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DEFICIT IS FORECAST FOR '78

Based on a day-long meeting in New York City on May 24, IEEE's Finance Committee has concluded that to pay for services the members want, the Institute is likely to incur a deficit in 1978. The next step will be for the Finance Committee's analysis and recommendations to be put before the Executive Committee and the Board of Directors at their July 13-15 meetings in Minneapolis, Minn.

IEEE POSITIONS ON ENERGY

The IEEE has issued three position papers on energy, which were prepared by the Energy Committee. The papers were approved for release by the IEEE Executive Committee at its April 17 meeting, rather than delaying until the July meeting of the full Board. Several additional position papers are being developed by the Energy Committee.

Taken as a whole, this group of position papers will afford a rather comprehensive coverage of the current energy situation in the United States as it pertains to electrical engineering. The three energy papers now issued--covering the areas of electricity in the U.S. energy economy, energy conservation, and solar energy--are reproduced in their entirety as TAB inserts, on pages 2A-2F of this issue. For more information, contact Ralph L. Clark, Secretary of the Energy Committee.

EMBERSON IS ACTING GENERAL MANAGER

IEEE President Robert M. Saunders has appointed Richard Emberson to the post of Acting General Manager, effective June 1, while the Search Committee continues its hunt for a new General Manager. Dr. Emberson has been the Staff Director for Education, Field, Standards, and Technical Services, and a profile of his functions as Staff Director appeared in April EE. As Acting General Manager, Dr. Emberson says it is his intention to keep a low profile. Meanwhile, Herbert A. Schulke is now consultant to the Acting General Manager and will leave his post no later than July 22, in accordance with his original decision to resign from the office.

CANDIDATES FOR IEEE OFFICE WHO WILL APPEAR ON THE SEPTEMBER BALLOT

■ Board of Directors' nominees for 1978:

For IEEE President, 1978:
Ivan A. Getting

For IEEE Executive Vice President, 1978:
Carleton A. Bayless

■ Regional Committee nominees for 1978-79:

For Region 1 Director:
Rex H. Beers
Jack L. Jatlow
James E. Shepherd

For Region 3 Director:
Roy H. Harris
Cary R. Spitzer

For Region 5 Director:
George T. Gibson
Darrell L. Vines

For Region 7 Director:
Edward F. Glass
Donald A. Roy

For Region 9 Director:
Agustin Leon
Carlos Rivera-Abrams

■ Technical Division nominees for 1978-79:

For Division I Director:
Mohammed S. Ghausi
Robert E. Larson

For Division III Director:
John W. Rouse, Jr.
Mischa Schwartz

For Division V Director:
Rolland B. Arndt
Richard E. Merwin

For Division VII Director:
Walter F. Fee

■ Petition candidates (members who have announced their intentions to run as petition candidates, not all of whom have as yet turned in to Headquarters the required number of petition signatures):

For IEEE President 1978:
Irwin Feerst

For IEEE Executive Vice President, 1978:
C. Lester Hogan

For Region 1 Director, 1977-1978:
Hans Cherney

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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USAB NEWS

A political action fund USAB plans to start, for which monies would be raised from voluntary member contributions, has been approved by the Executive Committee. A fund-raising program to solicit membership contributions to the new fund will be launched in early summer. Anticipated contributions have already been earmarked by USAB for use on the Democratic and Republican campaign committees, in accordance with the proportions of representatives from the parties in Congress.

The political action fund was created in response to a survey conducted this January in which sampled members responded positively to the question: "If the IEEE were to establish a political action fund, would you contribute?" Typical activities the fund will make possible are allowing the IEEE to participate in the major functions and gatherings of the two parties, and allowing the Institute to provide nonpartisan support of Congressmen responsive to engineering issues.

USAB urges IEEE members to write to their Senators or Representatives to express their opinions on various pieces of legislation and to provide background information to aid Congress in formulating important national policies. Members have asked for assistance in writing to Congressmen, so USAB has prepared a short guide entitled "How to Write Your Congressman." A copy is included in this issue, p.2I.

