

# TECHNOLOGY and SOCIETY



IEEE

CONTRIBUTED PAPERS, REPORTS, REVIEWS, AND  
CORRESPONDENCE OF THE COMMITTEE ON SOCIAL IMPLICATIONS OF TECHNOLOGY

SEPTEMBER 1977—#19

EDITOR: FRANK KOTASEK JR.

## IEEE CANDIDATES' VIEWS

The views of the twenty-three candidates to the offices of IEEE President, Executive Vice President, and Regional or Divisional Director on two issues of current interest were solicited. The letter outlining the issues and the responses received as of press time are published below in alphabetical order within each office.

Dear (name of candidate):

As you probably know, our publication TECHNOLOGY AND SOCIETY is widely read throughout the Institute. Since you are a candidate for a policy-making office within IEEE, our readers would be very much interested in learning of your views on two issues that are currently under consideration by the Institute and are of particular concern to CSIT.

Accordingly, your answers to the following questions are solicited.

### 1. IEEE Support of Ethical Engineers.

On September 23, 1976, the IEEE Board of Directors approved the following policy statement:

"[IEEE] Members who are placed in jeopardy as a consequence of adherence to the Institute's Code of Ethics may be offered assistance, provided that, in the opinion of the Board of Directors or its designated representative, such assistance is warranted." [IEEE Policy 7.8.B]

## NOTICE TO READERS

Starting with the March 1978 issue, T&S will be available only on a paid subscription basis at \$2 a year (4 issues), payable when you pay your regular IEEE membership dues for 1978. Please see page 20 for details.

a) Do you favor this policy?

b) Do you favor implementing this policy by setting up machinery along the general lines of USAB's "Proposed Procedures for IEEE Support of Ethical Engineers" (enclosed),\* assuming that adequate safeguards are included to protect IEEE against legal liability?

### 2. Universal Registration of Engineers.

At its February 1977 meeting, the IEEE Board of Directors in

\*A preliminary draft of the proposed procedures was sent to the candidates and appears on pp 8-10.

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effect endorsed the concept of universal registration of engineers. By a vote of 15 to 8, IEEE Policy Statement 7.3 was revised to incorporate the following clauses:

"[IEEE] Recommends that State laws uniformly reserve the title of engineer, or ---- engineer, to licensed practitioners. (---- = electrical, electronics, etc.)"

"[IEEE] Recommends that all practitioners responsible for their activities, or the activities of their subordinates, be licensed to practice. Signature to any work performed, or to show approval/acceptance of a subprofessional's activities, is one example to indicate responsibility."

"[IEEE] Recommends that the industrial exemption, as it applies to practitioners responsible for their activities, be eliminated in all State laws and that current practitioners be permitted to 'grandfather' into licensure on the basis of application." [Spectrum, April 1977, p 17]

a) Do you favor retaining these three clauses as part of IEEE policy, or do you favor modifying (if so, in what way) or

deleting any or all of the clauses?

b) What other changes, if any, in state licensing examinations and licensing regulations should IEEE advocate?

Please limit yourself to a collective total of no more than 500 words for all questions. In answering, refer to the question by number, but do not repeat the question. Please address yourself directly to the issues and refrain from personal comments on other candidates. Responses adhering to these guidelines will not be edited. To meet publication deadlines, please respond by August 23, 1977. ■

Sincerely,

Frank Kotasek Jr.  
Editor, TECHNOLOGY AND SOCIETY

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## IEEE CANDIDATES' VIEWS

### PRESIDENT 1978

IRWIN FEERST, P.E. (petition candidate)

1. I support, wholeheartedly, the fledgling efforts of IEEE to act as a professional defender for its members. I have so stated, in writing, for four years. But I do more than merely express my support - I have acted as well. Perhaps you recall the unfortunate case of the former employee of Loral Electronics Corp. who was terminated because he refused to work "free" overtime to the extent of 18 hr/week. He was denied unemployment compensation because management claimed that his dismissal was because of "misconduct". He came to me for assistance in his appeal of this denial after having been refused help by IEEE. I wrote a brief (copy enclosed) and accompanied him to his appeal. The hearing examiner, after hearing my testimony, ruled that he should receive his unemployment pay. It is my observation that, all too frequently, IEEE candidates are willing to say whatever is necessary to get elected; what separates the adults from the children is the willingness to act.

I am, however, opposed to having IEEE file mere amicus curiae briefs in these matters. This is not an advocacy position; rather it is one in which IEEE takes no side in the dispute and merely informs the court of what may be pertinent facts. It is my view that IEEE should serve on the side of the aggrieved engineer.

2. I do not support the concept of universal registration for engineers as the present policy statement is worded. Registration confers neither exclusivity nor prestige nor higher income on the engineer. Moreover, it is unwise to encourage NSPE (the ultimate beneficiary of registration) in their repeated attempts to undercut IEEE.

This policy statement was the subject of an all-day meeting in suburban Virginia on Saturday 6/4/77 which I attended. One very important point was made by one of the speakers: Many IEEE members who sign off on drawings and/or work done by subordinates are mathematicians, physicists, etc. and are therefore ineligible to become licensed engineers. IEEE, having first promulgated the policy and having then requested comments from the membership, is now in the embarrassing position of revising it.

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DR. IVAN A. GETTING

Please note that there seems to be a difference between my copy of the IEEE policy numbering and the numbers in your letter. [Sorry, my mistake.--Ed.]

