



TECHNICAL ACTIVITIES BOARD  
COMMITTEE ON SOCIAL IMPLICATIONS OF TECHNOLOGY

New York - January 10, 1976

MINUTES

1. The Vice Chairman, Mr. Benjamin, called the meeting to order at 10:25 a.m.

Those present: J. Malvern Benjamin, Vice Chairman  
Peter D. Edmonds, Secretary

Norman Balabanian, Newsletter Editor  
Carl Barus  
R. Jeffrey Bogumil, Nominations  
David C. Cook, NPS-C5  
R. M. Emberson, TAB Secretary  
Joseph S. Kaufman  
Frank Kotasek, Newsletter Editorial Board  
Gerald Rabow, WG/SEPT  
David Redfield, WG/EE  
Paul Russo, WG/EE  
Larry Stine, WG/IT  
Stephen Unger, WG/E  
Robert Rivers, IEEE Director IV, guest  
Enrique Kirberg, guest  
Claude Kagan, guest

Current Roster: Attachment A

Dr. Emberson explained that the incoming CSIT Chairman, ex-officio and 1976 Vice-Chairman of the IEEE Technical Activities Board, Dr. Albert S. Hoagland, an employee of IBM, Boulder, Colorado, was unable to be present. The incoming TAB Chairman, Mr. Robert Briskman, was also prevented from attending. Mr. Robert Rivers, the IEEE Director for Division IV (Electronic Techniques and Devices) was welcomed as a guest; Mr. Rivers is one of the Directors appointed by TAB to the IEEE-U.S. Activities Board and a former President of the Microwave Theory and Techniques Group. Mr. Rivers characterized himself and his goals (to professionalize IEEE).

Mr. Bogumil then introduced Dr. Enrique Kirberg, formerly rector of the 'Universitario Technico del Estado (State Technical University), Santiago and now at Columbia University. He recounted the history of CSIT's involvement in efforts to obtain the release from imprisonment

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of Dr. Kirberg. Dr. Kirberg spoke of his pleasure at being free from political imprisonment in Chile and of his gratitude to those who had applied pressure of public disapproval to the government of Chile to secure his release. He reported that: the University in Santiago had been attacked by soldiers with cannons; 5 persons were killed and many wounded; 700 professors and students were imprisoned. Dr. Kirberg was sent to a prison on a southern island and subjected to forced labor, bad food and a censorship of letters. Later he was imprisoned (for a total time of 2 years) in central Chile; he was not tortured, although some of his colleagues were. Several former ministers were still imprisoned. Universities in Chile now have retired military officers as presidents who use autocratic methods; there are no faculty meetings and about 30% of the faculty have been discharged. Dr. Kirberg then responded to questions from CSIT members.

The subsequent discussion included speculation that Dr. Robert Hansen had been eliminated from consideration for further IEEE office because he had signed the letter from CSIT to the Chilean president. Mr. Bogumil then reread the letter emphasizing the tentative and discreet wording of the enquiry concerning Dr. Kirberg's wellbeing.

A subcommittee consisting of Messrs. Bogumil and Unger with Mr. Rivers as advisor was set up to consider means of expressing disapproval of the continuing imprisonment of the former Chilean ministers.

ACTION  
Bogumil  
Unger

## 2. SECRETARIAT

Dr. Edmonds announced that the Committee no longer had a staff secretary because he and some 30 (25 according to later reports) other IEEE staff had been laid off by the military governor of IEEE, Maj. Gen. (ret'd.) Schulke (General Manager and Executive Director). The ostensible reason for the magnitude of the staff reduction was economy of 1976 operations; the selection of individuals clearly involved other criteria. The ex-staff secretary then volunteered as a Senior Member of IEEE with an interest in CSIT to serve as its secretary until further notice.

It was moved (Robbi) and seconded (Unger)

THAT Peter Edmonds be elected secretary of CSIT.  
(unanimously approved)

## 3. EMPLOYMENT PRACTICES

### 3.1 IEEE Staff Terminations

At the request of the Committee, the secretary recounted to the best of his knowledge and belief the significant events that led to the January 9 "massacre": At the December 4, 1975, Board of Directors meeting in New Orleans, the 1976 budget that had been

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developed throughout 1975 by the staff directors, the General Manager and the IEEE's Finance Committee(s), was rejected. Director Rivers interjected the information that the IEEE President had then warned the Board that the rejection might entail staff reductions. A plan for staff reductions and departmental reorganization was prepared and kept secret by the General Manager. Staff directors acquired partial information at staff meetings. Leaks during December and the notice given to the Staff Director for Educational Services provided more senior staff with brief warning. Other senior staff were advised on their return from Christmas or New Year's Holiday (December 29 or January 5); junior staff were not supposed to receive any warning before January 9. During the period between receiving notice and scheduled termination, many senior staff underwent "exit interviews" and subsequently some received degrading offers of alternative employment in IEEE at lower salaries and in less responsible positions. (These were later upgraded to the same salaries, according to reports.)

On January 7 the IEEE Executive Committee met with an agenda that did not include the reorganization of headquarters and the staff reduction. (The IEEE Executive Committee consists of the elected President and Vice President, the Junior Past President, the appointed Vice Presidents for TAB, RAB, EAB, URAB and RUB, the Secretary-Treasurer and the Executive Director, who is appointed by and reports to the Executive Committee.) At the end of the day and after an executive session, no significant decisions on this matter had been reached.

On January 9, dismissal slips were distributed by the Personnel Manager and more "exit interviews" took place. A staff directors' meeting occupied the morning and the reorganizational plan was revealed to staff in the early afternoon.

[NB<sub>1</sub> A general meeting of all remaining IEEE staff was not called until a week later, Friday, January 16. The General Manager then described the reorganizational plan and stated that no further mass reductions were contemplated.]

[NB<sub>2</sub> At the 1/19/76 EQC meeting, General Manager Schulke claimed that he was directed by the 1975 Executive Committee on 12/3/75 to reduce the IEEE payroll by 10% with effect on 1/9/76.]

