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VIEWS AND COMMENTS ON IMPROVING THE AEC REGULATORY PROCESS

JOINT COMMITTEE ON ATOMIC ENERGY
CONGRESS OF THE UNITED STATES

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JOINT COMMITTEE PRINT

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STATEMENT

This document is a committee compendium prepared by the committee staff and is not a committee report. It does not contain specific legislative recommendations, and is intended as a basis for further analysis and consideration by the members of the Joint Committee and the Congress.

FOREWORD

On March 20, 1961, the Joint Committee on Atomic Energy released a two-volume print entitled "Improving the AEC Regulatory Process." Volume I contained a study by the staff of the Joint Committee, while volume II contained, among other selected materials, studies by the Atomic Energy Commission and the Atomic Energy Research Project of the University of Michigan Law School.

The Joint Committee staff study recommended a major revision in the regulatory organization of the AEC, as well as a number of significant procedural changes. The study proposed that an internal Atomic Safety and Licensing Board, appointed by the President, be created within the Commission framework to perform the AEC's adjudicatory functions in atomic licensing.

The AEC study contained a number of recommendations for improving the AEC regulatory process, the most important being the creation of the Office of the Director of Regulation, reporting directly to the Commission on regulatory matters. The AEC has already implemented this change but with the understanding that its action would not prejudice a fair consideration of other proposals for revision of the AEC regulatory organization.

The University of Michigan study recommended a separate agency to exercise the AEC's regulatory functions, including both adjudicatory and rulemaking responsibilities.

Concurrent with the release of the committee print containing these studies, the following letter was sent to a number of leaders in the atomic energy industry requesting their comments on the proposed alternative organizational arrangements and related questions:

CONGRESS OF THE UNITED STATES,
JOINT COMMITTEE ON ATOMIC ENERGY,
March 23, 1961.

Enclosed for your information and comment is a copy of the Joint Committee's staff study of the AEC regulatory process. Volume I contains the staff's own study, while volume II contains, among other selected materials, studies by the Atomic Energy Commission and the Atomic Energy Research Project of the University of Michigan Law School.

The Joint Committee is planning hearings in late April on the AEC's regulatory organization and procedures, at which time the staff's proposal as well as other suggestions for improving the AEC regulatory process will be considered.

We would welcome your comments on our staff study which might be incorporated in an appendix to those hearings. In particular we would appreciate your views on—

1. The suggestions by the Atomic Energy Commission in their report, reproduced in volume II at page 86, particularly regarding the creation of a Director of Regulation reporting directly to the Commission.

2. The proposal for the creation of a separate agency as outlined in the extracts from the University of Michigan Law School study, reproduced in volume II at page 423.

3. (*a*) The staff's proposal for the creation of an Atomic Safety and Licensing Board within the AEC.

(*b*) The procedural changes suggested by the staff and others at page 64.

4. Any other improvements in either AEC regulatory organization or procedures.

It would be helpful if we could receive your comments by April 21, 1961. We appreciate your assistance in this matter.

Sincerely yours,

CHET HOLIFIELD, *Chairman.*

A similar letter was sent to a number of law school professors with expertise in the area of administrative law.

The committee has now received some 33 responses to the solicitation of views. In order to provide a framework of discussion for the hearings on "Radiation Safety and Regulation," to be held between June 12 and June 15, 1961 (as noted above, these hearings were originally scheduled for late April), these responses have been collected in this preprint.

It is recognized that some persons may not have yet prepared their formal responses to our request for comments. If any further comments are forthcoming prior to June 20, they will be incorporated in an appendix to the published hearing on "Radiation Safety and Regulation."

CHET HOLIFIELD,
Chairman, Joint Committee on Atomic Energy.

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OUTLINE FOR HEARINGS ON RADIATION SAFETY AND REGULATION

Monday, June 12—Afternoon

TOPIC I. RADIATION SAFETY

A. Introduction

A discussion of the common bases of reactor and materials (radioisotopic) safety with a "broad brush" treatment of the problems of radiation safety and regulation.

B. The Commission's reactor safety program

A discussion of positive developments in the reactor safety program as well as the difficulties.

(1) *Technical aspects of reactor safety.*—The technical problems of reactor safety should be discussed under four principal headings: Design, construction, operation, and siting. [Note: Site criteria will be discussed in detail under Topic I–C–(3).]

Tuesday, June 13—Morning

C. Specific problems in reactor safety

(1) *The SL–1 incident.*—In addition to a review of the incident, discussion should include the relation of the SL–1 to other facilities, i.e., the nature of the review to which the SL–1 was subjected and the administrative organization for the operation of the reactor.

(2) Results of the inspection program that followed in the aftermath of SL–1 with special emphasis on the Brookhaven review.

Tuesday, June 13—Afternoon

(3) *Reactor site criteria.*—Discussion of proposed AEC criteria dated February 11, 1961, and other policies.

Wednesday, June 14—Morning and Afternoon

TOPIC II. REGULATORY PROBLEMS

A. A general review of current problems facing the Federal regulatory agencies with special emphasis on the Landis report

B. AEC regulatory organization and procedures

A description of past and present AEC organization and procedures. [Note: Discussion and justification of changed procedures will occur under Topic IID(1)(a).]

C. Problems in the operation of the AEC regulatory process

(1) *The adequacy of the safety review in facility licensing.*

(*a*) Do the present procedures and organization provide the best possible safety review?

(2) *The prehearing process.*

(*a*) What is the role of the applicant in the prehearing process?

(*b*) What is the role of the hazards evaluation staff, the Director of the Division of Licensing and Regulation and other AEC branches in the prehearing stages?

(*c*) What is the role of the ACRS in the prehearing process?

(*d*) Is the prehearing review by the staff adequate? What can such a review hope to accomplish?

(*e*) Is the prehearing review efficient? Is the applicant burdened by duplicate presentations before the staff and the ACRS?

(*f*) What is the nature of the questions presented in the prehearing process and how do these questions differ from those presented in the formal review stage?

(3) *The formal review process.*

(*a*) What is the nature of the question presented to the hearing examiner and the Commissioners in a reactor licensing case? Is the issue one of law and policy or is it a substantive safety question? What is the Commission's role in a reactor licensing case?

(*b*) Is the present procedure unnecessarily cumbersome? Should the mandatory hearing on the operating license be eliminated?

(*c*) Is the Commission's present policy with respect to changes and amendments to facility licenses satisfactory? Should the question whether significant hazards considerations are involved in a proposed change be resolved by a technically qualified person or group of persons?

(*d*) Should submissions to the ACRS be put on a more selective basis?

(*e*) Is the present hearings procedure excessively formal? Should a round-table type of discussion be used, especially in noncontested cases?

(*f*) Is the advance notice of public hearing in facility license cases adequate?

(4) *Problems in rulemaking.*

(*a*) Does the present AEC organization permit the expeditious formulation of regulatory policy?

(*b*) What areas are currently in need of explicit policy formulation?

(5) *Summary considerations.*—A general discussion of regulatory problems including testimony on the problem of dual responsibilities, i.e., the difficulties arising from the merger of promotional, developmental and regulatory functions in the Commission itself.

(6) *Problems in materials licensing and waste disposal.*

THURSDAY, JUNE 15—MORNING

D. Possible improvements in the AEC regulatory process.

(1) *Direct presentation of alternative organizational arrangements.*

(*a*) The AEC's suggested reorganization, particularly creation of a Director of Regulation reporting directly to the Commission.

(*b*) ACRS view.

(*c*) Creation of a separate agency.

(*d*) The JCAE staff recommendation of an internal board.

THURSDAY, JUNE 15—AFTERNOON

(2) *Commentary on alternative arrangements.*—Pros and cons contained in Joint Committee study and appendixes would be considered, together with other comments and suggestions.

[Panel discussion.]

VIEWS AND COMMENTS ON IMPROVING THE AEC REGULATORY PROCESS

Reply From Advisory Committee on Reactor Safeguards, U.S. Atomic Energy Commission, Dated April 8, 1961

This is in reply to your letter of March 22. The Advisory Committee on Reactor Safeguards is pleased to submit its views on methods for improving the regulatory processes and the safety of nuclear reactors.

In reply to your questions regarding the three specific proposals for modification of the regulatory organization and procedure, we believe that any one of these proposals may be workable. However, the problem is to select the organization and procedure which is most advantageous in assuring the safety of nuclear reactors in the light of the present knowledge and state of development of the field, and at the same time to set up an organization and procedure which can develop to meet the needs of reactor regulation in the future.

Although it is our belief that any one of the three proposals can be made to work—given the proper high quality of leadership and personnel—there are points in each of the proposals which require modification in order to conduct the safety review of reactors efficiently and to keep to a minimum the burden upon the applicant, the AEC staff, and the ACRS in giving these projects adequate review.

Specifically, the Committee's comments on your points are as follows:

(1) It is the Committee's view that separation of the regulatory organization from the promotional activities of the AEC is desirable as we previously stated (see JCAE study, "Improving the AEC Regulatory Process," March 1961, vol. II appendix, p. 590). The creation of a Director of Regulation reporting directly to the Commission is a step in this direction. Many of the problems which existed under the earlier systems can be solved under the AEC organization plan, if properly implemented. However, it appears that the final judgment of reactor proposals may not receive the desired technical emphasis or simplification of procedures. It should be pointed out that reactors owned by the AEC and operated for the promotion of peaceful uses of atomic energy should give the same degree of protection to the public as licensed reactors. It is not yet clear how this activity will be coordinated with that of the organization under the Director of Regulation.

(2) The ACRS recognizes the problem of promotion and regulation within the same agency and is sympathetic with the motivation for the study by Messrs. Berman and Hydeman. However, it is the consensus of the Committee that the large body of information and technical competence which resides in the AEC and its contractors can be

most effectively made available if the regulatory agency requiring this information is in the same governmental agency; namely, the AEC. Adequate separation of promotion from regulation can be achieved within the agency, using either the organization recently adopted by the AEC in setting up a Director of Regulation reporting directly to the Commission, or by the proposal of the staff of the Joint Committee on Atomic Energy, or some modification of either plan.

(3) The proposal of the JCAE staff for an Atomic Safety and Licensing Board, containing both technically and legally trained persons, has considerable merit. The Committee believes that the problem is primarily technical. It also realizes the need for some formal public record. The proposal for a Board includes both aspects. If this proposal should be adopted, to be effective it must clearly state the interrelation of the various parts of the regulatory organization. We hope that there will be a direct relationships among the Board, the ACRS, and the technical staff. Unless the relationships are specified and duplication of staffs avoided, there exists in this plan a distinct possibility that an applicant may be subjected to two, or even three independent safety reviews. This may negate one of the principal stated reasons for the proposed changes.

(4) The ACRS favors the JCAE proposal for a Board as being a sound framework for the future growth of the hearing and licensing process. It is important that changes in the regulatory process provide for a continual review of current needs instead of relying on an intensive analysis every 3 or 4 years.

It is also important to the assurance of safety of the public that regulatory processes provide for the continuous growth of technical understanding of the physical problems which are not yet completely understood. The Committee believes applicants should be subjected to one, and only one complete and detailed review at each licensing phase. This review should be conducted by the full-time staff.

The regulatory organization, whatever its form, should have means of keeping informed concerning the experience with reactor operation and research and development.

There is a need for additional effort to write technical specifications and terms of reactor licenses so that reasonable flexibility of operation can be obtained without sacrificing safety. It is probable that some degree of uniformity in the terms of the licenses can be achieved.

(5) Finally, you have invited the Committee's comments on current problems in reactor safety. There are a number of such problems which are being given varying but not necessarily adequate attention. To avoid a lengthy discussion at this time, a list follows which is illustrative but not all inclusive.

Aging of reactors—deterioration of pressure vessels and reactor systems during operation.
Collection and evaluation of operating experience.
Competence of designers, constructors, and operating organizations.
Control requirements.
Corrosion.
Heat transfer and burnout correlations.
Means of detecting and predicting instability.
Radiation effects on materials.

Site criteria—man-rem dose, unusual meteorological conditions, large city distance, multiple reactor installations, and emergency tolerance doses.
Testing for nuclear service.

These problems are not all independent and thus research in reactor safety should be set up in an organized way.

Reply From Atomic Industrial Forum, Dated April 12, 1961

AIF Seminar on AEC Regulatory Organization and Processes

The Atomic Energy Commission's regulatory organization and the processes employed by the AEC in the discharge of its regulatory responsibilities have been the subjects of intensive study in recent months. Studies have been conducted by the staff of the Joint Committee on Atomic Energy, the Atomic Energy Commission, and the Atomic Energy Research Project at the University of Michigan.[1]

An efficient and effective regulatory organization and program is vital to assure the protection of the public health and safety without the imposition of unnecessary burdens on the development of peaceful uses of atomic energy. Accordingly, the Atomic Industrial Forum has closely followed the progress of the three studies. With the Atomic Energy Research Project at the University of Michigan, the forum has cosponsored two informal seminars, one at Ann Arbor, Mich., in July 1960 and a second in Washington, D.C., in January 1961. Both seminars were attended by representatives of industry, the atomic energy bar, the AEC, and the JCAE. A forum staff member is serving on a steering committee established by the JCAE to assist in planning public hearings which are tentatively planned to be held by the JCAE on May 22–24, 1961, to consider the AEC regulatory processes.

On April 12, 1961, under the sponsorship of the forum, a seminar on the AEC's regulatory organization and processes and the proposals for their modification was held in New York City. Although the AEC's regulatory responsibilities include the licensing and control of radioactive materials—source, special nuclear and byproduct materials—the seminar was limited to issues involving the regulation of nuclear facilities.

Participating in the discussion were:

James H. Campbell, Consumers Power Co.
James F. Fairman, Consolidated Edison Co. of New York.
Lyman R. Fink, General Electric Co.
Lee M. Hydeman, Atomic Energy Research Project, University of Michigan.
Murray Joslin, Commonwealth Edison Co.
Oscar M. Ruebhausen, Debevoise, Plimpton & McLean.
George F. Trowbridge, Marks & Trowbridge.
Arvin E. Upton, LeBoeuf, Lamb & Leiby.

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[1] A Joint Committee print, published in March 1961, sets forth the studies of the JCAE staff, the AEC, and selected portions of the University of Michigan study. Copies of the JCAE print are available from the U.S. Government Printing Office, Washington 25, D.C. Copies of the University of Michigan study are available from the Atomic Energy Research Project, University of Michigan Law School, Ann Arbor, Mich.

Charles H. Weaver, Westinghouse Electric Corp.
Gerald Charnoff, Atomic Industrial Forum, Inc.
Edwin A. Wiggin, Atomic Industrial Forum, Inc.

This memorandum is based upon the views and comments of the participants on the issues involved in the regulatory processes employed by the AEC and on the studies by the JCAE staff, the AEC, and the University of Michigan's Atomic Energy Research Project. No effort was made by the participants to arrive at a consensus on the issues discussed.

The purpose of this memorandum is to set forth for the benefit and information of forum members the issues considered at the seminar.

INTRODUCTION

AEC organization

The responsibilities and functions of the Atomic Energy Commission are many and they are not necessarily self-consistent. Among other things, the AEC's operational functions include the procurement of raw materials, and the operation of a network of facilities for the production of fissionable materials and nuclear weapons. Its promotional functions include the development of economically competitive nuclear power and commercial applications of radioisotopes. With other governmental agencies it assists in the development and formulation of policies on such matters as national defense and cessation of nuclear weapon tests. A third and rapidly growing area of activity involves licensing and regulation to protect the public from the hazards of radiation injury which could result from the operation of nuclear facilities and the use of nuclear materials.

To discharge these promotional, operational, and regulatory responsibilities, the AEC staff has been divided into several divisions, each charged with the performance of specified functions. Thus the Divisions of Raw Materials, Production, and Military Application are responsible for the execution of the Commission's operational functions. Promotional duties are delegated to the Division of Reactor Development and the Office of Isotope Development. Regulatory responsibilities are shared by the Division of Licensing and Regulation, the Inspection Division, and the Office of Health and Safety. Until recently each division director and office director reported to the Commission through the General Manager.[2]

AEC regulatory processes

In addition to the total safety review performed by the reactor manufacturer, and in some cases by the operating electric power company, the safety of power and testing reactors is formally reviewed by the technical staff of the AEC's Licensing Division and the Advisory Committee on Reactor Safeguards prior to issuance of a construction permit and again prior to issuance of an operating license. The Licensing Division's technical staff and the ACRS are composed of highly trained, technically competent individuals. Power and test-

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[2] On Mar. 16, 1961, the Commission established an Office of the Director of Regulation reporting directly to the Commission on the management of the regulatory program rather than to the AEC General Manager. This reorganization completes the separation on the staff level of the regulatory function from the operational and promotional functions. Formerly, below the General Manager level, the regulatory function was effectively separate from the operational and promotional functions.

ing reactors are further reviewed by the AEC hearing examiner, who has legal but no technical training, in the course of at least two public hearings held in conjunction with the issuance of the construction permit and the operating license. The examiner's decision after each hearing is, in turn, reviewed by the Commission.

Research and training reactors, and other reactors not qualifying as power or testing reactors, are not reviewed by the hearing examiner or the Commission, as a matter of course, unless a public hearing is requested by the applicant, the AEC Licensing Division, or an intervener. Such reactor projects are not required to be, and in practice are not, reviewed by the ACRS.

The review by the Licensing Division and the ACRS of applications for power and testing reactor licenses normally extends over considerable periods of time. Through conferences and amendments to the original applications, applicants keep the Licensing Division advised of changes in design and planned operating procedures. Under current practice, the Licensing Division reviews the performance and design specifications for each of the systems which comprise the total reactor project. In some cases, the engineering and construction details of important components of such systems are carefully reviewed. However, the details of most components of each of the systems comprising the reactor projects generally are not reviewed by the Licensing Division. The nature of the review, however, is adequate to enable the Licensing Division to evaluate the technical competence and qualifications of the license applicant.

The relationship of the ACRS to the AEC Licensing Division and its safety review functions and responsibilities are ambiguous. Under the Atomic Energy Act of 1954, as amended, the ACRS is required to review and report on applications for power and testing reactor licenses (including construction permits). In practice, the AEC Licensing Division reviews each such application and submits a report of its analysis to the ACRS. This analysis is not made available to the public. The license application, and the Licensing Division analysis are reviewed in some cases by a subcommittee of, and in all cases by the entire ACRS. The subcommittee may have several meetings with the applicant and the staff. The whole committee normally meets on several occasions with the applicant and the Licensing Division. Subsequently, in a meeting, from which the Licensing Division is excluded, the ACRS prepares a report on thea pplication to the Chairman of the AEC. ACRS reports are normally brief and set forth only general conclusions of the ACRS as to the safety, or lack thereof, of the proposed projects. The reasons for the conclusions are not included in the reports.

SEMINAR DISCUSSION

Agreeing that a safety review by a governmental agency of nuclear reactor projects is in the public interest, the essential questions with respect to the AEC regulatory organization, the regulatory processes, and the proposed modifications examined in the course of the seminar were:

(1) What form of organization and what kind of regulatory processes should be established at this time, in the light of the current technology, to assure continuous application of a high order of technical competence to the governmental safety review?

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(2) What form of organization and what kind of regulatory processes are required to assure the public that proposed reactor projects are receiving adequate safety review by the governmental agency?

Satisfactory responses to both questions involve consideration of the current organizational structure and the regulatory processes now being employed by the AEC.

The Licensing Division—Hazards Evaluation Branch

Background.—Since the enactment of the Atomic Energy Act of 1954, as amended, the primary AEC staff responsibility for the technical safety review of applications for reactor licenses has been in the Hazards Evaluation Branch of the Licensing Division, at first identified as the Division of Civilian Application and, more recently, since December 1957, as the Division of Licensing and Regulation. The Hazards Evaluation Branch is comprised of trained reactor physicists, nuclear engineers, mechanical engineers, and other scientists having competence in related fields.

Although the depth of review may vary with the hazard potential and the novelty of given reactor projects, the Licensing Division review is normally designed to check on the adequacy of the safety analysis performed by the applicant and the adequacy of the engineering, design, and procedural safeguards proposed by the applicant to minimize or eliminate the hazard potential of his project.

Except with respect to power and testing reactors, the Licensing Division analysis and review normally constitutes the only technical review of licensed reactor projects by the regulatory authority. Although the Licensing Division may discuss specific questions with regard to such reactor projects with the ACRS, in practice it is not generally done.

In the case of power and testing reactor projects, the work performed by the applicant and the Licensing Division is subject to surveillance by the ACRS, the hearing examiner and the Commission.

Discussion.—Because the competence and technical maturity of the staff members contributes more than does the form of organization to an efficient and effective regulatory program, several participants suggested that modifications in the present organizational structure and regulatory procedures should be effected only after careful consideration as to whether such modifications will result in increased prestige to the Licensing Division, thereby increasing the likelihood that competent personnel will be attracted to staff positions.

On the other hand, the staff as a whole may have an uneven competence due in part to the fact that competent individuals on the staff are continually leaving for more attractive opportunities with industry. Thus, in view of the relative novelty of the technology and the importance of assuring the public health and safety, it was also suggested that the Licensing Division safety evaluation should be critically reviewed by another independent, technically competent, review group. This function, in the case of power and testing reactors, at least, has been discharged by the ACRS. It appears, however, that the function and effectiveness of the ACRS have been abused by an overdependence by the Commission and the hearing examiner on the ACRS review and conclusions on given projects with the consequent downgrading of the Licensing Division staff.

To increase the status of the Licensing Division staff without discarding the usefulness of the surveillance by a group such as the ACRS, it was generally agreed that it would be desirable to publish the Licensing Division analyses which are prepared for the ACRS, and presently are considered privileged documents and not made publicly available. Publication of such analyses prior to consideration by the ACRS of the reactor projects would give the staff a more independent and competent image to the public. Publication of the analyses would disclose the extent to which the staff conclusions are concurred in, or modified, by the ACRS. It is understood that generally the staff's conclusions have been sustained by the ACRS. Such publication would also contribute to the public's understanding of the project.

Publication of the staff analyses, as in the case of testimony prepared for public hearings, would be one means of encouraging continued detailed and probing safety analyses by the staff.

Advisory Committee on Reactor Safeguards

Background.—Established as a statutory advisory committee in 1957 as part of the Price-Anderson indemnity program, the ACRS has become the "bête noire" of the AEC's regulatory processes.

The ACRS review procedure is deliberately informal and off the record to accommodate a burdensome agenda for a part-time committee. In the course of the usual 3-day-a-month meeting, the ACRS typically reviews 6 to 10 or more projects and completes reports on such projects to the Commission as required by the statute. To perform their difficult tasks in the limited time available, the ACRS has developed a basically standard form of brief report which varies from case to case only in the degree of enigma built into each letter. The reports usually are not helpful to an understanding of the project because the bases for the committee's conclusions are not set forth. By statute, the ACRS reports are required to be published and the ACRS is understandably cautious in phrasing its conclusions which virtually determine the fate of the license applications. Such reports, it is thought, have often hindered rather than aided the processing and review of the application by the hearing examiner who, perhaps because of his isolation from the technical staff, has tended to refer all matters to the ACRS without regard to the significance of such matters to the safety of the projects concerned.

Discussion.—For a number of reasons the advice of the ACRS on a particular project amounts to a determination that a license will or will not issue. To some extent this result is a partial abandonment to the ACRS of the Commission's regulatory and policymaking responsibilities. This was attributed at the discussion on April 12 to a number of causes including:

1. The Commission's alleged self-consciousness arising out of its inconsistent regulatory, promotional and operational functions;
2. The Commission's decision to isolate the hearing examiner from the technical staff despite the exception to the doctrine of separation of functions set forth in the Administrative Procedures Act for initial licensing;
3. The lack of clarity in the legislation establishing the ACRS and its functions; and

4. The theory that the public has more confidence in the "independent" ACRS than in the competence and judgment of the Commission and its technical staff, the Licensing Division.

It was agreed that the committee reports are not informative and that the part-time committee is overburdened and may not be able to continue its present function of case-by-case review.

The potentially significant cost of delay and frustration which might result from a negative or obscure ACRS report has, in some instances, increased the cost of reactor projects. For example, it was stated that license applicants frequently feel compelled to make design changes at the last moment to accommodate questions or suggestions made by members of the ACRS, although it is not certain that a favorable ACRS report is dependent upon such modifications.

The JCAE staff, the AEC, and the University of Michigan studies each propose retention of the ACRS, albeit with a more limited function. Although the proposals differ in detail, each proposal would have the ACRS only consider novel safety questions presented by reactor license applications.

Most of the seminar participants agreed with the sense of these proposals, particularly with the view that mandatory review of cases by the ACRS should be eliminated and that review by the ACRS should be primarily upon request of the regulatory agency and should be limited to particularly difficult problems of safety. However, it was also suggested by some that the total review of reactor projects now conducted by the ACRS should not be discarded in its entirety. It was thought that, in view of the importance of siting questions, the developing technology, and the need to obtain the confidence of the public in the safety of such projects, it might be useful to require the ACRS to continue to review power and testing reactor projects as it is now doing at the construction permit stage. The ACRS would be asked to judge the suitability of constructing the proposed reactor at the proposed site. The ACRS report could usefully identify questions which should be resolved to the satisfaction of the licensing authority before the operating license is to be issued, if such questions are apparent at the construction permit stage. Thereafter, the proponents of this view agreed that the ACRS should be utilized only in the consideration of new or important safety questions. It should not be asked for advice on the total project or at each stage of the project.

Hearing Examiner and Commission

Background.—All applications for licenses to construct and operate power and testing reactors are reviewed by the hearing examiner at public hearings and subsequently the examiner's decision is reviewed by the Commission.

Of all the reactor license applications set down for public hearings only one has been contested, and this occurred prior to the adoption by the Congress of the mandatory hearing requirements.[3] Where opposing parties appear at a hearing there is no dispute that a hearing examiner having legal training, but no technical competence, could be relied upon to render an appropriate decision since he would be required to assess conflicting testimony in the same context as any other judicial officer. In the uncontested case, however, the issues are

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[3] In the matter of the Power Reactor Development Corp.

