THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

# TECHNICAL ACTIVITIES BOARD

## COMMITTEE ON SOCIAL IMPLICATIONS OF TECHNOLOGY

Columbia University
Mudd Engineering Building
Conference Room, 1306A

June 9, 1979

MINUTES OF THE MEETING*

1. Call to Order and Attendance

Acting Chairman Unger called the meeting to order at 10:30 AM. Those present for all or part of the meeting were:

Stephen H. Unger, Acting Chmn.
Norman Balabanian
Carl Barus
J. Malvern Benjamin
R. J. Bogumil
David C. Cook
Virginia Edgerton
Richard Harris
Richard F. Koch
Frank Kotasek
Gerald Rabow

2. Approval of April 24, 1979, Meeting Minutes

The Minutes of the April 24, 1979, CSIT meeting were approved with the following corrections:

a. Page 3; Item 7; First Paragraph; Line 5: Change "1979" to "1978."

b. Page 3; Item 7; Second Paragraph; Line 5: Change "he" to "we."

3. CSIT Award Funds

David Cook reported that the transfer of money that the IEEE Nuclear and Plasma Sciences Society (NPSS) wants to contribute to the CSIT Award Fund had not yet been achieved. NPSS President Shohet will request the IEEE Executive Committee to approve the transfer.

4. WG/SEPT

Gerald Rabow's recommendations on taking the necessary steps to qualify the CSIT Position Paper on the Application of Systems Engineering to Societal Problems as an Entity Position Statement and an IEEE Position Paper, as described in the April 24, 1979, meeting Minutes, were approved.

* Unapproved

ACTION
Rabow, Unger, Balabanian

Rabow will send the papers and digest to Acting Chairman Unger, who will sign the Entity Position Statement and transmit the documents to the respective recipients. Rabow will also send copies to Norman Balabanian for publication of the new material in "T & S."

5. Energy

Acting Chairman Unger reported that David Redfield had asked for assistance in his function as CSIT representative to the IEEE Energy Committee. Carl Barus voluneered to help.

EXHIBITS A & B

In response to IEEE President Suran's testimony before a Congressional Committee, as reported in THE INSTITUTE (Exhibit A), which apparently conflicts with the position of the IEEE Energy Committee, David Redfield has written a letter to President Suran, asking for an explanation (Exhibit B).

It appeared to be the consensus that Suran's testimony, as reported in THE INSTITUTE, neither represented the balanced view on a controversial technical subject that we expect IEEE representatives to present to the public, nor was in accordance with the position of the Energy Committee set up by IEEE to determine IEEE energy positions (where the Energy Committee itself is already biased toward the views of the Power Engineering Society). The following actions by CSIT--as distinct from Redfield's action as a member of the Energy Committee--were agreed upon:

ACTION
Barus, Unger, Edgerton

a. A letter from Steve Unger to President Suran (to be drafted by Carl Barus), requesting a copy of the testimony from Suran.

b. Barus is to obtain the Minutes of the Congressional Committee before which Suran testified.

c. Barus is to request the IEEE Position on Energy from IEEE Headquarters.

Virginia Edgerton volunteered to help Barus in drafting the above letters.

The subject is to be taken up again at the next CSIT meeting with the aid of the answers to the above inquiries.

6. Policy 14

EXHIBIT C

Gerald Rabow presented a proposed amendment to Policy 14. The purpose of the amendment is to call attention to views within IEEE which differ from that of an Entity Position Statement or IEEE Position Paper. The amendment, as subsequently rewritten to reflect suggested additions, is appended as Exhibit C. The additions provide safeguards for dissenting viewpoints when there is insufficient time to reference them in an initial Entity Position Statement.

MOTION

A motion to adopt the amendment as a CSIT Position was approved by a vote of 10-0, with one abstention.

ACTION
Rabow, Unger
Balabanian

Rabow agreed to rewrite the amendment with the suggested additions (since completed as Exhibit C) and send it to Norman Balabanian for publication in "T & S," and to Stephen Unger who will send it to TAB with copies to Suran and Herz.

