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TECHNICAL AND SCIENTIFIC EVIDENCE IN ADMINISTRATIVE ADJUDICATION

Scott Cameron Whitney*

I. INTRODUCTION

During the present century, litigation requiring for its resolution a voluminous evidentiary record of complex and technical data has increased discernibly. This new breed of litigation, a product of the complex disputes arising from the expanding and increasingly sophisticated industrial-technical-financial establishment, has evoked various responses from the judiciary. One option, utilized for federal tax litigation, is the establishment of special courts.¹ Such courts have been established in a number of areas and proposed in many others.² In certain areas, such as antitrust, jurisdiction has been retained by the "generalist" courts despite the complexity and prolixity of the subject matter.

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1. The Board of Tax Appeals was created in 1918 (Revenue Act of 1918, ch. 18, § 1301(d), 40 Stat. 1057, 1141 (1919)). It was removed from the Internal Revenue Service by the Revenue Act of 1924 and achieved its present status as a technically independent agency in the executive branch of the government in 1926. It became known as the Tax Court by the Revenue Act of 1942, ch. 619, § 504, 56 Stat. 798, 957 (1942), and has continued through various succeeding Revenue Acts as a distinct judicial entity with national jurisdiction. Brown, *The Nature of the Tax Court of the United States*, 10 U. PITT L. REV. 298, 309 (1949); Del Cotto, *The Need for a Court of Tax Appeals: An Argument and a Study*, 12 BUFF. L. REV. 5 (1962); Drennan, *The Tax Court of the United States*, 75 W. VA. B. ASS'N J. 12 (1959); Griswold, *The Need for a Court of Tax Appeals*, 57 HARV. L. REV. 1153, 1154 (1944) ("[t]he Tax Court is in organization, tradition, and function a judicial body . . ."); Henke, *The Tax Court, The Proposed Administrative Court, and Judicialization*, 18 BAYLOR L. REV. 449 (1966); Note, *Forum Reform: Tax Litigation*, 35 U. CIN. L. REV. 644 (1966).

2. The special federal courts which were proposed prior to 1918 but never adopted are described in Rightmire, *Special Federal Courts*, 13 ILL. L. REV. 15, 15-16 (1918), which discusses the proposed Court of Indian Claims, the Court of Pension Appeals, and the Court of Arbitration. Professor Rightmire also discusses the Court of Private Land Claims, which existed briefly, between March 3, 1891, and June 30, 1904, to adjudicate claims arising under Spanish and Mexican grants in Arizona, New Mexico, Colorado, Utah, Wyoming, and Nevada. *Id.* at 18. For an account of the Choctaw and Chickasaw Citizenship Court see *Ex parte Bakelite Corp.*, 279 U.S. 438, 457 (1929), citing *Wallace v. Adams*, 204 U.S. 415 (1907). For reference to Indian Reservation Courts, see *United States v. Clapox*, 35 F. 575 (D. Ore. 1888). Several special federal courts have been proposed subsequent to Professor Rightmire's history.

Another option available to the judiciary is to refuse to take jurisdiction over disputes which make undue demands on the courts' time and/or expertise. The United States Supreme Court has adopted this approach to complicated "modern" disputes, most recently with respect to environmental litigation. In *Ohio v. Wyandotte Chemical Corp.*³ the Supreme Court ruled on a motion by the State of Ohio to invoke the Court's original jurisdiction against various companies incorporated in Michigan, Delaware, and Canada to abate an alleged nuisance resulting in pollution of Lake Erie. Although Ohio's complaint stated a cause of action within the compass of the Court's original jurisdiction, the Court nevertheless declined to exercise that jurisdiction.⁴ It based its decision on three reasons, one of which was that the Court was ill-equipped to resolve the complex, technical and novel questions presented.⁵ Justice Harlan noted that adjudication of complex cases involving novel scientific questions of fact and a multiplicity of government agencies would force the Court to reduce drastically its attention to other controversies for which it is a "proper and necessary forum."⁶

Another mechanism for handling disputes involving complex, technical or voluminous records is the administrative agency. Pioneer agencies, such as the Interstate Commerce Commission (1887) and the Federal Trade Commission (1914), were followed by a host of others, created to cope with, among other things, a cluster of specialized and frequently highly technical adjudicatory problems beyond the capability of the constitutional branches of government to resolve. Institutional structures designed to achieve environmental reform and planning, and to cope with new national problems, such as energy supply, pricing and allocation, are especially prolific and typically determine complex disputes involving a broad range of scientific and technical data. A partial list of new agencies created since World War II demonstrates that the trend started by the

Proposals for various types of administrative courts have been perennial. See generally Dix, *The Death of the Commerce Court: A Study in Institutional Weakness*, 8 AM. J. LEGAL HIST. 238 (1964). A number of proposals for special administrative courts advocate a special labor court. See Kutner, *Due Process of Economy: A Proposal for a United States Economy Court*, 15 U. MIAMI L. REV. 341 (1961). For a discussion of the Emergency Court of Appeals, see Laws, *The Work of the United States Emergency Court of Appeals*, 11 J.B. ASS'N D.C. 100 (1944). For a description of the Court of Claims, the Customs Court and the Court of Customs and Patent Appeals, see UNITED STATES GOVERNMENT ORGANIZATION MANUAL (1974-75).

3. 401 U.S. 493 (1971).

4. *Id.* at 495.

5. *Id.* at 501-05. The other two reasons were workload considerations and the availability of better relief in state or federal district courts or in a commission study through mutual cooperation. *Id.* at 498-504. The Court noted that Ohio was raising factual questions of first impression even to scientists. *Id.* at 504.

