ENVIRONMENTAL DECISIONMAKING
AND THE ROLE OF
THE COURTS*

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I. ENVIRONMENT: THE LAW ABLAZE

That there are rules of law for protection of the environment is evidence of the capacity of the law to address itself to the felt needs of the community. It is, after all, a primary characteristic of the law that it defines those values that a society holds in highest esteem, and to which it accords special protection. Some matters may be left to the realms of voluntarism; the law, with its coercive force, is invoked when the interests are of special importance, and when it becomes evident that they cannot be maintained without special sanctions.

The law of environment now seems suddenly ablaze, a development which has taken place essentially within the last five years. Hundreds of years ago, of course, the courts were working out a common law of nuisance that served to protect the concerns of environment that were important for that day, concerns that we now see as having been tied to the land and to protection of property. But the common law of yesteryear and old statutes given new twists,¹ though still part of the legal scene, are dwarfed by the developments of the last decade.

* This Article represents an amplification and reworking of remarks included in an address given under the auspices of the Committee on Science and the Law of the Bar Association of the City of New York on May 23, 1973.
The legislative burst which kindled the present blaze differs in two significant respects from legal developments in the common law setting. First, in promulgating rules to protect the environment against damage by citizens, the new statutes add the feature of administrative implementation through rules and orders rooted in technical expertise and inquiry. Examples include major antipollution laws such as the Clean Air\(^2\) and the Water Pollution Control Acts.\(^3\) More startling is a second trend, however, the passage of legislation to protect the environment against the government, such as the "action forcing" procedures of the National Environmental Policy Act\(^4\) (NEPA).

Under the current arrangement the courts no longer have the major role they once discharged in the direction formulation of the pertinent legal rules, notwithstanding romantics like Professor Sax who wish the courts might still be given primary responsibility for the articulation of those rules.\(^5\) Primary responsibility has been vested in executive officials and independent regulatory agencies. But this is not to say that the courts do not have an important role. They have a role of review which has been of major significance. In exercising this role, they have shared the public sense of urgency reflected in the new laws, and working within the framework of existing legal doctrine, have exerted a pervasive influence over the legislation's implementation. Of course, the vigor with which the federal courts initially assumed the task of reviewing governmental decisions with impacts on the environment has been tempered somewhat by reflection on the practicalities faced by agencies and executive officials. This tempering may be hastened by the energy crisis. But the mark, once writ on paper, can never be wholly erased.

Rather than focus on the multiple doctrines of substantive law emerging out of the implementation of environmental programs, this Article will inquire into the role of the courts in the new regulatory context. It will trace this role in the two strands of the new law, concentrating principally on the courts' enforcement of NEPA and their supervision of decisionmaking by the Environmental Protection Agency (EPA), which has assumed primary responsibility for administering recent pesticide and pollution control legislation.\(^6\)

\(^5\) J. Sax, Defending the Environment (1971).
\(^6\) This specialist agency was created pursuant to Reorganization Plan No. 3 of 1970, 42 U.S.C. § 4321 (1970).
II. THE RULE OF ADMINISTRATIVE LAW

A. An Explication of the Rule

The problems of allocation of roles between agency and court are not newly sprung in the context of environmental matters. They have a history in other contexts. In *Greater Boston Television Corp. v. FCC*, I sought to delineate the "requirements of the Rule of Law, as established by Administrative Law doctrine." The first postulate of the rule elaborated in that opinion is that the court has a supervisory function of review of agency decisions. This begins with enforcing the requirement of reasonable procedure, fair notice and opportunity to the parties to present their case, and it includes examining the evidence and fact findings to see both that the evidentiary fact findings are supported by the record and that they provide a rational basis for inferences of ultimate fact.

In the exercise of the court's supervisory function, full allowance must be given for the reality that agency matters typically involve a kind of expertise—"sometimes technical in a scientific sense, sometimes more a matter of specialization in kinds of regulatory programs." Nevertheless, the court must study the record attentively, even the evidence on technical and specialist matters, "to penetrate to the underlying decisions of the agency, to satisfy itself that the agency has exercised a reasoned discretion with reasons that do not deviate from or ignore the ascertainable legislative intent." It must ensure that the agency "has given reasoned discretion to all the material facts and issues." The court exercises this aspect of its supervisory role with particular vigilance if it "becomes aware, especially from a combination of danger signals, that the agency has not really taken a 'hard look' at the salient problems, and has not genuinely engaged in reasoned decisionmaking." Finally, if satisfied on these points, the court sustains an agency even though its findings are "of less than ideal clarity, if the agency's path may reasonably be discerned." The court is not to make its own findings, or select policies.

The entire process combines "judicial supervision with a

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8 Id. at 850.
9 Id.
10 Id.
11 Id. at 851.
12 Id. (emphasis added).
13 Id.
salutary principle of judicial restraint.” It is conducted with an awareness that agencies and courts together constitute a “partnership in furtherance of the public interest” and that the two are collaborative instrumentalities under which the “court is in a real sense part of the total administrative process, and not a hostile stranger to the office of first instance.”

B. Supervision Under the Rule of Administrative Law in the Environmental Field

A broad question arises, whether the general rule of administrative law and the relative roles of courts and agencies, are to be modified in any way, expressly or in practice, because of the special characteristics of environmental problems. Arguments can be made that the technical complexity which frequently marks environmental cases should restrict the reviewing role of the courts. The technical problems are real ones, and perhaps they will result in more restraint and less supervision so far as courts are concerned. At the outset, however, a fair assessment of judicial developments must put it that in the environmental field the courts so far have been, if anything, fully vigilant to exercise rather than abdicate their supervisory role.

The solicitude which has generally characterized judicial review of environmental issues was perhaps most openly expressed in the January 1971 opinion of our court in *Environmental Defense Fund, Inc. v. Ruckelshaus.* Chief Judge Bazelon stated:

> We stand on the threshold of a new era in the history of the long and fruitful collaboration of administrative agencies and reviewing courts. . . .

> [C]ourts are increasingly asked to review administrative action that touches on fundamental personal interests in life, health, and liberty. These interests have always had a special claim to judicial protection, in comparison with the economic interests at stake in a ratemaking or licensing proceeding.

This expression by our court was a reasonably clearcut precursor of the Supreme Court’s March 1971 opinion in *Citizens to Preserve Overton Park, Inc. v. Volpe,* where the Supreme Court articulated a similarly watchful approach to environmental pro-

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14 Id.
15 Id. at 852.
16 439 F.2d 584 (D.C. Cir. 1971).
17 Id. at 597-98.
tection in discussing the scope of authority given the Secretary of Transportation by the Federal-Aid Highway Act of 1968. That Act provides that the Secretary may not authorize use of federal funds to finance construction of highways through public parks if a “feasible and prudent” alternative route exists. The Government contended that apart from engineering considerations of what is “feasible,” the Secretary had discretion in the determination of what is “prudent” to engage in a broad balancing of competing interests, such as cost and safety. The Court said:

Congress clearly did not intend that cost and disruption of the community were to be ignored by the Secretary. But the very existence of the statutes indicates that protection of parkland was to be given paramount importance. The few green havens that are public parks were not to be lost unless there were truly unusual factors present in a particular case or the cost or community disruption resulting from alternative routes reached extraordinary magnitudes.19

The decision was not to be entrusted to the untrammeled discretion of the official; it was subject to judicial review under the Administrative Procedure Act (APA)20 because there was “law to apply.” Moreover, the Court was prepared to follow through with new procedural tools in making certain that judicial scrutiny of the administrative official’s action would be effective.

Although the Secretary was not required by the highway statute to make findings and was not subject to a judicial review to determine whether his decision was supported by “substantial evidence,” the Supreme Court held that the district court “must conduct a substantial inquiry.” After reciting the maxim that his action is entitled to a presumption of regularity, the Court cautioned: “that presumption is not to shield his action from a thorough, probing, in-depth review.”21 The court must give “scrutiny” to the facts to see whether the Department acted within the reasonable range of its authority, and must go further to see whether there was an abuse of discretion. “To make this finding the Court must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.”22

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19 Id. at 412-13 (emphasis added) (footnotes omitted).
21 401 U.S. at 415.
22 Id. at 416. The impact of Overton Park is subject to the unanimous per curiam
What this comes down to, I think, is the "hard look" concept central to the rule of administrative law. The court does not make the ultimate decision, but it insists that the official or agency take a "hard look" at all relevant factors. And when the matter is not brought to court on a direct review procedure, as to a court of appeals after some kind of inquiry on a more or less formal record, the court, in this case the district court, is authorized to probe the matter.

On remand, the district court indeed conducted a "thoroughgoing inquiry."\(^2\) It devised procedures to supplement the administrative record. Plaintiffs had discovery, first to determine whether the record as filed was complete, then to explore the mental processes of the decisionmakers, in the absence of filed findings by the Secretary. They were allowed to offer expert testimony to evaluate the investigation of alternative routes by the Secretary. And they were given the opportunity to show that there were in fact feasible and prudent alternative routes, because such a showing "would undercut the good faith of the administrative investigation."\(^2\)\(^4\) Finally, there was a plenary hearing, consuming twenty-five trial days, numerous exhibits and extensive posttrial briefings. This is the "hard look" doctrine in spades.

The treatment of *Overton Park* may suggest to some, in fact, that an even more stringent standard is at work in environmental cases than is usually comprehended by the "hard look" metaphor. I do not think that this view accurately explains what happened in *Overton Park*, however, or what has been happening in other cases. The "paramount importance" attributed to environmental values serves to grab the court initially and causes the court to be especially attentive in its review and, where necessary, to delve into the decisional process—to see whether the Government has acted to give due protection to the environment. But "[a]lthough this inquiry . . . is to be searching and careful, the ultimate standard of review is a narrow one. The Court is not empowered to substitute its judgment for that of the agency."\(^2\)\(^5\)

opinion in *Camp v. Pitts*, 411 U.S. 138 (1973), which held that on a complaint challenging denial of a national bank charter as arbitrary and capricious, the district court was not authorized to conduct a de novo evidentiary hearing that would displace the administrative record already made. *Overton Park* was distinguished as a case where there was no contemporaneous explanation of the agency decision. Where effective explanation is lacking, the court could apply *Overton Park*, not to hold a de novo evidentiary hearing, but "to obtain from the agency, either through affidavits or testimony, such additional explanation of the reasons for the agency decision as may prove necessary." *Id.* at 143.


\(^4\) *Id.* at 877.

\(^5\) 401 U.S. at 416.
The observation that the rule of administrative law guides court review of environmental cases does not, however, take us very far. The implications of the rule depend on a number of variables. The role of the courts in environmental matters is significantly shaped, in my view, by whether the agency or official under review is one whose primary function is or is not environmentally oriented. This principle governs the organization of the observations which follow and indeed serves as one of their basic themes.

III. ROLE OF COURTS IN SUPERVISING ENVIRONMENTAL CONSIDERATION BY AGENCIES WHOSE PRIMARY ROLE IS NONENVIRONMENTAL

A. The Courts in the Setting of NEPA

1. Institutional Alternatives

It is the premise of NEPA that environmental matters are likely to be of secondary concern to agencies whose primary missions are nonenvironmental. From this vantage point, NEPA looks toward having environmental factors play a central role in the decisions of such agencies. This goal does not mean environmental considerations are to be more important than every nonenvironmental agency mission; questions of housing, energy and inflation might have equal claim or even higher priority. But it does mean that environmental factors must serve as significant inputs to governmental policy and must be weighed heavily in the decisional balances. It is the function of review under NEPA to ensure that this purpose is served.

