IEEE
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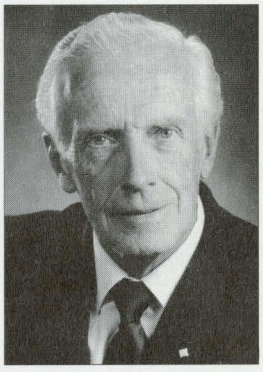
WHAT'S INSIDE.....

IEEE

Al Kiener Elected as New VP of Standards Board



E. G. "Al" Kiener was elected by the IEEE General Assembly November 18 to be the new Vice President of Standards, succeeding Wally Read. He will serve as the Chair of the IEEE Standards Board.

A private consultant, Kiener specializes in industrial and commercial power systems and lighting systems design and received his B.S.E.E. from San Diego State University. He joined General Dynamics in 1950 as an entry-level electrical engineer, rising to positions of electrical group leader and engineering supervisor, as well as consulting to other divisions of General Dynamics. He joined Solar Turbines in 1973 as plant electrical engineer responsible for electrical power distribution and lighting systems and became manager of Facilities Engineering. He has also served as representative on the California Manufacturers Association Energy Committee.

An active participant on the Gray, Gold, and Bronze IEEE Color Books, Kiener received the Industry Applications Society (IAS) Distinguished Service Award in 1991. Kiener has most recently served in several capacities for the Technical Activities Board (TAB) and was the TAB Liaison to the Standards Board for 1993 and 1994. Kiener resides in La Mesa, California.

1993 – 94 VP, Wally Read, is 1995 IEEE President-Elect

Wallace Read, the 1994 Vice President of Standards Activities, was elected 1996 President of the IEEE. Read will begin serving as IEEE President on January 1, 1996.

Read, from St. John's, Newfoundland, is the second Canadian in IEEE's history to be elected to IEEE's highest office. The first Canadian elected president was Robert H. Tanner of Ottawa, who served in 1972.

An active member of IEEE since 1952, Read has served as a member of the Board of Directors from 1984–1985, 1988–1990, and 1993–1994 and as a Director for Region 7 from 1984–1985. He is a Fellow of both the IEEE and the Engineering Institute of Canada.

Letter from the editor's desk

Dear Readers:

If a standards program is to remain vital, it must continually evolve and evaluate itself. This issue demonstrates how such self-examination occurs at every level. Newly developing standards groups, such as SCC31 (see page 10), have to carefully assess the scope of their activities to assure that they can manage their work and achieve their goals as effectively as possible. Long-established societies, such as the Power Engineering Society, recognize the need to evaluate their work in relation to the International Electrotechnical Commission (IEC) and thus educate themselves in IEC processes (see column on page 3). And the Standards Board itself, by considering such issues as balance in the sponsor balloting process (see article on page 9), must constantly review its procedures to meet changing environments and needs. All of this activity demonstrates that the program is alive and well, and ready to face tomorrow's challenges.

We can't forget that none of this growth would occur without the leaders who make things happen. We are fortunate to have had Wally Read as our Vice President of Standards for the past two years, and I know I've enjoyed reading his wise and witty columns during this period. We know he will go on to be an effective President-Elect. We are all looking forward to seeing Al Kiener take up the Chair's gavel and make his own imprint on the organization. Our special profile in this issue presents a parallel to Wally and Al—Allen Clapp, the former chair of the National Electrical Safety Code® and Chuck Amrhyn, the current chair, who both recount some of their experiences with the Code and how their work in standards has changed their lives (see page 6). These are leaders who have brought their expertise to standards work in a way that brings out the best in everyone who is associated with the effort. Working with experts is a privilege that comes with the voluntary standards process that may not be experienced in quite the same way anywhere else.

Although by the time you read this the new year has been in full swing, let me extend best wishes for 1995 from all of the staff here at IEEE Standards. We will continue to look for ways to improve our service to the volunteers and customers who support the standards-development process (see article on page 4). Your feedback and suggestions are always welcome by any means you choose. We'll be sure to respond to your comments.

Regards,

Kristin Dittmann
Editor-in-Chief
k.dittmann@ieee.org
(908) 562-3830

SPAsystem™ Q&A

This occasional series answers the most frequently asked questions about the SPAsystem.

What are the goals of the SPAsystem?

The main goal of the SPAsystem is to ensure that working groups creating documents are adding to a full-text database of standards. This is a fundamental shift from past thinking—instead of creating an individual standard that is locked into a proprietary format, working groups will be developing a richly structured document that links to other standards and can be searched on-line by readers. This database will also be able to link to other information databases—even to databases of other standards-development organizations.

Will the SPAsystem require me to switch my word processing and/or communications software package(s)?

No. The SPAsystem is being developed to accommodate most common word processing applications and communications software packages.

What information is available that describes the SPAsystem?

Currently, two information pieces are provided for working group members. The *Handbook for Standards Developers* V2.0 provides general information about the system and services to access it. A videotape entitled "Introduction to the SPAsystem" is available to working group chairs on a loan basis to show at meetings. The Handbook is distributed at the videotape showing and is available upon request.

Those working groups chairs who would like to show the video should contact Jerry Walker at (908) 562-3823; fax: (908) 562-1571 (e-mail: j.t.walker@ieee.org).

STANDARDS BEARER

The IEEE Standards Bearer is published quarterly by the IEEE Standards Department. **Vice President of Standards,** E. G. "Al" Kiener; **Publisher,** Donald C. Fleckenstein; **Staff Director,** Andrew Salem; **Assoc. Staff Director,** Judith Gorman; **Technical Program Director,** Karen DeChino; **Editor-in-Chief,** Kristin Dittmann; **Design/Production,** Esaleta Corbin; **Printing,** Karen McCabe; **Copy Editor,** Rochelle Stern; **Contributors,** Clyde Camp and Howard Scott. If you would like to contribute articles to the *IEEE Standards Bearer*, please write to the *IEEE Standards Bearer*, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331, USA. Third class postage paid at Piscataway, NJ. ISSN 08960-1425.

IEC Governing Meetings

by Anne O'Neill

Getting familiar with the IEC standards-development process is becoming increasingly important to members of the Power Engineering Society (PES) for many reasons. The systems designed and products supported by PES members are affected by IEC specifications. More PES working groups are including IEC standards as part of the literature search they do at the outset of their standards-writing process. Others would like to see that sections developed in their working groups be considered as additions to existing IEC standards.

But what are the best channels for learning about the IEC process? One way is to read the *IEC Directives,* which define the structure and flow of documents. Another approach, and the one we are taking in this two-part article, is to study the IEC's meetings to understand who attends them and how their business is conducted.

IEC has two basic types of meetings—governing and technical. We will discuss the governing meetings in this column. Many IEC meetings are collocated. A General Meeting is a collocated event of both governing bodies and some technical meetings that is held annually. The 1993 General Meeting was held in Australia, 1994 in France, and 1995 will be in South Africa. The United States is actively considering hosting the 1998 General Meeting.