Employer cooperation in career maintenance and development is the subject of a letter USAB has sent to all Section Chairmen requesting that all U.S. Sections implement the Board-of-Directors-approved policy that "all IEEE activities involving employer-employee relationships should solicit the views and cooperation of employers of engineers as well as of employees." One method suggested for implementing this policy would be for each Section to establish an "Employer Advisory Committee" consisting of representatives of local employers of engineers. The complete text of the USAB letter will appear in the September issue of The Institute.

* * *

Reminder: Call the USAB information line (202-785-2180) for news updates.

THE LONG RANGE PLANNING COMMITTEE

The Long Range Planning Committee (LRPC), chaired this year by former IEEE Executive Vice President Robert Cotellessa, has changed its focus since the issuance of its 1973-75 LRPC report (see Spectrum, June). Although one of the committee's charges for this year is to publicize the report and commentary on it, it is also taking on specific areas within which concrete improvements can be executed.

This year, the committee's main charge has been to prepare the Institute for activation of the President-Elect system. Robert Cotellessa explained to EE how this system would work: At the moment, the Institute elects independently an Executive Vice President and a President, with no succession arrangement. A plan is under study to have the elected Executive Vice President become the next year's President automatically. In other words, the candidate would be elected to serve for a two-year term: one year as Executive Vice President, one year as President.

At present, the committee is rewriting applicable portions of the IEEE Constitution and Bylaws, particularly Article 12, Section 1 to allow for instituting the President-Elect system. The proposed constitutional amendments will be publicized in Spectrum this September if they are given initial approval by the Board of Directors in July; then, if all goes smoothly they will be put to a member vote in September 1978. Among the advantages of this system are continuity in the office of the Presidency and an ample planning period for the new administration. However, the plan may also carry drawbacks, and the LRPC and the Board are interested in soliciting general membership response to the idea. If the plan is instituted, the first President-Elect chosen under it would serve his or her term in 1980.

The committee is comprised of 13 members and four consultants. It has operated on an extremely modest budget since the LRPC report was issued; however, it benefits from the full cooperation of other IEEE officers and committees.

This is the first in a series of profiles of Institute Standing Committees.

E.E. is sent without cost beyond dues to officers of IEEE Boards, Committees, Divisions, Societies, Groups, Technical Councils, Conferences, Regions, Regional Councils, Sections, Subsections, Chapters, and Branches. Second-class postage is paid at Piscataway, N.J.

Contact: Ralph Clark
IEEE Washington Office

Technical Activities Board

IEEE Position on Electricity in the United States Energy Economy

This statement is addressed to the perceived need for a national energy policy to be developed by the government in cooperation with industry and technical and professional organizations which will recognize the importance of electrical energy based on domestically plentiful coal and uranium sources in the short and medium term and advanced technology and virtually inexhaustible or renewable sources in the long term.

The availability of energy is fundamental to the welfare and economic health of society. The domestic oil and gas resources upon which the United States has principally relied for several decades are being rapidly depleted. The critical nature of United States dependence on foreign sources of energy was made apparent by the 1973-1974 oil embargo. The research and development effort required to bring alternate energy sources to commercial scale production, the large capital investments required for energy systems, and the pervasive societal impact of energy development requires the formulation and implementation of a sound national energy policy if our country is to maintain its standard of living.

The United States presently relies on oil and natural gas to supply the major portion of its energy requirements. At present rates of consumption, domestic resources of these two fuels will be near depletion for all practical purposes by the end of this century. Consequently, if there is not a significant change in our energy systems, dependence on imports will continue to increase with concomitant economic and national security risks and difficulties. Similarly, shortages will develop more rapidly for critical and unique non-energy uses of petroleum and natural gas. This is an unacceptable direction for the future.

Two primary energy sources, coal and uranium, are available domestically in sufficient abundance to supply a major portion of our energy requirements for a long time into the future. Coal supplies can be expected to last well into the 22nd century at the present and projected rate of consumption. Uranium for light water reactors can be expected to meet demand as a major source of energy well into the 21st century; and a much longer time for breeder reactors.

The IEEE recommends the prompt adoption of a national energy policy. Four basic elements of this policy are:

- Increased utilization of coal and uranium in electric power generation.
- Major emphasis on conservation, efficiency, and reliability.
- Adequate public safeguards and environmental protection.
- Development of most favorable new and advanced energy technologies.

