



COMMITTEE on SOCIAL IMPLICATIONS of TECHNOLOGY

ISSUE NO. 11 - SEPTEMBER 1975

SOME QUESTIONS FOR CANDIDATES FOR IEEE OFFICE AND THEIR RESPONSES

(EDITOR'S NOTE:) IEEE currently has a membership of over 150,000 and a budget exceeding 10 million dollars annually. It is the major organization for electrical engineers in terms of prestige and as a forum reflecting current thinking in the field. It is important that the membership have some idea as to how those twenty-four candidates seeking policy making office within the Institute stand on substantive issues. Unfortunately, insight into their views is limited to the brief paragraph each is permitted in Spectrum.

A list of seven questions was sent by the Editor to each of the candidates. It and the responses received are reprinted below. The questions are by no means comprehensive, even within the area of SIT. The pressures of time precluded a more detailed set. Readers are strongly urged to submit questions of their own so that in future years a better list can be submitted, thus making it easier to determine what course candidates for IEEE office intend to follow.

Dear:

As you are running for IEEE office we would be very interested in your answers to the following questions for the enlightenment of our readers. No doubt you will recognize that we are following the precedent set by IEEE Professional News.

1. Do you believe that all IEEE-sponsored events should be open to any IEEE member?
2. Do you believe that electrical engineers have a responsibility to consider the social implications of the work they do?
3. Do you believe that electrical engineers and their employers should subscribe to a code of ethics?
4. Do you believe that in cases of serious violation of a code of ethics IEEE should recommend censure of the violator (as does the American Association of University Professors)?

5. Do you favor establishment of an IEEE legal defense fund for electrical engineers harassed or discharged for adhering to a code of ethics?

6. Should the IEEE "Resolution on Basic Human Rights of Engineers and Scientists" (enclosed) be reiterated in the light of the arrests of some 40 Chilean engineers and scientists?

7. Do you favor the establishment of an IEEE field award for outstanding public service?

Your response will be published in full in the next issue of the C-SIT Newsletter. A response by July 15, 1975 would be appreciated.

Sincerely,
Victor Klig
Editor CSIT Newsletter

IN THIS ISSUE

Some Questions for Candidates for IEEE Office and Their Responses.....	1
Letters.....	8
News, Notes, & Comment.....	9
Book Review.....	9
Energy/Environment.....	10
CSIT Roster.....	12

NEWSLETTER STAFF

EDITOR:

VICTOR KLIG
497 Park Avenue
Leonia, New Jersey 07605
(201) 947-6755

ASSOCIATE EDITORS:

R. J. BOGUMIL
Mt. Sinai School of Medicine
Department of Obstetrics &
Gynaecology KPZ
New York, New York 10029
(212) 864-5046

J. H. CYR
Naval Post Graduate School
Monterey, California

RONALD GOLDNER
E. E. Department
Hooper Lab.
Tufts University
Medford, Massachusetts 02115
(617) 628-5000

FRANK KOTASEK, Jr.
73 Hedges Avenue
East Patchogue, New York 11772
(516) 475-1330

MICHAEL PESSAH
1895 North Avenue 52
Highland Park, California 90031
(213) 256-3266

SURESHCHANDER
E. E. Department
College of Technology
G.B. Pant University of
Agriculture & Technology
Pantnagar, India 263145

IEEE G/S Publication Staff: Stephanie Coles Frances Newburg

New subscriptions: IEEE members wishing to receive this Newsletter should write to: IEEE, CSIT Newsletter, 345 East 47th Street, New York, New York 10017.

The editorial staff invites letters and articles from readers. We are interested in publicizing news of all upcoming meeting, study groups, discussions, lectures, or workshops that in any way relate to the interaction between technology and society. Correspondence may be sent to any of the above editors. Material for publication must be received at least by the 7th of each odd numbered month.

RESPONSES

Some of the questions you have asked would normally require extensive discussion. Realizing the necessity to limit the length of my replies, I have given brief answers. These will indicate my general feelings without belaboring the details.

1. In principle, yes, but this is not practical for some committee meetings such as the Executive Committee, Board of Directors and various Standing and AdHoc Committees. These meetings must all be open to those who the IEEE membership has elected to serve it plus those who have been properly appointed to such committees. IEEE is also allowed to co-sponsor with other organizations classified events which have specified attendance criteria.

2. Yes

3. Yes

4. Yes, where they involve IEEE members. Here IEEE needs to establish carefully considered procedures to follow.

5. Yes, but again only where IEEE members are involved and only if appropriate review and evaluation procedures can be adopted.

6. No, but this matter should be separately considered and if appropriate, a separate resolution adopted.

7. Yes

WILLIAM E. CORY

This is in response to your letter of June 20, 1975. You expressed an interest, on behalf of the readers of the C-SIT Newsletter, in my replies to the questions posed in your letter. As you realize, each question deserves a discourse for adequate clarity and, as I shall limit myself to brief statements, I hope that your purposes will be served without sacrificing too much in understanding.

1. Do you believe that all IEEE-sponsored events should be open to any IEEE member?

Yes, generally. IEEE-sponsored events have the prime purpose of communicating technical information. In some instances, achieving this purpose in a straightforward manner and with adequate controls for a limited segment of the membership, is facilitated by IEEE sponsorship. I am in favor of the revised Bylaws that deal with this matter, including the conditions and limitations they contain.