- 1a) Engineering is a learned profession with a well-recognized obligation to advance the public good. The public is well served when qualified engineers practice their

profession with high ethical standards. I therefore support the Engineer's Code of Ethics. The nub of the question is the enforcement of this code by IEEE both: (1) Policy 7.9.B. for the protection of the engineer; and (2) Policy 7.9.A. where the infraction of the code is made by the engineer.

In order to be effective in developing and maintaining ethical standards IEEE must assure that its handling of complaints is objective and even-handed. Complaint inquiries must recognize that engineering decisions are influenced by pragmatic considerations of technical feasibility, schedule, cost, and sometimes conflicting engineering judgment which can be evaluated only after-the-fact. IEEE should become involved in advocacy on behalf of engineers when the issues are clearly defined and well supported by facts; in this respect, I support current IEEE policy.

- b) The proposed procedures for the implementation of the policy should receive further study and some rewrite. The procedures for implementing Policy 7.9.B. as now proposed would appear to give IEEE a pseudo-judicial role where the means to acquire data are dependent upon voluntary cooperation. Concomitantly, the parties in dispute are subject to constituted legal action, and IEEE should not set itself up as a substitute for legal redress. Searching for truth is often a thankless job; the "facts" appear different to the various players in the drama. Often the "truth" lies in between; and, then, should there not be procedures to implement Policy 7.9.A? By defending one aggrieved engineer, the IEEE may inadvertently be impugning the judgment and jeopardizing the career of other engineers. Thus, while the objectives of the proposed procedures are laudable, their detailed implementation needs further study to assure that unnecessary harm is not done in enforcing ethical behavior which is largely a matter of individual conscience.
- 2a) The current IEEE policy on registration needs to be reconsidered. The membership of IEEE includes many types of professional people, including metallurgists, physicists, administrators, educators, public servants, etc. The rapid growth in electronics has resulted from the combined efforts of all of these components. Correspondingly, IEEE policy should support each of these elements consistent with the professional characteristics of the component. I urge every electrical engineering graduate to become licensed; certainly electrical engineers who have a public practice should be licensed as a minimum protection to that public. Licensing should not be established as a restraint in trade; I do not favor the removal of the industrial exemption.
- b) IEEE should continuously monitor the changing attitude of our society and its impact on licensing. In certain states licensing is being taken over by consumer advocates often not qualified to establish criteria for professional examinations. Where licensing requires technical qualification, consideration should be given to continuing re-examination to assure the public that the practitioners are maintaining currency with the advancement in the art and changes in the laws and the codes.

## EXECUTIVE VICE PRESIDENT 1978

CARLETON A. BAYLESS

- 1a) Yes. I agree fully.
- b) There are many important issues and procedures to be explored as we go into this new arena for IEEE. The Board of Directors heard an excellent presentation on this same topic at Minneapolis last month. It will come before us again in November. At this particular time I favor proceeding cautiously and keeping the membership informed about each step we are taking. Ethics and adherence to the IEEE Code of Ethics is not limited to the United States. I hope we can set up procedures that are applicable worldwide. To summarize--I believe in setting up implementation procedures, but I have some reservations on some parts of this particular procedure. I am confident that the different groups who are working on the implementation matters will come up with an acceptable and effective procedure soon.
- 2a) I believe that the adoption of this policy has brought the subject to the surface for deliberate, in-depth interaction--after having been discussed in a variety of forums for years without any substantive results. One conference has already been held in Washington, exchanging facts, problems, and attitudes. Another is scheduled, at which time employers will give their additional inputs. I'm confident that after the "hearings" are held--those mentioned and others to be scheduled--a practical implementation plan can be worked out and perhaps certain parts of the policy will be reconsidered and changed. There are problems due to the varied makeup of our membership--physicists, practitioners, managers, software specialists, etc. IEEE policy should provide professional support for many different elements.
- b) Implementation of the IEEE policy requires the solution of as many problems as there are states, and the amount of time required to accomplish the goals will be significant; state reciprocity, standardization, variety of disciplines, continuing certification of competence, legal liability, and so on. I believe that a beginning must be made. After experience is gained on problems/solutions, we will advance from the ineffective situation of today to a satisfactory level of professionalism for all of our Institute constituency--members, industry, government, and public.

## REGIONAL DIRECTOR 1978-1979

### Region 1

REX H. BEERS, P.E.

1. I fully support the policy of the IEEE Board of Directors in their efforts to establish a means of securing redress for our members who may be wronged while abiding by

the IEEE Code of Ethics. Operating procedures to secure this redress would have my full support as long as impartiality is assured, legal liability safeguards were established and the costs were held within bounds.

2. I support and encourage voluntary universal registration of engineers and will continue to work toward aggressive programs that will assist our members who desire to upgrade their professional status. I cannot support any of the clauses in the revised policy statement as they are presently written because of implied discrimination. It is my opinion that the language could lead to misinterpretation and abuse and/or could violate the rights of many of our members. We need to assure that all our members' rights are respected and that no member who currently meets the criteria for membership in the Institute could be wronged. In this area of registration, certification and licensing, we need to make an in-depth, unhurried study of each segment as it applies to our members and establish a policy that will address the problem and not abrogate any of their rights. The current trend by some of the States leads one to the conclusion that registration or license is purely a revenue-deriving scheme or a method of implementing parochial interests.