Given the premise of the Act, it is clear that the review required to safeguard its objective must be conducted by an institution that is "independent" in the sense that it is not caught up in the agency's mission as its reason for being and basis for succeeding. There are broadly three possible forums for review that meet this requirement: Congress, superagencies in the executive branch, and the courts.

Congress suffers the disability of severe time constraints which make it impractical to review numerous individual cases of agency decisionmaking. In a few cases of overriding national

*In recent years the mass of environmental litigation involving nonenvironmental agencies has arisen under NEPA with its requirement of environmental impact statements. But even before NEPA, considering the environment was a duty imposed on some nonenvironmental agencies and enforced by the courts. The most dramatic case was Scenic Hudson Preservation Conference v. FPC, 354 F.2d 608 (2d Cir. 1965), cert. denied, 384 U.S. 941 (1966).*
importance Congress has acted as the final arbiter of whether the policies and aims of NEPA have been satisfactorily implemented. The Alaskan Pipeline controversy is perhaps the most notable of these. But the paucity of such exceptions only proves Congress' reluctance to assume the primary review function.

Nor did Congress establish a new superagency for review of all decisions, although it has granted two agencies within the executive branch a limited supervisory role over the implementation of NEPA by other agencies. The Council on Environmental Quality (CEQ) issues "guidelines" governing the preparation of impact statements under the Act. It also has a broad mandate "to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth" by NEPA, and it is empowered by executive order to "seek resolution of significant environmental issues" that might come to its attention. Under the Clean Air Act Amendments of 1970, EPA itself is required to review and comment in writing on aspects of any federal action subject to section 102(2)(C) of NEPA which fall within the agency's particular expertise. If the Administrator determines that the proposed action is "unsatisfactory from the standpoint of public health or welfare or environmental quality," he is to refer the matter to CEQ. Under this arrangement, neither CEQ nor EPA can make an authoritative disposition of the case before it. These agencies, in their review capacities at least, have been compelled by Congress to make their views felt, if at all, through informal intraexecutive processes. They have not therefore been sufficiently severed from the influence of the mission agencies to justify categorization as independent review bodies.

The reluctance of Congress to take the superagency approach to NEPA review, and its decision to opt for the courts instead, may have stemmed from an uncertainty that it could rely on any new institution to combine a supervisory role with an attitude of restraint. This predominant characteristic was already a feature of the courts, well-established in nonenvironmental

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32 Id.
cases under the general rule of administrative law. The courts had long been accustomed to do equity, interpret statutes, assure executive conformance to the legislative command, and at the same time avoid intrusion into areas governed by policy and discretion rather than law. Furthermore, the judiciary had proven that it could carry out these functions with the independence and the integrity needed to be responsive to policy considerations that could not command, on any particular decision, the broad constituency necessary to impel corrective congressional or executive action, even though the policies to be enforced might have wide public support, as in the case of NEPA.

It might also be noted at this juncture that Congress has relied upon federal courts of general rather than special jurisdiction to discharge the function of review in the environmental area. The desirability of a specialist court has been the subject of active debate recently, stimulated in part by a provision of the Water Pollution Control Act Amendments of 1972 which ordered the Attorney General to review "the feasibility of establishing a separate court, or court system, having jurisdiction over environmental matters." The Attorney General's report has recommended against the establishment of such a court, and although certain remarks that I made in the International Harvester opinion have been used by proponents of an environmental court to support their position, I am skeptical of the proposal. This skepticism derives in part from a sense of the intense pressures to which special interest groups would subject an environmental court. The selection of judges, for instance, would become a political event threatened by the possibility that one or the other group would consistently dominate the choice. This fear is borne out by the fate of the Commerce Court, which was established as a special forum for the review of decisions by the ICC and was abolished three years after its creation at least in part because Congress feared that it was being captured by the railroads at the expense of the public interest.

A second criticism is based on the view of the appellate judge's role which I have just outlined. Review to ensure balance,

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33 P.L. 92-500, § 9, 86 Stat. 899.
34 Report of the President, Acting Through the Attorney General, on the Feasibility of Establishing an Environmental Court System VII-1 to VII-4 (1973) [hereinafter cited as Environmental Court System].
coupled with restraint on the part of the reviewer, requires a
generalist who can penetrate the scientific explanation underly-
ing a decision just enough to test its soundness. A specialist
whose attention was directed exclusively to environmental is-

2. The Cost of Judicial Review

Review by the courts to assure consideration of environmen-
tal factors has a cost, or at least a potential cost. In the case of the
litigation over Storm King, it is said that the cost of delay has
been brownouts in New York. It is also said the Alaskan Pipeline
controversy, which raged for three years in the courts only to
be settled by congressional action, may have extended the time
required to handle the energy shortage.

The courts are not without means of controlling the costs of
review. They have evolved equity doctrines concerning stays and
injunctions, for instance, that permit the different facets of
public interest to be taken into account in deciding whether an
injunction should issue. These rules enable courts to avoid inter-
ference on behalf of claims that are not likely to succeed and in
cases where the public interest against delay overbalances en-
vironmental considerations.

An extreme example of judicial restraint against enjoining
an activity on environmental grounds appears in the litigation
surrounding the underground nuclear test on Amchitka, code-
named Cannkin. Our court held that there were serious ques-
tions whether the environmental impact statement of the AEC
complied with the law, but we denied the injunction in view of
the Government's "assertions of potential harm to national se-
curity and foreign policy—assertions which we obviously cannot
appraise."

41 See Virginia Petroleum Jobbers Ass'n v. FPC, 259 F.2d 921 (D.C. Cir. 1958).
43 463 F.2d at 798. The Government was asserting, inter alia, that the delay could jeopardize the Strategic Arms Limitation Talks.
peditious judicial handling—first in our court on a series of rulings had in a matter of weeks, and after our decision had sorted out the issues, by a lightning review in the Supreme Court, which in three days' time heard oral argument and affirmed the denial of the injunction.44

The cost of judicial review in NEPA cases cannot always be reduced so dramatically, however, and it will probably never approach a level of insignificance. Yet in determining the ultimate utility of review, its costs must be balanced against its contributions: in the case of NEPA, minimization of the environmental costs of ongoing governmental programs. In what follows I will not attempt a comprehensive review of NEPA litigation. This task has been performed elsewhere.45 I propose instead to focus first on the broad tenor of judicial review under NEPA and then specifically on the courts' handling of a few key problems, all with an eye to possibilities for minimizing the liabilities and maximizing the benefits which derive from the courts' activities.

B. The Developing Judicial Role

1. Establishing the Tenor of Review

Section 102(2) of NEPA applies across the board to all federal officials and agencies, to require an environmental impact statement, a "detailed statement" of the impact of any "major Federal action significantly affecting the quality of the human environment . . . ."46 This requirement was fleshed out by the D.C. Circuit in the historic Calvert Cliffs' Coordinating Committee, Inc. v. AEC in 1971,47 holding invalid Atomic Energy Commission regulations that prohibited raising environmental issues in certain proceedings. Calvert Cliffs' broadly declared that NEPA compels agencies to take environmental values into account by use of an "interdisciplinary approach," permitting a "balancing process" in which environmental costs are weighed alongside economic and technical benefits. Further, the court stated that the "systematic" balancing analysis includes a high standard of consideration of environmental factors, "a standard which must be rigorously enforced by the reviewing courts."48 And finally Calvert Cliffs' went on to hold that the preparation and circula-

47 449 F.2d 1109 (D.C. Cir. 1971).
48 Id. at 1114.
tion of the environmental impact statement can not be separated out from the main line of decisionmaking, but must be fully integrated into the decisionmaking process of the agency and its hearing and rulemaking procedures.

The new student who comes to *Calvert Cliffs' after having read *Overton Park* may not fully capture its drama and significance. Whereas the statutory provision construed in *Overton Park* gives environmental values dominant significance under certain circumstances, NEPA does not assign a relative weight to environmental concerns and therefore leads the courts to recognize much broader governmental discretion in deciding whether or not those concerns should prevail in a given case. But NEPA is a statute of incomparably greater scope. And it is the breadth of NEPA that underscores the importance of the ruling in *Calvert Cliffs' that environmental factors must be given some consideration in the balancing process that is the very stuff of government, and in the contemplation of sufficient judicial review to assure that this kind of consideration and balancing has really taken place.

The counterpoise of *Natural Resources Defense Council, Inc. v. Morton* (NRDC) added to *Calvert Cliffs' tone of firmness in judicial monitoring the recognition of the inevitable rule of reason. NRDC held inadequate an environmental impact statement filed by the Department of the Interior on its proposed sale of offshore leases, because the statement declined to consider the environmental consequences of alternative courses of action available to other agencies of government. Despite this result, NRDC has come to stand for principles of limitation on the demands that may legitimately be drawn from NEPA. First, in evaluating possible adverse environmental impact there is no requirement of "crystal ball" inquiry. Second, in interpreting NEPA's section 102 requirement of compliance "to the fullest extent possible . . .," the courts must take into account "that the resources of energy and research—and time—available to meet the nation's needs are not infinite." As was stated in NRDC, "if this requirement is not rubber, neither is it iron." Third, in the last analysis, NEPA is "subject to a construction of reasonableness . . ." In NRDC, this meant examining alternatives readily identifiable by the agency, but it excluded the need

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49 458 F.2d 827 (1972).
51 458 F.2d at 837.
52 Id.
53 Id.
to discuss effects "deemed only remote and speculative possibilities." 54

NRDC does not undercut Calvert Cliffs' insistence that environmental consequences be given consideration. It rather ensures that such consideration will be provided in the context of a viable decisionmaking process, a process not throttled with burdens that are unproductive or counter-productive. The two decisions in composite stand for the two sides of the coin of judicial review—to ensure supervision of the agencies and to refrain from excessive intrusion.