7. Cryptography

EXHIBIT D

Richard Harris has prepared a paper on cryptography (Exhibit D). He considers the problems of cryptography as part of the larger topic of the purposes of information technology and proposed a symposium on this topic sponsored by IEEE. Among the suggestions for setting up such a symposium were a session at the ICC meeting in Seattle on Communications and Society, an NSF proposal, and contacting Misha Schwartz, Weiner, Slepian, and the Rensselaer Institute.

Mal Benjamin reported that he had had discussions re ITAR (International Traffic in Arms Regulations) at the TAB meeting in Atlanta, to try to get IEEE to further investigate the problem.

8. Meeting on Technology and Growth

EXHIBIT E

A report from Victor Paschkis on the meeting on technology and growth which he is organizing is attached as Exhibit E. He would like to try to get some seed money from IEEE for a planning meeting for the proposed meeting. There was no objection from the Committee for him to attempt this.

9. San Francisco Meeting

EXHIBIT F

ATTENTION
Friedland,
Edmonds,
Bruder,
McMillan

In a letter to Stephen Unger (Exhibit F), Bernard Friedland indicates an opportunity for CSIT to particpate in the 1980 Joint Automatic Control Conference to be held in San Francisco, August 13-15, 1980. The consensus of the Committee was that we should take advantage of the opportunity and that our West Coast members and associates, Peter Edmonds, Robert Bruder, and Brad McMillan, should be encouraged to take the lead in getting something organized.

10. Correspondence with Committee of Concerned EE's

Mal Benjamin reported that he had received correspondence from Irwin Feerst to which he had not yet responded, and was asking for guidance on how to proceed. Feerst complained that the IEEE Member Conduct Committee had notified him of charges against him before the Member Conduct Committee. The charges have since been withdrawn, but the Committee refused to inform him of the nature of the charges. It was the consensus of CSIT that the Member Conduct Committee had probably erred in contacting Feerst prior to making a decision to conduct an extensive investigation, at which time the charges could have been specified. It was decided that Benjamin would write a letter of inquiry to Member Conduct Committee Chairman Fairman and a letter, preceded by a phone call, to Feerst, acknowledging the correspondence from Feerst.

ACTION
Benjamin

11. Interface with Member Conduct Committee (MCC)

In a conversation between Mal Benjamin and James Fairman, Chairman of the MCC, the following agreements were reached; they are to be formalized in writing:

a. MCC considers its job investigative only (CSIT can follow up with publicity).

b. Cases which come to CSIT's attention should be passed on to the MCC, either immediately or after a preliminary investigation. MCC will inform CSIT of its conclusions in those cases.

c. CSIT can conduct follow-up investigations.

12. "Technology and Society" ("T & S")

CTION
alabanian

Norman Balabanian reported that the March 1979 issue of "T & S" went to IEEE Headquarters April 12, but to the printers on June 6. He will complain to Woody Gannett, Staff Director of IEEE's Publications Department, about the delay. It will take another month for the issue to come out. The June 1979 issue is not yet complete.

The change to magazine status was turned down by the Publications board. The reasons given were that the staff is presently too busy, that the quality is not adequate and some think the material is not adequately balanced, and that magazines are limited to Societies and Groups. Gannett suggested that CSIT should submit the application again in a year.

Book reviewers are needed for "T & S."

13. CSIT Award Publicity

Mal Benjamin reported that SPECTRUM will consider news publication of ethics awards, with reference to the complete document.

14. Other Announcements

The present arrangement of Stephen Unger serving as Acting Chairman will probably continue for the remainder of the year.

CSIT received a request for support from an employee who was alledgedly dismissed for protesting the inadequate testing of aircraft. CSIT referred the matter to the Member Conduct Committee.

Stephen Unger will participate in a written debate for THE INSTITUTE on ethics.

15. CSIT Award Suggestion

EXHIBIT G Virginia Edgerton proposed as a candidate for the next CSIT Award for Outstanding Service in the Public Interest a chemist who was fired for demonstrating the flammability of material in a nuclear plant. Further details are given in Exhibit G.