A host country for an IEC meeting provides the meeting site, secretarial staffing, badges, and beverage service; covers the photocopying expenses; and sometimes also hosts a social event or dinner. The burden of hosting meetings is rotated and shared by a number of countries over time. All delegates are responsible for their own transportation, meals, and hotel costs.

The Council

The Council is the governing body of the IEC, and the Committee of Action is its technical arm. The Council comprises a representative from each of the 49 member countries of the IEC. Typically, a member country of IEC would send its president or head of the national committee as its chief delegate to the Council. Council business might consist of admission of new member countries, discussion of financial matters, election of IEC officers, and approval of documents for general use. For example, at the 1994 General Meeting in France Bernard H. Falk of the United States was voted in as President-Elect of the IEC. His term as President will run from January 1, 1996, through 1998.

The Council also receives reports from committees on conformity assessment for safety and quality and on general policy. The General Policy Committee has recently focused on how IEC can develop standards that the market wants.

The Committee of Action

The Committee of Action, consisting of 12 member countries with six-year terms, manages the technical work of IEC. The Committee examines and decides on the title and scope of Technical Committees (TCs); evaluates requests to set up a new TC for a new technical field or to disband a TC; and appoints chairs and secretaries of TCs. For example, at the 1994 General Meeting in France, the Committee of Action formed a new TC on System Engineering and Erection of Electrical Power Installations in Systems with Nominal Voltages Above 1 kVac. The Committee of Action also has advisory committees on the environment, electromagnetic compatibility, safety, and electronics and communications.

The advisory committees and special focus committees of both the Council and Committee of Action meet in conjunction with their parent governing body meetings and sometimes at other times during a year. Other members of a National Committee, in addition to its president, might be appointed to represent that country at meetings of these groups.

IEEE Members as Participants

The IEEE members who attended the 1994 General Meeting in France were acting in a variety of capacities. Two IEEE Standards Board members served as their respective country's head of delegation to the Council Meeting: Gilles Baril, President of the Canadian National Committee; and Ron Reimer, President of the US National Committee. Another IEEE Standards Board member, Donald Fleckenstein, was a member of the US delegation to the Council and Committee of Action. Don Fleckenstein sits on the Executive Committee of USNC as immediate past president of the USNC. Other members of the USNC delegation to the 1994 General Meeting in France included Judy Gorman, Associate Staff Director of the Standards Department and member of the USNC, as well as this author in her capacity as the PES organizational representative on the USNC.

Role of the National Committee

All country appointments, establishment of technical positions on drafts, and copies of the actual draft International Standards are processed through a country's National Committee, which is the actual member to the IEC. For interested IEEE members in the US, contact Charles Zegers (212) 642-4965; Fax (212) 398-0023. Canadian members should contact Charles Ender (613) 238-3222; Fax (613) 995-4564. For information on other National Committee contacts, contact Anne O'Neill at (908) 562-3852 (e-mail: a.oneill@ieee.org). ◆

IEC Bulletin Board

The IEC has an electronic bulletin board that is accessible via the Internet. The following data can be accessed:

- Project status reports
- Heads of member country national committees
- Lists of IEC committee chairs
- The International Electrotechnical Vocabulary (IEV)

The IP number is [193.134.248.10]

Log on as *demo-e* with the password *initial92*

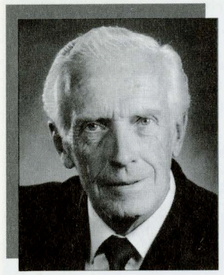
The IEV requires a second log-on and each is personal. To obtain your password to view the IEV, apply to the IEC Central Office, Information Systems Department, 3 rue de Varembé, CH 1211 Geneva 20, Switzerland; fax +41 22 919 03 00; e-mail fumey@iecmhs.iec.inet.ch or montoya@iecmhs.iec.inet.ch.

All IEC staff can receive e-mail through the Internet now as well. Use the format <lastname>@ iecmhs.iec.inet.ch.There are addresses in X.400 format, too. X.400 is an ITU standard that does not have as many commercial applications yet as the Internet.

This bulletin board is also available via phone modem although overseas calls may be expensive. The modem dial number is +41 22 734 95 26 or +41 22 734 95 28. The speed is up to 19200 bps.

An enhanced graphical bulletin board is also developed that will soon be available through the World Wide Web.

Message From The Chair



by E. G. "Al" Kiener

Allow me to introduce myself to those who do not know me. My name is E. G. Kiener, and I have been elected by the IEEE Assembly to the position of Vice President of Standards Activities for the year 1995. As such, I will also become Chair of the Standards Board. Most of my friends call me "Al," which is a nickname derived from my real name, "Elmer." How that occurred is a long story, with which I will not bore you at this time. Suffice it to say that I much prefer to be called by my nickname.

I'm looking forward to 1995, and consider it a great honor to have been selected for the position of VP of Standards. Wally Read will be a hard act to follow. I've been involved in standards work for about the last 20 years, so I have some familiarity with the process. Most recently, I've served as Director of Division II (Industrial Applications) and Technical Activities Board (TAB) liaison to the Standards Board, 1993–94. My entire professional career was in industry positions (about equally divided between aerospace and turbomachinery manufacturing). I retired at the beginning of 1984.

But enough about me. Let's get on with my thoughts about standards and what I believe we need to do in this coming year. Standards development is an important consideration in these times. The cars we drive, the homes we build, the consumer products we purchase, the industrial equipment our employers use—all are manufactured to conform to certain codes and standards. We've come to expect standards in just about everything as a guarantee of quality, conformity, and interchangeability.

Now, in this changing post-Cold War era of far-reaching world trade agreements, there are new opportunities for cooperative standards development between various countries and international standards organizations. I see this as a great opportunity for IEEE, since we already have in place a well-organized and highly respected standards-developing organization. I will, in my term of office, fully support and encourage increased participation and cooperative ventures with international standards-development organizations.

The SPAsystem™, too, must continue apace to achieve full development as a world-class system for electronic access to, and development of, standards. I see these goals as major challenges for IEEE Standards in the coming year. It promises to be an interesting time for all those who are involved in standards activities. There are some 30 000 volunteers involved in this activity in one way or another, and we have an excellent staff organization in Piscataway to support us.

I'm looking forward to working with all of you to further the goals of the Standards Board and the IEEE Strategic Plan. Best wishes for a happy and successful New Year. ◆

Services Available to IEEE Standards Developers

Valuable programs and services are available free of charge to members and standards developers in order to enhance their knowledge and skills in developing standards. Administrated by the IEEE Standards staff, prominent programs offered include the Leadership Training session, the SPASystem™ video, and the forthcoming modular sessions on a diversity of standards program topics.

The Leadership Training session is a free training program entitled "Leading a Standards-Development Group." A committee may request that this training session be given at a particular meeting. A staff member such as an editor or technical liaison will present the two-and-a-half hour training session. The curriculum includes topics such as legal responsibilities, IEEE's relationships with other groups, the IEEE standards-development process, project management techniques, conducting a successful ballot, and the editing process.