2. Handling of Key Problems Under NEPA

a. Review of the Threshold Determination that Section 102(2)(C) is Inapplicable

When section 102(2)(C) of NEPA applies, the issue arises of the extent of judicial review of the impact statement that must be filed. But when the issue is the applicability of section 102(2)(C)—whether the federal action is "major" and whether it "significantly affects the quality of the human environment"—there is court review of the threshold determination that no impact statement need be filed. The courts have evolved a requirement that an agency which believes an impact statement is unnecessary must give a statement of its reasons. This gives assurance that the agency "understood the statutory [NEPA] standard. In addition, it will provide a focal point for judicial review of the agency’s decision, giving the court the benefit of the agency’s expertise." 55 The quality and extent of judicial review may be examined by reference to the decisions of two Second Circuit panels in Hanly v. Mitchell (Hanly I) and Hanly v. Kleindeinstein 56 (Hanly II) and also of the D.C. Circuit in Maryland-National Park and Capital Planning Commission v. United States Postal Service. 57

The Hanly cases concerned the proposed construction of a Metropolitan Correction Center as part of the Foley Square Courthouse complex. The Government Services Administration (GSA) decided it did not have to file an impact statement. In Hanly I the court held that GSA had not taken a "hard look" at

54 Id. at 838. For further development of this point, see text accompanying notes 62-63 infra.
55 Scientists' Institute for Public Information, Inc. v. AEC, 481 F.2d 1079, 1095 (1973).
the consequence of locating a jail across from two apartment buildings. It noted possible effects on the "living environment" of the families stemming from "riots and disturbances" that could occur in the facility and also from increased traffic and parking. It required GSA to develop a reviewable environmental record, construing NEPA to protect "the quality of life for city residents." On remand, GSA prepared a twenty-five-page "Assessment" and again concluded the jail would not significantly affect the quality of human environment. The court concluded the agency had not justified its noncompliance with NEPA since it had failed to make a determination of environmental significance in terms of two objective factors, which may be characterized with some oversimplification as the new quality of use, as departing from existing uses in the area, and the new quantity of use. The court held that the agency's determination was arbitrary and capricious and remanded for its consideration anew whether an impact statement had to be filed.

Our recent decision in *Maryland-National Park and Capital Planning Commission* opted for more depth and less breadth in review of threshold determinations—particularly where local zoning decisions can assure consideration of factors such as aesthetics or social demographics. This suit was brought by the Maryland-National Capital Park and Planning Commission to enjoin continued construction by the United States Postal Service of the Washington Bulk Mail Center in Prince George's County, Maryland. In remanding the denial of a preliminary injunction for further consideration the court held that the reviewing court should particularly scrutinize a federal agency decision not to file an environmental impact statement when such action results in a deviation from local zoning procedures. Such deviation was a signal to the court to look carefully at the decision not to file an impact statement, but it was to restrict its consideration to such environmental effects as pertain to the "hard core" values of NEPA, the protection of natural resources and health.

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58 When local zoning regulations and procedures are followed in site location decisions by the Federal Government, there is an assurance that such 'environmental' effects as flow from the special uses of land—the safety of the structures, cohesiveness of neighborhoods, population density, crime control, and esthetics—will be no greater than demanded by the residents acting through their elected representatives. There is room for the contention, and there may even be a presumption, that such incremental impact on the environment as is attributable to the particular land use proposed by the Federal agency is not "significant," that the basic environmental impact from the project derives from the land use pattern, approved by local authorities, that prevails generally for the same kind of land use by private persons.

When, on the other hand, the Federal Government exercises its sovereignty
(i) The Scope of NEPA

Urban environment is not inherently outside the scope of NEPA, although subjectively, perhaps, the legislators were thinking of natural resources, and of wilderness, or at least rural, rather than urban environment. However, when the federal action is only a single aspect of a broader problem of city land use, and NEPA is seized upon by citizens because of what is essentially a happenstance that a federal agency is involved in one element of a broader problem, I become concerned that a too wide-reaching construction of the scope of NEPA, or at least of section 102(2)(C), may lead to a dilution of resources, both executive and judicial, which in the last analysis will be counterproductive in terms of assuring the primary goals of NEPA. This possibility should be taken into account in interpreting the intended reach of section 102(2)(C), whether one is concentrating on the requirement that an action be "major" or that it affect "the quality of the human environment," which is the focus of my remarks here, or that this aspect of its impact be "significant."

(ii) The Temper of Review

But when an agency action lies clearly within the reach of section 102(2)(C), there is certainly merit in the concept underlying the Hanly opinions that the courts cannot permit NEPA to be undone by scanting review of threshold determinations. Thus, in Maryland-National Planning Commission we were not prepared to say that the GSA and the United States Postal Service had adequately justified not writing an impact statement, regarding problems of water runoff and oil spillage from vehicles. Judicial review of such matters is not to be denied or tightly confined by the doctrine of deference to executive officials. That deference is appropriately generous under the rule of administrative law when there is a technical matter within the special competence of the official or agency. But when an essentially nonenvironmental agency has made a determination downplaying the environmental consequences of its action, the court may cock a skeptical eye so as to override local zoning protections, NEPA requires more careful scrutiny. . . .

Not all deviations from local zoning will necessarily rise to the level of affecting the 'quality of human environment' within the fair meaning of that term. Id. at 10-12.

59 One may muse on whether the judicial construction of NEPA would be as broad if the courts were subject to the requirements of the Act, an observation that suggests itself by Chief Justice Burger's request that Congress be required to file a judicial impact statement before assigning any further duties to the court.
and insist on the kind of justification that Overton Park seems to contemplate.60

(iii) Alternative Dispositions

In Hanly II, the role of the courts in determining the proper scope of NEPA was addressed in terms of only one disposition, whether the courts should require the agency to write an impact statement. In Maryland-National Planning Commission we suggested that the courts might play a more positive role in the process, at least in a context where the agency decision had gone too far to be halted completely while the court could come to grips with the matter. Balancing the equities and taking into account the overall public interest, the court concluded that even in case of NEPA violation, of failure to file an impact statement, the appropriate judicial response might not be a total prohibition but a ruling withholding such an injunction upon the condition that the agency make certain project modifications, such as provision for impoundment of water on the roof of the postal facility, which would significantly reduce environmental impact. Indeed, where project modification can reduce environmental impact to a minimum, an environmental impact statement is no longer required. Thus the goal of NEPA may in some instances be achieved as well or better by a change in design that minimizes environmental impact and avoids controversy and possible delay than by the exercise of writing an impact statement. Presumably Congress envisioned amendments of a project to curtail environmental impact in the light of an impact statement. Modification in order to avoid an impact statement is a sensible corollary.

b. Court Review of the Adequacy of Impact Statements

(i) Monitoring by the Court

It seems reasonable to predict that the courts will review with increasing care the content of environmental impact statements filed under section 102(2)(C) of NEPA. Although the role of the federal courts in this capacity has not been authoritatively determined by the Supreme Court, I venture to say that it will

60 The stringency with which courts have in fact tested agency threshold determinations has been characterized by some as de novo review, F. ANDERSON, supra note 45 at 100-05, but as I have suggested here, it is perfectly explicable in terms of the supervisory function by which courts, under the rule of administrative law, do not undertake to make findings or take action on their own but simply act to ensure that the agency performs these functions in a responsible way.
not be limited to the mechanical assurance that the file contains a document neatly tied up in ribbons and captioned "impact statement." Inasmuch as NEPA's checklist of factors to be dealt with in an impact statement does reflect a significant congressional objective—to expand the very bases on which executive decisions are to be made—the courts have a role in assuring at the least a good faith agency effort to fulfill that objective.

More and more this is likely to mean close judicial scrutiny of a document to see that it fully discloses and analyzes the environmental impacts of a proposed action; that it lays bare alternatives to the proposed action in such a way as they may be understood and appreciated by the decisionmaker; and more generally, in the vernacular, that it all hangs together and makes elementary good sense. As in judicial review of threshold determinations under section 102(2)(C), this scrutiny is not likely to be marked by particular deference to the initiating agency to the degree that it can claim no special expertise in isolating or analyzing the environmental ramifications of its activities.61

Of course, what must appear in an adequate impact statement is subject to a rule of reason recognized by the courts. In NRDC we held that section 102(2)(C) of NEPA required an analysis of the environmental risks of alternatives to the leasing of offshore oil fields including alternatives which were not within the immediate power of the agency filing the impact statement to implement,62 such as the elimination of oil import quotas. At the same time we said that only "reasonably available" alternatives need be discussed and stated further that "the Court does not seek to impose unreasonable extremes or to interject itself within the area of discretion of the executive as to the choice of the action to be taken."63 We took this principle to foreclose the necessity of including discussion of long-range alternatives, such as the development of oil shale and coal liquefaction and gasification, to what was essentially a proposal for short-term relief from fuel shortages.

Just how the rule of reason might operate in other cases is suggested by our decision in the Amchitka controversy.64 There we held that the agency could not rest content with its own view of the impact of its actions but had to set forth opposing views as

61 See text accompanying note 60 supra.
62 458 F.2d at 834-36.
63 Id. at 838 (footnote omitted).
well. At the same time we entered the caveat that only "responsible opposing views" were required to be expressed. This standard means discretion, of course, as to what constitutes a "responsible opposing view," and our decision in Amchitka has been questioned by students of NEPA on precisely that ground, but with proper judicial supervision I think it keeps open the door to fair appraisal by the agency, the President, Congress and the public without requiring the agency to shoulder the burden of isolating and cataloguing all views on a given issue regardless of their plausibility.

(ii) Measuring the Effect of Judicial Supervision

The importance of the courts' work in reviewing the adequacy of impact statements may be derided by saying that the agency can always report and consider environmental factors and then do what it wants in any event, with some rationalization. The skeptics might point to the NRDC case. As the author of that opinion, I was much concerned about the delay occasioned by our decision, which sustained an injunction against Interior's oil and gas lease sales, for I believed that the energy crisis, even then, was such that the leases would probably be sold eventually, after amplification of the impact statement to include the elimination of oil import quotas as an alternative course of action. That hunch was, of course, borne out. The environmental groups did not even litigate the sale authorized after the impact statement was modified.

But it misses the point of judicial review under section 102(2)(C) of NEPA to focus on the impact which a court's decision had in any particular case. The proper object of scrutiny is the extent to which the activity of the courts has encouraged agencies to modify their decisionmaking process in an effort to avoid judicial restraints, and perhaps even more to the point, the extent to which these process changes have affected agency output.

From this point of view, despite the courts' ultimate deference to the executive, consistent and scrupulous enforcement of the requirements of NEPA does not seem so much sound and fury signifying nothing. In the Louisiana lease case, for instance, we were advised that, in order to lessen environmental risk, the acreage covered by the proposed sale was reduced from what

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65 463 F.2d at 787.
66 F. ANDERSON, supra note 45, at 210.
was originally contemplated, by the withdrawal of eight tracts closest to the Delta Migratory Waterfowl Refuge. Similarly, in the last round of the Alaskan Pipeline case, where a NEPA question was argued but not decided by our court, litigation of the conservation groups resulted in a modification of the project in the interest of environmental concerns. The ultimate Interior Department permit contained an express Environmental Stipulation which required the permittees to bury certain stretches of pipe whose exposure above ground would have adversely affected the caribou herds and the native population dependent thereon. Also the permittees were required to bury pipe in such a way as to lessen the adverse effect on the permafrost. These and other restrictions imposed by the Department of Interior as conditions on the grant of rights-of-way for the pipeline were expressly preserved in the legislation providing for immediate construction of the line. And some in Congress who supported immediate construction did so because "the environmentalists—through long delays they have already forced—achieved the inclusion of strong safeguards in plans for the Alaskan line."