Key aspects of this policy should include:

Coal and Uranium

- Recognition that conversion of primary fuels to electricity offers an excellent method of making the shift in fuel resources to coal and uranium with the least disruption to the economy, and with maximum flexibility to accommodate change.
- A commitment to uranium and coal as the only rational near and medium-term alternatives to our present heavy emphasis on oil and gas.
- A program to de-emphasize the use of oil and gas as primary energy sources. These non-renewable and limited resources must be preserved for transportation in the medium-term and, especially, in the long-term for non-energy needs such as feedstocks for chemicals, plastics and fertilizers.
- A continued national effort through well planned, managed, and coordinated joint government/industry efforts to complete the development of breeder reactors to commercial reality. Breeder reactors can extend our uranium resources for hundreds and perhaps thousands of years.

Conservation, Efficiency and Reliability

- A program which emphasizes energy conservation taking due account of the environmental, economic, and social impacts of changing patterns of consumption.
- Continued and accelerated programs to achieve higher efficiency and better overall economics through improved utilization of electrical energy in manufacturing, transportation and in commercial and consumer usage.
- Conversion, where appropriate, from oil and gas-fired processes to electrical systems for more efficient energy end use and to shift dependence from scarce fuels to relatively more abundant coal and uranium.
- An increased effort supported by accelerated R & D programs to improve reliability of electric power system equipment. This effort should consider the design, construction and operational aspects of electric power systems and recognize the trade off between efficiency and reliability.

Public Safeguards and Environmental Protection

- Continued and accelerated programs to minimize the possible adverse environmental impact of coal and nuclear-based electric energy generation systems.

- An increased research program directed at the satisfactory disposal of waste products from both the nuclear and coal cycles.

- An aggressive national and international effort to address the problems arising from the production of plutonium and other fission products in the nuclear fuel cycle and to find acceptable technical solution for the safe handling of large quantities of fission products, and political and social solutions to deal with the threat of these materials to our peace and tranquility.

Advanced Electrical Energy Technologies

- An increased emphasis on research, design, and construction of advanced transmission and distribution systems.

- Continued and accelerated programs, such as Magnetohydrodynamics (MHD), fuel cells, advanced power cycles, etc., to achieve higher efficiencies and better overall economics in the production of electrical energy from fossil fuels.

- Development of renewable site specific sources such as solar, wind, geothermal and other alternative energy sources on a scale commensurate with the realistic appraisal of their potential as well as environmental and economic aspects.

- A continued national effort to develop fusion as a potential principal future energy source for the long-range.

It is the belief of the IEEE Energy Committee that the following essential benefits will be derived from the adoption of a national energy policy based on the above considerations:

- Reduced dependency upon foreign sources of energy resulting in:

  a. Reduced exposure to international political instability.

  b. Reduced pressure on the U.S. balance of payments, and hence, reduced inflationary pressure.

- Assurance that adequate sources of energy will be available to meet the requirements for sustained economic health and an improved standard of living for that significant portion of our population which is now living at substandard levels.

- Significantly reduced adverse environmental impact through the substitution of electrical energy for fossil fuel combustion in end use consumption.

Prepared by the Energy Committee, April 5, 1977

Approved by the Executive Committee, April 17, 1977

Contact: Ralph Clark
IEEE Washington Office

Technical Activities Board

IEEE Position on Energy Conservation

It is the IEEE position that energy conservation programs should be given the highest national priority in energy planning.

The rapid depletion, worldwide, of certain unrenewable fossil energy resources warrants continued identification and aggressive implementation of effective programs in which energy conservation is included as an important adjunct to the development of alternative energy sources. Such conservation programs should be given the highest immediate priority in national energy planning. They should be based on both implementation of available technology and on the undertaking of appropriate and promising research and development where existing technology appears inadequate.

It is the position of IEEE that the priorities, timing and degree of implementation should be based on thorough and competent analysis of the technology, cost effectiveness and the social, economic, and environmental benefits attainable, with recognition of potential public acceptance. Such procedures should be capable of providing substantial energy savings without significantly impairing standards or slowing economic growth.