16. Relation with Political Action Committees

Stephen Unger suggested an associate editor for "T & S" to interface with PACs. Among the PAC Chairmen with whom CSIT could keep in touch are McMillan (San Francisco), Tax (North Jersey), Andresen (Connecticut), and Edgerton (New York City).

17. Next Meeting

The next meeting is scheduled for September 15, 1979, at 10:30 AM, at Columbia University.

18. Adjournment

The meeting was adjourned at 3:30 PM.

Gerald Rabow, Secretary
June 26, 1979

GR/jeb

EXHIBIT A

THE INSTITUTE
VOLUME 3 ☐ NUMBER 6
June 1979
News Supplement to IEEE Spectrum



# uran urges more Federal funds or fission and fusion research

a hearing on the 1980 Depart- at of Energy Budget, Jerome an, IEEE President, recom- nded that Congress increase ding for light-water reactor :arch, with particular emphasis learning from the recent Three e Island accident. He also ommended continuation of the Clinch River breeder reactor proj- ct and support for fusion and hybrid fusion-fission technology.

These recommendations were among several that Mr. Suran made in an appearance April 11 before the House Subcommittee on Energy and Water Resources. He testified as an official representative of the IEEE.

Supporting the continued use of nuclear power, Mr. Suran told the Congressmen: "We face a grave shortage of electrical energy unless nuclear power makes a major contribution in the near and intermediate future." He criticized the contemplated 14 percent reduction in the DOE's 1980 nuclear-fission budget as not compatible with the national need to use nuclear resources to generate electricity.

Since the national objective is to reduce imports of foreign oil, Mr. Suran noted, nuclear energy is necessary. He said: "The economic penalty without nuclear power is of vital concern to our nation and must be evaluated along with the operating risks."

Other recommendations made by Mr. Suran in his statement on the DOE budget included:

- Support for developing a short-term solution to the nuclear waste-disposal problem by 1982 and a long-term solution by 1985.
- Research and development funds to assure the availability of an operating nuclear fuel reprocessing facility.
- Funds for continued in-depth investigations of U.S. uranium resources.
- Stronger support for development of synthetic fuels from coal.
- Restoration of last year's funding levels for research in electrical transmission and distribution systems, to provide new technology needed in the future.

In his recommendation for more funds for light-water reactor research, Mr. Suran noted: "A special effort to analyze the Three Mile Island incident, to determine possible changes in the designs or operating procedures of other existing reactors, would be especially worthwhile."

Though Mr. Suran's testimony did not center on the recent nuclear-reactor accident in Pennsylvania, he did make several

(Continued on p. 8, col. 1)

## Suran testifies

(Continued from p. 1, col. 3)

references to it. He noted that much information and misinformation had been published about risks to the public from nuclear power plants and he asked the subcommittee to bear in mind "the risk to the health, safety, and welfare of all U.S. citizens and for all people throughout the world, if we are unable to meet our future energy and electrical needs."

Mr. Suran also told the subcommittee that breeder reactors represented an important mechanism for extending the nation's nuclear fuel supplies and that the Clinch River breeder reactor would provide needed design, construction, and operating experience for scientists, engineers, and labor.

"The development of competent personnel cannot be achieved through other nations' breeder efforts," he said. "The IEEE recommends continued funding of the Clinch River breeder reactor project at a level that will allow completion as soon as feasible."

The basic theme of Mr. Suran's testimony was that given the future energy needs of this country, progress toward the reduction of oil imports can only be made by greater reliance on coal and nuclear energy. He said: "The advocates of other forms of energy sources—such as solar radiation and wind—are unrealistic when they predict that these can replace large central station generating plants fueled by coal and uranium without drastic changes in life styles and in our free enterprise society."

His DOE budget recommendations were based on the vital need for energy and the need to minimize the hazards to the public of all forms of energy conversion.

—*Tom Lombardo*

# *IEEE Board has favored safe use of nuclear power*

The IEEE Board of Directors has stated its support of nuclear electric power, but it has emphasized concern for safety and environmental protection in the use of such power.

In a statement on the need for nuclear power, the Board of Directors went on record Jan. 29, 1976, as "supporting the rapid and orderly development of nuclear electric power."