6. *Id.* at 504-05.

creation of the Interstate Commerce Commission is continuing in the second half of the twentieth century at an accelerated rate.⁷

The adjudicatory functioning of the pre-World War II agencies attracted during the decades of the fifties and sixties the criticism, and even condemnation, of practitioners, government administrators and legal scholars.⁸

7. The following partial list includes not only agencies having an adjudicatory dimension, but also agencies which provide technical or scientific data and expertise relied on in regulatory decisionmaking. The list also includes agencies that have been restructured or given new functions since World War II: Environmental Protection Agency, Consumer Product Safety Commission, Occupational Safety and Health Administration, Federal Aviation Administration, Transportation Safety Board, National Oceanic and Atmospheric Administration, the various agencies implementing the Economic Stabilization Act of 1970 (Cost of Living Council, Price Commission and Wage Board), Atomic Energy Commission (now Nuclear Regulatory Commission), U.S. Railway Association, Council on Environmental Quality, Federal Energy Administration, International Trade Commission, Energy Research and Development Administration. For examples of Congress' authorizing older entities to perform new functions, see the addition to the Federal Trade Commission of consumer product warranty functions (Magnuson-Moss Warranty Federal Trade Commission Improvement Act, 15 U.S.C.A. §§ 45-46 (Sup. 1975)), and the addition of the regulation of deepwater ports to Coast Guard responsibilities (Deepwater Ports Act of 1974, 33 U.S.C.A. §§ 1501-24 (Supp. 1975)).

8. Beelar, *Federal Legislation: United States Administrative Court*, 24 GEO. L.J. 944 (1936); Benjamin, *A Lawyer's View of Administrative Procedure—The American Bar Association Program*, 26 LAW & CONTEMP. PROB. 203, 219-23 (1961); Cooper, *The Proposed United States Administrative Court* (pts. 1-2), 35 MICH. L. REV. 193, 565 (1936-1937) (analysis of the Logan-Walter Bill); Davison, *An Administrative Court of the United States*, 24 GEO. WASH. L. REV. 613 (1956); Hector, *Problems of the CAB and the Independent Regulatory Commissions*, 69 YALE L.J. 931 (1960); McGuire, *A Possible Federal Administrative Court*, 20 J. AM. JUD. SOC'Y 238 (1937). For a debate of the merits of a trade court, see Berger, *Administrative Courts*, 27 J. B. ASS'N D.C. 16 (1960); Kintner, *The Administrative Court Proposal—Or Should Judicial Functions of Administrative Agencies Be Transferred to an Administrative Court*, 24 J.B. ASS'N D.C. 10 (1957); Sellers, *The Administrative Court Proposal—Or Should Judicial Functions of Administrative Agencies Be Transferred to an Administrative Court*, 23 J.B. ASS'N D.C. 703 (1956). See also Berger, *A Reply to Commissioner MacIntyre's Attack on the Trade Court Proposal*, 29 J.B. ASS'N D.C. 337 (1962); Berger, *Removal of Judicial Functions from the Federal Trade Commission to a Trade Court: A Reply to Mr. Kintner*, 59 MICH. L. REV. 199 (1960); Kintner, *The Trade Proposal: An Examination of Some Possible Defects*, 44 A.B.A.J. 441 (1958); Kintner, *The Current Ordeal of the Administrative Process: In Reply to Mr. Hector*, 69 YALE L.J. 965 (1960) (defense of the Federal Trade Commission's performance and opposition to a trade court); MacIntyre, *Administrative Court Proposal*, 29 J.B. ASS'N D.C. 316 (1962); Minor, *The Administrative Court: Variations on a Theme*, 19 OHIO ST. L.J. 380 (1958). See also COMMISSION ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, A REPORT TO THE CONGRESS 86-88 (1955) (Hoover Committee Report); PRESIDENT'S ADVISORY COUNCIL ON EXECUTIVE ORGANIZATION, REPORT ON SELECTED INDEPENDENT AGENCIES, A NEW REGULATORY FRAMEWORK (1971) (Ashe Committee Report); SENATE COMMITTEE ON THE JUDICIARY, REPORT ON REGULATORY AGENCIES TO THE PRESIDENT ELECT, 86th Cong., 2d Sess. 72-74 (1960) (Landis Report).

These attacks included the contentions (1) that over-judicialization of the agencies was producing undue delay in decisionmaking;⁹ (2) that the objectivity of their judicial functioning had been tainted by their promotional and developmental activities and objectives;¹⁰ and (3) that their decisions had come to lack precedential value and that confusion and administrative drift held sway.¹¹ That many of the industries regulated by these pre-war agencies (notably the railroads, the airlines and the maritime industry) faced bankruptcy or massive federal subsidies gave strength to the criticism that the dilatory and cumbersome adjudicatory format of the agencies had outlived its usefulness.¹²

The second and third difficulties listed above are beyond the scope of this paper. The first, undue delay in decisionmaking, has been analyzed elsewhere in procedural terms.¹³ While procedural reform can contribute importantly to correcting this problem,¹⁴ the critical question is whether

9. Benjamin, *supra* note 8, at 222; Berger, *Removal of Judicial Functions from the Federal Trade Commission to a Trade Court: A Reply to Mr. Kintner*, 59 MICH. L. REV. 199, 223-25 (1960); Hector, *supra* note 8, at 957-58.

10. Benjamin, *supra* note 8, at 219-20; Berger, *supra* note 9, at 204-06; Hector, *supra* note 8, at 956-57. For a recent solution to an alleged built-in functional conflict, note the disestablishment of the Atomic Energy Commission and the vesting of its developmental functions in the Energy Research and Development Administration. Its regulatory, licensing and enforcement functions were vested in the Nuclear Regulatory Agency. See Energy Reorganization Act of 1974, 42 U.S.C.A. §§ 5801, 5811 (Supp. 1975).

11. For a penetrating analysis of this problem, its causes and suggested remedies, see H. FRIENDLY, *THE FEDERAL ADMINISTRATIVE AGENCIES: THE NEED FOR BETTER DEFINITION OF STANDARDS* 1-26, 74-105 (1962).

12. The Ford Administration has announced that it favors deregulation of the commercial airline industry, and the Civil Aeronautics Board has issued a study recommending partial deregulation. REGULATORY REFORM: REPORT OF THE C.A.B. SPECIAL STAFF (July 1975). Three of the largest air carriers (Pan American World Airways, Trans World Airlines and Eastern Airlines) have applications pending before the CAB for annual subsidies which aggregate approximately one-half billion dollars per year. Pan Am Docket 26560, Pan Am-TWA Docket 27031, TWA Dockets 26563 and 27805, EAL Docket 28787.

The Interstate Commerce Commission is generally regarded as being unequal to the task of resuscitating the railroad industry. Congress in 1972 enacted the Railway Reorganization Act mandating a final plan to restructure the rail industry in a new and economically viable form. The maritime industry has for many decades been the "sick man" of the United States transportation establishment. While the causes for this condition are manifold and beyond the scope of this paper, the adjudicatory procedures of the Federal Maritime Commission are one factor.