2. Do you believe that electrical engineers have a responsibility to consider the social implications of the work they do?

Yes. An individual who, through utilizing his training, can have an effect on the society of which he is a part, necessarily has this responsibility. It is anticipated that, in a given situation, the conclusion reached by one electrical engineer may differ from that of a colleague.

3. Do you believe that electrical engineers and their employers should subscribe to a code of ethics?

Yes. IEEE is committed to a code of ethics and to having it utilized.

4. Do you believe that in cases of serious violation of a code of ethics IEEE should recommend censure of the violator (as does the American Association of University Professors)?

Yes. Careful attention must be given to the composition and procedures of a censuring body, as well as to legal aspects. Bar associations perform a similar function.

5. Do you favor establishment of an IEEE legal defense fund for electrical engineers harassed or discharged for adhering to a code of ethics?

Yes. IEEE has incurred expenses in this activity and it would be an improvement to budget such costs from special regional assessment funds.

6. Should the IEEE "Resolution on Basic Human Rights of Engineers and Scientists" (enclosed) be reiterated in the light of the arrests of some 40 Chilean engineers and scientists?

Yes. Appropriate procedures for communicating the Resolution adopted by the Board of Directors should be followed.

7. Do you favor the establishment of an IEEE field award for outstanding public service?

Yes. The intent of the question has not been made clear. Presently our awards recognize achievements that advance the public interest. I believe the intent of the question relates to electrical engineering efforts performed courageously in the face of criticism or professional risk. A field award in this context would be appropriate.

ROBERT F. COTELLESA

With regard to the questions you have raised, my answers are naturally influenced by the fact that I am a Canadian and am running for office as a representative of the Canadian Region, bearing in mind the transnational nature of IEEE.

With regard to question 1, I feel that the policy adopted by the Board of Directors at their April '75 meeting is both reasonable and appropriate when considering the various types of functions in which IEEE participates.

Question 2 dealing with the social implications of engineering work is difficult to answer in a concise manner. Social implications are one of the many factors which must be taken into account in Engineering and responsible Engineers will give due weight to them. Naturally, their importance is commensurate with the level of responsibility of the Engineer concerned.

Engineering is always a matter of compromise to obtain the best solution of a problem; when social implications are apparent they must be considered in arriving at the best compromise.

For question 3, I firmly believe that all engineers should subscribe to a code of ethics. This applies regardless of whether the engineer is an employee or employer. However, any code of ethics adopted by IEEE must be broad enough in scope to avoid any infringement on legal aspects of other codes in various countries.

The question of violation of such a code raised in question 4, is not a suitable subject for IEEE in my opinion, due to the transnational nature. It is up to the national or local engineering association to handle such matters. In Canada, this comes under the jurisdiction of the various Provincial Associations which are empowered by law to license engineers.

In line with the above philosophy under question 5, I am not in favour of IEEE taking an active role in either defense or prosecution. Any IEEE code of ethics should be in the nature of a guide - not a law.

As far as question 6 is concerned, the resolution adopted by the Board in 1973 is of a very general nature covering all countries. From the tone of the question, it appears that a specific instance is to be considered. This I do not favour, since I feel that IEEE should not become involved in specific cases which require thorough investigation and is beyond either the capabilities or terms of reference of the institute.

In answer to question 7, I do not think such an award should be instituted by IEEE. The Institute is transnational and as such can hardly deal with this subject on a global basis. It is not desirable for a transnational Institute to establish new awards on a regional basis and such an award could only feasibly be made on such a basis.

The above are my present thoughts on the questions raised.

F.C. CREED

The following are my responses to the questions contained in your letter.

1) I believe that IEEE sponsored events should be open to all IEEE members who can benefit from or contribute to that event.

2) While I believe that electrical engineers have a responsibility to consider the social implications of the work they do, his employer has the greater responsibility.

3) It is desirable that electrical engineers and their employers subscribe to a code of ethics.

4) A serious violation of the code of ethics should be the basis for some form of censure by the IEEE.

5) The IEEE "Resolution on basic rights of engineers and scientists" as adopted by the IEEE board of directors September 11-12, 1973 should be reiterated.

6) I would favor the establishment of an IEEE field award for outstanding public service in an area related to professional activities.

SAMUEL LEVINE

some brief comments on the questions for the C-SIT Newsletter:

1. Do you believe that all IEEE-sponsored events should be open to any IEEE member?

Yes. However, I also believe it is a service to IEEE members to have auxiliary sessions available during an IEEE conference for those members who qualify to attend. These may be in the same hotel or nearby hotel, and they need not be IEEE-sponsored.

2. Do you believe that electrical engineers have a responsibility to consider the social implications of the work they do?

Most certainly yes, but all electrical engineers will not necessarily come to the same conclusions concerning social implications. The IEEE must be careful not to establish value judgements or to moralize on behalf of its diverse membership.

3. Do you believe that electrical engineers and their employers should subscribe to a code of ethics?

Yes. The principles in the recently-adopted IEEE code of ethics have been subscribed to by my employer and me over many years. Following a code of ethics is good business.

