Worst Case Analyses: A Continued Requirement under the National Environmental Policy Act?

Valerie M. Fogleman*

I. INTRODUCTION

In April 1986, the Council on Environmental Quality (the "CEQ" or the "Council") withdrew its "worst case analysis" regulation.[1] The worst case analysis regulation had first appeared in 1977 as part of the CEQ's regulations for implementing the National Environmental Policy Act (NEPA).[2]

Under NEPA, federal agencies must prepare detailed statements for "major federal actions significantly affecting the quality of the human environment . . . ."[3] The detailed statements, known as environmental impact statements ("EISs") must include an agency's consideration of:

> (i) the environmental impacts of the proposed action,
>
> (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
>
> (iii) alternatives to the proposed action,
>
> (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

* Visiting Instructor, University of Illinois College of Law. J.D. 1986, B.L.A. 1983, Texas Tech University. This Article was written while the author was Natural Resources Law Fellow, Northwestern School of Law of Lewis and Clark College. The author would like to thank Professor William F. Funk of Northwestern School of Law for his helpful comments on the Article, Lenair Mulford of Northwestern School of Law for her editing and typing skills, and Letitia J. Mallin of Columbia University School of Law for her editing skills and diligence.

1. Council on Environmental Quality, Final Rule, 51 Fed. Reg. 15,618 (1986); *see* 40 C.F.R. § 1502.22 (1985) (superseded). In this Article the term "worst case analysis regulation" refers to the regulation which was withdrawn. The current regulation, which replaced the worst case analysis regulation in 1986, will be called "the superseding regulation."

2. 40 C.F.R. § 1500 (1987); *see* 42 U.S.C. §§ 4321-4347 (1982).

3. 42 U.S.C. § 4332(2)(C) (1982).

> (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[4]

The CEQ's regulations provided a framework to aid federal agencies in their preparation of EISs. As part of that framework, the worst case analysis regulation addressed an important problem occasionally faced by the agencies in preparing EISs.

The contours of the problem, as seen by the CEQ, are best illustrated by a synopsis of the regulation. If scientific uncertainty or gaps in relevant information were discovered by an agency when it was evaluating the significant adverse environmental effects of its proposed action, the uncertainty or gaps had to be disclosed.[5] If the relevant unavailable information was essential to a decision on alternatives to the proposed action and the overall costs of obtaining the information were not exorbitant, the information had to be included in the EIS.[6] On the other hand, if the costs were exorbitant, or if the means of obtaining important information was unavailable because it was beyond the state-of-the-art, the agency had to balance the need for the action against the severity and risk of possible adverse environmental effects if the action proceeded in the face of scientific uncertainty.[7] A decision to proceed with an action obligated the agency to include a worst case analysis in its EIS, together with an indication of the probability of the occurrence of the adverse impacts.[8] In essence, the worst case analysis regulation addressed agency actions with the potential for low-probability but catastrophic environmental consequences when important information regarding such consequences was unknown or conflicting. The regulation dictated that if an agency's proposed actions involved a leap into the unknown, the worst environmental consequences of that action were to be analyzed.[9]

4. *Id.*

5. 40 C.F.R. § 1502.22 (1985) (superseded).

6. *Id.* § 1502.22(a).

7. *Id.* § 1502.22(b).

8. *Id.*

9. *See* Yost, *Don't Gut Worst Case Analysis*, 13 Envtl. L. Rep. (Envtl. L. Inst.) 10,394, 10,394 (1983).

An example of a worst case analysis was described in Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983). In *Sigler*, the Corps of Engineers proposed constructing an oil superport in Galveston Bay, Texas. A possibility existed that construction of the superport would result in the total cargo loss of an oil tanker in the bay. Because the environmental conse-

In 1986, following controversial interpretations of the worst case analysis regulation by the Ninth Circuit,[10] the CEQ withdrew the regulation.[11] The superseding regulation requires federal agencies to disclose the existence of incomplete or unavailable information when evaluating reasonably foreseeable significant adverse environmental effects.[12] If the superseding regulation is triggered, the agency must disclose the fact that information is incomplete or unavailable; state the relevance of such missing information; summarize "credible scientific evidence" relevant to an evaluation of reasonably foreseeable significant adverse impacts; and evaluate the impacts by the use of research methods or theoretical approaches which are generally accepted in the scientific community.[13] "Reasonably foreseeable significant impacts" include environmental effects of low probability but catastrophic consequences if and only if an analysis of such effects "is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason."[14]

In effect, the superseding regulation shifts the focus of an agency's inquiry into proposed actions whose environmental consequences involve scientific uncertainty. Whereas the worst case analysis regulation required an agency to analyze the worst environmental consequences of an action where scientific uncertainty

quences were known for only the first twenty-four hours following the spill, the Fifth Circuit ordered the Corps to prepare a worst case analysis. *Id.* at 974-75.

The court stated that the worst case analysis could be based on the Corps' twenty-four hour dispersion model of the oil spill's environmental consequences, as well as on existing data about the bay's tides and currents. *Id.* at 974. Thus, although information on the environmental consequences of an oil spill after its first twenty-four hours was beyond the state-of-the art, an informative worst case analysis of the spill could be prepared that was not unreasonably speculative. The analysis would be useful to a decisionmaker in deciding whether to proceed with the superport's construction. *Id.* at 974-75.

10. *See* Save Our Ecosystems (SOS) v. Clark, 747 F.2d 1240 (9th Cir. 1984); Southern Or. Citizens Against Toxic Sprays (SOCATS) v. Clark, 720 F.2d 1475 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984). *See generally* Brock, *Abolishing the Worst Case Analysis*, 2 NAT. RESOURCES & ENV'T 22, 64-66 (Spring 1986) (criticizing Ninth Circuit's holding in *SOCATS*); Note, *The Council on Environmental Quality's Research and Worst Case Regulation: The Recent Litigation*, 64 OR. L. REV. 547, 558-61 (1986) (discussing *SOS* and *SOCATS*); Note, *NEPA's Worst Case Analysis Requirement: Cornerstone or Stumbling Block*, 25 NAT. RESOURCES J. 495, 507-12 (1985) (agreeing with *SOCATS*); Note, *SOCATS: Worst Case Analysis in the West*, 6 PUB. LAND L. REV. 183, 187-90 (1985) (same).

11. Council on Environmental Quality, National Environmental Policy Act Regulations; Incomplete or Unavailable Information, Final Rule, 51 Fed. Reg. 15,618 (1986).

12. 40 C.F.R. § 1502.22 (1987).

13. *Id.* § 1502.22(b).

14. *Id.*

as to those consequences was involved, the superseding regulation permits an agency to evaluate only the scientific evidence that it considers to be credible. If an agency does not consider scientific evidence concerning potential environmental consequences to be credible, it can comply with the superseding regulation merely by disclosing the extent of incomplete or unavailable scientific evidence and stating the relevance of that evidence.

Withdrawal of the worst case analysis regulation shattered the consensus of support behind the CEQ regulations.[15] While some parties viewed the CEQ's actions as an improvement to the NEPA process, others, including members of the Senate Committee on Environment and Public Works, viewed it as a dilution of the benefits provided by NEPA to the public.[16]

This Article will examine the CEQ's withdrawal of the worst case analysis regulation and its replacement by the superseding regulation. Part II will summarize the background of the CEQ regulations. Part III will discuss the origin, and Part IV, the legality, of the worst case analysis regulation. Part V will examine the question of the CEQ's authority to withdraw the worst case analysis regulation. Assuming that the CEQ has the authority to withdraw it, Part VI will analyze the legality of the CEQ's withdrawal of the regulation. Part VII will discuss the effect of the superseding regulation on agency decisionmaking and on judicial review in cases involving scientific uncertainty. The Article will conclude that the CEQ's action in withdrawing the worst case analysis regulation and replacing it with the superseding regulation probably

15. *Cf.* Yost, *NEPA—The Law That Works*, 3 ENVTL. F. 38, 41-42 (Jan. 1985) (describing enthusiastic welcome accorded CEQ regulations by all interested parties). The term "CEQ regulations" is used in this Article to mean all the CEQ regulations, not just the worst case analysis regulation and its replacement.

16. *See* Letter from Senators J. Randolph, R. Stafford, D. Durenberger & M. Baucus to A. Alan Hill, Chairman, CEQ (Feb. 2, 1984); *see also Department of Housing and Urban Development, and Certain Independent Agencies Appropriations for Fiscal Year 1986, Part I, Hearings on H.R. 3629 Before a Subcomm. of the Senate Comm. on Appropriations*, 99th Cong., 1st Sess. 661-709 (1985) [hereinafter *1986 Appropriations Hearings*] (comments received by CEQ in response to Advance Notice of Proposed Rulemaking). Generally, business and industry supported the CEQ's actions while environmental organizations opposed them. *See id.* at 665-84 (comments by business and industry); *id.* at 684-92 (comments by public interest groups including environmental organizations). Federal agencies were split in their opinions of the CEQ's actions, with the majority in favor of a change to the worst case analysis regulation. *See id.* at 699-709 (comments by federal agencies). A split in the opinions of commenting state governments resulted in a wide variety of suggestions for clarifying the regulation. *See id.* at 661-65 (comments by state governments).

generated more controversy and uncertainty than it resolved. In at least two circuits, judicial precedent requires preparation of worst case analyses in situations involving scientific uncertainty. Therefore, agency compliance with the superseding regulation does not necessarily mean compliance with NEPA. Thus, in creating the superseding regulation, the CEQ may have simply added a superfluous procedure to those already required by NEPA.

II. The Council on Environmental Quality and the National Environmental Policy Act

The CEQ was established in the Executive Office of the President by NEPA in 1970.[17] The CEQ's three members, appointed by the President with the advice and consent of the Senate,[18] are supported in their duties by a small staff.[19] During the early 1970s, over seventy staff members supported the CEQ.[20] In 1986, the CEQ's support staff numbered less than ten.[21] The most drastic reduction occurred in 1981 when fifty-one staff members were fired.[22]

The CEQ was directed by NEPA to review and appraise the activities of federal agencies in relation to the Act.[23] The small agency was thus placed in the unenviable position of reviewing

17. 42 U.S.C. § 4342 (1982).

18. *Id.* The structure of the CEQ is patterned after the Council of Economic Advisors. *See* Liroff, *The Council on Environmental Quality*, 3 Envtl. L. Rep. (Envtl. L. Inst.) 50,051, 50,052 (1973).

19. 42 U.S.C. § 4343 (1982). The support staff is provided by the Office of Environmental Quality created by the Environmental Quality Improvement Act of 1970. 42 U.S.C. §§ 4371-4374 (1982). In practice, the CEQ and the Office of Environmental Quality operate as one entity. Davies & Lettow, *The Impact of Federal Institutional Arrangements*, in Federal Environmental Law 126, 131 (Envtl. L. Inst. 1974).

20. *See CEQ's Role Declines Under Carter, Reagan After Serving as Major Policy-Making Body*, 16 Env't Rep. (BNA) 10 (1985).

21. *Fiscal Year 1987 Budget Review: Hearings Before the Senate Comm. on Environment and Public Works*, 99th Cong., 2d Sess. 424 (1986).

22. *Department of Housing and Urban Development—Independent Agencies Appropriations for 1983, Hearings Before a Subcomm. of the House Comm. on Appropriations*, 97th Cong., 2d Sess. 11 (1982) (statement of Thomas Delaney, Administrative Officer, CEQ).

23. 42 U.S.C. § 4344 (1982); *see* Anderson, *The National Environmental Policy Act*, in Federal Environmental Law 238, 249 (Envtl. L. Inst. 1974). Other duties of the CEQ include advising the President on environmental policy, 42 U.S.C. § 4344(4) (1982), preparing annual environmental quality reports, *id.* § 4344(1), and analyzing data on environmental quality, *id.* § 4344(5).

implementation of the Act by much larger federal agencies unaccustomed to having their actions directed by another agency.[24]

The CEQ's relative powerlessness was compounded by the terms of NEPA. NEPA is written broadly,[25] declaring environmental policy rather than specifying procedures for the Act's implementation.[26] It has been suggested that NEPA's supporters in Congress expected federal agencies to begin acting in an environmentally conscious manner once they had assimilated the knowledge generated by the Act's "action-forcing" provisions.[27] Federal agencies, however, proved unwilling to incorporate environmental protection into their mandates.[28]

Despite the federal agencies' reluctance to comply with NEPA, the CEQ cautiously strengthened its own role in implementing the Act. While attempting to avoid the appearance of asserting control over federal agencies,[29] the CEQ used the authority con-

24. For example, every agency missed the CEQ's deadline of October 30, 1973 for publication of proposed changes to agency regulations to reflect compliance with NEPA. *See* Druley, *Federal Agency NEPA Procedures*, Env't Rep. (BNA) Monograph No. 23, at 1-2 (1976).