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not so handled. The AEC Licensing Division and the ACRS, having completed their safety review, typically are prepared prior to the hearing to recommend issuance of the license. The applicant realizing the decisive influence of the Licensing Division's opinion and that of the ACRS on a hearing examiner, who is not equipped to delve into the highly technical safety matters, prior to the hearing, will have resolved all technical questions with the staff and the ACRS either by convincing the staff and the ACRS of the safety of his project or by making modifications in his design. In the uncontested case the public hearing has not been a forum for resolution of safety questions.

Discussion.—Although it has been argued that the public hearing record is a valued vehicle for advising the public of the nature of the reactor projects, the experience to date leads to the conclusion that the public hearing records would tend to confuse rather than to educate.

The three studies by the JCAE staff, the AEC, and the University of Michigan would restrict the mandatory hearing requirement to the construction permit stage. At that stage the basic policy determination of locating the reactor project at the particular site is made.

Although the discussion reflected some doubts as to the contribution to be made by any public hearing in a noncontested case, a mandatory public hearing at the construction permit stage would not be objectionable. A published, well prepared, narrative analysis by the regulatory agency of the safety of the proposed facility might be easier to comprehend and more useful than the public hearing. Accordingly, the University of Michigan proposal for limiting the mandatory hearing requirement to a period of 3 to 5 years would appear to be desirable.

Licensing Board

Discussion.—If the function of the ACRS is limited as suggested and if it is true that the hearing examiner is not technically competent to conduct a critical appraisal of the safety review conducted by the Licensing Division, the AEC regulatory process would require modification to incorporate a technical surveillance of the safety analyses prepared by the staff and the applicant. Such surveillance would be performed by the form of Atomic Safety and Licensing Board proposed by the JCAE staff, which, unlike the ACRS, would also be authorized to make final decisions on licensing actions.

The JCAE staff and the University of Michigan studies propose the creation of a full-time three-man board, two of whom would be trained and experienced scientists or engineers with competence in the field of safety. The third member of the Board would be experienced in the conduct of administrative proceedings.

The Board as proposed by the JCAE staff would be established within the AEC. It would be granted final licensing authority—the Commission would not review its decisions—in cases set down for public hearings.

The extent to which the proposed Board would review the safety of nuclear facilities not set down for public hearing is unclear. The proposal in the study suggests that the Director of the Licensing Division would retain his present delegation of authority which authorizes him to grant licenses for research, training, and medical reactors. The need for surveillance of the licensing staff's safety evaluations is not limited to power and testing reactors. The Board, it was concluded by a number of discussants, should be responsible for the re-

view of the safety of all reactors regardless of their size and purpose. Such review in most cases should be on the basis of the Licensing Division's written safety analyses and would not require public hearings. Power and testing reactor licenses, however, should be issued only on authority of the Board.

Relationship of Board to ACRS

Discussion.—With a full-time technically competent Board checking the safety reviews performed by the Licensing Division and the applicants, the function of the ACRS could reasonably be limited as described above without compromising the safety of the public. It would permit the ACRS to focus its attention on general matters of safety policy and specific substantial and novel safety issues. The question remains as to whether the Board, or the Licensing Division should determine the cases and questions to be reviewed by the ACRS. The JCAE staff and a number of the discussants would assign this function to the Board. Others, fearing the problem of overburdening the Board, and favoring limiting its functions to hearing cases only, would give this responsibility to the Licensing Division.

Rulemaking

Discussion.—The JCAE staff proposal would grant the Board authority to recommend to the Commission the adoption of rules and standards, but leaves unclear the locus of responsibility for the initiation of rules. Because the technology today does not permit the promulgation of detailed standards and in view of the consequent difficulty of distinguishing between regulatory policy to be established by rule and that to be established by decisions in licensing proceedings, a number of persons advocate granting rulemaking as well as decisional authority to the Board. Moreover, it was urged that the Board would develop greater understanding of the substantive issues necessarily involved in the rulemaking process. Most participants at the seminar held that the authority in the Board to recommend rules and to comment on rules proposed by the Licensing Division or the Commission would be sufficient to assure a consistent regulatory policy. In any event, close and cooperative interaction between the Board and the Commission on rulemaking would be required without regard to which group has the final rulemaking authority and responsibility for the initiation of rules. A cooperative relationship would also be required to avoid the possibility that each group will wait for the other to develop needed rules and standards.

Some of the reasons advanced for permitting the Commission to retain final responsibility for the promulgation of rules were: (1) The Commission is more likely to have a broader perspective of the developing atomic energy program that the Board, and (2) the Commission is likely to be politically in tune with the President, and its retention of rulemaking authority would enable it to conform the regulatory policies with the policies of the political leadership of the country.

Staff support

Discussion.—The JCAE staff proposal contemplates that the Board would be serviced by a small staff and that the Board would have discretion to call upon the AEC Licensing Division and other divisions of the AEC.

The extent to which the Board uses the Licensing Division may affect the extent to which it becomes the captive of the staff. For this reason provision for a small staff to service the Board would be appropriate. On the other hand, the Board should be so established that Parkinson's law will not operate. Duplication of the Licensing Division staff would be an unproductive use of manpower and ultimately could lead to the disadvantages discussed below in connection with the proposal for a separate regulatory agency.

The negative consequences of a large staff is a further argument against granting final rulemaking authority to the Board. It could reasonably discharge its responsibility to recommend rules and standards where needed and appropriate with a small staff. Final rulemaking authority in the Board would inevitably result in a buildup of staff.

To assure the independence of the Board it might be appropriate to authorize it to prepare its own budget requirements. On the other hand, if the Board is not to become a separate agency, its budget should be included within the Commission's budget. This, of course, would permit the Commission to determine the size of the Board's staff.

Although it is not made clear in the JCAE staff report, it is understood that the Licensing Division would report primarily to the Commission. This should be clarified to assure that the Board's independent review of the work of the Licensing Division does not become susceptible to challenge.

Review by the Commission

Background.—A footnote in the Joint Committee staff study refers to a suggestion in favor of limited review by the Commission of Board decisions. The JCAE staff notes the difficulty of defining the scope of such review.

Discussion.—Such a right of limited review would in theory unite the rulemaking and adjudicatory authority in the Commission and academically, at least, resolve the problems of splitting the adjudicatory functions from the rulemaking function. On the other hand, the real advantages of such a procedure are difficult to perceive. Presumably the Board will have technical competence to review the safety of reactor projects and the Commission lacks the time and perhaps the technical competence to make such a review. The Board's decisions, if final, will be subject to appeal to the courts, who are equally competent with the Commission to adjudicate the nontechnical aspects of a license application.

Most seminar participants agreed that review by the Commission would add an unnecessary step to the licensing process. Final decisional authority should be given to the Board.[4]

A separate regulatory agency

Background.—The study completed by the atomic energy research project of the University of Michigan recommends the establishment

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[4] On Apr. 15, 1961, the AEC amended its rules of practice to limit the review by the Commission of decisions by the Hearing Examiner. Essentially the new rules will limit the Commission review to "important or novel questions of law, policy, or administration" and to assure compliance by the parties and the Hearing Examiner with applicable statutes and rules. Under the new rules, the Commission would continue to have the right to review the case on its own motion.

of a separate regulatory agency. Under this proposal the AEC would continue to function only as an operating and promoting agency. The proposed separate agency would assume all the present regulatory responsibilities of the AEC. It would replace the Federal Radiation Council and would be responsible for the development of radiation safety criteria and guides and would assist the States in the development of their radiation protection programs.

Discussion.—Some of the considerations presented in favor of such a separation are:

(1) The AEC's present functions of directly promoting industrial development and regulating that development from the health and safety standpoint are allegedly not compatible, and the incompatibility could result in a loss of public confidence in the integrity of the Commission's regulatory program.

(2) The Commission's alleged sensitivity to its incompatible functions has caused it to overjudicialize its procedures to protect itself from attack, and this overjudicialization has resulted in a significant burden to applicants.

(3) The Commissioners have too much to do and cannot give adequate attention to their regulatory responsibilities.

(4) The Commissioners tend to cut themselves off from communication with applicants while an application is pending before them, and therefore they are denied information bearing on their promotional program.

(5) The radiation protection functions of the Federal Government are becoming diffused among various Federal agencies, and the functions need to be centralized from the standpoint of a primary directing force.

(6) A board with primarily adjudicative functions may not have enough to do and may tend to maintain or increase the present procedural burdens attendant on license applications, and, in addition, a board with such limited functions within an existing agency may not have sufficient stature to attract qualified persons for services thereon.

The considerations against a separate regulatory agency are:

(1) A new and separate agency might tend to lose contacts with persons with technical competence in the AEC's reactor program and would be hampered thereby in performing its regulatory functions.

(2) The volume and importance of the regulatory activities may not be sufficient to enable a new agency to attract and maintain high-quality personnel.

(3) A completely separate regulatory agency may not give weight to the developmental objectives of the Federal Government in the field of reactors.

(4) In deciding upon a developmental program, the Commissioners should balance proposed technological advances with safety considerations.

(5) A new agency charged only with safety functions would have to coordinate its policies with the AEC. Thus the separation might be in name only.

The proposal for a separate agency as formulated by the University of Michigan Atomic Energy Research Project does not involve a complete separation of the regulatory and promotional functions. The

proposal recommends that the agency responsible for the promotional activities would sit with the regulatory board and have a voice in its decisions on the promulgation of rules of general applicability. In addition, it is proposed that the Joint Committee on Atomic Energy should have legislative jurisdiction over both agencies. Further, some physical contact between the agencies is recommended in terms both of location and use of certain common services. It was indicated that the scope of responsibilities of a separated board or agency are more significant under the Michigan proposal than whether such responsibilities are reposed in a separate agency or in a separate board within the AEC. The recommendations stress that the same policymaking body should have both the rulemaking and adjudicative functions, and also should have the closely related responsibilities of formulating basic radiation protection standards and for coordinating State and Federal activities, and for making general recommendations on the scope of governmental research in the field of radiation safety.

Giving due recognition to the present state of the technology, most seminar participants were more favorably disposed toward implementation of the JCAE staff proposal of an internal board rather than creation of a wholly separated regulatory agency.

Military versus civilian activities

Discussion.—To take care of the argument for separation that the Commissioners are charged with too many functions, an alternative solution to splitting of the Commisison's regulatory responsibilities would involve separation of the military activities from those activities which have a clearly nonmilitary character. The Commissioners currently devote a substantial amount of time to issues involving the development and production of weapons and the proposed cessation of nuclear weapon tests.

Seminar participants were not favorably disposed to such an alternative. Even with the military and civilian activities within the AEC, there is considerable difficulty in obtaining data relating to developments in the military reactor field for the benefit of the civilian developmental program. Lodging the military activity in a separate agency would compound the difficulties.

Commission form of organization

Discussion.—The view was expressed that the Commission form of organization is archaic and that there is a need to totally reorganize the AEC to provide it with a single administrative head.

The AEC participates very actively in the formulation of government-wide policies. This frequently involves interagency consultations with agency representatives authorized to commit their agencies or departments to certain policy positions. Under the Atomic Energy Act, each Commission member has "equal responsibility and authority in all decisions and actions of the Commission." This precludes a single Commissioner from committing the AEC to any particular policy. It is alleged that a single administrator form of organization would permit the President to assume political responsibility for the agency's activities, and would expedite the development of policy decisions in the operational and promotional activity areas.

The discussion group generally held that the regulatory problem is unrelated to whether the AEC is headed by a single administrator rather than a commission. In any event, the JCAE staff proposal, if adopted, would be compatible with a total reorganization such as that proposed.

Office of Director of Regulation

Background.—In a step designed to separate the regulatory function from promotional and developmental functions at the general manager level, the AEC has recently created the Office of Director of Regulation which will report directly to the Commission on the management of the regulatory program. The position of Assistant General Manager for Regulation and Safety has been abolished.

Discussion.—This reorganization does not appear to be directly related to the basic issues of how to assure competent technical review of nuclear facilities and to reassure the public that the facilities are being carefully regulated. However, the reorganization will probably facilitate a better awareness and understanding by the Commissioners of regulatory matters and will probably expedite the development and formulation of rules and standards. This reorganization was viewed with favor.

REPLY FROM PROF. FRANCIS ELWOOD BARKMAN, ASSOCIATE PROFESSOR OF LAW, UNIVERSITY OF TOLEDO, COLLEGE OF LAW, DATED MAY 10, 1961

I appreciate your courtesy in forwarding the two volumes on "Improving the AEC Regulatory Process" and in inviting my views thereon.

I believe that the work of JCAE is of utmost significance, not merely because of the vision which atomic energy holds before us, but also because JCAE has broad implications for our entire institutional system in suggesting ways by which our various legal institutions and governmental units can be more effectively coordinated, to enable the citizens of our Nation to preserve their essential freedoms while permitting those changes which technological complexity and ideological and economic competition will demand if we are to survive. Although JCAE has had relatively little precedent available to guide it, its efforts on the whole, have been in the best tradition of statesmanlike responsibility, with only relatively minor, occasional, partisan bickering (which perhaps only shows that the persons involved are human after all).

The marshaling of facts and opinion to facilitate informed judgment is work of prime importance. The creditable job of preliminary fact gathering in the volumes should enable JCAE in its hearings to concentrate its attention upon some of the more critical spots of telltale strain in the AEC regulatory process. Data so elicited may alter the opinion which I have tentatively formed after reviewing the study. For example, a convincing explanation by AEC of just why it took more than 7 months to suspend the license of Coastwise Marine Disposal Co. (I: 42–43; II: 310–311) might go far to persuade that AEC has not neglected the safety factor and to induce acceptance of AEC's recommendations that no fundamental change be made (II:

420). Again, the long delays between the various steps in the PRDC case (I: 27–31; II: 173–179, 447 et seq.) may possibly be explained in terms of the peculiarily difficult circumstances of this trail-blazing effort by AEC, or perhaps even by attempts to negotiate a settlement of the controversy, and thus counter the conclusions of the Berman-Hydeman study (II: 555–7) and the Kennedy-Heimann memorandum (II: 558 et seq.). The answers in such situations might, on the other hand, be so insignificant as to indicate that the problems reviewed in the study are even more serious and that the cure should necessarily be more drastic.

From among the various proposals presented in the two volumes, the suggestion of JCAE's staff for the licensing board within AEC strikes me as the most practicable alternative in that—

(*a*) It meets some of the objections of unnecessary delay, expense and overjudicialization;

(*b*) It recognizes the importance of separating the functions of regulation and promotion;

(*c*) It points toward the delineation of the tasks of policy formulation and policy application, yet would permit coordination between these two functions;

(*d*) It would facilitate identification of individual responsibility for the decisions of particular cases, thereby promoting industry and public confidence in the integrity of decisions;

(*e*) It tends to avoid problems of inefficiency and impairment of morale which might be precipitated by the more drastic remedies, yet permits these remedies to be preserved for future use in the event of need;

(*f*) It keeps the responsibility in atomic matters essentially unified at a time when technology is still in a developmental stage and minimizes the disadvantages of feuds between agencies independent of each other;

(*g*) It seems best tailored to the apparent need of the immediate future; and

(*h*) It can be accomplished with the minimum of disruption to our atomic energy program.

Your letter of March 30 also invites any other observations. I am thus prompted to mention a doubt aroused in the back of my mind whether the frontline responsibility and initiative for the formulation of policy in atomic energy matters is in the process of being subtly shifted from AEC to JCAE. I do not claim that this has in fact happened but merely wish to warn against the possibility of this occurring. The raw statistics of the AEC's regulatory activities suggest that the policy followed might have been one of inaction until goaded into action by some outside agency or party. Any such policy would tend to create a vacuum in the governmental process which the members and staff of JCAE, in the conscientious discharge of their statutory responsibilities, might be tempted, almost automatically, to occupy. The members of JCAE have all of the arduous and numerous responsibilities which our Federal legislators must normally carry; even with the aid of a staff, JCAE cannot satisfactorily discharge the role of frontline responsibility in such a complicated area. Its function as a watchdog or gadfly is about as far as it can reasonably be expected to go. My doubt could be easily dispelled by a con-

vincing demonstration that the AEC's policy has included a constant and continuing concern over its own efficiency and effectiveness by a program of constructive self-criticism, thus negating any inference of passive obstruction which the statistics suggest.

I trust that all who read this letter will appreciate that the views expressed are my own and are not to be attributed either to the University of Toledo or its College of Law.

REPLY FROM MR. RAYMOND C. BARRALL, CHIEF HEALTH PHYSICIST, PHYSICS RESEARCH DIVISION, ARMOUR RESEARCH FOUNDATION OF ILLINOIS INSTITUTE OF TECHNOLOGY, DATED MAY 12, 1961

The comments below are in response to the invitation to comment extended by Representative Chet Holifield in his letter of March 18, 1961, to Dr. L. Reiffel, director of physics research at ARF.

The formulation of regulations which give reasonable assurance of radiation safety without, at the same time, being unduly restrictive is indeed a formidable task. If one further complicates the problem by adding a desire to promote and encourage the use of radiation, the task becomes even more difficult. There are many who conclude that the promotional and regulatory functions are conflicting and inconsistent tasks. To some extent this is undoubtedly true; but the exact extent of the conflict seems to be a most important consideration.

The importance of this statement is immediately recognized if one considers the diverse activities of government generally. It would seem that, as the technical undergirding of evaluation and decision-making increases, the extent to which the decision itself is made by technical experts must also increase. Any system which involves the formation of a separate regulatory agency which is completely divorced from the promotion of atomic energy would, in the end, not associate itself with the important goal of promoting peaceful applications of atomic energy. In fact, the general question of safety is intimately intertwined with the use of atomic energy. To separate into two groups those who build from those who regulate seems to offer few advantages compared to the tremendous difficulties which would result.

There are some who feel that present organization is such that there are two groups now that are too widely separated. An organization chart showing both groups under one commission does not insure cooperation and appreciation of each other's viewpoint.

At this point an illustrative example may serve well. Recently, amendments to part 30, title 10, of the Code of Federal Regulations, was amended to allow certain applications of tritium. This is especially significant in view of the hazard evaluation related to tritium luminescent devices which shows that the use of tritium in place of radium will result in a reduction in the hazard. The AEC is certainly to be commended for issuing this amendment. However, one might raise serious issue as to whether or not the magnitude of this decision to issue an amendment which would allow a hazard reduction was so difficult as to require delay until January 12, 1961. This is the type of decision which could have been made years sooner. It is perhaps relatively unimportant scientifically since the net effect of

the amendment is primarily to encourage an industrial application. This, of course, is no small benefit but is probably much less important than a comparable amendment which would make it easier to use radioisotopes in research. The delay and waste of scientific manpower in needless licensing activity is a waste our country can ill afford. We still, after a considerable wealth of experience with atomic energy, require a license of the experimenter in order that he may possess small quantities of radioactive materials that are far less hazardous than the other chemicals he uses. If this is the case, it is pertinent to ask whether such licensing has the effect of causing a material reduction in the total hazard. As a basis for discussion and comparison, let us adopt the philosophy that licensing should be based on considerations of safety. Safety is a relative quantity and it is immediately obvious that complete safety is impossible. Let us go one step further and state that, for most cases, the delays and expense associated with licensing activity for low-hazard quantities is wasted effort if the total hazard is not significantly reduced by such licensing. If it is really true that the hazard from the radioactive material is less than or equal to the hazard presented by Bunsen burners, acids, normal 110-volt electrical wiring, slippery floors, etc., then some serious questions are raised. Should all chemicals, electricity, water, etc. be licensed? Should one small portion of the total hazard receive a great deal of attention while others do not; and, if so, how many scientific man-hours and how many dollars should be diverted to this effort? Finally, is it possible that greater safety would be obtained by raising the limits for general licensing so that fewer licenses are required and a larger safety effort is expended on the larger hazards?

In line with these questions, tables 1–3 are presented below to aid in comparing natural mercury in quantities found very commonly in laboratories and homes with radioactive mercury. It is recognized that there may be other aspects to the problem which are neglected in this brief discussion. Mercury is chosen as an example for the following reasons:

(1) It is very widely used in laboratories from elementary schools to the highest order of research laboratory.

(2) We have accumulated several hundred years experience with mercury.

(3) There is established by the American Conference of Governmental Industrial Hygienists a maximum acceptable concentration (MAC) in air for occupational exposure.

From these data, one would certainly conclude that the licensing limits are at least sufficiently stringent. At least in this instance, it is clear that those who wish to promote the peaceful application of nuclear energy have not influenced those who regulate. In fact, for this comparatively low hazard situation, one might desire that they have more direct influence which presumably would force the establishment of more realistic standards.

The staff's proposal for the creation of an Atomic Safety and Licensing Board within the AEC seems to have some important advantages which could result in a significant increase in the effectiveness of licensing. Perhaps the most important benefit to be derived from such an organization is the establishment of standards for the guidance of licensing decisions by or under the guidance of the Board.

This would seem to be very advantageous if the Board is composed of highly qualified technical people. Consideration should also be given to increasing membership to include one member with a technical-legal background, two members with technical experience with reactors, and two members with technical experience with isotopes. Under this plan the Board would act as a group, but the membership would tend to be representative of two distinctly different areas of interest and different orders of hazard potential. It is pertinent to note that while the largest hazard potential may be associated with atomic power production, the greatest ultimate distribution in society will probably be derived from the use of isotopes.

TABLE 1.—*Comparison of maximum volumes of air which could be contaminated by one microcurie of radioactive mercury compared with natural mercury*

Material	Maximum permissible concentration (MPC) in air (microcuries/cc.) [1]	Maximum volume of air which could be made at MPC by dispersion of 1 microcurie (quantity requiring a license) (Ft^3)
Radioactive mercury:		
Hg–197m	7×10^{-7}	50
Hg–197	1×10^{-6}	35
Hg–203	7×10^{-8}	500
	MAC air (mg/m^3) [2]	Maximum volume of air which could be made at MAC by dispersion of natural mercury in the indicated quantities
Natural mercury (100 cc.) [3]	0.1	500,000,000
Natural mercury (0.2 cc.) [4]	0.1	1,000,000

[1] Values taken from NBS Handbook 69.
[2] Value adopted by ACGIH.
[3] A common amount to be found in a bottle in most any laboratory.
[4] An estimated amount in a typical thermometer.

TABLE 2.—*Comparison of maximum permissible body burden with licensed quantity*

	Microcuries
Maximum permissible body burden (Hg–197m.)	4
Maximum permissible body burden (Hg–197)	20
Maximum permissible body burden (Hg–203)	4
Quantity requiring a license	1

TABLE 3.—*Comparison of ingestion hazard with licensed quantity*

Isotope	Maximum permissible body burden (MPBB) (microcuries) [1]	MPC for drinking water, microcuries per cubic centimeter [1]	Daily ingestion by "standard man" drinking 1,500 cubic centimeter per day to eventually reach MPBB (microcuries)	Microcuries requring AEC license
Hg–197m	4	5×10^{-3}	7.5	1
Hg–197	20	9×10^{-3}	13.5	1
Hg–203	4	5×10^{-4}	0.75	1

[1] Values taken from NBS Handbook 69.

Reply From Mr. James H. Campbell, President, Consumers Power Co., Dated May 20, 1961

In response to your letter of March 18, this letter contains my comments with reference to the Joint Committee on Atomic Energy staff study of the AEC regulatory process. My comments result from a careful review of the staff study and the discussion of the matter both in our organization and with other members of the nuclear power industry. In my opinion, the recommendations reached by the JCAE staff are sound and I find myself in rather close agreement with those recommendations from a long-range point of view. At the same time, I would like to point out that the experience Consumers Power Co. has had in connection with the obtaining of licenses for Big Rock Point Plant would not indicate any urgent need for major change in the organization of the regulatory function. We have found the present organization to be technically competent, fully aware of its responsibilities for the public welfare, and mindful of the problems faced by the licensee.

My comments upon the specific issues raised in the staff study are based upon a conviction that reactor safety is of paramount importance and that review of the safety of nuclear powerplants by a competent Government agency is essential. At the same time it must be recognized that reactor safety can only be attained by a concentrated cooperative effort by all segments of the industry and interested Government agencies. In order to be most effective, the whole process must focus competent technical attention on important problem areas and must create warranted public confidence in the quality of the safety review process. Creation of a Safety and Licensing Board, continuation of an improved ACRS review process, and the establishment of reasonable public hearing procedures all serve to strengthen the technical quality and public image of the safety review process.

1. *Proposed Safety and Licensing Board.*—The Joint Committee staff study proposes a full-time Safety and Licensing Board within AEC composed of three members having final authority to pass on applications and amendments for nuclear facility licenses. Such a board could, I believe, make an important contribution to the safety review process. As a full-time body it could review in such detail as it thought necessary the safety analyses prepared by the applicant and by the AEC technical staff. It could relieve the Advisory Committee on Reactor Safeguards of much of the routine work now performed by the Committee. Further, since the Board and not the Commission would be the final point of decision on individual licensing matters, concern over possible conflicts between the Commission's regulatory and promotional responsibilities would largely be eliminated.

Review by the Board would replace and would, I believe, improve upon the review now performed by the hearing examiner. The main work of the Board will be to pass on the work of the applicant and the AEC staff. It is possible that future licensing proceedings, while not inolving private contests, will develop more differences between the applicant and the AEC staff than has been the case to date. Most differences, however, are likely to be over details of the design or operation of nuclear reactors or over license limitations and conditions will be debated and determined on technical grounds. Such issues

can best be resolved by a Board competent to evaluate technical matters. However, the record of this review must be suitable for review by the public and use in appeal proceedings when necessary. The inclusion of a member on the board skilled in administrative proceedings is most appropriate to satisfy the nontechnical objectives of the Board activities.

I am in agreement with the main functions of the Board as outlined by the Joint Committee staff. In particular, I feel strongly that the board should pass on Government-owned as well as privately-owned reactors. The distinction proposed by the Joint Committee staff study between reactors for peaceful purposes when the Board would have final authority and nonpower producing military or production reactors, where the Board would only have an advisory function, seems to me appropriate. Military objectives outside the competence of the Board may have to be weighed against safety considerations. As to nonmilitary projects, however, I see no reason for drawing a distinction between Government and private projects so far as Board review and authority is concerned. It is important that the Board have responsibilities for and contact with both military and other Government projects so as to remain conversant with new developments in reactor technology.