In the official IEEE Position on Electricity in the U.S. Energy Economy, approved by the Board of Directors on April 5, 1977, the IEEE recommended the "prompt adoption of a national energy policy" that included these basic elements:

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

The position paper urged that the U.S. policy move to deemphasize the use of the limited supplies of oil and gas as primary energy sources and to build a commitment to uranium and coal as "the only rational near- and medium-term alternatives to our present heavy emphasis on oil and gas."

For safety and protection of the environment, the IEEE recommended that the Government accelerate its programs to minimize the adverse environmental impact of coal and nuclear-based electric generating systems and increase research into disposal of wastes from both the nuclear and coal cycles. In addition the position recommended "an aggressive national and international effort to address the problems arising from the production of plutonium and other fission products in the nuclear-fuel cycles."

This position paper also suggested "joint Government/industry efforts to complete development of commercial breeder reactors because "breeder reactors can extend our uranium resources for hundreds and perhaps thousands of years." President Suran recently reemphasized this position in testimony before the Congressional Subcommittee on Water and Energy Resources.

The IEEE Board has also urged a vigorous effort to develop atomic fusion as a potential principal energy source and has issued a separate statement to this effect.

—*Tom Lombardo*

EXHIBIT B

Mr. Jerome J. Suran, President
IEEE
345 East 47th Street
New York, NY 10017

RCA

29 May 1979

Dear Mr. Suran:

As a member of the IEEE Energy Committee I feel obliged to advise you of the damaging impression that was presented by the article in the June issue of The Institute describing your testimony on energy "as an official representative of the IEEE" before the House Subcommittee on Energy and Water Resources. For reasons that I shall outline below, the overall message conveyed by that article is a disservice to both the IEEE and the nation and needs to be corrected emphatically and clearly. I know that news media accounts are not always accurate, and I believe that this matter is of such importance that I urge you to clarify it promptly and, in doing so, to consider the following points.

The general problem is that, by not reflecting well the totality of carefully considered studies that the Energy Committee has provided to the IEEE Board of Directors, nearly all of which have been adopted as IEEE positions, the energy recommendations in this article present an unbalanced energy policy. One example is the emphasis (highlighted by the headline) on fission and fusion energy almost to the exclusion of other major ingredients in energy policy. Specifically, the IEEE has adopted and issued a position that "energy conservation programs should be given the highest national priority in energy planning," yet that subject is totally ignored in the article.

Next, the IEEE position on fusion energy clearly identifies it as a "goal" with "potential advantages" for the long term if it succeeds. It is misleading, therefore, to include it with fission energy in the article's discussion of concerns for "the near and intermediate future." Similarly, the fission breeder reactor is also outside the realm of such concerns, since all of the authorities who supported it before the Energy Committee stressed that it could not make a significant contribution within this century.

To the extent that these recommendations address intermediate-to-long-term energy sources, the article presents still another serious distortion of the Energy Committee's findings and of the facts on which those findings are based. That distortion lies in the treatment of renewable energy sources such as solar energy. The only mention of those sources in the article is a disparaging one, despite the fact that the Energy Committee has recently presented a new, and considerably more encouraging position statement concerning these sources based on a number of updated studies showing substantially more promise than had been recognized earlier.

To represent properly the considered judgments of the entire IEEE and to provide the public with the best advice we can offer, all of these important issues need widespread clarification. Again I urge that you make every effort to correct these misimpressions in all forums where the IEEE is heard.

Sincerely yours,

David Redfield

/lmk

cc: Mr. H. U. Brown III
Prof. Stephen Unger

EXHIBIT C

# CSIT Proposal for Amendment of IEEE Policy 14

CSIT proposes the following amendments to the New Policy 14 on IEEE Position Papers and Entity Position Statements which were adopted at the IEEE ExecCom and BoD meetings of February 14-17, 1979. The purpose of the amendments is to fairly represent to the outside world the various viewpoints held within IEEE on controversial issues, without unduly impeding the development of IEEE Position Papers or Entity Position Statements:

Entity Position Statements

1. Entity Position Statements must be circulated to all IEEE Entities.

2. Any Entity shall have the right to issue a Position Statement with a different viewpoint from that of other Entities.

3. When there are differing Entity Position Statements, complete or in preparation, each must include, starting with the second sentence, a sentence for each Entity with different view, indicating the existence of such a view, supplied by the Entity holding that view.