4. Do you believe that in cases of serious violation of a code of ethics IEEE should recommend censure of the violator (as does the American Association of University Professors)?

Yes. I am not familiar with the details of AAUP procedure, but a reputable business should have no fear of censure, provided it is administered using checks and balances with a fair appeal route.

5. Do you favor establishment of an IEEE legal defense fund for electrical engineers harassed or discharged for adhering to a code of ethics?

Yes, although we must recognize our financial limitations with our present dues structure. Controls on use of the fund would have to be developed carefully to prevent frivolous claims.

6. Should the IEEE "Resolution on Basic Human Rights of Engineers and Scientists" (enclosed) be reiterated in the light of the arrests of some 40 Chilean engineers and scientists?

Our resolution on basic human rights is already on public record. I do not see how reiterating it would help the deplorable Chilean situation.

7. Do you favor the establishment of an IEEE field award for outstanding public service?

The IEEE already has many awards, and the winners of most of these have given outstanding service to the public and society. I prefer to reserve judgement on this question until I see a more detailed proposal defining "public service" differentiating it from our other awards.

J. K. DILLARD

1) Open IEEE events - Yes, I do believe that all IEEE events ought to be open to all. On a technical basis, I believe that IEEE ought to have nothing to do with classified events which, rightfully, should exclude some participants. On the professional level, I believe that all IEEE Board and Executive Committee meetings ought to be open to all. Perhaps you know that I was ejected from the recent Region I nominating convention held in April of this year in the Americana Hotel in New York City. Of course, this is a violation of existing IEEE statutes, but I did not care to protest it then.

2) Social responsibility of EEs - Yes, EEs do have a social responsibility for their professional and private lives, and so do members of every other profession. This, of course, includes New York City sanitation workers, who recently staged a work stoppage. But I do not think this sense of responsibility can be legislated. Rather, it is the function of society in general to instill this in its members, by means of education and by pointing out the worth of society in general to the individual - or, in other words, the value of the Social Contract to the individual.

3) Code of Ethics - Yes, I do believe that employers and employees ought to subscribe to the Code of Ethics. The danger is however that in trying to accommodate the employers of EEs, we practitioners will give away our professional lives. Rather, we must establish a strong code of ethics with only a minimal input from employers. Moreover, I look forward to the day when we EEs will be independent practitioners, and not employees.

4) Violations of Code of Ethics - Are you kidding? This point (publishing in *Spectrum* a list of employers who have violated this code) has been a fundamental point of mine since 1971 and I am on record at that time as espousing this. See the enclosed flyer. (So that it shouldn't be a total loss, please sign the petition and return it.)

5) IEEE Public Service Award - Theoretically yes, but practically no. It seems that every award which IEEE makes inevitably goes to one of the closed clique of academics or corporate executives which control it. We should first reform the system of making awards (and also the system by which IEEE creates Fellows) and then institute this award.

6) Chilean Engineers - No, they should not fall within IEEE's policy of opposing political harassment. For then IEEE would be forced to look into the charges that some Portuguese engineers have been imprisoned by the left wing government there. More importantly, however, I do not believe that IEEE should be an international organization. The overwhelming majority of IEEE members are American and we must recognize that fact of life.

7) Legal Defense Fund - Of course I am in favor of this. But I think you err if you think that the LDF ought to be used to protect EEs who are harassed or discharged for adhering to a code of ethics only. It should also be used to aid EEs who are discharged because of age bias. Perhaps you know that I was one of the prime movers in back of IEEE's decision to file an "amicus curiae" brief in the BART case. In August, 1974, I contacted each and every member of IEEE's Board of Directors and urged them to do this. It is interesting to learn that J. K. Dillard (this year's Board nominee for President) wrote back to me and opposed this. Of course, it must be realized that Dillard is an executive with Westinghouse, who is generally

considered to be one of the principal culprits in the BART fiasco.

Another interesting point about the LDF is that I have been trying to have IEEE file another "amicus curiae" brief in the case of the 62 over-40 engineers who were fired by Sperry in what is alleged to be a case of age bias. It is of interest to learn that Arthur Rossoff, who is a candidate for Director from Region I almost single-handedly has succeeded in blocking IEEE from doing this. (For further details about this nefarious deed, please contact Bill Keneally, the VP of Sperry's Engineers Union at 516/PI 7 6545).

IRWIN FEERST

In reply to your letter, I am pleased to reply to the questions contained therein.

I believe that all IEEE sponsored events should be open to any member. I am absolutely opposed to any provision of the Institute Constitution or Bylaws, or Section Bylaws, or operating procedures, which would be restrictive in any way to deny an IEEE member access to any IEEE meeting. There are obvious exceptions, and these are covered in the recent ruling of the Board of Directors on this matter.

The social implication of work done by engineers, and not just electrical engineers, has been of concern to me for some time. I believe firmly in the matter of professionalism for all engineers and am committed to the concept that all engineers must be responsive to the social implications of their work. The same is true in the matter of the Code of Ethics. It appears essential that such procedures as administration of a code of ethics, however, require the mantle of government. The code of ethics now operative in New Jersey under the Society of Professional Engineers is a good example.