In the establishment of such energy conservation plans it is the Institute's position that consideration should be given to the following concepts and objectives:

Areas of Application

Energy conservation is not limited merely to a reduction of energy use. On the contrary, the potential for energy savings lies in numerous areas, each of which are candidates for significant conservation implementation and development programs. Among these are the following:

a. Immediate reduction of energy use by measures such as modifying thermostat settings, car pooling and lowering lighting levels.

b. Improve the efficiency of the transportation sector.

c. Apply modern technologies for improved control and utilization of energy.

d. Reduction of energy loss during generation, transmission and conversion.

e. Reduction of energy loss during use.

f. Recapture of waste energy released during generation and use.

g. Maximum utilization of work capability of energy prior to use for space or water heating.

h. Utilization of energy potential of discarded solids and liquids, including agricultural, industrial and municipal waste and sewage sludge.

i. Maximum recovery and reuse of materials and products which require relatively large amounts of energy in their production and distribution.

j. Reduction in use of energy intensive materials having short service life and poor recoverability relative to competing materials.

Voluntary Action

It is appropriate that energy conservation measures be implemented through a combination of regulatory and voluntary action. However, no regulatory action can be effective unless producers and consumers provide voluntary support in the belief that compliance is truly cost effective from their own standpoint.

Cost Incentives

Public acceptance of proven energy conservation measures will depend on effective information programs and, in many cases, on the establishment of tax and price incentives at the consumer level. In doing this thorough consideration should be given to incentives both in the production and consumption areas, so as to recognize improved efficiency in products and practices through a net reduction in associated consumer prices wherever possible. Methods should be devised and implemented to encourage the use of life cycle costing for energy consuming investments and to recognize the increasing costs of electricity. Where appropriate the price of electricity should be such as to encourage users to shift their time of usage away from peak demand periods. In general, the price of primary energy sources should be set in the free marketplace.

Regulation

Building codes and product performance requirements are among the effective means of achieving improved energy conservation. However, such codes must be based on sound technology and economics and must avoid restricting future improvements. All existing building codes should be reviewed and revised where needed to reflect the importance of energy conservation and the continuing increase in the cost of energy.

The Role of Energy Conservation

Energy conservation is important and should be undertaken wherever reasonable and feasible. Nevertheless, it must be recognized that conservation, by itself, can only slow the rate of growth of energy requirements for the foreseeable future. Its inherent limitations are such that it can be no substitute for the urgent need to expand the application of coal and uranium and the development of alternative energy resources. Viewed in this light, it should be recognized as an important supplement to any comprehensive energy program.

Prepared by the Energy Committee, April 5, 1977

Approved by the Executive Committee, April 17, 1977

Contact: Ralph Clark
IEEE Washington Office

Technical Activities Board

IEEE Position on Solar Energy

The Institute of Electrical and Electronics Engineers hereby goes on record in support of vigorous development of solar energy systems.

The finite quantity of fossil and uranium fuels together with their increasing economic and environmental costs indicates the necessity of developing alternative renewable energy sources such as solar energy in order to avoid serious future economic and national security problems. In order for these renewable energy sources to be used in our energy systems, they must be capable of integration in existing conversion and utilization facilities.

While intensive development of coal, nuclear energy, petroleum and conservation measures will be required to solve the nation's short-term energy problems, solar energy offers for the more distant future the possiblity of a renewable source with minimal environmental impact.

Solar energy can make a contribution in the short-term for those applications where it is close to economic competitiveness such as water heating. This will require the development of economic retrofit systems for existing homes and buildings. In some applications, such as space heating and industrial heat, economic competitiveness is estimated to be close at hand in some regions of the country, while for other applications and other regions cost reductions will be necessary before competitive systems can be produced.

The technical feasibility of more advanced solar energy systems such as air conditioning, electrical power generation by solar thermal or photovoltaic processes, and bio-conversion plants has also been demonstrated. The economic viability of these systems depends, however, on further engineering development to reduce costs.

For those reasons, the IEEE recommends and supports the following in order to promote development of this potentially important energy source:

1. A vigorous research, development, and demonstration program aimed at improving the performance and reducing the cost of solar energy systems.
2. A public information program which addresses the question of how cost competitive solar energy systems can be implemented by individuals and industries.
3. A program to investigate the institutional and economic problems of implementing solar energy systems on a large scale.
4. Provision of selective economic incentives or subsidies in order to promote early growth of solar energy systems.