4. Whenever time permits, Entity Position Statements shall not be publicized outside IEEE until other IEEE Entities have had reasonable time to respond.

5. When time does not permit waiting for response from other Entities, the Entity Position Statement must be labeled "Preliminary" and must include the following first paragraph:

"This is a preliminary Position Statement by Entity X, which is one of N Entities constituting IEEE."(N to be supplied by IEEE staff) "It is preliminary because the remaining IEEE Entities have not yet had an opportunity to react to this Position Statement, or to exercise their right to develop a different position on the topic."

6. A preliminary Position Statement must be replaced, as soon as

practical, by one including the responses of the other Entiities. Use of the Preliminary Position Statement must then cease, and all references to it must be updated.

IEEE Position Papers

On IEEE Position Papers, Entities must be given the opportunity to append differing position statements (not requiring the approvals of #14.8B of Policy 14). In any use of the Position Paper, the existence of the differing position(s) must be brought out.

EXHIBIT D

Because computer and communications technology can be the means to a multiplicity of ends, the questions arise, Which ends are appropriate? and, perhaps even more importantly, How do we decide which ends are appropriate? A recent and controversial series of events offers what I believe to be a paradigm of this problem of purpose.

'The Cryptography Affair,' as it was called in the IEEE Information Theory Group Newsletter of December 1977, intimately involved the IEEE. Recognizing that it is arbitrary to assign beginnings and endings in any continuum, we might say that the affair started during the preparations for the International Symposium on Information Theory held in Ithaca, New York in October 1977, and reached its conclusion with the publication of 'Privacy and Authentication: An Introduction to Cryptography' by Dr. Whitfield Diffie and Dr. Martin E. Hellman in March 1979. The symposium was sponsored by the Information Theory Group, and the article was printed in Proceedings of the IEEE.

At issue were the new cryptographic techniques for guaranteeing communications privacy--techniques whose economic feasability could make them widely available to a large and rapidly growing body of users of electronic communications systems. The question in 1977 was whether or not the new techniques ought to be made public; by March 1979 they had passed unhindered into the international realm. In 1977 some people saw the promulgation of the new techniques as a threat to national security; others saw the suppression of the techniques as a threat to free research and the right to privacy. In 1977 two questions came

to the fore: When does a scientist or engineer have the right to communicate publicly? When does the public have the right to communicate privately? Now, in 1979, these questions have moved to the rear, where they are dormant, but not resolved.

National security versus personal and professional rights produced the spark that ignited the cryptography affair. On the one hand, it was feared that the promulgation of the new techniques would provide a valuable tool to enemy states and groups, who could make damaging use of secure communications. The National Security Agency had been monitoring telegraph and Telex messages sent into and out of the United States, and there was reason to believe that the loss of its ability to make communications scans might impede it in fulfilling its nominal task. It was suggested that cryptographic techniques represented a part of the United States' secret arsenal. In a letter to Mr. E. K. Gannett, Staff Secretary of the IEEE Publications Board, Mr. J. A. Meyer of Bethesda, Maryland noted that the International Traffic in Arms Regulations existed as a method for controlling the effects of new technology on national security, and that scientists and engineers should submit papers on any technological topic that is covered by the ITAR (for example, cryptography) to the State Department for approval prior to dissemination. This letter was dated 7 July 1977, prior to the symposium to be held in October at Ithaca, where papers on cryptography were due to be presented. The Senate Select Committee on Intelligence recommended that the National Security Agency become involved in choosing which scientists and institutions receive Federal research grants in cryptology.

Conflict arose, because it was feared that the right to privacy would be threatened by witholding the new techniques and allowing eavesdropping to pro-

liferate, and that the right to free research would be endangered by governmental review and possible censorship of technological pursuits and publications.