The NEPA process may result, on occasion, in the termination of projects. The termination of the Cross-Florida Barge Canal project, after crystallization of its effect on the Everglades, comes to mind. The skeptic might, not unreasonably, stress that opposition to this project also involved nonenvironmental factors, including the economic interests of the railroads.

c. Substantive Review of the Agency Decision

The function of the courts in reviewing an agency decision to pursue its mission in the face of significant adverse environmental impact awaits definitive resolution. Judge Friendly, for a three-judge district court in review of an ICC action permitting the Bush Terminal Railroad to abandon its New York Harbor operations, offered the thought that in cases of good faith compliance with NEPA procedures, "we seriously question

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67 458 F.2d at 831.
whether much remains for a reviewing court," since the agency
would have complied with the "hard look" mandate.\textsuperscript{72} In my
view, the "hard look" metaphor requires more than subjective
good faith, which would be essentially untestable; it requires an
analysis of the environmental consequences sufficient to convince
a court that they have been considered. It is noteworthy that
Judge Friendly did analyze in detail the ICC's findings, and its
reopening of the record on remand to comply with NEPA
procedures, and found they were supported by "substantial
evidence."

Recently there has surfaced a new approach to judicial
review, review not only of the statement but also of the substan-
tive decision to take executive action. This appears in \textit{Environ-
mental Defense Fund, Inc. v. Corps of Engineers},\textsuperscript{73} which related to
the construction of the Gillham Dam on the Cossatot River in
Arkansas. The case had been litigated at length in the district
court, resulting in six lower court memorandum opinions over
one and one-half years.\textsuperscript{74} The NEPA statement had extensive
coverage of the effect on wildlife of the proposed dam and
otherwise showed a substantial effort on the part of the Corps. It
cost \$250,000 to prepare, was 200 pages in length and contained
an appendix of 1500 pages.\textsuperscript{75} The court of appeals affirmed the
district court's ruling that this statement was adequate. The
court, however, disagreed with the district court's contention that
there was no room for substantive review of the decision
reached. Chief Judge Matthes stated that the "Act is more than
an environmental full disclosure law."\textsuperscript{76} The court relied on the
APA as providing judicial review; the APA's narrow exception
for action committed to agency discretion\textsuperscript{77} was held inapplica-
ble, with reliance on a similar ruling in \textit{Overton Park} that the
decision of the Secretary to construct the road was not within
such an exception.\textsuperscript{78} The Eighth Circuit held that NEPA re-
quired a good faith balancing of competing interests, and that
the action contemplated by the mission agency could be enjoined
when its balance was arbitrary.\textsuperscript{79} This was dictum perhaps be-

\textsuperscript{73} 470 F.2d 289 (8th Cir. 1972), cert. denied, 409 U.S. 1072 (1972).
\textsuperscript{74} 342 F. Supp. 1211 (E.D. Ark. 1972); 325 F. Supp. 749, 741 (E.D. Ark. 1971); 325
\textsuperscript{75} 470 F.2d at 294.
\textsuperscript{76} Id. F.2d at 297.
\textsuperscript{77} \textsuperscript{5} U.S.C. § 701(a)(2) (1970).
\textsuperscript{78} See 401 U.S. at 410.
\textsuperscript{79} In reaching this result the Eighth Circuit relied principally on the following
language from Calvert Cliffs' Coordinating Comm. v. AEC, 449 F.2d 1109, 1115 (D.C.
Cir. 1971) (emphasis added): "The reviewing courts probably cannot reverse a substan-
cause the project was allowed to proceed, but it was a deliberate approach. Other circuits have been less expansive. The Tenth Circuit, in *National Helium Corp. v. Morton*, thought there was no judicial review of the substantive decision. The Fourth Circuit has also indicated that if an agency "makes a good faith judgment as to the consequences, courts have no further role to play."

Conceptually there is much force to the Eighth Circuit opinion. Speaking practically, it is difficult for courts to rebalance on their own. Of course, common law courts were required to balance the utility of the conduct against the gravity of the harm in nuisance actions, but this was primarily in regard to private activity, and the courts were to balance in the first instance, performing a function that is now delegated to the Government agency.

Part of the difficulty is the subjective nature of the balancing that is presented for review. There are broad references to cost-benefit analysis in this area. While many of the benefits can be quantified, avoiding property loss from flood control, for example, or providing jobs, the environmental cost is typically less amenable to quantified analysis. Reliance on cost-benefit analysis is hindered further by questions, such as the appropriate discount rate, which have yet to be given definitive resolution.

While the formula or standard for judicial review is not without some significance, it stands on a lower plane than the means and the disposition on the part of the court to retrace the advantages and disadvantages of the action decision. If the balance struck by the agency is within a zone of reasonableness, though it is not the one the court would itself have preferred, it will be sustained, and this is the traditional standard of administrative law. If the agency's decision, or even the decisional approach, is considered by the court to be obtuse or purblind, to be, in legal terms, outside the zone of reasonableness, the particular formula of judicial review will not be likely to preclude judicial inhibition or remand.

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80 *455 F.2d 650 (10th Cir. 1971).*
81 *451 F.2d 1130, 1138 (4th Cir. 1971).*
But see *Kleindienst v. Mandel*, 408 U.S. 753, 770 (1972) (holding as to the conditional delegation of plenary congressional power to exclude aliens "that when the Executive exercises this power negatively on the basis of a facially legitimate and bona fide reason" the courts will not look behind the exercise of discretion).
IV. Court Review of Regulatory Actions by Environmental Agencies

Court review of regulatory actions by environmental agencies embraces the same rule of administrative law that the court, usually the court of appeals, applies generally to government agencies engaged in complex policy formulation. But there are some aspects in which the special features of environmental law seem to make a difference.

A. The Review of Inaction

The courts are somewhat readier to review inaction by environmental agencies than by other agencies of Government. The first case to reveal this tendency was Environmental Defense Fund, Inc. v. Ruckelshaus, where the court reversed a failure to commence proceedings for the deregistration of the pesticide DDT and remanded for findings to support the decision not to suspend sale during the litigation, in view of the Administrator's recognition that a "substantial question" existed as to the safety of DDT.

A year later, the court decided Environmental Defense Fund, Inc. v. EPA, remanding the failure to suspend aldrin and dieldrin pesticides. Here, the court assumed the power to review the findings for nonsuspension and remanded for lack of an explanation by EPA of the benefits, if any, from continued use of these products during the proceeding as against suspension or partial suspension. "The interests at stake here are too important to permit the decision to be sustained on the basis of speculative inference as to what the Administrator's findings and conclusions might have been regarding benefits."

In this opinion, the court stated that it was "impressed by the thoughtfulness and range of EPA's general approach" toward its "difficult and demanding" functions, but it insisted on a "high standard of articulation" for this agency. "The importance and difficulty of subject matter entail special responsibilities when the EPA undertakes to explain and defend its actions in court." Implicit in these remarks is the chief consideration spurring the court to this relatively unusual review of failure to suspend: the irreparable harm from environmental

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83 429 F.2d 584 (D.C. Cir. 1971).
84 465 F.2d 528 (D.C. Cir. 1972).
85 Id. at 539.
86 Id. at 540.
87 Id. at 541.
inaction, the problem of irreversible consequences that is also the underpinning of NEPA.

B. The Need for Consideration of Nonenvironmental Aspects of the Public Interest

The cases on direct review of the validity of actions of environmental agencies, in terms of compliance with the requirements of the underlying statute, present the converse of the NEPA-type cases. In the NEPA cases the courts are concerned to assure that environmental consequences are considered. When the action is taken by the environmental agency, those consequences are likely to be clear. The dominant question for the court becomes whether there has been sufficient consideration of the nonenvironmental factors. In each case, the court assures that there is a due consideration of all aspects of the public interest, but the use of a different starting point gives a different cast to the case.

This is most clearly developed in the opinion issued February 10, 1973, in the automotive emission case, *International Harvester Co. v. Ruckelshaus*.88 In that case EPA had failed to exercise the statutory authority to suspend for one year the emission standards that would otherwise be prescribed by the statute for 1975 model cars. The court scanned such global economic consequences as the impact on the overall economy if EPA maintained an overly onerous requirement. There was also the secondary issue of the effect on competition if the agency's approach were to retain stringency for the record with the intention of relaxing later as seemed necessary, an approach which in this case would operate to penalize the most cooperative and progressive of the manufacturers. This problem haunts any approach which is not solidly based on current data and shows that a planned relax-later policy presents its own evils of counterproductive penalties. A systematic administrative course along these lines would obviously inhibit genuine industry cooperation.

C. The Emergence of Technological Feasibility as the Core Issue

In the Clean Air Act proceedings the issue of technical feasibility has emerged as the core issue for decision. That issue appears in the *International Harvester* decision on mobile sources of pollution. The same question has been presented in cases

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88 478 F.2d 615 (D.C. Cir. 1973).
involving new stationary sources of pollution emissions. And it promises to dominate litigation arising under the new Water Pollution Control Act Amendments of 1972, which require polluters to install the "best practicable control technology currently available" by 1977 and the "best available technology" by 1983.

1. The Nature of the Feasibility Issue and the Attitude of the Courts

The courts would be the first to agree, indeed to proclaim, that they are not technicians and cannot themselves either decide technological disputes, or draw on their own knowledge for a ruling on whether an agency's determination is proper. Thus, in *International Harvester* we fully recognized that courts are not equipped to second-guess whether, as a theoretical matter, catalytic converters offered the "most effective" system for control of automobile emissions or to criticize that determination on the basis that EPA misunderstood how such devices work.

A second and pivotal question in the case, however, drew a slightly different response from the court: whether the catalytic converter made feasible the achievement of auto emissions standards prescribed by Congress for 1975. The Administrator's determination that the converter did offer a feasible control technology was not based directly on the results of a scientific test. In fact, the only emission performance data, offered by the automobile manufacturers to show that achievement of the 1975 goals was not feasible, showed that no car equipped with the device "had actually been driven 50,000 miles and achieved

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92 Id. § 1311(b)(2)(A).
93 In his opinion in *NLRB v. Standard Oil Co.*, 138 F.2d 885 (2d Cir. 1943), Judge Learned Hand expressed this limitation on the reach of judicial review:

That there can be issues of fact which courts would be altogether incompetent to decide, is plain. If the question were, for example, as to the chemical reaction between a number of elements, it would be idle to give power to a court to pass upon whether there was 'substantial' evidence to support the decision of a board of qualified chemists. The court might undertake to review their finding so far as they had decided what reagents had actually been present in the experiment, for that presumably would demand no specialized skill. But it would be obliged to stop there, for it would not have the background which alone would enable it to decide questions of chemistry; and indeed it could undertake to pass upon them only at the cost of abandoning the accumulated store of experience upon the subject.

*Id.* at 887. The decision in *Standard Oil*, in which the court declined to second guess the NLRB's determination of the effect of employer coercion on the will of employees, seems far removed from environmental concerns. But the underlying thinking is relevant to environmental matters.

93 478 F.2d at 647-48.
conformity of emissions to the 1975 standards."\textsuperscript{94} EPA's finding was a prediction, based on a scientific methodology which was nothing more itself really than a sophisticated method of proof. With all deference to agency expertise, the court felt it should address itself attentively to the problems which seemed to inhere in EPA's methodology in assessing the reliability of the agency's predictions. The court was convinced by its examination that EPA had not established the reliability of the methodological approach on which it relied.