Dr. Emberson noted that whenever a new general manager is appointed to an organization he inherits a staff whom he has had no opportunity to choose; normally some individuals will be identified for replacement in due course. Some of those terminated might have been selected in this manner. Termination compensation had been calculated on the basis of 1 week's salary per year of service, plus fully paid 1976 vacation time (policy adopted by the Executive Committee) plus full fringe benefits during this period. Senior staff had been offered the services of an "outplacement consultant service (THinc)" which provided advice and facilities to aid the discharged employee in finding a new job; some such employees would have preferred to receive the vast fee (reported to be \$1,000 + 15% of salary) per employee as additional compensation and find jobs on their own.

Mr. Kagan asked if the option of general pay reductions by 10% was considered. Dr. Edmonds replied that it had not been seriously considered because the staff had not been asked.

[DB It may be asked that in order to provide these forms and amounts of compensation and keep IEEE in conformity with joint societies' guidelines and permit IEEE to polish its image by pointing to these provisions, it was necessary to dismiss more staff than would have been the case if the compensation had been less expensive. Hence some of the compensation of employees was bought by the dismissal of some of themselves.]

### 3.2 Case of the CSIT Staff Secretary

The victim acknowledged that he had received advance warning in October, 1975, of the intention of the General Manager to dismiss him (by courtesy and consideration of Drs. Cotellessa and Emberson). At that time a commitment had been made by the General Manager to continue his employment through July 1, 1976, because of the academic hiring cycle. Under pressure from Dr. Cotellessa and Mr. Briskman, that commitment was now being reluctantly honored by providing a specially extended period of terminal leave from the effective termination date of January 9 until July 1. The General Manager had signed a memo of agreement expressly providing that no IEEE work would be required, but if IEEE work were done voluntarily, associated expenses would be reimbursed. No credible explanation other than personal antipathy and an intention to frustrate the desires and obstruct the activities of the interdisciplinary committees served by Dr. Edmonds could be found for the present action of termination under these circumstances.

### 3.3 Reactions of CSIT Members

Dr. Redfield distinguished three distinct aspects:

- 1) Concern for Edmonds' personal problems
- 2) Concern for Edmonds' relationship with CSIT as the cause of his dismissal
- 3) General IEEE personnel practices.

It was not clear that staff services would be withdrawn from CSIT since future TAB office capabilities were unknown at present.

Mr. Rivers added:

- 4) Is centralization of authority good for IEEE?

Dr. Unger contributed:

- ( ) A draft statement expressing CSIT's concern at the loss of its staff secretary
- 2) The opinion that the actions taken by CSIT in mid-1975 concerning the questioning of candidates for IEEE office and the letter to the President of Chile and their implementation by the secretary had been unjustifiably used as significant contributory causes for his dismissal.
- 3) A draft statement concerning the mass termination of IEEE staff. He observed furthermore that economy of IEEE money was clearly not the objective being served by providing 6 months' termination compensation and by the extensive refurbishing of the offices of the General Manager and his immediate staff that had accompanied the substantial and costly rearrangement of IEEE's New York offices in 1975.

Mr. Hobbi suggested that the general question of IEEE staff employment practices should be handled by UEAB's Ethics and Employment Practices Committee; Mr. Rivers pointed out that this committee does not exist among the new goal-oriented array of UEAB committees. Hence, this ball was also in CSIT's court. Dr. Unger proposed that the scope of the CSIT Working Group on Ethics be expanded to include Employment Practices (unanimously approved).

Mr. Benjamin charged the WG/KEPC: (a) to react to the IEEE staff dismissals and (b) to document the case first particularly with respect to treatment of the professional staff members, i.e., conformity of procedures with Guidelines, lack of notice, lack of performance evaluation, lack of consultation with committees served, any evidence of age or sex discrimination. Dr. Edmonds was asked to become a member of the WG/KEPC to assist in documenting the case and he agreed to do so.

It was then moved (Unger), seconded (Redfield) and unanimously approved that the portion of Dr. Unger's draft concerning the former staff secretary's performance be addressed and delivered to the IEEE Vice President for Technical Activities, Mr. Briskman (Attachment B).

It was also agreed that separate statements should be prepared and delivered:

- a) expressing CSIT's concern at the lack of specific and general consultation with volunteers affected by the staff reduction (to be drafted by Dr. Emberson and Mr. Benjamin and offered to Dr. Hoagland for signature) (Attachment C)
- b) expressing CSIT's concern for the evident centralization of authority within IEEE.

#### 4. OPERATION OF MOBILE FM RECEIVERS IN NEW JERSEY

Mr. Kagan drew the attention of the Committee to the recent trend to enforce a New Jersey statute (2A-1274) (the statute does not apply to pedestrians, equestrians or motor cycle riders) prohibiting the installation of car radio receivers that are capable of receiving broadcast transmissions by any government agency, unless a permit has been obtained. Mr. Kagan had been denied a permit for a regular FM car radio by his local chief of police. He estimated that 150,000 New Jersey residents (including 2 members of CSIT present) were at risk of criminal prosecution. He recommended that CSIT and IEEE take action to express their disapproval of this statute because scrambler technology is available to any government agency desiring to transmit secret messages and thus residents of New Jersey should not be regulated in their actions of installing FM radios in their cars.

The secretary enquired if Com-19 had been advised. Mr. Kagan replied that Dr. Schwartz, Chairman of Com-19's committee on Social Implications of Communications Technology, felt that CSIT should

consider the matter. Urgency of reaction derives from the following imminent events: (1) The Trentonian newspaper is writing a story for publication shortly. (2) The New Jersey Attorney General is currently reviewing correspondence. (3) Grand Jury action is pending. (4) Promotion of sales of FM car radios continues.

Mr. Stine, Chairman of CSIT WG/Information Technology, felt that this was an example of a problem that his WG could study. It was agreed that Messrs. Kagan and Stine would discuss details over lunch. Subsequently it was reported that WG/IT would investigate the matter and that the CSIT Newsletter would publish an article on the problem.