I attach great importance, as does the Joint Committee staff study, to the appointment of Board members with a high degree of professional competence. Presidential appointment of the Board and top Government salaries will help to solve the problem. In the long run, however, the functions of the Board will determine the caliber of personnel who can be attracted to serve on the Board. This consideration lends support to the staff proposals that the Board have the final power of decision in licensing proceedings and that it have an important advisory role in proposing and commenting on regulations issued by the Commission.

2. *Role of the Advisory Committee on Reactor Safeguards.*—The ACRS should continue to play an important role in reviewing the safety of nuclear projects. Both the independence of the Committee from the Safety Board and the Commission staff and the breadth of technical knowledge and experience among its members contribute valuable elements to the AEC review process.

It is not possible for observers outside the AEC to gage in detail the work of the ACRS, especially the relative contributions of the AEC staff and the ACRS in identifying and resolving safety questions. The unavailability of AEC staff reports to the ACRS and the terseness of ACRS's own reports make such an assessment difficult. But the ACRS has had, I believe, a highly salutary effect on the work done both by applicants and the AEC technical staff, and has added to public confidence in AEC's licensing actions.

There are, of course, practical limitations on the role which any part-time advisory group can play, and the work of the Committee should be confined to more important matters. Too many licensing actions now find their way to the Committee. I believe there ought to be one mandatory review by the ACRS of every license application for a power reactor (and perhaps test and research reactors) preferably prior to issuance of a construction permit. Additional reviews should be limited to novel and important safety questions. Both the

Division of Licensing and Regulation and the proposed Safety and Licensing Board should have authority to refer such questions to the ACRS. The ACRS should also have the privilege on its own initiative of requesting that matters be referred to it for review.

In a great measure, the ACRS can act to restrict its activities to important and significant issues. The Committee should have the freedom to exercise this internal grading of issues and the leadership of the Committee should be urged to make the most efficient use possible of this important gathering of technical talent.

3. *Public hearings.*—Reduction in the number of formal public hearings presently required by the AEC in uncontested licensing proceedings is, I feel, essential. Under current policies and procedures the prospective owner of a nuclear powerplant must look forward not only to hearings in connection with the issuance of a construction permit and initial operating license but also to a succession of formal public hearings in connection with operation at successive power levels, changes in plant design and operating procedures, conduct of experimental programs, etc.

The burden to the applicant and to the AEC staff of multiple public hearings, in terms of expense and demands on the time of key technical personnel, is substantial. A far more important consideration may prove to be enforced delays in operating and experimental schedules as a result of adherence to hearing requirements as they now exist.

The problem of delay is not likely to be severe at the construction permit phase of licensing proceedings. Planning of construction permit proceedings can begin many months in advance and can allow room for the extra time which must be added because of the public hearing requirements. Further, current AEC regulations permit substantial amounts of site preparation and procurement work to proceed prior to issuance of a construction permit. Once the reactor is ready to start operating, however, time is more likely to be a crucial factor in securing necessary AEC authorizations and approvals.

I strongly favor, therefore, the staff recommendations that mandatory public hearings be limited to construction permit proceedings. Thereafter public hearings in uncontested cases should be required only in exceptional situations where interest in the proceedings is widespread and where a public hearing will demonstrably facilitate dissemination of information about the proceedings to the public.

Where public hearings are to be held in uncontested proceedings, the hearing procedure itself could be greatly simplified. The Joint Committee staff study contains a number of excellent suggestions for changes in existing procedure. I mention here only those which suggest themselves from our experience to date in obtaining a construction permit for the Big Rock Point plant.

In lieu of extensive oral testimony, written testimony could be furnished in advance of the hearing by the applicant and the AEC staff and then incorporated in the record of the hearing. Applicant's testimony would be a summary of material contained in the application. AEC staff testimony could be drawn largely from the staff analysis previously presented to the ACRS. This procedure would be entirely in keeping with the primary purpose of the public hearing requirement, as viewed by the Joint Committee staff, that "proceedings should be public and on the record."

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A good deal of time is consumed under current practice in the preparation by the applicant of proposed findings of fact, in the preparation of similar proposed findings by the AEC staff, and in the review and rewriting of findings by the hearing examiner. For the most part such findings are merely further condensations of the testimony of the applicant and the staff and add little if anything to the public record. Where, as in most cases, the testimony of the applicant and the staff clearly support the findings required by AEC regulations, applicant and the staff should be permitted jointly to submit, immediately after the hearings, a proposed order containing only the essential findings required by AEC regulations and the terms of the license or license amendment proposed to be issued. Such an order could be promptly reviewed and acted upon.

4. *AEC rulemaking.*—All of the studies, including the AEC's own study, conclude that there is room for improvement in developing rules and regulations of general applicability. The time has not arrived when it is feasible or desirable to adopt detailed codes and standards for the siting, design or operation of nuclear reactors. But much could be done in enunciating more clearly AEC's licensing policies and procedures. The Joint Committee staff recommendation that policy and rulemaking responsibility remain with the Commission rather than the proposed Safety and Licensing Board will work out in practice only to the extent that regulations are developed and issued by the Commission. Otherwise, as evidenced in decisions of the AEC hearing examiners to date, important policy matters will continue to be decided on an ad hoc basis in disposing of individual licensing proceedings.

The creation by AEC of a new Director of Regulation reporting directly to the Commission is a constructive step. Relieved of direct responsibility for individual licensing actions, he should be in a position to devote much of his effort to developing needed regulations for Commission consideration.

Several very knowledgeable sources have suggested that the solution to the regulatory problems in this field is the establishment of new separate regulatory agency. The principal, and in my opinion controlling, drawback to the establishment of a new regulatory agency is the loss of contract which is likely to result between the new agency and the large AEC and military reactor programs. At the present time, the AEC and military reactors represent the greater portion of this country's total reactor program, and the AEC and its contractors have accumulated the largest body of experience in reactor design and operation. The AEC licensing staff has ready access to technical information about all of the Government projects. A new agency would have more difficulty. Even if, as proposed by the University of Michigan study, the new agency were to be given formal regulatory responsibility for Government as well as private reactors, a new element of formality and restraint between the new agency and existing AEC installations is likely to result and to impede communications on technical development.

Another aspect of the proposed new agency which troubles me is the problem of attracting competent technical staff in an agency concerned primarily with safety regulation and without the stimulus of direct contact with programs for developing reactor technology.

Failure to attract competent personnel would, of course, compound the difficulties I foresee for a new agency in keeping abreast of technical developments.

If there is any way in which I or representatives of my company can provide further assistance to your committee in examining possible ways of improving the AEC regulatory process, I would be most anxious to do so.

Reply From Prof. Kenneth Culp Davis, University of Minnesota Law School, Dated April 19, 1961

You have asked me to comment on the various proposals for the reorganization of the AEC's regulatory function, and I am glad to do so.

Because I believe the present procedure needs to be radically changed, and because I do not agree with any proposal for changing the organizational structure, I have felt compelled not merely to criticize but to think constructively. This has involved considerable study, but I have lacked the advantage of consultation with you or with others who have thought about the problem.

At the outset I feel impelled to commend the staff of the Joint Committee for the general excellence of the study it has made. That my opinion differs on problems admitting of difference of opinion does not detract from my admiration for the high quality of work the staff has done.

EXCESSIVE USE OF TRIAL PROCEDURE

My fundamental criticism of the present system is the tendency to use the forms of adjudication where there is nothing to be adjudicated. I think that a great deal of harm has been done by using trial procedure when there is nothing to try, and I think that none of the proposals sufficiently recognizes the harm or sufficiently moves away from such trial procedure.

The thinking behind the present system seems to me to be founded upon the erroneous assumption that cases are contested. The AEC says flatly (vol. 2, p. 405) that—

> no applicant has yet chosen to go to a public hearing when it knew that the staff was not prepared to recommend approval of its project.

The staff of the Joint Committee confirms this (vol. 1, p. 22) by saying that—

> the applicants have not attempted to contest an adverse position taken by the staff, and that "there has been only one instance * * * in which there has been an intervention and an active contest of the staff's decision in a reactor licensing case.

The planning of the system, it seems to me, should be primarily for the usual case, which is uncontested, and only incidentally for the rare contested case. The Commission itself (vol. 2, pp. 399–422) consistently speaks of its licensing functions as "quasi-judicial." I respectfully suggest that in absence of contest, licensing is not quasi-judicial, and it ought not to be so regarded. I don't care about the words used, but I do care about the attitude that goes with the words. The Commission's attitude is that uncontested cases have to be handled as if they were adjudications. They are not adjudications, and much

harm is caused by regarding them as adjudications, as I propose to demonstrate. The staff of the Joint Committee says (vol. 1, p. 72):

> A hearing before the Board should be mandatory in all major facility licensing cases prior to issuance of a construction permit, as at present. The hearing should be held in public and oral testimony taken, although in uncontested cases not to the extent evident in present practice. * * * The oral testimony would be by way of testing and explaining the views of the experts.

This statement still clings unduly to forms of adjudication where they don't belong.

My opinion is that the Commission should cease holding trials with nothing to try, adjudications without issues, adversary proceedings without adversaries.

PROPER PROCEDURE FOR TYPICAL UNCONTESTED CASE

The prehearing portion of the procedure the Commission now follows is thoroughly sound, in my opinion. The applicant discusses informally with the AEC technical staff, and the staff postulates a "maximum credible accidents" and prepares a "hazards analysis" memorandum. Then the ACRS reviews, first through a subcommittee, and then through the entire committee, with informal meetings with the applicant and with the AEC staff. The informal methods are the right methods for this type of business. The technical problems are dealt with by people having the proper technical training, and this is as it should be.

As soon as the applicant, the AEC staff, and the ACRS have come to a complete agreement, the public should be allowed to come in if it chooses. A notice of at least 30 days should be given, as now. (The notice should be much more effective than it is now; the problem of notice is discussed in the next section of this letter.) If no one intervenes, then a hearing is pointless. The valuable time of the technical people should not be squandered by having them make oral recitations when all insiders are in agreement and when no outsider intervenes.

The proper procedure as soon as it becomes clear that no one wants to intervene is to send the case to the five Commissioners, not to a hearing examiner. Since the Commissioners are not necessarily trained on problems of reactor safety, they should be allowed to consult the technical staff as they see fit. I would permit them to consult not only the AEC technical staff but also, if any one of them chooses, to consult members of the ACRS and members of its staff. And I would permit consultation with technical representatives of the applicant. Careful Commissioners, despite the complete agreement and despite lack of intervention, should be allowed to ask questions and to think as independently as they choose, especially since they have the final responsibility for protecting the public safety.

The procedure appropriate for an uncontested case involves no trial, no examiner, and no separation of functions.

INFORMING THE PUBLIC

Neither the present system nor any of the various proposals, in my opinion, adequately deals with the problem of informing the public. I would put great stress on the importance of making fully

effective the methods of giving notice to the public of what is contemplated. But I would not use a trial as a means of trying to inform the public.

The public, in my opinion, should be informed in four principal ways: (1) The report of the ACRS should be full and detailed, giving a full statement of pros and cons with respect to each facet of safety, and the report should be published in full, in whatever technical language the ACRS chooses to use. (2) The report of the AEC staff should similarly be full and detailed, and it should be published in full. (3) A translation of both the ACRS report and the AEC staff report should be prepared by the AEC staff in layman's language, going as far into technical questions as is feasible in such language, but presenting fully the final practical judgment on the question of how much risk is too much in the circumstances of the particular case. (4) As a part of notice to the public, a conference somewhat in the nature of a press conference should be held, where reporters and anyone else having a legitimate interest will have opportunity to question the technical people. To the extent it is feasible, not only AEC staff members but also representatives of the ACRS and of the applicant should be available for questioning. This conference should be held in ample time before the scheduled hearing, since this conference is one means of making effective the public notice of the hearing; yet the written reports should be released in advance of this conference, so that questioners will have opportunity to prepare.

If these four methods are used to inform the public, then the use of a trial to inform the public will serve no useful purpose and should be dispensed with in absence of contest.

UNCONTESTED CASES CALL FOR NO TRIAL, NO EXAMINER, NO SEPARATION OF FUNCTIONS

The idea of a trial without issues and without opponents is, in my opinion, completely unsound. The reason for the invention of the machinery of a trial is in order to resolve issues of fact between parties who oppose each other. When no such issues exist, and when no opponents exist, the machinery of trial is not only wasteful but is otherwise harmful.

So far as I can find, the reason that has actuated the Commission in deciding to use a trial procedure goes back to the thinking of a 1956 University of Michigan Law School Summer Institute on Legal Problems of Atomic Energy, which recommended "formal hearings * * * on all applications for the licensing of facilities." Under the Commission's rules of practice, "formal hearings" are governed by title 10, Code of Federal Regulations, sections 2.730–2.756; these rules provide for trial procedure. The Michigan workshop stated two reasons in support of its recommendation of formal hearings:

> First, that in view of the various interests that could be affected, a formal hearing would make available a procedure appropriate to the protection, at the earliest possible stage, of all affected legal interests; and second, that the public information provided by such a hearing would serve to foster and maintain the confidence of the general public and State and local authorities in the proposed project.

The statement seems splendid for a case in which facts are in dispute. But the workshop added:

> In the event that the application is not opposed, the hearing could be conducted expeditiously along the lines of similar proceedings before other Federal regulatory agencies.

The workshop did not say what other agencies hold formal hearings on nonexistent issues between proponents and nonexistent opponents. I know of no such agency; I hope none exists. Nor did the workshop say how such formal hearings of nonexistent issues can be conducted expeditiously.

Nothing the workshop said in favor of formal hearings justifies or even tends to justify the use of trial procedure in absence of anything to try, or the use of adversary procedure without adversaries, or the use of the forms of adjudication with nothing to adjudicate.

The affirmative harm done by using the forms of adjudication to resolve nonexistent issues goes well beyond the waste of time and money of both the Government and the applicant. The greatest affirmative harm lies in forcing officers without the appropriate technical training to make decisions without the assistance of technical staffs, thereby endangering the public.

If an uncontested case were an adjudication, as it is not, then having an examiner who is appointed pursuant to section 11 of the Administrative Procedure Act would make sense, for such an examiner knows how to conduct an adjudication. But in absence of issues and in absence of opponents, what is needed is someone who knows the technical subject matter. Not only is the examiner who hears the uncontested cases not technically trained with respect to reactor safety, but he is even forbidden to consult the technical staff when he has difficulties in preparing his initial decision. This seems to me harmful to the public safety; not even initial decisions ought to be made by an officer who is without technical training and who is forbidden to consult the technical staff.

Apparently the lawyers who have thought up the rule forbidding the examiner to consult the technical staff are trying to comply with the letter or the spirit of the Administrative Procedure Act, which forbids a presiding officer to consult any person or party on any fact in issue unless upon notice and opportunity to participate. But that provision has no application to an uncontested case for many reasons, three conclusive ones being: (1) The provision is by its terms limited to adjudication, and a case without issues and without opponents is not an adjudication. (2) The provision is limited to adjudication required by statute to be determined on the record and no statute concerning AEC licensing requires a hearing on the record. (3) A presiding officer cannot consult on any fact in issue if no fact is in issue.

Even a greater harm flows from the attempt to force an uncontested case into the forms of adjudication: The five Commissioners who make the final decision are forbidden to consult their technical staff. This is even worse than forbidding the examiner to consult, for the Commissioners have the basic responsibility for protecting the public safety, and officers who have such an important responsibility should not be required to act without full understanding of what they are doing.

The idea that Commissioners should be compelled to decide an uncontested case without consulting the technical staff seems to me one of the most preposterous ideas I have ever encountered in 25 years of observing governmental processes. No words of condemnation for this idea can be too severe.

What an outrageous predicament for a conscientious Commissioner who happens to be without technical training on problems of reactor safety: He feels strongly his responsibility for public safety, he is convinced he needs help from the technicians, and yet his lawyers insist that he must decide without consulting the technicians.

Lawyers who give such advice are allowing their misunderstanding of due process and of the Administrative Procedure Act to override their commonsense.

The 1957 amendment makes a hearing mandatory, but it does not make trial procedure mandatory. Indeed, the legislative history of that amendment shows that a trial was not intended:

> The Joint Committee concluded that full, free, and frank discussion in public of the hazards involved in any particular reactor would seem to be the most certain way of assuring that the reactors will indeed be safe and that the public will be fully apprised of this fact.

The words "discussion in public" are inconsistent with a trial.

I would carry out the intent of the 1957 amendment by fully informing the public in the four ways I have indicated above, including especially the conference at which reporters and others with a legitimate interest are allowed to question the technical people about safety problems. This will be a much more effective and more efficient discussion in public than the present system of trial.

CONTESTED CASES

Even the rare case that is contested should not necessarily be handled by trial procedure. The nature of the contest should determine the procedure. In general, trial procedure should be used only on issues of fact, although trial procedure may be useful on issues which are only somewhat factual. By and large, trial procedure should be avoided on questions of policy or discretion or judgment, unless those questions are mixed up with issues of fact about which opposing positions are taken.

In absence of issues of fact or issues which are somewhat factual, contested cases may best be handled through argument procedure, that is, through procedure that resembles the procedure of an appellate court.

On problems of reactor safety, I think that even when facts are in dispute so that trial procedure is appropriate the idea of separation of functions is out of place. Nothing about due process prevents the Commissioners from freely consulting the technical staff. Nothing about the Administrative Procedure Act prevents such consultation, for section 5(c) exempts proceedings on applications for initial licenses. Whatever the legal rules, the purpose of separation of functions is primarily to keep the deciding function from being contaminated by the thinking of those who are trying to win for one side; on a safety question, a member of the technical staff is not in the position of an advocate. In an accusatory case, such as revocation of a license for an alleged offense, separation of functions serves a useful purpose.

My position about separation of functions is founded upon a comprehensive study of the law of that subject. See 2 Davis, Administrative Law Treatise 171–249 (1958).

A PROPOSED ATOMIC SAFETY AND LICENSING BOARD

The staff of the Joint Committee proposes creation of an Atomic Safety and Licensing Board. Even though the staff says that this Board will be "within the AEC," it will be a separate and independent agency in that (1) the AEC will have no power to appoint Board members, (2) the AEC will have no power to remove Board members, (3) the AEC will have no power to supervise Board members, (4) the AEC will have no power to review Board decisions, and (5) Board decisions will be binding upon the AEC.

Although I speak with less confidence than I have concerning the need for dispensing with trial procedure in uncontested cases, I am inclined to believe that the present unitary command of the AEC should be continued and that the new Board should not be established.

Even though the Joint Committee's staff quite commendably recognizes the need for moving away from the present excessive formality, I think that the proposal to create the new Board is founded upon a pervasive and insidious assumption that formal procedures are desirable for the bulk of the license cases, and this assumption seems to me clearly unsound. The assumption comes out in such remarks as that "A hearing before the Board should be mandatory in all major facility licensing cases," that "oral testimony" should be taken even in uncontested cases, and that "relevant data not of record * * * should be added to the record and an opportunity given for additional testimony or cross-examination concerning them" (vol. 1, p. 72).

The Commissioners now spend from one-sixth to one-third of their time on regulatory matters, and I recognize both the advantage of reducing this burden and the prospect that the volume of regulatory business will increase. Even so, I think the wrong way to reduce the Commissioners' burden is by destroying their unitary command. A sounder system of procedure—dispensing with trial procedure in uncontested cases, and allowing Commissioners to consult the technical staff—will to some extent reduce the burden on the five Commissioners. Deciding without technical help consumes more time than deciding with such help. I fear that the proposed division of power between two agencies will cause frustrations and stalemates that will greatly increase the burden on the Commissioners.

The power of the proposed Board will be almost wholly negative. The AEC will continue its affirmative program of promotion, of operation, and of research. Although the Board can make rules and although it can require modifications as a condition of withholding its veto power, its principal assignment will be to make choices between (*a*) interfering with the AEC's affirmative program, and (*b*) not interfering with the AEC's affirmative program. The new Board can have no affirmative program of its own for furthering the development of atomic energy.

The AEC, I should think, will continue to be able to attract men of the highest caliber as Commissioners. But why should men of stature, men who are alert and resourceful, be willing to serve on

an agency whose principal job is to choose between saying no and not saying no to plans formulated by someone else?

An agency whose function is almost entirely negative will almost inevitably develop an imbalance in a negative direction. The Board's only big assignment will be to protect the public safety; it will achieve its mission only to the extent that it does something, and the main thing it can do is to say no. It can't get any credit if the atomic energy program is highly successful; the credit will properly go to those who make the affirmative contributions to the atomic energy program. On the crucial question in every case of how much risk is too much, men who have only the negative power surely will gradually exaggerate the safety needs and gradually underestimate the affirmative needs for developing atomic energy.

As soon as the responsibility for safety is transferred from the AEC to the new Board, the AEC will naturally put less emphasis on safety and more emphasis on affirmative programs. A difference in point of view between the AEC and the new Board seems to me to be built into the proposed system of organization. The difference in point of view will inevitably lead to frustration and stalemate. The Board will temporarily win, because it will have the ultimate power, but the Board will win only until the organizational structure is changed. And I doubt that many years will pass before the change will come.

Decisions about safety should be made by men who have a balanced view of the entire program, not by men who are assigned to focus only upon the safety factor of the program. Anyone who is given the job of focusing upon any one facet of any program will in time tend to believe that his facet is more important than it is, in relation to other facets. It is the people who have responsibility for all facets, as the Commissioners of the AEC do now, who are most likely to maintain a good balance.

The most difficult and crucial problems about safety involve the determination of whether the estimated risks are too great despite the estimated gains. The relatively less difficult tasks involve finding ways to increase safety without too much impairing the project. On the difficult problems of weighing risks against gains, what is wanted is a balanced judgment that will weigh the one against the other, not a judgment that will tend to favor either the one or the other. Officers who are told that their assignment is to protect the public safety are very likely to make it their business to protect the public safety, with minds that emphasize safety at the expense of affirmative programs.

The proposed Board will have a brake but no accelerator and no steering wheel. The AEC will continue to have all three—a brake, an accelerator, and a steering wheel, but it will be discouraged from using its brake. Is a bus more likely to avoid accidents if it has not only the usual driver with the usual controls but also an extra operator with only a brake? I think the man with the brake will tend to use it too much and at the wrong time, and that the divided responsibility will increase the probability of accidents. Accidents are avoided by using the accelerator and the steering wheel, not just by using the brake, and especially are accidents avoided by the coordinated use of all three. In the atomic program, some risks should be

undertaken in order to learn how to avoid accidents. Some risks should be undertaken in order to learn how to save lives; how many lives have been saved by atomic contributions to medical science alone? Some risks should be undertaken to further the developing science for benefits as yet undiscovered. What cost in lives is too much for the development of an atomic-powered plane or missile or earth satellite? If misuse of a brake brings crucial programs to a halt, the human costs may be immeasurable.

If we are to give the public the best protection we know how to provide, we won't have an extra operator with only a brake. We will trust the one driver who can coordinate the use of all the controls. We will trust the Commission as now organized.

Great weight, in my opinion, should be given a simple observation of the Commission (vol. 2, p. 417):

> Exercise of all of the present functions of the Commission in a single organization headed by a Commission has the clear advantage that administration of this technical and important area is an integrated process with single direction. * * * The division of its functions between two agencies * * * might well leave the two agencies working at cross-purposes * * *.

I think, although I can't prove, that the odds that the two agencies would work at cross-purposes, because of the opposite types of assignments, are very high.

But won't Commissioners who want to carry out an affirmative program tend to become impatient and tend to minimize possible dangers to the public safety in order to do what they become eager to do for the sake of their achievement? This question is easier to ask than to answer. My opinion is that the answer is probably no, especially if we continue to attract men of the highest quality as Commissioners. But, even if some independent check is needed in addition to the judgment of the five commissioners and their technical staff, the system I recommend includes an independent check—and an especially good one.

I strongly recommend that the ACRS should be continued. This Committee should remain independent of the AEC. Its members should continue to serve only part time, with primary interests elsewhere, for we don't want an authority that will give full time to choosing between saying no and not saying no. The Committee should continue to be only advisory.

The procedure of the ACRS deserves more attention than it has been given. The procedure is thoroughly sound, and its soundness needs to be more fully appreciated. The procedure is the natural and proper procedure for the tasks the ACRS performs. A subcommittee of the ACRS talks informally with the AEC staff and with the applicant's representatives, and then the whole ACRS engages in the same kind of informal discussion with both the AEC staff and the applicant's representatives. This is an excellent way to provide an independent check upon the judgment of the AEC and its staff. But the AEC should retain the power to override a recommendation of the ACRS; the power to override is likely to be used very sparingly, and the practical result, as now, will nearly always be that the AEC and the ACRS will succeed in ironing out their differences by informal methods—unless the lawyers come along and force them to formalize or force them to cease consulting.

A PROPOSED ATOMIC ENERGY BOARD

The University of Michigan study proposes creation of a separate three-man Board. What I have said about the proposed Atomic Safety and Licensing Board applies equally to this proposal. In addition, I especially disagree with the Michigan study's view that the ACRS should be abolished, for I think the ACRS is one of the strongest features of the present system. My view is directly opposed to the astonishing view that "the Commissioners, or a panel of Commissioners, should preside over all uncontested hearings and such contested hearings as time permits"; precious time of the Commissioners in my opinion should not be squandered by having them conduct formal proceedings.

CONCLUSIONS

My opinion is that the present procedure in licensing cases should be radically altered, but that the fundamental organizational structure of the Atomic Energy Commission with respect to regulation should remain unchanged.

My principal proposals are:

1. The present prehearing procedure in licensing cases is excellent and should continue.

2. The ACRS is ideally suited to its present function and should not be changed. Its members should serve part time, it should use its present informal procedures, and it should have no more than advisory powers.