25. *See* City of New York v. United States, 337 F. Supp. 150, 159 (E.D.N.Y. 1972) (describing NEPA as "broad" and "opaque"); Hanks & Hanks, *An Environmental Bill of Rights: The Citizen Suit and the National Environmental Policy Act of 1969*, 24 RUTGERS L. REV. 230, 245 (1970) (describing NEPA as statutory in form but constitutional in spirit); *see also* Cramton & Berg, *On Leading a Horse to Water: NEPA and the Federal Bureaucracy*, 71 MICH. L. REV. 511, 512-13 (1973) (comparing NEPA to constitutional charter).

26. *See* R. ANDREWS, ENVIRONMENTAL POLICY AND ADMINISTRATIVE CHANGE 18 (1976); W. RODGERS, HANDBOOK ON ENVIRONMENTAL LAW 697 (1977).

27. *See* Anderson, *supra* note 23, at 242. The major "action-forcing" provision is 42 U.S.C. § 4332(2)(C) (1982), which requires federal agencies to prepare a detailed statement specifying adverse environmental impacts and including alternative actions for "major Federal actions significantly affecting the quality of the human environment . . . ." *But see* Caldwell, *The National Environmental Policy Act: Retrospect and Prospect*, 6 Envtl. L. Rep. (Envtl. L. Inst.) 50,030, 50,031 (1976) (because NEPA's intent was reformation of administrative performance, detailed implementation of NEPA was intentionally left to administrative initiative).

28. *See, e.g.*, Calvert Cliffs' Coordinating Comm., Inc. v. AEC, 449 F.2d 1109, 1119 (D.C. Cir. 1971) (criticizing AEC's reluctance to incorporate NEPA procedures into its review process); Rhode Island Comm. on Energy v. GSA, 397 F. Supp. 41, 58 (D.R.I. 1975) (criticizing GSA's "utter disregard of environmental concerns"). *See generally* Anderson, *supra* note 23, at 244 (describing agency reaction to NEPA); Lynch, *The 1973 CEQ Guidelines: Cautious Updating of the Environmental Impact Statement Process*, 11 CAL. W.L. REV. 297, 300 (1975) (describing "simmering conflict" between agencies' implementation of NEPA and CEQ's interpretation of how NEPA should be implemented).

29. *See Fish and Wildlife Miscellaneous—Part 5: Hearings Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries*, 98th Cong., 2d Sess. 51 (1984) [hereinafter *Fish and Wildlife Hearings*] (statement of R. Cahn, former CEQ member); *See* Lynch, *supra* note 28, at 308, 321, 335 (describing CEQ policy favoring judicial precedent wherever possible).

tained in NEPA supplemented by Executive Order No. 11,514[30] to issue guidelines to aid federal agencies in their preparation of EISs.[31] In 1971, a landmark decision by the District of Columbia Circuit solidified the CEQ's role as a major force behind the implementation of NEPA.

In *Calvert Cliffs' Coordinating Committee, Inc. v. AEC*, the court used the CEQ's guidelines to reject the Atomic Energy Commission's (the "AEC") "crabbed interpretation of NEPA."[32] The court favored "[c]ompliance to the 'fullest' extent possible . . . ."[33] The AEC rules for implementing NEPA, which were at issue in the case, had permitted the agency to exclude specifically,[34] or to ignore generally,[35] environmental considerations if the agency merely complied with the procedural requirements of NEPA. The court rejected the AEC's interpretation of NEPA, quoting from several CEQ guidelines[36] and favorably contrasting the guidelines with the AEC's rule. According to the District of Columbia Circuit, the CEQ guidelines aimed to " 'assist agencies in implementing not only the letter, but the spirit, of the Act,' "[37] while the rejected AEC rules were only in technical compliance with NEPA.[38]

During much of the period since the *Calvert Cliffs'* decision, the courts and the CEQ have acted almost symbiotically in developing NEPA law by means of judicial interpretation of NEPA and

30. 3 C.F.R. 902 (1970), *reprinted in* 42 U.S.C. § 4321 note, at 508-10 (1982), *as amended by* Exec. Order 11,991, 3 C.F.R. 123 (1978). Executive Order 11,514 was drafted largely by the CEQ. *See* R. ANDREWS, *supra* note 26, at 180 n.20; Liroff, *supra* note 18, at 50,052. Originally, the OMB was to be responsible for reviewing federal agencies' compliance with NEPA procedures. *See* F. ANDERSON, NEPA IN THE COURTS 11 (1973). OMB did not resist the CEQ's desire to acquire review authority for NEPA. *See* Liroff, *supra* note 18, at 50,052.

31. Council on Environmental Quality, Preparation of Environmental Impact Statements; Guidelines, 38 Fed. Reg. 20,550 (1973); 40 C.F.R. § 1500 (1974) (superseded).

NEPA provided the CEQ with authority to assist and advise the President in the formulation of national environmental policy. 42 U.S.C. § 4344 (1982). Executive Order No. 11,514 authorized the CEQ to issue guidelines to aid federal agencies in implementing NEPA. 3 C.F.R. 902 (1970), *reprinted in* 42 U.S.C. § 4321 note, at 508-10 (1982), *as amended by* Exec. Order 11,991, 3 C.F.R. 123 (1978).

32. 449 F.2d 1109, 1117 (D.C. Cir. 1971).

33. *Id.* at 1118 (quoting 42 U.S.C. § 4332 (1982)). The court defined "to the fullest extent possible" as setting a high standard which reviewing courts must enforce rigorously. *Id.* at 1114.

34. *See id.* at 1122 (citing 10 C.F.R. § 50, app. D, at 249 (1971) (superseded)).

35. *See id.* at 1117-18 (citing 10 C.F.R. § 50, app. D, at 249 (1971) (superseded)).

36. *See id.* at 1118 n.19; *id.* at 1129 n.43.

37. *Id.* at 1118 n.19 (quoting 36 Fed. Reg. at 7724).

38. *Id.* at 1117.

the CEQ guidelines[39] and the CEQ's codification of judicial decisions.[40] In 1978, the CEQ's authority to implement NEPA was further strengthened by Executive Order No. 11,991, which granted the CEQ authority to issue regulations binding on all federal agencies.[41] The earlier executive order, No. 11,514, had enabled the CEQ to issue guidelines only.[42]

The CEQ regulations are unusual for two reasons. Because they were issued eight years after NEPA's enactment, the regulations incorporate case law, administrative experience, and the results of a lengthy and exhaustive rulemaking process.[43] Also, the rules apply broadly to all federal agencies, meaning that federal agencies must adopt procedures supplementing and conforming to the CEQ regulations.[44] Normally, agency rules govern only the actions of the agency which promulgated them.

39. *See* Izaak Walton League v. Schlesinger, 337 F. Supp. 287, 294-95 (D.D.C. 1971). *See generally* Yarrington, *The National Environmental Policy Act*, Env't Rep. (BNA) Monograph No. 17, at 11 (1974) ("[i]t is universally accepted that the courts have shaped NEPA, and the federal process under it, in a manner unprecedented in the history of the development of federal programs").

40. *See* 4 CEQ ANN. REP. 234 (1974) (revised CEQ guidelines "incorporate[ ] much of NEPA's legal evolution in the courts over the past 2 years"); Anderson, *supra* note 23, at 253 ("relationship between CEQ and the courts can be characterized as one of mutual support and partnership"); Lynch, *supra* note 28, at 301 (CEQ guidelines tend to concentrate on noncontroversial areas supported by judicial precedent). *Compare* 40 C.F.R. § 1506.1(a) (1987) (restraining federal agencies from taking actions adversely affecting the environment or limiting their choice of alternatives until a record of decision is issued) *with* Scientists Inst. for Public Information, Inc. v. AEC, 481 F.2d 1079, 1090 (D.C. Cir. 1973) (fast breeder reactor program could not proceed to technology development stage until AEC complied with NEPA procedures).

41. 3 C.F.R. 123 (1978) (amending Exec. Order 11,514, 3 C.F.R. 902 (1970)), *reprinted in* 42 U.S.C. § 4321 note, at 508-10 (1982). Executive Order 11,991 was issued after a congressional oversight committee, the President's Commission on Federal Paperwork, and commentators had recommended replacement of the CEQ guidelines by binding regulations. *See generally* Liebesman, *The Council on Environmental Quality's Regulations to Implement the National Environmental Policy Act—Will They Further NEPA's Substantive Mandate?*, 10 Envtl. L. Rep. (Envtl. L. Inst.) 50,039, 50,045 (1980). The Executive Order was drafted at the CEQ. *See generally* Yost, *supra* note 15, at 41.

42. *See supra* note 30 and accompanying text.

43. *See* 43 Fed. Reg. at 55,980 (describing background of regulations). *Compare* Kleppe v. Sierra Club, 427 U.S. 390, 410-12 (1976) (criteria for cumulative actions under NEPA) *with* 40 C.F.R. § 1508.24(a)(1) (1987) (CEQ criteria for cumulative actions); *see also infra* note 146 (describing incorporation of scoping procedure from Massachusetts statute into CEQ regulations).

44. 40 C.F.R. § 1507.3 (1987). The CEQ regulations provided a uniform procedure for implementing NEPA to replace the varying sets of regulations promulgated by over 70 federal agencies. 43 Fed. Reg. at 55,978.

The basis for many of the CEQ regulations cannot be found in NEPA or its scant legislative history. For example, the CEQ regulations mandate preparation of a draft and a final EIS;[45] NEPA only specifies preparation of "a detailed statement . . . ."[46] Similarly, the CEQ regulations emphasize the importance of public participation in the NEPA process;[47] NEPA is silent on the issue.[48] Courts have traditionally deferred to the CEQ regulations,[49] however, and the Supreme Court has recognized that the executive branch made the regulations binding on federal agencies.[50]

In summary, despite the disadvantages of its small size and the vague terms of its enabling legislation, the CEQ today plays a major role in the federal government's implementation of NEPA. The CEQ, supplementing its powers by means of Executive Orders Nos. 11,514 and 11,991, issued guidelines and, later, regulations which provide the basic framework on which federal agencies formulate the procedures and criteria used by them in implementing the Act. The courts' general deference to the CEQ regulations have further strengthened the CEQ's authority to provide the basis for federal agencies' implementation of NEPA.

III. The Worst Case Analysis Regulation

The worst case analysis regulation stated that:

45. 40 C.F.R. § 1502.9 (1987).

46. 42 U.S.C. § 4332(C) (1982).

47. 40 C.F.R. §§ 1503.1(a)(4), 1503.4(a) (1987).

48. NEPA merely mentions that comments of federal, state, and local agencies are to be made available to the public through Freedom of Information Act requests. 42 U.S.C. § 4332(c) (1982); *see* 5 U.S.C. § 552 (1982). The emphasis on public participation began in the CEQ guidelines. *See generally* Druley, *supra* note 24, at 17 ("clearest situation in which the CEQ guidelines and the agency procedures go beyond the requirements of NEPA is with regard to hearings"); Lynch, *supra* note 28 at 305 (noting appearance of public participation requirement in CEQ guidelines).

Executive Order No. 11,514 gave the CEQ the authority to encourage public participation in the EIS process. 3 C.F.R. 902 (1970), *as amended by* Exec. Order 11,991, 3 C.F.R. 123 (1978), *reprinted in* 42 U.S.C. § 4321 note, at 508-10 (1982).

49. *See, e.g.*, Andrus v. Sierra Club, 442 U.S. 347, 357 (1979) (granting substantial deference to CEQ regulations); Fritiofson v. Alexander, 772 F.2d 1225, 1243 (5th Cir. 1985) (relying on CEQ regulations and commenting on regulations' consistency with judicial precedent); Thomas v. Peterson, 753 F.2d 754, 758 (9th Cir. 1985) (relying on CEQ regulations and judicial precedent).

50. Andrus v. Sierra Club, 442 U.S. 347, 357 (1979) (citing Exec. Order 11,991, 3 C.F.R. 124 (1978)). The Supreme Court has reserved the issue of whether the CEQ regulations bind independent regulatory agencies. Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87, 99 n.12 (1983).