The tone of the cryptography affair was set by a counterpoint between secrecy and scrutiny. In so far as the one is fostered, the other suffers; the wider the application of cryptographic techniques, the more circumscribed becomes the effectiveness of eavesdropping techniques. Deciding how widely to employ methods for protecting communications means deciding which messages may enjoy the security of secrecy, and which must face the vulnerability of scrutiny. Promulgating the new methods leads towards security for all users of electronic communications systems. Reserving the techniques for exclusive employment by governmental intelligence agencies and the military entails security for the elect, but possible exposure to scrutiny for all other communicants--private and commercial users, besides enemy states.

Just like the computer and communications systems to which they are applied, cryptographic and eavesdropping techniques can be the means to a multiplicity of ends. An international telephone call might be used to plan a family reunion or a terrorist meeting; a remote terminal and a host computer might exchange data needed for staging an assault on a new market by an expanding corporation or an attack on the United States by a warlike nation. Eavesdropping is as much a tool for bribery as for national defense, and the virtue of 'secret writing' depends very much on the goals of the author. There is, of course, no perfect balance to be struck between cryptographic and eavesdropping techniques, no way to foster all the good purposes and at the same time curb all the bad ones. Determining the domains of cryptography and eavesdropping means deciding which worthy purposes must suffer in

order to stifle the baneful ones, and which baneful ones must flourish in order to protect the worthy. Perhaps even more important than the decision itself is the way in which it is made. The cryptography affair, with its debate over the promulgation as opposed to the restriction of the new cryptographic techniques, points inevitably towards the question: What is the most just and democratic process by which to judge personal and cultural purposes, to determine which are appropriate and which are not, and to weigh the constraint of the baneful against the nurture of the worthy?

The cryptography debate was inadequate, because it failed to address this question. Instead, it centered on a misleading polarization between national security and personal and professional liberty. 'Security' means, literally, 'without care' or 'without anxiety.' Expressed in these terms, the issues were private communication without anxiety over eavesdropping, public communication without anxiety about censorship, and a nation without anxiety about destruction. The debate focused more on what we want to be 'without' than on what we want to be 'with,' looking more towards what we have to fear than towards what we want to achieve. Security and liberty have in common that they are not ends in themselves, but are essential preconditions for the pursuit of human purposes. Our need for security and liberty--personal, professional, commercial, and national--stems from our need for an integrated cultural framework within which to pursue our aspirations.

Computer and communications networks are a burgeoning part of our culture, and the growth of these networks means a growth of power. Cryptographic and eavesdropping techniques can be the means for regulating--for enhancing or limiting--the potency of other information techniques.

The cryptography affair represents the first time that a great many of the developers of information technology have been intimately involved in a dispute over the control of 'information power.' The problem of deciding how to use this power is a very difficult one. The solution cannot be left to a small group, no matter how benevolent, and neither can the problem be ignored. The tools to define the human purposes that might be furthered by information technology and to weigh them, one against the other, are provided neither by technology itself nor by bureaucracy. Any method for controlling the development and use of computer and communications technology ought to be based on thoughtful discussion and informed, public debate on the whole range of purposes to which the technology might be put. A tool's use cannot be controlled by its makers, but its misuse can cause it to rebound upon the community that developed it. The cryptography affair demonstrates the stake that the technological community has in a broadly based definition and evaluation of the spectrum of uses of information technology.

One step that the IEEE might take towards this definition and evaluation would be to sponsor a symposium on the uses and abuses of computer and communications technology, with speakers from engineering, from the social and natural sciences, from the arts and literature, from business and industry, from politics and law, and from religion and philosophy. Such a symposium would aim to establish a sound basis for public discussion of the purposes of information technology. The creators of technology, those who provide the means, have a great deal to gain by fostering a mature, humanistic knowledge of the ends that their creations serve.