Judge Bazelon's concurring opinion in the case suggested that the majority's line of inquiry encroached upon the special province of the agency.\textsuperscript{95} But to the extent that special knowledge was involved, it was the knowledge of how matters are proven, and that is a field in which courts have always had a special interest and in which they cannot escape keeping up with the scientific times. This brings to mind Justice Holmes' aphorism that some requirements are not a duty but only a necessity, for the courts and others concerned with justice. There may be recondite problems in the frontier of statistical and probability theory that a court cannot meaningfully handle. Basically, however, a court can, by diligence and attentiveness, address itself to issues of how matters are proven, even though understanding such issues may involve some inkling of statistical significance.

After \textit{International Harvester} issued, I chanced to read again the stimulating and prescient observation of Justice Frankfurter concerning court review of technological prediction. In \textit{RCA v. United States},\textsuperscript{96} RCA challenged the promulgation of standards for color television, after the Commission had taken the position that it was not necessary to wait for a system that was "compatible" with existing black and white receivers and had chosen the CBS system. Justice Black, writing for the majority, said that the decision of the Commission should be sustained, considering agency expertise, a thorough hearing process and a thorough search of the record by the district court. Justice Frankfurter, who thought the ruling of the court was based primarily on deference to agency expertise, wrote, \textit{dubitante}:

\begin{quote}
[W]e are told that the Commission's determination as to the likely prospect of early attainment of compatibility is a matter within its competence and not subject to court
\end{quote}

\textsuperscript{94} Id. at 642.

\textsuperscript{95} Id. at 650-51.

\textsuperscript{96} 341 U.S. 412 (1951).
review. But prophecy of technological feasibility is hardly in the domain of expertness so long as scientific and technological barriers do not make the prospect fanciful. In any event, this Court is not without experience in understanding the nature of such complicated issues. We have had occasion before to consider complex scientific matters.97

The Restatement formulation and the development of the common law also demonstrate that the inquiry by the court into the question of "feasibility," and the technical understanding which that might require, is not new, generally, even if it injects a new note into court and agency relationships. This "feasibility" concept was treated in the first Restatement98 as one of the factors involved in judging the utility of conduct which, if of large enough consequence, would preclude nuisance liability. The Restatement provides that utility is determined, in part, on the basis of "impracticability of preventing or avoiding the invasion."99

A leading federal case, relied on by Professor James in a memorandum on the proposed formulation of Restatement Second100 and also by those drafting the first Restatement,101 is De Blois v. Bowers.102 Plaintiff had sued to enjoin operation of a factory which caused the discharge of obnoxious gases so as to invade plaintiff's interests in the use and enjoyment of his land. Justice Morton held that unless defendant took reasonable measures to prevent the invasion, a mandatory injunction would issue. He stated: "The question whether the defendants have done everything reasonably practicable to avoid the cause of the offense is important. Reasonable care must be used to prevent annoyance . . . ."103 Framing the question in such a way inevitably leads to an analysis of the technical question of whether control technology exists,104 a task for which the judge in that

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97 Id. at 426 (footnote omitted).
98 RESTATEMENT OF TORTS (1939).
99 Id. § 828(c).
100 See Restatement (Second) of Torts, App. A, at 143 n.9 (Tent. Draft No. 16, 1970).
101 See Restatement of Torts § 7, at 84 (Tent. Draft No. 16, 1938).
103 Id. at 623.
104 In Vile v. Pennsylvania R.R., 246 Pa. 35, 91 A. 1049 (1914), the railroad defendant was engaged in cleaning its locomotives with compressed air. "As a consequence of this process of cleaning, smoke, soot, ashes, cinders and greasy substances were blown out of the stacks of the locomotives and settled on appellant's premises, ruining his plants and vegetables and destroying his business." The trial court granted defendant's motion for judgment notwithstanding the verdict, on the ground that the evidence presented by plaintiff's expert on the ability of the defendant to control emission was insufficient. The Pennsylvania Supreme Court reversed.
case prepared himself by going to the scene of the pollution to see for himself, noting the "galvanizing process" which was the source of the fumes, and referring to the testimony of experts, for both sides, on the concentration of the fumes as they reached plaintiffs' land.\textsuperscript{105}

Our inquiry is complicated, of course, by the sophistication that has been added over time in classifying pollutants and designing emission controls. In pursuing the feasibility question today, we face scientific issues that stretch courts' understanding. Their difficulty even affects the court's ability to sense the heft of a case, to determine, for example, which of the objections to the agency's regulation or standard are serious and must be studied in depth and which are essentially red herrings or in any event are insubstantial. But this is not fundamental to the role of the courts under statutes which put the assessment of technology at the heart of the task of setting standards.

2. "Burden of Proof" as a Device for Testing the Fairness and Sufficiency of Presentations on Feasibility

It is important for my purpose to note that in the \textit{De Blois} case, the court's decision to issue an injunction did not rest on a finding that there were in fact commercially practicable means for controlling the fumes from the defendant's plant. The court may well have felt uncomfortable in coming to a definitive statement on the issue. Instead it simply identified the burden of proof on the feasibility issue as resting with the defendant and went on to determine that that burden had not been met, an approach which called for significantly less conclusiveness on the court's part.

The concept of the burden of proof is at the heart of our handling of \textit{International Harvester}. There we held that as the automobile manufacturers' data established a case for the infeasibility of meeting the 1975 standards, the burden of proof shifted to the Administrator in making out a case for his predictions that the standards could be attained. We did not purport to use "burden of proof" in the conventional sense of civil trials, but simply to indicate that the Administrator must sustain the "bur-
den of adducing a reasoned presentation supporting the reliability of EPA's methodology."106 Our remand was based not on a finding that the Administrator was in error in his finding of feasibility but simply on our determination that the required presentation had not been made. Judge Bazelon's concurrence asserted that in this ruling the court was purporting to decide a scientific issue.107 In my view, the majority opinion cannot fairly be so read; it was a burden of proof holding. It is my feeling that the burden of proof concept will be relied upon increasingly in review of similar questions by courts which are reluctant, on the one hand, to interfere with an agency's expert manipulations of test data and, on the other, to defer blindly to whatever methodology the agency puts forth in support of its predictions.

The aptness of the burden of proof device in this context is enhanced by the very reason for which predictive questions appear so often in environmental regulatory cases. Predictions are needed in the public interest, lest a more conservative and deliberative study squander so much time as to generate irreversible damage to the environment. In its reliance on prediction, Congress balanced the risks of erroneous action against the risks of delayed action. The firmer the predictions, of course, the more fruitful this sort of approach will turn out to be. The burden of proof and the burden of going forward are nothing more nor less than devices for controlling risks of error. Their deployment in feasibility review protects against excessive risks of error that could seriously erode the efficiency of the regulatory scheme in which Congress has put such store.

D. The Effect of Agency Procedures

1. The Impact of Rulemaking

The questions put to the court are heightened in difficulty by virtue of the informality of rulemaking procedures used at the administrative level. When dozens if not hundreds of topics are covered by the comments filed in response to proposed rulemaking, there is no sifting at the agency level like that which would occur if the subjects had to be shaped in terms of the testimony of witnesses subject to cross-examination.

In turn, the agency does not identify in its statement of reasons accompanying the rulemaking all of the manifold con-

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106 478 F.2d at 643.
107 Id. at 650-51.
tentions made, with a specification of dispositions and agency responses. The court responded to this problem in *Kennecott Copper Corp. v. EPA*,\(^{108}\) by stating that although the APA does not contain a general requirement for statement of reasons in rulemaking, the minimum standard is not enough when there is need to provide "aid of the judicial function, centralized in this court, of expeditious disposition of challenges to standards."\(^{109}\)

The EPA modified its procedure, following *Kennecott*, to supplement its statements of reasons accompanying other promulgations of standards under the Clean Air Act—as appears from the statement of reasons provided in new stationary source standards reviewed in *Portland Cement Association v. Ruckelshaus*.\(^{110}\) The number and variety of issues covered in comments left a gap, however, which had to be covered on remand.

2. Need for Additional Procedures in the Interest of Fairness and Reasoned Decisionmaking

Courts may require supplemental procedures in rulemaking over and above the APA minimum, particularly if matters of fact are involved which are crucial to the problem. This was established outside the environmental field in decisions such as *American Airlines Co. v. CAB*,\(^{111}\) involving air freight regulations. The *American Airlines* doctrine was followed in *Holm v. Hardin*,\(^{112}\) in which the court remanded a regulation limiting the size of imported tomatoes in order to give the importer an opportunity to make a submission directly to the cognizant Department of Agriculture official. Minimum rulemaking procedures would have confined the importer’s submission to an industry committee dominated by domestic producers. The principle was also applied to EPA in *International Harvester*, where the court held that although the sixty-day time limit for EPA’s ruling on suspension applications was justification for denying the kind of general right of cross-examination that had been claimed by Chrysler, a different question would be presented by "a claim of a need for cross-examination of live witnesses on a subject of critical importance which could not be adequately ventilated under the general procedures."\(^{113}\) The opinion also went on to

\(^{108}\) 462 F.2d 846 (D.C. Cir. 1972).
\(^{109}\) Id. at 850.
\(^{110}\) 486 F.2d 375, 379 (D.C. Cir. 1973).
\(^{112}\) 449 F.2d 1009, 1015 (D.C. Cir. 1971).
\(^{113}\) 478 F.2d at 631.
say "that a right of cross-examination, consistent with time limitations, might well extend to particular cases of need, on critical points where the general procedure proved inadequate to probe 'soft' and sensitive subjects and witnesses." Our remand in that case provided that cross-examination should be had on such subjects, upon request, and also on new lines of testimony.

Judge Bazelon, concurring in the result, would have gone further and announced a general right of cross-examination throughout the proceeding. He noted that granting this general right might require abandonment of the sixty-day time limit set by Congress, but he thought that it filled a greater need and that the sixty-day time limit was something that lay within the court's province to waive. In the absence of restraints in the interest of fairness, which have an aura of both constitutional requirement and implied legislative accord, I think a court has no principled basis for overriding a clear-cut sixty-day mandate. I am also of the view that cross-examination is a marvelous technique in the right place, but if applied generally across the board in administrative policy determinations, it can readily become a drag. Or as stated in International Harvester, there is a "not insignificant potential for havoc."

A recent Fourth Circuit case, Appalachian Power Co. v. EPA, has applied the doctrine of American Airlines and International Harvester to the procedure for EPA approval of a state implementation plan under section 110 of the Clean Air Act Amendments of 1970. There had been state hearings on the implementation plan, but at the federal level, when the plan was approved, there had been neither hearings nor opportunity for comment or testimony on the proposed state plans.

The court began with the proposition that the type of procedures required were a function of the questions involved. The core issue raised by petitioners was that the plan would have the effect of closing their plants, or in the alternative, would saddle them with quite large expenses. The court concluded that petitioners' claims to a hearing would be satisfied if adequate hearing procedures existed at the state level. This dovetailed, in its opinion, with the need for expedition. The court stated,

\[\text{footnotes}\]
\[\text{Id.}\]
\[\text{Id. at 649.}\]
\[\text{Id. at 651-52.}\]
\[\text{Id. at 631.}\]
\[477 \text{ F.2d 495 (4th Cir. 1973).}\]
\[42 \text{ U.S.C. } \S 1857c-5 (1970).\]
\[477 \text{ F.2d at 503-04.}\]
however, that it was the duty of EPA to consult those state hearings,\textsuperscript{121} and held the case pending the filing of the state record and indication by EPA that it had consulted the state hearings in reaching its decision to approve the state plan. This authority to outline procedures, the court indicated, was pursuant to its judicial review function.\textsuperscript{122}

Agency procedures should be determined in the first instance by the agency, choosing from among the various options available to assure input for decision. The standard of judicial review, the doctrine of the “hard look,” however, must remain a constant in the equation.