> When an agency is evaluating significant adverse effects on the human environment in an environmental impact statement and there are gaps in relevant information or scientific uncertainty, the agency shall always make clear that such information is lacking or that uncertainty exists.
>
> (a) If the information relevant to adverse impacts is essential to a reasoned choice among alternatives and is not known and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.
>
> (b) If (1) the information relevant to adverse impacts is essential to a reasoned choice among alternatives and is not known and the overall costs of obtaining it are exorbitant or (2) the information relevant to adverse impacts is important to the decision and the means to obtain it are not known (e.g., the means for obtaining it are beyond the state of the art) the agency shall weigh the need for the action against the risk and severity of possible adverse impacts were the action to proceed in the face of uncertainty. If the agency proceeds, it shall include a worst case analysis and an indication of the probability or improbability of its occurrence.[51]

The proposed worst case analysis regulation created minimal controversy when it first appeared in 1977. Its inclusion in the proposed CEQ regulations was strongly commended although concern was expressed that it might lead to undue emphasis on improbable consequences.[52] In response, the CEQ amended the proposed worst case analysis regulation to require a discussion of the probability of the adverse environmental consequences.[53]

The origin of the worst case analysis regulation is disputed. Some courts and commentators contend that it is a codification of NEPA case law;[54] other commentators view it as an innovation of

51. 40 C.F.R. § 1502.22 (1985) (superseded).

52. 43 Fed. Reg. at 55,984.

53. *Id.*; *cf.* Carolina Envtl. Study Group v. United States, 510 F.2d 796, 799 (D.C. Cir. 1975) (in certain cases it is necessary to consider the probability as well as the consequences of agency actions).

The amendment was also responsive to earlier criticism that worst case scenarios were included in EISs without being labeled as such. *See* Bardach & Pugliaresi, *The Environmental-Impact Statement vs. The Real World*, 49 PUBLIC INTEREST 22, 29 (Fall 1977).

54. *See, e.g.*, Southern Or. Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1478 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984); Sierra Club v. Sigler, 695 F.2d 957, 971 (5th Cir. 1983); Bach, *Worst Case Analysis: A Historical and Legal Perspective*, in PROCEEDINGS OF A SYMPOSIUM ON WORST CASE ANALYSIS 19, 20 (1985) (worst case analysis regulation "was merely a formal codification of what had been long-standing court-made law"); Yost, *supra* note 9, at 10,395 ("worst case requirement, though not the nomenclature, existed before adoption of the CEQ NEPA regulations").

the CEQ.[55] Consensus exists, however, that a requirement to conduct a worst case analysis was not mentioned in NEPA's legislative history.[56] Congressional committees discussed worst case scenarios such as the Santa Barbara oil spill,[57] but the possibility that information on environmental consequences would be unobtainable did not seem to occur to NEPA's authors.[58] Not until after NEPA's enactment did agencies and courts have to face the problem of whether a project should proceed in the face of scientific uncertainty regarding the project's environmental effects.[59] The worst case analysis regulation provided a means by which agency actions could proceed when data was unavailable.[60] If scientific data was available, the worst case analysis regulation was not triggered.[61]

55. *See, e.g.*, Arnold, *Implications of the Worst Case Analysis to Food and Fiber Production*, in PROCEEDINGS OF A SYMPOSIUM ON WORST CASE ANALYSIS 87, 89 (1985) (worst case analysis regulation "is entirely novel and appears for the first time in [CEQ] regulations"); Comment, *New Rules for the NEPA Process: CEQ Establishes Uniform Procedures to Improve Implementation*, 9 Envtl. L. Rep. (Envtl. L. Inst.) 10,005, 10,008 (1979) (describing worst case analysis regulation as "a major innovation and improvement in the EIS process").

56. *See generally* Note, *Putting Bite in NEPA's Bark: New Council on Environmental Quality Regulations for the Preparation of Environmental Impact Statements*, 13 U. MICH. J.L. REF. 367, 384 (1980) (NEPA "completely overlooks the possibility that potentially relevant information may be unavailable or cost-prohibitive").

57. *See* S. REP. No. 296, 91st Cong., 1st Sess. 8 (1969); 3 CEQ ANN. REP. 222 (1973).

58. *See generally* Peterson, *An Analysis of Title I of the National Environmental Policy Act of 1969*, 1 Envtl. L. Rep. (Envtl. L. Inst.) 50,035, 50,039 (1971) (citing NEPA language at 42 U.S.C. § 4332(2)(H) (1982) (requiring federal agencies "to initiate and utilize ecological information in the planning and development of resource oriented projects" as authorizing agencies to obtain necessary information in the event of inadequate knowledge of environmental effects).

If necessary research is not exorbitantly costly, courts may order agencies to obtain it. *See, e.g.*, Brooks v. Volpe, 350 F. Supp. 269, 279 (W.D. Wash. 1972) ("NEPA requires each agency to undertake the research needed to adequately expose environmental harms"), *aff'd*, 487 F.2d 1344 (9th Cir. 1973).

59. *See* Environmental Defense Fund, Inc. v. Corps of Engineers, 348 F. Supp. 916, 927-28 (N.D. Miss. 1972) (ecosystems analysis adequate for EIS if state-of-art method used), *aff'd*, 492 F.2d 1123 (5th Cir. 1974). *See generally* Village of False Pass v. Watt, 565 F. Supp. 1123, 1149 (D. Alaska 1983) (courts adopted rule allowing agency actions to proceed in the face of insufficient information), *aff'd*, 733 F.2d 605 (9th Cir. 1984); Trubek, *Allocating the Burden of Environmental Uncertainty: The NRC Interprets NEPA's Substantive Mandate*, 1977 WIS. L. REV. 747, 757 (commenting on lack of direction provided to agencies on how to proceed when they are faced with scientific uncertainty).

60. *Fish and Wildlife Miscellaneous: Hearings Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries, Part 2*, 95th Cong., 1st & 2d Sess. 38 (1977-78) [hereinafter *NEPA Oversight Hearings*] (written answers by CEQ to committee questions).

61. *See* Friends of Endangered Species, Inc. v. Jantzen, 589 F. Supp. 113, 116 n.1 (N.D. Cal. 1984), *aff'd*, 760 F.2d 976 (9th Cir. 1985).

After its appearance in the CEQ regulations, the worst case analysis regulation lay dormant for several years as agencies generally ignored its existence.[62] In 1983, however, the Fifth Circuit's decision in *Sierra Club v. Sigler*[63] caused the agencies to reexamine the need to include worst case analyses in EISs involving scientific uncertainty. *Sigler* involved a proposed oil superport in Galveston Bay, Texas. The Corps of Engineers had prepared an oil spill analysis in its EIS on the proposed project but did not prepare an analysis of the environmental consequences of a total cargo loss by a supertanker in the Bay.[64] The Sierra Club challenged the Corps' omission by arguing that a worst case analysis of the total cargo loss was required under NEPA because the environmental consequences of such an oil spill beyond the first twenty-four hours of its existence were unknown.[65]

The Fifth Circuit upheld the Sierra Club's challenge because the Club had shown that there was information on which to base an informative and useful worst case scenario that was not unreasonably speculative.[66] The court ordered the Corps to prepare the worst case analysis because the potential total cargo loss was a significant environmental effect of the Corps' proposed action, and information in the analysis was important to the decisionmaker in deciding whether to proceed with the proposed action.[67]

Later in 1983, the Ninth Circuit interpreted the worst case analysis regulation in *Southern Oregon Citizens Against Toxic Sprays v. Clark* (*SOCATS*).[68] *SOCATS* involved a proposal by the Bureau of Land Management (the "BLM"), a division of the Department of the Interior, to spray herbicides on some of its forests in Oregon. The agency had prepared a programmatic EIS updated by annual environmental assessments for a ten-year spraying program. An environmental group sued to enjoin the program because the environmental documents did not contain a worst case analysis. The group argued that the analysis was required because of scien-

62. *See* Council on Environmental Quality, Talking Points on CEQ's Oversight of Agency Compliance with the NEPA Regulations (1980) (paper prepared by CEQ for interagency meetings), *quoted in* Liebesman, *supra* note 41, at 50,049.

63. 695 F.2d 957 (5th Cir. 1983).

64. *Id.* at 968.

65. *Id.* at 973.

66. *Id.* at 974-75.

67. *Id.*

68. 720 F.2d 1475 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).

tific uncertainty regarding the carcinogenicity of the herbicide 2,4-D.[69]

In *SOCATS*, the district court had previously determined that scientific uncertainty existed regarding the probability of harm to human health posed by the herbicide spraying program.[70] The BLM did not appeal the district court's finding of scientific uncertainty.[71] Instead, the agency argued that a worst case analysis was not required because it was improbable that the herbicides would adversely affect human health.[72] The Ninth Circuit rejected this argument, noting that the probability vel non of the herbicides' adverse effects was the scientific uncertainty in question.[73]

Despite the district court's unchallenged finding "that a segment of the credible scientific community believes that [the proposed] herbicides may initiate cancer at any dosage level,"[74] the BLM proceeded to prepare a worst case analysis assuming that a safe dosage level existed.[75] The adequacy of that worst case analysis was subsequently challenged in a second action.[76] In *Save Our Ecosystems v. Clark*, the Ninth Circuit affirmed the district court's determination that the worst case analysis was inadequate because it did not contain an analysis of the possibility that the herbicides were carcinogenic or mutagenic.[77] Indeed, the analysis only discussed the herbicides' probable consequences, omitting discussion of the worst possible consequences: namely, that the herbicides were carcinogenic or mutagenic.[78]

69. *Id.* at 1477.

70. Southern Or. Citizens Against Toxic Sprays, Inc. v. Watt, 13 E.L.R. 20,174, 20,176 (D. Or. 1982), *aff'd as modified sub nom.* Southern Or. Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984). The district court found that scientific uncertainty existed regarding the carcinogenicity and mutagenicity of at least one herbicide in the spraying program (2,4-D), as well as scientific uncertainty as to whether there was a safe level of dosage. 13 E.L.R. at 20,176.

71. 720 F.2d at 1478.

72. *See id.* at 1478-79.

73. *Id.* at 1479, 1482.

74. Save Our Ecosystems v. Watt, 13 E.L.R. 20,887, 20,888 (D. Or. 1983), *aff'd in part and rev'd in part sub nom.* Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984); *see* 747 F.2d at 1479.

75. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1245-46 (9th Cir. 1984).

76. Save Our Ecosystems v. Watt, 13 E.L.R. 20,887 (D. Or. 1983), *aff'd in part and rev'd in part sub nom.* Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984).

77. 747 F.2d at 1245-46, *aff'g in part and rev'g in part* Save Our Ecosystems v. Watt, 13 E.L.R. 20,887, 20,888 (D. Or. 1983).

78. 13 E.L.R. at 20,888.

Instead of developing approaches to comply with the worst case analysis regulation, the agencies reacted defensively to their judicial defeats in *Sigler*, *SOCATS*, and *Save Our Ecosystems*.[79] Thus, in 1984 when the Supreme Court denied the Department of the Interior's petition for certiorari in *SOCATS*,[80] the agencies sought other means to nullify the Ninth Circuit's opinions. Since they had failed to persuade the Supreme Court to remove the judicial precedent, the agencies attempted to remove it by administrative process.[81]

In 1984, the Department of Justice, which represented the BLM in *SOCATS* and *Save Our Ecosystems*, forwarded to the CEQ a draft amendment of the worst case analysis regulation.[82] The CEQ subsequently published guidance which read a threshold of reasonable foreseeability of environmental effects into the regulation in an attempt, according to the CEQ, to clarify conflicting positions on construing the regulation.[83] The guidance was withdrawn six months later, however, due to public comments received by the CEQ.[84] Reaction to the CEQ's revisions to the worst case analysis regulation made it apparent that the worst case regulation could not be changed without "notice and comment" rulemaking procedures.[85] After a petition by the Pacific

79. *See Discussion of the Worst Case Analysis*, in PROCEEDINGS OF A SYMPOSIUM ON WORST CASE ANALYSIS 170, 175 (1985) (statement by Dinah Bear, General Counsel, CEQ).

80. 720 F.2d 1475 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).

81. *Cf.* Smyth, *What Is the Worst Case?*, 1 NAT. RESOURCES & ENV'T 56, 56 (Winter 1985) (Supreme Court's denial of certiorari in *SOCATS* will probably lead to "a complete overhaul of the regulation to eliminate the effect of the Ninth Circuit's decision").

82. 40 C.F.R. 1502.22, Proposed Amendment of Regulations Implmenting NEPA, from Roger J. Marzulla, Department of Justice to John Cooney, Jim Barnes, and Dinah Bear, CEQ (Dec. 5, 1984); *see Fish and Wildlife Hearings*, *supra* note 29, at 13, 27 (statement of A. Alan Hill, Chairman, CEQ).

83. Council on Environmental Quality, Notice of Proposed Guidance and Request for Comments, 48 Fed. Reg. 36,486 (1983).

84. Council on Environmental Quality, Notice—Withdrawal of Proposed Guidance Memorandum for Federal Agency NEPA Liaisons, 49 Fed. Reg. 4803 (1984).