I would support efforts by IEEE to promote standard licensing procedures and a more liberal interpretation and/or application of reciprocity between states. With the national scope of our industry and the transitory nature of our engineers, this is the first step to making universal registration practical. The IEEE has long had a reputation for integrity and sound ideas. We must assure that this reputation continues to be unblemished in our efforts to approach this most controversial area.

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HANS C. CHERNEY (petition candidate)

- 1a) Yes, I am in favor of this policy. I think that every organizational entity, just like every individual, should adhere to a Code of Ethics.
- b) Yes. If elected I will actively support the implementation of this policy along the lines of USAB's proposed procedures. However, I feel that this Code should apply to all IEEE members, including those outside the U.S.A. I understand that we do have members in countries that are ruled by "non-democratic" governments. The Code should apply to those members as well. It obviously would apply to U.S. citizens who work in those countries, and there is no reason why IEEE should tacitly support such a double standard. The principles embodied in the IEEE Code of Ethics are compatible with the professed ideals of all governments. IEEE can encourage all of its members to adhere to the Code--and can support them when they do so--without interfering in the political affairs of other countries. If it takes some additional words in the Code and implementation procedure to make them applicable internationally, then let us get to work on it!

2a&b)

In general I favor retaining these clauses. However, I foresee some hurdles--not barriers--which have to be overcome in developing procedures to implement this registration policy. Most of these hurdles relate to the variety of job functions of IEEE members. Some of the questions have been raised before but, to my knowledge, have not been answered satisfactorily. Following are these questions--hurdles--as I see them:

What are "practitioners"?

How do we handle members who are--or work as--computer scientists, programmers, systems architects, systems designers, etc., especially when they have EE degrees and/or move in and out between software and hardware every few years (or months)? We have to keep in mind that, in most cases, the "typical" IEEE member has no voice concerning his or her job assignment. How does the procedure apply to managers and executives who are EE's, moving in and out of their positions; how does it apply to sales engineers, procurement engineers? Some outstanding innovative and inventive engineers have science (physics) degrees, but work as EE's (especially in the solid state industry). Some outstanding EE's do not have a degree at all, and others have non-EE degrees. What about EE--and other--instructors, professors, deans, etc., in engineering schools; are they "practitioners"?

Does the model of the P.E. designation as it exists today apply to employed EE's and, specifically, the IEEE membership?

At present, the P.E. designation is tailored mostly to self-employed engineers, concentrating heavily on civil engineering and to some extent, on mechanical engineering. The dynamic, changing technological environment of the IEEE member needs a different model. Perhaps Groups and Societies--alone or together with industry--could establish centers of competency to certify specialties, to participate or take over the registration, certification and/or validation process. Questions of whether communications specialists are competent to work in the power area and vice-versa are not satisfactorily answered by the present P.E. designation. In fact, someone could be a P.E. in civil engineering and work as an EE because of the non-uniformity of state laws. Today a technologist graduate can take the P.E. examination and become a registered engineer. Is this acceptable? And last but not least, instituting reciprocity between states or national registration for engineers is a key factor for employed EE's, in light of the large number of employers who operate in a number of states and want to transfer employees rather than lay them off.

So the question is really: How do we make the new registration policy work for EE's and, specifically, for our members and to the benefit of the profession? In fact, I suggested at the June 4th meeting on Registration that we take a good look at our industrial environment; i.e., take a few companies--large, medium, and small--as models and see how the new policy could be implemented and what changes would be necessary in those specific instances.

JACK L. JATLOW

I very strongly favor the policies enumerated in your letter. I believe these policies are a prime essential for improving the status of the engineering profession.

1. I favor the policy, and feel it is important that IEEE start implementing the policy. It shall be mandated to: (1) Authorize and hire a full time staff (one person to start with and increase the staff as needed) for initial review and action on inquiries and infractions of the IEEE Code of Ethics, and (2) Initiate and join with the other Engineering Societies to set up a joint unified board to process grievances relating to ethical engineering.

I find that very few engineers are familiar with the "IEEE Code of Ethics", or the IEEE list of "IEEE Members' Professional Needs". I propose that they be periodically listed in Spectrum. I propose that IEEE, thru its educational activities, promote a lecture on "Engineering Code of Ethics and Engineering Professional Needs," at engineering schools, for senior students. USAB's proposed procedures for IEEE support of ethical engineers are good as an initial kick-off for implementing these activities.

2. Registration of Engineers: I thoroughly agree with the IEEE recommendations and favor retaining the three clauses as part of the IEEE policy.

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Region 3

ROY H. HARRIS

- 1a) Yes.
- b) Yes. The approach proposed by USAB is responsible and equitable to all parties involved. I feel that this would be a real service to Institute members and the general public.
- 2a) I support the registration of engineers for the twofold purpose of protection for the public and enhancement of the status of engineers; therefore, we should encourage wherever possible in our IEEE literature the positive aspects of registration for all engineers. Protection of the public is a more critical problem for the individual practitioner or consulting engineer. The registration laws add little protection where the engineer is employed by a company with an inherent responsibility for the public safety aspects of its products.
- b) The State licensing examinations should be reviewed to look at the current problem that exists in having one examination cover the extremely broad spectrum of electrical engineering in practice today.

CARY R. SPITZER

1a) Yes.

b) Yes.

2a) These clauses should be retained but modified as discussed below:

I. The title "engineer" should apply to anyone holding a four-year or post-graduate degree from an ECPD accredited institution.