Prepared by the Energy Committee, April 5, 1977

Approved by the Executive Committee, April 17, 1977

IEEE

Contact: Ivan G. Easton

Standards

IEEE, and its predecessor societies, and other similar organizations have a long tradition of standards work. Legislation now being considered by The Congress (S825) might lead to drastic changes in the procedures for the development of voluntary standards. The following is the text of IEEE testimony by Ivan G. Easton.

Statement by IEEE
before
Subcommittee on Antitrust and Monopoly
of the
Committee on the Judiciary
Unites States Senate

My name is Ivan G. Easton. I am the Director of Standards of the Institute of Electrical and Electronics Engineers, Inc., a non-profit professional, educational, and scientific society with a membership of approximately 180,000 engineers, of whom about 150,000 members are within the United States.

Since 1890, the IEEE and its predecessor organizations have been active in the development of "voluntary" standards, particularly in the standardization of units, symbols, definitions, methods of measurement, test procedures, and in matters of safety. In 1901, IEEE endorsed bills before the United States Congress to establish a national standardizing bureau in Washington which is now the National Bureau of Standards. In 1904, we organized the International Electrical Congress at St. Louis at which two international commissions were proposed. The first, on electrical units, evolved into the International Conference on Weights and Measures. The second is now the International Electrotechnical Commission. In 1916, we actively participated in the establishment of what is today the American National Standards Institute. The IEEE continues today its close association with the National Bureau of Standards (two of the members of its Standards Board are Bureau employees and many Bureau employees are active on its Technical Committees), with the International Electrotechnical Commission (I am a member of the Executive Committee of the U. S. National Committee of the IEC and Chairman of one of its Technical Committees), and with the American National Standards Institute (I am a member of the Executive Standa-ds Council of ANSI, and IEEE is represented by more than two hundred delegates to various boards and committees operating under ANSI procedures).

The word "standard" is used to describe a wide variety of publications. The bill under consideration places considerable emphasis on so-called product standards, particularly consumer-product standards. But there are a host of other standards which are far removed from direct consumer concern, which are of extreme importance to the functioning of the technological aspects of our economic system and are produced by the voluntary standards system. For example, I have with me IEEE Std 100, which is a dictionary of electrical and electronic terms. This widely used document has been generated by the volunteer efforts of thousands of engineers over a period of many years, and a continuing effort produces new editions every five years or so. Another class of standards document is the standard of good engineering practice. As an example, I show you IEEE Std 141, "Recommended Practice for Electric Power Distribution for Industrial Plants", which is in its 5th edition over a period of forty years. It represents the consensus of generations of engineers as to proper engineering practice in an area closely concerned with employee safety. As a third example, I show you a compilation of standards on graphic symbols which is particularly interesting in the present context since four of the five standards included have been adopted for mandatory use by the Department of Defense. These documents represent an outstanding example of the proper functioning of a total national standards system since they were developed in close cooperation between the private sector and interested government agencies. All this was done in the voluntary system under the aegis of the American National Institute, with IEEE functioning as the secretariat of the committee.

The IEEE believes that voluntary standards development in the United States has, in fact, been highly successful, and that government, industry, and the consumer have benefitted immeasurably from the many thousands of standards that have been produced under the voluntary system.

S825 discusses at length the need for cooperation between government and private sector. We believe the record will show IEEE does work closely with the U. S. Government in the development of standards. We are joint secretariat of American National Standards Committee C95 on Radio-Frequency Radiation Hazards with the U. S. Navy and joint secretariat of American National Standards Committee C2, National Electrical Safety Code, with the National Bureau of Standards. The Nuclear Regulatory Commission has referenced many IEEE Standards in its Regulatory Guides, and the Department of Defense has adopted the IEEE Standards on graphic symbols, letter symbols, and reference designations for mandatory use. The U. S. Coast Guard, the Federal Communications Commission, and other federal agencies, reference IEEE Standards for their requirements. In all of these instances, utilization of standards developed under the aegis of IEEE has avoided, or eliminated,

duplication of standards efforts by government and industry. On the many ANSI Committees for which IEEE serves as secretariat, there are representatives of interested federal agencies.

The voluntary standards development system has, over the last ninety years, established approximately 20 thousand voluntary standards that are used by government as well as by industry. These standards have reduced production costs, have increased personnel safety, have provided a better basis of communication between buyers and seller, and have given the consumer products and services that are more uniform, safe, and reliable. Hundreds of government agencies on the national, state, and local level, adopt and use these standards, with only a small number of complaints concerning adequacy or fairness.