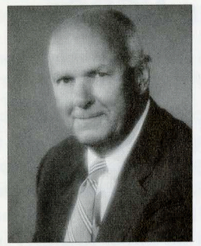
If a committee requires information on a specific area of the standards program, members might consider the forthcoming Modular Component Sessions program. Currently under development, the modular sessions program will facilitate understanding of one particular topic. Topics under development include submitting and filing PARs; project management; balloting; SPAsystem; and copyright, trademark, and patent issues. Each session will be given individually according to the committee's needs.

The SPAsystem video is a visual introductory tour of the Standards Process Automation System (SPAsystem). Endorsed by the IEEE Board of Directors and the Standards Board, the SPAsystem is an interactive information service available on the Internet and over dial-up lines. The system will allow standards developers to electronically communicate and work on developing their standards. The video is provided on an on-loan basis to allow every working group chair the opportunity to present the system to individual groups.

IEEE staff technical liaisons help to bring these services to the forefront. They are responsible for relaying helpful information and aiding the standards developer in accessing many services and programs. For more information on accessing the services of the standards staff, call (908) 562-3800. Comments and suggestions on topics for the modular sessions are welcome. Contact Rochelle Stern at (908) 562-3818 (e-mail: r.stern@ieee.org). ◆

Congratulations

Awards Spotlight



Clayton H. Griffin was the unanimous first choice for the 1994 Charles Proteus Steinmetz field award for technical and administrative leadership in the development of standards in the electrical and electronics field.

Griffin began employment in 1947 with Blackstone Valley Gas & Electric Company in Pawtucket, Rhode Island, after being commissioned as an Ensign in the US Naval Reserve for three years. In 1948, he joined the Georgia Power Company where he remained until retirement in 1989, with the exception of two years' active Naval duty as Electrical Officer on the cruiser USS Worcester commencing in 1951. Upon his return from the Navy in 1953, he became Test Engineer and advanced to Protection Engineer, and then to Chief Protection Engineer. In 1979, Griffin was appointed Manager of System Protection and Control.

A member of the IEEE Power Engineering Society and Power System Relaying Committee (PSRC), Griffin has been actively involved in the development of over a dozen IEEE standards, including guides for the protection of generators, power transformers, shunt reactors, and pumped storage hydro plants. In 1976, he initiated a one-million dollar EPRI research project on the detection of high-impedance faults on utility distribution circuits. He served as Chair of the PSRC Line Protection Subcommittee from 1976 to 1980, and Secretary, Vice Chair, and Chair of the main committee from 1983 to 1988.

One of Griffin's principal concerns in the standards area has been the coordination of customer-owned sources of generation with utility systems. In 1983, he formed the IEEE Standards Coordinating Committee on Dispersed Storage and Generation (SCC23).

Griffin is a Life Fellow of the IEEE. His awards include the Distinguished Service Award in 1990, the PSRC Prize Paper Award in 1986, and Georgia Society of Professional Engineers "Engineer of the Year in Industry" Award in 1985. ◆

Standards Medallions

Two IEEE Standards Medallions were awarded in the past quarter. **Richard B. Schulz** was presented with the award at the November EMC Dallas Chapter meeting. **Ward E. Laubach** was awarded the Medallion at the October Switchgear meeting.

* * * *

The IEEE Standards Board formally congratulates the officers as well as their working groups on the publication of their standard, interpretations, or collection.

V. S. (Stan) Harper, Task Force 12-5 Chair: *82-1994,* IEEE Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors

Max Cambre, Chair; **R. William Simpson, Jr.,** Editor: *259-1994,* IEEE Standard Test Procedure for Evaluation of Systems of Insulation for Specialty Transformers

Michael Jasberg, Chair: *277-1994,* IEEE Recommended Practice for Cement Plant Power Distribution

Brit Grim, Chair; **David Zaprazny,** Technical Editor of Working Group SC6.3: *379-1994,* IEEE Standard Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems

W. H. Gottung, Chair; **J. C. Botts, L. F. Klataske, W. B. Penn, W. G. Stiffler, J. J. Wilkes,** Working Group Members: *429-1994,* IEEE Recommended Practice for Thermal Evaluation of Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Preinsulated Stator Coils for Machines Rated 6900 V and Below

Dhadesugoor R. Vaman, Chair; **Ronald Kemper Sr.,** Vice Chair; **Wayne A. Zakowski,** Editor; **George Westwick,** Secretary: *802.9-1994,* IEEE Standards for Local and Metropolitan Area Networks: Integrated Services (IS) LAN Interface at the Medium Access Control (MAC) and Physical (PHY) Layers

Don A. Voltz, Chair; **Mack A. Martin, Jr.,** Past Chair: *835-1994,* IEEE Standard Power Cable Ampacity Tables

Al J. Bolger, Chair: *979-1994,* IEEE Guide for Substation Fire Protection

Richard G. Cottrell, Chair: *980-1994,* IEEE Guide for Containment and Control of Oil Spills in Substations

Mike Souders, Chair, **Robert Lawton,** Past Chair; **Stuart Strieff,** Technical Editor: *1057-1994,* IEEE Standard for Digitizing Waveform Recorders

Helmut Hellwig, Chair: *1193-1994,* IEEE Guide for Measurement of Environmental Sensitivities of Standard Frequency Generators

William M. (Mitch) Bradley, Chair; **John Rible,** Draft Editor: *1275.1-1994,* IEEE Standard for Boot (Initialization Configuration) Firmware: Instruction Set Architecture (ISA) Supplement for IEEE 1754

William M. (Mitch) Bradley, Chair; **John Rible,** Draft Editor: *1275.2-1994,* IEEE Standard for Boot (Initialization Configuration) Firmware: Bus Supplement for IEEE 1496 (SBus)

Forrest D. Wright, Chair; **Michael Timperman,** Editor: *1284-1994,* IEEE Standard Signaling Method for a Bidirectional Parallel Peripheral Interface for Personal Computers

Jack H. Lawson, Chair; **Thomas J. Kendrew,** Vice Chair: *1333-1994,* IEEE Guide for Installation of Cable Using the Guided Boring Method

Graham Jack, Technical Editor: *1351-1994,* IEEE Standard for Information Technology—ACSE and Presentation Layer Services—Application Program Interface (API) [Language Independent]

Graham Jack, Technical Editor: *1353-1994,* IEEE Standard for Information Technology—ACSE and Presentation Layer Services—Application Program Interface (API) [C Language Binding]

Jim Isaak, Chair: ISO/IEC *13210 : 1994* (IEEE Std 1003.3-1991), Information technology—Test methods for measuring conformance to POSIX

Lou Gaussa, Chair: *C37.20.2b-1994,* Supplement to IEEE Standard for Metal-Clad and Station-Type Cubicle Switchgear: Current Transformer Accuracies

Joseph G. Bellian, Project Leader: *N42.12-1994,* American National Standard Calibration and Usage of Thallium-Activated Sodium Iodide Detector Systems for Assay of Radionuclides

Interpretations

Donald E. Hooper, Chair: *National Electrical Safety Code Interpretations, 1993–1995, Fifth Interim* Collection

Donald W. Cragun, 1003.2 Interpretations Coordinator; **Andrew Josey,** Vice-Chair: *1003.2-1992/INT, December 1994 Edition,* IEEE Standards Interpretations for IEEE Std 1003.2-1992

Correction to Awards Spotlight

Robert A. Donnan, Chair, 802.5 and **Phillip Emer,** Task Group Chair: *802.5p-1993* (Supplement to ISO/IEC 8802-2:1994), IEEE Standard for Route Determination Entity, should have been listed in the October, 1994 issue.