If the procedural minimum required by the APA is met, it may be that judicial concern with the adequacy of an agency's procedures could be satisfied by the course of remand used, for example, in \textit{Kennecott Copper}, in which the court was concerned with the lack of findings even though no findings were required by statute.\textsuperscript{123} Under this approach, inadequate procedures, like inadequate findings, would lead to a remand in aid of the function of appellate review rather than a declaration that the order as issued was invalid for inadequate procedures. Assuming this tack did not result in manifest injustice to the parties, it would have the advantage of avoiding any “penalty” to an agency which had complied with prescribed statutory procedures. The court's power to declare the regulation invalid for lack of fair procedures would be reserved for the most flagrant cases. In the ordinary case, the court would be remanding for further evidence, a commonplace authority generally expressed in statutes establishing judicial review of agency action. In \textit{International Harvester} the court made it clear that the order was not invalid because of a procedural defect (failure to provide cross-examination), but it remanded with instructions to the agency to receive such evidence, in aid of the process of judicial review.\textsuperscript{124}

It is notable that the \textit{International Harvester} mandate expressly retained full flexibility on EPA's part to modify its order in the light of the evidence received on remand.\textsuperscript{125} This was an acknowledgement of the concept of a partnership in the public interest between the reviewing court and the agency being re-

\textsuperscript{121} Id. at 504 n.33.
\textsuperscript{122} Id. at 507.
\textsuperscript{123} See text accompanying notes 108-09 supra.
\textsuperscript{124} See 478 F.2d at 649. Similarly, in \textit{Portland Cement}, the court remanded in part for failure to respond to the assertions of an engineer that inaccuracies existed in the text reports. This response might be in the nature of findings, and might require further evidence at the agency level. 486 F.2d at 392-95.
\textsuperscript{125} See 478 F.2d at 650.
viewed, both of which must be considered parts of the administrative process as a whole, with review combining effective supervision, judicial restraint and administrative flexibility.

E. Standard of Judicial Review

There is no doubt that the scope of judicial review on the merits is a narrow one, which must repose full latitude in the agency, provided it has shown that it has taken a "hard look" at the problems. It is not likely to be of great consequence whether the formula is put in terms like the need for "substantial evidence" or a "substantial inquiry" into whether the order was so lacking in a reasoned basis as to be "arbitrary." My own habit is to use the "substantial evidence" concept to define what is needed to support evidentiary findings of fact, whether express or implied, and to use the "arbitrary and capricious" term to focus on the agency's transition from its facts to its ultimate

126 See Associated Industries v. Department of Labor, 487 F.2d 342 (2d Cir. 1973) (comparing the "arbitrary and capricious" standard for review of rulemaking, 5 U.S.C. § 706(2)(A) (1970), and the "substantial evidence" test set in the Occupational Safety and Health Act, 29 U.S.C. § 660(a) (1970)). Judge Friendly commented that "in the review of rules of general applicability made after notice and comment rulemaking, the two criteria do tend to converge." Id. at 350.

The District of Columbia Circuit recently ruled that when Congress provides a "substantial evidence" test for direct circuit court of appeals review of rulemaking, there is an implication that some kind of "record" is required—at least to the extent that the agency cannot rely on material in another proceeding without giving the parties notice and an opportunity to offer rebuttal material. See Texas Gulf Coast Natural Area Rate Cases, No. 71-1828, at 49-50 (D.C. Cir. Aug. 24, 1973), petition for cert. filed, 42 USLW 3427 (U.S. Dec. 21, 1973) (nos. 73-966 to 968); Mobil Oil Corp. v. FPC, 485 F.2d 1238, 1258-60 (D.C. Cir. 1973), cert. granted sub nom. Chevron Oil Co. v. FPC, 42 U.S.L.W. 5401 (U.S. Jan. 14, 1974) (No. 73-91). Of course, these cases involved natural gas pricing under the Natural Gas Act. In another context, the "record" might reasonably consist of comments supplied pursuant to notice and comment rulemaking, provided there was opportunity to supplement that procedure as needed for fair exploration of the underlying issues. See International Harvester Co. v. Ruckelshaus, 478 F.2d 615 (D.C. Cir. 1973). Anyone wishing to come finally to grips with whether and to what extent a statutory provision for "substantial evidence" review implies an agency procedure, however, must face inharmonious decisions on these issues. Compare Bunny Bear, Inc. v. Peterson, 473 F.2d 1002, 1005-06 & n.3 (1st Cir. 1973), with Chrysler Corp. v. Department of Transportation, 472 F.2d 659, 667-71 (6th Cir. 1972); compare Superior Oil Co. v. FPC, 322 F.2d 601 (9th Cir. 1963), cert. denied, 377 U.S. 922 (1964), with City of Chicago v. FPC, 458 F.2d 731, 758-45 (D.C. Cir. 1971), cert. denied, 405 U.S. 1074 (1972).

The procedural approach of the D.C. Circuit in the FPC cases may reflect a special concern over the propriety of the FPC's conversion of ratemaking under the Natural Gas Act into APA rulemaking, unless special care is taken to maintain a meaningful procedure for the disputed issues which the FPC previously explored in an adjudicative context. Cf. Dakin, Ratemaking as Rulemaking—The New Approach at the FPC, 1973 Duke L.J. 41, 78-87. Arguably the D.C. Circuit's approach is contrary to that in Phillips Petroleum Corp. v. FPC, 475 F.2d 842, (10th Cir. 1973), cert. denied, 42 U.S.L.W. 3401 (U.S. Jan. 14, 1974), and in the Southern Louisiana area case, Placid Oil Co. v. FPC, 483 F.2d 880 (5th Cir. 1973), cert. granted, 42 U.S.L.W. 3405 (U.S. Jan. 14, 1974) (Nos. 73-437, 457, 464). The Supreme Court denied certiorari in the Phillips case, perhaps because that petition involved a serious issue of ripeness, since the FPC had not translated the Rocky Mountain area decision into specific applications to the companies in the area. Since the Court is aware of the Texas Gulf Coast opinion, it may include some comment on this procedural issue when it comes to decide the substantive issue in Chevron Oil Co. v. FPC, No. 73-91 (U.S. Jan. 14, 1974).
conclusions. In any event, the court will not be confined to bare formalities but will probe the entire record to identify the choices made by the agency, to determine whether there has been a disregard of ascertainable legislative intent, to assure itself that the parties were offered a reasonable opportunity to present their position, and to find whether there has been a reasonable assessment of the interrelated policy and legal questions. The court's careful scrutiny of whether an environmental agency has given adequate consideration to nonenvironmental matters stands in high relief by contrast with its concurrent willingness to accept the agency's consideration of environmental matters as complying with NEPA (as a "functional equivalent of a NEPA impact statement") even though not put in the strict mold of an environmental impact statement.

In the present context, however, when technological feasibility questions have signal importance, it is probable that the courts will continue to have recourse to burden of proof concepts, which permit consideration of fairness alongside comparative risks of error. The use of this approach in International Harvester was not an accident but was responsive to an inherent characteristic of this kind of litigation, in which so much is and must be projected from the known to the forecast.

V. PROBLEMS AND POSSIBILITIES IN THE REVIEW OF ENVIRONMENTAL AGENCIES

Perhaps the ultimate question in this portion of my inquiry should be whether there should be judicial review of decisions by environmental agencies at all. I have discussed the costs of judicial review of attacks on executive decisions under NEPA. Review by the courts of determinations by environmental regulatory agencies can also mean costly delays, although it does not potentially affect nearly so many different governmental programs and operations as review under NEPA. Perhaps a more important strike against judicial review stems from the level of technological complexity in issues raised on appeal from decisions of the Administrator of EPA, a level of complexity significantly higher than in most NEPA cases. For NEPA is designed to provide information to decisionmakers not versed in...
environmental technologies and therefore necessarily involves a level of treatment accessible to the layman, whereas EPA functions as a specialist agency in the resolution of often controversial and technical points of environmental engineering. The ability of federal judges without specialist training to competently probe the record on appeal from a decision by EPA or similar agency may therefore be very much in doubt.

Of course, there is some need for appeals from decisions of such agencies to ensure balance and fairness. There are a range of alternative forums, including Congress. Yet the members of Congress have not undertaken review of manifold individual decisions, nor have they created a special appeals commission for that purpose.\textsuperscript{130} Perhaps, then, to the extent that the federal courts of appeal have in fact been given primary review responsibilities in this context, the more fruitful line of inquiry is not whether there should be judicial review but whether and in what ways the costs of that review can be reduced and the proficiency of appellate judges in their task increased.

A. Cutting Costs

Lloyd Cutler's recent remarks\textsuperscript{131} on the overjudicialization of environmental decisionmaking state a preference for a modified decisional model. He believes the current combination of mandated procedures and judicial review in the regulatory context is partly responsible for our dirty air and our energy crisis. His solution, along the lines of the Clean Air Act, is to set a time limit for agency action, and further, a time limit for judicial review, with all decisions done by rulemaking.\textsuperscript{132} The possibility of legislative time constraints for reviewing courts may merit further consideration.

There are a growing number of instances in which important issues have been addressed by the courts with reasonable focus notwithstanding extraordinary expedition.\textsuperscript{133} But max-

\textsuperscript{130} Congress has considered the establishment of "a separate court, or court system, having jurisdiction over environmental matters . . . ." 33 U.S.C.A. § 1361n (Supp. 1973). But the "investigation and study" which it commissioned on the issue came out opposed to the creation of such an institution. See Kiechel, Environmental Court Vel Non, 3 Env. L. Rep. 50013, 50015-16 (1973).

\textsuperscript{131} Heyman, Quarles, Sive & Cutler, The Challenge of Environmental Controls, 28 Bus. Law 9 (1973) (Special Issue).

\textsuperscript{132} Id. 22-28.

imum expedition in any volume of cases may require dispensing with reasons and the binding force of precedent, as Congress has recognized.\textsuperscript{134} If it is the role of a reviewing court to carry out an attentive analysis and to provide explanatory reasons, expedition may thus largely defeat the purpose of review. Perhaps an even more important point to be made about expedition is that the savings promised by time constraints may well turn out to be illusory. A large number of environmental cases in our circuit in recent years have been given a right of way over other matters in actual practice, with expedition in decision, only to result in remands which of necessity extend the time for ultimate decisionmaking. This was the case in \textit{International Harvester}.

One is left with the feeling that if judicial review of environmental regulatory decisions is worthwhile, it is worth the delay attendant on a careful and reasoned consideration by the reviewing court. The fact that our system of checks and balances involves delay does not mean that it is inefficient. By ensuring fairness and consistency, in a broad sense, with congressional priorities, the corrective mechanism may enhance the efficiency of resource allocations on a larger scale.