13. Louis Hector suggests in his vivid description of the CAB handling of the Seven States Area Investigation that the problem arises from inept procedures, failure to control and limit the judicial process adequately, and a fatally repetitive and largely futile review procedure structured within the agency process. Hector, *supra* note 8, at 931.

14. The Civil Aeronautics Board is engaged presently in procedural reform. See FINAL REPORT OF CAB ADVISORY COMMITTEE ON PROCEDURAL REFORM (Dec. 31,

agency adjudicatory process can evaluate competently specialized scientific and technical data to produce fair and rational decisions within an acceptable period of time and at an acceptable cost to the litigants, the regulated entities and the public. The data bearing on the critical issues in such complex proceedings are *qualitatively* different from the material that administrative agencies and special courts traditionally have handled.

Although agencies and specialized courts are said to have special expertise, the members bring to their tasks not *expertise* arising from mastery of a distinct, substantive technical or scientific discipline, but *experience* derived from extensive familiarity with a special subject.¹⁵ Gardner, observing that "in most agencies the commissioner or the head is in no sense an expert," cautioned against building up "our law and our thinking on the fiction of their invariable expertise."¹⁶ Even the career agency staff, although experts as students or analysts, observe "from the outside and with a touch of unfamiliarity."¹⁷

The complex scientific and technical subject matter that is considered in many modern agency adjudications is radically different from that involved in the traditional independent agency decisionmaking process. This study will consider two adjudicatory situations which illustrate the problem of handling this subject matter effectively in the present procedural format.

II. *International Harvester Co. v. Ruckelshaus*

*International Harvester Co. v. Ruckelshaus*¹⁸ illustrates the difficulties inherent in a generalist court's review of a decision made by a specialist agency. Pursuant to congressional directive, the administrator of the EPA issued in 1970 regulations limiting automobile hydrocarbon and carbon monoxide emissions to .41 and 3.4 grams per vehicle mile and prescribing test procedures to measure compliance.¹⁹ The Clean Air Amendments²⁰ required automobile manufacturers to meet these standards with their 1975

1975). The Federal Maritime Commission enacted reforms in its Rules of Practice and Procedure in 1974, 39 Fed. Reg. 33221-26 (1974), and is considering further procedural amendments. Notice of Proposed Rule Making, Docket No. 75-36, 40 Fed. Reg. 43925-30 (1975).

15. See Mr. Justice Jackson's discussion of the Tax Court in *Dobson v. Commissioner*, 320 U.S. 489, 498-99 (1943).

16. W. GARDNER, *LEGAL INSTITUTIONS TODAY AND TOMORROW* 113 (1959).

17. *Id.*

18. 478 F.2d 615 (D.C. Cir. 1973).

19. 36 Fed. Reg. 12,657 (1971).

20. 42 U.S.C. § 1857f-1(b)(1)(A) (1970), *as amended*, 42 U.S.C.A. § 1857f-1(b)(1)(A) (Supp. 1976), provided that "engines manufactured during or after model year 1975 shall contain standards which require a reduction of at least 90 per centum from emissions of carbon monoxide and hydrocarbons allowable under the standards . . . applicable to light duty vehicles and engines manufactured in model year 1970."

models. A one year "suspension" of the deadline could be obtained if a manufacturer made certain statutory showings.²¹

On March 13, 1972, Volvo, Inc. filed such an application for suspension, thereby starting the running of a 60-day period during which the administrator had to decide whether or not to grant the suspension.²² In April EPA held public hearings at which the applicants, representatives of most major vehicle manufacturers, suppliers of emission control devices, and public interest groups testified or submitted written data for the record. The EPA Hearing Board did not permit oral cross-examination or challenge of the methodology on which EPA relied.²³ On May 12, 1972 EPA issued its decision denying suspension to all applicants.²⁴ The decision was further augmented on July 27, 1972 by a Technical Appendix setting forth the analysis and methodology used by EPA in reaching its decision.²⁵

The EPA decision noted that the test procedures used by the applicants differed from the 1975 Federal test procedure and required conversion to the 1975 procedure by imprecise calculations. Furthermore, incomplete data had been submitted.²⁶ Instead of simply concluding that the applicants

21. 42 U.S.C. § 1857f-1b(5)(D) (Supp. 1976). The applicant must show that: (i) such suspension is essential to the public interest or the public health and welfare of the United States, (ii) all good faith efforts have been made to meet the standards established by this subsection, (iii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available for a sufficient period of time to achieve compliance prior to the effective date of such standards, and (iv) the study and investigation of the National Academy of Sciences conducted pursuant to subsection (c) of this section and other information available to him has not indicated that such technology, process, or other alternatives are available to meet such standards.

Id. § 1857f-1(b)(5)(C)(i-iv).

22. International Harvester, Ford, Chrysler and General Motors also filed applications for suspension. 478 F.2d at 624.

23. Section 202(b)(5)(D) does not require a trial-type hearing, but merely a "public hearing." This is in contrast to section 110(f)(2) (hearing on a one-year postponement of a plan requirement upon application by a state governor) and section 206(b)(2)(B)(i) (42 U.S.C. § 1857f-5(b)(2)(B)(i) (Supp. 1976)) (hearing on suspension or revocation of a motor vehicle certification) decisions, which must be made "on the record."

24. *In re Applications for Suspensions of 1975 Motor Vehicle Exhaust Emission Standards*, Decision of the Administrator (May 12, 1972) (hereafter cited as EPA Decision).

25. *Id.* at Technical Appendix (July 27, 1972).