3. The notice to the public should be made much more effective. Notice should be given in at least four ways: (*a*) The detailed report of the AEC staff should be published; (*b*) the detailed report of the ACRS should be published; (*c*) both reports should be translated into layman's language (as far as feasible) and published; and (*d*) a conference should be held to allow reporters and others with a legitimate interest to question representatives of the applicant, the AEC staff, and the ACRS.

4. The only hearing for the purpose of informing the public should be the conference just referred to. Except for the conference, no hearing should be held unless disagreement develops among the applicant, the AEC staff, and the ACRS, or unless an outsider intervenes.

5. In absence of opponents and in absence of issues, trial procedure is inappropriate and should not be used. The public should be fully informed, but trial procedure is a wasteful and harmful way to try to inform the public.

6. When issues develop, trial procedure should be used to resolve issues of fact, and argument procedure should be used to resolve nonfactual issues of policy or discretion.

7. In an uncontested case, no examiner should be appointed. When the insiders are in agreement, the case should go to the five Commissioners as soon as it is clear that no outsider desires to intervene.

8. In an uncontested case the five Commissioners should be free to consult anyone as they choose in order to make their decision.

9. The Commission should be concerned about separation of functions only in an accusatory case, such as revocation of a license for an offense. In the ordinary licensing case, separation of functions is

harmful and serves no useful purpose. Separation of functions in licensing cases has been exceedingly harmful in preventing the examiner and the Commissioners from consulting the technical staff even when such consultation may be essential to understanding.

10. The regulatory powers should continue in the AEC, the present unitary command should not be disturbed, and no new Board should be created.

11. The proposed Atomic Safety and Licensing Board, whose principal powers would be limited to choosing between saying no and not saying no, would be unlikely to attract the best personnel. The proposed system seems to have a built-in assurance of frustration and stalemate, for the new Board would emphasize safety and the AEC, relieved of the primary responsibility for safety, would emphasize affirmative achievement. To make sound decisions in weighing safety against achievement, a tribunal must have responsibility for both safety and achievement.

12. An independent check upon the AEC's judgment in weighing safety against achievement may be needed, but the ACRS in its present form provides an excellent independent check.

Reply From Mr. W. Kenneth Davis, Vice President, Bechtel Corp., Dated May 11, 1961

Your letter to Mr. J. Perry Yates of March 18, 1961, requesting his comments on the Joint Committee's staff study "Improving the AEC Regulatory Process" has been referred to me for reply.

The staff study and the accompanying appendix provide a wealth of factual material as well as many thought-provoking suggestions about the various aspects of nuclear safety and licensing procedures. It is clearly impossible to comment on all of these in any detail. However, I would like to make a few observations with respect to nuclear safety, primarily the safety of nuclear power reactors, and some comments and suggestions with respect to the proposals made in the staff study.

True nuclear-reactor safety can only be attained by the design, manufacture, construction, testing, operation, and maintenance of nuclear plants and equipment by responsible, competent, and experienced personnel who are thoroughly conscious at all times of the paramount importance of safety. The necessary degree of nuclear-reactor safety will not and cannot be achieved by legislation, regulation, inspection, or by the most exhaustive technical or administrative reviews although these can make some contribution, primarily by stressing the importance of safety.

It must be clearly recognized that no regulations, procedures, or reviews will eliminate the necessity for an individual or group of individuals to make a judgment that the risk involved in granting a reactor license is justifiable in terms of the advantages gained by so doing. There will inevitably be some risk. Although statistics based on experience may some day be available to assist in the evaluation, this day is far off. In the intervening period the risks can only be assessed qualitatively and are themselves largely matters of judgment.

It is, of course, desirable to have as much technical data and other information available as possible to form the basis for the judgments which must be made. The preparation and evaluation of such data will not only identify and emphasize areas of concern but will also provide a basis for evaluating the basic competency and concern for safety of the applicant and his contractors.

The basic requirement for those making the final licensing judgment would appear to be mature and responsible judgment backed up by knowledge and experience relevant to the design and operation of reactors. Those charged with making the decision must be as capable of judging the competency and judgment of the applicant and his contractors as they are of judging the technical facts presented. Mere technical competence or familiarity with safety or administrative procedures does not appear to be adequate.

In reviewing the various organizational proposals presented by the JCAE staff and others, it is my conclusion that the preferable course is the creation of an Atomic Safety and Licensing Board as an extension of the AEC. While there are substantial arguments for a completely separate agency, it does not appear that a complete separation would be feasible or desirable at this stage in the development of nuclear energy.

Those making the final safety judgment must have the benefit of close contact with those having the overall technical and programatic background. They should also have close contact with those formulating and establishing regulations, issuing licenses and inspecting licenses, etc. However, they must also be sufficiently independent so that their judgments are made in an objective manner. This would appear to be achieved by the proposal presented, at least in its general outline.

I believe that the Advisory Committee on Reactor Safeguards (or a similar group) should be established to serve the Atomic Safety and Licensing Board by providing advice when requested on technical matters, either specific to a given case or general in nature, referred to it by the Atomic Safety and Licensing Board. I do not feel that the Advisory Committee on Reactor Safeguards should be expected to serve both the Licensing Division and the Atomic Safety and Licensing Board and that their function could be most effectively performed by assigning them to the Atomic Safety and Licensing Board.

It does not appear practicable or desirable to have the Advisory Committee on Reactor Safeguards, as a part-time group, continue to review and make in effect the controlling judgment on every project, every project change, and at each stage of each project.

At the same time the Licensing Division should maintain a technically strong and experienced group to analyze and evaluate license applications. This group should be free to call upon experts in other Divisions of the AEC, scientists and engineers in the AEC laboratories, and outside consultants, as required, to assist in their analyses. The report by the Licensing Division to the Atomic Safety and Licensing Board should become a part of the public record and should be made available to the applicant prior to his appearance before the Atomic Safety and Licensing Board.

It is going to be difficult, and increasingly difficult as nuclear power loses its glamor, to attract and hold the outstanding and mature in-

dividuals absolutely essential for effective conduct of the Board, the Advisory Committee, and the staffs of the Board and the AEC. This is a serious problem throughout the AEC and other branches of our Government, but it is crucial here. In my opinion, this problem is intensified by tedious and excessive administrative procedures which can tend to divide, dilute, and confuse responsibilities and authority to a point where the type of person really desired is frustrated. This is quite aside from the frustrating effect on the applicant and his contractors who are led to consider the process one of undoing governmental redtape rather than a realistic and objective consideration of the basic safety questions which they can appreciate.

One apparent defect in the proposed arrangement is the absence of any real channel of communication between industry and the AEC with respect to reactor safety, regulations, and licensing procedures. The industrial companies developing reactors, providing the plants and equipment, and operating the reactors are not only concerned about safety but also have the best background in knowledge and experience relative to nuclear safety. This background is not generally available to the AEC or the ACRS today except in a very limited way.

It is suggested that it might be desirable for the AEC to establish an industry Advisory Committee on Reactor Safety. Such a committee could render a valuable service by advising the Director of Licensing and Regulation with respect to general problems. It would not, of course, be appropriate for such a committee to review or make comments with respect to individual license applications or issues affecting only a single case; but such a committee could consider regulations, procedures, the AEC reactor safety development program, and other matters of general industrial interest and would provide the AEC with information and an industrial point of view not otherwise obtainable.

I would like to add one additional comment with respect to public hearings. While I recognize that provision should be made for public hearings, particularly when there is intervention, I question the need for the number and formality of public hearings now required for each project.

While the foregoing comments are far from complete and may not be as detailed as might be desired, I believe that they will give you an appreciation of my views on this important question.

REPLY FROM PROF. J. FORRESTER DAVISON, PROFESSOR OF LAW, GEORGE WASHINGTON UNIVERSITY LAW SCHOOL, DATED MAY 7, 1961

I want to express my thanks for the two volumes of the latest JCAE staff report on the AEC regulatory process, and the opportunity to add my comments on this matter. * * *

I find the phase of development suggested, of the new internal licensing authority within AEC, remarkably in accord with the possible development in the report with which I was associated. Accordingly I am happy to endorse this proposal very enthusiastically. The

actual experience in licensing civilian reactors for the past period does indicate an overly strict concern for the judicial type of proceeding at several stages, in an area where the judicial technique is not well adapted for the best scientific or administrative procedures. I am also inclined to believe that the separated staff of AEC in the formal hearings creates more problems than it is worth, in any supposed greater integrity or objectivity in the proceedings. With the new licensing authority within AEC the need for such strict staff separation would not appear to exist to any great extent. With many thanks for your thoughtfulness in this request for my ideas.

Reply From R. L. Doan, Manager, Atomic Energy Division, Phillips Petroleum Co., Dated April 5, 1961

I appreciate your kind invitation to comment on the recent Joint Committee staff study of AEC regulatory procedures, with particular regard to the various suggestions that have been made to improve the organizational structure for developing and administering these procedures. As a longtime former member of the Advisory Committee on Reactor Safeguards, I have had an opportunity to observe some of the problems associated with present regulatory procedures in the reactor field and to gain an appreciation of the need for improved methods of dealing with them.

The problem created by the dualism in the Commission's statutory responsibility to protect the health and safety of the public while promoting the peaceful uses of atomic energy has been ably stated in the staff analysis. But the dilemma presented to the Commission by a statutory ACRS whose advice to the Commission must be made public for certain categories of reactors seems not to be so well recognized. The dilemma is sharpened by the fact that, as recognized in the staff report, policy decisions as well as technical considerations of safety must of necessity enter into the final overall decision of whether or not a particular type of reactor should be permitted to be constructed in the proposed location. It is clearly the responsibility of the Commission, not the ACRS, to establish policy and make the final decision. Yet the publication of the ACRS letter of advice can hardly improve the freedom of the Commission to arrive at an independent decision.

Because of the difficult position in which the Commission is placed by publication of ACRS letters of advice, it is my feeling that the first constructive step toward improving present regulatory procedures would be for Congress to rescind the statutory requirement that such letters be published. If these letters occasionally seem less than completely lucid, one or both of two factors may be responsible: (1) the necessity of framing the letters for public scrutiny, and (2) the attempt to resolve in one letter all the viewpoints of 10 to 15 Committee members, some of which may be quite diverse. I am convinced that the Commission would be in a much better position to fulfill its statutory responsibility for decisionmaking on construction and operating permits, if it could have the benefit of more informal advice from the ACRS than is possible under the present circumstances.

As regards the various suggestions that have been made for improving the organizational structure for handling regulatory pro-

cedures, it is difficult for me to see any advantages in the step recently taken by the Commission to set up a Director of Regulation with authority over the regulatory staff, responsible directly to the Commission. On the contrary, it will be surprising if substantial administrative difficulties do not arise in isolating the General Manager organizationally from the reactor hazards evaluation staff whose advice he has previously had available in arriving at a preliminary judgment on the safety problems posed by various reactor proposals that come up for consideration. To whom is the General Manager now to look for such advice? I am more impressed by the possibility of administrative problems in the new setup than by its potential for improving the separation of promotional and regulatory functions. Whatever conflict exists between these two areas of statutory responsibility resides within the Commission itself and can only be resolved completely by taking the regulatory function outside of Commission jurisdiction.

The creation of a separate agency as outlined in the University of Michigan Law School Study is, I believe, the ultimate solution to the problem under discussion. The question is one of timing rather than of feasibility. For the intermediate future I concur with the viewpoint expressed in the staff study that the overall advantages lie in the direction of keeping the regulatory function within the jurisdiction of the Atomic Energy Commission.

The staff proposal to set up a full-time Atomic Safety and Licensing Board within the AEC appears to me to have considerable merit. Such a board, if made up of properly qualified members, able to work effectively with both the AEC hazards evaluation staff and the ACRS, could greatly expedite the safety evaluation phase of the regulatory procedures. Working within a framework prescribed by the Commission, there is no reason why the board could not assume and exercise whatever decisionmaking authority the Commission saw fit to vest in it. By having technically qualified members on the board as well as someone experienced in hearing procedures it should be possible to conduct public or private hearings on reactor safety evaluation much more effectively than at present and without the necessity of setting up a "separated technical staff" for advising the hearing examiner.

If a board of the type visualized were to be set up, the role of the ACRS in its relationship to the board and to the Commission would have to be carefully defined in order to avoid weakening the position of the board. Here again, it would be desirable not to require publication of the ACRS letters of advice, for the reasons already given. In any case, for most effective work, the board should be able to confer informally both with the AEC staff and the ACRS, and should have direct access to the Commission for discussion or clarification of special problems. It should also be possible for the board to retain outside consultants whenever desirable.

The Joint Committee staff has suggested that the board consist of three members, two of whom would be technically well qualified. My own preference would be for a five-member board rather than three, in order to get a little wider spread of technical discipline relevant to reactor safety. However, this would pose a more difficult problem in respect to finding men with the necessary high qualifica-

tions able and willing to accept a full-time appointment to board membership.

A great deal has been said and done in the past year about the development of site criteria for arriving at decisions on the location of power and test reactors. Certainly this is an important activity. But it is perhaps even more important to arrive at some policy criteria to guide the efforts of those concerned with reviewing the safety aspects of proposed reactors. I have the impression that one of the principal reasons for the mounting costs and increasing efforts associated with getting over the hurdle of AEC approval of license applications is that both the AEC and the ACRS are trying to cover too much territory in their safety reviews. Granted that it is sometimes difficult to differentiate between those aspects of proposed reactor design which may only pose operating problems for the applicant and those which offer potential public safety hazards. But to the extent that this can be done, it is my feeling that the staff and ACRS should focus their efforts on those things which constitute significant problems of public safety, leaving to the applicant as much latitude as possible to exercise design judgment and to reap the profit or loss of experience. Granted, further, that the administrative, supervisory and operational philosophy of a company proposing to operate a reactor can have a large influence on the safety of the operation, and that the AEC through its regulatory procedure must exercise continuing surveillance over the performance of its licensees. But is this something that the staff or ACRS need concern themselves with? I rather think not. Nearly everyone involved in reactor safety evaluations will concede that it is impossible to assure the complete safety of any reactor operation solely on the basis of actions taken in Washington. The real question is, where do the AEC staff and ACRS leave off trying to do so? A few policy criteria enunciated by the Commission might help to clarify this question, with a resultant saving in time and effort required for reactor safety reviews.

My final comment pertains to the ACRS itself. It is my opinion, based on considerable experience, that the statutory membership of 15 for this committee is much too large for effective action. The difficulty of arriving at a common decision in any committee goes up almost exponentially with the number of members, and the ACRS is no exception. Science can and does thrive on differences of viewpoint. But differences of opinion among scientists in areas involving as many imponderables as reactor safety evaluation can and do pose substantial problems when it comes to framing at least some of the letters of advice to the Commission. They are also responsible for prolonging the amount of review and discussion with applicants in arriving at a decision.

It is my feeling that there would be many advantages in reducing ACRS membership to about seven and making more liberal use of individual consultants in special areas. It might be argued that such a reduction would adversely affect ACRS subcommittee activity. However, since it is in this area that most of the duplication of effort occurs as between the AEC staff and the ACRS, some curtailment of subcommittee activity is probably desirable. Certainly, with the rapidly increasing number of reactor proposals coming up for review,

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it is becoming increasingly urgent to define as precisely as possible the scope of governmental safety evaluation studies and the relative areas of responsibility of the AEC staff and ACRS in carrying them out.

REPLY FROM MR. LYMAN R. FINK, GENERAL MANAGER, ATOMIC PRODUCTS DIVISION, GENERAL ELECTRIC CO., DATED MAY 17, 1961

SUBJECT: IMPROVING THE AEC REGULATORY PROCESS

Your letter of March 18, 1961, invites comment on several proposals for modification of the AEC's regulatory organization and procedures. I shall discuss each of these proposals briefly. Before doing so, I would like to summarize my own views.[1]

(1) The major problem with the regulatory process is its burdensomeness. Some of the present burden is necessary but much of it makes no contribution to protecting the public. The principal step which can be taken to reduce the burden is the painstaking development of technical standards for reactor design and operation and for site selection.

(2) Government-owned facilities and privately owned facilities present very similar safety problems. The review procedures should be the same for both types of facilities, except to the extent that national defense considerations make this inappropriate.

(3) The present provisions for mandatory ACRS review of facility license applications should be modified. ACRS review should be held (*a*) at the instance of the licensing body, and (*b*) wherever the ACRS itself considers it appropriate, but should not be automatic.

(4) Decisions should be made by persons with technical background or at minimum with their advice. The present role of the Examiner in the decision process should be eliminated.

(5) Formal hearings should be mandatory only at the construction permit stage. The need for mandatory hearings even at the construction permit stage should be reviewed again after some appropriate period, say, 5 years. Any revision of the statute should provide for such review.

(6) On balance, establishment of a separate regulatory agency seems the most desirable solution of the organizational problem. Short of that, establishment of a licensing board with authority (a) to act on facility license applications, and (b) to issue regulations, would be a constructive step.

Recent AEC organizational changes

The recent action of the Commission in establishing the position of Director of Regulation reporting directly to the Commission is desirable. Even more encouraging is the fact that this action seems to be accompanied by an intention (1) to give the Director considerable discretion on more routine matters and (2) to provide greater participation by the Commissioners in resolving significant issues of licensing policy.

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[1] General Electric's Dec. 1, 1960, memorandum which appears in vol. II of the Joint Committee print (pp. 558 et seq.) sets forth most of these views in more detail.

However, for the reasons stated in the JCAE Staff and Michigan Studies, these changes will not meet the major concerns. To deal effectively with these concerns, it is necessary to amend the statute and to make more far-reaching changes in the review and hearing procedures.

The Michigan Law School proposal for a separate agency

The Michigan Law School study is a perceptive and carefully considered analysis of the present regulatory system. The recommendations as to the appropriate organization of the regulatory function set forth in that study and the views set forth in General Electric's December 1 memorandum are quite similar. Adoption of the Michigan recommendations would, in my opinion, result in substantial improvements over the present situation.[2]

The JCAE staff proposal for a board within AEC

If the Congress concludes that it would be premature to create a separate agency, then the JCAE staff study suggestion of an Atomic Safety and Licensing Board within AEC would be a sound course for an interim period and one distinctly better than the current system. However, there are some critical questions as to the authority of the proposed Board.

(1) What should be the Board's responsibility with respect to issuing regulations?

(2) Should radiation protection functions lodged elsewhere in Government (particularly in the Federal Radiation Council) be assigned to the Board?

(3) Should the present Director of Regulation and his staff report to the Board or to the Commission?

I shall take these up in order.

(1) Of the three questions, the first is crucial. The most urgent regulatory task is the development of technical standards for reactor design and operation, and of site criteria. Work on these standards must, in large measure, be carried on by private bodies. However, if the standards are to be of value, they must be accepted and applied by the licensing body. This, in turn, makes it highly desirable that there be intimate collaboration with this body in the development and formulation of the standards. Moreover, the standards must grow out of and reflect in some measure the case-by-case determinations of specific issues made by the licensing agency. The recent regulation on changes procedure, which grew out of experience in the VBWR license proceeding, is a good example of this process. If the issuance of regulations adopting technical standards will increasingly become the heart and center of the regulatory work, then separation of this function from the function of deciding license applications seems clearly unwise.

Preserving in the Commission the function of promulgating regulations could, of course, operate as a check on the licensing body (see JCAE staff study, p. 65). However, such a check could also be provided by an arrangement somewhat like that suggested in the Michigan study. Under this arrangement, the Commission would designate

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[2] I do differ with the suggestion made in the Michigan study as to participation of an ACRS member in the hearing. If a separate agency were created, it would seem desirable to have either the agency itself or a member thereof or the examiner conduct hearings, essentially as recommended in the JCAE staff study (vol. I, p. 72).

a representative to sit with the licensing body when it considered proposed regulations. The Commission's representative would have the right to participate in all discussions and to vote. This device, by introducing another perspective on regulatory matters, could help to provide a reasonable balance between safety and developmental considerations.

(2) The Michigan study makes a persuasive case for lodging with the regulatory body other responsibilities with respect to safety: (*a*) authority to establish radiation protection criteria,[3] (*b*) responsibility for liaison with the States, and (*c*) responsibility to review and make recommendations on research and development programs of AEC and other agencies relating to atomic safety.

(3) A judgment as to whether the regulatory staff should be transferred to the new Board or kept with the Commission depends in part on the extent of the functions assigned to the new Board. The greater the range of the Board's functions, the stronger the case for transferring the staff.

The JCAE staff study states some cogent considerations in favor of leaving the regulatory staff under the Commission. Without deprecating these considerations, it should be recognized that placing the hazards review staff outside of the Board could, over a period of time, be productive of basic differences of outlook, of disputes, and of administrative difficulties. The fact that the Board would need, in any event, some minimal staff of its own, could accentuate these problems. The public might not be served as effectively and industry might find itself in the middle.

One solution might be to leave the hazards staff under the Commission initially and to provide in the statute that, after some appropriate period, say, 5 years, the question would be reexamined.

Other procedural changes suggested in the JCAE staff study

The JCAE staff study makes a penetrating and valuable review of the key procedural questions. I am in almost complete agreement with the specific suggestions made in the study.

(1) The study recommends that public hearings in uncontested cases be mandatory at the construction permit stage but in the discretion of the Board at the operating license stage. This suggestion—which is also made in the Michigan study—would preserve the basic principles of the 1957 legislation while at the same time eliminating some of the burdens and delays which have developed in recent cases. Adoption of the recommendation would be a major improvement.

The need for mandatory hearings even at the construction permit stage should be reviewed by the Joint Committee after, say, 5 years. The essential objective of the 1957 legislation is that the review process should be conducted in the open. This objective can be attained without the formalities of quasi-judicial hearings. Moreover, in uncontested cases, the formal hearing itself is unlikely to make a significant contribution to safety; the real contribution comes from the discipline imposed by making the hazards summary report and the results of the technical reviews, a matter of public record.

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[3] The National Committee on Radiation Protection should be continued in its present form and should be available to consult with the regulatory body.

(2) Modifications in the role of the ACRS will become increasingly essential. The recommendations outlined at page 71 of the JCAE staff study are sound and represent a considerable advance over the present situation.

(3) The suggestions as to the relationship of the proposed Board to the hearing examiners seem desirable, with only one qualification. For the reasons stated in section IV of the General Electric memorandum, it would be desirable to provide for initial decisions by the Board itself rather than by the examiner, even when the examiner conducted the hearing. The Board should preside at hearings until such time as the volume of work makes conduct of hearings an undue distraction from the Board's other duties.

(4) The balance of the staff study's suggestions with respect to hearing procdures, decisions, issuance of operating licenses, and judicial review also seem sound.

(5) The Commission has recently embodied in a regulation the changes procedure established for the Vallecitos boiling water reactor. The basic VBWR changes procedure is sound, although much depends on its administration. The tests stated in the Commission's regulation for determining whether a change requires further review, are clearer than those suggested in the staff study.

Review of Government-owned facilities

The JCAE staff study appears to contemplate that the same review procedures would be provided for both privately owned and Government-owned reactors, regardless of where located, except for non-power-producing military and production reactors. The Michigan study takes essentially the same position. This is a highly desirable feature of any revision of the present regulatory process.

One final observation should be made. The present difficulties in the regulatory area call for revisions of organization and of legal procedures. However, the basic problems of atomic safety are not organizational or legal but technical and they require technical solutions. Some system of Government regulation is essential but the contribution which can be made by this system is limited. Progress will come through further operating experience, through engineering development, and through the formulation of standards.

Accordingly, there will be a continuing need for thorough scrutiny of the effectiveness and reasonableness of the regulatory process. Without this scrutiny there will be a danger that regulation will become an end in itself and that Parkinson's law will result in the preservation and elaboration of procedures which have outlived their usefulness. It is not inconceivable that the advent of economic nuclear power could be delayed by unwise regulatory policies.

Hence it is vital that any statutory revisions of the regulatory process provide for periodic appraisals of this process by the Joint Committee and that the Committee continue to seek the counsel of the scientific and engineering community, of industry and of the legal profession.

Reply From Mr. Willis Gale, Chairman, Commonwealth Edison Co., Dated April 13, 1961

Arthur Gehr, who has represented us as a lawyer in connection with the Dresden license, and Murray Joslin, one of our vice presidents, have received the same letter as the one you sent me on March 18.

They are going to respond, in due course, on the basis of their many, many firsthand experiences with the present licensing procedure.

I propose to make a few comments based partly on reports I've had from our people, but mostly on my experience in developing a management setup for a reasonably large business.

My first comment is that if you have the right kind of an atmosphere and the right kind of people, the form of organization is not too important. By and large, my impression is that the AEC has been staffed with good people. I have the impression, however, that the atmosphere has not always been too good. I have a feeling that at least a considerable part of the cumbersomeness of the licensing procedure grows out of the fact that too many people are too much concerned with making certain that no criticism will ever accrue to them.

My second comment has to do with people in another way. In administering the affairs of Commonwealth Edison, I do not, for example, undertake to reengineer the engineering work done by our engineering department. I try to make sure that our engineering department is in the hands of men of the greatest possible competence. When I have done so, I rely to a great extent on their recommendations.

In the licensing process, it seems to me that there has been too much reengineering of the engineering work done by General Electric. Long before now, the AEC staff should have determined that General Electric is highly competent in the atomic area and, in fact, that Commonwealth Edison is, also. I believe that more emphasis ought to be placed upon a determination of whether proposed reactor builders and operators are truly competent and less emphasis on the engineering details of each step of a project.

My third observation has to do with duplication of functions. I have found that whenever two departments have jurisdiction over the same activity, difficulty is most certain to arise. In our experiences with the AEC licensing procedure, this duplication, to a high degree, has existed between the activities of the ACRS and the Division of Licensing and Regulation. Actually, the hearing examiner setup has really added triplication to the process. There is clearly a need for a sharp separation of the jurisdiction of ACRS and the licensing and regulation function.

Having dealt for many years directly and indirectly with regulatory authorities, both Federal and State, I must say that regulation through the hearing examiner process really confounds confusion. Except in a contested case where one party ought not to be permitted to present his side of the story except in the presence of the other party, it is certainly true that a more effective job can be done through the informal conference method.