Increased cooperation by the U. S. Government in standards development would be welcomed by the private sector, and we are pleased that the introduction of S825 reflects an awareness on the part of this Committee that there is need to devote the necessary time, money, and skills, to cooperate in the development of standards and to work with the voluntary system in the management of standards programs that affect government as well as small business and the consumer.

At the present time, standards activity is coordinated on a national level by the American National Standards Institute. In its 58 years of operation, ANSI has established procedure for development of standards that are intended to assure that standards are developed by committees representing all concerned interests, that any interested party may have the opportunity to review and comment on a document prior to its approval by ANSI, and that any interested party may appeal the approval of a standard. These are the basic guarantees that S825 proposes. They already exist in ANSI, and IEEE can see no useful purpose in establishing a new structure to duplicate or supersede the work of that organization. What is needed is not a new system which S825 is proposing to set up for managing standards, but more participation in and support of the voluntary system by the Unites States Government.

We feel that the situation is similar in the area of International Standards. The structure authorized by Title II of the bill appears essentially to duplicate or supersede the functions of the existing U. S. National Committee of the International Electrotechnical Commission in the electrical field, and duplicates or replaces the functions which ANSI now performs as a member of the International Standards Organization. These organizations, currently in place, are performing their intended function reasonably well. They have been doing so with increasing effectiveness over several decades in spite of the increasing hardship of inadequate funding. It is the belief of the IEEE that if the Government bore a proper share of the cost of these activities, the present structures would be quite adequate and that there is no need to create new entities.

We concede that there are problems and that the national standards system could be improved. We do not believe that all problems lie in the private sector. For example, we believe that the system would function more effectively if, in addition to providing proper support to the voluntary coordination effort, the Federal Government were to establish uniform procedures for all Federal agencies that adopt or make reference to existing standards. There are, at present, wide inconsistencies between the methods used by the Department of Defense, Federal Communications Commission, Occupational Safety and Health Administration, Food and Drug Administration, Nuclear Regulatory Commission, Housing and Urban Development, U. S. Coast Guard, and numerous other agencies that have adopted and used voluntary standards. These inconsistencies make it difficult for the standards developing societies and associations to react promptly to the needs of government. A uniform system for announcing an intention to adopt a standard, a uniform policy on public hearings before adoption, and agreement by all Federal agencies that they will adopt standards by reference, rather than by competition with the publishing activities of the voluntary organizations, has long been needed. As a minimum requirement, all Federal agencies that adopt a standard should be required to advise the organization that issued the standard of its adoption. Such notice will give the standards-developing organization an opportunity to insure that the adopting agency's views are properly considered when the standard is revised.

It is not the contention of the IEEE that the present system is without fault. It IS our viewpoint, however, that the problems which have been identified are not severe enough to warrent legislation such as S825 nor that such legislation, however well intended and designed, will necessarily solve these problems.

In a letter, Senator Kennedy has suggested that "the test of proper legislation is whether reasonable and enforceable safeguards are introduced in the standards setting process without imposing excessive federal regulation." It appears to us that S825, in fact, does propose excessive and unnecessary federal regulation. We feel that the solution to the problems lies in the cooperation between the federal government and the private sector, not in control by a federal agency (and we do believe that the present bill has within it the potential of complete federal take-over of the system). In addition to cooperation, there is a need of tangible support. As has been noted in the introduction to the bill, the government and the private sector may spend between them 1.5 billion dollars on standardization activities. Obviously, the coordination of an activity of this magnitude is a major and costly effort. We believe that if the federal government participated more actively in this coordination effort, many of the problems that have been cited could be solved. Furthermore, we believe that they would be solved at a much lower cost to the taxpayer than by the creation of brand new agencies within the federal government.

It should be noted that all of my remarks are directed to the subject of standards development, and not to certification or accreditation of certification laboratories. The IEEE does not certify products or procedures, nor does it accredit laboratories who test to standards promulgated within IEEE.

In summary, it is the opinion of the IEEE that legislation such as S825 is not necessary at this time, and that the system should be given the opportunity to work with a fuller cooperation from agencies of the federal government and with appropriate financial support.