26. *Id.* at 16-17. This decision was appealed by Applicants to the D.C. Circuit pursuant to 42 U.S.C. § 1857h-5(b)(1) (Supp. 1976). On December 19, 1972, the day after oral argument, the court, in a per curiam order, remanded the record to the Administrator, directing him to supplement his decision by explaining what consideration he gave the study of the National Academy of Sciences and the basis of any disagreement with that study. On December 30, EPA responded with a sup-

for suspension had not submitted data that conformed to the testing and measuring requirements required by EPA regulations, and that they had therefore failed to meet the burden of proof required for suspension in section 202(b)(5)(D)(iii) of the Act, EPA sought to "adjust" the data submitted by the applicants by use of certain "assumptions."²⁷ The tactical decision to pursue this complex "adjustment" of applicants' data shifted the burden of proof on appellate review from the applicants to show that the technology would not be available to EPA to show that it would be available. On review, the D.C. Circuit indicated that for purposes of judicial review EPA did have the burden. The court stated: "As matters have shaped up, the central technical issue on this appeal concerns the reliability of EPA's methodology. . . . We shall subsequently develop the legal questions, primarily questions of EPA's burden of proof, that arise with respect to EPA methodology."²⁸

The reviewing court addressed itself to three aspects of EPA procedure: the applicants' right to cross-examine, the applicants' right to comment on EPA methodology, and the respective roles of the agency and the court. The majority adopted a curiously ambivalent stance to the applicants' claimed right to cross-examine. In Part II of the opinion, the court ruled that the Act did not require an "adjudicatory" hearing with a decision based "on the record." The court, emphasizing the 60-day time limit, stated that because of "[t]he heft of the hearing problem, including the time constraints on decisions, a broad right of cross-examination cannot be maintained."²⁹ The court noted the "not insignificant potential for havoc"³⁰ in the combinations of cross-examinations, redirect examinations, and recross examinations. Further, it stated that "these complications are likely to be disproportionate to the values achieved in a proceeding focusing on technical matters where other techniques generally are sufficient to adduce the pertinent information as to both what is known and unknown."³¹ The court concluded that EPA's substitute for cross-examination, the screening of written questions, was reasonable and comported with basic fairness.³² However, in Part V of its opinion, the court stated:

In the remand proceeding—not governed by the same time congestion as the initial decision process—we require reasonable cross-examination as to

respond with a supplement to its decision. Thereafter the court reviewed the EPA decision and on February 10, 1973, remanded for further proceedings. 478 F.2d 650.

27. See 37 Fed. Reg. 23778-79 (1972).

28. *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 632 (D.C. Cir. 1973).

29. *Id.* at 631.

30. *Id.*

31. *Id.*

32. *Id.*

new lines of testimony, and as to submissions previously made to EPA in the hearing on a proffer that critical questions could not be satisfactorily pursued by procedures previously in effect.³³

The court's treatment of the cross-examination question appears incomprehensible, if not perversely self-contradictory. Indeed, Chief Judge Bazelon, while concurring in the result, could find nothing in the 60-day time limit to support the distinction between cross-examination at the time of the original decision and on remand.³⁴ There is little doubt that Congress set the 60-day limit to force prompt conclusive determination of an obviously time-critical issue.³⁵ However, congressional intent was thwarted by the slow adjudicatory process. Between the filing of the applications for suspension and the second remand, almost a year elapsed—a time nearly equal to the length of the suspension being sought.

Addressing the applicants' claimed right to comment on EPA methodology at the hearing, the court again made contradictory statements. In Part II, "Rejection of Manufacturers' General Contentions," the court noted that it could not ignore the problem of time and likened the instant case to the conventional rulemaking situation.

The requirement of submission of a proposed rule for comment does not automatically generate a new opportunity for comment merely because the rule promulgated by the agency differs from the rule it proposed, partly at least in response to submissions.³⁶

To this statement is appended the footnote, "[a] contrary rule would lead to the absurdity that in rule making under the APA the agency can learn from the comments on its proposals only at the peril of starting a new procedural round of commentary."³⁷ The analogy missed the gravamen of the applicants' complaint, *i.e.*, that EPA did not disclose its methodology and much of its analysis until long after the hearing was terminated. Later in the opinion, the court abandoned this earlier incorrect position and, noting that the record "leaves this court uncertain, at a minimum, whether the essentials of the intention of Congress were achieved," ordered a remand to allow the applicants to address the methodology and analysis contained in the Technical Appendix.³⁸

33. *Id.* at 649.

34. *Id.* at 652-53.

35. Congress had in fact dropped in conference an earlier version of the Act that would have allowed six months for a suspension decision. 478 F.2d at 630. See also 116 Cong. Record 33078-79 (1970).

36. 478 F.2d at 632.

37. *Id.* at 632 n.51. This statement is baffling. Not only is it not descriptive of the facts of the case at bar, but the court is simply in error about agency disinclination to receive two "rounds of commentary." Many agencies issue an Advanced Notice of Proposed Rule Making to solicit comment upon the basis of which a Notice of Proposed Rule Making is formulated and circulated to elicit further comments to "fine-tune" the ultimate rule that is promulgated.

38. *Id.* at 649-50.

Chief Judge Bazelon criticized the court's decision, because he considered challenge of EPA methodology through judicial review an inadequate substitute for confrontation prior to the decision. He based his position both on fairness to the parties and on the court's limited ability to deal with technical intricacies.³⁹

In discussing the fundamental issue of the respective roles of agency and court in controversies requiring decisions based on evaluation of complex scientific and technical evidence, the majority again paid lip service to one rule and applied another. It stated:

It is with utmost diffidence that we approach our assignment to review the Administrator's decision on "available technology." . . . Our diffidence is rooted in the underlying technical complexities, and remains even when we take into account that ours is a judicial review, and not a technical or policy redetermination, our review is channeled by a salutary restraint, and deference to the expertise of an agency that provides reasoned analysis.⁴⁰

After this statement, the majority undertook a detailed and lengthy re-examination of the regulatory, engineering, scientific, and statistical assumptions of EPA. The majority appeared to presume that promulgated EPA regulations (*e.g.* those regarding maintenance of catalytic converters and the lead content levels in fuel) would not be effective or enforceable.⁴¹ Despite its claimed diffidence, the majority freely substituted its own judgment on scientific and engineering assumptions.⁴² It adopted without convincing explanation the statistical assumptions of the National Academy of Sciences rather than those of EPA.⁴³

This performance provoked Chief Judge Bazelon's comment:

Socrates said that wisdom is the recognition of how much one does not know. I may be wise if that is wisdom, because I recognize that I do not know enough about dynamometer extrapolations, deterioration factor adjustments, and the like to decide whether or not the government's approach to these matters was statistically valid. Therein lies my disagreement with the majority.