85. *See Department of Housing and Urban Development, and Certain Independent Agencies Appropriations for Fiscal Year 1985: Hearings Before a Subcomm. of the Senate Comm. on Appropriations, Part I*, 98th Cong., 2d Sess. 278 (1984) [hereinafter *1985 Appropriations Hearings*] (statement of A. Alan Hill, Chairman, CEQ). Several commentators to CEQ's proposed guidance had suggested that the regulation be amended in lieu of the publication of guidance. *See id.* at 270 (Forest Service); *id.* at 272 (Edison Electric Institute); *cf. id.* at 275 (National Wildlife Federation) (guidance attempts to amend worst case analysis regulation without proper rulemaking procedures).

Legal Foundation to amend the regulation,[86] the CEQ began the long process that culminated in 1986 with withdrawal of the worst case analysis regulation in favor of a new regulation.[87]

IV. Legality of the Worst Case Analysis Regulation

Opponents of the worst case analysis regulation argued that NEPA's rule of reason was violated either by the regulation,[88] the CEQ's interpretation of the regulation,[89] or judicial interpretation of the regulation.[90] However, their arguments are flawed.

NEPA's rule of reason limits discussion of alternative agency courses of action and environmental effects and risks to those that are reasonable. The District of Columbia Circuit, in 1972, was the first court to state that a rule of reason should be applied to NEPA.

In *Natural Resources Defense Council, Inc. v. Morton*, the court held that NEPA "require[d] a presentation of the environmental risks incident to *reasonable* alternative courses of action."[91] If an alternative was merely a "remote and speculative possibilit[y],"[92] environmental effects that could not be readily ascertained did not

86. Petition to the Honorable A. Alan Hill, Chairman, Council on Environmental Quality Executive Office of the President to Amend 40 C.F.R. § 1502.22 (1983), to Reestablish a Sound Rule of Reason Governing Worst Case Analysis in Environmental Decision Making Mandated by National Environmental Policy Act, § 102(2)(C)(ii), 42 U.S.C. § 4332(2)(C)(ii) (July 6, 1984). The Pacific Legal Foundation's petition was submitted to the CEQ under 5 U.S.C. § 553(e) (1982). *See* Council on Environmental Quality, Advance Notice of Proposed Rulemaking, 49 Fed. Reg. 50,744, 50,744 (1984).

87. *See* Council on Environmental Quality, National Environmental Policy Act Regulations; Incomplete or Unavailable Information, Final Rule, 51 Fed. Reg. 15,618 (1986).

88. *See* Brock, *supra* note 10, at 24-25.

89. *See* Petition to the Honorable A. Alan Hill, Chairman, Council on Environmental Quality, Executive Office of the President, to Amend 40 C.F.R. § 1502.22 (1983), to Reestablish a sound Rule of Reason Governing Worst Case Analysis in Environmental Decisionmaking Mandated by National Environmental Policy Act § 102(2)(C)(ii), 42 U.S.C. § 4332(2)(C)(ii) at 5-11 (July 6, 1984).

90. *See* Arnold, *supra* note 55, at 89-91; *see also 1986 Appropriations Hearings*, *supra* note 16, at 669 (comments of M. Sullivan, Industrial Forestry Association) (Ninth Circuit opinions exceed rule of reason; agencies should not be required to speculate regarding environmental effects); *id.* at 674 (comments of T. Choo, Dow Chemical U.S.A.) (recent court decisions exceed rule of reason by requiring agencies to evaluate all possible adverse environmental impacts where any uncertainty exists about those impacts).

91. 458 F.2d 827, 834 (D.C. Cir. 1972) (emphasis added).

92. *Id.* at 838. *But cf.* W. Rodgers, *supra* note 26, at 734 n.87 (describing Teton Dam failure as remote consequence of EIS examined in Trout Unlimited v. Morton, 509 F.2d 1276, 1283 (9th Cir. 1974)).

need detailed discussion.[93] In other words, the more remote from serious consideration an alternative seemed, the less detailed the discussion of environmental effects had to be. Conversely, if the alternative was more probable, a fuller discussion was required. Thus, in 1978, when inclusion of the phrase "all reasonable alternatives" in the CEQ regulations[94] was challenged on the basis that "it was unduly broad,"[95] the CEQ was able to reject the challenge by arguing that courts had consistently limited the range of alternatives to exclude a full discussion of an infinite or unreasonable number of alternatives.[96]

As applied to EISs in which the environmental consequences are known, the rule of reason means that agencies must fully discuss reasonably foreseeable consequences. That is, an agency must discuss all known consequences that are not so remote so as to be considered insignificant by a decisionmaker.[97]

The worst case analysis regulation did not violate NEPA's rule of reason. The regulation applied to agency actions for which sufficient knowledge existed for the action to proceed, but where scientific knowledge regarding the action's effect on the environment was uncertain or unknown. Because a boundless number of scenarios regarding uncertain or unknown environmental effects could be imagined, the regulation limited the circumstances in which the analysis was required. Improbable environmental consequences were to be considered in the preparation of an EIS only if those consequences were potentially catastrophic. The improbability of the environmental consequence's occurrence was to be noted.[98] Thus, remote environmental consequences were to be considered only where it would have been unreasonable for an agency to proceed without weighing the potentially catastrophic effects its action could cause.

93. 458 F.2d at 837-38; *see also* Environmental Defense Fund, Inc. v. Andrus, 619 F.2d 1368, 1375 (10th Cir. 1980) (applying rule of reason to discussion of alternatives).

94. 40 C.F.R. § 1502.14(a) (1987). Section 1502.14(a) requires agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action.

95. 43 Fed. Reg. at 55,983.

96. *Id.*

97. *See* San Luis Obispo Mothers for Peace v. NRC, 751 F.2d 1288, 1300 (D.C. Cir. 1984); Carolina Envtl. Study Group v. United States, 510 F.2d 796, 798 (D.C. Cir. 1975); *see also* County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1383 (2d Cir. 1977) (applying rule of reason to determine adequacy of environmental effects and alternatives).

98. 40 C.F.R. § 1502.22(b) (1987); *see* Council on Environmental Quality, Final Regulations, 43 Fed. Reg. 55,978, 55,984 (1978).

The guidance that the CEQ provided to help agencies comply with the worst case analysis regulation did not interpret the regulation in such a way that it would violate the rule of reason. While the guidance explained that worst case analyses were required so that the fullest possible spectrum of the environmental consequences of agency action would be presented,[99] that guidance did not mean that every low-probability event had to be included. Worst case analyses, which were to be based on "available information, using reasonable projections of the worst possible consequences of a proposed action,"[100] were to include "a low probability/catastrophic impact event" as well as more probable but less catastrophic events.[101] Thus, the CEQ's guidence identified the range of potential environmental effects to be considered in actions involving scientific uncertainty.

Finally, judicial interpretation of the worst case analysis regulation did not violate the rule of reason. Courts have determined that it is within the rule of reason to require a worst case analysis when: (1) information beyond the state of the art is "relevant to a 'significant' effect of a proposal";[102] (2) the analysis would be "informative and useful" to the decisionmaker;[103] and (3) "a body of data [exists] with which a reasonable worst case analysis can be made that is not unreasonably speculative."[104] Thus, courts have limited the circumstances in which a worst case analysis is required.[105] According to the courts, the rule of reason permits an agency to initiate a project involving scientific uncertainty or data gaps rather than requiring the agency to wait until the uncertainty

99. *See* Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,032 (1981).

100. *Id.*

101. *Id.*

102. *See* Sierra Club v. Sigler, 695 F.2d 957, 974 (5th Cir. 1983).

103. *Id.*

104. *Id.* at 974; *see* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1244-45 (9th Cir. 1984); *cf. 1986 Appropriations Hearings*, *supra* note 16, at 675 (comments of Exxon Co., U.S.A., to CEQ's Advance Notice of Proposed Rulemaking) (describing rule of reason's application to worst case analysis regulation as twofold: (1) possibility of worst case occurring and (2) scope of analysis required).

105. *See* Friends of Endangered Species, Inc. v. Jantzen, 589 F. Supp. 113, 116 n.1 (N.D. Cal. 1984) (worst case analysis not required when scientific data were complete for all significant effects of agency action), *aff'd*, 760 F.2d 976 (9th Cir. 1985); *see also* Village of False Pass v. Clark, 733 F.2d 605, 616 (9th Cir. 1984) (analysis of more catastrophic worst case not required when subsequent offshore leasing process required preparation of an EIS).

is resolved or the gaps filled.[106] Finally, courts have limited the scope[107] and depth of judicial review of the analysis.[108] For example, no court has found a worst case analysis to be inadequate because the scenario analyzed was not sufficiently catastrophic.[109]

In summary, neither the CEQ nor the courts have ever interpreted the worst case analysis regulation to violate NEPA's rule of reason. Instead, the regulation's application has been limited to situations in which an informative discussion of the potentially severe environmental effects of an agency action involving scientific uncertainty would be useful to a decisionmaker. By interpreting the worst case analysis regulation in light of the rule of reason, the CEQ and the courts have provided a framework for analyzing worst cases scenarios that excludes the consideration of fantastic scenarios.

V. THE CEQ'S AUTHORITY TO WITHDRAW THE WORST CASE ANALYSIS REGULATION

The CEQ's actions in withdrawing the worst case analysis regulation may be ineffective. Although the agency possesses the authority to change its own regulations as long as the resulting policies are in accordance with NEPA, it has no authority to change judicial precedent. The Fifth and Ninth Circuits have determined that the worst case analysis regulation is a codification of prior case law.[110] No court has made a contrary finding.[111]

106. *See* Oregon Envtl. Council v. Kunzman, 614 F. Supp. 657, 663 (D. Or. 1985); *see also* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1249 (9th Cir. 1984) (if cost of obtaining relevant information is exorbitant or if means of obtaining it is beyond the state-of-the-art, agency must prepare a worst case analysis).

107. *See Sierra Club*, 695 F.2d at 975 n.14 (agency "need not concern itself with phantasmagoria hypothesized without a firm basis in evidence").

108. *See id.* at 976 ("preparation of a worst case analysis cannot be held to the exacting standards imposed by the trial court because it goes beyond existing knowledge and methods of acquiring knowledge").

109. *See* Oregon Envtl. Council v. Kunzman, 636 F. Supp. 632, 640 (D. Or. 1986) (rejecting assertion that agency should have analyzed more severe impacts), *aff'd*, 817 F.2d 484 (9th Cir. 1987); *cf.* note 107 *supra*.

110. *See* Southern Or. Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1478 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984); Sierra Club v. Sigler, 695 F.2d 957, 971 (5th Cir. 1983).

111. The District of Columbia Circuit, the only other circuit that interpreted the worst case analysis regulation, was silent on the issue. However, the Fifth Circuit cited District of Columbia Circuit cases as precedent for its finding that the regulation codified case law. *See* Sierra Club v. Sigler, 695 F.2d 957, 970-71 (5th Cir. 1983) (citing Alaska v. Andrus, 580 F.2d 465, 473-74 (D.C. Cir. 1978), *vacated in non-pertinent part sub nom.* Western Oil &

Thus, because the CEQ is without authority to set aside judicial precedent,[112] withdrawal of the worst case analysis regulation by the CEQ leaves intact the NEPA common law rule requiring worst case analyses in EISs involving scientific uncertainty.[113] In *Oregon Natural Resources Council v. Marsh*, a 1987 case decided after the CEQ had withdrawn the worst case analysis regulation, the Ninth Circuit required the Corps of Engineers to prepare a worst case analysis or conduct further research in a situation involving scientific uncertainty.[114] The court stated that because the worst case analysis was a codification of judicial precedent, "the rules embodied in the regulation remain in effect even though the regulation was rescinded."[115]

If the worst case analysis is a judicially created procedure, the CEQ's withdrawal of the regulation codifying the procedure may have brought into issue the survival of the procedure. In *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*,[116] the Supreme Court sharply criticized judicial interference in requiring agencies to follow judicially created procedures in rulemaking in addition to the procedures mandated by the Administrative Procedure Act (APA) and the agency's enabling legislation.[117] The Court overturned a District of Columbia Circuit

Gas Ass'n v. Alaska, 439 U.S. 922 (1978) *and* Scientists' Inst. for Public Information, Inc. v. AEC, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); *see also* Potomac Alliance v. NRC, 682 F.2d 1030, 1036-37 (D.C. Cir. 1982) (requiring agencies to consider probability and possible environmental effects of actions taken in the face of scientific uncertainty).

112. *See* Oregon Natural Resources Council v. Marsh, 832 F.2d 1489, 1497 n.8 (9th Cir. 1987).

113. Circuits with no prior decisions involving the worst case analysis regulation will have to choose between judicial and CEQ interpretation of NEPA. Although courts accord the CEQ's interpretation of NEPA substantial deference, Andrus v. Sierra Club, 442 U.S. 347, 357 (1979), they do not necessarily accept CEQ's interpretation. *See* Louisiana v. Lee, 758 F.2d 1081, 1083 (5th Cir. 1985) (informal advice of CEQ such as "Forty Questions" is not binding), *cert. denied*, 475 U.S. 1044 (1986); Deukmejian v. NRC, 751 F.2d 1287, 1302 n.77 (D.C. Cir. 1984) (citing Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson, 685 F.2d 678, 682 (D.C. Cir. 1982) (declining to accord substantial deference to CEQ's "Forty Questions")), *vacated*, 760 F.2d 1320 (D.C. Cir. 1985), *cert. denied*, 107 S. Ct. 330 (1986).