In reply to your question concerning the IEEE Resolution on Basic Human Rights of Engineers and Scientists, I would welcome the opportunity to have the Board reiterate that position to include not only scientists and engineers, but all human beings. You may recognize from my comment that much of what appears to be the concern of electrical engineers is indeed, and should be, the concern of everyone. For the same reason, I would be in favor of an IEEE Field Award for Outstanding Public Service, but I feel somewhat concerned if, in the establishment of such an award, we would feel obligated to restrict the award to electrical and electronics engineers only.

And finally, let me say in summary that I am gratified that IEEE has, in recent years, become much more sensitive to the needs of the membership, particularly in the professional area. USAC has already done much of the pioneer work, especially in connection with the pension issue, the code of ethics, and many other professional aspects of the Institute too numerous to mention.

I trust these comments reply to your questions and if there is anything additional that I can do, please do not hesitate to contact me. For your information, I have included a copy of my candidate statement which is to be published in the August issue of SPECTRUM.

J. G. O'GRADY

Referring to your letter in which you asked me as a candidate running for Member of the IEEE Board of Governors, representing Division III, to answer seven questions, I believe that my personal answers are irrelevant to the position I would take if elected, because I shall be representing the Groups and Societies of Division III. To the extent that I can detect from their managements their consensus on those subjects, I shall represent it rather than my personal position, should the occasion arise.

F. D. REESE

In regard to your letter, herewith are my answers to your questions.

1. Do you believe that all IEEE-sponsored events should be open to any IEEE member?

All IEEE sponsored events should be open to any IEEE member as long as the member financially contributes to the activity by paying entrance fees when required. There must be a practical way to recover the cost of organizing and preparing a conference or course. Charging a moderate tuition or entrance fee to an activity is a good method. It is true that the principle of charging limits the attendance of many engineers by imposing an economic burden on members. But it is also true that activities requiring payment of a fee, stimulate the interest of the members and makes them appreciate the opportunity of participating in an IEEE event.

2. Do you believe that electrical engineers have a responsibility to consider the social implications of the work they do?

Much has been said about electrical engineers not being aware of the social implications of their profession. I believe that this is more speculation than reality. Engineers are like all human beings; some are more responsible than others. Some engineers, due to their work arrangement and relationship with their supervisors, can be outspoken about the social implications of their work; while others, are limited in their expression by rules and regulations imposed at their place of work. As long as engineers are hired, this condition will exist.

3. Do you believe that electrical engineers and their employers should subscribe to a code of ethics?

Definitely, engineers and their employers should subscribe to a code of ethics. Part of the function of the engineering associations in Latin America, which are sponsored and regulated by the government, is to name a committee to pass judgement on violations to the code of ethics. Violations to the code of ethics can result in cancellation of the professional engineers license. In the U.S.A., each state should require an engineering license as a condition to work. The institute could then help in naming a committee that could establish the requirements for an engineering license, could write a code of ethics and could pass judgement over code of ethics violators.

5. Do you favor establishment of an IEEE legal defense fund for electrical engineers harassed or discharged for adhering to a code of ethics?

If the mechanism to regulate the code of ethics is properly established, then the IEEE would probably need a defense fund to protect those engineers punished unjustly for violation of the code of ethics.

6. Should the IEEE "Resolution of Basic Human Rights of Engineers and Scientists" (enclosed) be reiterated in the light of the arrests of some 40 Chilean engineers and scientists?

It is one thing for IEEE members to defend the human rights of engineers in the country they make their home, and it is another to cross country boundaries to defend human rights of engineers living in other parts of the world. I believe the sovereignty of each country must be respected. Each country should look after the well being of its citizens, without outside interference.

7. Do you favor the establishment of an IEEE field award for outstanding public service?

The establishment of an IEEE field award for outstanding public service is more than justified. There are many civil servants who have spent their lifespan doing outstanding engineering and administrative work resulting in betterment of the society in which they live. The IEEE must give proper recognition to these persons in the same manner that recognition is given for technical achievement.

CARLOS RIVERA-ABRAMS

Thank you for your letter soliciting my views on seven questions of interest to the C-SIT Newsletter. Enclosed is my statement as it will appear in the August 1975 IEEE Spectrum. My specific answers to your questions are as follows:

1. Yes, there is a definite need for restricted attendance meetings since they serve a major technical need of a significant fraction of our membership.

2. Yes

3. Yes

4. No

5. Yes

6. Yes

7. Yes

CARY R. SPITZER

I have your questionnaire and commend you for providing your readership with relevant data upon which to base their votes. The Professional News precedent to which you refer was established by me last year in my role as chairman of the PAC Liaison Committee. The practice of publishing candidate statements in Spectrum was established quite a few years ago in response to my request to its then editor, Dave DeWitt.

I am pleased to respond:

1. I am not sure I understand the question fully. Is an IEEE-Sponsored event a technical conference or do you enlarge this to include business meetings of committees? If the former, I am not aware that IEEE members are ever excluded except for requirements (rarely) of security clearance and of registration fee when charged. You probably mean the latter. I do not believe in executive sessions and would allow membership attendance at all, including the IEEE Board of Directors. Practical limitations of space and the chairman's prerogative to police disruption and to grant permission to speak are necessary qualifications.