The court's opinion today centers on a substantive evaluation of the Administrator's assumptions and methodology. I do not have the technical know-how to agree or disagree with that evaluation—at least on the basis of the present record. . . .

I cannot believe that Congress intended this court to delve into the substance of the mechanical, statistical, and technological disputes in this case.⁴⁴

The foregoing situation illustrates the shortcomings inherent in judicial review of agency adjudication of highly technical issues. The traditional agency adjudication process produced a record which the reviewing

39. *Id.* at 651-52.

40. *Id.* at 641.

41. *Id.* at 643-44.

42. *Id.* at 647-49.

43. *Id.* at 649.

44. *Id.* at 650-51.

court perceived a need to supplement and supplant with its own substantive analysis of the technical and scientific data. The solution of the problem is not the elimination of judicial review, for its assures agency accountability. Instead, the underlying agency process must be revised so that it both functions within reasonable time limits and provides a reviewing court with evidence that the agency has reached its decision on the basis of a rational decisionmaking process.

III. LICENSING OF NUCLEAR ENERGY FACILITIES

A. *The Problem*

The problem of handling complex scientific and technical issues in agency adjudicatory format also arises in the licensing of nuclear energy facilities. Under existing procedures the licensing of a nuclear generating plant can involve three federal proceedings and a siting clearance by state or local governments.⁴⁵ The licensing proceeding for the construction permit⁴⁶ typically requires, *inter alia*, submission by the applicant of several volumes of information containing a detailed preliminary safety analysis report and an environmental impact report. The Atomic Energy Commission regulatory staff reviews the data in detail and requires submission of additional material deemed necessary. During this evaluative period the regulatory staff, in compliance with the National Environmental Policy Act of 1969 (NEPA),⁴⁷ also prepares and publishes the draft environmental impact statement and obtains comment from federal, state and local government agencies and the public. The application for construction permit, filed late in the staff review process, is scrutinized successively by the Advisory Committee on Reactor Safeguards in an informal hearing, by the Atomic Safety and Licensing Board in a formal adjudicatory hearing under the Administrative Procedure Act, and finally by either the Atomic Safety and Licensing Appeal Board or the Commission.

Similar proceedings are conducted to evaluate an operating permit application. In addition, an Atomic Safety and Licensing hearing is required when requested by a party who shows that his interests will be affected by the issuance of the permit. Section 105 of the Atomic Energy Act further protracts the licensing process by requiring review of antitrust aspects of these applications.⁴⁸ The antitrust division of the Department of Justice may recommend an additional hearing to explore the antitrust impacts.⁴⁹ The National Environmental Policy Act, as judicially inter-

45. See generally Hennessey, *Licensing of Nuclear Power Plants by the Atomic Energy Commission*, 15 WM. & MARY L. REV. 487 (1974).

46. 10 C.F.R. § 50.23 (1975). The Energy Reorganization Act of 1974 abolished the Atomic Energy Commission (AEC) and assigned its primary functions to two separate agencies. See note 10 *supra*.

47. 42 U.S.C. §§ 4321-47 (1970).

48. *Id.* § 2135 (1970).

49. *Id.*

preted, expands the scope of nuclear licensing and regulation to include consideration of air and water pollution, noise, fish and wildlife, ecological, aesthetic, sociological, and economic factors, and the protection of historic and cultural resources.⁵⁰

The completion of this ramified regulatory scrutiny presently requires between nine and ten years. This delay is *prima facie* evidence that the regulatory process is fundamentally defective. In any era a decisionmaking process requiring a decade to act would be undesirable; given the pace of events in contemporary society, such delay is intolerable. It virtually eliminates expansion of nuclear power as a means of attaining national energy self-sufficiency in the next two decades.

Although the causes of delay are diverse, the most apparent cause is the multiple-licensing, multiple-hearing format structured by Congress. The NEPA process compounds this delay by significantly enlarging the range of issues that must be considered and by injecting multiple interdisciplinary evidentiary considerations. Further delays in the processing result from tactics employed by public interest parties who have aggressively contested the grant of the requisite licenses at each procedural stage, including judicial review. The conflict between counsel for these public interest groups and counsel for the applicants and the regulatory agency results in protracted administrative trials utilizing the panoply of legal techniques associated with protracted litigation in the courts.⁵¹ The public interest groups seek at the prehearing conference to raise every conceivable relevant issue; they also seek to utilize the new "right to know" provisions of NEPA and expanded interpretations of the Freedom of Information Act⁵² to obtain through discovery procedures voluminous information from the applicant and the regulatory staff. Disputes over disclosure of information have resulted in extended delays at various stages of the licensing process.⁵³ These disputes not only require interpretations of NEPA and the Freedom of Information Act, but also present the question whether certain information is proprietary data.⁵⁴

Once a hearing is commenced, further delay results from cross-examination of technical witnesses. In many contested proceedings the public interest groups rely on massive cross-examination, rather than on the testimony of technical rebuttal witnesses, to obstruct the grant of the necessary licenses and permits. This tactic produces voluminous and often cumulative evidentiary records which build delay into the ensuing

50. *Calvert Cliffs' Coordinating Comm., Inc. v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971).

51. *San Antonio v. CAB*, 374 F.2d 326 (D.C. Cir. 1967).

52. 5 U.S.C. § 552 (1970).

53. Hennessey, *supra* note 45, at 494-95.

54. AEC rules protect "proprietary data" from public disclosure. 10 C.F.R. § 2.790 (1973).

evaluative process.⁵⁵ These dilatory tactics are re-employed when public interest groups are able to obtain adjudicatory hearings at the operating license stage.

B. Current Attempts to Reform the Process

The Atomic Energy Commission and outside commentators have proposed various changes and reforms to shorten lead times in the licensing of nuclear facilities.⁵⁶ To date the shortest period estimated for a reformed and "streamlined" process which would not compromise safety and environmental standards is five to six years.⁵⁷ Some of these reforms are possible within the present statutory framework; others would require statutory amendment. Changes not requiring amendment include the "standardization" of the design of nuclear power plants and their components,⁵⁸ and the use of generic rulemaking to govern disposition of certain issues now considered on a repetitive *ad hoc* basis.