We respectfully draw the attention of the Committee to the recommendations of the Interagency Standards Policy Committee. We believe that the mechanisms and procedures recommended by that Committee would be most helpful in promoting the mutual interests of government and the private sector.

On behalf of IEEE, I thank you for the opportunity to present our views.

IEEE

Contact: Dorothy L. Bomberger

United States Activities Board

HOW TO WRITE YOUR CONGRESSMAN

When Writing Your Senator:

Senator (name)
U.S. Senate
Washington, D.C. 20510
Dear Senator (name):

All Senators have the same zip code regardless of the location of their Washington, D.C. office.

When Writing Your Representative:

Congressman (name)
U.S. House of Representatives
Washington, D.C. 20515
Dear Congressman (name):

All Representatives have the same zip code regardless of the location of their Washington, D.C. office.

Remember, there are only 100 Senators and 435 Representatives! All of them have a Washington, D.C. address. If you want to write but forget the zip code or do not remember the correct form of address, write anyway. If you get the name and Washington, D.C. on the envelope, he or she will receive it. If you know the local address, you can write there as well. If you need help identifying your Senator or Representative, call the Washington, USAB office at 202/785-0017.

Keep your message short and to the point. Explain what you want the Senator or Representative to do for you. Try to be positive. Above all, don't forget to thank him or her if he or she has done something for you or taken a position you favor.

The man who keeps IEEE's books

Charged with implementing the financial policies of the Institute, Controller Thomas Bartlett's areas of responsibility are divided geographically between IEEE's Piscataway offices and New York Headquarters. Of Tom's three main units, the general accounting area and the financial area are located in Piscataway, close to the computer; the budget area is in New York, within earshot of the Staff Directors. The general accounting area, reporting to Accounting Manager Ed Rosenberg, is responsible for the maintenance of the Institute's general accounting records as well as those of the Groups and Societies, preparation of financial reports, of the payroll, and of all the payables. The financial area, which reports to Finance Manager Mike Sosa, is concerned with the processing of all cash receipts, review of the Institute's Investment Fund performance, handling of short-term investments, preparation of tax returns, and monitoring all contracts involving the Institute. The budget area reports to the new Staff Budget Coordinator, Carol Scragg, who reviews and monitors the operations of the budget and assists the Staff Directors in preparing their detailed budgets.

Tom Bartlett himself is an old-timer who doesn't look the part. He has been with the Institute since 1946, when he joined the staff fresh out of high school and before he earned his B.B.A. degree in the evening from Pace College. IEEE Controller since 1975, he works closely with the Institute's Treasurer, who plays an extremely active and formative role in the fiscal process.

Tom is now assembling the 1978 budget plans, which he anticipates will result in an operating deficit. But deficit financing cannot continue indefinitely, as he sees it, and, ultimately, a dues increase or some new source of income will be needed. Tom does not agree with the approach that would call for cutbacks in technical services to members or a reduction in the dissemination of technical information to the scientific community. "After all," he says, "that's why we're in business."

The seventh in a series on key Headquarters staff functions.

PUB NEWS

In-house composition will be possible now that the Publications Department and Spectrum have ordered Compugraphic Editwriter 7500 photocomposers. This machine includes a sophisticated keyboard, a display terminal, and a minicomputer for output. The keyboard allows complete control over input, proofing and correcting, formatting, and work management, as well as over the final output. The display terminal continuously monitors operational functions, and serves as a guide to accurate composition. The editing screen allows the operator to work on up to 6000 characters at a time.

The photo unit provides unrestricted mixing of a wide range of sizes and faces from the tape library. The font capacity is 96 fonts on-line: two film masters of four faces each, in 12 sizes. There are 118 characters per font.

Delivery of the machines is expected in about four months, and they will be used initially to set Spectrum articles, Standards, newsletters, and nonmathematical Transactions material. Over a period of time, more difficult composition will be attempted, with the goal of setting math perhaps a year away.

The new U.S. copyright law, which takes effect next January, requires publishers officially to obtain written transfers of rights from authors or their employers in order to copyright their works. Such copyright transfer is necessary in order for journal publishers, such as IEEE, to continue to function effectively. It will provide a single source to whom individuals, libraries, and other publishers can turn for reprint or republication permission and for dealing with such requests on behalf of IEEE's 12,000 authors per year. Policies and procedures will be developed by midsummer to make transfer of rights as simple as possible for editors and authors to execute and to provide maximum privileges for authors. Since the new procedures will require educating authors and their employers, all hands are alerted to the need for full cooperation during the transition. For further information, contact Woody Gannett.