114. 832 F.2d 1489, 1496-97 (9th Cir. 1987).

115. *Id.* at 1497 n.8; *see also* Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 817 n.11 (9th Cir. 1987) (CEQ's withdrawal of the worst case analysis regulation "does not nullify the [worst case analysis] requirement").

116. 435 U.S. 519 (1978).

117. *Id.* at 546-47. The APA prescribes the minimum procedures that must be followed by federal agencies in conducting formal and informal rulemaking, and formal adjudication. 5 U.S.C. §§ 553-557 (1982).

decision requiring the Nuclear Regulatory Commission (NRC) to adopt additional procedures during an informal rulemaking hearing.[118] The Supreme Court held that "absent constitutional constraints or extremely compelling circumstances,"[119] or "totally unjustified departure[s] from well-settled agency procedures of long standing,"[120] an agency should be able to formulate its own rulemaking procedures free of judicial intervention.[121] The Court found no support in NEPA for the additional procedural requirements advocated by the District of Columbia Circuit. Because the APA controlled the procedures by which factual issues were investigated during rulemaking, "NEPA [could not] serve as the basis for a substantial revision of [the APA's] carefully constructed procedural specifications . . . ."[122] The Court remanded the NRC rule to the District of Columbia Circuit for a review of the adequacy of the rule's basis under the APA's arbitrary and capricious standard, but denied the circuit court the power to de-

118. 435 U.S. at 525, *rev'g* Natural Resources Defense Council, Inc. v. NRC, 547 F.2d 633 (D.C. Cir. 1976) *and* Aeschliman v. NRC, 547 F.2d 622 (D.C. Cir. 1976). The cases involved the informal rulemaking procedures used by the NRC to establish a generic rule concerning the environmental effects of radioactive waste generated by nuclear power plants. *Id.* at 528. The rule, which was to be used in individual licensing proceedings, was published after the notice and comment procedures of section 4 of the APA. *Id.* at 529; *see* 5 U.S.C. § 553 (1982). Although the District of Columbia Circuit did not require the NRC to follow specific procedures, it found the procedures the agency followed at its hearings inadequate. 435 U.S. at 541-42.

119. 435 U.S. at 543.

120. *Id.* at 542.

121. *Id.* at 543-44. *Vermont Yankee* received mixed comments from academia. Some commentators criticized the Court's reliance on the letter of the APA to the exclusion of judicial interpretation of the Act by the courts since 1946. *See, e.g.*, Davis, *Administrative Common Law and the* Vermont Yankee *Opinion*, 1980 UTAH L. REV. 3, 7-12 (*Vermont Yankee*, in forbidding lower courts to follow Supreme Court's example in creating administrative common law, is contrary to language and legislative history of APA); Stewart, Vermont Yankee *and the Evolution of Administrative Procedure*, 91 HARV. L. REV. 1804, 1814-15 (1978) (*Vermont Yankee* ignores past decisions fashioning common law under the APA). Other commentators, however, praised the decision for curtailing hybrid rulemaking by the courts. *See, e.g.*, Byse, Vermont Yankee *and the Evolution of Administrative Procedure: A Somewhat Different View*, 91 HARV. L. REV. 1823, 1823 (1978) (welcoming "*Vermont Yankee* as a needed corrective to an unwholesome trend in the lower federal courts"); Scalia, Vermont Yankee: *The APA, the D.C. Circuit, and the Supreme Court*, 1978 SUP. CT. REV. 345, 369 (*Vermont Yankee* was directed to curtail the hybrid rulemaking tendencies of the District of Columbia Circuit). *See generally* Neely, Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.: *Response and Reaction in the Federal Judiciary*, 14 U. BALT. L. REV. 256, 262 n.38 (1985) (listing articles discussing *Vermont Yankee*).

122. 435 U.S. at 548.

clare the rule invalid on procedural grounds.[123] However, *Vermont Yankee* may not necessarily render a CEQ-abandoned worst case analysis requirement invalid for the following two reasons.

First, *Vermont Yankee* "involve[d] rulemaking procedures in their most pristine sense,"[124] and did not address preparation of the EIS accompanying the rule.[125] Preparation of an EIS is the type of agency action that has no procedures detailed for it by the APA.[126] Consequently, it can not be said, as it was in *Vermont Yankee*, that the APA controls the procedures relevant to the preparation of an EIS. In spite of this distinction, several lower federal courts have applied *Vermont Yankee* to agency actions in addition to informal rulemaking,[127] including the preparation of EISs.[128] If

123. *Id.* at 535 n.20, 549; *see* 5 U.S.C. § 706(e) (1982). The District of Columbia Circuit's decision that the rule's basis was inadequate was reversed by the Supreme Court when the Court considered a case it had remanded in light of its ruling in *Vermont Yankee*. Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87 (1983), *rev'g* Natural Resources Defense Council, Inc. v. NRC, 685 F.2d 459 (D.C. Cir. 1982); *see* Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 435 U.S. 964 (1978) (mem.).

124. 435 U.S. at 524 n.1.

125. *See id.* at 528-30.

126. The APA contains procedures for informal rulemaking, 5 U.S.C. § 553 (1982), formal rulemaking, *id.* §§ 556-557, and formal adjudication, *id.* § 554. Courts review an EIS's adequacy under one of two standards. Some circuits apply a reasonableness standard. *See* Save Our Ten Acres v. Kreger, 472 F.2d 463, 466 (5th Cir. 1973); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1972). Other circuits apply the APA's "arbitrary and capricious" standard. 5 U.S.C. § 706(2)(A) (1982); *see* Enos v. Marsh, 769 F.2d 1363, 1372 (9th Cir. 1985); Village of False Pass v. Clark, 733 F.2d 605, 613 (9th Cir. 1984); Friends of the Earth v. Coleman, 513 F.2d 295, 298 n.3 (9th Cir. 1975). Justice White would like to resolve the conflict between the circuits over the varying standards of judicial review. *See* River Road Alliance, Inc. v. Corps of Engineers, 475 U.S. 1055, 1056 (1986) (White, J., dissenting from denial of certiorari); Gee v. Boyd, 471 U.S. 1058, 1060 (1985) (White, J., joined by Brennan and Marshall, JJ., dissenting from denial of certiorari).

127. *See* Aircraft Owners & Pilots Ass'n v. FAA, 600 F.2d 965, 970 n.25 (D.C. Cir. 1979) (*Vermont Yankee* applied to bar additional procedures in informal adjudication); Kenworth Trucks of Philadelphia, Inc. v. NLRB, 580 F.2d 55, 62-63 (3d Cir. 1978) (*Vermont Yankee* applied to bar additional procedures in adjudicatory proceedings despite recognition that *Vermont Yankee* involved rulemaking not adjudication). *See generally* Neely, *supra* note 121, at 264-306 (discussing manner in which lower federal courts have applied *Vermont Yankee*).

128. *See* Sierra Club v. Corps of Engineers, 701 F.2d 1011, 1043 (2d Cir. 1983) (applying *Vermont Yankee* to find that "extremely compelling circumstances" did not exist to warrant court appointment of special master who proposed intrusive procedures for ensuring adequate supplementation of EIS); North Slope Borough v. Andrus, 642 F.2d 589, 604 n.83 (D.C. Cir. 1980) (advising lower court to consider *Vermont Yankee* in deciding whether to require an agency to discuss an alternative); Gloucester County Concerned Citizens v. Goldschmidt, 533 F. Supp. 1222, 1228 (D.N.J. 1982) (applying *Vermont Yankee* to find review of agency procedures governed by APA); National Wildlife Fed'n v. Goldschmidt, 504

such an approach continues, it would tend to prevent the federal courts from requiring a worst case analysis procedure in agency rulemaking in addition to APA and individual agency requirements. However, *Vermont Yankee* does not foreclose judicial imposition of the worst case analysis procedure.

Second, the worst case analysis procedure may survive because it can be distinguished from the type of adjudicatory procedures at issue in *Vermont Yankee*.[129] The worst case analysis requirement is a quasi-procedural analytical tool.[130] The Supreme Court has approved the judicial imposition of such tools.[131] A similar quasi-procedural tool is the cost-benefit analysis required by the Second Circuit in EISs.[132] Such requirements merely implement NEPA's mandate of full disclosure[133] and do not impose an adjudicatory procedure on federal agencies.

There is yet another avenue for challenging the worst case analysis concept. Although the worst case analysis procedure is within NEPA's statutory minima,[134] it is not explicit in the Act. Thus the procedure could be precluded by the Supreme Court's

F. Supp. 314, 326 n.41 (D. Conn. 1980) (applying *Vermont Yankee* to method by which EISs are prepared), *aff'd*, 677 F.2d 259 (2d Cir. 1982); Committee Against R.R. Relocation v. Adams, 471 F. Supp. 142, 145 (E.D. Ark. 1979) (citing *Vermont Yankee* as authority for not imposing judicial procedures on agency actions).

129. *See* Natural Resources Defense Council, Inc. v. NRC, 547 F.2d 633, 642-43 (D.C. Cir. 1976), *rev'd sub nom.* Vermont Yankee Nuclear Power Corp. v. NRC, 435 U.S. 519 (1978). The procedures suggested by Judge Bazelon included informal conferences, discovery, interrogatories, and technical advisory committees. *Id.* at 653.

130. *See Fish and Wildlife Hearings*, *supra* note 29, at 39 (statement of N. Yost, Senior Staff Attorney, Center for Law in the Public Interest); *cf.* Garland, *Deregulation and Judicial Review*, 98 HARV. L. REV. 505, 538 (1985) (describing requirement that agencies consider alternative actions as quasi-procedural).

131. *See* Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 48-51 (1983)); *see also* Garland, *supra* note 130, at 545 ("[t]he Court could hardly have been more explicit in approving the judicial imposition of quasi-procedural requirements").

132. *See* County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1384 (2d Cir.), *cert. denied*, 434 U.S. 1064 (1977). *See generally* Rodgers, *A Hard Look at* Vermont Yankee: *Environmental Law Under Close Scrutiny*, 67 GEO. L.J. 699, 715 n.120 (1979) (cost-benefit analysis is a procedure in excess of APA requirements).

133. *See* Weinberger v. Catholic Action of Hawaii/Peace Education Project, 454 U.S. 139, 144 (1981) (describing one of NEPA's aims as disclosing to the public that an agency has considered the environmental concerns of its proposed actions).

134. Sierra Club v. Sigler, 695 F.2d 957, 970 n.9 (5th Cir. 1983). The worst case analysis procedure is consistent with NEPA's language. *See id.* at 969 (citing 42 U.S.C. § 4331(b) (1982) (responsibility of federal agencies to avoid unintended environmental consequences); and 42 U.S.C. § 4332(c) (1982) (federal agencies must prepare detailed statements which are to disclose all environmental impacts)).

bald statement in *Vermont Yankee* "that the only procedural requirements imposed by NEPA are those stated in the plain language of the Act."[135] The Supreme Court cases on NEPA generally reflect a narrow reading of the Act's required procedures.

Nevertheless, exceptions exist. Even while it was admonishing the District of Columbia Circuit for imposing judicially created procedures on the NRC, the Court in *Vermont Yankee* cited approvingly an earlier opinion in which it had agreed with the CEQ that a "detailed statement" in NEPA meant a comprehensive rather than a site-specific EIS in certain cases.[136] NEPA contains no explicit language requiring a comprehensive EIS; this type of EIS was devised by the CEQ in a memorandum.[137]

The Court's earlier recognition that the executive branch made the CEQ regulations binding on federal agencies[138] is difficult to reconcile with its statements that the procedures NEPA imposes are limited to those explicit in the Act.[139] The Court must have realized in that earlier case that the CEQ regulations codified NEPA case law[140] and incorporated administrative experience.[141]

135. Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519, 548 (1978) (citing Kleppe v. Sierra Club, 427 U.S. 390, 405-06 (1976)).

136. *Id.* at 548 (citing Kleppe v. Sierra Club, 427 U.S. 390, 409 (1976)). In *Kleppe*, the Court stated that NEPA "may require a comprehensive impact statement in certain situations where several proposed actions are pending at the same time . . . ." 427 U.S. at 409.