\textbf{B. Proficiency}

1. Review by a Single Judge, or an Appellate Panel

To the extent that there is judicial review of environmental decisions, should it be by a single judge or by an appellate panel? A single judge has more latitude in conducting an evidentiary inquiry. If the administrative record requires testing or supplementing, he can hear witnesses. He can call expert witnesses to help him understand what is in the record and can usually be confident of a means of payment for experts.\textsuperscript{135} There is no tradition of a short, set time for presentation, and he can schedule whatever time is needed for a thoroughgoing inquiry.

An appellate tribunal permits some difference in focus among the judges, which often and perhaps typically enhances

\textsuperscript{134} \textit{See, e.g.}, D.C. Code \textsection{} 23-104(d)-(e) (1973). These statutes provide for limited appeal by the government of rulings made before or during trial. In order to expedite the appeal, oral argument must be within 48 hours in cases where the trial has been adjourned, and the decision must come within 48 hours of the argument. The appellate court may dispense with the issuance of a written opinion. In United States v. Zeiger, 475 F.2d 1280 (D.C. Cir. 1972), the court heard an interim appeal brought under \textsection{} 23-104(d) and reversed a lower court decision admitting as evidence the results of polygraph testing. In taking this step, the court declined to overrule precedent requiring exclusion but expressly reserved the issue for consideration on appeal from the conviction, if any.

\textsuperscript{135} \textit{See} text accompanying note 151-53 \textit{infra}.\n
depth perspective, as with a stereopticon. Different judges have different strengths and backgrounds, and these implement the purpose of judicial review by ensuring that the various facets of the public interest have been given due consideration. The collegial process of interchange and discussion is helpful even though, in most cases, the laboring oar must be assigned to a designated judge. And if the single judge is to be subject to appellate review, the direct review of the agency by an appellate tribunal saves time ultimately.

As a practical matter within the federal system, of course, whether or not initial review will be had by a single judge or a panel depends on whether or not first appeal from an administrative decision lies to the district court or the court of appeals. What follows will suggest the relative merits of initial access to one or the other forum in various kinds of cases.

a. Appeals to the District Courts

In the absence of statutory provisions for direct appeal to the circuit courts, federal administrative decisions affecting the environment may be brought in federal district court under the Mandamus and Venue Act of 1962.\textsuperscript{136} Placing the initial forum in the district court allows a thoroughgoing inquiry into the bases of decision, such as occurred in \textit{Overton Park}. Although officials may file affidavits, they can be queried on interrogatories, and at least in the absence of findings, the court may permit oral depositions. In many cases these devices function to provide a record without which appellate review, at least within its current confines, would be largely ineffective.\textsuperscript{137}

b. Appeals to the Circuit Courts

(i) Appeals from Orders

In the case of licensing decisions made after a hearing, Congress typically provides for review in the court of appeals. This scheme operates, for example, in the context of a registrant's challenge to a decision by EPA to cancel permission to make or sell or use a pesticide.\textsuperscript{138} It also applies to NEPA challenges to FPC and AEC licensing proceedings.\textsuperscript{139} Skipping the district courts in these cases seems appropriate to the degree


that agency adjudications produce a reasonably well-focused and complete factual record with which an appellate court can comfortably deal—provided, of course, that the appellate tribunal has access to sufficient scientific expertise to enable it to understand the record, an issue with which I will deal subsequently.\textsuperscript{140}

(ii) Appeals from Agency Rulemaking

Similarly, with regard to agency determinations after rulemaking procedures, Congress has, in the case of the chief environmental regulatory agency, EPA, provided for review in the court of appeals, again to avoid the delay incident to consideration by two courts. Though the statutes do not expressly require priority in the court of appeals, that intention is implicit in the structure of the appeal, particularly where, as in the Clean Air Act Amendments of 1970, the EPA has been put under severe time constraints. A different pattern applies, however, to NEPA attacks on regulations issued by other executive departments. In that case, there is often no process for appeal directly to the court of appeals, and the lawsuits are often heard in the district court.

Provision for direct appeal to the court of appeals from a diffuse rulemaking record presents strains. Already the appellate courts have had to devise procedures to implement their task of review, and if they are to continue to act as the initial forum in such cases, they may have to make further adjustments in their conventional practices. In what follows I will suggest in some detail the forms which such adjustments might take.

2. Flexibility in Appellate Procedures

Appellate tribunals will, inevitably, be obliged to develop greater flexibility in the handling of these major environmental cases. Today, they supplement their technical inadequacies only by asking for supplemental memoranda and argument and by remanding to the agency for additional findings, either on the record as made or as supplemented by additional evidence.

a. Use of Counsel

It is, as I have said elsewhere, the lawyer's responsibility to "elucidate the technical."\textsuperscript{141} But it may be that the appellate courts should become freer in calling on counsel for supplemen-

\textsuperscript{140} See text accompanying notes 142, 163-71 infra.
tal help. Our court is increasingly asking for supplemental memoranda, sometimes using the informal practice of drafting a letter for the clerk to send. Why not go further and be more liberal in asking for supplemental argument in the light of such questions?

There is awkwardness in reconvening the panel and counsel, and the time involved seems forbidding. Yet the time required for the judge to grind away on the basis of the original argument, even with the assistance of diligent law clerks, may mean even greater delay in decision. Further, why not permit a single judge to have an on-the-record conference without reconvening the entire panel if the other members do not feel the need of participating? Counsel will doubtless conclude that the initiating judge is writing, but who is to know whether he is writing for the majority or in dissent? It is primarily convention that makes an appellate panel less flexible in such matters than a single trial judge; appellate judges can and should become less custom-bound.

b. Proposed Opinions

The flexibility of appellate courts and procedure might include the use—if experts were called upon for assistance in understanding the record—of a proposed opinion. This opinion would be issued for the purpose of obtaining comment on whether the court's view reflected misapprehension of a technically complex or ambiguous record. Although every opinion is subject to reconsideration, courts may be more ready to entertain comments leveled at a proposed opinion. The "proposed" decision technique is recognized by the APA for executive officials and administrative agencies. Similarly, under the Federal Rules of Civil Procedure a master may file a draft report "for the purpose of receiving [the parties'] suggestions." If the idea has merit, it should not be foreclosed to the courts merely because judicial application is novel.

3. Scientific Aides for Courts

Perhaps the path of vision lies in embracing the use by courts of scientific experts of their own selection. International Harvester commented that the courts have no scientific aides. Yet this condition is not graven in stone. Let us begin by focusing

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143 478 F.2d at 641.
on the problem as it may surface when trial courts are the forum for judicial review.

a. **Trial Courts**

(i) **Expert Witnesses**

Professor McCormick has pointed out, "Cases are recorded as early as the 14th century—before witnesses were heard by juries—of the summoning of experts by the judges to aid them in the determining of scientific issues. The existence of the judge's power to call witnesses generally and expert witnesses particularly seems fairly well recognized in this country." The practice persists, even though it has been abandoned in England in civil cases, and would be codified by the Proposed Federal Rules of Evidence.

As Wigmore forcefully develops, what may rightly disturb the trial judge is that the partisanship and pecuniary subserviency of an expert witness called by a party, a problem encountered, of course, with ordinary witnesses as well, may distort the perceptions of the trier of fact who associates scientists with ideals of objectivity, trustworthiness and truth. The frequent inconclusiveness, uncertainty and contradiction of expert testimony may be as much a function of bias and selectivity on the part of the witness, conscious or otherwise, as a reflection of the limits of knowledge. A judge may rightly not wish himself or a jury to be confined to a view of the issues shaped by such testimony. Wigmore is quick to add, however, that the calling of a scientific expert by the court should take place in the context of evidence presented by experts representing parties, and that the expert called should be subject to cross-examination, a stricture which also appears in proposed rule 614(a).

The question whether the formalities of testimony for the record should always accompany the input of court-appointed experts was thrown into relief by an incident arising in 1963 in the FPC's famous Permian Basin Natural Gas Area Proceeding. When the hearing examiner asked for help in "filling a gap" in the evidence, it developed that a thoughtful

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145 S. Phipson, *Evidence* § 1562 (11th ed. 1970) (such witnesses can, in a civil case, only with the consent of all parties).
person in the industry was willing to come as a witness if called by the hearing examiner but not by the parties. The examiner decided to interview the witness first, to explore the subject he might be willing to discuss, but did so in an on-the-record session expressly designed not to constitute testimony. While one party sought unsuccessfully to stop this procedure by interlocutory appeals that were dismissed, it was not made a ground for objection to the ensuing regulation.

This episode, of course, may be distinguished from the situation contemplated by Wigmore and proposed rule 614(a) in that the expert was not functioning as a witness at the time of his communications with the examiner. One could quibble about where exactly the line defining a witness should be drawn for this purpose. But certainly to require that all contacts, of whatever nature, between judges and neutral experts touching on issues under review be subject to cross-examination by the parties would seriously impair the flexibility of trial courts in illuminating the problems before them.

Use of court-appointed experts inevitably raises the question of who should pay for their services. For criminal cases in the federal courts, the means of paying witnesses called by the court is expressly provided by the Federal Rules of Criminal Procedure. "The court may determine the reasonable compensation of such a witness and direct its payment out of funds as may be provided by law." The Administrative Office of the Courts has a special account to pay for such witnesses.

There is no similar provision for civil cases. Justice Brandeis, writing in Ex parte Peterson, felt there was a power in the courts to tax the costs against the defeated party, but he also cited Whipple v. Cumberland Cotton Manufacturing Co. as precedent for the assessment of costs against both parties. There is also the possibility that the court might bear the costs.

A recent opinion of the Comptroller General dealt with this last alternative in a case in which Judge Edward Curran called a psychiatrist in a proceeding to determine whether a person committed to a mental hospital, after successfully raising

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149 Id.
150 For a proposed use of experts as appellate court aides, a capacity in which they would not be subject to cross-examination, see text following note infra.
152 253 U.S. 300, 315-19 (1920).
153 29 F. Cas. 934 (No. 17,516) (C.C.D. Me. 1843).
the insanity defense in a criminal trial, should be released upon
the motion of the hospital superintendent. Judge Curran was
required by the statute in effect to make an independent assess-
ment whether the committee's condition warranted his release,
despite favorable testimony from the hospital.

Judge Curran referred the psychiatrist's invoice for payment
under the Criminal Justice Act. The bill was not paid by the
Administrative Office on the ground that habeas corpus pro-
ceedings were civil in nature. The Comptroller General, however
ruled that there was "no question concerning the authority of a
court to procure at its own motion expert services which are
deemed necessary to determine the matter before it," and that
the expense should be payable by the Administrative Office from
funds appropriated for "miscellaneous expenses, not otherwise
provided for, incurred by the judiciary. . . ."

(ii) Masters

Apart from expert witnesses, the courts may call on experts
in the role of masters. The term “master” includes a “referee,
an auditor, an examiner, a commissioner, an assessor,” which
broadly defined could include “scientific examiners.” The adap-
tability of the procedure is highlighted by the case of Knight v. Board of Education, where the court appointed a “Masters
Committee of Educational Experts” to supervise the implementa-
tion of an injunction against the board to provide high school
education to students whose transfer from a school had
amounted to a de facto discharge from the educational system.
The defendant board was to be taxed with the costs.