STANDARDS
Profiles

Volunteers Become Lifetime Specialists in the NESC®

by Rochelle Stern

The National Electrical Safety Code® (NESC), developed under the secretariat of the IEEE and approved by the American National Standards Institute (ANSI) Accredited Standards Committee C2, is more than just a consensus standard. It is a stronghold in the US electrical industry and communications utility field, virtually serving as the law and the last word on safety requirements for power, telephone, cable TV, and railroad signal systems. Far-reaching, intricate, and requiring careful oversight, the NESC is a document that demands expertise and hard work of the engineers who revise each edition. It is little wonder that the long and varied expertise of both former NESC chair Allen Clapp and current chair O. C. "Chuck" Amrhyn has paved the way for them to build full-time consultant occupations helping others understand and correctly apply the NESC requirements.

ALLEN L. CLAPP

A 23-year veteran of the NESC, Clapp started work on the NESC Clearances subcommittee 5 and the Strength and Loading subcommittee soon after he was employed by the North Carolina Utilities Commission in 1971. At that time, he was involved with work on accidents with respect to sailboats and clearances to buildings that indicated a need for changes in NESC clearance rules. Clapp has been involved with design construction and operation of electric utility systems for over 30 years. Amrhyn, involved with the NESC for 16 years, worked with the telephone industry for 40 years prior to his retirement. His specialty has been in preparing construction and engineering practices for the industry. One of Amrhyn's job duties was to help implement joint agreements between power and telephone companies based upon the NESC, thus requiring him to evaluate and research pertinent NESC rules.

Clapp describes himself as "probably the greatest generalist there ever was," in relation to his broad knowledge of all facets of the NESC. The editor of the *NESC Handbook,* he considers himself an NESC historian. Clapp has logged more work-years in NESC subcommittee work than any past member. Amryhn is close behind and so is Frank Denbrock, NESC Vice Chair, whom Clapp credits with helping him as a young man develop the consensus-making techniques required to achieve the best standards for a changing environment. Clapp now owns a consulting company, Clapp Research Associates, P. C., which provides standards development and standards training services to companies. He also heads Clapp Research, Inc., which produces training materials, videotapes, and publications.

As a consultant, Amrhyn works as a contractor with Bellcore in developing the fiber-optic telecommunications network of the future. This project, Amrhyn explains, will greatly affect many areas, such as new worker training and the allocation of utility equipment space on poles. Amrhyn says a system will have to be designed to conform with the NESC, and certainly there may be changes to the NESC as a result of fiber optics.

O. C. "CHUCK" AMRHYN

"We had already made revisions in the 1987 Edition with respect to fiber optics," recalls Amrhyn. "At that time there were a lot of unanswered questions that caused a number of confrontations between the power, telephone, and the cable TV industries." Amrhyn says the NESC committee "more or less" finalized its work on fiber optics in the 1990 Edition "so that we feel that there is no threat to either utility employees or the public due to clearance changes."

The NESC is unique in that it relies heavily on widespread public input. It employs procedures that call for several reviews and revisions before final publication. To accomplish the work involved in the revisions, the NESC committee is divided into overseeing subcommittees on which Amrhyn and Clapp both serve. The procedure takes into account formal change proposals submitted by various interested parties.

"There are no secrets in writing the Code," Amrhyn explains. The revisions are done in "a very fair manner so that the public can have input into this." Clapp says that in his experience with various Codes, "the NESC revision process is one of the most open and credible revision efforts, using information from all sides to promote effective, long-term solutions to potential problems before they become widespread."

Amrhyn and Clapp agree that one of the most challenging issues of today is metrication. In the upcoming 1997 Edition of the NESC, the metric unit is proposed to be presented first with the customary inch-pound unit following. Amrhyn says that he is a great proponent of the metric system because it is a superior system, and the US has taken steps to promote and further its usage by mandating that its own agencies use the metric system where possible. It is also in conformance with the IEEE metric practice goal of using the metric system in publications (see *The IEEE Standards Bearer,* January 1994). Amrhyn is also a member of IEEE Standards Coordinating Committee 14 on Quantities, Units, and Letter Symbols.

Both Amrhyn and Clapp have been called upon by manufacturers, utilities, and other company entities to give expert testimony on the NESC in the case of accident situtations dealing with lines or equipment. They both prefer development work over expert witness work. "You have to have a thick skin to be a consultant on this; the lawyers grill you relentlessly on your knowledge and background on the Code," says Amhryn. "I used to turn down accident investigation work, but I have found that it forms a complement to Code work," Clapp says. "The more I understand about how various accidents occurred, the better I can draft Code language to limit such occurrences."

When Amrhyn is not working on NESC-related work, he enjoys hiking locally in New Jersey, and sailing in the Connecticut area.

Clapp, who hails from the Raleigh, North Carolina area, logs about 6000 miles a week in air travel for his consultant work. He has traveled so often that once a flight attendant recognized him on a moving sidewalk in an airport in Salt Lake City, Utah. When he's not traveling on business, Clapp and his wife take an annual vacation to Maui, Hawaii. Clapp has always admired firearm engraving and recently invested in a week-long basic course. ◆

Recent IEEE Standards Publications

COMPUTER

802.9-1994 IEEE Standards for Local and Metropolitan Area Networks: Integrated Services (IS) LAN Interface at the Medium Access Control (MAC) and Physical (PHY) Layers (ISBN 1-55937-456-X) [SH94228-NXG] $87.00

1275.1-1994 IEEE Standard for Boot (Initialization Configuration) Firmware: Instruction Set Architecture (ISA) Supplement for IEEE 1754 (ISBN 1-55937-462-4) [SH94234-NXG] $45.00

1275.2-1994 IEEE Standard for Boot (Initialization Configuration) Firmware: Bus Supplement for IEEE 1496 (SBus) (ISBN 1-55937-463-2) [SH94236-NXG] $45.00

1284-1994 IEEE Standard Signaling Method for a Bidirectional Parallel Peripheral Interface for Personal Computers (ISBN 1-55937-427-6) [SH17335-NXG] $56.50

1351-1994 IEEE Standard for Information Technology—ACSE and Presentation Layer Services—Application Program Interface (API) [Language Independent] (ISBN 1-55937-465-9) [SH94230-NXG] $64.00