2. Yes. This is at least partially expressed in the new Code of Ethics and in the IEEE constitution. The full implications of the code with respect to social impact have yet to be understood. The engineer's obligation to the public welfare in matters of safety, for example, is explicit. Not so clear is the extent to which his subjective judgement may define the public good in more philosophical terms. In any case, he has the prerogative not to work, but may have to accept the consequences of such an act of conscience.

3. Yes. The Ethics and Employment Practices Committee of USAB, of which I am chairman, has the charge to develop an IEEE position on the question of whether the obligation to subscribe is implicit or whether there should be a formal "oath" as a condition for membership. In any case, the IEEE should, in my view, take the position that the code is binding and act accordingly.

4. Yes. Here too, EEPC is working on a formal position. I favor censure and, in extreme cases, expulsion. Very careful machinery must be set up to protect the subject.

5. Yes. Again, this is on the EEPC agenda. If we are serious in our promulgation of the Code of Ethics, we must help the individual engineer to understand his rights and, if necessary to prosecute for legal redress. However, we would do best to attempt to mediate first to avoid the necessity for legal action.

6. While I am not acquainted with the details of this case, I would invoke the Resolution wherever its language and intent are applicable.

7. Yes. I would also establish an award for outstanding service to the profession. Such awards should be as prestigious as any of our traditional awards for technical achievement.

ARTHUR L. ROSSOFF

1. Do you believe that all IEEE sponsored events should be open to any IEEE member?

I agree that all IEEE-sponsored events should be open to any IEEE member, subject to the general constraints of physical facilities and the payment of registration fees. However, under certain circumstances additional restrictions of attendance may be imposed if such restrictions facilitate the exchange of technical information of such an event. There may be two kinds of restrictions of this nature. One is at a highly technical workshop, where the attendance is limited to those who can actively participate in the technical program. The other is a meeting or a portion of a meeting involving government classified or restricted data, where government security requirements for admission must be satisfied in order to have such a classified portion of the meeting. However, in either case such restricted events must be financially self-supporting by those participating in the events.

2. Do you believe that electrical engineers have a responsibility to consider the social implications of the work they do?

I do because we have to satisfy our conscience for the work we do.

3. Do you believe that electrical engineers and their employers should subscribe to a code of ethics?

Yes

4. Do you believe that in cases of serious violation of a code of ethics IEEE should recommend censure of the violator?

Yes

5. Do you favor establishment of an IEEE legal defense fund for electrical engineers harassed or discharged for adhering to a code of ethics?

Yes, but we should be very careful to consider the individual cases this fund will be used for; otherwise, it can easily get out of proportion.

6. Should the IEEE "Resolution on Basic Human Rights of Engineers and Scientists" be reiterated in the light of the arrests of some 40 Chilean engineers and scientists?

I agree in principle. However, we should realize that the situation in Chile, similar to some other nations, involves not only the basic human rights of engineers and scientists but also the basic human rights of all the people in Chile.

7. Do you favor the establishment of an IEEE field award for outstanding public service?

Yes

STEPHEN S. YAU

Thank you for your interest expressed in your letter. I certainly welcome the opportunity to comment on your questions:

1) I believe that all IEEE sponsored events should be open to all IEEE members. Human affairs being what they are, however, I have not yet seen a rule or law or principle to which there were no exceptions. I think this is an important principle and exceptions should only be granted most reluctantly.

(2) and (3) The answer is certainly "yes" although it is not clear to me whether in 3 you mean a code of ethics for the engineer recognized by the employer or a code of ethics for the employer.

4) Naturally, I understand there were disciplinary actions under the old AIEE code, some of which resulted in expulsion of the member. If your question refers to industrial violations as your reference to AAUP seems to imply, then your question addresses a very complex problem which demands much honest and devoted study and effort before it is resolved. It affects the entire spectrum of IEEE's technical and professional activities, especially the effectiveness of these activities and IEEE's relations with industry and government. Most of all it raises the question of the extent of the IEEE clout. For instance, universities are composed of faculty members with life long tenure. University administrators, like Deans and Presidents have at most one year appointments as administrators although they are typically tenured as professors of the school. Thus the professors and their organizations have extensive influence in academe. As everyone knows, industry is not so constituted. Considering then that AAUP censures, which are used sparingly, are not uniformly effective, one must wonder just how much positive effect an IEEE censure would have at the present time. For the future the aim is to constructively build up the IEEE prestige and influence with industry and government to the point where respect for the IEEE stand will resolve most such problems before they arise.

5) A fund in search of action is probably not desirable. As such cases arise, IEEE and its legal staff should analyze them on their own merits, and when justified, give such aid to the members as is consistent with the IEEE Constitution.

6) The IEEE "Resolution on Basic Human Rights of Engineers and Scientists" is on the record. From time to time, based on the facts of some actual situation, it may be desirable to reissue it. If the matter of the Chilean engineers should come up in the Board, I shall seek information on the facts of this matter which I now do not have.

7) By all means.

JOHN ZABORSKY

I am happy to have an opportunity to answer the questions put forth in your letter. I will try to answer them in the order they were asked.