My final comment has to do with the Joint Committee staff proposal as to the creation of an Atomic Safety and Licensing Board within the AEC. This, to my way of thinking, is far superior to the

creation of a separate regulatory agency. I am sorry to say, however, that I cannot agree that such a Board should be appointed by the President with the advice and consent of the Senate. If this Board is to operate effectively within the structure of the Atomic Energy Commission, it must be subject to the direction of the Commission. It cannot effectively be subject to the direction of the Commission unless it is appointed by the Commission. This is a cardinal principle of good organization.

Since we have not received our final operating license, perhaps it is not wise of me to express my opinions as frankly as I have. However, you have invited my views and I know that your only interest is to do the best possible job of improving the mechanics of licensing. Therefore, if I am to respond at all, I have to say exactly what I think. You will understand, I am sure, that any direct or implied criticisms are not aimed at particular people. I am speaking of the licensing process in the aggregate.

REPLY FROM ALEXANDER GRENDON, COORDINATOR, STATE OF CALIFORNIA OFFICE OF ATOMIC ENERGY DEVELOPMENT AND RADIATION PROTECTION, DATED APRIL 14, 1961

Your committee staff study, "Improving the AEC Regulatory Process," is timely and outstandingly competent. We should like to comment on certain matters of broad principle and then discuss in detail some aspects of the proposals for improvement.

The inherent internal conflict of interests in an organization charged with the dual responsibility of development and regulation has been universally noted in discussions of this problem. It must be recognized, however, that, at a very high level, someone must accept this dual responsibility, since development should not be completely suppressed in the interests of complete safety nor safety be disregarded to foster development.

At the general manager's level, where weighting of the various factors may well be influenced by their relative budgetary importance, the dollar weighting of 1,000 to 1 for development relative to regulation, whether or not it does in fact influence decisions, has created an attitude of distrust of the AEC safety views. The Commission itself, consisting of temporary appointees, has the positional advantage of relative freedom from the suspicion that it may seek to build an empire by catering to the dollar-heavy development interests, but it is, nevertheless, involved in allocation of funds and could understandably devote most of its attention, and yield in its views, to the fiscally important development program. It is not sufficient to contend that the dual responsibility ultimately rests with Congress and the President, since their judgments must be conditioned upon the recommendations made to them by technical experts.

What is therefore needed is a technically expert agency, not involved in fiscal decisions and divorced from the temptation to build a bureaucratic empire, charged with the very dual responsibility that creates a problem in its present assignment. To have the necessary expertise within this agency almost certainly requires more than one man, but need not demand a large group. As noted in the study,

with "sound scientific training and experience in one field," a reviewer can make use of the talents available widely within the AEC, provided the avenues of communication are kept open and as accessible as possible. To free this agency from fiscal pressures, its members should be appointed from above the Commission level, should be well-compensated, full-time employees, with no outside conflict of interests, should not be given that degree of permanence that tempts one toward aggrandizement, but should have appointments of sufficient duration to encourage capable individuals to accept the post and give them a fruitful period for employment of their experience. Their mission should be to accept the responsibility for keeping development and regulation in balance by reviewing proposed applications to insure safety commensurate with the public importance of the application, receiving comments on proposed rules and regulations from all official and unofficial sources which are presently invited to offer comments to the AEC, and reviewing these proposed rules in the lights of these comments and their own experience and reviewing the activities of the AEC that are directed toward insuring compliance with the approved safety standards among both licensees and contractors.

It will be evident that our views agree with those of the study in regarding the AEC proposal as inadequate to solve the problem, not only for the reasons discussed above but also for the two additional reasons cited in the study: "lack of expertise at the decisionmaking level and the reliance on formal, cumbersome procedures which do not necessarily assure greater reliability in safety decisions." In our opinion, the optimum solution for the foreseeable future lies somewhere in between the proposals of the committee staff and the University of Michigan Law School group. It does appear that the current relatively small workload and the desirability of the continuing close liaison between the technical staffs of regulatory and promotional groups within AEC militate against a complete removal of the regulatory function from the AEC at this time. On the other hand, we believe that the Atomic Safety and Licensing Board should be granted more authority than is provided for in the committee staff proposal.

Our recommendations may best be made by commenting on the sections which discuss details of the committee staff plan as they appear on pages 69–75 of volume I of the report.

1. *Creation of an "Atomic Safety and Licensing Board".*—We agree with the provisions of this section. The size of the Board, the method of appointment of members, and the qualifications of members are all appropriate. The incidental mention of the AEC's Licensing Division suggests that it should be renamed License Analysis or License Evaluation Division to correspond to its altered role, as discussed below.

2. *Licensing functions.*—The Board should have full authority over licensing. The function of the License Analysis Division should be similar to its present function with the important exception that decision as to license actions is made by the Board, either by individual case or by category. (As a minor revision of the text, the reference to "Government-owned non-power-producing military or production reactors" should be restated to include cases such as the Hanford nuclear power reactor, where power may be produced incidentally.)

3. *Rulemaking functions.*—In our view, the Board should have central and primary responsibility for issuance of rules relating to safety. The Commission staff should continue its present procedure of preparing proposed rules, but the Board should serve as the final review agency, incorporating into the final rules the changes evolved from public comment and their own critical examination. Clearly, this would give the Board more authority in this area than the committee staff proposes; but we believe this to be an entirely rational and proper extension of the Board's responsibilities as the agency that vouches for the unbiased review of safety versus promotion.

4. *Board's relation to the Commission and its staff.*—We would recommend that, in addition to the points covered in this section of the study, the Board be assigned responsibility for review of the inspection activities of the Commission. The regulatory system, as noted in the study, comprises establishment of safety standards, licensing, and enforcement of compliance. The Board's function is regarded by us as that of insuring that the regulatory system is not neglected in favor of its wealthier brother, and this concern should be extended to all parts of the regulatory system.

5. *Board's relation to the ACRS.*—We generally concur with this section, except that it should be emphasized that the ACRS is advisory to the Board rather than to the Licensing Division. The Board should seek to conserve the time and efforts of the ACRS.

6. *Board's relation to the hearing examiners.*—It is natural that this study stresses facility licensing because of the greater seriousness of the problems involved. Current procedures with respect to contested materials licensing cases, however, also suffered markedly from overjudicialization and length of time required for final decisions. It would be very unfortunate if such deficiencies were not corrected in any new plan adopted.

7–11. We agree with the provisions of these sections, though we would call attention to the mention of "a specified period after publication" in section 10. The time for communication between Washington and California plus the time for a central State agency to communicate with other State and local agencies makes a period of 30 days marginally effective for review and action, even if notice is sent direct to the State.

12. *Proceedings in cases involving minor facilities or materials.*—Two of the comments made above are also pertinent here. The Licensing or License Analysis Division should have responsibility for issuance of licenses only as delegated to it by the Board; the Board should hold decisionmaking authority. This section as proposed would do little to correct the substantial deficiences that now exist in procedures utilized for contested cases of this type. Procedures of a less formal nature, similiar to those described in section 7 for major facility licenses, might be applied to advantage here also. If a licensee against whom a decision is rendered under these less formal conditions were to feel that the lack of formality had deprived him of due process, he might be permitted to request the formal hearing, but it seems probable that most cases could be expeditiously cleared by the informal process.

B. The plan in operation

This is an excellent description of how the plan would work with respect to reactor licensing. Except as the suggestions we made above apply, we would agree with this pattern of operation.

In summation, we would say that the committee staff plan is generally good for the near future, but would be strengthened by: (1) giving the Board more responsibility for rulemaking; (2) making the AEC regulatory staff responsible to the Board; and (3) providing for improved procedures in contested cases involving minor facilities and materials.

REPLY FROM PROF. KURT L. HANSLOWE, PROFESSOR OF LAW AND OF INDUSTRIAL AND LABOR RELATIONS, CORNELL LAW SCHOOL, DATED APRIL 18, 1961

I appreciate the opportunity to comment on problems of AEC reorganization and have no objection to your appending my remarks to the record of your forthcoming hearings.

The current travails of the administrative process are, I believe, the price of having in earlier years proceeded on too pragmatic a basis. Administrative agencies, including the AEC, have "growed like topsy" in response to some immediate need. This was certainly true in the case of atomic energy development. Yet, I take it, it was this early focus on development (and later on promotion) which is now making trouble in the areas of licensing and regulation. The trouble of course, springs from the merging of essentially conflicting or incompatible functions. No amount of talk about the difficulty of separating policy formulation from regulation and adjudicating can avoid these fundamental incompatibilities. The law enforcer is going to be interested in convictions. The promoter will tend to discount risks. Etc., etc. On the other hand, the imposition of the regulatory function upon the promoter is also apt to prove distracting, and may tend to undermine effective discharge of the promotional function. Thus, the agency with such conflicting tasks may wind up discharging none of them well.

It is my view, then, that our regulatory organs generally, and the AEC in particular, are in need of some fairly major surgery. Continuation of the present AEC organization, with minor internal changes and improved procedures, strikes me as quite inadequate. The choice would appear to be between the staff's proposal and the Michigan plan. As to both of these, it is noteworthy that they plainly point in the identical direction, namely toward a quite distinct separation of the regulatory function. However, while the Michigan plan is designed to fully accomplish this end, the staff proposal temporizes by (1) keeping the licensing board within the AEC and by (2) putting the important rulemaking function in limbo. Hence I believe the Michigan proposal to be considerably to be preferred.

I recognize the appeal of the staff position. It has the virtue of being the "middle road." It may be the gradual, less traumatic, and therefore politically more feasible method of moving in the desired direction. The suggestion is that the staff proposal would be adequate

to handle the needs of the regulatory program for the next decade or so (by the end of which period, presumably, something like the Michigan plan will become necessary).

I find none of these considerations wholly persuasive. I am persuaded by the criticism of this approach contained in the Michigan study. I am also persuaded that, commencing in the very near future and at an accelerating pace, there will be need for a coordinated, national, regulatory effort in the atomic energy field which can be met only by a centrally focused locus of comprehensive regulatory authority. When that need becomes pressing, it will be better to have the instruments ready to hand, than to have to scramble through another administrative reorganization for the purpose of hastily erecting some makeshift regulatory structure.

Adoption of the substance of the recommendations contained in the Michigan study would, in my judgment, result in such administrative preparedness. I urge the creation of a separate board with final regulatory responsibility, including the reallocation of functions recommended in paragraph B on page 556 of volume II of the committee print.

I believe that, as a result, we should also get more effective developmental and promotional activity. Especially would this be the case if the recommendation for a single-headed Atomic Energy Administration is accepted. Discharge of essentially executive functions should rest in the hands of a single, responsible executive official. The notion of the multimember board, having principally executive functions, rests upon a faulty analogy to judicial tribunals. It results in diffuse policy execution.

I also endorse the suggestion that, on matters of rulemaking, the Administrator participate as a member of the Board. This would go at least part way in meeting the objection that policy formulation is so intertwined with adjudication as to make their separation unwise, if not impossible.

Two final observations, one on the negative, one on the positive side, regarding the Michigan proposal: I do envision some difficulty on the matter of separate staffs, and on the risk of some duplication of effort. On the other hand, the efficiencies to be gained by a strong, independent regulatory organ seem to me to outweigh this risk. A board of the sort recommended, by virtue of its demonstrated independence, can afford speeded-up procedures without either acting unfairly or conveying the appearance of unfairness. (Consider for instance, some of the summary procedures of the Supreme Court). Thus, separation of function does not necessarily mean greater judicialization. If anything, it means greater opportunity for experimentation with shortened procedures. And this, it seems to me, is of tremendous importance in a developing regulatory field, where the cases are apt to be "big cases," and the litigated issues highly technical and complex.

Reply From Mr. David P. Herron, Director, Nuclear Technology, Advanced Technology Laboratories, Dated May 4, 1961

COMMENTS ON AEC REGULATORY PROCESS

We have reviewed with interest the two volumes of the JCAE staff study on the AEC regulatory process which you transmitted to us, and wish to commend the committee staff on the thoroughness and clarity of the material and the alternatives presented.

We are impressed by the unanimous opinion in these volumes that everything would be ideal if the ACRS could only review every finding of the Commission safety staff. Unfortunately, the ACRS as a part-time body cannot physically do so. Thus, there is little criticism of (1) an independent expert advisory body (ACRS) making recommendations to the Commission, and (2) the Commission making the final decision. What is criticized is (1) lack of technical review by an independent, competent group if the ACRS is overburdened, and (2) technically fruitless judicial hearings.

The proposed AEC plan envisages a Director of Licensing reporting directly to the Commission, but empowered only to make safety recommendations which form part of a judicial hearing and are then subject to overall decision by the Commission. This plan overcomes neither of the difficulties mentioned above and thus seems incapable of dealing with the fundamental difficulties.

The JCAE staff study dealt effectively with the disadvantages of the separate-agency proposal, and we have no further thoughts on this alternative.

In view of the approval by all parties of the work and organizational arrangement of the ACRS, it seems to us the essential features of the ACRS arrangement should be retained to the degree possible. In this light, we believe that the JCAE staff plan of a Board within the Commission reporting to the Commission, and yet of executive authority beyond the control of the Commission is an inappropriate organizational arrangement. The Commission should retain final authority over such vital nuclear energy matters as to whether a certain reactor project should be constructed and as to what safety questions it should review and what questions it can delegate.

A preferable procedure would be the rendering of a published opinion on all safety questions to the Commission by an independent advisory group, with the Commission making the final decision in the light of such publicly known facts. In short, the need appears to us to be for a full-time Safety Board having a staff and the same advisory relation to the Commission as the ACRS. Its responsibilities would be to—

(1) Review all safety recommendations of the AEC licensing staff.

(2) Hold a hearing if desirable.

(3) Advise the Commission of its own technical opinion (which should be published in the important cases) and recommend one of the following courses:

(*a*) In novel questions, or when the Board and AEC staff disagree, suggest a further review and technical opinion from the ACRS, followed by a Commission review. (The ACRS could also review any matter it desires on its own initiative.)

(*b*) In cases of moderate importance, suggest a Commission review only.

(*c*) In routine matters, suggest purely formal concurrence by Commission of Board decision.

Our proposal would retain the desirable ACRS-type of working arrangement and have the following advantages:

(1) Retention of coherence of authority by the Commission in civilian atomic energy matters.

(2) A review of all AEC staff analyses on safety.

(3) Relief of ACRS from less-critical matters.

(4) Competence and organizational authority to decide what should be referred to ACRS.

(5) No creation of new agency.

(6) Independence of reviewer from undue influence by promotional branch of AEC.

(7) Atmosphere conductive to recruitment of highly competent personnel staff.

(8) Atmosphere conducive to professional cooperation with AEC safety staff.

The suggested procedural changes (p. 64, vol. I of JCAE staff study), with one exception, seem in the right direction as adjuncts to the suggested new Board. We are in strong disagreement with any movement at present to formulate standards for site evaluation and reactor design. The unfortunate attempt already made to do this has amply illustrated the dangers involved. In our opinion it is not possible to formulate separately site standards and reactor-design standards on an uncoordinated basis. Any "suggested" site standards develop an iron rigidity regardless of ameliorating safeguards inherent in the reactor design, and vice versa. We believe that for some time reactor safety must follow a common-law and not a coded-law approach, for the same sound reasons that makes common law essential in many legal categories. Premature rigidity in site standards as a substitute for intelligent administration of a rapidly changing technology could cripple the entire civilian nuclear power program.

Thank you for the opportunity of participating in the development of this policy.

Reply From Mr. Murray Joslin, Vice President, Commonwealth Edison Co., Dated May 2, 1961

Of the several organization changes proposed with the objective of improving the AEC regulatory process, I prefer that of the joint committee staff which provides for a Licensing Board within AEC, two members of which would be selected for their technical qualifications and the third for his expertness in procedural matters.

My concept of how such a Board could function most efficiently and at the same time protect the public health and safety incorporates ideas gathered from other agency and individual proposals contained in the two volumes you sent me. Also, my views are influenced by our own experiences in the *Dresden* case.

My principal suggestions are these:

(1) The Licensing Board should decide all reactor licensing matters. If a public hearing is required, the Board itself should conduct the hearing. I strongly concur in the many suggestions for minimizing the number of our public hearings.

(2) The Board should need only a minimum staff. Its detail work could be done by the present AEC staff—hazards evaluation, inspection, et cetera.

(3) ACRS should become a truly advisory group serving the Licensing Board. With ACRS relieved of the details with which it is currently burdened, it would have time for matters of greater importance as assigned by the Board.

I have deliberately oversimplified my concept of AEC reorganization. In a situation this complex, and where the suggestions for change are so numerous and varied, it seemed appropriate to do so.

More important than form of organization, however, is the AEC staff's concept of its regulatory responsibility which I think must be changed if the objective of reorganization is to be realized. I am not critical of AEC staff members as individuals. They are conscientious and undoubtedly feel they are doing what is expected of them. My comments are categorical but a reading of the Dresden record or, for that matter, of any reactor licensing case will reveal numerous specific illustrations.

One category is the action of the staff in matters of design. The staff appears to feel that it must examine minutely the engineering design details of the reactor under consideration. It is one thing for the staff to require the applicant to submit design criteria, to see that these are adequate, and to satisfy itself that the design organization is competent. But it is a misuse of both staff and applicant's technical personnel to require the repetitive examination of design details which has been the staff practice. The staff does not, and cannot, have experts in all of the specialized fields of engineering which enter into the design of the reactors that come before it for evaluation, nor does it have the time to examine all features to the same extent. It cannot, therefore, give the same detailed consideration to all design aspects. By going into such details, it seems to me the staff may be laying itself open to criticism by assuming a degree of responsibility for the whole project not appropriate to its regulatory role.

The other category in which I feel the staff exceeds its regulatory responsibility is the area of reactor operation. The staff requires the applicant to expand his operating procedures to cover a wide range of situations that may arise and specify in detail the action his operator must take in each instance. The problems arising from this approach are compounded by the staff's attempts to make such procedures almost immutable by requiring changes to be authorized by license amendment.

It is proper for the staff to require operating procedures. We want operating procedures, too. In fact, we require them of the operators of our conventional powerplants. But the extent to which the staff has gone in specifying the action to be taken amounts to assuming direction of operation of the licensee's plant. Here, too, it seems to me the staff may be making itself subject to criticism for the extent to which it has restricted the use of judgment by the plant operator.

This is further emphasized by the fact that it is virtually impossible to anticipate all of the situations that may arise. Also, we always discover improved guides to safe operation through operating experience that we are unable to foresee in advance. If the staff will not accept these facts, it ought at least to recognize that, as procedures are made more detailed, greater flexibility must be allowed in effecting changes as experience dictates.

As I said at the beginning, my views are influenced by our Dresden experience. We went through the early period of development of licensing procedures—and we have had a number of problems at Dresden, such as the control rod drive failure. This was of great interest to the entire industry because of the use in other reactors of the alloy which failed at Dresden. Then the SL–1 accident occurred just 2 days before the meeting I scheduled with the staff to present the results of General Electric's extensive research into our metallurgical problem and the solution arrived at.

It has been a trying time for the staff as well as for General Electric and Commonwealth Edison. Staff members have worked long hours on our problems and they have many others that require their attention. The combination of circumstances, the consequent workload on members of the staff, and their awareness of their responsibility for public health and safety have all contributed to the development of the concept of regulatory responsibility which I referred to. It is evident that the staff cannot be expected to change this concept unless directed to do so.

Thank you for giving me this opportunity to express my views on improving the AEC regulatory process.

Reply From Mr. Allen S. King, President, Northern States Power Co., Dated May 8, 1961

In your letter of March 18, 1961, and Mr. Ramey's letter of April 19, you have asked for our views for assistance in the study of the Atomic Energy Commission's regulatory process. We sincerely appreciate your giving us the opportunity to comment and we are most interested in the development of regulatory procedures which will insure vigorous growth and development of the use of atomic energy, while at the same time protecting the safety of the public.

We recognize that this is a tremendously complex problem and we are fully cognizant of the limitations of our own knowledge of the subject. We have had experience, of course, with the regulation practice by the Commission and we offer our comments for consideration with others on the basis of that experience. On the whole, our relationship with the Commission has been excellent but we recognize, as you do, and as the Commission does, that the present processes are unwieldy, slow, and expensive, and that they do not provide flexibility for the future when the problems multiply.

Of the various plans for improvement, we believe that the changes suggested by the Commission in "Improving the AEC Regulatory Process" (vol. II, p. 86) provide the best approach. These are all in the direction to improve the process and to provide a framework which can be modified as continuing study indicates. We disagree with the Michigan proposal to create a separate regulatory agency.

This, in our view, would compound the present problem of overlapping interests and of coordination between the numerous sections involved in the process.

We differ with the AEC plan in one respect. We feel that there is a definite need to centralize responsibilities, for safety of design, in one body. ACRS, we believe, should be taken out of this field altogether, even as an organized consultative body. The fact that the Hazards Evaluation Branch and ACRS both have responsibilities in this area slows decisions, makes composition of points of issue difficult, and is not only a delaying factor but is bad organization, inhibiting both bodies, in our view.

We believe that hearings in connection with the licensing process should be held to the minimum number necessary, Hearings on the construction and operating licenses are sufficient, in our view, except in extraordinary cases. We further believe that there should be an abbreviated form of hearing for use in cases which are substantially repetitious of previous cases or contain nothing novel, as will be true in the future when designs become repetitive. Hearings themselves are not a delaying factor of much magnitude, but preparation for them requires a great deal of work, most of which may be a rehash of material already of record.

Again, we appreciate having had the opportunity to comment and we would be pleased to give any further assistance to this study which you might request.

Reply From Mr. J. W. Landis, Assistant Manager, the Babcock & Wilcox Co., Dated May 15, 1961

Thank you for your invitation of March 1961, addressed to Dr. L. M. Currie, to comment on the JCAE staff study of the AEC regulatory process. Dr. Currie has asked me to reply for the Atomic Energy Division.

While we consider the JCAE staff study to be in general an excellent analysis of the regulatory problem, we feel that it does not go far enough in its recommendations. In our opinion, the establishment of a separate Atomic Energy Board, as recommended in the University of Michigan Law School study, or the assignment of regulatory responsibilities to an existing Government agency separate and distinct from the Atomic Energy Commission, would be preferable to the JCAE staff plan.

Two objectives are involved: Promoting and encouraging the establishment of an industry and developing and applying regulations to that industry (licensing should be minimized) as required by the public interest. The first is promotional, creative; the second, adjudicative and at times appropriately restrictive. The question is: Are these responsibilities better assigned as the simultaneous objectives of a single agency or as the respective single objectives of two separate agencies?

As you pointed out during the early 1960 hearings on indemnity and reactor safety, one problem is that the Commission is continually criticized for "confusing its safety regulations with its promotional objectives." Clearly, if these objectives are divorced and separately assigned, the risk of such confusion significantly diminishes. The

question then becomes: At what level should such separation be effected? Every advantage cited for the proposed Atomic Safety and Licensing Board (vol. I, sec. VI, pt. B, pp. 74 and 75) would accrue to such a body reporting to a different agency, and there would be one major additional advantage—the eventual development of an attitude on the part of industry that the Commission is a constructive, coordinating agency to which industry can turn for advice, assistance, and encouragement.

Further, there is considerable validity to the point made by the JCAE staff in its 1957 study, as quoted on page 415 of volume II of the present staff study, that consideration of the regulatory and licensing function must take into account the following policies and goals:

(1) *Objectivity in the evaluation of reactor hazards removed from promotional considerations,* contributing to the protection of the health and safety of the public;

(2) Increased public confidence in the regulating agency because of more formalized and open proceeding, *separation of prosecutor and judicial functions,* and *provision of a quasi-judicial body which is not the primary competitor of the new industry,* thereby creating a regulatory framework within which the industry may grow as the need for Government assistance diminishes; and

(3) *Increased emphasis upon safety* in the new industry, *to protect both the private and public investment* in the program and to take maximum precautions to prevent a serious reactor accident which would set the program back many years.

Both the JCAE and the University of Michigan studies state clearly and unequivocally that the very highest caliber people should constitute the regulatory body and that its access to scientific and technical talent should be total and immediate. This desideratum can in our opinion be best achieved by wiping the present slate clean and making a new start.

In summary, then, we feel that the Atomic Energy Board, the organization and procedures of which are described in the University of Michigan Law School study, is the best present proposal, and that a variation of this proposal—namely, establishment of a similar board in an existing Government agency separate and distinct from the Atomic Energy Commission—deserves consideration. Either the Department of Health, Education, and Welfare or the Department of Commerce could conceivably be the parent organization in the latter plan. Both participate heavily in regulatory and adjudicatory activities in the public interest; either could be appropriately staffed and equipped to cope with the additional responsibility; neither is in the position of competing with those it would judge and regulate. We fully realize that this approach would require a great deal of careful evaluation and preparation, but consider that it justifies this effort in terms of its ultimate benefit to the industry and to the Nation.

Thank you for the opportunity to comment and please convey to your staff our compliments on the quality of its study. If we can provide further information or reaction, please call us at your convenience.

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Reply From Mr. W. D. Leggett, Jr., Vice President-Engineering, Alco Products, Inc., Dated May 15, 1961

After reviewing the reports on the AEC's regulatory process, I find myself in favor of the Joint Committee's general plans. In making this observation, however, I feel that I should point out that ALCO's field of activity has been largely in the military applications, and we are not, therefore, as experienced in the current procedures as many other organizations. Our only licensing activities have to do with such things as our critical facility, which is a substantially simpler problem than those of power reactor licensing.

Despite the competing interests involved in having both promotional and regulatory responsibilities, I feel the basic AEC overall responsibility is a sound one. Establishment of a separate licensing board or other regulatory framework would solve the conflict of responsibilities, but it is my opinion that it will delay progress in the atomic energy field. A separate regulatory agency will not be subject to the incentive to develop this source of energy, and as a result, will tend almost toward greater conservatism to the extent that I fully expect the progress would be seriously hampered.

Strengthening of the role played by a licensing and regulation division by any of the several techniques discussed is an important move. Actions in this important area should be principally the work of a full-time organization, and the responsibility of an Advisory Committee on Reactor Safeguards should be just what the name implies—advisory. The current heavy reliance upon their reactions is unfair to them, and to the industry as long as they remain a part-time advisory body.