1353-1994 IEEE Standard for Information Technology—ACSE and Presentation Layer Services—Application Program Interface (API) [C Language Binding] (ISBN 1-55937-466-7) [SH94231-NXG] $52.00

13210 : 1994 (ISO/IEC) (IEEE Std 1003.3-1991) Information technology—Test methods for measuring conformance to POSIX (ISBN 1-55937-494-2) [SH94251-NXG] $42.00

INDUSTRY APPLICATIONS

277-1994 IEEE Recommended Practice for Cement Plant Power Distribution (ISBN 1-55937-453-5) [SH94241-NXG] $51.00

INSTRUMENTATION AND MEASUREMENT

1057-1994 IEEE Standard for Digitizing Waveform Recorders (ISBN 1-55937-488-8) [SH94245-NXG] $55.00

POWER ENGINEERING

82-1994 IEEE Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors (ISBN 1-55937-477-2) [SH94222-NXG] $45.00

259-1994 IEEE Standard Test Procedure for Evaluation of Systems of Insulation for Specialty Transformers (ISBN 1-55937-452-7) [SH94238-NXG] $45.00

379-1994 IEEE Standard Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems (ISBN 1-55937-454-3) [SH94223-NXG] $45.00

429-1994 IEEE Recommended Practice for Thermal Evaluation of Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Preinsulated Stator Coils for Machines Rated 6900 V and Below (ISBN 1-55937-455-1) [SH94224-NXG] $45.00

835-1994 IEEE Standard Power Cable Ampacity Tables (ISBN 1-55937-478-0) [SH94232-NXG] $200.00

835-1994 IEEE Standard Power Cable Ampacity Tables in electronic format for windows™ (ISBN 1-55937-484-5) [SH94240-NXG] $225.00

835-1994 IEEE Standard Power Cable Ampacity Tables and electronic format for Windows™ *package* (ISBN 1-55937-490-X) [SH94247-NXG] $340.00

1333-1994 IEEE Guide for Installation of Cable Using the Guided Boring Method (ISBN 1-55937-464-0) [SH94242-NXG] $48.50

979-1994 IEEE Guide for Substation Fire Protection (ISBN 1-55937-493-4) [SH94249-NXG] $40.00

980-1994 IEEE Guide for Containment and Control of Oil Spills in Substations (ISBN 1-55937-459-4) [SH94243-NXG] $47.00

C37.20.2b-1994 Supplement to IEEE Standard for Metal-Clad and Station-Type Cubicle Switchgear: Current Transformer Accuracies (ISBN 1-55937-483-7) [SH94239-NXG] $6.50

RADIATION INSTRUMENTATION

N42.12-1994 American National Standard Calibration and Usage of Thallium-Activated Sodium Iodide Detector Systems for Assay of Radionuclides (ISBN 1-55937-491-8) [SH94248-NXG] $45.00

TIME AND FREQUENCY

1193-1994 IEEE Guide for Measurement of Environmental Sensitivities of Standard Frequency Generators (ISBN 1-55937-487-X) [SH94244-NXG] $55.00

INTERPRETATIONS

1003.2-1992/INT, December 1994 Edition, IEEE Standards Interpretations for IEEE Std 1003.2-1992 (ISBN 1-55937-476-4) [SH94253-NXG] $50.00

NESC Interpretations 1993–1995, Fifth Interim Collection (ISBN 1-55937-489-6) [SH94246-NXG] $57.00

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For more detailed status information, call (908) 562-3800 or e-mail stds.info@ieee.org.

US National Committee Seeks Nominations for Technical Advisor

The US National Committee seeks calls for nominations for a Technical Advisor (TA) to IEC/SC 48D—Mechanical Structures for Electronic Equipment. This position requires the TA to help coordinate US involvement in this work. A TA works with a Technical Advisory Group composed of those who are directly and materially affected by this activity, and reports to the USNC's Executive Committee.

The scope of the parent IEC/TC 48 covers standardization of electric switches, electric connectors, and mechanical structures for electronic and electrical equipment and connecting devices. Contact Charlie Zegers (212) 642-4936; fax (212) 398-0032.

IEEE STANDARDS BOARD ACTIONS

APPROVED PARs FOR NEW STANDARDS

P896.4a (C/BA) Supplement to IEEE Standard for Conformance Test Requirements for Futurebus+ — Errata, Corrections, and Clarifications
P896.12 (C/BA) Standard for Fault Tolerance Classification of Computer-Based Systems
P1003.1j (C/PA) Standard for Information Technology—Portable Operating System Interfaces (POSIX)—Part 1: Advanced Realtime System Application Program Interface Extensions [C Language Binding]
P1003.5c (C/PA) Standard for Information Technology—POSIX Ada Language Interfaces—Binding for Protocol Independent Interfaces—XTI
P1275.6 (C/BA) Standard for Boot (Initialization Configuration) Firmware, 64-Bit Extensions
P1355.1 (C/BA) Standard Protocols for IEEE Std 1355 on Unshielded Twisted Pair Cable
P1410 (PE/T&D) Guide for Improving the Lightning Performance of Electric Power Overhead Distribution Lines
P1413 (R) Standard Methodology for Reliability Predictions and Assessment for Electronic Systems and Equipment
P1420.1 (C/SE) Guide for Information Technology—Software Reuse—Asset Certification Framework
P1420.2 (C/SE) Standard for Information Technology—Software Reuse—Data Model for Reuse Library Interoperability: Basic Interoperability Data Model
P1414 (PC37.100.1) (PE/SWG) Standard for Common Requirements of IEEE Power Switchgear Standards

REVISED PARs

P1003.1i (C/PA) Standard for Information Technology—Portable Operating System Interfaces (POSIX)—Part 1: Technical Corrections to Realtime System Application Program Interface Extensions
P1073.2 (EMB/MIB) Standard for Medical Device Communications, Application Profiles, Framework, and Overview
P1073.2.1 (EMB/MIB) Standard for Medical Device Communications Applications Profile—Connection Mode—Minimum Set
P1073.3 (EMB/MIB) Standard for Medical Device Communications Transport Profile—Common Subset
P1348 (C/SE) A Recommended Practice for the Adoption of Computer Aided Software Engineering Tools
P1366 (PE/T&D) Trial-Use Guide for Power Distribution Reliability Indices
P1596.1 (C/MM) Guide for Information Technology for Building Bridges and Switches for the Scalable Coherent Interface (SCI)

PARs FOR STANDARDS REVISIONS

P100 (SCC10) Standard Dictionary of Electrical and Electronics Terms
P142 (IA/PSE) Recommended Practice for Grounding of Industrial and Commercial Power Systems
P176 (UFFC) Standard on Piezoelectricity
P308 (PE/NPE) Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations
P499 (IA/CI) Recommended Practice for Cement Plant Electric Drives and Related Electrical Equipment
P743 (COM/T&A) Standard Equipment Requirements and Measurement Techniques for Analog Transmission Parameters for Telecommunications
P765 PE/NPE) Standard for Preferred Power Supply for Nuclear Power Generating Stations
P845 (PE/NPE) Guide for the Evaluation of Human-System Performance in Nuclear Power Generating Stations
P1031 (PE/SUB) Guide for a Detailed Functional Specification and Application of Static var Compensators
P1067 (PE/T&D) Guide for In-Service Use, Care, Maintenance, and Testing of Conductive Clothing for Use on Voltages Up to 765 kV and ±750 kV dc
P1073.3.1 (EMB/MIB) Standard for Medical Device Communications, Transport Profile—Connection Mode
P1073.4.1 (EMB/MIB) Standard for Medical Device Communications—Physical Layer Interface—Cable Connected