Standardization could take three forms. The first approach would utilize a "reference system." The nuclear regulatory staff would approve a basic plant design; individual applicants could preclude *ad hoc* review by indicating that they planned to use the approved design in the proposed plant. Under this approach only the siting of the plant would be considered in the individual licensing proceeding. This method has been criticized on the ground that it could freeze technological progress to the approved design, decrease competition in the nuclear design industry and lessen public participation.⁵⁹ A second possible standardization technique would be simultaneous agency evaluation of two or more identical design proposals submitted for plants at different locations.⁶⁰ Finally, the regulatory agency could issue a manufacturing license to the architect-engineer-manufacturer for a specific design which applicant utilities could then adopt. Again, only the siting considerations would be considered in the individual application proceedings.⁶¹

The Atomic Energy Commission has experimented with "generic" rulemaking to avoid repetitive trial of basic issues in each licensing proceeding. Examples of this experiment include the attempts (1) to determine per-

55. In one proceeding the hearing on the issues of radiological health and safety took 56 days and produced 15,000 pages of transcript. See *In re Long Island Lighting Co.*, No. 50-322 (AEC April 12, 1973).

56. See Shapar & Malsch, *Proposed Changes in the Nuclear Power Plant Licensing Process: The Choice of Putting a Finger in the Dike or Building a New Dike*, 15 WM. & MARY L. REV. 539 (1974).

57. Directive of President Nixon, 120 Cong. Rec. 369 (Jan. 23, 1974).

58. See AEC Press Release No. R-85 (Mar. 5, 1973).

59. Trosten & Moore, *Nuclear Power Plant Standardization: Promises and Pitfalls*, 15 WM. & MARY L. REV. 527, 529 (1974).

60. *Id.* at 530.

61. *Id.* at 531.

formance criteria for emergency core cooling systems,⁶² (2) to determine whether planned discharges of low-level radioactive materials meet the "as-low-as-practicable" regulatory standard,⁶³ (3) to determine the environmental effects of nuclear power reactors in relation to the total impact of the uranium fuel cycle,⁶⁴ (4) to determine the environmental impacts of transporting various radioactive materials,⁶⁵ (5) to develop general environmental siting criteria for nuclear plants,⁶⁶ and (6) to devise criteria under which site excavation and preparation could be commenced prior to grant of the construction permit.⁶⁷ Unfortunately, in a number of these rulemaking efforts so-called "adjudicatory" generic rulemaking with formal hearings was utilized. The emergency core cooling system hearings required 125 days of hearings and produced 22 thousand pages of transcript plus 15 thousand pages of written testimony and exhibits, the major part dealing with abstruse, leading-edge scientific issues.⁶⁸ Thus, the AEC experience suggests that the use of adjudicatory hearings in its rulemaking process tends to be self-defeating and offsets to a major extent the advantages anticipated from disposing of certain issues by generic consideration.

The limited success of these reforms has prompted the Atomic Energy Commission to advocate three changes in the Atomic Energy Act:⁶⁹

- (1) Amendment of section 189(a)⁷⁰ to eliminate mandatory public hearings prior to the grant of a construction permit, unless requested by an interested party;
- (2) Amendment of section 182(b)⁷¹ to eliminate mandatory review by the Advisory Committee on Reactor Safeguards unless required by the Commission; and
- (3) Amendment of section 189(a) of the Act⁷² to allow the Commission to permit interim operation of a nuclear plant prior to a hearing when there has been a showing that such operation is necessary to meet a power need in a given area.

If these amendments were enacted, applicants could elect among three alternative procedures proposed by the Commission: (1) the present licensing system with the above reforms, (2) a combined construction and

62. AEC Docket No. RM-50-1.

63. AEC Docket No. RM-50-2.

64. Final Regulations were published April 22, 1974. 30 Fed. Reg. 14188 (1968).

65. 38 Fed. Reg. 3334 (1973).

66. *Id.* at 3106.

67. 39 Fed. Reg. 14506 (1974).

68. Shapar & Malsch, *supra* note 56, at 542 & n.11.

69. *Id.* at 545.

70. 42 U.S.C. § 2239(a) (1970).

71. *Id.* § 2232(b).

72. *Id.* § 2239(a). A further reform would be amendment of section 2235 to eliminate the present requirement that construction permits state the earliest and latest dates for completion.

operating permit licensing,⁷³ and (3) issuance of a temporary license.⁷⁴ None of these options would affect the antitrust review procedures or the NEPA process. As noted, the most optimistic appraisal of the time impact of these reforms is reduction of the overall processing time from the present nine to ten years, to five to six years. In view of the national energy requirements, this is still an unacceptably long and costly process.⁷⁵

IV. A SUGGESTED ALTERNATIVE

The problem of resolving technical and scientific issues reliably and within acceptable time constraints arises at two points in the present decision-making process: (1) the formulation of a satisfactory alternative to existing practice, and (2) the resolution of contentions involving subject matter comprehensible to the court, but not to the agency, and, therefore, reviewable only in judicial review. Attempts to solve the problem should be directed toward the agency level. As Chief Judge Bazelon stated:

In cases of great technological complexity, the best way for courts to guard against unreasonable or erroneous administrative decisions is not for the judges themselves to scrutinize the technical merits of each decision. Rather, it is to establish a decision-making process which assures a reasoned decision that can be held up to the scrutiny of the scientific community and the public.⁷⁶

In formulating a satisfactory alternative to existing practice, one must recognize that the rulemaking and agency adjudication methods concretized by the Administrative Procedures Act,⁷⁷ do not exhaust the pos-

73. This would require an amendment of section 185 (42 U.S.C. § 2235 (1970)).

74. A site permit would be issued before the filing of an application for either a construction permit or a combined construction and operating permit. After site approval, the Commission could allow site preparation and could grant temporary permission to operate the reactor prior to any hearing. A hearing would be granted only if a party demonstrated that one was necessary in order to consider modified requirements to protect public health, the common defense and security, or the environment. This procedure would require amendment of section 192 (42 U.S.C. § 2242 (1970)).