1. Yes, I believe that all IEEE-sponsored events should be open to any IEEE member. It also seems to me that non-members should be charged a premium to attend.
2. Electrical engineers definitely have a responsibility to consider the social implications of the work they do. Social implications will become even more important in the future.
3. I believe that both electrical engineers and their employers should use a code of ethics in their business endeavors.
4. Certainly, IEEE should recommend censure of the violator in cases of serious violation of a code of ethics.
5. I believe that a legal defense fund for electrical engineers might be appropriate for some cases. However, this would depend upon the individual case and the surrounding circumstances.
6. Yes, this is an important issue and everyone should be made aware of it.
7. Yes, I think the establishment of an IEEE field award for outstanding public service would be a very worthwhile project.

GEORGE GIBSON

In the interests of conservation of publication space, I will answer questions 1 through 5 as follows: it depends on the details. I can imagine that my answer would be yes to these questions if their interpretation were appropriate. As for questions 6 and 7, yes.

ALBERT L. HOPKINS, JR.

LETTERS ●●●

Dear Editor:

IEEE election time is here again, and I have been disappointed by the low ballot return in past years. These of course are changing times, with the engineer's standing in society and rewards both diminished from a decade ago. And the IEEE is also changing, vigorously entering into pension activities and other items concerning the economic aspects of engineering employment. With all these changes taking place, it is vital that the leadership move in directions which will best benefit and please most of the members. Your vote is important, as this is one of the best ways of steering the Institute.

R.C. HANSEN
Vice-Chairman, TAB

Dear Editor:

Your account of my talk "The Mystery of the Electric Vehicle," NEWSLETTER (#10, July '75, Page 20), added an editorial mystery while omitting, to some extent, the "mystery" which I discussed at the CSIT function.

Inefficient gasoline vehicles displaced the noiseless, low pollution, more efficient electrics because of the low price of gasoline and the limited range of lead-acid, battery-driven, vehicles. Electric vehicles are not "over 80% efficient," but nevertheless, can get more mileage out of crude oil transformed into electric traction than can the typical Detroit-gas-burner. Of course, the electric power could also be derived from coal, nuclear, solar or other sources.

The mystery of electrics is that, while they are ideally suited to hundreds of thousands of short-range routes, they are hardly used in this country. The blindness of Detroit to long-lived electrics and the inertia of the electric utilities who would be signal gainers, as a result of a large-scale introduction of electric vehicles, play leading roles in the mystery. Technological advances in England and Japan are likely to deliver electrics to U.S. roads unless American industry and government act now.

Sincerely,

CYRUS A. ADLER

The World Environment and Resources Council (WERC) will sponsor a CONFERENCE ON THE ENVIRONMENT OF HUMAN SETTLEMENTS at Brussels, Belgium, March 1 - 2, 1976. Its theme will be, "Urban development and preservation of open space."

The Brussels Conference, sponsored by WERC with the patronage of the government of Belgium, will provide information to the Brussels meeting of the Ministers of the Environment of Council of Europe in April, 1976 and to the European non-government organizations for use at the United Nations Habitat Conference on Human Settlements in Vancouver, Canada in June, 1976.

The Brussels Conference will provide information on the consequences (physical, social, health, and economic) of the various settlement strategies that are being proposed. Technical areas will include new forms of development as alternatives to urban sprawl, planning techniques for human well-being in existing settlements, etc. Time will also be devoted to the presentation of case histories.

For more information contact Dr. P. Laconte, University of Louvain, Avenue de l'Espinette, 14, B-1.348 Louvain-la-Neuve, BELGIUM Telephone 010/41.73.11.

INFORMATION RESOURCES FOR PUBLIC INTEREST edited by Carl C. Clark and Mary K. Marcus (Sixth Edition, May 1975) is a catalog of the names and, in many cases, the addresses and telephone numbers of some 3,000 groups and 3,000 people involved in work of public interest. Details on safe drinking water issues and the Citizens' Drinking Water Coalition, and on the Federal Advisory Committee System, are included, or may be bought separately. Many additional articles, books, laws, hearings, and periodicals are referenced, in some cases with brief excerpts.

For further information contact:

Commission for the Advancement of Public Interest Organizations of the Monsour Medical Foundation
1875 Connecticut Avenue, N.W. Suite 1013
Washington, D.C. 20009
(202) 462-0505

A workshop, "Technology and Society on the Campus", will be offered by Penn State University, October 26-28, 1975. The workshop is primarily intended for those who are or are likely to be involved in organizing and teaching courses on science, technology and society, but is open to all. For further details, contact:

Dr. Rustum Roy
Director
Materials Research Laboratory
The Pennsylvania State University
University Park, PA 16802

Review of the booklet "Lifestyle Index", by A.J. Fritsch and B.I. Castleman (Center for Science in the Public Interest, Washington, D.C.; 1974).

As stated in the Introduction, this booklet is intended "to demonstrate how much energy each American uses each year, and to show how his or her standard of living compares with that of average persons living in other countries of the world" (where, this reviewer is careful to note, "standard of living" is equated to "energy units per capita expended annually.")