EXHIBIT E


# The American Society of Mechanical Engineers

United Engineering Center • 345 E. 47th St., New York, N.Y. 10017 • 212-644-7722 • TWX-710-581-5267

## Technology and Society Division

*(Founded in 1972)*

**EXECUTIVE COMMITTEE 1978-1979**


5-27-1979



To: Steve Unger
From: Victor Paschkis
cc: L.Malvern Benjamin

Re: Meeting on T&S fir which I was to prepare plans

Dear Steve:

The meeting for which we had hoped to get funds from the Natl. Science Fdtn. or the Natl.Fdtn. for the Humanities, and for which I was to prepare plans was, as I see it, never very well defined. Since I cannot attend your next meeting (I am on vacation starting June 6)), and since I think we should not further delay I am submitting hereafter a report including some questions. If the Comm. in general agrees I would be grateful if I could receive suggestions for additional names of potential speakers and certain organizational questions raised below.

1) Title... I believe that this can wait, but I suggest two, to indicate the direction of my thinking
   Does growing technology mean growing consumption?
   Is an ever growing consumption desirable?
2) Purpose
   We-i.e. the various Technol.&Soc.groups are convinced that the answer to the second question under 1) is no. But even if all engineers were united on this point (which they are not) it would be counter to democratic principles to force our view on the majority. For both reasons (that there is not unity in the profession, and the 'democratic' aspect) we must educate the general public. Planning such education and thinking it through in general terms is the purpose of the proposed meeting.
3) The education of the public should include both groups that are directly involved and the socalled 'general public'. Because of the width of groups to be involved there can be only few representatives from engineeri
   I think the total group must not be smaller than 15 and not larger than 2
4) I suggest to get representatives (not less than one, not more than 2 fro
   each group:

(1)Electr. Eng.
(2)Mechan. Eng.
(3)Natural Scient.
(4)Social Scient.
(5) Grade Schl. Teacher
(6) High School Teach.
(7) College Teacher
(8) Union Worker
(9)Housewife (H.person
(10) Lawyer
(11) Friends Comm. on Natl. Legislati
(12)League of Women Voters

Suggested names:
(1)Mal Benjamin; Steve Unger (2) V.Paschkis; Paul Torda;Roy Anderson
(3) Harry Blanchard (chem.) or Prof. Percy Baker, Dean Em. Bilogy Morgan State College
(4)Noel Francisco(may be too far away:Wisconsin)
(5)
(6) Mrs. Irene Shapiro Dept. of Biology The Bronx High School of Science
(7) Dr. Monika Hellwig 8408 Galveston Rd. Silver Spring Md20910 (College)
(8) Carl Herbine, Phila. (9)Barbara Mauger, Phyllis Taylor (who is also Nurse)
(7) Peter J.Petkas former coworker of Nader
(10)
(11) (12) Suggest invite organization;am willing to do if you request

EXHIBIT F

SINGER

AEROSPACE & MARINE SYSTEMS GROUP
KEARFOTT DIVISION

24 May 1979

Prof. Stephen H. Unger
229 Cambridge Avenue
Englewood, NJ 07631

Dear Steve,

At a CSIT meeting I attended (I think) last fall there was some discussion of conducting some CSIT activity at an appropriate national meeting. The recent minutes indicate that this possibility is still being considered.

As recently named General Chairman of the forthcoming 1980 Joint Automatic Control Conference to be held in San Francisco, 13-15 August 1980, I should like to offer the possibility of CSIT holding some meeting at our conference. This could be a committee meeting held one of the evenings of the JACC or on one of the two days following. Or it could be a special session included in the technical program. For the former, all you have to do is ask me to reserve a room;; for the latter, you would have to submit a program outline by 15 January 1980 to the Program Committee chaired by Dr. H. Austin Spang, III, General Electric Company, Corporate R&D, Building 5, Room 207, Schenectady, NY 12345.

I continue to believe that exposure of the activities of CSIT is a real benefit and I would hope that you can use this opportunity.

Sincerely,

Bernard Friedland
General Chairman
1980 Joint Automatic Control Conference

BF:wg

EXHIBIT G

I, IE-JJJJ, make the following statement, freely and voluntarily, to Michael V. Annast who has identified himself to me as a representative of the U. S. Nuclear Regulatory Commission:

I am an Instrument Engineer and was working in my office at the Browns Ferry plant on March 22, 1975.