75. Similar regulatory problems face the development of oil shale as an energy source. The oil shale program of the Department of the Interior, although under consideration for at least a decade, is still in the program development stage. Numerous environmental, technical and scientific questions remain to be resolved before the licensing-of-individual-projects phase is commenced. There is thus the opportunity to establish expedited procedures to regulate this important activity. The coal fuel cycle likewise involves extensive regulatory clearances. See FEDERAL ENERGY REGULATION: AN ORGANIZATIONAL STUDY PREPARED BY FEDERAL ENERGY REGULATION STUDY TEAM (Apr. 1974). The regulatory techniques for management of such advanced fuel modes as fusion and solar energy have not yet been devised. In each instance the regulatory format must be structured to resolve complex scientific and technical questions in a reliable manner and within an acceptable time frame.

76. *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 652 (D.C. Cir. 1973).

77. See, e.g., *Hearings on Administrative Procedure Before the House Comm. on the Judiciary*, 79th Cong., 1st Sess. 29 (1945): "There are two kinds of operations

sibilities. These APA categories have been criticized for obstructing the development of administrative procedures tailored to the needs of agencies.⁷⁸ Attempts to break out of these categorical confines, such as analysis of agency decisionmaking in terms of "adjudicative facts" and "legislative facts," have not produced effective methods for evaluating vast amounts of technical-scientific data.⁷⁹ There is a growing awareness that the adjudicatory agency hearing conducted "on the record" is not the optimal method to produce a "reasoned decision" in these complex cases.⁸⁰ One critic, addressing agency judicialization, noted that the adjudicatory hearing merely "preserves the appearance of the rule of law, making it seem that the immensely important allocation and planning process is being carried out at all times subject to fair and equitable guiding principles."⁸¹ To the extent that this observation is valid, use of the adjudicatory hearing can in fact produce pernicious results.

There is significant evidence that court-developed litigation techniques in the format of the traditional adversary proceeding are not viable means of resolving technical-scientific questions. Most of the elements of the trial-type proceeding evolved in circumstances markedly different from those surrounding the agency licensing process. Cross-examination, for example, developed in the context of two-party controversy in which the trier of fact sought to adduce the truth or falsity of a limited number of contentions involving subject matter comprehensible to the average judge. Extensive cross-examination is clearly ill-suited for use in multi-party cases involving an immense volume of highly complex data, often expressed in thousands of pages of exhibits spanning several specialized technical disciplines, and calling for subtle judgmental determinations by the hearing officer.⁸² Cross-examination frequently is used as a substitute for discovery or as an alternative to calling one's own expert witnesses. The potential for dilatory tactics in such a system is obvious and the probability of rational decision is slight.

An adequate administrative decisionmaking process must produce a "reasoned decision" and convince the public that a responsible and ra-

as all studies have indicated and any practitioner knows: Number 1, the issuance of a general regulation, which is similar to a statute; Number 2, the matter of adjudication, similar to the judgment of a court."

78. See Robinson, *The Making of Administrative Policy: Another Look at Rule-making and Adjudication and Administrative Procedure Reform*, 118 U. PA. L. REV. 485, 536 (1970).

79. K. DAVIS, *ADMINISTRATIVE LAW TEXT* § 7.03, at 160 (1971).

80. Green, *Public Participation in Nuclear Power Plant Licensing: The Great Delusion*, 15 WM. & MARY L. REV. 503, 518-19 (1974).

81. Reich, *The Law of the Planned Society*, 75 YALE L.J. 1227, 1237 (1966).

82. See Homburger, *Functions of Orality in Austrian and American Civil Procedure*, 20 BUFF. L. REV. 9, 36 (1970): "If cross-examination really is the 'greatest legal engine ever invented for the discovery of truth,' one wonders why other legal systems have not imported that fabulous 'engine.'"

tional determination has been made.⁸³ This presupposes the opportunity for appropriate substantive comment by the public and a mechanism of agency response that indicates convincingly that these comments have been considered fairly and adequately in reaching the decision. A substitute decisionmaking process must be impartial and competent, function within acceptable time and cost limitations, provide adequate notice, consider and respond to expressed viewpoints, and contain provisions for review.

A "comprehensive impact statement process" patterned after the decision-making methodology established under the National Environmental Policy Act for preparation of environmental impact statements⁸⁴ would satisfy these criteria. NEPA requires all federal decisionmakers to evaluate at the earliest possible moment the environmental consequences of their proposed decisions. If a proposed decision would affect the environment significantly, the "lead" agency must prepare a draft environmental impact statement.⁸⁵ The preparation of this statement assures "a case-by-case balancing judgment on the part of federal agencies. In each individual case, the particular economic and technical benefits of planned action must be assessed and then weighed against the environmental costs."⁸⁶

One of the distinctive features of the impact statement process is that substantive input by interested parties is achieved by means of a comment process. Copies of the draft statement are circulated to federal agencies, to all units of state and local government and to the public.⁸⁷ The "lead"

83. See, e.g., Boyer, *Alternatives to Administrative Trial-Type Hearings for Resolving Complex Scientific, Economic and Social Issues*, 71 MICH. L. REV. 111 (1972); Hamilton, *Procedures for the Adoption of Rules of General Applicability: The Need for Procedural Innovation in Administrative Rulemaking*, 60 CALIF. L. REV. 1276 (1972); Robinson, *The Making of Administrative Policy: Another Look at Rulemaking and Adjudication and Administrative Procedure Reform*, 118 U. PA. L. REV. 485 (1970).

84. 42 U.S.C. §§ 4321-47 (1970).

85. This statement must contain

a detailed statement by the responsible official on—(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

National Environmental Policy Act of 1969 § 102(c), 42 U.S.C. § 4332(c) (1970).

86. *Calvert Cliffs' Coordinating Comm., Inc. v. AEC*, 449 F.2d 1109, 1123 (D.C. Cir. 1971).

87. See section 9 of the Council on Environmental Quality Guidelines for Preparation of Environmental Impact Statements and Appendices II and IV, 38 Fed. Reg. 20550 (1973). These regulations implement section 102(2)c of NEPA which requires the responsible federal official to consult and obtain comments from other federal agencies, state and local agencies and the public. 42 U.S.C. § 4332(b) (1970). Comment from state and local agencies and the public is obtained through the OMB A-95 clearing house process. See 40 Fed. Reg. 47,960 (1975).

agency has a legal duty to consider and respond to opposing views.⁸⁸ These comments and responses must accompany the statement through the entire decisionmaking process, and a copy of the final statement, with comments and responses attached, must be recirculated to those who commented.⁸⁹ If the response is deficient, aggrieved commentators may seek judicial review.