It is hoped that the above comments may be of help and I appreciate the opportunity to review and to comment upon the report.

Reply From Mr. S. C. McMeekin, President, Carolinas Virginia Nuclear Power Associates, Inc., Dated 19, 1961

Carolinas Virginia Nuclear Power Associates, Inc. (CVNPA) appreciates your invitation to comment on the various recommendations that have been made to the Committee by the Atomic Energy Commission, the staff of the Joint Committee and the authors of the University of Michigan Law School study on ways of improving the present procedures for the licensing of atomic reactors. While it would not be appropriate for us to comment on the extent of the burden imposed on the AEC and the Advisory Committee on Reactor Safeguards by present licensing procedures, we hope that our views as one presently subject to regulation under those procedures may prove helpful to the Joint Committee.

The central issue in the recommendations of all three groups is: Who shall have the final licensing authority at the administrative level—the AEC as presently constituted or a different group? The AEC favors continuation of its final authority. The Michigan Law School study and the Joint Committee staff recommend transfer of this authority to a new board. Under the Joint Committee staff's recommendation the Board would in form be a part of the AEC but its independence would make it in fact a separate agency. On this central

issue, CVNPA is of the view that for the present at least, final authority over all licensing matters should remain in the AEC.

All three groups go into great detail in discussing the various arguments on both sides of this central question and we do not believe it would be helpful to the Committee for us to review all of them in detail. But relying on our own experience with AEC and that of our sponsoring companies in other fields of Federal regulation, we briefly state two of our basic reasons.

(1) The nuclear industry is still at that early stage of development where to disseminate, both among the regulated and the regulators, current knowledge of rapidly changing technical advances will constitute the prime assurance of public safety. To create a separate new agency, regardless of its form, would tend to obstruct rapid dissemination. This would more than neutralize the advantages from the possibility, itself a highly arguable conjecture, that greater public confidence might result from formal separation between "promotion" and "regulation." The organizational procedures now evolved within the AEC seem adequate for the present to assure the faithful and efficient performance of the AEC's licensing responsibilities.

(2) The formation of an autonomous licensing agency would separate final administrative responsibility for the formulation of general rules from that for their application. This division of authority would be open to question at this stage in the development of the industry when a wide background of operating experience still remains to be accumulated. Conflicts could easily arise over basic policies, with resulting confusion, delay and expense, involving repeated appeals to the courts or Congress. The basic virtue of the administrative process is flexibility and responsibility. This is promoted by quality of personnel. It is not promoted, but obstructed, by multiplication of formal requirements.

Rather than comment on the details of the study recommendations, we address ourselves to some of their underlying presuppositions.

(*a*) One of the principal premises of two of the studies is that the AEC cannot be objective in the performance of its regulatory duties because of its promotional responsibilities. We believe that this fear is greatly exaggerated, but rather that a deep concern for safety must be at the heart of any sound promotional program. As a company presently building a nuclear reactor, we hope that our reactor will be completed on schedule, will be operated as expected, and will be perfectly safe. But the desire to see our earlier judgment borne out by the final facts does not predispose us to cut corners on safety—quite the contrary. CVNPA and its sponsoring companies are aware of their responsibility to their employees who will be working at the reactor and to the general public. There is no pressure of any kind on CVNPA because of its promotional interests in the reactor to compromise with safety. Nor can we see how the AEC, since it is concerned with promoting development—not disaster, could feel any pressure of any kind to license our reactor if there were any substantial question concerning its safety.

(*b*) CVNPA has not found the AEC procedures "burdensome." Indeed, we have benefited greatly from the orderly expert review of our project by the AEC staff and the Advisory Committee on Reactor Safeguards. In addition to these technical reviews, we also believe

that the overall review of our project, with special reference to AEC regulations and precedents, at the hearings on the construction permit was of great value. This translation into judicial language provides an assurance that all of the technical questions have been methodically and dependably resolved. And it is of value to the public to have this evidence in a form that can be understood by responsible State and local officials and most private citizens. This, after all, is the basic purpose for requiring public hearings. The retention of the "judicial type" proceeding at the last stage of Commission action makes the right to judicial appeal meaningful. Judges are seldom nuclear experts and cannot act efficiently on a record made by nuclear experts for nuclear experts alone.

In addition, we should like to comment on the recommendation that the role of the Advisory Committee on Reactor Safeguards in reviewing test and power reactors be severely curtailed. In our opinion, to afford the Advisory Committee relief from having to review every change in every reactor is wise. But care should be taken not to impair its basic function of making an objective evaluation of the safety features of any substantial reactor design features. That can best be protected through discretionary powers to the committee as in the Judiciary Act of 1925 by which the Supreme Court exercises so effectively its selecting and discretionary powers in determining the cases it will review and the extent. At present independent review by the committee furnishes the applicant, the examiner and the Commission highly valuable assurance of the safety of the reactor. Though the Advisory Committee previews the same questions as the Hazards Evaluation Branch of the Commission, this is by different people with a different point of view and hence is not wasteful duplication but desirable precaution. If present law or present regulations should be changed so that the opinion of the Advisory Committee on the safety of a reactor is not available to the hearing examiner, the suggestion that the examiner be afforded greater access to the technical staff of the Commission or to independent consultants should be given serious consideration.

In summary, we suggest, on the basis of CVNPA's experience, that the AEC regulatory process functions well. Most of the changes that have been made in that process by the AEC from time to time have been improvements. While the creation of a new licensing agency may some day be desirable, we believe that the time has not yet come in the development of the industry where such a far-reaching change would be in the public interest. And we feel certain that it would involve many elements of expense and delay, both in the confusion of establishment and in the resulting tendency to duplication of personnel and procedures.

REPLY FROM ARTHUR W. MURPHY, ESQ., LAW FIRM OF BAER, MARKS, FRIEDMAN & BERLINER, DATED MAY 2, 1961

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On the whole, I think that the staff proposal for an independent Safety and Licensing Board within the Commission is in accord with

the facts of life in the atomic energy business at this stage of the game. The relatively small number of license applications now being processed, as well as the shortage of technically qualified people available, seem to me to rule out the establishment of a separate agency even if such an agency were desirable on other grounds. However, whether or not the Commission's promotional functions have in fact interfered with their objectivity in passing on lciense applications for projects which they are sponsoring, it does seem that some change in the present setup is required. The combination of functions makes the Commission vulnerable to public criticism and their reaction to that criticism has been to make the proceedings more formal and judicial than they would otherwise warrant.

However, I have one observation which it seems to me is central to any proposal. I think it is well to remember that somebody has to give overall direction to the atomic energy program. As the staff points out, the only way in which complete safety can be achieved is to stop building reactors. So long as reactors are to be built and so long as we are going to attempt to make them economically competitive with conventional powerplants, there must be some compromise between safety considerations and the need for power. To create a new organization, even one within the present AEC setup, will not answer the problem of making the compromise. I believe that the Joint Committee and the Commission, working together, must formulate a plan which will give some guidance to the new board.

REPLY FROM MR. SAMUEL B. NELSON, GENERAL MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES, DATED APRIL 7, 1961

Thank you for forwarding to us on March 18, 1961, a copy of the Joint Committee's Staff Study of the AEC regulatory process for our information and comment.

In the course of its study, the Joint Committee Staff identified the following problems (vol. I, pp. 3 and 4):

(1) The lack of a technically qualified body to review staff determinations and the tendency to overjudicialization of the hearing process.

(2) The need for selectivity in referring problems to the Advisory Committee on Reactor Safeguards (ACRS) and in subjecting license amendments to the formal hearing procedures.

(3) The inability to formulate needed regulatory policy.

We have reviewed the following:

(1) The suggestions by the AEC in their "Report on the Regulatory Program of the AEC," volume II, pages 39 through 423. These suggestions include, among others, the creation of the position of a Director of Regulation reporting directly to the Commission. Another suggestion is that the role of the ACRS be revised by regulation. It

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is believed that in the future the ACRS should concern itself mostly with broad principles of safety, and the detailed analysis of reactors and sites be left to the AEC's Hazards Evaluation Staff.

(2) The proposal for the creation of a separate agency, as outlined in the extracts from the University of Michigan Law School study, volume II, pages 425 through 557. The authors of this study recommend that the present AEC be replaced by two agencies.

(*a*) The Atomic Energy Administration headed by an executive responsible to the President for all operational and promotional functions.

(*b*) The Atomic Energy Board headed by a body of three men responsible for all of the regulatory functions.

(3) The staff's proposal for the creation of an Atomic Safety and Licensing Board within the AEC with final licensing authority, as outlined by volume I, pages 69 through 75. It is believed that as a result the ACRS would be relieved of the review of routine cases because of the technical qualifications of the Board.

Our comments concerning the above suggestions follow:

(1) The creation of the position of a Director of Regulation reporting directly to the Commission might reduce somewhat, but will not solve, the present problems.

(2) The creation of an independent three-man Regulatory Board will probably solve most of the above problems, provided Congress will be willing to centralize responsibility and the anomalous position of the ACRS will be revised.

(3) The creation of an internal Safety and Licensing Board is a compromise solution and is questionable from an organizational point of view.

In addition to the above comments, we are in substantial agreement with the Michigan Law School study analysis of the anomalous position of the ACRS as described in volume II, page 477:

> In the first place, the burden imposed on the committee has prevented it from devoting much attention to the important matter of general policy guidance in the field of reactor safety. Secondly, in order to review each case in a manner that will satisfy its individual members, the committee has had to duplicate a good deal of the work performed by the AEC's hazards staff. Not only has this created friction between the ACRS and the AEC's staff, and added to the burden imposed on applicants, but, if continued, could affect the caliber of individuals that the AEC is able to recruit for its Hazards Evaluation Branch. Thirdly, the character of the committee's reports, perhaps necessitated by its advisory role, may, unwittingly, have the effect of forcing an unnecessarily conservative approach to reactor safety upon the AEC.

We are also in agreement with the Michigan Law School study statement that there are problems related to the overall responsibilities of the AEC that require attention. The AEC's responsibilities appear to be too numerous and diverse to permit these responsibilities to be performed effectively. It is, therefore, recommended that a study be made considering the separation of certain operating programs, such as weapons developments, from the remaining activities of the agency.

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Reply From Mr. H. C. Nickel, Manager, Allis-Chalmers Manufacturing Co., Dated May 15, 1961

RE AEC REGULATORY PROCESS

We wish to thank you for the opportunity to express some comments on improving the AEC Regulatory Process. Mr. Harold Etherington has asked me to reply to your letter to him dated March 18, 1961, on this most timely subject:

An examination of volume I containing the staff's own study, and volume II containing selected materials, studies by the Atomic Energy Commission, and the atomic energy research project of the University of Michigan Law School, indicates clearly that very serious and scholarly attention has been directed toward improving the AEC regulatory process. As a major designer and builder of nuclear reactors, our company wishes to extend its gratitude to all those persons who have contributed to the aforementioned studies. Undoubtedly, the public, Government, and industry will continue to manifest interest in the matter of the licensing of nuclear reactors.

I feel that the magnitude and the inter-relating complexities of the various proposals under consideration for improving the AEC Regulatory Process require that I limit myself in this letter to a few of the fundamental principles involved. There is little doubt that the various proposals proffered in the studies have both pros and cons; it is hoped that the forthcoming hearings will shed additional light on the many issues involved. However, I think we can all agree that the basic purpose and underlying philosophy of any final regulatory process governing the licensing of nuclear reactors is reasonable assurance of safety to the public. It is therefore, our opinion that any requirement for the licensing of a nuclear reactor should always be put to the test of its relevancy to attaining the objective of safety. If it does not pass this test, then the requirement may prove to be burdensome and a detraction to an efficient and orderly licensing procedure.

One of the more time consuming undertakings with respect to the licensing of a nuclear reactor is the requirement for a public hearing. It is our understanding that the three studies by the JCAE staff, the AEC, and the University of Michigan would restrict the mandatory hearing requirement to the construction permit stage. It is felt that a useful purpose could be served by such an initial public hearing, but that requirements for additional public hearings as a matter of course during subsequent stages of the licensing procedures cannot be justified. We believe that since practically all documentation relating to the licensing procedure is a matter of public record, numerous public hearings are uneconomical and might tend to confuse the safety issues involved rather than clarify them.

We feel that in the long range, the best assurance of safety to the public rests on assurance to the public that matters of safety have been carefully examined and evaluated by a responsible governmental group, and not by public hearings. This is for the reason that much difficulty and misunderstandings are encountered when the public, comprised in the main of laymen to the nuclear field, attempt to engage in discussions involving highly technical matters.

Without intent to comment at this time on the overall posture of Part VI—A Plan for an Atomic Safety and Licensing Board Within

the AEC as contained in Volume I—Improving the AEC Regulatory Process, we are in general accord with the principles set forth under section 7, "Hearing Procedures," and section 9, "Operating Licenses," of part VI. We assume that after a mandatory public hearing prior to issuance of a construction permit, it would be the intent to require subsequent hearings only in cases seriously affecting the public interest. In the abesnce of any requirements for subsequent hearings, we feel that the public could very well be assured of its safety by (1) its reliance on the competency of the governmental group responsible and concerned with public safety, and (2) its continuous access to the public record.

Reply From Herzel H. E. Plaine, Esq., Law Firm of Rhyne & Rhyne, Dated May 18, 1961

This is in response to your letter of March 18, 1961, and the further letter of Executive Director James T. Ramey of April 19. I appreciate the opportunity afforded me to comment on the Joint Committee staff study of the Atomic Energy Commission regulatory organization and procedure.

It seems to me that whether or not changes in the existing organization and procedure for the licensing of power and testing reactors should be made depends upon the objective to be accomplished.

Under the present process, the basic and crucial technical judgments as to safety (for construction permit or operation) which are made on the Government's side are made by the AEC staff (principally the hazards evaluation group, the compliance group, etc.), as distinct from the five member Commission and the hearing examiners, before public hearing is reached. The only real review of the technical judgments (and this in the form of spotting points or areas with AEC staff and applicant's staff) is made by the Advisory Committee on Reactor Safeguards, also before public hearing is held.

As presently constituted, neither the Commission nor the hearing examiners are prepared or equipped to do more in the public hearings and in the Commission review which follows than ascertain that the AEC staff (or, to a lesser extent, the advisory committee) went through certain steps or tests and that certain stages of completion have been reached. Thus the formal hearings and Commission review are in the nature of a public summation of the staff work on the applicant's case; and the safety findings are generally derived from staff (and applicant's) findings, and are not based upon an independent examination of the safety factors by the hearing examiner or Commission.

This is a shorthand, and perhaps oversimplified, appraisal of the power and testing reactor licensing system. I base it on my past experience as litigation counsel for AEC and former counsel to the Advisory Committee on Reactor Safeguards. The appraisal is not intended as a criticism, but is necessary to state if one is to consider maintaining or changing the public hearing process and the role of the Commission and the hearing examiners.

So long as reactor licensing is, in the main, uncontested (as it has been with one exception), the present process creates no major public policy problems. The de facto delegations of technical safety au-

thority to the AEC staff and the Advisory Committee on Reactor Safeguards have produced workable results, and there is now in being a private power reactor and testing reactor program. Of course there is irritation and delay, from industry's standpoint, in requiring a second review of the AEC staff work and applicant's case in the public hearing (after the advisory committee has made its review of these in nonpublic session); but arguably, there is merit, and at least good psychology for a new and not too well understood technology, in placing the major safety considerations, sustaining the grant of a construction permit or license, on a public record. (So far as I know, there has never been any request for public hearing on a reactor concept or site rejected by the AEC staff or the advisory committee.)

There is, of course, the practical problem for the part-time advisory committee in being able to do adequately the reviewing placed before it if the number of cases should grow beyond present proportions. But so far, the committee has shown remarkable ability to keep up.

The present process will experience real difficulties if serious contests of AEC staff and advisory committee views are conducted by third parties objecting to an allowance, or by applicants contesting a rejection, of a permit or license. In that context the need for a technically competent body, capable of dealing independently of staff and advisory committee judgment with the merits of technical safety questions, would be essential, if concepts of fair hearing and the role of the staff in the administrative agency is to be placed in its proper perspective, and if public confidence in the agency is to be maintained. In a contest, staff is a party in a much truer sense than in the noncontested case. In a contest, the advisory committee would probably be viewed as an adjunct on staff side, because of its close relation with staff prior to formal hearing; and probably because the committee would want to continue to function in the run of cases, as presently, doing its principal work in privileged executive session with staff and applicants for licenses.

Thus, because of the need which contested cases will generate, there ought to be developed an expert, full-time governmental body, along the lines proposed by the staff study of the JCAE or by the Michigan atomic energy research project, capable of doing the kind of work done and providing the judgments made by the Advisory Committee on Reactor Safeguards, but in the course of both the informal and formal hearing processes contemplated under the Administrative Procedure Act. The capacity of such a body to do the necessary and complete job of licensing would be greatly enhanced by placing with it formally and legally, as well as factually, the rulemaking power. In the practical sense, for each new power or testing reactor licensed today, the current licensing authority is engaged in making rules, and it would seem to make good sense to formally recognize the fact and keep it so.

Obviously, the development of such a body, if it attracted the right kind of people and succeeded, would make unnecessary the maintenance of two expert reactor review bodies. May I note, however, that as former counsel to the Advisory Committee on Reactor Safeguards, whose members individually and collectively I hold in the highest esteem, I had always been impressed that the committee

regarded itself as a body of temporary duration, born of the necessity to provide the expertise in dealing with actual cases which it felt must ultimately be acquired and possessed by regular Government officials for the long-range regulation of the reactor business. I would therefore surmise, even now, that the committee would be first to regard its useful life terminated, if a suitable full-time governmental body were to be developed.

I think we must ultimately come to this development. There may be wisdom in planning and executing it now rather than waiting for the advent of the contests ahead and the scramble for expedients.

REPLY FROM MR. JOHN J. ROSCIA, VICE PRESIDENT AND GENERAL COUNSEL, NORTH AMERICAN AVIATION, INC., DATED APRIL 18, 1961

We have reviewed with interest the volumes furnished with your letter of March 18, 1961, relating to the AEC regulatory process including the Joint Committee staff study of such process. We appreciate the opportunity afforded us to comment on the various proposals for improving such process suggested by the staff, by the Commission, and by others.

As you request, we will direct our comments to the Commission's proposal for a Director of Regulation reporting directly to the Commission, which position, we understand, has been established by the Commission since receipt of your letter; the proposal for the creation of an agency separate from the Commission to assume the regulatory responsibility; your staff's proposal for the creation of a Licensing Board within the Commission; and the suggestions for changes in Commission procedures proffered by the staff and others.

Initially, we favor gradual not precipitant changes in the organizational structure of the Atomic Energy Commission. In terms of experience with the regulatory process, particularly in the matter of facility licenses, we do not believe the Commission's organizational structure has been sufficiently tested to justify the separation of functions proposed by the University of Michigan Law School study. In a field as advanced and changing as atomic energy, more time is required for the Commission to develop internally procedures and criteria to assure that the regulatory responsibility is exercised rationally, expeditiously, judiciously, and with proper regard for the Commission's development and promotion responsibilities.

The requirement of a hearing in uncontested licensing proceedings hinders, in our opinion, the development of a sound regulatory process. Lacking a contest, the hearing examiners have assumed the role of public defender and tended to draw out beyond reason the length and number of successive hearings. Yet we do not believe it follows that the safety of a nuclear reactor is proportionate to the number of hearings that are held.

The separate agency proposed by the Michigan study and to a lesser extent the separate but equal licensing board within the Commission, as proposed by the Committee's staff, might affirm public hearings as the instrument to evaluate reactor safety. Such evaluation, in all but contested proceedings, is best determined solely by technically qualified personnel, advised when there are questions they cannot resolve,

by those most knowledgeable in the field. This is now possible by strengthening the personnel and stature of the hazards staff, to which end the new Director of Regulation might well apply himself, and by properly utilizing the Advisory Committee on Reactor Safeguards without, we believe, undue burden on that body.

The Commission itself or a panel of Commissioners should, in our opinion, preside in contested licensing cases. As the Committee's staff points out in its excellent study, the Commission's safety responsibility cannot be separated from operation and development—the two are but aspects of a single undertaking: making atomic energy available for peaceful purposes. Who, but the Commission, the responsible agency, should be entrusted to make the proper evaluation. To say that it cannot do so, that the two functions are irreconcilable opositives, is to say that no judicial, executive, or legislative body can act or decide in the face of more than one interest. If the peaceful use of atomic energy is to become a reality, then responsibility for its development with adequate safeguards for the public must ultimately be assumed by one body and not diffused amid multiple agencies, boards, committees, examiners, consultants, and staffs.

We also suggest that the Commission should preside in uncontested proceedings if there is a conflict between the applicant and the licensing office of the Commission over the grant of a license or the conditions therefor and the applicant appeals. Such appeal proceedings before the Commission should, we believe, be noticed to the public, just as there should be public notice in all cases before issuance of licenses to construct or operate or an amendment to a license; thereby an opportunity to request a public hearing would be afforded all who could show a valid interest. We believe legislation requiring such prior notice should establish classes and criteria respecting who has such an interest. State and local governments, for example, obviously should be permitted to request a hearing.

We can appreciate, considering the present state of reactor technology and the magnitude of the risks involved, the view that there should be a mandatory hearing before issuance of a construction permit. If the law continues to require mandatory hearings it may also be well, to lessen the burden on the Commission, to having hearing examiners accept testimony and make recommendations, as in most Federal agencies. The decision, however, should be the Commissioners' not the examiner's, as is now usually the case. We agree with the Michigan study that any statutory provision for mandatory hearings should be limited to 3 to 5 years so that Congress may reconsider if the requirement has outlived its usefulness.

In view of the foregoing, we support the Commission's internal reorganization, separating the regulatory functions from the promotional and developmental functions at the General Manager level by creation of a Director of Regulation with authority over the regulatory staff, including field inspection personnel, and reporting directly to the Commission. We would hope that this reorganization would promote greater participation by the Commissioners in the regulatory function and would lead to greater emphasis on technical evaluation of license applications. If the promotional and regulating staffs of the Commission are kept sufficiently distinct and equal and both answerable directly to the Commission, we believe adequate division of the two functions can be achieved to assure the public that its

interests, which cannot be in safety alone, are paramount. Assuredly, the public's interest in safety is best entrusted to those trained to evaluate such matters, so long as the avenue of the due process and public hearing remains open to challenge the technical decision.

We would also like to add our support to the suggested changes in procedures listed on page 64 of the staff's study; and to the extent they suggest additional changes, the recommendations in part A of the summary of the Michigan study (vol. II at pp. 555 and 556). In particular, we believe that public hearings, if mandatory at all, should be so only before the issuance of a construction permit. Also, the Commissioners should preside over all uncontested and contested hearings to the extent time permits. In any event, even if hearing examiners are employed to take testimony and make recommendations, the decision should be the Commissioners'.

Time should be granted the Commission to see what improvement flows from its internal reorganization and the suggested procedural revisions before either a licensing board is set up within the agency or a separate regulatory agency established. Assuredly, both the staff's and the Michigan studies apprise the Commissioners of the deficiencies in the present processes. Particularly in the matter of the ever formalizing and lengthening hearing process, the Commissioners must realize they should not require more than the law necessitates and congressional intent indicates.

We are glad of this opportunity to express our views on so important a subject. We hope our comments may be of some small value to the Joint Committee's consideration.

Reply From Mr. R. L. Schacht, General Manager, Consumers Public Power District (Nebraska), Dated April 6, 1961

We appreciate the opportunity to comment on the Joint Committee's staff study of the Atomic Energy Commission regulatory process dated March 1961, and contained in two volumes. These comments include those of the staff of Consumers Public Power District, and of Mr. Wilson, our general counsel, to whom you sent a separate request for comments.

It would probably be most beneficial if our comments included those which are motivated primarily by the fact that we are in the position of an applicant for a license. Whenever you can simplify the documents which must be filed and hearings which must be held without interfering with protecting the safety of the public you will benefit and increase the willingness of electric utilities to enter this field. As reported by the University of Michigan Law School study, at page 465 of your volume II, the present arrangement is "a burdensome and time-consuming process for the staff of the regulatory agency and the applicants."

Our comments concerning the items on which you particularly requested our views, in the order set out in your letter, are as follows:

(1) We understand that the Atomic Energy Commission has put into effect its suggestion for creation of a Director of Regulation reporting directly to the Commission. This appears to be a very desirable and beneficial step to separate developmental and regulatory

activities at a staff level. However, the Commission itself apparently still has the ultimate authority in both the developmental and licensing activities and, moreover, this step does not appear to lessen the burden presently resting on the applicant for a license.

(2) The University of Michigan Law School study reproduced in your volume II recommends the creation of a separate agency to assume, among other things, the present safety regulatory responsibilities of the AEC. This would appear to us to be unnecessary at this time and to have serious disadvantages set out on pages 64 and 65 of volume I of your staff study. From the viewpoint of the licensee, we are particularly concerned with the fact that past experience has indicated that a "pure" safety agency may become so preoccupied with safety that necessary pioneering is eliminated.

(3) (*a*) We would not be opposed to the creation of an Atomic Safety and Licensing Board within the AEC and having final responsibility for all licenses, as suggested by the staff of the Joint Committee. Such an intermediate position, between more extreme alternatives, could provide a needed separation of promotion and licensing without depriving the new Board of needed technical consultation with the AEC staff. We particularly support and recommend the suggestion on page 73 of volume I that the Board should be permitted to issue an operating license without a hearing where there has already been a full hearing on the reactor prior to the commencement of the construction. We very much approve of the idea expressed on page 75 of volume I that the creation of this Board will not add any further layer to the hearing process but may cut down one layer by having the Board conduct the hearing.

(*b*) From our own standpoint the procedural changes suggested on page 64 of volume I of your staff study are just as important as the proposed separation of regulation and licensing. We particularly urge that public hearings be mandatory only before the issuance of a construction permit. Where there has been one hearing on a reactor with opportunity for everyone to be heard, and the reactor has been constructed as contemplated at the time of that hearing, a formal finding that it has been so constructed and that the safety determinations previously made have not changed should be enough without requiring the staff and the attorneys for the applicant to bear the burden of another hearing.