137. The memorandum was relied on by the District of Columbia Circuit in Scientists Inst. for Public Information, Inc. v. AEC, 481 F.2d 1079, 1090 (D.C. Cir. 1973) (quoting Council on Environmental Quality, Memorandum to Federal Agencies on Procedures for Improving Environmental Impact Statements (May 16, 1972), *reprinted in* 3 Env't Rep. (BNA) 82 (1972)), and was subsequently included in the CEQ guidelines. *See* 40 C.F.R. § 1500.6 (1973) (current version at 40 C.F.R. § 1502.4(a) (1987)). *See generally* Druley, *supra* note 24, at 11.

138. Andrus v. Sierra Club, 442 U.S. 347, 357 (1979) (citing Exec. Order 11,991, 3 C.F.R. 124 (1978)).

139. *See* Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519, 548 (1978); Kleppe v. Sierra Club, 427 U.S. 390, 405-06 (1976).

140. For example, in Hanly v. Mitchell, 460 F.2d 640, 647-48 (2d Cir.), *cert. denied*, 409 U.S. 990 (1972), the Second Circuit required agencies to develop a reviewable environmental record of agency actions. The Second Circuit's decision thus required notice and comment procedures for informal agency adjudications such as planning proposed construction projects. *See* Note, 51 TEX. L. REV. 1016, 1018 (1973) (reading Second Circuit's decision as ensuring that a project's opponents would be given notice, and that their comments would be considered by the agency). *See generally* 4 CEQ ANN. REP. 234 (1974) (discussing incorporation of case law into NEPA guidelines).

141. For example, the scoping procedure was adopted from the Massachusetts mini-NEPA. *See Department of Housing and Urban Development—Independent Agencies Appropriations for 1980: Hearings Before a Subcomm. of the House Comm. on Appropriations, Part 3*, 96th Cong., 1st

Those regulations effectively established procedures which are not apparent in the plain language of NEPA. Indeed, Justice Marshall had specifically recognized that NEPA's broad statutory mandate seemed designed to trigger development of a common law of NEPA.[142]

Whether the Court would declare the worst case analysis procedure to be a judicially imposed procedure not contained in NEPA's plain language is uncertain, therefore, in light of the Court's earlier recognition of the validity of other procedures imposed by CEQ regulation and not apparent from NEPA's plain language. If the Court does find that the worst case analysis procedure was a judicially imposed procedure not mandated by NEPA, federal agencies would then have the option of determining whether worst case analyses were essential to their proper implementation of NEPA. However, such an action by the Court would raise the issue of the continued validity of other CEQ regulations requiring procedures that are arguably outside NEPA's mandate.

Sess. 9 (1979) (statement of Nicholas Yost, General Counsel, CEQ). *See generally* 4 CEQ ANN. REP. 234 (1974) (discussing incorporation of "experience gained and lessons learned since 1971" into CEQ guidelines).

The CEQ regulations also allow agencies to create categories of activities for which EISs are not required. *See* 40 C.F.R. § 1508.4 (1987). These categorical exclusions are not mentioned in NEPA or its legislative history.

142. Kleppe v. Sierra Club, 427 U.S. 390, 421 (1976) (Marshall, J., concurring in part and dissenting in part); *see, e.g.*, City of West Chicago v. NRC, 701 F.2d 632, 648 n.15 (7th Cir. 1983) (noting that Second Circuit requires notice and comment procedures to accompany the threshold decision not to prepare an EIS even though that requirement is not specified in NEPA).

The Court could not have been endorsing the federal agencies' acceptance of procedures developed under NEPA's common law when it stated that the CEQ regulations were binding on federal agencies. *See* Andrus v. Sierra Club, 442 U.S. 347, 357 (1979). The agencies were reluctant to follow the CEQ regulations. In fact, some independent agencies asserted that the Court's ruling did not apply to their implementation of NEPA. *See, e.g.*, Nuclear Regulatory Commission, Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions and Related Conforming Amendments, 49 Fed. Reg. 9352, 9352 (1984) ("as a matter of law, the NRC as an independent regulatory agency can be bound by CEQ's NEPA regulations only insofar as those regulations are procedural or ministerial in nature. NRC is not bound by those portions of CEQ's NEPA regulations which have a substantive impact on the way in which the Commission performs its regulatory functions"); Federal Energy Regulatory Commission, Notice of Proposed Rulemaking, 44 Fed. Reg. 50,052, 50,053 (1979) (Commission is not bound by CEQ regulations because it is an independent regulatory agency). *See generally* 4 CEQ ANN. REP. 236 (1974) (discussing tardiness of federal agencies in allowing public participation in NEPA process as advocated by CEQ).

Even though the Supreme Court's ruling in *Vermont Yankee* may prevent courts from requiring a "worst case analysis" as such, the "hard look" standard,[143] used by courts to review the adequacy of agency actions in implementing NEPA,[144] is still available to enable the courts to scrutinize agencies' actions in depth. NEPA is an environmental full disclosure law.[145] If a court does not have evidence on the record that an agency considered the full spectrum of environmental effects, it may decide that the agency's substantive decision was inadequate.[146] Courts are not limited to

143. *See* Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976) (citing Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 838 (D.C. Cir. 1972) (court should "insure that the agency has taken a 'hard look' at environmental consequences"). For a discussion of the evolution of the hard look doctrine, see Rodgers, *supra* note 132, at 704-08.

144. *Vermont Yankee* was remanded to the District of Columbia Circuit to review the adequacy of the rule's basis as per Judge Tamm's suggestion. 435 U.S. at 549. Judge Tamm had recommended that the NRC take "a hard look at the waste storage issue." 547 F.2d at 658 (Tamm, J., concurring); *see also* Independent U.S. Tanker Owners Comm. v. Lewis, 690 F.2d 908, 922-23 (D.C. Cir. 1982) (*Vermont Yankee* does not preclude addition of procedures necessary to ensure that courts can make a thorough and searching review of agency action); National Indus. Sand Ass'n v. Marshall, 601 F.2d 689, 699 n.35 (3d Cir. 1979) ("[C]ourt did not specifically condemn the 'hard look' doctrine" in *Vermont Yankee*); National Crushed Stone Ass'n, Inc. v. EPA, 601 F.2d 111, 116 (4th Cir. 1979) ("[a]gency must make reasoned decisions with full articulation of the reasoning and take into account all relevant factors"), *rev'd on other grounds*, 449 U.S. 64 (1980); East Texas Motor Freight Lines, Inc. v. United States, 593 F.2d 691, 695 n.7 (5th Cir. 1979) (*Vermont Yankee* "did not purport to address the principle that in order to preserve effective review, a court could demand a reasoned decision from an administrative agency").

The hard look doctrine has been criticized as undercutting *Vermont Yankee*. *See* Natural Resources Defense Council, Inc. v. NRC, 685 F.2d 459, 517 (D.C. Cir. 1982) (Wilkey, J., dissenting) (criticizing "too hard a look" doctrine adopted by majority), *rev'd sub nom.* Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87 (1983); Neely, *supra* note 121, at 302-03 (District of Columbia Circuit may not always be following spirit of *Vermont Yankee* in reviewing agency actions).

145. *See* Columbia Basin Land Protection Ass'n v. Schlesinger, 643 F.2d 585, 594 (9th Cir. 1981) (emphasizing NEPA's purpose as full disclosure law); Environmental Defense Fund, Inc. v. Corps of Engineers, 325 F. Supp. 749, 759 (E.D. Ark. 1971) ("[a]t the very least, NEPA is an environmental full disclosure law"), *vacated*, 342 F. Supp. 1211 (E.D. Ark.), *aff'd*, 470 F.2d 289 (8th Cir. 1972).

146. *See* Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 818 (9th Cir. 1987) (agency's discussion in its EIS of relevant environmental effects was inadequate because dicussion was based on incomplete information); *cf.* Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 776 (1983) (quoting Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519, 558 (1978) ("NEPA's goal [is to] 'insur[e] a fully informed and well considered decision' "); Committee for Nuclear Responsibility, Inc. v. Seaborg, 463 F.2d 783, 787 (D.C. Cir. 1971) ("full range of responsible opinion on the environmental effects" must be included in an EIS); Sierra Club v. Froehlke, 359 F. Supp. 1289, 1342 (S.D. Tex. 1973) (EISs "should contain 'all possible significant effects on the environment' ") (quoting Corps' NEPA regulations, 37 Fed. Reg. 2528 (1972)), *rev'd on other grounds sub nom.* Sierra Club v. Callaway, 499 F.2d

reviewing an agency's record, but may examine evidence outside the record to determine whether the agency ignored relevant information.[147] If an agency ignored comments that its assessment of environmental effects was based on insufficient information, its determination based on that limited assessment may subsequently be viewed by a court as unreasonable.[148] Courts may review opinions of members of a scientific community in order to determine if an agency's scientific opinion had broad support or was based on generally accepted methodology.[149] Thus, the hard look standard enables courts to determine whether a determination by an agency was grounded on an adequate informational base.[150]

In addition to ignoring relevant information, agencies sometimes understate negative information. Thus, the hard look standard is also applicable to agency consideration of unfavorable environmental concerns. NEPA was designed to mandate the preparation of EISs[151] in order that "every significant aspect of the environmental impact of a proposed action" be considered.[152] According to the late Judge Leventhal, hard look review

982 (5th Cir. 1974); Environmental Defense Fund, Inc. v. Corps of Engineers, 325 F. Supp. 749, 759 (E.D. Ark. 1971) (EISs must disclose "all known *possible* environmental consequences" (emphasis in original)), *vacated*, 342 F. Supp. 1211 (E.D. Ark.), *aff'd*, 470 F.2d 289 (8th Cir. 1972). *See generally* Axline, *Contrarians*, 1 NAT. RESOURCES & ENV'T 47, 48 (Spring 1985) ("on its face [the worst case analysis regulation] simply requires that agencies consider the full range of possible impacts from their activities").

147. County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1384 (2d Cir.), *cert. denied*, 434 U.S. 1064 (1977); *see also* National Indian Youth Council v. Andrus, 501 F. Supp. 649, 667 (D.N.M. 1980) ("information outside the administrative record may be necessary in order for a court to fully discharge its duty under the 'rule of reason' "), *aff'd sub nom.* National Indian Youth Council v. Watt, 664 F.2d 220 (10th Cir. 1981).

148. *See* Sierra Club v. Corps of Engineers, 701 F.2d 1011, 1031 (2d Cir. 1983).

149. *See* National Indian Youth Council v. Andrus, 501 F. Supp. 649, 667 (D.N.M. 1980), *aff'd sub nom.* National Indian Youth Council v. Watt, 664 F.2d 220 (10th Cir. 1981).

150. *Cf.* Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509, 528 (1974).

151. *See* Dreyfus & Ingram, *The National Environmental Policy Act: A View of Intent and Practice*, 16 NAT. RESOURCES J. 243, 255 (1976).

152. *Vermont Yankee*, 435 U.S. at 553; *see also* 115 CONG. REC. 29,059 (1969) (statement of Sen. Church) (NEPA requires federal agencies to be aware of and concerned with "the total environmental impact of their actions and proposed programs").

Being required to present convincing reasons why an environmental effect is insignificant prevents agencies from ignoring criticism and persistent problems involving their actions. *See* Steamboaters v. FERC, 759 F.2d 1382, 1393 (9th Cir. 1985); Township of Lower Alloways Creek v. Public Serv. Elec. & Gas Co., 687 F.2d 732, 741-42 (3d Cir. 1982) (citing Maryland Capital Park & Planning Comm'n v. United States Postal Serv., 487 F.2d 1029, 1040 (D.C. Cir. 1973)); *see also* Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1973) (unsup-

"requires an analysis of the environmental consequences sufficient to convince a court that they have been considered."[153] To prevent federal agencies from simply assuming that an action's environmental effects are insignificant, and therefore, do not require disclosure and consideration, reviewing courts require an agency to provide convincing reasons to support a conclusion of insignificance.[154]

Fulfillment of the worst case analysis requirement formerly permitted agencies to proceed with actions having uncertain effects, secure in the knowledge that they had complied with NEPA. In the future, application of the hard look standard to methodologies replacing the worst case analysis procedure may result in a court's rejection of those methodologies, despite their general acceptance in the scientific community.[155] That is, a reviewing court may determine that the new procedure fails to adequately disclose potentially significant environmental effects.

The hard look standard is also used by the courts under NEPA to review agency consideration of the environmental costs of the proposed action. Uncertainty[156] and significant environmental risks are costs which must be factored into a decision to proceed.[157] For example, the risk of an accident is an effect requiring consideration under NEPA.[158] If a worst case analysis is not prepared for a proposed action involving scientific uncertainty, an

ported conclusions are insufficient in an EIS); Environmental Defense Fund v. TVA, 339 F. Supp. 806, 809 (E.D. Tenn.) (same), *aff'd*, 468 F.2d 1164 (6th Cir. 1972).

153. Leventhal, *supra* note 150, at 528.

154. *See* Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1973).