## 5. WORKING GROUP REPORTS

### 5.1 Energy/Environment

In response to an enquiry about the status of the draft IEEE statement on statewide initiatives concerning nuclear power plants, Dr. Emberson read the latest version (Attachment D<sub>1</sub>). Its status following the 1/7/76 IEEE Executive Committee meeting was not known.

Dr. Redfield expressed disagreement with the thrust and emphasis of the text just read and offered a statement he had drafted (Attachment D<sub>2</sub>). In particular, he urged that the assertions in an IEEE statement be properly documented by professional standards and that the wide range of viewpoints on the subject of nuclear power held by informed IEEE readers be reflected in any IEEE statement.

ACTION  
Redfield  
Edmonds

It was agreed by consensus that Dr. Redfield's text should be sent to Dr. Cotellessa immediately for his use in drafting a final statement.

Dr. Unger also urged that objection should be lodged at the lack of formal requests for CSIT to review and comment on draft IEEE statements falling in its scope. He also noted that CSIT is entitled to issue statements in its own name and reserves the right to do so.

It was moved (Redfield) and seconded (Russo)

ACTION  
Redfield  
Emberson

THAT a letter be sent to the Board of Directors, quoting Philip Handler, and emphasizing that the lack of unanimity on the subject of nuclear power is so great and the lack of consideration of multiple inputs is so great that there is no basis yet established for issuing an IEEE statement on this subject now and

THAT a scholarly study should be made to formulate an IEEE statement properly representing the diverse views of the membership. (9 for, 3 against)

Dr. Russo advised that Dr. Redfield had agreed to take over the Chairmanship of WG/EE, if appointed, effective March 1, 1976.

The Vice Chairman thanked Dr. Redfield for his willingness and confirmed the appointment. He also thanked Dr. Russo for his creative leadership of the WG, noting that Dr. Russo will continue as a member of the WG and as CSIT's representative to the IEEE-TAB Energy Committee. Dr. Russo then proposed that Dr. Redfield also attend the next meeting of the IEEE-TAB Energy Committee (New York, January 28, 1976) to provide commentary on his solar energy paper.

### 5.2 WG/Ethics

Dr. Unger recalled that at the last meeting there was a formal vote of approval of the nomination of the three BART engineers for an IEEE Award for Outstanding Service in the Public Interest. He read a statement to implement this decision (Attachment E). Discussion ensued on the best procedure for submitting this nomination for action and it was agreed that Mr. Benjamin would consult with Director Rivers on this.

ACTION  
Benjamin

## 6. LONG-TERM EVOLUTION OF IEEE

ACTION  
Benjamin

It was decided to address a letter to the IEEE Vice President for Technical Activities urging not only effective support of CSIT activities but also expressing concern for the apparent trends in control and direction of the IEEE.

## 7. RESTRUCTURING CSIT

Dr. Hansen's report of CSIT activities in 1975 (Attachment F<sub>1</sub>) was noted and his suggestion of restructuring CSIT along the lines of the APS Forum on Physics and Society was briefly discussed. Due to lack of time for adequate consideration of this significant evolutionary step, the question was tabled until the next meeting.  
(N.B. Attachment F<sub>2</sub> is a correction to the above report. FDE)

## 8. NEXT MEETING

The next meeting will be held in New York on Saturday, February 14, 1976, at 10 a.m.

## 9. MINUTES

The Vice Chairman requested the opportunity to review the draft minutes before issuance.

10. ADJOURNMENT

The meeting was adjourned at 4:25 p.m.

PREPARED BY: P. D. Edmonds

ISSUED: February 14, 1976

**ATTACHMENTS:**

- A Current Roster
- B Statement on CSIT secretary
- C Statement on IEEE staff discharges
- D<sub>1</sub> Current draft of IEEE statement on nuclear power plants
- D<sub>2</sub> CSIT's majority statement on item D<sub>1</sub>
- E Nominations for award
- F<sub>1</sub> Dr. Hansen's report of CSIT activities in 1975
- F<sub>2</sub> Statement on Dr. Hansen's report

**DISTRIBUTION:** CSIT Roster (including Dr. Hoagland)  
Dr. Cotellesee  
Mr. Briskman  
Dr. Hansen  
Mr. Rivers  
Dr. Emberson

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Draft: 1/11/76 S. H. Unger

CSIT Statement on Peter Edmonds

Peter Edmonds has served as secretary to CSIT since its inception in 1972. During this period we have all been most favorably impressed with the quality of his work and have regarded him as an invaluable asset to our activity.

We were therefore amazed and dismayed to learn of Dr. Edmonds' dismissal by General Manager Schulke. The IEEE is indeed in deep trouble if it must dispense with the services of so able and dedicated individual. We strongly disagree with this misguided step. It is also distressing that a decision to discharge an important staff member be taken without any request for input from a volunteer committee that he has been serving as part of his official duties for so long.



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Attachment C  
CSIT Minutes 1/10/76

January 13, 1976

Dr. Albert S. Hoagland  
IBM Corporation, Building 910  
P. O. Box 1900  
Boulder, Colorado 80302

Dear Al:

You missed an interesting meeting of the Committee on Social Implications of Technology (C-SIT). As the C-SIT Chairman, you are involved with some of the implementation, and I hope you will be able to arrange to attend the next meeting, on Saturday, February 15, probably at 10:00 a.m. at the Engineers Club, or some nearby place in New York. Inasmuch as you could not attend the meeting, and prior commitments prevented attendance by the TAB Chairman, Division IV Director Rivers was asked to attend, which was particularly appropriate because of the USIA interest in some C-SIT efforts. You may wish to discuss the draft with him and the C-SIT Vice Chairman, J. M. Benjamin. The draft does not address the rationale for the staff reorganization but only the point that affected Boards and Committees should be considered in advance.