In summation, we believe that the overall regulatory process should provide the maximum amount of flexibility for the rapid development of the atomic energy industry, while continuing to protect the public health and safety and assure public confidence of the field. I would hope that the major problems associated with regulating the first plants will be significantly less for future generations of similar plants. Therefore, the organization needed to carry out these responsibilities today must be created in such a way that it can shift from the novel work of establishing new rules and evaluating a large number of new designs, to the future routine of review and regulation of systems using established technology. Congress and the executive branch of the Government can encourage development of atomic energy uses without lessening the safety protection to the public by eliminating hearings and reports that constitute only a formal "show" with no real consideration of the safety factors involved and having

such detailed safety considerations determined by experts where there has already been a hearing on the construction of the reactor and the permit for such construction has been followed.

REPLY FROM MR. A. SOMERVILLE, SUPERVISOR, PHYSICS DEPARTMENT, ISOTOPE LABORATORY, RESEARCH LABORATORIES, GENERAL MOTORS CORP., DATED MAY 12, 1961

I wish to thank you for your letter of March 18, with enclosures, inviting me to comment on the AEC regulatory processes. I found the information contained in volumes I and II very interesting and evidencing the careful consideration being given to these very important organizational problems. I was particularly pleased with the clarity of the material prepared by your own Joint Committee staff.

Those regulatory problems which are of greatest import to the people of the United States, our national progress, and national defense are concerned with production and utilization facilities and not with byproduct material facilities. Unfortunately, I am not qualified to offer expert advice in these areas since my training and experience has been most largely concerned with the utilization of byproduct material and not with production or utilization facilities. I will confine my comments to general observations and to comments in the byproduct materials area.

THE SEPARATION OF PROMOTIONAL AND REGULATORY FUNCTIONS

The University of Michigan report explores various ways of achieving various degrees of separation between promotional and regulatory functions. The American people and Congress desire the simultaneous optimization of both functions to achieve maximum utilization of and maximum progress in atomic energy consistent with public safety. This requires some degree of coordination which must be supplied by some Government body. If the promotional and regulatory funtions are completely separated, then the Joint Committee may have to participate in making basic decisions when questions arise which cannot be resolved by the two independent agencies.

THE SEPARATION OF RULEMAKING AND REGULATORY FUNCTIONS

In general, I do not believe that any attempt should be made to divide the rulemaking and regulatory functions. The two go hand in hand. One cannot properly write rules unless one is familiar with the regulating problems. Rules, in fact, are developed as a result of regulatory experience. Detailed rulemaking cannot be intelligently carried out without this regulatory experience.

THE ESTABLISHMENT OF PERMISSIBLE LEVELS

There is one area, however, where the above reasoning is not entirely applicable. This area is, perhaps, the most critical one of all and involves the basic determination of, or definition of, maximum safety through the establishment of permissible levels of radiation

exposure under routine operating conditions, and under emergency operating conditions. The function of establishing these limits has been carried out by the International Committee on Radiation Protection and the National Committee on Radiation Protection. Their recommendations have essentially been adopted by the Atomic Energy Commission. The establishment of these maximum permissible limits must naturally affect our national progress in atomic energy, but it does not involve detailed considerations similar to the considerations involved in licensing. Instead, it involves a broad understanding of both the effects of radiation on man and the tremendous potential of the atom for the good of mankind. These are the factors which must be carefully weighed. Once maximum permissible limits have been established, the remainder of the regulatory problem is, in all cases, a mechanical problem in either the legal or engineering sense. It is a problem of designing facilities which will permit operation within the maximum permissible limits established for these facilities, and of regulating and inspecting these facilities to make certain that they are properly designed and properly operated to be within the said maximum permissible limits in the day-to-day situation; and to guard against exceeding maximum permissible emergency limits in the event of a catastrophe.

THE USE OF AN EFFECTIVE REGISTRATION SYSTEM

While volumes I and II extensively consider the problems associated with the regulation of production and utilization facilities, little is said concerning byproduct material licensing problems. I was delighted to notice, however, that on page 54 of volume I the Joint Committee's staff recognized a need in this area and said:

> Registration would afford a more sure means of enforcing the Commission's regulations without creating undue burden on the user of the material. Consideration of this measure is especially appropriate at the present time in light of the evolving Federal-State program, still in its formative stage. The States are generally familiar and have more experience with a registration system.

At the present time the act authorizes the Commission to control the distribution of byproduct material through the issuance of specific and general licenses. Serious consideration should be given to the use of a registration mechanism which requires the user to register his intent to procure byproduct material and associated devices in lieu of licensing in many instances. This would considerably relieve the burden placed on the licensing staff although it might not have a measurable effect upon the inspection staff. It would also considerably reduce the amount of paperwork which the user would have to handle to present an adequate picture of his safety program and obtain a few millicuries of radioactive material.

It is obvious that sellers of radioactive material would have to be licensed. Such licenses would specify the form and amount of radioactive material permitted in shipments to unlicensed customers. In the case of devices, the license would also include a description of the device. Licensing of original vendors would permit the regulating agency to prevent the sale of devices of questionable design to unlicensed purchasers, and also prevent the sale of devices which might, because of their broad distribution, result in a radiation hazard to the general public even though the amounts involved in individual shipments were nominal.

I would suggest that the regulations might provide either for the use of a "terms and conditions of registration" statement to be signed by the prospective unlicensed buyer when he registers intent to procure byproduct material, or for the use of a sales contract which a licensed seller of radioactive material would have executed by the unlicensed purchaser, perhaps on behalf of a Government agency. Such a statement or contract would then be executed by all persons obtaining byproduct material without a license either when registering the material or when purchasing the material. The contract would have prescribed terms and conditions which the unlicensed purchaser would have to accept before procuring the byproduct material. The terms and conditions should be written to acquaint the buyer with existing rules and regulations and with particularly important safety problems. Specifically they might state that the buyer is thoroughly familiar with AEC and his State's rules and regulations, or safety recommendations, and has copies of these documents on his premises; that the buyer understands that it is his responsibility to keep currently informed concerning any new regulations or recommendations which might be issued by the Federal Government or his State government; that the buyer understands that he will be inspected by Federal and/or State inspectors, and that he must conduct his operations in a safe manner or be subject to prosecution; that the buyer understands that special precautions must be taken to make certain that individuals under 18 years of age are not exposed to radiations emitted from radioactive material, and that the material should not be used by, in the presence of, or in the vicinity of, individuals under 18 years of age unless a special icense is acquired for said use; that the buyer will make certain that the radioactive material being ordered will be received, unpacked, manipulated, and used under the direct supervision of personnel competent in radiation safety; that the disposition of the radioactive material can be accomplished only through a licensed organization or licensed radioactive materials disposal concern; and that the buyer will only ship radioactive material in accordance with regulations established by the Interstate Commerce Commission. The exact form of the contract should be established by the Division of Licensing and Regulation, and approved by the Commission.

I sincerely believe that a registration system can be made as effective as the present licensing system in preventing misuse of radioactive material. I believe also that most purchasers of radioactive material will feel more compelled to examine their own training and experience, or the training and experience of their personnel before they sign the prescribed contract and receive byproduct material.

SAFETY RECOMMENDATIONS VERSUS RULES AND REGULATIONS

I note many references in volumes I and II to the slow process of developing adequate rules and regulations. This is true with respect to rules and regulations concerning byproduct material. It is a natural result of overemphasis or reliance on detailed rules and regulations which are legally correct and precise. It is very difficult to develop technically correct rules and regulations in a new field since one never has all of the facts which he would like to have at the time the regulations are written. In the past the AEC has utilized some informal documents, but this practice seems to have been largely abandoned now.

A guide or recommendation containing minimum terms and conditions which will usually be required for a given type of licensing, or stating applicable safety procedures for a given type of use would yield greater safety. Such documents should clearly state that they are guides and not regulations. These documents would permit specific users to deviate from the recommendations in specific instances where the reasons for deviating from these procedures could be justified. A conscientious user of radioactive materials would not deviate from recommended safe practices unless he had good reasons associated with peculiarities particular to his operation. Rules and regulations on a given subject should not be written until adequate information is available to make certain that these regulations can be written correctly. I firmly believe that, in many instances, the use of recommendations with an appropriate preamble stating their importance might be advantageously used in place of detailed rulemaking to effectively promote the safe use of byproduct material.

A SUGGESTION TO PREVENT OVERRELIANCE ON RULES AND REGULATIONS

I would suggest that serious consideration be given to specifically authorizing the Atomic Energy Commission to issue recommendations concerning the minimum requirements for licensing and safety. The act in section 81, now authorizes the AEC to establish safety standards and authorizes the Commission to recall any material distributed to any licensee who is not equipped to observe, or who fails to observe such safety standards. This statement could be revised specifically to suggest that safety recommendations should be used in cases where regulations cannot properly be established, or where the safety recommendations may be more effective than detailed regulations. This should prevent overreliance on rules and regulations in cases where safety recommendations might actually be more appropriate.

Reply From Mr. Philip Sporn, President, American Electric Power Service Corp., Dated May 17, 1961

I appreciate the opportunity, in response to your letter of March 18, to comment on the AEC regulatory process.

My comments start with two general observations. First, I think it essential in the interest of the nuclear power industry, as well as the general public, that during the period of rapid development and change in nuclear technology, nuclear reactors be subject to thorough safety review by a competent Government agency. One of the primary objectives of any plan of organization and procedure during the period of development and change, ought to be to maintain, and improve if possible, the quality and effectiveness of this Government review.

Second, Government organization and procedure need to be based on a sound understanding of the techniques of safety review, including the inherent limitations in any review process. No safety review can ever be a substitute for constant attention to safety problems by the applicant and its contractors throughout the design, construction, and operation of a nuclear reactor; nor is it feasible, or desirable even

if it were feasible, for the Government agency to duplicate all of the detailed work and calculations which go into the design of a facility. While the reviewing agency may on occasions spot weaknesses in design or operating methods or be able to make constructive contributions of its own, its principal and most valuable contribution will be to assure that the applicant and its contractors have themselves given adequate attention to safety questions. To fulfill this role, both the staff personnel who get into the details of the project and the officials responsible for the ultimate judgment as to its safety need to be qualified to understand and evaluate the technical data with which they are dealing.

These general remarks are reflected in my detailed comment on the three studies referred to in your letter of March 18.

1. *AEC study.*—There is room, I believe, for improvement in current licensing procedures as described and recommended in the AEC study. There is also much to be commended. In particular the several studies of AEC's regulatory process confirm my impression that the technical staff of the Division of Licensing and Regulation has gone about its job in a sensible way. The technical staff does not try to duplicate the detailed design work and calculations of the reactor designer, but it does get far enough into the design, through information submitted by the applicant and through direct contact with the designer and operator, to ascertain whether the applicant and its contractors have adequately considered safety questions and to identify any important weaknesses in the plant design and operating procedures. The balance of the AEC review process depends heavily on the caliber of the work done at the staff level.

The work of the advisory committee on reactor safeguards has also been important, particularly in the influence which the committee has had on the quality of the work done both by the applicant and the AEC staff. There is need, however, to recognize the limitations of any part-time advisory group, however eminent its members. Such a group can be highly useful in evaluating novel or difficult technical problems and in the advice it can give on policy matters. So far as review of most individual projects is concerned, the ACRS cannot go deeply into technical detail and is necessarily dependent on the more detailed review performed by the AEC staff and on identification by the latter of safety problems. I think there is need for greater selectivity in matters referred to the ACRS than exists at present and for a corresponding redefinition of the responsibilities of the ACRS.

I am not impressed with the value of the further proceedings which follow AEC staff and ACRS review, involving formal public hearings and decision by a hearing examiner. Without getting into the question whether AEC has gone beyond the mandatory hearing requirements of the present law, I question the utility of the present hearing procedure.

In a typical case, by the time an application for a construction permit or operating license reaches the stage of a public hearing, the applicant has either satisfied both the AEC staff and the ACRS as to the safety of the project as submitted or has made such changes in plant design or operation as these two groups consider necessary. There is little likelihood that a substantive contribution to the safety

of the project will come from a third review before a hearing examiner, and except in contested cases, I see no substantive value in the formal hearing procedure commensurate with the burden to the AEC staff and the applicant or with the length of time added to licensing actions by the hearing requirement.

While questioning the value of the formal hearing process in uncontested cases from the standpoint of its contribution to the ultimate safety of the project, I accept the judgment of all three studies referred to in your letter of March 18 that a public hearing at the construction permit stage is worthwhole. The consensus seems to be that such a hearing has value from the standpoint of public understanding and confidence at the time when public interest in a nuclear powerplant and its location is likely to be greatest. If this result can be aided by a public hearing, the extra burden to the AEC staff and the applicant is a small matter.

But when a nuclear powerplant reaches the operating stage the potential benefits of a public hearing are smaller and the time factor in securing operating licenses and amendments is likely to be more acute. In particular, speed and flexibility will be required in the licensing process for handling license amendments dealing with changes in facilities and operating procedures. This will become increasingly apparent, I believe, as additional reactors are licensed for operation.

Creation by AEC of a new Director of Regulation, reporting directly to the Commission, seems to me all to the good. I believe it is possible for the Commission to do a better job than it has done to date in getting out regulations and policies of general applicability, and I understand that improvement in this area will be one of the principal responsibilities of the Director of Regulation.

2. *University of Michigan Law School study.*—I do not favor transfer at this time of AEC's regulatory function to a separate agency. Several aspects of this proposal disturb me, including the problem of staffing the new agency with competent technical personnel. But the controlling consideration, in my view, is that a new agency would inevitably lose in some degree the close contact which AEC's technical staff now has with the large Government reactor program, including both the AEC and military programs. This contact, which occurs naturally within an agency with broad responsibilities for reactor development, seems to me essential if the personnel responsible for safety review are to keep up-to-date on technical developments and on the practical problems of designing and operating reactors. Even if a new agency were to be given formal licensing responsibility for Government as well as private projects, deterioration is likely to occur in the ease, frequency, and closeness of contact which the Division of Licensing and Regulation now has with technical developments and technical personnel in AEC and other Government facilities.

I have, of course, considered the main arguments in favor of a separate agency, i.e., the workload imposed on the Commission by its many responsibilities, possible conflicts between the Commission's regulatory and promotional functions, and the question whether the Commission's sensitivity to its dual responsibilities has resulted in overly complicated and burdensome licensing procedure. While all

of these considerations carry some weight, they seem to me less important than the disadvantages of establishing a new agency. Also, the proposals by the Joint Committee staff, discussed below, go a long way in meeting the problems at which the proposal for a separate agency is aimed.

3. *Joint Committee staff study.*—Creation of a Safety and Licensing Board within AEC, as proposed by the Joint Committee staff study, seems to me to have advantages over the present AEC organization and system of review. Final decision on licensing proceedings would be made by a Board at least two of whose three members would be technically qualified to evaluate safety questions; the Board would be a full-time body which could go as deeply as it thought necessary into technical questions; and it could relieve the ACRS of much of the routine matters presently submitted to the ACRS.

I wish to point out certain aspects of the staff proposal which I regard as particularly important if the objectives of the staff proposal are to be achieved:

(*a*) Under the staff proposal, the Board is to have licensing jurisdiction over AEC and other Government civilian reactor projects as well as over private projects. It would also have an advisory role on military reactor projects. I think these are a necessary and crucial part of the Board's functions if it is to stay adequately abreast of nuclear reactor technology. I see no reason also, from the standpoint of protecting the public health and safety, why nonmilitary Government reactor projects should be treated differently than private projects.

(*b*) While the Commission would retain authority to issue rules and regulations, the Board would make final decisions on individual licensing proceedings. This division of responsibility will free the Commission from the burden of reviewing individual cases. It also largely eliminates the problem of possible conflict between the Commission's promotional and regulatory interests in individual projects. At the same time it leaves the Commission, as I thing desirable, with the responsibility for drawing the proper balance at a policy level between absolute safety and the advancement of nuclear technology. Decisionmaking and rulemaking can never, however, be completely separable, and the proposed division of responsibility between the Board and the Commission will work out as intended only to the degree that the Commission acts vigorously in getting out rules and policies of general applicability.

(*c*) The Board should take over much of the job now performed by that ACRS in reviewing individual projects and in checking on the work of the applicant and AEC's technical staff. This would leave the ACRS free to consider matters of special importance referred to it by the Division of Licensing and Regulation or by the Board itself.

All of these points are made in the Joint Committee staff study. I mention them only to emphasize the importance I attach to them.

Reply From Mr. Harold E. Thayer, President, Mallinckrodt Chemical Works, Dated May 15, 1961

We appreciate the opportunity to comment on the proposed improvements in the Atomic Energy Commission regulatory processes.

It is understandable that the functions and activities of the Commission have multiplied and increased in complexity throughout the years. In spite of this complexity, the Commission has discharged its obligations well. It is commendable that your committee has undertaken to conduct its study, and consider recommendations of others so that desirable changes can be recommended to continue the steady, yet safe, development of peaceful uses of atomic energy.

In my opinion, based on the present level of development in the commercial reactor field and that envisioned in the next 10 years, there is not now a need for creation of a new completely independent licensing agency. Retaining a licensing board within the framework of the AEC with as much access as possible to its capable technical staff and, at the same time, achieving maximum independence of action from promotional pressures would seem to present the most desirable approach. As pointed out in the staff study, a common national ogal must be served—making atomic energy available for peaceful purposes. At a time when regulatory policies are still in process of formulation, it would seem that this national goal could best be served by a balance of responsibilities—creation of a Board for regulation and licensing within the Commission with access to experienced technical staffs, with independence in licensing activity, and with overall policy coordination.

We realize that considerable effort would be required to implement such a philosophic concept in order to achieve at one time a single source of responsibility for development and safety in the area of atomic energy, freedom of the licensing Board within the AEC from conflicting pressures, and availability to such a licensing board of the knowledge and skills of staff.

It appears that the plan for a licensing Board within the AEC could provide a desirable intermediate step to possible future attainment of a greater separation of the adjudicatory and rulemaking functions suggested by the second Hoover Commission.

Your committee, the Commission, and the University of Michigan Law School are to be commended for the fine studies made with a view toward improving regulatory processes in the Atomic Energy Commission. We have valued the opportunity to review their studies and offer our comments.

Reply From Arvin E. Upton, Esq., Law Firm of LeBoeuf, Lamb & Leiby, Dated April 21, 1961

I am writing in response to your letter of March 18, 1961 which invited my comments on the two-volume study of the AEC regulatory process by the Joint Committee staff.

For over a year I have thought that some separation of the present regulatory functions of the AEC is needed. Probably the dangers resulting from a conflict of regulatory and other functions have been

exaggerated. Nevertheless, there exists the possibility of conflict, as well as the possibility of misinterpretation of motives by the opponents of particular actions by the Commissioners. Moreover, one doubts that the Commissioners can, commensurate with their other burdens, and do, exercise effective safety review in particular cases already analyzed at various levels before consideration by them.

In your letter you asked for views on four topics which I shall discuss in the order you listed.

AEC SUGGESTIONS, ACTIONS, AND PROPOSALS

These suggestions, actions, and proposals appear on pages 399–400 of volume II of the study. The following comments, briefer than the suggestions deserve, refer to the 10 numbered items being considered, already adopted or recommended:

Creation of Director of Regulation.—This change is desirable to facilitate the processing of regulations but will not otherwise affect the problems of structure treated in the staff study.

Transfer of inspection personnel.—Here too the improvement will be mainly in administrative efficiency.

Clarification of authority of divisions.—Desirable but not decisive of the issues treated in the study.

Further development of regulations.—Also desirable but not decisive.

Definition of roles.—Also desirable but not decisive.

Establishment of Office of Director of Regulation by statute.—Appropriate but not important.

Appointment of motions commissioners.—Not presently needed.

Modification of statutory functions of Inspection Division.—Appropriate but not important.

Elimination of mandatory hearing requirement.—The "prescribed conditions" (see vol. II, pp. 580–581) make this proposed change more apparent than real. I shall comment later in this letter on mandatory hearings.

Statutory authority for provisional operating licenses.—Probably needed as a matter of law if "provisional" operating licenses are to continue to be issued but it may be questioned whether the term and the practice are not more confusing than useful.

In general, the Commission's suggestions fall into two categories: (1) "Clean-up" measures which clarify legal authority and (2) measures which speed up procedures. Neither singly nor cumulatively do these suggestions solve the problems of "conflict of function" and of repetitive nonexpert safety reviews.

CREATION OF A SEPARATE AGENCY

The University of Michigan study is thorough and scholarly and the conclusion reached, to create a separate regulatory agency, is logically difficult to contest. Nonetheless, it seems to me too soon to set up such an agency. In this regard I concur in the reasoning set forth in volume I of the staff study. It would seem, however, that the organization proposed by the committee staff is a separate agency in everything but name.

(The University of Michigan study also recommends the establishment of a single administrator in lieu of the present Commission for the performance of the nonregulatory activities of the Commission. In view of the diversified nature of demands on Commissioners' time, this conclusion seems questionable.)

STAFF PROPOSAL FOR SAFETY AND LICENSING BOARD

Constitution of Board

I agree with most of the details specified under this heading. However, I would prefer to see the Board appointed by the Commission. If men of stature and competence are chosen—and unless such men can be found the board scheme is useless—there need be no fear about their independence of viewpoint. In view of the probable workload, the board should have seven members rather than three. Panels could then be set up to pass on special questions or cases. At least one member of the Board should be a health physicist, one a nuclear engineer and one should be a lawyer.

Any purpose served by top Commission review of Board decisions would be equally well served or better served by the court review permitted by law. Any scheme for such top Commission review, however narrow, might soon revive the problems which the creation of the Board would be expected to resolve.

Board licensing functions

The conclusions of the staff study on this point are not as clear as they might be. One approach would be to give the Board only those adjudicatory functions connected with hearings. Under that approach the Board would act in lieu of the present hearing examiners and also in lieu of the Commissioners as final deciders in cases involving hearings. The other approach—which is seemingly the one adopted in the study—is to make the Board the final decider on all licenses (including suspensions, revocations or modifications thereof) whether or not a hearing is involved. If this is the intended conclusion of the study, I have some doubts about it. In the first place, the workload for the Board may be too great. In the second place, I question whether any asserted conflict in the Commissioners' functions is strong enough to be weighed where the safety issue concerned is not important enough to involve a hearing. On balance, I would be inclined to limit the Board's functions at the outset to cases where hearings are involved, with a proviso that Board decisions shall be binding up future actions by the Commission's Licensing Division. perhaps at a later period the Board could be given authority over all licensing but before this is done the facets of the tripartite relationship of Commissioners-AEC Staff-Board should be further explored.

In order to encourage compliance with the Board decisions and for other reasons I would, however, give the Board the right to order a hearing on its own motion where it judged an action by the AEC Licensing Division to conflict with Board decisions or to present a novel and substantial safety question.

The granting of operator licenses is similar to "grading examinations" and should remain the responsibility of the Commission's Licensing Division.

The Board's functions as to rulemaking

Any opinion on this issue must be tentative; there are disadvantages to every choice. I would favor the continuation of rulemaking functions in the Commission with the qualification that the comments of the Board and, except as to procedural rules of the Advisory Committee on Reactor Safeguards (ACRS) must be sought in each instance. The Board (but not the ACRS) should also have the right to initiate rules.

The Board's relation to Commission and Commission staff

If the Board is given authority over all licensing, the resultant workload will necessitate either the employment of a new staff or use of the present AEC Licensing Division personnel. The former alternative seems economically undesirable, while the latter raises potentially serious questions of conflict of loyalties as to Licensing Division personnel who would be acting as advocates (for the Commission) before the Board and also as "servants" of the Board in the exercise of licensing authority. No such conflict would exist if the Board is only a hearing board.

Although cooperation and informal consultation are admirable objectives from the standpoint of efficiency, it is hard to see how they can be encouraged without prejudicing applicants or intervenors.

Review of "programs of safety research" would be more suitable for the ACRS than for the Board.

The Board's relation to the ACRS

Both the staff study and the Commission report advocate continued review by the ACRS of individual cases. In contrast, I would designate the following functions for ACRS:

(*a*) Required comment on all proposed AEC regulations except procedural ones.

(*b*) Solicited or unsolicited advice to the Commission (and the Board) on general matters of safety about facility design, use of nuclear materials and siting.

(*c*) In individual cases involving hearings, advice only when requested by the Board.

(*d*) In other individual cases advice only when requested by the Commission.

These conclusions would limit the present ACRS functions but this limitation is justified if the following assumptions are correct; that the Board will include experts as competent as members of the ACRS; and that most facility cases, as well as other cases raising novel and substantial safety questions, will be set down for a hearing.

ACRS deliberations are "off the record"; and the written report, although important and often conclusive "evidence" in an administrative proceeding, cannot be tested and evaluated through the customary cross-examination. The informality of ACRS proceedings should be retained. However, oral examination on a report made in connection with a hearing should be permitted.

The Board's relation to hearing examiners

I would favor discontinuing the use of hearing examiners (except possibly to take testimony) in recommending or making decisions. It would be preferable to have a larger Board and to use the panel system if and to the extent needed. Under current AEC practice, and

probably necessarily, hearing examiners, because of their isolation and lack of technical expertise, are largely unable, despite their most conscientious efforts, to make a positive contribution to the essential safety reviews of nuclear projects.

Hearing procedure

As a matter of history, I was cochairman of the University of Michigan group which in 1956 recommended that public hearings be held in all facility license cases. All of us in that group thought that such a procedure would help to establish public confidence. We assumed, however, that in uncontested cases the hearing would be on stipulation and that a hearing officer would not attempt to "defend the public."

I am still of the opinion that one hearing, at whatever stage seems to the Board appropriate, should be required as a matter of law on applications for licenses for "demonstration" facilities (under section 104b of the Atomic Energy Act) and for testing reactors (under section 104c). On this point, current difficulties are not created by the statutory requirement but by the complicated way in which it has been administered.