II. The second clause is acceptable only because it is a recommendation. I remain to be convinced that all practitioners need to be licensed.

III. Clause III is acceptable as written since it contains a "grandfather" provision.

My concern about licensing lies within the examination itself. The examination suffers from the same limitations as any written examination in that it is impossible to fully portray all pertinent facets of a problem in writing and thus it becomes difficult to assess the prospective licensee's performance in the real world. Testing, to a very great extent, demonstrates only that the person knows or doesn't know the answers to the stated questions. The ability to do well in a license examination is, I believe, only weakly correlated to performing a sound engineering task. I also remain to be convinced that being required to pass an examination will raise the quality of engineering talent - its largest effect will be to reduce the quantity of talent available which, incidentally, is a goal sought by some IEEE members.

b) I can offer no suggestions for changes pending further study.

#### Region 5

PROF. DARRELL L. VINES

1a) Yes, as long as the Board of Directors is fair to the Engineer as well as the membership. It is possible that we might have a member who is absolutely obnoxious and would cause trouble wherever he is. Be careful!

b) Maybe. Keep the staff small! No more than one person. Have plan to phase out in two years if there is not enough for the person to do. Let us not create a monster.

2. Yes, states should reserve "engineer" to licensed practitioners. A graduate from an ECPD approved University or college should automatically be licensed.

Assuming the above is true, then each engineer-supervisor should also be licensed.

Industrial exemptions can surely lead to problems as in 1a), so that the elimination of the exemption may be good. I'd hate to have a union type arrangement so that PDQ Inc. had to hire me for a signature.

#### Region 7

E. F. GLASS, P.E.

1a) No.

b) No.

IEEE is not an appropriate organization to impose, through its own Code of Ethics, either legal or economic constraints on individuals or groups of individuals outside its own membership. It does not have the right to do so, and without the support of law any assuming of vested authority is illusory and a misapplication of the Institute's economic and staff resources. Laws are enacted by governments; they are administered by the legal profession; and they are applied to individual citizens or groups. The process cannot be reversed. And without enforcement rights and procedures a "Code of Ethics" is only a set of guidelines for professional conduct of the membership, with little significance to the rest of the world. "Censures" applied without legal or economic penalties are little more than formalized complaints.

IEEE should provide leadership and co-operate with all groups of professional engineers to extend and strengthen state legislation covering the practice of engineering. Protection of public interests should be defined to include engineering as a natural resource to provide state employment opportunities, accredited programs for engineering education in state colleges and universities, and the protection of the physical and economic interests of the public from works of engineering by non-qualified opportunists. The public in each state has a right to such basic protection, and their elected legislators have a responsibility to ensure that it is provided.

IEEE in concert with the professional engineers of other disciplines in each state could develop a successful program with state legislators to strengthen the self-governing role of the profession. Continuation of lobby activities by not only a minority of professional engineers but also a minority of discontented members of IEEE will have little chance of serious attention and will continue to be a serious divisive and costly element of our own organization.

2a) No.

I support the registration and licensing of all practicing professional engineers, but question the reference to "universal". For practical application of the licensing process I would support the amendment of existing state(s) legislation to register all practicing engineers to ensure protection of the public from the serious consequences of the engineering failures. Registration by defined engi-

neering discipline or sub-discipline introduces unnecessary complication and support to a skeptical public of closed shop protection of "vested interests". Bylaws and a Code of Ethics can effectively apply personal responsibility to limit practice to be consistent with academic training and professional experience. The National Society of Professional Engineers would continue to coordinate and encourage national standards for licensing and registration, codes of ethics, and accreditation of engineering programs in state colleges and universities.

b) Nil.

IEEE should avoid a direct "advocate" position on all issues associated with the legal and so-called "professional" self-interests of its members. This does not mean that the Institute should discontinue its activities to resolve the recognized complex and serious problems. It does mean that IEEE might re-direct its interests to coordinate and support similar concerns and objectives of all groups of professional engineers. There is a need for legislation to define all employers of professional engineers as clients, and to include the work forces of industries and corporations with "the public" and entitled to full protection from unqualified and irresponsible engineers. Professional electrical engineers comprise fewer than 15% of the engineering profession and to the legislators with direct responsibility to the public, their identity is even less significant. Continued allocation of IEEE resources to "right the wrongs" of its own small world of citizens, with all the advantages of advanced education, will be a futile investment.

PROF. DONALD A. ROY

1a) Yes.

b) Yes.

2a) Yes, because of the large majority of U.S. engineers in the IEEE. Rewording the clauses to make the recommendations universal is desirable.

b) Being a Canadian, I cannot really comment on this question other than to recommend a national body similar to the Canadian Council of Professional Engineers (C.C.P.E.) to coordinate and to promote uniformity of licensing examinations and licensing regulations.

#### DIVISIONAL DIRECTOR 1978-1979

##### Division I

DR. MOHAMMED S. GHANSI

1. I am not against IEEE support of ethical engineers providing that only serious and substantive issues which fall

within the scope of IEEE be considered for assistance. I favor implementing this policy by setting up machinery along the general lines of USAB's proposed procedures; however, care should also be exercised so as not to go overboard on staffing the Ethics Committee, or becoming involved in trivial issues. The Institute must furthermore exercise caution in defining the parameters of its involvement.