The Committee spent a great deal of time discussing the reorganization of IEEE and the IEEE staff, the latter in the context of how the actual plans, procedures, and actions relate to the IEEE Long Range Planning Committee report, to the IEEE Code of Ethics and related employment practices, and to the impact of staff changes on the plans and programs of IEEE Boards and Committees. C-SIT subdivided its conclusions and recommendations in order to have items of manageable proportions. I was asked to write to you immediately to report on one of these C-SIT conclusions and recommendations, namely, on the impact of staff reorganizations that were made apparently without consultation and consideration of the Boards and Committees that are directly affected. Attached is a draft letter from you to TAB Chairman Briskman. Obviously, the content of the letter will not be "news" to him because he was here for the January 7 meeting of the IEEE Executive Committee. The purpose of the C-SIT letter is to place the C-SIT position on the record before the next meetings of TAB OpCom and the IEEE Executive Committee and Board.

January 13, 1976

An unusual item on the C-SIT agenda and worthy of note was the appearance of Dr. Enrique Kirberg, to thank us for writing to the Chilean authorities in his behalf. It is impossible to say that the C-SIT letter, or any other letter, was responsible for his release, but he was certain that it was the totality of all such letters that produced his release. Also, he pointed out that time is of the essence in such matters. In his case, if the C-SIT letter had been long delayed, it might have been written with quite a different tone and verb tenses, because he had been on the course leading to execution.

Sincerely,

*RME*

Richard M. Emberson  
Director  
Technical Services

FOGE:jtb

CC: J. M. Benjamin (215) 839-3250  
R. D. Briskman  
H. F. Cotellesa  
P. D. Edmondson  
R. C. Hansen  
R. A. Rivers (603) 473-2323



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DRAFT

Mr. Robert D. Briskman, Chairman  
Technical Activities Board

Dear Mr. Briskman:

The TAB Committee on Social Implications of Technology met on January 10 and discussed the reorganization of the IEEE headquarters staff, as voted by the IEEE Executive Committee on January 7 and as implemented by the General Manager. Great concern was expressed that such decisions had been implemented without any consultation with the officers of the Boards and Committees that would be directly affected. A resolution was voted unanimously that I should write to you, calling the recent events to your attention, objecting to the procedures that had been followed, and urging that there be advance consultation if any further staff adjustments are necessary.

Very truly yours,

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Attachment D<sub>1</sub>  
CSIT Minutes 1/10/76

January 15, 1976

TO: IEEE Energy Committee

FROM: Richard M. Emberson

SUBJECT: Draft Statement on Nuclear Power

1. At the October 6 meeting of the Committee, it was agreed that the statement on the California initiative should be generalized. Several drafts have been circulated, each bringing forth new comments and suggestions. A draft was given to each member of the IEEE Executive Committee at its meeting of January 7, with a request that they promptly submit comments and suggestions to Dr. Cotellessa. The enclosed draft, dated 1/13/76, incorporates these most recent suggestions and is on the agenda for the IEEE Executive Committee and Board; these meetings will be held January 28 and 29, respectively.

2. It is my understanding that this statement is desired for use at a press conference on Tuesday, January 27, during the Winter Power Meeting, with IEEE President Dillard participating. I believe that Dr. Cotellessa intends to canvass the IEEE Executive Committee members individually prior to this press conference in order that the statement may be presented at least as coming with the authority of the IEEE Executive Committee. He has requested that the draft be circulated with an urgent appeal for any comments and suggestions to be in his hands by Monday, January 26. If you send comments in writing, I suggest that they be addressed in duplicate to both his office (Dr. R. F. Cotellessa, Professor & Chairman, Department of Electrical & Computer Engineering, Clarkson College of Technology, Potsdam, NY 13676; Telephone Nos. - Office (315) 268-6511, Home (315) 265-4433) and to the TAB office.

3. In the event the following items have escaped your attention, I suggest that they will be interesting reading:

Scientific America (January issue) - Article by Hans Bethe

Science (26 December 1975) - "European Breedors (1): France Leads the Way", Page 1279

Physics Today (January issue) - Letter by B. L. Cohen, Pages 9-15; and Editorial on Page 120

The last reference above is a suggestion for solving the dilemma described by Dr. Phillip Handler, President of the National Academy of Sciences: "We are aware of the polarization of attitudes on nuclear energy among the public and in the scientific community as well."

cc: P.T. Ashton, TAB OpCom, C-SIT Members Present at 1/10/76 meeting

Statement by the Board of Directors  
of the  
Institute of Electrical and Electronics Engineers, Inc.  
on  
The Need for Nuclear Power

The Board of Directors of the Institute of Electrical and Electronics Engineers, Inc. hereby goes on record as fully supporting the vigorous development of nuclear electric power.

The supply of energy, in all forms, to meet worldwide needs in the near future can be achieved only by developing to the fullest extent all of the energy options, including wise conservation.

The limited size of known oil and gas reserves, relative to the world's energy requirements, establishes a pressing need to reduce dependence on these sources for the generation of electric power. While there is vast potential in options such as solar energy and nuclear fusion, an appreciable period of time is needed for their development. During this period, it is deemed necessary to increase emphasis for the remainder of this century on the use of coal and fissionable fuels to provide the bulk of our energy needs. While additional engineering and environmental problems exist with the use of coal and fissionable fuels, these are presently being given active attention and evolutionary refinements continually are being made. Experience to date indicates that coal and uranium provide unique and practical alternatives to oil and gas. In accord with the need, expressed above, to develop all energy options, the utilization of fissionable fuels should proceed along with an increased use of coal.

The development of safe, efficient nuclear power plants has progressed rapidly and such facilities are now providing a growing percentage of the world's electric power with an outstanding safety record. This development is progressing in an orderly, highly-regulated manner to insure that the

public safety, the disposal of waste material, and security of fuel properly and adequately are taken into account; Therefore, any energy policy should include the increased use of nuclear energy for additional electric power generation.

For these reasons, the Board of Directors of The Institute of Electrical and Electronics Engineers, Inc. urges all interested and responsible individuals and organizations to take actions to ensure that in addition to developing other energy sources, the rapid and orderly development of nuclear electric power be stimulated.