Spectrum was named a finalist in the 1977 National Magazine Awards for its special issue, "What Went Wrong?," focusing on technological failure and its lessons. Spectrum was one of 24 magazines selected as finalists in a field of nearly 500 entries, and is the first electrical/electronics magazine in the history of the National Magazine Awards to be named to

(cont'd on p. 4, col. 1)

PUB NEWS (cont'd)
this distinction. Other finalists included Business Week, Scientific American, Newsweek, Esquire, The New Yorker, and Harper's.

Three new books are being issued by IEEE Press: "Electrical Noise: Fundamentals and Sources," edited by Madhu S. Gupta; "Microprocessors: Fundamentals and Applications," edited by Wen C. Lin; and "Computer Methods in Image Analysis," edited by J. K. Aggarwal, R. O. Duda, and A. Rosenfeld. The 368-page book, "Electrical Noise: Fundamentals and Sources," contains 22 reprinted papers concerned with all aspects of fluctuation noise and is priced at $13.45 for the paperbound member edition, $26.95 for the clothbound (discounted to $20.20 for IEEE members). "Microprocessors: Fundamentals and Applications," a 344-page volume sponsored by the IEEE Computer Society, contains 43 reprinted papers and is priced at $9.95 for the paperbound member edition, $19.95 for the clothbound ($14.95 for IEEE members). "Computer Methods in Image Analysis," a collection of 31 papers in 472 pages, focuses on digital image analysis--the use of computer to extract useful information from digitized pictures. It is sponsored by the IEEE Computer Society, and is priced at $14.95 paperbound, $29.95 clothbound ($22.45 for IEEE members). All three volumes can be ordered postpaid from the IEEE Service Center, 445 Hoes Lane, Piscataway, N.J. 08854.

MIDCON PROGRAM

The MIDCON '77 Program Committee, chaired by R. Kruse, is now in the second round of its proposal review process, but it is still willing, until June 21, to consider good new proposals for inclusion. MIDCON '77 will be held in Chicago, Ill., November 8-10.

ELECTRO '77 ATTENDANCE

Exhibitors at ELECTRO '77 were well pleased with the quality and volume (about 28,000) of the audience. Some 5000 engineers attended the professional program, 57 percent of whom were IEEE members. A poll of the attendees showed that 88 percent hold B.A. degrees, and 45 percent hold advanced degrees.

STUDENT NEWS

Calling all hams: a new edition of the directory of IEEE Student Hams will be published this month. Names, addresses, and call letters of individual student hams and Branch stations are sought. Contact Judy Rundle, Manager, Student Services, at Headquarters.

IEEE T-shirts are now available. These new, colorful T-shirts, perfect for campus or beach, in sizes small to extra large, are only $3.75 in individual orders; $3.25 each for orders of ten or more. Interested? Contact Judy Rundle.

"Career and Life Planning for Sudents," a pamphlet by John Picarelli which originally appeared as a series of articles in the "IEEE Student Newsletter," is planned for publication this summer. Advance copies will be included in each Student Branch's fall promotional package, due on campus in August.

CHAPTER NEWS

Established--The Electron Devices Chapter of the Rochester Section.

Established--The Aerospace & Electronic Systems Chapter of the Houston Section.

Established--The Circuits & Systems Chapter of the Montreal Section.

Established--The Engineering in Medicine & Biology Chapter of the Atlanta Section.

Expanded--The Power Engineering Chapter of the Tulsa Section, to include Industry Application members for formation of the Joint PE/IA Chapter.

Expanded--The Reliability Chapter of the Montreal Section, to include Engineering Management members for formation of the Joint R/EM Chapter.

Centerfold inserts

Green--Technical Activities Board: Energy Position Papers	2A-2F
Green--Standards	2G-2H
Ivory--USAB: How to write your Congressman	2I-2J

Names and assignments of IEEE staff members referred to in ELECTRICAL ENGINEERING are listed on page 4 of IEEE SPECTRUM.