In other words, it is the authors' hope, in the first place, to educate the (wo)man-in-the-street regarding the amounts (quantification) of energy used by and in those things and processes which we have come to routinely employ and rely upon as we go about the pursuit of living and survival within our respective domiciles, and in going about our respective businesses. In the second (and more important) place, the authors' thereby hope to arouse the conscience and awareness of the citizen-at-large to the relatively critical nature of the energy scenario, with the realization that energy conservation, perhaps through alternatives available for use, is there for those who care to practice it, through examples given in the book.

The quantification technique invented by the authors is novel and convenient: they reduce everything to manageable and logical "energy units", one energy unit (1 EU) being one ten-thousandth of the energy expended by the average American in 1972.

The body of the book is then given to "inventory statement" summaries of energy absorption of those things, devices and processes which we rely on and use daily - it being left to the reader to fill in the amounts (in EU's), in blank spaces provided for that purpose, of energy absorbed by those particular items which the individual reader himself (herself) has and employs in his (her) immediate surroundings. Duly filled out, the booklet thus becomes the particular reader's personal energy inventory - of household energy expenditures, foods and beverages, consumer items and leisure activities, transportation, and social and governmental services.

Tables of energy data are included as appendices. The booklet lists and acknowledges authoritative sources of reference. This reviewer thus considers the booklet to be a valuable and handy compendium - one which the layman and concerned citizens will appreciate, the sort of reference which should be handy in every home and office.

B.R. Meyers

INDIA

The energy-environment problem in India and other similar developing countries is viewed mainly from the cost and availability aspect only. The environment degradation aspect is not of much importance. As this group of countries are mainly importers of energy resources, particularly the petroleum hydrocarbons, the high cost of oil is slowing down their already meagre rate of economic growth. The allround cost-push inflation in the aftermath of the energy crisis has made it extremely difficult for these nations to maintain even the status quo ante. Though their per capita energy consumption is miniscule in comparison to that of industrialised nations (India's per capita energy consumption is about 2% of that of the U.S.A.), even this meagre consumption is being priced out of their reach. The conservation ethic is strong and premium energy resources are being conserved and reserved for priority sectors only by government policy and price control.

In the above context, the preoccupation with the problems of ecological and environmental degradation which is a consequence of energy use looks rather irrelevant to our situation, notwithstanding the global effects of such degradation. In their view, the primary responsibility for any ecological consequences and possible remedial action lies with those nations whose energy consumption is substantial. The emphasis on ecological consequences is even viewed as a threat to their industrial growth.

The central effort in these nations is for indigenous discovery and production of energy resources and an ardent wish to be energy self-sufficient. Such low technology energy resources as bio-gas, solar energy are evoking great interest and research efforts are being concentrated in these areas. These forms of energy have the additional attraction of decentralised generation and distribution which is particularly suited for a scattered rural population.

Dr. K.K. Murthy
Professor of Electrical Engineering
Shri G.S. Institute of Technology & Science
17 Park Road
Indore-3 (M.P.)
India

TURKEY

Most of the developing countries are not self-sufficient in energy production. In paying for the imported fuel (mostly oil), they have to spend large amounts of valuable foreign currency reserves, which would otherwise be used for economic investment. Although the same situation may exist for an industrialized country, the social and economic end results pose a greater problem for a developing country, because the former can pay for imported oil by higher exports of manufactured goods. Trying to raise the same export potential is much harder for a developing country, driving it to the brink of bankruptcy.

In Turkey the situation may not be so severe, but the 1973-74 hike in petroleum prices has made the energy problem a much discussed public issue with strong political overtones. The five major sources of energy in Turkey are petroleum, coal, hydro-electric power, wood and dried manure. The first three are used in electric power generation, while wood and dried manure are used in the heating of buildings. In addition there are of course direct industrial uses of petroleum, coal and wood.

Turkey can fulfil only about one third of its petroleum need by local production. The rest must be imported at a total price of about 800 million dollars a year, forming about a quarter of all imports. Governments of the last two decades have been criticized for building petroleum burning power stations. Multinational oil companies are under strong criticism because they have preferred to import oil, rather than search for it. That is because multinational oil companies are naturally, firstly profit motivated and their interests are not necessarily in parallel with national interests. The single Turkish oil company has done more drilling and more production than all the multinational companies combined, despite the fewer permits and a smaller total licensed area.

There are those who call for nationalization of all oil business, while others call for more stringent controls and national involvement to the most possible extent. The economic privileges multinational oil companies were given 20 years ago for purposes of technology transfer and encouragement to invest need a fresh look and reevaluation today.

There is plenty of coal in Turkey but most of it is low quality lignite. The rather limited high quality coal is just enough to meet the needs of the iron and steel industry. There are several small lignite burning power stations and plans are under way for building large ones (over 1000 MW each). Most of the lignite is consumed in the heating of buildings. The pre-1974 trend toward fuel oil in residential heating has understandably reversed in favor of coal with subsequent increases in air pollution in town and cities.

Pollution of the air and water has not received the attention from the decision makers to make much of a difference in real life. There are small private organizations and societies for clean environment, but they don't have much political voice.

One government official was quoted as saying that developing countries can't bother themselves with environmental clean up, and that pollution is an issue of industrialized countries. To the old mind, extinction of marine life is the fisherman's problem.