Draft Letter on Nuclear Power Statement to IEEE Board from CSIT

Energy stands among the foremost issues at the interface of technology and society, and has therefore been a major concern of the IEEE Committee on Social Implications of Technology. The particular field of nuclear energy is undoubtedly the most complex of the immediate energy issues that we face; it demands the utmost objective analysis of its technological, environmental and societal facets. That demand has caused the National Academies of Sciences and Engineering, at governmental request, to initiate a major new study of nuclear energy and the alternatives. In discussing that study, Academy of Sciences president Philip Handler said, "We are aware of the polarization of attitudes on nuclear energy among the public and in the scientific community as well" (Science, 190, 961 (1975)).

It is the conviction of the Committee on Social Implications of Technology that any public statement by the IEEE on this subject must present objective analyses of the various aspects of the issue and must reflect the diversity of views that are held by thoughtful, sincere people throughout our society. The draft statements (including revisions available at our meeting of January 10, 1975) submitted for IEEE endorsements do not meet these criteria: they lack both the documentation and the balance that should characterize any IEEE statement.

The CSIT is gravely concerned that the endorsement of any such inadequate position will discredit the IEEE leadership among the members and discredit the IEEE itself in the eyes of the world. We urge that any public statement on this issue be deferred until the criteria set forth in the preceding paragraph are met. The CSIT has the will and the resources to contribute to that goal. This issue is one that is clearly within our area of competence and concern; we therefore further urge that prior to the issuance of any IEEE position related to energy, CSIT be permitted to review and comment on its contents.

*Drafted by D. Redfield*

DRAFT: 1/9/76 S. E. Unger

CSIT Proposal for IEEE Award to BART Engineers

CSIT at its 11/6/75 meeting voted to nominate former BART engineers Max Blankensee, Robert Bruder and Holger Hjortsvang for a special IEEE award in recognition of their highly professional behavior as defenders of the public interest in the face of pressures by management that eventually cost them their jobs. Following is a summary of the case for the nomination.

As members of BART's engineering staff, Hjortsvang, Bruder and Blankensee observed many instances of poor engineering practice.<sup>1</sup> Their proposals to management for rectifying these practices were, over a period of years, given no serious consideration and they were told to "stop rocking the boat".

With the project far behind schedule, and seeing that actions thru normal channels were failing to remedy a situation that was creating a hazard to life as well as a drain on the taxpayer, the nominees placed their careers in jeopardy by taking their concerns to the BART Board of Directors. This led to the summary dismissal of the 3 and ultimately to a series of investigations that largely confirmed their misgivings. Subsequent accidents, a poor maintenance record and delays in the completion of the BART system (to this date it is still not in full service<sup>2</sup>) have served more concretely to validate their criticisms.

For example, the need for adequate training programs for computer maintenance technicians was pointed out by one of the nominees in a memo to his manager<sup>3</sup>. The lack of such programs is clearly a factor today in BART's ongoing problems. Their warnings about inadequate acceptance testing and a general lack

of an effective systems approach to safety and reliability have all been confirmed by subsequent experience.

It has been argued that the nominees acted improperly in going over the heads of their management to the Directors and to the press. Since extensive efforts thru normal channels had proved fruitless over an extended period, they acted in the only manner consistent with the admonition to protect the public safety and welfare which is included in virtually every code of ethics for engineers. Incidentally, they apparently did not take their case to the press<sup>4</sup> (tho, under the circumstances this could have been justified). The press came into the case thru the actions of Board members.

Blankensee, Bruder and Hjortsvang have been labelled by some as "troublemakers". This accusation has some validity. Had they taken the hint from their managers and "gone along", or if they had contented themselves with the issuance of routine memos, or if they had quietly resigned, a great deal of trouble for BART's management would have been avoided- at least for a while. One may speculate as to how such behavior might have affected the troubles of those destined to ride on and pay for BART. In a situation where incompetence is in command, we feel that constructive troublesmaking as opposed to docile buck passing should be encouraged.

Publishing a code of ethics and articles about professionalism in engineering are positive steps that promulgate a desirable philosophy. But practical minded engineers, as well as engineering students, would be more likely to take this philosophy seriously if their professional society singled out for distinction a trio whose commitment to professionalism went well beyond lip service.

References

1. The BART Case - Ethics and the Employed Engineer, CSIT Newsletter, 9/73. Other material on the case will be found in the CSIT Newsletters of 12/73, 6/74 and 11/74. See also IEEE Spectrum, 10/74 and the editorial in Electronic Design, 1/4/74.
2. Newsweek Magazine, 1/12/75, p.8.
3. BART memo- Blankensee to L. F. Margin, 11/3/71
4. Letter to S. H. Unger from Contra Costa Times reporter Justin Roberts.

Proposed Wording of Award

Special IEEE Award for Outstanding Service in the Public Interest

To Max Blankensee, Robert Bruder and Holter Hjortsvang for having persistently worked to rectify faulty engineering practices detrimental to the public safety and welfare in the BART development project ~~in the face of~~ <sup>despite</sup> managerial opposition highly detrimental to their careers.