The fire alarm came in at 12:35 p.m. After I was sure the fire alarm was serious, I went up to the control room. When I entered the control room, I noticed that the RHR and core spray pumps started by observing annunciation on panel 9-3. I discussed this anomaly with O-M and suggested he back off on the load. By using RECIRC, he initiated it with the concurrence of the ASE. We were getting numerous alarms on panel 9-3 and at about 12:50 p.m. O-M manually scrammed Unit 1. I then walked over to Unit 2 to see if it was being influenced by the abnormal occurrences observed on Unit #1. At that time, I noted none of the phenomena occurring. O-KK, the Unit #2 operator, told me to stay on Unit #2 side to help if necessary. He then asked me to put the Unit #2 reactor building fans from high to low speed. When I returned, I saw Unit #2 scrammed; I think manually but I am not sure. O-KK enabled the Cardox and I heard it go off below in the spreading room. I noticed that one half of the RPS power was lost on Unit #2. I went back to Unit #1 and noticed several instrumentation problems, specifically on panel 9-3. SE-R asked me to call P-Supt., IE-JJJ, and AS-GG at about 1:10 p.m. I stayed in the Control Room. At about 3:00 p.m., I was alerted to smoke emanating from the back of panel 9-5, Unit #1. We used $CO_2$ on this and removed the leads from the smoking transformer. I felt very concerned at this time because the control room was getting quite smokey. Service air was brought in from Unit #3 by an instrument mechanic. GEIE-CZ GE Instrument Engineer, arrived at about 3:30 p.m. I was called to Unit #2 to help investigate a PCIS isolation on the Unit #2 MSIV's. Two temperature switches in the main steam tunnel were tripped, One switch reset while I was investigating, one remained tripped. These switches had caused problems prior to the fire, due to conservatism in trip set points. Steam tunnel temperature was 150-160°F at 2:30 - 3:00 p.m. I want to state that I jumpered the tripped switch on order of the Unit #2 ASE and registered the jumper wire record on the SE's blackboard. I found GEIE-CZ and together we suggested that two Unit #1 SRM's be removed from the control board of Unit #1 and be made ready for local installation at the preamp since the cables appeared damaged. Unit #2 was having HPCI problems. The suction valve from the torus kept opening and the suction valve from the condensate storage tank kept closing. The Unit #2 operator stated he had plenty of water in the storage tank and wanted to take HPCI suction from it. He had me hold the valve handswitch in the storage tank suction mode while HPCI continued to automatically start and then trip on low suction pressure. The pump would speed up and pump about 2000 gpm and trip after about 5 seconds. Water level was being maintained manually using what appeared to be a FW pump. I was told that some feed level indication was lost so that the recorder could not be used on Unit #1. I found the "B" column inverter fuse blown and replaced it.

I left the plant at 6:00 p.m. and returned at 11:30 p.m.

I feel that the fire fighting effort was inadequate due to improper equipment and confusion. The hand-held $CO_2$ extinguishers were not adequate as they are not designed for high ceilings. The fire fighting organization was poor; there seemed to be a lack of leadership and no one knew exactly what was burning. I heard that the air supplies were hard to find and did not fit well together.

During the test and startup period of Unit #1, I demonstrated the flammability of the sealing material to P-Supt., the plant superintendent. In the presence of IE-JJJ, I burned the material in P-Supt. office. P-Supt. immediately called someone with Construction, apparently CPM and they discussed the situation. I was later (the next day) told by PRS-EEE, Results Supervisor, that a flameproofing material was to be sprayed over the flammable material. I feel P-Supt. did all that was immediately possible to investigate the situation as it appeared DED was not going to change the material. GEIE-CZ, GE, also sent a sample of the above material to his office in San Jose,.California. I have heard that the GE people tested the material and sent a report to TVA.

| /s/ Michael Annast | /s/ IE-JJJJ | 4/28/75 |
|---|---|---|
| WITNESS | SIGNATURE | DATE |

SUBMITTED BY
M. PLOTKIN, NPS
6/9/77