. The audiences were invited to contact principals of their local schools and offer to help as volunteers and mentors.

The joint section and life membership concluded with a discussion of future meetings, venues, topics, etc. The following was agreed upon:

- The meeting was a success and future meetings should be scheduled in Lee County.
  - Luncheon meetings are preferred.
  - The next meeting should be in the September/October time frame.
1. FGCU may be the site of our next meeting. We are hoping to schedule a lecture by the Whitaker Eminent Scholar Dr. Jerry Jackson. Michael Fauerbach, Ph.D. and Chalmers Sechrist, Ph.D. have agreed to organize that meeting.

It was satisfying to see so many IEEE members attending a meeting held in the southern area of our section.

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## Florida West Coast Section Web Site Update!

Have you check out Florida West Coast Section web site lately? It has been updated with the latest Suncoast Signals, Section's calendar of events, FWCS Executive Committee meeting minutes, and links to technical societies and IEEE national. Check it out and let us know what you think.

<http://ewh.ieee.org/r3/floridawc/>





# Brain Teaser Challenge Column

By Butch Shadwell

## June BTC Solution

At the time of this writing I had only received one correct response. Just to make sure I solved the Bahamians regulator problem two ways. The obvious solution is to use a resistor in series with the 7805 to dissipate most of the power wasted by this linear regulator. Calculating the value of this resistor is very easy. We take the supply voltage and subtract the voltage across the load, 5 volts, and the voltage required by the regulator, 2 volts. This leaves 17 volts for the resistor to drop. At the maximum load, .5 amps, this resistor needs to be 34 ohms. If we multiply 17 volts times .5 amps the power dissipation of this resistor will be 8.5 watts at the highest operating point. A normal design rule is to use a resistor rated at twice the maximum actual power dissipation, or at least 17 watts in this case. Next I wanted to calculate the worst case power dissipation of the regulator device to see if it was safely below the 5 watt limit. I did this calculation two ways to make sure.

First, I wrote an equation for the power dissipation of the regulator.

$$P = I(24 - 5 - (I \times 34)) = -34I^2 + 19I$$

Next I calculated the first derivative,  $dP/dI = -68I + 19$

The peak power dissipation would be where  $dP/dI = 0$ , so setting  $-68I + 19 = 0$  and solving for I, we get  $I = .279$  amps at the point of highest power dissipation in the regulator. Substituting this value in the original power dissipation equation, we get the peak regulator power dissipation at 2.65 watts. We are in good shape.

The second method is not quite so interesting but perhaps more telling. The most power is transferred when the load impedance (regulator impedance in this case) matches the source impedance. If the source impedance is 34 ohms, and the source voltage is  $24V - 5V$ , or 19 volts, then the regulator would have its maximum power dissipation when its resistance was also effectively 34 ohms. That means that the voltage across the regulator is half the applied voltage, or 9.5 volts.  $P = V^2/R$ , so  $= 9.5^2 / 34 = 2.65$  watts. Now wasn't that fun?

## July BTC

Don't you hate it when you are on your way to a movie you really want to see and while driving there, your car is abducted by creatures from outer space. You wake up back in your bed with 12 missing hours and you wonder how the picture ended. I know I hate it when that happens. And then there are all those unsightly scars left by the aliens taking tissue samples and performing strange reproductive experiments.

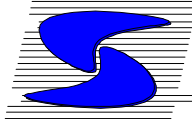
In an effort to help myself remember more of what occurred during these episodes, I decided to design an implantable device that would apply an electric shock to rouse me in case I happen to be in an extraterrestrial's hypnotic trance. I've come up with a very good design that will fit under the skin just fine, but I am at a loss as to how to power it. I need the readers to use their imaginations and help me come up with a unique way to make this system work. I have been able to make the design work down to .5 volts and it only draws 500 uA on average. What do you think?

Questions or comments to the Brain Teaser Challenge, please contact Butch Shadwell at 904-223-4465 (v), 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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# **2001 Review Seminars For PE Electrical and EIT/FE October 26 & 27 Examinations**

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

**Monday, August 6<sup>th</sup> for the EIT/FE Exam**  
**Thursday, August 9<sup>th</sup> for the EE Exam**

Seminars are conducted from 7-10 P.M. (Monday or Thursday) for ten weeks. The registration fee is \$300 and includes text. The seminars will be held on the main USF campus in Tampa with several viewing sites available via FEEDS. Videos of all classes will also be available to registered students.

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

**[Alan.M.Keith@pgnmail.com](mailto:Alan.M.Keith@pgnmail.com)**

Phone (727) 384-7937, FAX (727) 384-7994 Pinellas  
Chapter, Florida Engineering Society

## July 2001 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4 <i>Independence Day</i>	5	6	7
8	9 <i>EXCOM Mtg TECO Center At 5:30 PM Guests Are Always Welcome!</i>	10	11	12 <i>Joint Section &amp; PES/IAS Meeting - Noon At ETRC USF "RTO Status"</i>	13 <i>Material Due For Next Month's Suncoast Signal Newsletter</i>	14
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