There is one place where they are near being forced to take some action and that is the polluted air of Ankara, one of the worst in the World in winter. The chief source of air pollution in Ankara is low quality coal for heating. The smog problem exists in most other Turkish cities in winter. Inefficient fuel burning, bad insulation, and lack of temperature control in the heating systems adds to the problem.

There is good potential for hydroelectric power utilization, but progress has been slow. In addition to several small hydroelectric plants, Turkey's largest power plant, Keban, started service last year. But production was hampered by technical troubles, with foreign contractors taking the blame. They were accused of negligence, using obsolete technology and doing a poor job in general. Keban was not the only place of troubles. Due to malfunctioning equipment at other sites and a generally low water level at dams due to consecutive dry seasons, 1974 and 1975 has seen power rationing, that is each town or section of country got its share of scheduled power outage for one or two hours a day. Rationing along with voltage and frequency fluctuations has caused much loss and damage to the economy.

Plans are under way for bigger hydroelectric dams. This time international as well as economic considerations are playing a role, because of rivers crossing international boundaries where there is much need for water. Again environmental considerations are nonexistent.

Wood and dried manure are used (energywise) almost exclusively for residential heating. In terms of calories they account for more heat than coal and petroleum. It is a pity that manure is burned while there is much complaint of high fertilizer prices. The environment effects of cutting up forests just to burn them has long been known to everybody, and they are repeated at each occasion. However, due to lack of near-term economic alternatives the process goes on with resulting erosion of top soil, floods, drought, etc.

The potential for solar energy is very good in most of Turkey. There are small research groups beginning to work on the subject, with a planned construction of a small experimental unit. There is some work to tap the geothermal energy, but it seems the results when they come will only be for small scale production. Finally there are government plans for building one or two 600 MW nuclear stations, despite the criticism that they will be 100% dependent on foreign fuel. There is also the fear that the negligence and carelessness shown in other places may carry over to the nuclear plants with much worse results.

The emphasis on the energy issue has been on the production side, whereas much could be done on the conservation side. There is much room for improving the heating of buildings. Some of them are known and practised to a limited extent, such as training of control heating system operators for more efficient methods of fuel burning. But a large majority of buildings do not have a central heating system, each residence having its own burner(s). In either case there is no automatic temperature control, resulting in energy waste. (If it is too hot the windows are opened.) In buildings with a central heating system, water (or

steam) is used as the medium of heat transfer, with no system of forced air heating. There is little use of insulating material. Double sided windows have appeared in the market only recently.

Electricity is not used in heating except for small (1-2 KW) space heaters. Lack of enough electrical power and an overloaded distribution system has added to the electrical losses by large voltage and frequency fluctuations. Bad power quality has caused people to buy regulators for their TV sets and other electronic equipment. A few have even set up their own small generators. The end result is of course more waste.

The energy problem is multifaceted and so far in Turkey the discussion has been only on ways and means of more production. Conservation seems to be a nonissue. It is worth repeating that there has been very little if any regard for the environment in governmental decision making. In fact, what seems to have been the government policy so far is that, if it looks like the country needs energy, call for bids for a power station or two. The need for research and long range planning with all its implications, is greater than ever. But it is yet to start.

Dr. F. Ince
The Scientific and Technical Research Council of Turkey
Marmara Scientific and Industrial Research Institute
P.O. Box 21 Gelze
Kocaeli, Turkey

CSIT ROSTER

CHAIRMAN

Dr. R. C. Hansen
Box 215
Tarzana, CA 91356

VICE CHAIRMAN

Mr. J. Malvern Benjamin
Bionic Instruments, Inc.
221 Rock Hill Road
Bala Cynwyd, PA 19004

SECRETARY

Dr. Peter D. Edmonds
IEEE Headquarters
345 East 47th Street
N.Y.C., NY 10017

1975 CSIT WORKING GROUPS AND THEIR CHAIRMEN

ETHICS

Stephen Unger
229 Cambridge Avenue
Englewood, NJ 07631
(201) 567-5923 (Home)
(212) 280-3107 (Office)

NATIONAL SECURITY

Otto Friedrich, Jr.
Eng. Science Dept. 114B
University of Texas - Austin
Austin, TX 78712
(512) 471-1800

BIOELECTRONICS

Michael Pessah
1895 North Avenue 52
Highland Park, CA 90031
(213) 256-3266

SYSTEMS ENGINEERING & PUBLIC TECHNOLOGY

Gerald Rabow
309 Grant Avenue
Nutley, NJ 07110
(201) 235-1978 (Home)
(201) 284-0123 (Office)

ENERGY/ENVIRONMENT

P. M. Russo
RCA Labs.
Princeton, NJ 08540
(609) 452-2700 Ext. 3231

COMMUNICATIONS & INFORMATION

Fred B. Wood
736-22nd Street N.W.
Apt. 101
Washington, D.C. 20037

EFFECTS OF AUTOMATION ON WORK

M. Kuscher
IBM Systems Products Division
Neighborhood Rd.
Kingston, NY 12401

EDUCATION

(Vacant)



THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

345 EAST 47TH STREET, NEW YORK, N.Y. 10017

Non Profit Org.
U.S. Postage
PAID
IEEE