**R. C. HANSEN, P.A.D., CONSULTING ENGINEER**

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**ANNUAL REPORT FOR 1975, 2 2 1975**  
**OF IEEE COMMITTEE ON SOCIAL IMPLICATIONS OF TECHNOLOGY**

**1.0 ORGANIZATION**

CSIT consists of a body of members sufficiently interested to retain their names on the Newsletter mailing list. There are roughly 6000 of these. The active work is done by a small group of officers and committee chairmen. These are as follows:

<b>Vice Chairman</b>	<b>Mal Benjamin</b>
<b>Newsletter Editor</b>	<b>Norm Balabanian</b>
<b>Working Group on Energy &amp; Environment</b>	<b>Paul Russo</b>
<b>Working Group on Education</b>	<b>Leon Zelby</b>
<b>Working Group on Ethics</b>	<b>Steve Unger</b>
<b>Working Group on National Security</b>	<b>Otto Friedrich</b>
<b>Working Group on Information Technology</b>	<b>Mr. Stine</b>
<b>Working Group on Systems Engineering and Public Technology</b>	<b>Gerry Rabow</b>
<b>Working Group on Automation and Work</b>	<b>M. Kutcher</b>
<b>Working Group on Communications and Data Banks</b>	<b>?</b>
<b>West Coast Coordinators</b>	<b>Ed Hulse</b>
<b>Past Newsletter Editor</b>	<b>Mike Pessah</b>
<b>Intercon</b>	<b>Vic Klig</b>
<b>Past Vice Chairman</b>	<b>Joe Kaufman</b>
<b>Senior Advisors</b>	<b>Tony Robbi</b>
	<b>R. J. Bogumil</b>
	<b>Carl Barus</b>
	<b>Bob Hansen</b>
<b>Chairman, the TAB Vice Chairman is the titular chairman of CSIT</b>	

Excellent staff support was provided by Peter Edmonds at Headquarters.

**2.0 ACTIVITIES**

CSIT activities encompass the Newsletter, sponsorship of sessions at conferences and of conferences, liaison with similar organizations, and the activities of the several Working Groups.

## **2.1 Newsletter**

Under the able editorship of Vic Klig, the Newsletter has aired a variety of opinions and views. It appears irregularly about four times per year. The past editorial policy of publishing correspondence without editing produced a difficulty during the recent IEEE election in that a national candidate chose to attack unfairly a candidate for regional director. Fortunately, that director has been elected. Our new editor may wish to edit correspondence where appropriate. The Newsletter is the 'glue' that keeps the large body of CSIT together. Since there are no financial levies on CSIT members, the extremely modest cost of CSIT (mainly Newsletter) comes from TAB. In this regard see Section 3.0 on Recommendations.

## **2.2 Appointments**

IEEE is represented on several outside organizations. For example, as a member organization of USERC, IEEE appoints three directors and three alternates. USERC conducted a workshop on Environment, Resources, and Urban Development in Washington, D. C. in November.

## **2.3 Conferences and Sessions**

IEEE, through CSIT, is a participant in the International Conference on Environmental Sensing and Assessment held in Las Vegas. The most recent conference was September 1975. The cosponsors were EPA and the University of Las Vegas with a host of other organizations with minor interest. IEEE is the responsible (managing) society as this conference is a result of the merger of several others. This year it was necessary to be firm with ULV as they wished to include all income and expenses in their University conference account which would have made it impossible to keep tight books. The conference was a great success.

At Intercon 75, a Highlight Session was organized by CSIT: Social Implications of Nuclear Power. Seville Chapman was moderator and each side was represented by two speakers. This was an excellent and well-attended session which aired some of the concerns about nuclear power safety. It also demonstrated the quality of thinking on each side of the question.

### **Other Conferences**

CSIT coordinates with other conferences as appropriate. Some held during 1975 were:

- Intersociety Engineering Ethics, May 1975, Baltimore, ASME**
- Frontiers in Education, October 1975, Atlanta**
- Conversion of Refuse to Energy, November 1975, Montreux, USERC**

...at other conferences as appropriate and asks specific members to review sessions of interest whether sponsored by CSIT or not. These reviews are for the Newsletter.

## 2.4 Awards

Last year CSIT proposed an Award for Public Service. The Awards Board was divided on the merits of such an award and they elected to present pro and con opinions to the BoD. The BoD Executive Committee resolved that any major Board could recommend a specific award for public service with the award requiring approval of the BoD. No more than one such award could be made per year. At a following meeting of the BoD the CSIT Chairman conducted a short discussion of the merits of a permanent Public Service Award. The sentiment there was that such an award would be good provided that the normal award process was followed and provided that candidates of high caliber could be recommended. There is always the problem of funding new awards. There is some strong feeling at the CSIT meetings that candidates for such an award should have made some sort of personal sacrifice. As long as this feeling persists, the Chairman believes that there is no prospect of either a singular award or a permanent award. If the objective is really to recognize those who have performed outstanding service in the public interest, then outstanding candidates can be found. For example, the American Physical Society's Forum on Physics and Society has the Leo Szilard award for Physics in the Public Interest and they have found outstanding candidates. If, on the other hand, the objective is to recognize those who are 'fighting the system', then there is small likelihood that the 'system' will approve such an award.

## 2.5 Working Groups

**2.5.1 Ethics.** CSIT was partly responsible for the new IEEE Code of Ethics and worked with USAB to prepare the code. There should be another revision of this code after the members have had time to think about it but the responsibility now belongs to the Employment Practices Committee of USAB. It will probably be necessary to vigorously encourage them on this matter. CSIT was largely responsible for the IEEE Amicus Curiae position on BART. With the return of Steve Unger from Denmark this group will again be active.

At a CSIT meeting it was decided to send a letter to the President of Chile protesting the imprisonment of Dr. Kirberg. A letter was prepared by the staff and signed by the Chairman and sent. This action was regretted by various people within IEEE who felt that only the President should write to foreign governments (perfectly reasonable in retrospect), or who felt that such matters should be coordinated wherever an overlapping interest

occurred (also reasonable but would have precluded sending such a letter), or who felt that we should mind our own business (the Kitty Genovese syndrome). Apparently the letter produced no ill effects upon Chilean IEEE members. Recently Kirberg was released and is now at Columbia University.

### 3.0 RECOMMENDATIONS

It is the Chairman's belief that the CSIT activists represent a highly intelligent and dedicated group within the Institute and that their contributions have been and will be important. There is no doubt that a very large number of IEEE members are concerned about the things in which CSIT is interested. Of course CSIT has many activities and some members may be interested in certain ones and some members in other ones. The present configuration of a small active group plus a Newsletter mailing list does not seem to be adequate. The AIP and APS Forum has the support of the majority of their members and is very successful.