The Federal Rules of Civil Procedure provide that “[t]he
compensation to be allowed to a master shall be fixed by the
court, and shall be charged upon such of the parties or paid out
of any fund or subject matter of the action, which is in the
custody and control of the court as the court may
direct.” Presumably the court also retains discretion in certain cases to
absorb the costs of a master itself, as in the psychiatrist-witness
case just discussed.

155 This motion can be brought under D.C. Code § 24-301(e) (1973).
158 Id.
161 Id. at 118.
b. Appellate Courts: A New Role for Scientific Experts in Appellate Review

Could these available procedures be adapted to the need of appellate courts for scientific aides? The principles of the Federal Rules of Civil Procedure concerning masters have been applied by analogy, as representing sound principles of judicial administration, to masters appointed by the federal courts of appeals, including masters appointed from personnel unconnected with the court. The usefulness of this device to appellate courts has seemed limited to special circumstances, however. And I know of no examples of witnesses called by the appellate court, though on occasion we question counsel as to matters outside the technical record and can accept their observations as a premise of judgment if not contested.

(i) A Proposal

What an appellate court needs, in my view, is an aide who is not a witness so much as a kind of hybrid between a master and a scientific law clerk, a scientific expert who might be available, at the call of the appellate court, not to give evidence or resolve factual or technical issues, but to advise a court so that it could better understand the record. To illustrate: in the context of appeals from EPA rulemaking proceedings, the expert could help the court understand and appraise the relative significance of petitioners' scientific contentions. He could also provide assistance in understanding problems of scientific methodology and in assessing the reliability of tests conducted by the agency in light of specific criticisms. These are issues on which the expert would assist the judge in performing a task he must now perform with only the help of a law-trained clerk.

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163 This has occurred in cases where the appellate court has been called on by the National Labor Relations Board to adjudicate an employer as in civil contempt of the court's judgment affirming the Board's order. E.g., NLRB v. Crown Laundry & Dry Cleaners, Inc., 437 F.2d 290, 292 (5th Cir. 1971); NLRB v. Ralph Printing & Lithographing Co., 433 F.2d 1058, 1060 (8th Cir. 1970), cert. denied, 401 U.S. 925 (1971); Skyline Homes, Inc. v. NLRB, 381 F.2d 706, 707 n.4 (5th Cir. 1967), cert. denied, 389 U.S. 1039 (1968).

164 See note 163 supra.


166 See International Harvester Co. v. Ruckelshaus, 478 F.2d 615, 641 (D.C. Cir. 1973): The legal issues are intermeshed with technical matters, and as yet judges have no scientific aids. Our diffidence is rooted in the underlying technical complexities, and remains even when we take into account that ours is judicial review, and not a technical or policy redetermination . . . .
Of course, counsel are often helpful in elucidating a technically complex record, and I have suggested ways in which an appellate court could be more flexible in making use of their knowledge.\textsuperscript{167} But surprisingly often in argument before a court that enjoys the services of an excellent bar, the judges' questions on technical matters are fended off rather than answered, even after whispered conferences with the assistant nearby. And then there are the agonies of the judge who feels after listening to counsel that he understands the technical aspects well enough—that is, well enough to ponder the legal issues—but who finds when he comes to conference that he doesn't really understand the matter that well, or perhaps does not remember it clearly.\textsuperscript{168}

A lawyer understanding a technical litigation knows very well that a major part of his learning process is the acquisition of background technical understanding—before he gets to focus on the disputed issues. He spends many and often weary hours discussing this learning with experts in whom he has confidence. The need of the appellate court is not as broad-ranging, but it is substantial, and it is often crucial.

(ii) Procedural Safeguards Required by the Use of Scientific Aides

The question will doubtless arise whether the parties could demand the right to be apprised of the advice given by the court's scientific aide and to examine him. As I have implied by stressing the analogy to the function of a law clerk, I think this should not be a matter of right. If such a procedure were made universally applicable to the expert's memoranda, why not to his conferences with the judge? The resulting overload of procedure would so inhibit the assistance as to leave the proposal stillborn. Judges would have to be sensitive to the problem of advice regarding scientific material that is not in the technical record. Judges now refer to such material as a matter of judicial notice.

An appellate court would have to be vigilant in order to sense whether the submission involved any matter that might be disputed. The court could even hold an inquiry on whether after-supplied material needed to enhance the court's understanding did in fact fall within an area of dispute. If an area of possible dispute were involved, then there would be basis for a

\textsuperscript{167} Text following note 141 supra.
\textsuperscript{168} See Leventhal, supra note 141.
claim that material not offered by the expert should also be brought forward for the court's consideration. Whether there should also be cross-examination of the expert is another issue. The common sense of the matter is that if the subject is one that involves bona fide dispute, it is not a matter that the court should handle by an appellate analogy to judicial notice or summary judgment, and the case should be remanded to the agency to take further evidence and findings. The failure of the courts to be sensitive to this problem could result in Supreme Court chastisement or perhaps in a reconsideration of the fundamental wisdom of a court-aide scheme.

(iii) Practical Problems in the Use of Aides

If the course I am suggesting were taken, courts would be faced with the problem of selecting satisfactory aides. The expert could be drawn from the scientific community at large or from a pool of scientific aides established for exclusive use of the courts. The first alternative may be preferable, because inclusion in a pool of "court aides" would not be attractive to the broad-gauged and widely informed person who could best be expected to provide the sort of information needed to assist the court in its understanding. Choosing this alternative would not preclude relying on institutions such as the National Academy of Sciences—unless, of course, in that particular case they had already given advice to the agency that was party to the litigations.

Payment would have to be arranged. My own predisposition is that the costs would ordinarily be taxable to both parties, since the expert's time is being used to inform the court on the points made by both sides. In the case of parties devoid of funds or subject to legal limitations, as may be the case with government parties, there may be need to invoke the principle of absorption by the court, drawing on funds appropriated to the judiciary for miscellaneous expenses.

(iv) Objections to the Proposal

The matter is not open and shut. Judge Wyzanski has apparently repented the procedure he followed in appointing Carl Kaysen, a distinguished economist and now head of the Institute for Advanced Study at Princeton, as his law clerk during the year he was considering United Shoe Machinery Corp. v.
United States.\textsuperscript{169} That opinion is a landmark, and was affirmed by the Supreme Court without further opinion.\textsuperscript{170} A few years ago Judge Wyzanski noted in an address that the procedure had been challenged by Bethuel Webster, and that on reflection he thought Mr. Webster was right.\textsuperscript{171} His central point seems to have been that in this recondite field the judge did not have ability equal to that of his economist law clerk, and that the judge did not have requisite independence when the assistant had, in effect, “mastery” over the judge through superior technical ability, learning and experience. Judge Wyzanski felt that he had used a superior technique in a later case, apparently a radar patent case, in which he named an outstanding expert as a master and required that he confer with each of the parties and staff in the presence of the other and prepare a report which would be submitted to both parties. The master would then be subject to examination by each party in open court on the witness stand.

While the issue is close, I think there is room, both in practical necessity and in the legal structure, for access by an appellate judge to a scientific assistant, with whom he could communicate in private, as with his law clerk, orally as well as in writing. Certainly a system which enhances understanding by the judge is preferable to one in which the judge must grab, or stab, at a record that seems to be important but which incorporates confusing and extraneous impressions. If this happens in the jury room, when a choice must be made between two experts and one is taken to be more sagacious than the other by reason of his gray hair, friendly smile or mild demeanor, at least the damage is confined to an individual case. Also, there are so many nonrational aspects of the jury system that this one is not particularly obtrusive. But to require environmental decisions to be delayed and possibly upset by a court on the basis of similarly superficial aspects of what appears in the hearing record seems to me to make perfection the enemy of progress.

\textsuperscript{170} 347 U.S. 521 (1954).
\textsuperscript{171} Wyzanski, The Law of Change, 38 N.M.Q. 5, 19 (1968). For a thoughtful view that the economist's only sound role in antitrust cases is as a witness, not as a master or ex parte expert in any guise, see Webster, The Use of Economics Experts as Witnesses in Antitrust Litigation, 17 The Record 456 (1962) (speech made at Third Circuit Judicial Conference). For views that an economist should not again be made a judge's law clerk, see Kaysen, An Economist as the Judge's Law Clerk in Sherman Act Cases, 12 ABA ANTITRUST SECTION REPORT 43 (1958); Webster & Hogeland, The Economist in Chambers and in Court, id. 50.
Even if no jury is involved, there remain significant differences between the trial judge and the appellate panel that may render Judge Wyzanski's current views less telling in the context of appellate review. Susceptibility to "excessive" influence is substantially lessened, for instance, when the tribunal consists of more than one judge, as points of view not affected by consultation with an aid offer a tempering influence. The danger is further reduced by the fact that the trial judge usually has the function of deciding issues of fact, whereas the appellate court determines only whether there is a rational and legitimate basis for the resolution of the facts by others. The appellate court, therefore, may rely on the general guidance of an aid, his translation, as it were, from a recondite language, without having to accept advice on whether a given view of the factual issues is "correct" or not.

In a final response to the concern that the influence of a scientific aid might become excessive, I would again emphasize the analogy to the law clerk rather than the expert witness. This view is informed by a sense that any institutional program for supplying scientific aids will evolve more naturally and effectively, and with less of a threat to judicial independence, if the scientists involved are asked to serve as "assistants" to the court panel.

VI. Conclusion

The ultimate answer on how courts should be organized to respond to environmental issues depends on which tribunal can best serve the objective of judicial review. One objective is to provide supervision that emphasizes broad questions of fairness. Another objective is to combine supervision with restraint, making the courts a genuine kind of partner with the agency in the overall administrative process. We had that very much in mind in International Harvester in the fashioning of the opinion and remand order. In the remand proceeding,\(^\text{172}\) the Administrator was, at least in my impression, both intent on complying with the requirement of our opinion and order, and able to use the concepts set forth by the court as a new point of reference for marshaling the materials and probing the central issues. He frequently referred to his findings and conclusions as both in

compliance with the court's order and in furtherance of the public interest.

Thus the Administrator set out to analyze the problem of the extent of feasible automotive emission control by 1975, in light of broad considerations of the public interest outlined in the opinion; made a showing of the reliability of the methodology used to predict the ability to conform with proposed interim standards, including an estimate of the statistical significance of its prediction; and made a presentation on the basis of a detailed analysis of the record. The court's decision apparently provided a useful structure for his decision, especially in terms of the burden of proof which he was expected to carry. Yet the Administrator was able and willing to explore on his own initiative new avenues of decision and partial decision.

The common theme one can draw from these observations on the role of the courts in environmental matters is the court's central role of ensuring the principled integration and balanced assessment of both environmental and nonenvironmental considerations in federal agency decisionmaking. The rule of administrative law, as applied to the congressional mandates for a clean environment, ensures that mission-oriented agencies, where NEPA is applied, will take due cognizance of environmental matters. It ensures at the same time that environmental protection agencies will take into account the congressional mandate that environmental concern be reconciled with other social and economic objectives of our society. The courts have been selected by Congress to provide an "independent" review of the decisions involved. This conjoins effective supervision with restraint. The path that lies ahead is to improve the capability of the courts to apply the rule of administrative law to the environmental area, in which special problems of complexity are presented.