155. *See* Foundation on Economic Trends v. Heckler, 756 F.2d 143, 153-54 (D.C. Cir. 1985) (citing *Vermont Yankee*, 435 U.S. at 553) (uncertain environmental effects which could occur if genetically engineered bacteria were to be dispersed must be addressed; court rejected scientists' evaluation of the effects which had satisfied a scientific review committee); *see also* National Indian Youth Council v. Andrus, 501 F. Supp. 649, 667 (D.N.M. 1980) (court may look outside record to determine if agency's scientific methodology is generally acknowledged by scientific community), *aff'd*, 664 F.2d 220 (10th Cir. 1981).

156. *Cf.* Sierra Club v. Sigler, 695 F.2d 957, 979 (5th Cir. 1983) ("[t]here can be no 'hard look' at costs and benefits unless all costs are disclosed"); Alaska v. Andrus, 580 F.2d 465, 473 (D.C. Cir.) ("[o]ne of the costs that must be weighed by decisionmakers is the cost of uncertainty"), *vacated sub nom.* Western Oil & Gas Ass'n v. Alaska, 439 U.S. 922 (1978).

157. *See* Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87, 100 (1983) ("an agency must allow all significant environmental risks to be factored into the decision whether to undertake a proposed action").

158. Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 775 (1983). The risk of a catastrophe must be disclosed, but not the public's reaction to it. *Id.* at 775 n.9.

environmental cost of the action will not have been addressed. Thus, if a reviewing court determines that an agency perfunctorily dismissed uncertainty and risks even though it complied with the superseding regulation, the agency's consideration of the environmental costs of its proposed action may violate NEPA's full disclosure mandate.[159]

In conclusion, agencies must continue to comply with the worst case analysis regulation in order to be sure of passing the "hard look" standard of judicial review. The validity of judicial imposition of the procedure withdrawn by the CEQ thus does not depend solely on the fact that *Vermont Yankee* is distinguishable from the present situation in the following three respects: (1) the preparation of an EIS is not controlled by the APA; (2) the worst case analysis is a quasi-procedural analytical tool; and (3) some Supreme Court precedent has recognized that the CEQ regulations are valid under NEPA. Most importantly, the application of "hard look review" will require courts to impose a procedural equivalent to the worst case analysis regulation to ensure that the potential environmental effects and costs of a proposed action in cases involving scientific uncertainty have been fully considered. Only thus can a court enforce NEPA's statutory mandate of full disclosure.

VI. THE LEGALITY OF THE CEQ'S WITHDRAWAL OF THE WORST CASE ANALYSIS REGULATION

It has been argued that the CEQ is entitled to withdraw the worst case analysis requirement because neither Congress nor the judiciary have mandated the preparation of worst case analyses by federal agencies.[160] Allan Brock, who views the CEQ's actions in withdrawing the requirement as a reinterpretation of NEPA, argues that "the question [of] whether the Council may choose to eliminate the worst case analysis concept from its regulations is answered by the Supreme Court's decision in *Chevron*."[161]

159. *See, e.g.*, Columbia Basin Land Protection Ass'n v. Schlesinger, 643 F.2d 585, 594 (9th Cir. 1981) ("one of the purposes of an EIS is to ensure full disclosure of the environmental consequences of a project"); Sierra Club v. Morton, 510 F.2d 813, 819 (5th Cir. 1975) (quoting Calvert Cliffs' Coordinating Comm. v. AEC, 449 F.2d 1109, 1122 (D.C. Cir. 1971) (" '[t]he sweep of NEPA is extraordinarily broad, compelling consideration of any and all types of environmental impact of federal action' ")); Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1973) ("[NEPA] serves as an environmental full disclosure law").

160. Brock, *supra* note 10, at 24.

161. *Id.* at 23. Mr. Brock is an attorney for the Department of the Interior.

In *Chevron, U.S.A., Inc. v. Natural Resource Defense Council, Inc.*, the Supreme Court examined the Environmental Protection Agency's (EPA) interpretation of a section of the Clean Air Act.[162] The Act required permits to be issued for "the construction and operation of new or modified major stationary sources" in areas that had not attained national ambient air quality standards.[163] The EPA had rejected its former definition of "source," which had required that permits be obtained for new or modified equipment within a plant if emissions from the new or modified equipment reached a threshold level.[164] The EPA then adopted a bubble concept, defining a "stationary source" as an entire plant. Under the new definition, a permit would not be required for the installation and modification of individual pieces of equipment within a plant as long as the total emissions from the plant were not increased.[165]

In deferring to the EPA's new interpretation of "source," the Supreme Court held that if Congress did not intend that statutory language be given a specific interpretation, courts must defer to a reasonable interpretation of the language by the agency to which Congress delegated policymaking responsibilities.[166] The Court emphasized the complexity of the Clean Air Act,[167] Congress's express delegation of policymaking responsibilities to the EPA,[168] and the EPA's flexible interpretation of statutory language in reconciling the Act's conflicting policies of reducing air pollution and encouraging economic growth.[169] Because the EPA made the policy choice in "a detailed and reasoned fashion," the Court deferred to the agency's interpretation of "source" as reasonable.[170]

If Brock's analogy from the *Chevron* precedent to the CEQ's withdrawal of the worst case analysis regulation were valid, it would follow that courts should defer to the CEQ's decision to

162. 467 U.S. 837 (1984); *see* 42 U.S.C. § 7502(b)(6) (1982).

163. 42 U.S.C. § 7502(b)(6) (1982).

164. *See* 467 U.S. at 857 (citing 45 Fed. Reg. 52,676, 52,697 (1980)).

165. *Id.* at 858-59 (citing 46 Fed. Reg. 50,766, 50,766 (1981)). The EPA thus came full circle to a view it had originally espoused before the District of Columbia circuit had ordered the agency to change its prior interpretation of "source" to mean individual emissions within a plant. *See id.* at 864; *see also* 15 CEQ ANN. REP. 60 (1986) (EPA has favored the bubble concept since 1975).

166. 467 U.S. at 842-43, 865-66.

167. *Id.* at 848, 865.

168. *Id.* at 862, 865.

169. *Id.* at 863-64.

170. *Id.* at 865; *see id.* at 858-59, 863 (describing basis of EPA's policy change).

withdraw. Brock's comparison of the CEQ's action in withdrawing the worst case analysis requirement to the EPA's action in reinterpreting the Clean Air Act is flawed, however, for two reasons. First, Congress did not delegate policymaking power under NEPA to the CEQ. Second, the CEQ was not reinterpreting NEPA when it withdrew the requirement.

The CEQ derives its authority to regulate under NEPA from an Executive Order.[171] Nothing in NEPA or the Executive Order delegates policymaking authority to the CEQ. Thus, the power to interpret NEPA in order to fill in the gaps in its broad language belongs primarily to the courts[172] which, however, have accorded substantial deference to the CEQ's interpretation of the Act.[173] This situation is significantly different from that in *Chevron*, where the Supreme Court determined that Congress had implicitly delegated controlling authority to the EPA to construe the Clean Air Act reasonably.[174] Thus, *Chevron* does not apply to the CEQ's actions under NEPA because no statutory delegation of policymaking power to fill in the gaps in NEPA's language has been made.[175]

When Congress does delegate authority to an agency to promulgate regulations, the agency may issue legislative regulations which will be accorded controlling weight by the courts.[176] In other words, the courts uphold the regulations "unless they are arbitrary, capricious, or manifestly contrary to the statute."[177] Regulations promulgated by an agency that does not have, or is

171. Exec. Order No. 11,514, § 3(h), 42 U.S.C. § 4321 note, at 509 (1982).

172. *See* Starr, *Judicial Review in the Post-*Chevron *Era*, 3 YALE J. ON REG. 283, 299 (1986) (in statutes that are not complex, "the Court might find no explicit or implicit gap left by Congress for the agency—rather than the courts—to fill"); *see also* Kleppe v. Sierra Club, 427 U.S. 390, 421 (1976) (Marshall, J., concurring in part and dissenting in part) (courts have created a common law of NEPA); Anderson, *supra* note 23, at 242 (courts are "the principal enforcers of NEPA").

173. Andrus v. Sierra Club, 442 U.S. 347, 357 (1979); *see* Anderson, *supra* note 23, at 342 (CEQ guidelines "to some extent fill in the gaps left by Congress").

174. 467 U.S. at 843-44; *see* 42 U.S.C. §§ 7411(a)(3), 7502(b)(6), 7602(j) (1982). *See generally* Saunders, *Interpretative Rules with Legislative Effect: An Analysis and a Proposal for Public Participation*, 1986 DUKE L.J. 346, 358 (analyzing *Chevron*).

175. *See* Saunders, *supra* note 174, at 367 ("*Chevron* clearly applies only when an implicit or explicit delegation of authority to construe has taken place . . . .").

176. Batterton v. Francis, 432 U.S. 416, 425 n.9 (1977). Procedural regulations are a subset of legislative regulations, which are promulgated by an agency to outline its own procedures. Such regulations bind the agency legally. *See* B. SCHWARTZ, ADMINISTRATIVE LAW § 59, at 159-60 (1976).

177. *Chevron*, 467 U.S. at 844.

not exercising, statutorily delegated authority are termed interpretative regulations.[178] The degree of deference that such regulations will be granted by the courts depends on the agency's expertise, the consistency of its position on the issue, and the timing of the regulations.[179]

The CEQ regulations must be interpretative in nature because the Council has no authority to issue legislative regulations.[180] Only Congress can delegate the authority to promulgate legislative regulations to an agency; it did not delegate that authority to the CEQ under NEPA. In fact, Congress may have intended the Office of Management and Budget to implement NEPA, not the CEQ.[181] The conclusion that the CEQ regulations are merely interpretative is reinforced by the CEQ's own statements upon its promulgation of the regulations. Even though the notice and comment procedures required for legislative regulations were followed,[182] the CEQ described its regulations as providing "formal guidance . . . on the requirements of NEPA for use by the courts in interpreting [NEPA]."[183] The CEQ also acknowledged that it was issuing the regulations pursuant to an executive directive.[184]

The Supreme Court's grant of deference rather than controlling weight to the CEQ regulations is consistent with their interpretative character. Substantial deference was extended because of the CEQ's creation by NEPA, its advisory responsibilities under the Act, and the "detailed and comprehensive process" by which the regulations were formulated.[185] Whether the same

178. *See* K. DAVIS, ADMINISTRATIVE LAW TREATISE § 7.8 (1958).

179. Batterton v. Francis, 432 U.S. 416, 425 n.9 (1977). A grant of deference means that the reviewing court defers in part to an agency's interpretation of a statute, but the court reserves the primary authority to state what the statute means. *See* Saunders, *supra* note 174, at 365.

180. *Cf.* Comment, *NEPA After* Andrus v. Sierra Club: *The Doctrine of Substantial Deference to the Regulations of the Council on Environmental Quality*, 66 VA. L. REV. 843, 844-45 & nn.6, 8 (1980) (describing CEQ as presidential advisory body with no statutory authority to issue or enforce regulations).

181. *See* S. REP. No. 296, 91st Cong., 1st Sess. 25 (1969). *See generally* F. ANDERSON, *supra* note 30, at 11.

182. *See* 43 Fed. Reg. 55,978, 55,978 (1978). The CEQ issued draft regulations for public review and comment according to the APA. *Id.*; *see* 5 U.S.C. § 553 (1982). Public hearings were held and opinions of nearly 12,000 federal, state, and local agencies and private parties were sought. 43 Fed. Reg. at 55,980.

183. 43 Fed. Reg. at 55,978.

184. *Id.*

185. Andrus v. Sierra Club, 442 U.S. 347, 357 (1979); *see also* United States v. Morton, 467 U.S. 822, 834 (1984) (because Congress explicitly delegated authority to the agency to

high level of deference will be accorded to the regulation replacing the worst case analysis regulation is doubtful because of the circumstances surrounding its adoption. For example, the CEQ's actions might be interpreted as an attempt to overturn judicial precedent.[186] In addition, the superseding regulation was not part of the comprehensive review of the entire NEPA procedure that the Supreme Court mentioned as a reason for granting substantial deference to the original regulations.[187] Indeed, the superseding regulation contradicts the position that the CEQ took on scientific uncertainty during that comprehensive review.[188] Finally, the superseding regulation's effect in allowing agencies to disclose a lesser amount of negative environmental information does not comport with NEPA's principle of full disclosure.[189]

The *Chevron* precedent does not apply to the CEQ's withdrawal of the worst case analysis requirement for a second reason. The CEQ was not reinterpreting NEPA when it withdrew the requirement. Instead, withdrawal was based on the CEQ's conclusion that "the worst case analysis requirement [was] flawed,"[190] and that "the new requirements provide[d] a wiser and more manageable approach to the evaluation of reasonably foreseeable significant adverse impacts in the face of incomplete or unavailable information in an EIS."[191] Nowhere in its many notices in the

construe the statute, regulations are legislative and have controlling weight); Herweg v. Ray, 455 U.S. 265, 274-75 (1982) (because Congress explicitly delegated authority to the Secretary to interpret the statute, the interpretation has legislative effect).