It is recommended that CSIT be replaced as soon as the planning can be accomplished by an IEEE Forum on Electrical Engineers in Society. The Forum would be handled administratively like a Group, Society, or Council and would be open to members upon payment of a small fee (perhaps \$2.00). The fee would be used to publish the Newsletter and for other organizational expenses. An Administrative Committee would be set up with officers and elected members, again analogous to a Group or Society.

There are several advantages to such an arrangement. First, it would broaden the CSIT representation; there must be many more than 6000 engineers who are interested in social implications. Second, the modest fee would provide the Newsletter with a financial base, unlike the present situation where there is inadequate money for printing special issues to attract new members. Third, the President of the Forum should report directly to TAB, just like the President of a G/S/C instead of the present awkward situation where the Chairman is imposed from above. Fourth, having a broader representation would provide a broader range of views for the Administrative Committee. The upgrading of CSIT into a Forum on Electrical Engineering in Society would I believe interest many of our younger members, who will be the leaders of the Institute in the years ahead.

Respectfully submitted

*R C Hansen*

R. C. Hansen  
Chairman CSIT  
Vice Chairman TAB &  
Director at Large

cc: Joseph K. Dillard  
Robt. F. Cotellesa  
Robt. D. Briskman  
A. S. Hoegland  
Richard Emberson ✓  
Peter D. Edmonds  
CSITers listed above

From: P. D. Edmonds

12/30/75

Subject: Correction to Dr. Hansen's report of 1975 CSIT activities, concerning the letter to the president of Chile.

1. Dr. Hansen states in his report of 1975 activities of the Committee on Social Implications of Technology that the letter sent to the president of Chile and the Chilean embassy in Washington, concerning Dr. Enrique Kirberg, "was drafted by the staff". This statement is misleading by being incomplete.
2. The letter consisted of two paragraphs. The second paragraph, which contained the message being communicated, consisted only of the text presented to CSIT at its meeting on June 9, 1975 by the committee member initiating this action. Approval to send this text to the president of Chile was given by a formal vote of CSIT taken in the presence of Dr. Cotellesa, and Dr. Emberson, with Dr. Hansen in the chair, after Dr. Hansen had voluntarily stated his willingness to sign a letter so constituted. Therefore, this paragraph was not in any way "drafted by the staff" either before or after the meeting.
3. When preparing the original letter for Dr. Hansen's signature, after the CSIT meeting, I added the first paragraph which stated briefly what kind of organization IEEE is. This act of addition was already standard practice of the staff in preparing letters to be sent to outside organizations or persons having no previous contact with IEEE. This was the only act of "drafting by the staff" and I claim that it was entirely within my normal duties.



TECHNICAL ACTIVITIES BOARD  
COMMITTEE ON SOCIAL IMPLICATIONS OF TECHNOLOGY

MEETING NOTICE

The next meeting of C-SIT will be held:

Saturday, January 10, 1976 - 10 a.m. - 4 p.m.  
Balcrep Restaurant  
47 West 44 Street (between Fifth and Sixth Avenues)  
New York, N.Y.  
212/986-6678 or 212/687-9535

CONTACT: Peter Edmonds - 212/644-7887 - Secretary

It is anticipated that the incoming Vice-Chairman of TAB and Chairman ex-officio, of C-SIT, Dr. Albert Hoagland of IBM, Boulder, Colorado, will not be able to attend this meeting.

AGENDA

1. Introductory Remarks - Benjamin
2. Minutes of November 8, 1975 meeting
3. Items for the agenda
4. Working Group Reports:
  - 4.1 Ethics - Unger
  - 4.2 Energy/Environment - Russo/Redfield
    - 4.2.1 Position statements on Nuclear Power (enclosure 1)
    - 4.2.2 Endorsement of AIHE position statement on offshore oil and gas exploration (enclosure 2)
  - 4.3 Information Technology - Stine
  - 4.4 Education - Zalby
  - 4.5 National Security - Friedrich
  - 4.6 Automation & Work - ? -
  - 4.7 Systems Engineering & Public Technology - Rabow
5. Award Nomination - Bogumil
  - 5.1 Other nominations
6. Newsletter - Balabanian

**Statement by**

**The Institute of Electrical and Electronics Engineers, Inc.**

**on**

**The U.S. Need for Nuclear Power**

The Institute of Electrical and Electronics Engineers, Inc. hereby goes on record as fully supporting the vigorous development of nuclear electric power in the United States.

The shortage of energy in all forms which this country faces in the near future can be alleviated only by developing to the fullest extent all of the energy options. Opponents of nuclear power have led some of the public into believing that a plan for conservation in the near term and the hope of successful development of new and unproven resources in the long term is a viable solution to the energy problem. This questionable reasoning lulls some into believing that it is unnecessary for the United States to employ the vast energy resources contained in coal and uranium, which can provide the bulk of our energy needs for hundreds of years. But, there are no other sources known today which have this potential. Use of these coal and uranium resources will allow time to develop the vast potential in options such as nuclear fusion, which is still in the experimental stage with no assurance of success, and solar energy, which today can only be used in low-level heating applications, but which is many years from being practical for large-scale electric power generation.

The United States' energy problem today is miniscule when compared to that which will be experienced in a few short years if all possible energy options are not vigorously pursued. Nuclear energy, at its present highly-advanced state of development, is the cleanest, safest, and least expensive option. The existing techniques for radioactive materials handling and waste disposal are being improved rapidly in the same manner as technical improvements are made in other areas. Nuclear power is a proven resource,

ready to satisfy a large portion of the energy demand which will be experienced as the U.S. economy expands.

That other countries have recognized nuclear power's great advantages is evidenced by the fact that their commitments for nuclear plants during 1974 increased approximately 35% as a result of the Arab oil embargo, while those in the United States increased only 9% during the same period. Furthermore, during 1975, the net U.S. commitment for additional nuclear plants was zero. It would be sheer folly for the United States, alone in the world's community of nations, to abandon the atom, which is now so fortuitously at hand to assist greatly in overcoming the energy problem.