2. I am against universal registration for engineers. I don't think this issue has been carefully thought through. Its implementation is at best a difficult task and it could have undesirable effects on the members as well as the industrial community. If state laws are not uniform on this issue, mobility and transfer of engineers may become difficult. I believe graduation from an accredited program with a minimum of a B.S. degree should be sufficient to establish the credentials of a practicing engineer. The Institute should consider taking a more active role in upgrading standards for accreditation.

#### Division III

PROF. MISCHA SCHWARTZ

1. On the first question, relating to IEEE support of ethical engineers, I am wholeheartedly in favor of this policy and do favor its implementation along the general lines of USAB's proposed procedures.

2. On the second question, I still do not see the need for universal registration. The main problem, in my mind, is that of raising the esteem of engineering as a profession in the U.S. I feel there are better ways of accomplishing this goal (and with it, of course, improving the economic status of our profession). As an example, we should greatly increase our current efforts to have legislators and government policymakers rely more on the technical expertise available through engineering societies such as the IEEE. We should seek out ways of improving the utilization of engineers by industry, of ensuring that trained engineers really do the creative work of which they are capable.

Although I retain an open mind on the question and am willing to listen to further arguments in favor, I just do not see how universal registration is applicable to the problems we in electrical engineering face. Most electrical engineers work in teams or in relatively large groups. How can our professional activities be compared to those of doctors, lawyers, or even consulting engineers, working as individuals or in relatively small offices? Note that scientists, including those working in industry, are not registered, and often get a better press than engineers. I just cannot see how universal registration, with the myriad problems it will create--establishing and monitoring licensing examinations; judging a person's ability in engineering on the basis of one set of standardized examinations; designing, writing, and keeping up-to-date such examinations; coping with

necessary government licensing bureaucracy; etc.--will help improve the status of electrical engineers in our modern society.

#### Division V

DR. RICHARD E. MERWIN

1a) Yes.

b) Provision of this type of protection to IEEE members placed in jeopardy by following the Institute's Code of Ethics is a well-justified membership service.

2a) The clause should be altered to read Professional Engineer (as it is now recognized in most states). The title of engineer is descriptive of one's occupation and background and of one's qualifications to sign contracts and other legal documents as a specialist of some kind.

b) The IEEE should advocate more meaningful Professional Engineer licensing exams which reflect the specialty of the licensee. At present, most licensing exams deal with Civil Engineering specialties. Electrical engineering specialties (especially data processing) are entirely ignored by present licensing exams.

## EDITORIAL: IMPLEMENTING THE CODE OF ETHICS

At its June 18, 1977 meeting, USAB approved a pair of draft proposals for setting up machinery to implement the IEEE Code of Ethics. These two documents, which are reprinted below, propose procedures to: (1) provide IEEE assistance to engineers who are placed in jeopardy as a consequence of their adherence to the IEEE Code of Ethics, and (2) take appropriate action against IEEE members who violate the Code of Ethics. The Proposed Procedures were submitted to the IEEE Board of Directors, which has placed them on the agenda of its Nov. 1977 meeting. Meanwhile, the drafts are being revised, mainly to make their language appropriate for inclusion into the IEEE Bylaws. At present, the Bylaws contain no provision whatsoever to assist engineers placed in jeopardy as a consequence of adherence to the Code of Ethics, and the provision for dealing with infractions of the Code by members is inadequate.

A genuine effort by IEEE to encourage adherence to the Code of Ethics would be of great benefit to our profession, the Institute itself, and our society. I would urge all IEEE members to express their views on these Proposed Procedures (and on universal registration) in letters to the IEEE Board of Directors and to *Spectrum*. Suggestions for improving the Proposed Procedures are most welcome and may be sent directly to the Chairman of the USAB Ethical Conduct Activities Task Force: Dr. STEPHEN T. KOWEL, 103 Sun Harbor Drive, Liverpool, NY 13088.  
F.K.

## PROPOSED PROCEDURES FOR IEEE SUPPORT OF ETHICAL ENGINEERS

Draft Report Prepared by

USAB\* Ethical Conduct Activities Task Force: Dr. Stephen T. Kowel; Walter Elden, P.E.; Dr. Stephen Unger; Faith Lee, P.E.; Victor Zourides, P.E.; John Thatcher, P.E.

### A. Objectives

The intent of these procedures is to give positive support to those engineers whose careers are jeopardized as a consequence of their sincere efforts to practice their profession according to the letter and spirit of the IEEE Code of Ethics. As outlined below, this would include giving advice to those who anticipate problems as well as aid to those already penalized. A closely-associated goal is, where appropriate, to call attention to possible threats to the public interest that engineers may encounter in the course of their work. A considerable educational role will also be provided by the appropriate publication of fictionalized and actual cases. This will serve to sensitize IEEE members to the sorts of problems they may encounter in the practice of their profession.

B. Authority - Policy No. 7.8(B) of the IEEE Board of Directors, adopted September 1976.

### C. Creation and Composition of an Ethics Committee (EC)

The key IEEE entity for administering these procedures is the Ethics Committee (EC), composed of five IEEE members (member grade or above), appointed for staggered, renewable,

three year terms by the IEEE Assembly (the elected members of the Board of Directors). They should be chosen insofar as is feasible from a broad spectrum with respect to geography, type of employment, age, etc. It is proposed that the same committee shall administer the ethics enforcement procedures discussed in the companion report. The EC should have appropriate staff support. It is expected to draw heavily on volunteer members as well as PAC's and local sections.