WITHDRAWN PARs

P149 (AP/A) Standard Test Procedures for Antennas
P1065 (NPS/NI&D) Digital Bus for NIM Instruments
P1066 (NPS/NI&D) NIM Modular Systems
P1072 (NPS/NI&D) Measurement Techniques and System Performance Characterization for Germanium Radiation Detectors for In-Vivo Bioassay Applications
P1121 (IA/IPC) Recommended Practices for Switching Power Supplies
P1140.1 (C/MM) Standard Measurement Techniques for ELF and VLF Magnetic Fields and Electrical Fields from Desktop Computer Displays and Associated Desktop Devices
P1190 (EMC) A Guide for Calibration of Line Impedance Stabilization Networks (LISN)
PC37.30d (PE/SWG) Definitions for Fault-Closing Testing
PC37.34c (PE/SWG) Fault Closing Test Procedures and Definitions for High-Voltage Switches
PC37.36 (PE/SWG) Develop a High-Voltage Guide for High-Voltage Interrupter Switches
PC37.36a (PE/SWG) Develop a Standard for Requirements for Line and Cable Switching for Interrupter Switch Application Guide

APPROVAL OF NEW STANDARDS

610.7 (C/SCC) Standard Glossary of Computer Networking Terminology
896.5a (C/BA) Standard for Futurebus+, Profile M (Military)—Errata, Correction, and Clarification
896.9 (C/BA) Standard for Fault Tolerant Extensions to the Futurebus+ Architecture
1003.2d (C/PA) Standard for Information Technology—Portable Operating System Interfaces (POSIX)—Part 2: Shell and Utilities—Amendment: Batch Environment
***1014.1** (C/BA) Standard for Futurebus+/VME64 Bridge
1073.3.1 (EMB/MIB) Standard for Medical Device Communications—Transport Profile—Connection Mode
1073.4.1 (EMB/MIB) Standard for Medical Device Communications—Physical Layer Interface—Cable Connected
1184 (SCC29) Guide for the Selection and Sizing of Batteries for Uninterruptible Power Systems
1220 (C/SE) Trial-Use Standard for Application and Management of the Systems Engineering Process
1238.1 (C/PA) Standard for Information Technology—OSI Application Program Interfaces—File Transfer, Access, and Management [C Language]
1308 (PE/T&D) Recommended Practice for Instrumentation for Electric Field Strength and Magnetic Flux Density Meters—10 Hz to 3 kHz
C62.23 (PE/SPD) Application Guide for Surge Protection of Electric Generating Plants

REVISED STANDARDS

***450** (SCC29) Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications
644 (PE/T&D) Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines
C57.12.22 (PE/TR) Standard for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers with High Voltage Bushings, 2500 kVA and Smaller; High Voltage, 34 500 GrdY/19 920 Volts and Below; Low Voltage, 480 and Below

REAFFIRMED STANDARDS

583 (NPS/NI&D) Standard Modular Instrumentation and Digital Interface System
595 (NPS/NI&D) Standard Serial Highway Interface System
726 (NPS/NI&D) Standard Real-Time BASIC for CAMAC
833 (PE/NPE) Recommended Practice for the Protection of Electrical Equipment in Nuclear Power Generating Stations from Water Hazards
1095 (SCC29) Guide for Installation of Vertical Generators and Generator/Motors for Hydroelectric Applications
C37.81 (PE/SWG) Guide for Seismic Qualification of Class 1E Metal-Enclosed Power Switchgear Assemblies
C37.90.1 (PE/PSR) Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems
C37.95 (PE/PSR) Guide for Protective Relaying of Utility-Consumer Interconnections
C37.99 (PE/PSR) Guide for the Protection of Shunt Capacitor Banks

* Final approval subject to Standards Board conditions being met.

EXTENSION

45-1983 (IA/MT) Recommended Practice for Electrical Installations on Shipboard

ADOPTED AS FULL USE

1175 (C/SCC) Standard Reference Model for Computing System Tool Interconnections

WITHDRAWN STANDARDS

823-1989 (COM) Standard Methodology for Specifying Voice Grade Channel Transmission Parameters and Evaluating Connection Transmission Performance for Speech Telephony

ABBREVIATIONS

AP/A	Antennas and Propagation/ Antennas
C/BA	Computer/Bus Architecture
C/MM	Computer/Microprocessors and Microcomputers
C/PA	Computer/Portable Applications
C/SCC	Computer/Standards Coordinating Committee
C/SE	Computer/Software Engineering
COM	Communications
COM/T&A	Communications/Transmission Systems & Access
EMB/MIB	Engineering in Medicine and Biology/Medical Interface Bus
EMC	Electromagnetic Compatibility
IA/CI	Industry Applications/Cement Industry
IA/IPC	Industry Applications/Industrial Power Converter
IA/MT	Industry Applications/Marine Transportation
IA/PSE	Industry Applications/Power Systems Engineering
NPS/NI&D	Nuclear Plasma Sciences/Nuclear Instruments & Detectors
PE/NPE	Power Engineering/Nuclear Power Engineering
PE/PSR	Power Engineering/Power Systems Relaying
PE/SPD	Power Engineering/Surge Protective Devices
PE/SUB	Power Engineering/Substations
PE/SWG	Power Engineering/Switchgear
PE/T&D	Power Engineering/Transmission & Distribution
PE/TR	Power Engineering/Transformers
R	Reliability
SCC10	Standards Coordinating Committee 10 (Terms and Definitions)
SCC29	Standards Coordinating Committee 29 (Stationary Batteries)
UFFC	Ultrasonics, Ferroelectrics, and Frequency Control

The Crucial Role of Balance in the Sponsor Ballot Process

by Clyde Camp

The Sponsor Ballot is, as the saying goes, where the rubber meets the road as far as the development of an IEEE standard is concerned. The Sponsor Ballot body is the group of voters "who have been selected to vote on the acceptability of a new or revised standard" *(1994 IEEE Standards Operations Manual)*, based on the interest expressed by the individual. But in order for the ballot to be valid, it must accurately reflect the inputs of all interested and affected parties, and it must be *balanced* in the sense that no single entity or interest category could represent undue, unethical, or illegal influence on the development of a consensus opinion.