If the problem is allowed to grow, it will most certainly lead to extreme economic and social disruptions of a magnitude never before experienced.

For these reasons, the Institute of Electrical and Electronics Engineers, Inc. urges \_\_\_\_\_ to take actions to encourage the rapid and orderly development of nuclear electric power.

\_\_\_\_\_  
(date)

The Institute of Electrical and Electronics Engineers, Inc. is an international scientific and educational organization having a membership of over 170,000 engineers engaged in all branches of electrical engineering. These include, among others, such specialized disciplines as electronics, nuclear science, energy conversion, and power generation and distribution. The Institute's primary concern is the advancement of the theory and practice of electrical engineering. Its goal is to enhance the quality of life through the application of electrical technology and to promote understanding of the influence of technology on public welfare.

Position Statement on Offshore Development

We, the Coordinating Committee on Energy of the Association for Cooperation in Engineering, hereby go on record as being in favor of an accelerated Outer Continental Shelf (OCS) oil and gas leasing program.

The United States is facing a severe and lasting energy supply problem. We rely on imported oil to make up the difference between what we produce and what we consume. Assessments of the U.S. energy outlook for the period 1975 through 1990 forecast an ever-widening gap between domestic oil supply and demand. In 1955 about 14 percent of the U.S. oil requirements were imported from abroad. In 1970 we imported 23 percent. Last year about 37 percent of our oil came from imported sources. Unless something is done to slow down this increasing dependency on foreign oil, our imports could increase to 50 percent by 1980.

To close this widening energy gap as quickly as possible two approaches should be followed:

- (1) Government policies should be adopted that will encourage maximum efforts by private industry to increase domestic energy supplies.
- (2) Government and industry should continue to encourage voluntary conservation measures to reduce demand.

Vigorous conservation efforts cannot close the energy gap, but they can help buy time needed to develop alternate energy sources such as the production of oil and gas from coal and oil shale and the expanded use of coal and nuclear fuels for power generation. However, in the near term, only the expanded exploration for petroleum and natural gas can provide a significant contribution toward minimizing our growing reliance on imported oil. We must intensify drilling for oil and gas throughout the country and we must recognize that the nation's best prospects for significant new oil and gas reserves lie under the Outer Continental Shelf frontier areas and Alaska.

The United States needs to move ahead in developing its offshore oil and gas resources and the development must be done in a responsible manner with protection to the environment. Offshore production operations are not absolutely risk-free. However, safe environmental protection technology exists. This is evidenced by the oil industry's record. Over 19,000 wells have been drilled off the U.S. coasts with only one severe oil spill (Santa Barbara in 1969). This spill was cleaned up and there is no indication that any spill has had a significant lasting adverse effect on the environment.

Since 1969 the oil industry has made many technological advances, strengthened its own environmental controls, and is subject to both new and stronger government regulations and controls.

Regulations and techniques developed in the last 25 years have shown that oil operations can be compatible with commercial and sport fishing and other

marine activities. Environmental controls have been established to assure that exploration and development of offshore oil and gas production is conducted in such a way as to protect beach and marshy areas.

Because of the long lead times (4 to 8 years or more) needed to develop new offshore areas, the early evaluation of the producing capacity of such areas is vital in planning a national energy strategy. If substantial oil and gas reserves can be developed, our midterm energy problem will be alleviated; but if the oil and gas reserves are not there, the urgent need to develop alternate energy sources becomes even more critical.

The best seismic data cannot guarantee oil and natural gas discoveries. Drilling is required to determine whether or not sedimentary rocks have reservoir characteristics. Furthermore, the true potential cannot be estimated accurately without years of drilling and production experience in a given area.

Estimates of potential reserves are highly speculative. For example, no exploratory drilling has actually taken place on the U.S. portion of the Atlantic Outer Continental Shelf. No one knows for sure how much oil and gas can be found and recovered. The latest assessment by the United States Geological Survey (USGS) reports, within the probability levels of 95 percent and 5 percent, potential hydrocarbon reserves ranging from zero to six billion barrels of oil, and from zero to 22 trillion cubic feet of natural gas.

In summary, we believe the nation must proceed with the OCS oil and gas leasing program on an accelerated basis. Our growing energy needs make it essential to determine whether or not hydrocarbons exist beneath the Outer Continental Shelf in significant quantities. Rational energy policies cannot be developed without this knowledge. We further believe that this can be done by private industry with full regard for establishing a proper balance between environmental protection and the development of much needed resources.

November 7, 1975

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## Colophon:

This document was produced as an experiment to see how feasible it is to produce PDF files by scanning the archival microfiche of society minutes created by IEEE. For SSIT, there is a three inch stack of these containing minutes from 1972 on. Each microfiche has room for 14 typescript pages across by 5 pages down, although most contain fewer pages.

Scanning was done by a Visioneer "OneTouch 9320" scanner. The microfiche was scanned as if a black and white 35mm transparency. This was done by positioning 3 pages on the fiche over the scan area at a time. The parameters for scanning were: 6400 dpi, contrast adjusted to 100 (the maximum) brightness set to -40.

The scanner claims to have 6400 x 3200 optical resolution. However, raw scans at this resolution are not sharp at all. Perhaps a different scanner at a comparable resolution would be sharper.

Images were processed using Photoshop: first the gray levels were inverted, then the image was adjusted using "curves". Unsharp masking was applied 3 to 5 times to sharpen the fuzzy image. This is an absolutely crucial step. The parameters for unsharp masking were: 72%, radius 5.8, threshold 0. Following this step, "levels" was used to brighten the image. The individual pages were cropped from the original scan, and the size of the document was then adjusted to 8.5" by 11" and 200 dots per inch.

After the individual pages were produced, Adobe Acrobat 5.0 was used to produce the PDF file.

This was all very tedious, and this one fiche took hours to do. My conclusion is that converting the fiche to PDF files is not feasible, at least not with a \$120 scanner. There are professional services that do this, but they charge a great deal of money.