Public confidence, and the public interest, it now appears, will be best served if final safety decisions are made by technically qualified persons and the basis for those decisions explained in nontechnical language. The public cannot be expected to understand or evaluate the detailed testimony on site factors and reactor design hitherto presented at hearings, and the "public" should not have the responsibility for exercising a meaningless and uninformed right to intervene.

As I now see it, the following hearing principles and procedures would be desirable:

(1) One mandatory hearing would be held on the cited classes of facility licenses; the state of completion of design of the proposed facility, and not site criteria alone, should determine the time of this hearing. Amendments to a construction permit or license should not be subject to the mandatory hearing requirement. (Other comments on changes are set forth below.) Prior to a hearing, a nontechnical summary of its issues and implications should be publicly distributed.

(2) Testimony at a hearing in uncontested cases should normally be written and exchanged in advance but oral cross-examination should be permitted. Members of the Board could also conduct oral examination but in vew of their technical background it could be assumed that such examination would be limited to eliciting relevant issues not covered in the testimony.

(3) Brief and relatively nontechnical summaries of all testimony should be prepared by the parties for the benefit of the press and the public, and the Board, after hearing and decision, should prepare and publish (but not as a part of the decision) a similarly brief and relatively nontechnical summary which fixes the decision in relation to nuclear health and safety generally.

(4) Informal and "round table" conferences should probably be avoided, however attractive they may be to technical witnesses, if a suitable record for possible court review is to be made.

(5) If the technically qualified Board needs the help of the AEC staff (I would entirely exclude any reference to the ACRS in this situation) in "evaluating testimony," it should be on the record.

(6) The technique of prehearing conference should be freely utilized by the Board.

Decisions of the Board

I agree with the implication of the study that the Board should not supervise the details of facility construction or operation.

Operating licenses

As already indicated, the time of the mandatory hearing should depend upon the status of reactor design; in most cases, however, the hearing would be held before the issuance of an operating license is considered.

Changes

Only those factors basic in facility operation which are of "special significance for safety" should be included in the technical specifications. No changes should be made in those specifications without Board approval, the matter of an additional hearing being left to the discretion of the Board. Other changes should be handled by the Commission (i.e., the AEC Licensing Division by delegated authority) without reference to the Board except for its information unless either the Board or that Division decides that a novel and substantial question of safety is involved in the change.

It may be observed that the handling of changes could be simplified if the Commission issued a more precise definition of the "facility" that is subject to regulation. In the case of a nuclear powerplant, for example, it will be obvious that certain portions of the conventional generating plant should not be subject to control as to nuclear safety. But what portions?

Judicial review

I have no disagreement with this portion of the study. It should be noted, however, that the question of intervenors and their rights may not have been completely analyzed.

Courts and administrative agencies are quite liberal in allowing interventions and it is sometimes difficult to know who does not enjoy the required standing to intervene. Under the Administrative Procedure Act any intervenor may force a hearing. It is, of course, the rights of the public to know and to "call to account" that are involved. These rights should be limited with great caution but in view of the difficulties of their effective assertion in AEC proceedings—and the expense and effort involved in hearings otherwise unnecessary—I would be inclined to give the Board discretion to refuse to grant a hearing at the instance of intervenors in some instances. (Statutory authority would of course be needed for such Board discretion.) No new limitation should be placed, however, on the right to intervene, and all intervenors should have the right to state their views for the record of the proceeding.

Proceedings in minor cases

As already indicated, I would not favor continued use of hearing examiners. When hearings are needed, either the Board or a panel of the Board should hold the hearing. In some minor cases there should possibly be no right to a hearing; instead, the Board should be given discretion in the matter.

PROCEDURAL CHANGES SUGGESTED IN STAFF STUDY

My views on some of these proposals (vol. I, p. 64), especially those numbered (4), (5), (6) and (7), have already been set forth, explicitly or implicitly, in this letter. Views on the other proposals follow:

(1) Rules to guide prospective applicants would be helpful but not vital.

(2) Whether or not one agrees that standards on sites, design, etc., can be formulated depends upon the definition of "as soon as practicable." Perhaps guidelines can be developed soon but it is questionable whether "off-the-rack" measurements can be applied to a presently "custom-tailored" industry.

(3) Press releases might be helpful but only if they are in the form of brief and relatively nontechnical summaries of staff hazards analyses and ACRS reports; verbatim reproduction would inform only those already informed.

OTHER IMPROVEMENTS

If it should be decided to retain the present functions of the ACRS, its purpose could be clarified and its procedure sharpened. As now constituted, the ACRS should advise the Commission on whether a plant is safe enough, and not insist on safety features to make it safer than "safe enough." It should not try to "design" a plant. ACRS reports should be more precise and less enigmatic. It is often difficult for applicants to decide, after meeting with the ACRS and studying its report, whether design features mentioned by it are considered by it to be "necessary," or only "desirable." As a result, the applicant may add features which are not actually needed and which increase already heavy plant costs.

The only other improvement which occurs to me and which is not advocated at some point either in the staff study or in the comments already made in this letter, is to drop the concept of "provisional" construction permits and licenses. Since both types of authorization must by nature be provisional until facilities subject to section 103 licenses are to be constructed, nothing is added by using the terms. Necessary controls of the continuing details of construction and operation can be maintained by the AEC Licensing Division. The Board would be kept informed of this continuing supervision and could order a supplemental hearing whenever it saw fit to do so.

Perhaps this would be a good place to restate, in an integrated, positive way, rather than through unrelated concurring or negative comments, my conception of how the nuclear regulatory process should operate:

All nuclear facilities and all uses of nuclear materials would remain subject to license (except of course to the extent controls are transferred to individual States).

As to nuclear materials not used in licensed facilities, licenses would continue to be issued by the AEC Licensing Division, and hearings (before a new Licensing Board established within the AEC) would be held only upon referral by the Licensing Division or upon the Board's own motion, in each instance before the license became final. Intervention would be permitted before any such license became final

but a hearing would be discretionary with the Board. If no hearing resulted, neither the Board nor the ACRS would be involved in these licenses or changes therein. As to revocation or suspension of a license, however, the licensee could request a hearing as a matter of right.

The above-described guidelines would also apply to facilities other than power and test reactors unless the Commission determined, as to a particular type of facility, that it posed hazards sufficiently important to warrant treatment of that type of facility in the same way as power and testing reactors are treated.

As to such power and testing reactors, one mandatory hearing would be held until such time as proceedings under section 103 licenses are instituted. The time for such hearing would vary in different cases. Control over the case after hearing would normally be exercised by the AEC Licensing Division without re-referral to the Board. Intervention would of course be freely permitted. No referral to the ACRS would be made, however, unless the Board decided to seek its advice. Subject to court review, the Board's decision would be final. After an initial hearing on such power and testing reactors, the same procedure would apply to a hearing requested or called, except that the Board would have discretion to limit the extent of participation by intervenors.

At a contested hearing, testimony would be oral but at a noncontested hearing usually in written form and prepared and exchanged in advance. A hearing, even if mandatory, in a noncontested facility case should normally be completed very quickly.

The ACRS for the most part would be reserved for the role of adviser to the Commission and the Board on general questions of safety and health. In individual cases, where no hearing was held, neither the ACRS nor the Board would be involved.

GENERAL OBSERVATIONS

The staff study is readable, thoughtful, and persuasive. Although my opinions differ with it on numerous details, the only serious doubt I have about it is the recommendation to transfer the entire adjudicatory function to the new Board. I would vest the Board with authority more gradually.

Any changes proposed by anyone in AEC organization or procedures must unequivocally respect and foster public health and safety. Better no shortcuts than shortcuts which rightly or wrongly might later be accused of contributing to a serious nuclear incident. Applicants for licenses would be very foolish to oppose the most thorough and painstaking analyses of the safety aspects of their activities. All such analyses are necessary to build a record of safety which will support the orderly evolution of a nuclear industry without the loss of public confidence. The question is: how much analysis and by whom? Presently, there are at least four reviews, two of which are by persons or groups not necessarily technically qualified to make such review. It is idle to say that these nontechnical reviews are necessary for "due process" unless the Administrative Procedure Act and the Second Hoover Commission have acquired a monopoly on definitions of procedural due process. It would seem to be sufficient,

and entirely consistent with the public interest, to prescribe (i) one review (by the AEC's Hazards Evaluation Branch and its consultants) subject to Board scrutiny when no novel and significant safety questions are involved; (ii) two reviews (by the Hazards Evaluation Branch and by the Board) when such questions or certain facilities are involved; and (iii) three reviews when the Board decides that ACRS advice is needed.

I have not had time to test either the staff study or this letter against the recommendations in the Landis report. Offhand, I see no inconsistency as to either.

I appreciate very much the opportunity to make these comments. Those of us who represent private clients before the Commission clearly have a professional obligation to the Commission, and to your committee, to aid in developing sound procedures for this new regulatory agency and the new industry being regulated. Since this responsibility is a professional one, I should perhaps note that my opinions are entirely my own, although I hope and believe they will be shared by others.

Some of the statements in this letter may be rather cryptic since it is obviously unnecessary to supply "background" for the Joint Committee or its staff. Nor have I attempted to identify all recommendations which would necessitate statutory changes. Please let me know if I can expand or clarify this letter or otherwise assist you in further analysis of the matters treated in the staff study.

Reply From Mr. Clark C. Vogel, the Martin Co., Dated May 26, 1961

This letter is in response to your invitation to submit comments on the Joint Committee's staff study, "Improving the AEC Regulatory Process."

I am in general agreement with the staff's conclusions and recommendations. The study and the material in the accompanying appendix so thoroughly canvass and analyze the problems involved that, quite frankly, it is difficult to contribute anything further that would be helpful. However, I do have two suggestions which the Joint Committee may wish to consider:

1. I feel that too little attention has been devoted to the prehearing phase of the regulatory process, particularly the AEC staff review phase. At this stage of the process, erroneous staff interpretations of the act on regulations, the insistence upon meeting more onerous requirements than may be necessary, or delay in resolving intermediate problems can be costly and time consuming and adversely affect the overall regulatory scheme. At the present time, where disagreement with the staff is not clearly frivolous, there is no available mechanism whereby an applicant can appeal to a higher level to assure that staff action is consistent with policy or does not extend beyond what is reasonably necessary. Such an intermediate appeal procedure, which could be informal, would be effective in offsetting the natural inclination of the staff to be overly cautious and conservative.

2. The study recognizes that the problems inherent in the AEC regulatory process cannot be solved at one stroke. As the regulatory workload increases over the next decade there will be need constantly for further changes and refinements. Even with respect to standards, criteria, and procedures established now, there will be continuing problems in the application thereof in particular instances, and a continuous need for critical observation of the overall process in operation. Accordingly, the Joint Committee may wish to consider the creation of an Advisory Committee on the Regulatory Process, with full access to Commission regulatory records and personnel and to report to the Joint Committee and the Commission, annually or at more frequent intervals, on the results of its continuing study and examination.

REPLY FROM CHARLES H. WEAVER, VICE PRESIDENT, WESTINGHOUSE ELECTRIC CORP., DATED MAY 12, 1961

We have reviewed the material enclosed with your letter of March 18. Before commenting on the four specific topics in that letter, our analysis indicates that there are really three basic points. They are, in increasing order of seriousness, in my opinion: (1) whether there is, indeed, a lack of public confidence because of the operational-promotional-regulatory roles of the Commission; (2) whether the existing procedure or any proposed procedure would be more likely to assure that the grant of a proposed license reflects the best reasonably available collective safety judgment; and (3) which procedure, on balance, will be the some simple, least formalistic, and involving a minimum of redtape.

The first problem is, we submit, largely academic in view of the opportunities now available and those additional opportunities, short of creation of a separate agency, which have been proposed for safeguarding the public interest. The second and third problems are more practical and our comments are more directly pertinent to them.

1. Although the recent creation in the AEC of the Office of Director of Regulation will probably make for greater familiarity of the Commissioners with regulatory problems and might tend to produce greater public confidence in the AEC (if there is, indeed, a lack of such confidence) it, in our opinion, will do but little to meet either of the remaining two practical "problems" as we see them. Two of the procedural suggestions of the Commission (following p. 399 of vol. II) in particular, i.e., actual publication of the staff safety analysis (or a well written version slanted for a larger public audience) and the ACRS report well prior to hearing would also enhance the opportunity for public participation. Other means, also suggested, such as greater circulation to local authorities, publication in local newspapers and the actual holding of the hearing in the community nearest the location of the proposed reactor might also help. We subscribe to the suggestion that there be only one mandatory hearing, i.e., at the time the initial construction permit is granted. A parallel requirement that, at least for the time being, the ACRS report at that time be the only ACRS advice required also appears sound. ACRS

advice at subsequent stages should be a matter for the staff to request when its judgment so indicates.

(2) We are opposed to the creation of a separate agency at this time, generally for the reasons set forth in the JCAE staff report as disadvantages. In addition, however, we feel there has been no demonstration of a strong enough need to justify such a step with the inevitable effects of Parkinson's law. Should several years of experience and a more mature industry indicate reconsideration, reorganization would be relatively simple. It almost goes without saying that the installation of a completely separate regulatory agency would tend toward the creation of a standard of "absolute safety," an inherently impossible standard to meet if there is to be achievement of our goal of economic nuclear power.

(3) The answer to the second practical "problem," as we see it, may well lie in filling the role of the hearing examiner with a person or persons technically skilled for making safety judgments. Filling that role by a Board composed of two technical people and an administrative (probably legal) counterbalance is a better alternative than merely having a "technical" instead of "legal" hearing examiner. This is particularly so, since the Board approach gives a stronger (although perhaps unnecessary) basis for public confidence. In short, we are in accord with the basic staff recommendation. We believe, however, that the Board or one of its members should preside at hearings and that there be no subsidiary role of hearing examiner, at least until the hearing volume warrants. However, the Board should not, even implicitly, via the decision process undertake supervision of the details of construction or operation. We also think that further study should be given to limiting the Board's function to power and test reactor facilities in the absence of a public hearing, leaving the procedure for authorizing research facility and materials licenses as it now stands.

As far as the procedures set forth on page 64 are concerned:

(1) The issuance of rules for the guidance of prospective applicants would be helpful. Perhaps a form could be prepared. The Commission has already taken an important step in this connection by proposing a rule dealing with change procedures and setting forth a suggested format for technical specifications (at p. 3030 of the Federal Register for Apr. 8, 1961.)

(2) We doubt whether there is yet enough experience to establish substantive standards such as those suggested. Unfortunately, standards have a way of becoming inexorable, a situation which should not exist in this field where more imagination and further research and development are so necessary to achieve the ultimate goal of economic nuclear power.

(3) We believe, as noted previously, that a good deal more can be done in publicizing the safety problems in advance of hearing.

(4) We believe that there should only be one mandatory reference to the ACRS, and that, again, prior to the issuance of the construction permit when the site and general features of the plant are to be considered. This is the time when public participation may be warranted, not later on in a project when detailed problems arise which can only be understood and handled by experts. We also believe that the mandatory reference need not be a matter of law, but a

matter of present policy which may be changed during the next 3–5 years. Perhaps the ACRS could then return to a purely advisory status.

(5) We agree that there should be no more than one mandatory hearing, and that hearing before the issuance of a construction permit.

(6) Although informal hearings are desirable, they should not take the place of a record, showing all the significant reasons for a decision, so that a well-grounded appeal, if necessary, can be taken. We do have the feeling, however, that there has been too much formality to date. The degree of use of written testimony should be optional with the particular parties concerned.

(7) Clarification of the roles of the various functions has been well set forth in the JCAE staff study. If this could be done (and I am not sure it would be possible) in short form it would be helpful. However, it must be done if a Licensing Board is to be established.

(4) Although most of the following points raised by your fourth topic are either express or implicit in what I have already said, I will amplify as follows:

(*a*) *ACRS.*—We recommend that the ACRS be retained, but, by law, as an Advisory Committee which may be called on by the staff or the Board for advice. Although there should be no statutory requirement for reference to the ACRS, we believe that, for the next few years, the AEC staff, as a matter of policy, should request ACRS advice prior to the hearing on the construction permit and that the ACRS report be publicized. There should also be an opportunity at the hearing for oral examination on the ACRS report.

(*b*) *Appeal to AEC.*—We believe there should be no appeal from the Board to the Commission on any matter relating to safety (as distinguished from other issues for decision) but that any party aggrieved because of an adverse safety conclusion should be relegated to his remedy in court. The Board, of course, must be guided by rules of the Commission into which must be built the authority and direction for the Board to consider other policy factors which must be weighed in making the ultimate safety judgment.

(*c*) *Rulemaking.*—Rulemaking proceedings should be administered by the Board but initiated either by the AEC or the Board. Private individuals should also be permitted to initiate rulemaking proceedings, but their requests should be directed to the Board rather than the Commission. Final adoption of a rule, however, should be the prerogative of the Commission, not the Board.

(*d*) *Board as final licensing authority.*—We believe that, if a Board is set up within the Commission, the Board should be assigned the existing responsibility of the Commission to authorize the Division of Licensing and Regulation to issue licenses (but only insofar as power and testing reactors are concerned) and to determine the procedures and conditions under which the grant of license is to be made. At the same time we recognize that difficulties of economy or conflict might well arise out of the staffing which would be necessary should the Board replace the Commission's function in this respect.

I am sure you will recognize that our views may change as a result of further analysis, experience, and discussions. I hope, however, they will be helpful for the forthcoming hearing.

Reply From Mr. William Webster, President, Yankee Atomic Electric Co., Dated May 9, 1961

The following comments are in response to your letter of March 18, which enclosed a copy of the Joint Committee's staff study on the AEC regulatory process. In large measure the views expressed here are those of Roger J. Coe and D. G. Allen, vice president and counsel for Yankee, who have been the individuals in our organization in closest contact with AEC licensing procedures.

The staff study, and the parallel studies prepared by the Commission's staff and the University of Michigan research project, contain a full analysis of the development of AEC regulatory procedures to date, and disclose a number of specific areas where present practice could be improved. We are in agreement with the great majority of these specific suggestions, and believe that an important result of the current discussions before the Joint Committee will be to give impetus and direction to changes initiated by the Commission itself.

In view of the full discussion of these matters that is already before the committee, we have limited our comments to matters which we believe are of fundamental importance and which may therefore deserve additional emphasis.

(1) As a general proposition, we believe that matters of administrative practice and procedure should be developed on a continuing basis by the agency itself, and should not be codified in detail by legislation. However, many of the specific criticisms of current AEC procedures are traceable to ambiguities in the procedural sections of the Atomic Energy Act, and we believe that these may usefully be reexamined in the light of accumulated experience in licensing actions to date.

In particular, we suggest that much of the AEC's tendency to overjudicialize its procedure is traceable, in the case of power and test reactors, to ambiguities in sections 182(b) and 189(a), as amended in 1957. These sections require the Advisory Committee on Reactor Safeguards to review "each application" for a major facility license, and make mandatory a public hearing on each such "application." While the general congressional intent is clear, in practice a license application is subject to periodic amendment, during construction as design details are firmed up or modified, and during operation as design changes or modifications of operating procedures become desirable. It seems to us inconceivable that Congress should have intended to require a formal ACRS review and a public hearing on each successive amendment to the license application, however inconsequential the substantive matters involved. However, the language of these sections provides no guide to the Commission as to the number of formal proceedings to be held on an individual project, and no affirmative basis for treating an inconsequential amendment to the license application in more summary fashion than an amendment proposing a change in the basic concept of the reactor.

A closely related problem is the concept of the technical specifications of a facility which, under section 182(a), are to be incorporated as a part of any license issued. Again, the basic purpose is clear, in seeking to define the precise characteristics of the facility being licensed. However, the act appears to deal with the technical speci-

fications as a static, unchanging set of numbers, and makes no provision for their subsequent revision to reflect changes in reactor design and operating procedures that may later become desirable in the light of actual experience. The problem of devising suitable change procedures is further complicated when the provisions of section 182(a) are read in parallel with the mandatory hearing requirement of section 189(a) and the requirement of section 185 that a construction permit be issued before any modification of a licensed reactor is made.

We believe that revision of these sections can now be made in the light of actual experience with the licensing process to date. Our suggestions in this regard are as follows:

(*a*) A public hearing is desirable in uncontested cases only when major issues of substance are presented. Initially, the choice of site is a matter of major importance to the public and to the licensee, and can appropriately be dealt with at the construction permit stage. Thereafter, issues of substance will be presented at the time the final design is approved and operating limitations are imposed for purposes of an operating license; and upon any proposal involving a major modification of the reactor, either as to size or basic concept. On such occasions a public hearing would be appropriate, but we believe that in most instances it would be preferable to revert to the Commission's earlier practice (still in use with respect to research reactors), of publishing notice of the licensing action proposed to be taken, together with the staff hazards evaluation and the ACRS report. A hearing would then be held only at the request of an intervenor, and would be directed to specific issues raised by the intervention. In any event, we believe that multiple hearings on the minutiae of individual projects can be avoided only by lodging discretion with the Commission to determine when major issues of substance are involved; and that a public hearing should not be required when changes are requested that, while technically involving an amendment of the license or technical specifications, are either inconsequential in nature or move in the direction of increased safety.

(*b*) Similarly, only matters of genuine importance should be referred to the Advisory Committee on Reactor Safeguard for review. The ACRS occupies a unique position in the regulatory process, by bringing to bear on major safety problems the skills of a select group of qualified individuals representing the various disciplines involved in reactor technology and safety. Their availability as parttime consultants to the Commission depends on limiting their workload to questions of major importance. Accordingly, while the ACRS should be kept currently informed of developments in all major projects, we believe that the Commission, acting on the advice of its technical staff, should have discretion as to what questions should be referred to the ACRS for formal review. In addition, the ACRS itself should be free to conclude that a particular question does not involve safety considerations of sufficient importance to warrant detailed analysis by the committee as a whole.

In any event, whether this or some other pattern of regulation is ultimately settled upon, we believe that appropriate revision of the procedural provisions of the act is a prerequisite to any genuine improvement in AEC regulatory procedures, regardless of what further organizational changes may be made.

2. In our view, the case for a dangerous conflict between the Commission's regulatory and promotional functions has not been proved.

On a practical level, we believe that, if anything, the AEC has placed an undue emphasis on procedural safeguards in reactor licensing cases, in an effort to avoid any suggestion that its judgment on safety issues has been influenced by developmental objectives.

On a more fundamental level, we believe that a separation of the regulatory and promotional functions necessarily assumes that safety judgments can be reached without regard to developmental objectives. This is logically impossible. As the Joint Committee on Atomic Energy staff study points out, the basic regulatory objective is not absolute safety, or no reactors would be built. Rather, the basic regulatory questions are, first, whether all foreseeable risks have been minimized in reactor design and operating procedure; and second, whether any remaining risks are acceptable in the light of the developmental objectives of the national atomic energy program. The two considerations, of safety and development, are two faces of the same coin. The Commission should not promote an unsafe reactor; and by the same token should not restrict new developments more than is necessary to meet safety requirements. Both considerations must be weighed by the Commission in exercising its promotional and developmental functions; and both must be weighed in exercising regulatory and licensing functions.

Any organization's separation will invite a divergence of views between the promotional agency and the regulatory agency, and will thus require some further means of reconciling their differences in the interests of overall national policy. The issues involved are not judicial questions for the courts, but policy questions for the legislative and executive branches of Government. Nevertheless, pending proposals contain no mechanism for coordination of policy, either by the Joint Committee and Congress or by the President and the Cabinet. In any event, the reconciliation of developmental objectives with safety considerations should be a continuing process, based on a day-to-day familiarity with developments in reactor nuclear technology—the basic reason for lodging both developmental and regulatory functions with the Atomic Energy Commission in the first instance.

In our view, therefore, it would be unwise to separate the promotional and regulatory functions of the Commission, either by the creation of a separate regulatory agency, or by establishing an independent licensing board still nominally within the structure of the present Commission.

On the other hand, our views assume that the present Commission will be free to devote a major portion of its time and attention to these two interrelated functions, both of which are vital for the development of the civilian atomic energy program. This may well not be the case today, for the Atomic Energy Commission is charged with a broader range of responsibility than any other administrative agency in our Government.

Historically, the Commission was created to administer a military program, and its responsibilities in this field have increased and continue on a priority basis. It is inevitable, therefore, that a major share of the time and attention of the five Commissioners must be devoted to programs for weapons development and support, space

developments, disarmament and testing programs, and other matters essentially related to the military and space programs. While the question has not as yet been fully explored, we feel that a valid case may well be made for separating the military and peacetime programs, as an alternative to separating the Commission's regulatory and licensing functions from the balance of its work. In making this suggestion, we recognize that it will involve further consideration as to where to lodge responsibility for the Commission's production and experimental facilities, which provide essential support for both the military and peacetime programs.

Reply From Dr. W. H. Zinn, Vice President, Combustion Engineering, Inc., Dated April 19, 1961

This is in reply to your March 18, 1961, letter in which you requested comments on several points. Rather than comment on the various programs which you have shown, I would prefer to make my comments in one statement.

I believe that it is important to create a separation between officers of the Government who have a responsibility for promoting the use of nuclear energy and officers of the Government who have a sole responsibility to carry out the safeguarding of the public welfare in the use of nuclear energy. I do not see that this separation of responsibility requires a separate agency. If the function of safeguarding the public welfare remains in the AEC, then the members of the Commission cannot simultaneously have ultimate authority for promoting the use of nuclear energy and the ultimate authority for safeguard decisions. One of these responsibilities must be delegated in a formal manner. On the assumption that the safeguard matter is so delegated, it would have to be done in such a way that decisions of the safeguard people would not be subjected to review or corrected by the AEC. It seems to me that this can be brought about by the proper regulations within the Commission either along the lines proposed by the AEC or by the mechanism proposed by the Joint Committee staff.

Perhaps my most important comment is to say that the safeguarding activity can only be carried out successfully if the people who discharge the responsibility are sophisticated with respect to the highly compliacted technical and management matters with which they must deal. Perhaps this is the strongest reason for keeping the operation within the AEC, which location ought to enhance the possibility of obtaining such suitable staff.

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