Each individual balloter is registered in a certain category. The typical categories are (U)ser, (P)roducer and (G)eneral Interest. Additional categories (such as academic, government, etc.) also exist and are sometimes used as appropriate. All categories are intended to designate how the voter is to be represented on the specific balloting body being formed. In IEEE, members participate as individuals. They categorize themselves in accordance with their relationship to the document. This may or may not match the interests of their employer. For example, a hypothetical balloting group for a standard on motors might include a field-coil expert from company X voting as a (P)roducer of motors, while another individual from the same company might be voting as a (U)ser of motors as a component in a coolant system. Yet a third might have a (G)eneral interest in motors because, even though he now works in accounting, he wrote his thesis on motor design and is a member of the Motor Society.

The Standards Review Committee (RevCom), which reviews the final draft and the process under which it was balloted, takes a very close look at balloting groups that have strange populations. Even if they meet the letter of the law, RevCom may not recommend them for approval if they are deemed, in some sense, to have violated the spirit of fairness—in instances where the (G) category is disproportionately large, for example, or where there is a large number of categories with only a few individuals in each. While not explicitly disallowed, these types of strangely configured balloting bodies could delay the results of the ballot. On the other hand, if there is a legitimate reason for the category mix and no one is complaining, it would probably be allowed.

Achieving a "fair" balance is often tricky. It is nearly impossible to prevent a deliberate attempt to abuse the process by means of loopholes in the wording of the procedures. Fortunately, deliberate abuse rarely happens. But deliberate or not, lack of balance can result in consequences ranging from delays in approval (while RevCom researches the problem) to appeals (by a dissatisfied participant) and even, in the worst case, to litigation.

A sponsor's requirement to achieve balance could even mean restricting participation in some cases. For example, a large percentage of voters from a single company is undesirable, even if the P/U/G categories are balanced. In this case, the Sponsor might legitimately request that some consolidation of comments take place within the company so that all individual comments are voiced but the number of votes from a single source is reduced to a reasonable number.

As events dictate, the formal procedures will evolve to improve the process, but this takes time. In the final analysis, it is up to the Sponsor to make sure that a balance is achieved that is, in the best possible sense, "fair" to all concerned. ◆

Clyde Camp has chaired both NesCom and RevCom and has been a key contributor to the improvement of the process by which IEEE Standards are developed.

CBEMA CHANGES NAME TO ITI

Effective December 1994, CBEMA, the Computer and Business Equipment Manufacturers Association, changed its name to the Information Technology Industries Council (ITI).

Self-Study Courses on Color Books Offered

Comprehensive self-study courses based on the Color Book Series are now being developed. A self-study based on Chapter 6 of the *IEEE Red Book* [IEEE Std 141-1993, IEEE Recommended Practice for Electric Power Distribution for Industrial Plants] is already available, and a self-study course on the *IEEE Buff Book* [IEEE Std 242-1986, IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems] will be introduced in 1995. Administrated by IEEE Educational Activities as part of a continuing education series, and written by Dr. Frank Mercede of Widener University, these self-study courses promote understanding of applications, terms, and definitions presented in the books. Many examples and review units on the essentials are provided.

The self-study course on Chapter 6 of the *Red Book* provides a detailed study of Fault Calculations in Industrial/Commercial Power Systems. Designed for plant engineers, utility engineers, power engineering consultants, and power engineering students, this publication covers such topics as sinusoidal steady-state circuit analysis, sinusoidal steady-state power, balanced three-phase circuit analysis, and basic modeling of power system analysis. This course comprises six review units on essential background in steady-state, and it includes many examples of short-circuit calculations for balanced faults at low and medium voltage buses. The course has been reviewed by Walter C. Huening and M. Shan Griffith, two of the leading industry experts in the subject and authors of Chapter 6.

The components of this self-study package include the *IEEE Red Book; Power Systems Analysis* by Arthur Bergen, a study guide, and a solutions manual with a final exam. The package can be ordered with or without the *Red Book.*

To order the complete *Red Book* Chapter 6 self-study package, call 800-678-IEEE or fax (908) 981-9667 and order product number HL4598. To order the package without the *Red Book,* use product number HL4648. For more information about self-study courses, contact Barbara Coburn at (908) 562-5498. ◆

STANDARDS ON THE CUTTING EDGE

SCC31 Expands to Meet New Technology Challenges

by Howard Scott

Only five short years ago, just a handful of standards developers attended the meetings of the Standards Coordinating Committee on Automatic Meter Reading and Energy Management, SCC31. At that time, many of the participants were attempting to build a standard around their existing products. Today, up to 100 attendees regularly attend SCC31 meetings and are seriously trying to build universal standards.

The members and work of the relatively new SCC31 are remarkably diverse. Originally established to standardize the automation of gas, water, and electric utility meter reading, the committee has expanded its work to support many other functions, including connection to local area networks and other devices on the customer's premises.

The membership of SCC31 has representatives from many backgrounds including utility companies, telephone companies, radio data networks, equipment vendors, and consultants. Each of these participants brings a different focus to the standards process. However, all of them recognize that the utility companies are the key participants, because they are the ultimate customer—they buy the services and use the equipment.

In many ways the evolution of SCC31 has paralleled the concept of the "smart house," where household devices can be controlled from a remote location. Initially, both SCC31 and the various "smart house" projects had a communications gateway device on the customer's premises that linked many household devices and could be remotely controlled. This concept underwent a major change; other gateway devices were developed that offer local area networks extending out from the customer's premises to nodes inside the utilities' distribution networks. Meanwhile, the growth in communications alternatives has forced everyone in the home automation business to consider telephone, radio, coaxial cable, satellite, fiber optic, power-line carrier networks, or any combination of them. Today, utility companies consider all these choices.

The challenge in such a diverse environment is to identify what can be standardized. For example, it is unlikely that any one communications method could be approved for a national standard. These and many other decisions will be decided by the marketplace. Therefore, SCC31 has limited its scope to equipment interfaces at a few key locations, such as information flowing into and out of a customer's location, the utility company's premises, and the monitored device. Specifying interfaces internal to a communications network, or between different types of media in a wide area network, is beyond the scope of this work. Standards for any piece of equipment used in these networks are also not considered.

P1390, Standard for Utility Service Architecture for Switched Telephone Networks, is SCC31's first draft standard, providing communications over a telephone network interface. Other work will include a broad standard (P1377, Standard for Utility End Device Applications Layer Communications Protocol) that addresses interfaces to a wide variety of end devices. Working groups are also examining additional communications interfaces, data models, communications languages, and other related topics.

The results of this work are already being felt in other arenas. Use of the utility telephone interface is being planned for many non-utility applications. For example, some telephone companies are about to offer data access to "smart" telephones over the existing telephone networks using the proposed utility telephone interface. Also, groups working on CE Bus attend SCC31 meetings and are examining ways to couple utility applications with other data applications over a common bus.

The goals and early dreams of SCC31 members' are beginning to come to fruition. The winners are the public utility companies and people like us—their customers. ◆

Howard Scott is the Chair of the SCC31 Communications Interface Subcommittee. He is Vice President of Business Development for Edgecom Corporation in Atlanta, Georgia.