If an agency process requires a formal hearing, this hearing is used as a part of the review process of the NEPA statement. However, the impact statement process itself does not require a formal "on the record" hearing and even a "public hearing" is discretionary.⁹⁰ Where the adjudicatory hearing has proven to be counterproductive, Congress could simply repeal that portion of the enabling statute requiring a hearing "on the record."⁹¹

In terms of the six criteria of acceptable agency process, the comprehensive impact evaluation process appears superior to the adjudicatory format. First, it would in fact assure more impartiality than is generally presumed to exist in current agency practice. Perhaps the most criticized aspect of agency regulatory activity is the allegation that agencies become "captives" of the industries they regulate and tend to become tunnel-visioned zealots executing their perceived mission heedless of its repercussions on other programs.⁹² Under the circulation procedures prescribed, the decisionmaking agency would no longer function in the private half-light that has characterized so much of agency "adjudication." Instead, the agency would be required to submit its decisions for comment to sister federal agencies with interrelated missions, to state and local counterparts, and to the public. The review process would assure impartiality by imposing on the lead agency a duty to respond to these parties' comments in a way that meets the standards imposed by the courts, for responses must be supported by "substantial evidence" "substantial evidence on the whole record" or the "rule of reason."⁹³

To fulfill the competency requirement, agencies must marshal and bring to focus upon a given issue the necessary range of interdisciplinary data

88. National Environmental Policy Act of 1969 § 10(a), 42 U.S.C. § 4332(c) (1970).

89. *Id.* § 10(b), 42 U.S.C. § 4332(c) (1970).

90. *Id.* § 7(d), 42 U.S.C. § 4332(c) (1970). Agency decisions not involving a formal hearing are many times more numerous than those having a hearing requirement.

91. In agency licensing proceedings in which rival applicants are processing "mutually exclusive" applications it would be necessary, absent statutory change, to hold an adjudicatory hearing for the limited purpose of selecting applicants. See *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327 (1945).

92. Benjamin, *supra* note 8, at 219-20; Berger, *supra* note 9, 204-06; Hector, *supra* note 8, 956-57.

93. For a discussion of the various court-imposed standards, see L. JAFFE, *JUDICIAL CONTROL OF ADMINISTRATIVE ACTION* 600-04 (1965); Davis, *supra* note 79, at 525-31, 535-38.

and expertise required to produce a sound decision.⁹⁴ The impact statement process would depend on a substantive "record" composed of the lead agency's staff analysis and justification, the comments, and the lead agency "response." Compliance with the steps of the impact statement process would guarantee that all aspects of the problem received reasoned consideration.

The impact statement process would be superior to adjudication in terms of time and cost limitations. The experience with environmental impact statements suggests that in the majority of instances the process can be completed within an acceptable time frame specified by law or regulation. The costs of the comment process appear to be much lower than the costs of the hearing process with its attendant keeping of a record, calling of witnesses, and preparation of exhibits.

A decisionmaking process must provide adequate notice for submission of representative viewpoints. Existing agency process is sometimes subject to the criticism that notice published in the Federal Register may either be so general or elliptic or deal with such technical terminology that parties, especially laymen, may not realize the effect a proposed agency action will have. The draft impact statement would be physically circulated to all requesting parties pursuant to the procedures and public notice rules heretofore described. The complete disclosure of the proposed decision, its impacts, ramifications and alternatives not only would provide complete notice, but also would be a significant vehicle for public information and education.

Another critical element in any decisionmaking process is the lead agency's responsiveness to relevant comments. The process must clearly demonstrate that comments are given meaningful consideration and are to a reasonable extent factored into the final agency decision. More than five years' experience with environmental impact statements suggests that the lead agency will effectively respond to the comments. Congress has indicated approval of statutory "consultation" procedures by incorporating them into other agency decisionmaking processes.⁹⁵

94. Mr. Hector's description of the CAB use of anonymous opinion writers to rationalize board decisions suggests that many agency decisions are not based on detailed scrutiny of the voluminous records. Hector, *supra* note 8, at 947.

95. One example is the structure Congress devised for factoring federal agency comment into state coastal zone management plans during the preapproval stage. Coastal Zone Management Act of 1972, 33 U.S.C. §§ 1454-56 (1972). After these comments have been incorporated into the state plan and the plan has been approved by the Secretary of Commerce, all commenting federal agencies must conduct their business in a manner "consistent" with the approved state plan. *Id.* § 1456(c) (1), (2). This mechanism clearly presupposes that federal comment will be taken into account. For another example of interagency collaboration through a comment-and-response process, see the Noise Control Act of 1972 which provides, by amendment to section 611 of the Federal Aviation Act of 1958, for a "collaborative" agency approach between EPA and FAA for formulation of regulations for the control and abatement

The control and accountability necessary for a sound and reasonable decisionmaking process can be obtained through judicial review. The comprehensive impact statement process, through comment and response, will narrow the disputed issues to a manageable compass so that a reviewing court can evaluate them to determine whether the decision of the lead agency is supported by a substantial basis. The agency decision would contain a statement of findings of fact and conclusions of law sufficiently detailed for the court to determine whether it is the product of a "reasoned process."

A salutary feature of the comment process is that it preserves the opportunity for interest-oriented submissions and provides the commenter with his opportunity to be heard. However, since evidentiary submissions are not made primarily by the parties, as they are in existing agency adjudication, the comment process offers a greater range of points of view from which objectivity can be derived. The comprehensive impact statement process offers promise of a means to shorten and to improve the decision-making process in the face of formidable pressures for resolution of issues involving energy, the environment, and complex socio-economic matters.

V. CONCLUSION

Administrative agencies were created to deal with problems which the traditional government bodies were unable to handle effectively. However, as the two situations described above indicate, the rapid growth of technology has made the once forward-looking agency procedure a hindrance to efficient and effective decisionmaking. Fundamental changes, such as those embodied in the comprehensive impact statement, are needed to enable agencies to manage complex scientific and technical data in a more efficient manner and to produce decisions that will pass muster with reviewing courts.

of aircraft noise and sonic boom. A similar device is prescribed in the Clean Air Act of 1970, 42 U.S.C. § 1857 (1970), whereby the National Academy of Sciences is designated as an arbiter as to whether technology is available to comply with air quality goals.