### D. Procedures

As a general rule, cases are initiated by individual engineers (not necessarily IEEE members) contacting the EC either directly or through other IEEE entities. Direct initiation by the EC may also be undertaken. Cases are referred initially to the staff for preliminary screening to filter out those that are frivolous, inappropriate, or obviously unjustifiable.

If the engineer is simply asking for advice, this might be provided informally by the staff, depending on the complexity and importance of the situation. Otherwise the staff reports to the EC, which might consider the matter directly and render an opinion or it might appoint an ad hoc committee of one or more IEEE members to study the matter and report back to it.

\*USAB = United States Activities Board.



Upon consideration of this report, the EC would then pass on advice and take any other action it deems appropriate.

Where a conflict exists (usually between an employer and an engineer), and in some advisory situations, a waiver letter (Appendix A) is obtained from the engineer at the start of the process. If the engineer is asking for assistance, the staff may try to resolve the problem by informal inquiries. Indeed efforts are made at all stages to settle conflicts informally, and it is anticipated that these will usually succeed. When the staff encounters an appropriate prima facie case that it cannot resolve informally, it reports to the EC. Upon review, the EC, if it feels the case may have merit, appoints an ad hoc committee of two or three suitably-detached IEEE members. A vote of three in favor is required for EC committee action. It is anticipated the committee will meet at regular intervals to consider such cases.

This investigating committee (IC), with staff cooperation, carries out a thorough investigation, reviewing documents, interviewing concerned parties and witnesses, and calling, if necessary, on IEEE members (or others) for technical advice. It then prepares a careful report incorporating all of the pertinent facts and views expressed, noting, if necessary, refusals by any parties to cooperate with the investigation. The report concludes with a recommendation by the EC on the merits of the case. That is, a recommendation as to whether an engineer has suffered professionally because of his adherence to the Code of Ethics. It is not essential that the IC make any determination on the technical issues involved in the matter.

If the IC finds the engineer to be substantially in the right and the EC concurs, then the report is published (after review by counsel), over the signatures of the IC members, in Spectrum or some other publication sent to all IEEE members. The identity of the engineer may be suppressed if this is felt to be in his best interest. Note that all proceedings to this point are kept in strict confidence. The only exception being that the EC may decide to publish, for educational purposes, versions of some cases, so edited as to conceal the identities of all parties involved.

In addition to publication, the EC also forwards to the IEEE Board of Directors (or possibly to USAB if this is considered the appropriate body) recommendations for actions by the Institute in support of the engineer. These may include, but are not limited to, the issuance of a formal statement commending the engineer's behavior (to help counteract possible retaliatory bad references by the employer), formal censure of the employer, the filing of an amicus curiae brief, direct entry into a case by IEEE attorneys, other forms of financial aid to the engineer, requests to public agencies that they intervene, and notifications to other professional societies who may have members employed by the organization involved. The actions taken by the board would also be made public.

Besides responding to particular cases, the EC may engage in other activities consistent with its overall purpose. These include the publication of illustrative fictional cases, cooperation with similar committees of other societies, and the publication of commendations of organizations that set outstanding examples in respecting the professional prerogatives of their engineers.

E. Information - Once final disposition is made, all data, etc. not published should be destroyed.

## APPENDIX A

### Waiver Letter Addressed to Ethics Committee by Engineer Seeking Aid:

I believe that I have been improperly treated by \_\_\_\_\_ as a result of my adherence to the IEEE Code of Ethics, and hereby request assistance from the Ethics Committee. The situation is outlined in the enclosed statement.

You may contact other individuals or corporate entities concerned insofar as is necessary to conduct a thorough investigation. I absolve IEEE, its operating groups, and all individuals associated therewith of any responsibility for the consequences of your investigation of this matter, and I agree to take no legal action against the Institute as a consequence of its findings.

Notarized.

Signed,

## APPENDIX B

### Supplementary Remarks to Support Proposal

#### 1. Objectives.

The machinery described here is intended to support engineers only in ethics-related matters. Other factors are to be considered only if directly related to the ethical issue. (For example, a pay cut used to pressure an engineer into backing down on an ethical matter.)

Employers of engineers will benefit significantly from these procedures. Their engineering staffs will tend to operate at a higher professional level and avoid the kinds of disasters that often result from evasions of responsibility. Responsible organizations will also receive some protection from the unscrupulous practices of irresponsible competitors.

With respect to protecting the public interest, if the engineers involved in the BART case or in the design of the DC-10 had been able to call on a prestigious engineering society to review their allegations and bring them to the attention of the appropriate agencies at the initial stages, much grief would probably have been averted. Note that in such situations it is not necessary that the EC come to a definite conclusion on the technical merits. Conveying to a regulatory agency, for example, that an objective, preliminary study by a respected group reveals a strong likelihood of a serious problem would generally suffice to trigger a full-scale investigation. Good judgment must of course be exercised to restrict such actions to serious matters.

#### 2. Composition of the Ethics Committee.

Obviously it is essential that the EC, its staff, and the volunteers cooperating with them be competent, dedicated individuals. A long-term goal might be to make EC membership a full-time, prestigious, paid position, possibly serving a group of engineering societies (a proposal by Victor Paschakis of the ASME) and administering a common intersociety code of ethics.

#### 3. Procedures.

It would be a mistake to attempt to specify rigid procedures in advance. Only experience can lead to the development of

effective detailed machinery. Careful records should be maintained to facilitate this learning process.