CALENDAR

OF EVENTS

January

29–Feb. 2 **PES Winter meeting**
New York City
contact—Frank Schink
(908) 276-8847

February

1, 2 **PES Winter meeting**
New York City
contact—Frank Schink
(908) 276-8847

3 *Deadline for draft and PAR submission for March Standards Board meeting*

March

5–9 **Applied Power Electronics Conference**
Dallas, TX
contact—Pam Wagner
(202) 649-4090
fax (202) 347-6109

6–10 **LAN MAN Standards Committee meeting** (Computer Society)
West Palm Beach, FL
contact—Classic Consulting
(604) 527-1045; fax (604) 527-1046
72630.107@compuserve.com

12 **Software Engineering Standards Committee meeting**
(Computer Society)
St. Mary's College, MD
contact—Leonard Tripp
(206) 237-5240

13 **IEEE Microprocessor and Microcomputer Standards Committee (MMSC) meeting**
(Computer Society)
Audio or videoconference participation is available by prearrangement
contact—Fritz Whittington
(214) 995-0397 or fritz@csi.ti.com

13–15 **US TAG for ISO/IEC JTC 1/SC7**
St. Mary's College, MD
contact—Leonard Tripp
Boeing, MS 6H-TW, P.O. Box 3707, Seattle, WA 98124
(206) 237-5240

14–15 **IEEE Standards Board Committee meetings**
Piscataway, NJ
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org

16 **IEEE Standards Board meeting**
Piscataway, NJ
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org

23–24 **ANSI Annual Conference**
Washington, DC
To register or for information, call 800-417-0348

28 **IEC Standards Development Process Training** (US National Committee to the IEC)
IEEE, Piscataway, NJ
contact—Charles T. Zegers (212) 642-4965; fax (212) 398-0023

April

2–5 **Insulated Conductors Committee** (Power Engineering Society)
Colorado Springs, CO
contact—L. J. Hiivala
(416) 467-4158; fax (416) 421-4779

3–7 **Bus Architecture Standards Committee (BASC) meeting**
(Computer Society)
Monterey, CA
contact—Anatol Kaganovitch
(408) 991-2599
anatol@scs.philips.com

6–7 **Nuclear Power Engineering Committee**
(Power Engineering Society)
Seattle, WA
contact—J. E. Thomas
(803) 831-4011; fax (803) 831-3077

6–8 **Design Automation Standards Committee (DASC) meeting**
(Computer Society)
San Diego, CA
contact—Paul Menchini
(919) 990-9506

23–28 **Portable Applications Standards Committee (PASC) meeting**
(Computer Society)
Irvine, CA
contact—Lowell Johnson
(612) 635-7305

23, 27 &28 **US TAG for ISO/IEC JTC 1/SCC22/WG15**
Irvine, CA
contact—Lorraine Kevra, AT&T, 5A-210, Rts. 202/206 N, Bedminster, NJ 07921 (908) 234-6423

23-27 **Transformers Committee meeting**
(Power Engineering Society)
Kansas City, MO
contact—J. H. Harlow
(813) 535-3408: fax (813) 546-0121

24–26 **Stationary Batteries Standards Coordinating Committee 29**
Atlanta, GA
contact—Joseph Dudor
(714) 898-3731

24–28 **Surge Protective Devices Committee meeting**
(Power Engineering Society)
Costa Mesa, CA
contact—K. B. Stump
(404) 740-3852; fax (404) 740-3397

May

5 *Deadline for draft and PAR submision for June Standards Board meeting*

1–5 **Substations Committee meeting**
(Power Engineering Society)
Washington, DC area (Vienna, VA)
contact—J. B. Cannon
(215) 841-4827; fax (215) 841-6192

1–5 **Switchgear Committee meeting**
(Power Engineering Society)
Washington, DC area (Vienna, VA)
contact—Keith Gray
(708) 597-8190 ext. 123

June

11–14 **IEEE Standards Board and Committee meetings**
Geneva, Switzerland
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org

22–23 **Non-ionizing Radiation Standards Coordinating Committee 28**
Boston, MA
contact—John Parisi
(908) 562-3814

Power Cable Ampacity Tables Effort Concluded

More than 20 years of dedication and effort came to fruition in December with the publication of IEEE Std 835-1994, *IEEE Standard Power Cable Ampacity Tables,* in both printed and electronic format. Sponsored by the Insulated Conductors Committee (ICC) of the IEEE Power Engineering Society, IEEE Std 835-1994 was approved by the Standards Board in September 1994. The Working Group was chaired by Don A. Voltz and previously by Mack A. Martin, Jr. The new standard supersedes IEEE S135, volumes I and II (IPCEA P-46-426), *IEEE–IPCEA Power Cable Ampacities,* which had served the industry as the only complete document on power cable ampacities in the United States since its publication in 1962.

The newly published IEEE Std 835-1994 reflects changes in cable design, application, and methodology over the past 30 years. It provides over 3000 ampacity tables for extruded dielectric power cables rated through 138 kV and laminar dielectric power cables rated through 500 kV. It is available both as a hard cover, single-volume, 3100-page book and electronically in a PC Windows™-based application.

The long history of ampacity table publications started with the original edition of the Current Carrying Capacity tables, published in 1943 by the Insulated Power Cable Engineers Association (IPCEA). In the 1950s, new cable types and better knowledge of thermal circuits led the IPCEA to join with the AIEE Insulated Conductors Committee to revise the tables. The resulting document, IEEE S135 volumes I and II (IPCEA P-46-426), known to many as the "black books," has been used by engineers, planners, and system designers throughout the world for the past 30 years.

During the 1970s, the industry's need for updated ampacity tables became increasingly apparent. In 1976, due to the tremendous increase in the use of single conductor extruded dielectric cables with multiple point bonding and grounding, the ICC/ICEA/National Electrical Manufacturers Association (NEMA) published supplemental ampacity tables to provide ampacity ratings for single conductor cables with shield losses due to circulating currents.

In the late 1970s, to respond to the continuing demand for upgraded and expanded ampacity tables, the IEEE ICC formed a working group within the Cable Characteristics Subcommittee, Project 3-1, to prepare a scope document for a revised edition of the ampacity tables. The scope document was subsequently approved by the ICC and the IEEE Standards Board in 1984. However, the large amount of computer time and work required by experts in the field to compile the tables placed the project beyond the reach of the normal volunteer approach—and the project languished for several years.

In 1990, the IEEE approved an ICC proposal to resurrect the project by obtaining contributions from companies and individuals who would benefit from the revised tables. The successful fund-raising drive provided the finances needed to see the project through to its 1994 completion. ◆

Correction Sheets Available

Correction sheets have been issued for the following standards:

- IEEE Std 301-1988
- IEEE Std 802.10-1992
- IEEE Std 1061-1992 (also in Software Engineering Collection)
- IEEE Std C37.015-1993
- NESC Preprint Proposals 1997

To receive a free copy of any correction sheet, please write to: IEEE Standards Department, Attn: Correction Sheets, 445 Hoes Lane, P. O. Box 1331, Piscataway, NJ 08855-1331.

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