The experience of the American Association of University Professors (AAUP) has been most useful in developing the procedures outlined here. The AAUP has, since 1915, successfully investigated cases, published reports, and censured university administrations without encountering any serious legal problems. Here the thrust has been in the area of denial of due process relative to tenure and reappointment. The AAUP scrupulously avoids the appearance of acting as a collective bargaining agent. It acts to investigate reports of infractions of its principles and to report its findings. It is most interesting to note that the AAUP receives more than 1000 inquiries a year, which are primarily handled by three full-time staff members. Of these cases no more than ten ever reach the stage of a published report by the investigating committees. All actions are reviewed by counsel, and no

suit has ever been brought against the Association.

The American Chemical Society has for a number of years investigated and published findings relative to employment practices. It has censured a number of chemical and non-chemical companies, and no legal action has ever been brought against it. Furthermore, it appears that no economic sanctions have been brought against the Society. There have been no cancellations of advertising or other support of the Society.

Both AAUP and the ACS require a waiver similar to the one suggested in the above appendix.

By having all documents reviewed by legal counsel before publication, by scrupulous adherence to confidentiality, and by conducting careful, thoroughly impartial investigations, the Institute should be able to protect itself adequately against legal liability. ■

## PROPOSED PROCEDURES FOR HANDLING ALLEGED INFRACTIONS OF THE IEEE CODE OF ETHICS BY MEMBERS

Draft Report Prepared by USAB Ethical Conduct Activities Task Force

### A. Objective

To establish the procedures for receiving, investigating, evaluating, and taking appropriate action to resolve reported infractions of the Institute's Code of Ethics by members, and to educate the membership on ethics-related issues.

B. Authority - Policy No. 7.8(A) of the IEEE Board of Directors, adopted September 1976.

### C. Administrator of Complaint Investigations and Proceedings

An Ethics Committee shall be formed and shall have the full responsibility and authority to carry out the assigned duties of the procedures set forth herein. The makeup and operating procedures of the Ethics Committee shall be set forth elsewhere and may include duties other than those prescribed herein, as approved by the IEEE Board of Directors. (Refer to the Procedures for IEEE Support of Ethical Engineers.)

The Ethics Committee shall report to the IEEE Executive Committee. The Ethics Committee shall, in addition to other duties, administer the following main functions in the most expeditious manner consistent with constraints imposed by legal aspects, availability of volunteers, witnesses, etc.:

1. Receive complaints.
2. Initiate complaints when deemed necessary.
3. Conduct investigations to determine probable cause.
4. Assemble and conduct hearings to resolve complaints.
5. Review findings of the hearing proceedings and report findings to the Executive Committee and to all affected parties.

### D. Appeals Review Board

The Executive Committee, upon receiving the findings report of the Ethics Committee, shall convene and serve as an Appeals Review Board. Its decision shall be reported to the IEEE Board of Directors for final action.

### E. Final Board Action

The IEEE Board of Directors shall take final action in all matters covered by this procedure and shall approve any recommended disciplinary action to be taken against a member. The Executive Committee shall administer the approved disciplinary action on behalf of the Institute.

### F. Complaints of Infractions of the IEEE Code of Ethics

1. Any person, IEEE member, or the Ethics Committee may file a complaint.
2. The complaint shall be prepared in writing and signed by the person filing the complaint.
3. The complaint shall specify the section of the Code of Ethics which is alleged to have been violated and describe the particulars of the alleged violation. Supporting material may be provided with the report.
4. The Ethics Committee is empowered to seek any information not available in the original complaint.

### G. Processing of Reported Infractions

1. Complaints and evidence of reported infractions shall be received by the Chairman of the Ethics Committee and copies transmitted to all members of the Ethics Committee.
2. The Ethics Committee shall meet on a pre-scheduled basis and review all complaints received.
3. The Ethics Committee shall make a determination at the meeting whether there exists a basis for conducting an investigation. If such a basis does not exist, either because of lack of evidence or because of a determination that no infraction has occurred, the Ethics Committee may close the case and shall notify in writing the individual who filed the complaint.
4. If a determination is made that another body or society has interest in the matter, the Ethics Committee may choose to refer the case to that body as well.

#### H. Conduct of Investigations

1. Investigations shall be conducted after the Ethics Committee has determined that the allegations contained in the complaint warrant gathering additional information in order to determine whether an infraction has indeed occurred.
2. The Ethics Committee shall appoint an Investigating Committee (IC) for each case.
3. The Ethics Committee shall provide the Investigating Committee with copies of the complaint at the time appointed, with proper instructions governing approved rules, methods, and procedures for conducting an investigation.
4. The IEEE member named in the complaint and the individual bringing the complaint both shall be notified, by certified letter, by the Ethics Committee of its decision to investigate.
5. Both parties to the complaint shall be informed of the fact of the inquiry and notified where hearings, if any, are to be held in connection with the investigating committee's work. The member against whom the complaint is brought and his/her representative shall be invited to appear.
6. The investigation shall be conducted in order to gather additional facts or to receive statements from witnesses. Interviews in person, written inquiries, and hearings to gather pertinent testimony shall be conducted.
7. Upon completion, the Investigating Committee shall decide whether "probable cause" has been substantiated. Probable cause shall mean that there is reasonable basis for believing that the facts alleged in the complaint, if proven, would constitute cause for expulsion, suspension, or censure of the member against whom a complaint has been brought and that the facts alleged in the complaint can be proven.
8. The Investigating Committee shall prepare a written report of its investigation, its findings, and its conclusions, and shall submit it to the Ethics Committee Chairman.
9. At all times, the Investigating Committee shall protect the privacy of the individuals by not disclosing matters of the case to outside persons.
10. In the event the Ethics Committee decides to conduct a hearing, a member of the Investigating Committee shall be prepared to provide his service as the Manager. The Manager will present the case on behalf of the IEEE at such a hearing.

#### I. Ethics Committee Review and Processing of Investigating Committee's Report

1. The written report, received from the Investigating Committee, shall be reproduced and distributed to all members of the Ethics Committee.
2. This case shall be placed on the agenda of the next regularly-scheduled meeting of the Ethics Committee, or a specially-called meeting if circumstances are so warrant.
3. The Ethics Committee shall review the report and recommendations of the Investigating Committee. The Committee shall make a determination at the meeting whether "Probable Cause" of an infraction of the IEEE Code of Ethics has been substantiated.
4. If the IC has determined that no probable cause exists, the Ethics Committee shall close the case, notify all parties in writing by certified mail, and submit a written report to the IEEE Executive Committee. Privacy shall be maintained in the matter.
5. In the event of a finding of probable cause, the Ethics Committee shall (1) notify all parties in writing by cer-

tified mail, stating the alleged infraction, the person bringing the charge, the member against whom the complaint is made, the date, time, place, and the rules and procedures for conducting a hearing to resolve the matter; (2) notify the IEEE Executive Committee by written report; (3) select the member of the Ethics Committee to be the Presiding Official to conduct the hearing; and (4) appoint a member of the Investigating Committee to serve as the Manager of the case on behalf of the Institute.

6. The Ethics Committee shall institute the selection of peer members to serve as a Hearing Board in the proceedings. The Hearing Board shall be comprised of six randomly selected IEEE members residing in the same Region as the member against the whom the complaint is brought. The Presiding Officer shall act as mediator in any questions arising concerning challenges to the seating of anyone on the hearing board.
7. The Ethics Committee shall have the authority to accept a plea of guilty by the member against whom the charges are brought. This plea shall be entered in the record and the proceedings terminated. The plea shall be obtained in writing. If this action is taken, the Executive Committee and all parties shall be notified of the fact by written report.

#### J. The Hearing Procedures

1. The proceeding shall be conducted in accordance with the conditions stipulated in the written notification.
2. The Presiding Officer shall be the official in charge of seeing that the hearing is conducted in accordance with the written rules and procedures established by the Ethics Committee. All points of order, resolution of disputes, clarification of instructions, and administrative functions necessary to the proceeding shall be the responsibility of the Presiding Officer.
3. The order of the proceedings shall be as follows:
  - (1) Opening instructions by Presiding Officer.
  - (2) Presentation of the case by the Manager. The cross-examination of all witnesses shall be permitted.
  - (3) The member against whom the complaint is lodged shall present a defense against the charges, have the right to advice of legal counsel or any other chosen person, and may introduce any witnesses, and material facts; the Manager shall have the right to cross examine any witnesses brought by the member.
  - (4) Both sides shall make closing statements; first the Manager, then the member against whom the charges are brought.
  - (5) The Hearing Board shall deliberate in closed session, shall have the right to examine witnesses and material facts, and shall reach a decision by a vote of two thirds (4 out of 6). This result is reported to the Presiding Officer for transmittal to the Ethics Committee.
  - (6) In the event that the Hearing Board finds the member guilty of an infraction, it shall set a maximum penalty by a vote of two thirds (4 out of 6).
  - (7) In any event, their findings shall be transmitted to the Presiding Officer who forwards it to the Ethics Committee.
  - (8) A sound recording shall be made of the hearing if requested and kept on file by the Ethics Committee until a final action required under these procedures. At that time all records, evidence, etc. shall be destroyed, except for a digest stating the essential elements of the findings.

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Frank Kotasek Jr., Ed.

### CSIT MEETING, November 5, 1977

The next meeting of CSIT will be held on Saturday, Nov. 5, 10am to 3pm, at the Engineers Club, 32 West 40th Street, New York, NY. CSIT meetings are open to all IEEE members, and we hope you will take this opportunity to become better acquainted with us and with our activities. Light lunch will be provided. If you plan to attend, please notify Ms. Joan Breslin, IEEE, 345 East 47th Street, New York, NY 10017, (212) 644-7887.

## CALL FOR PAPERS

### 1978 CARNAHAN CONFERENCE ON CRIME COUNTER-MEASURES

May 17-19, 1978; Lexington, KY

Send 200-word abstract to:

John S. Jackson  
Dept. of Electrical Engineering  
University of Kentucky  
Lexington, KY 40506  
(606) 257-3926 or 258-5949

Deadline: September 19, 1977.

### ENERGY '78

IEEE Region 5 Annual Conference

April 16-18, 1978; Tulsa, OK

Topics include (but not limited to): New energy sources; Energy conservation; Energy storage; Economics of energy systems and alternatives; Efficient utilization of energy resources. Submit three copies of 200-word abstract before November 1, 1977.

Send abstract to:

Dr. R. Ramakumar  
Technical Program Chairman  
School of Electrical Engrg.  
202 Engineering South  
Oklahoma State University  
Stillwater, OK 74074  
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All other information:

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