186. *See* Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 817 n.11 (9th Cir. 1987); Oregon Natural Resources Council v. Marsh, 832 F.2d 1489, 1496-97 n.8 (9th Cir. 1987); *see also supra* text accompanying notes 79-82.

187. *See* Andrus v. Sierra Club, 442 U.S. 347, 357-58 (1979). The CEQ regulations were issued pursuant to an executive order by President Carter ordering the agency to create uniform regulations to bind federal agencies in their implementation of NEPA. *Id.* at 357 (citing Executive Order 11,991, 3 C.F.R. 124 (1978)).

188. *Cf.* General Elec. Co. v. Gilbert, 429 U.S. 125, 142-43 (1976). By definition, the worst case analysis regulation required agencies to consider the worst environmental consequences of agency action involving scientific uncertainty. The superseding regulation attempts to change this requirement by omitting the language that required the preparation of a worst case analysis.

189. *See* 42 U.S.C. § 4321 (1982) (NEPA "promote[s] efforts which will prevent or eliminate damage to the environment"); *see also* Columbia Basin Land Protection Ass'n v. Schlesinger, 643 F.2d 585, 594-95 (9th Cir. 1981) (emphasizing NEPA's purpose as a full disclosure law); *cf.* Morton v. Ruiz, 415 U.S. 199, 237 (1974) ("[i]n order for an agency interpretation to be granted deference, it must be consistent with the congressional purpose" (citations omitted)).

190. 51 Fed. Reg. at 15,624.

191. *Id.* at 15,620.

Federal Register regarding the worst case analysis regulation does the CEQ purport to be reinterpreting NEPA. *Chevron*, on the other hand, was a case of strict statutory construction.[192]

In *Chevron*, the EPA's re-interpretation of the Clean Air Act was found to be reasonable. But the CEQ cannot show that its "re-interpretation" of the worst case analysis regulation was reasonable according to the *Chevron* standard,[193] because the action the CEQ took was not a re-interpretation. The CEQ instead made an administrative change, hoping to make NEPA more manageable by federal agencies. The CEQ's action, therefore, does not come within the deferential framework of *Chevron*, but should be judged by the more exacting standard of *Motor Vehicle Manufacturers Association, Inc. v. State Farm Mutual Insurance Co.*[194] This standard dictates that when an agency "changes its view about the wisdom of a rule [it must] demonstrate not only that the new rule is reasonable, but also that the agency's decision to change course is reasonable."[195]

In *State Farm*, the Supreme Court determined that the National Highway Traffic Safety Administration's (NHTSA) rescission of its passive restraints rule was arbitrary and capricious.[196] In 1977, the agency promulgated a rule requiring passive restraints (air bags or automatic seat belts) to be installed in large cars by model year 1982 and in all cars by model year 1984.[197] Four years later, after extending the deadline for passive restraints in large cars because of economic difficulties in the automobile industry, the Secretary of Transportation rescinded the rule.[198] The NHTSA explained that rescission occurred because the agency could no longer find that the rule would produce significant safety benefits.[199]

192. 467 U.S. at 859-62 (interpreting "source" in Clean Air Act); *see* Chemical Mfrs. Ass'n v. Natural Resources Defense Council, Inc., 470 U.S. 116, 125-26 (1985) (interpreting "modify" in Clean Water Act); *see also* Garland, *supra* note 130, at 550 ("Court treated *Chevron* purely as a case of statutory construction").

193. *See* 467 U.S. at 866.

194. 463 U.S. 29 (1983).

195. Starr, *supra* note 172, at 298.

196. 463 U.S. at 46.

197. *Id.* at 37 (citing 42 Fed. Reg. 34,289, 34,290 (1977)).

198. *Id.* at 38 (citing 46 Fed. Reg. 53,419, 53,419 (1981)).

199. *Id.* In 1977, the agency had found that the rule would produce significant safety benefits. 42 Fed. Reg. 34,289, 34,290 (1977). Since 1977, the NHTSA standard had been modified to permit automatic seat belts to be manufactured so that they could be de-

The Supreme Court determined that, although the NHTSA was entitled to change its course of action, it could not do so without providing a reasoned analysis for the change as well as for its new course.[200] The NHTSA's rescission was arbitrary and capricious, the Court concluded, because the agency had not made a rational connection between the facts and its judgment.[201]

The facts surrounding the CEQ's rescission of the worst case analysis regulation resemble the background of the *State Farm* case. The Supreme Court determined in *State Farm* that the Act under which the NHTSA acted was passed "because the industry was not sufficiently responsive to safety concerns."[202] NEPA was enacted because federal agencies were not sufficiently responsive to environmental concerns.[203] Also, just as the NHTSA reacted to the problems the automobile industry encountered in complying with its passive restraints rule,[204] the CEQ reacted to the difficulties experienced by federal agencies in complying with its worst case analysis regulation.[205]

More importantly, *State Farm* should govern the CEQ's actions because of the very nature of those actions. Since the CEQ was not reinterpreting NEPA when it replaced the worst case analysis regulation but was changing its opinion about the wisdom of the regulation itself, *State Farm* controls.[206] The CEQ must, therefore, provide a reasonable explanation for the change in its course of action as well as for the adoption of the superseding

tached. The agency determined that because many people would detach the seat belts, the anticipated safety benefits would not be realized. *See* 463 U.S. at 47.

200. 463 U.S. at 42, 57.

201. *Id.* at 56.

202. *Id.* at 38.

203. *See generally Fish and Wildlife Hearings*, *supra* note 29, at 38 (statement of N. Yost, Senior Staff Attorney, Center for Law in the Public Interest).

204. 463 U.S. at 49.

205. *See* 6 CEQ ANN. REP. 628 (1976); *see also* Yarrington, *supra* note 39, at 37 (language and legislative history of NEPA confirm the Act's purpose in substantially changing the decisionmaking procedures of federal agencies).

206. 463 U.S. at 42; *cf.* 51 Fed. Reg. at 15,620 ("CEQ is amending this regulation because it has concluded that the new requirements provide a wiser and more manageable approach to the evaluation of reasonably foreseeable significant adverse impacts in the face of incomplete or unavailable information in an EIS").

regulation.[207] This explanation must have an evidentiary basis in order to withstand judicial scrutiny.[208]

The CEQ began to express its concern about the worst case analysis regulation as early as 1983. At that time, in publishing guidance on the worst case analysis regulation, the agency stated its concern with "a wide variety of conflicting interpretations by both federal agencies and reviewing courts."[209] Two years later, the CEQ narrowed its focus to judicial interpretation of the requirement. According to the agency, "the requirement to prepare a 'worst case analysis' in certain circumstances has been the impetus for judicial decisions which require federal agencies to go beyond the 'rule of reason' in their analysis of potentially severe impacts."[210] The requirement allegedly "challenge[d] the agencies to speculate on the 'worst' possible consequences of a proposed action,"[211] and was "counterproductive, because it has led to agencies being required to devote substantial time and resources to preparation of analyses which are not considered useful to decisionmakers and [which] divert the EIS process from its intended purpose."[212] The CEQ stated that the Ninth Circuit had ordered a federal agency to "present a discussion of a particular disastrous impact even when the agency believe[d] that no credible scientific data ha[d] indicated that the particular impact could be caused by the proposed action."[213] It can be inferred

207. *See* Starr, *supra* note 172, at 298. Judge Starr, of the District of Columbia Circuit, stated that "if an agency changes its view about the wisdom of a rule, *State Farm* requires the agency to demonstrate not only that the new rule is reasonable, but also that the agency's decision to change course is reasonable." *Id.*

208. Bowen v. American Hosp. Ass'n, 476 U.S. 610, 643 (1986) (citing *State Farm*, 463 U.S. at 50).

209. Notice of Proposed Informational Guidance and Request for Comments, 48 Fed. Reg. 36,486 (1983).

210. Proposed Amendment to 40 C.F.R. § 1502.22, 50 Fed. Reg. 32,234, 32,234 (1985); *see also id.* at 32,237 ("[t]he Council believes that the current 'worst case analysis' requirement, as interpreted by recent judicial decisions, imposes a requirement on the agencies which goes beyond [the] 'rule of reason' ").

211. *Id.* at 32,236.

212. *Id.*

213. *Id.*; *see also Department of Housing and Urban Development—Independent Agencies Appropriations for 1986: Hearings Before a Subcomm. of the House Comm. on Appropriations, Part 4*, 99th Cong., 1st Sess. 61 (1985) (CEQ describing herbicide spraying cases as an impetus for reopening rulemaking on worst case analysis regulation); *Department of Housing and Urban Development—Independent Agencies Appropriations for 1985: Hearings Before a Subcomm. of the House Comm. on Appropriations, Part 3*, 98th Cong., 2d Sess. 32 (1984) (statement of A. Alan

from these remarks that the main reason behind the CEQ's rulemaking was the Ninth Circuit rulings.

In 1986, when the CEQ rescinded the worst case analysis requirement, the agency explained that it agreed with the requirement's goals of disclosing the extent to which information was incomplete or unavailable, acquiring that information if reasonably possible, and evaluating "reasonably foreseeable significant adverse impacts even in the absence of all information."[214] However, the CEQ said that it had chosen to rescind the requirement because it was "an unproductive and ineffective method of achieving [the requirement's] goals; one which can breed endless hypothesis and speculation."[215] The CEQ again drew on evidence from the Ninth Circuit to support its remarks about the infeasibility of the worst case analysis regulation. According to the CEQ, in *Save Our Ecosystems v. Clark*, the Ninth Circuit had ordered the BLM to prepare "a conjectural analysis, lacking a credible scientific basis" which appeared to be an indulgence in speculation for its own sake.[216]

However, the CEQ was misreading the Ninth Circuit's opinion. The trial court carefully weighed the competing views regarding the credibility of the scientific base before ordering the BLM to prepare that analysis.[217] That ruling was upheld by the Ninth Circuit.[218] Thus, the *Save Our Ecosystems* court did not read the worst case analysis regulation to require "endless hypothesis and speculation." Instead, the court ordered the BLM to prepare a worst case analysis only after it had been satisfied that a credible scien-

Hill, Chairman, CEQ) (discussing "considerable litigation" involving worst case analysis regulation "on the West Coast").

The proposed amendment of the worst case analysis regulation prepared by the Department of Justice pinpointed one decision that, the Department stated, "even held that a worst case analysis is required unless a federal agency can disprove an assertion that a particular consequence is arguably possible." 40 C.F.R. 1502.22, Proposed Amendment of Regulations Implementing NEPA, from Roger J. Marzulla, Department of Justice, to John Cooney, Jim Barnes, and Dinah Bear, CEQ (Dec. 5, 1984). The Department of Justice represented the BLM in *SOCATS* and *Save Our Ecosystems*.

214. 51 Fed. Reg. at 15,620.

215. *Id.*

216. 50 Fed. Reg. at 32,236 (citing 747 F.2d 1240 (9th Cir. 1984)).

217. Save Our Ecosystems v. Watt, 13 E.L.R. 20,887, 20,888 (D. Or. 1983), *aff'd in part and rev'd in part sub nom.* Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984).

The trial judge was "satisfied by the evidence presented at trial that some degree of uncertainty exists in the scientific community as to the potential of some or all of these herbicides for causing cancer and genetic mutation." *Id.*

218. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1245-46 (9th Cir. 1984).

tific basis for the analysis existed. This approach is consistent with all other judicial interpretations of the worst case analysis requirement, none of which have required "speculation" beyond that implicit in NEPA.[219]

As with its concern about undue speculation, the CEQ's concerns about conflicting interpretations by courts and federal agencies, counterproductivity, and violations of the rule of reason engendered by the worst case analysis regulation are unfounded.

The CEQ's reference to the "wide variety of conflicting interpretations [of the regulation] by both federal agencies and reviewing courts"[220] suggested that reviewing courts interpreted the worst case analysis regulation inconsistently. However, the Fifth and Ninth Circuits, the only circuits which had reviewed the regulation, did construe the regulation consistently. In fact, the Fifth Circuit formulated guidance to aid federal agencies in preparing worst case analyses,[221] thus alleviating conflicts in interpretations among agencies regarding the regulation's requirements. The only unresolved conflict was the BLM's persistent argument that it should not have been ordered by the Ninth Circuit to prepare a worst case analysis not based on any credible scientific evidence.[222]

The CEQ's assertion that the worst case analysis regulation was counterproductive because it required agencies to devote sub-

219. *See* Scientists' Inst. for Public Information, Inc. v. AEC, 481 F.2d 1079, 1092 (D.C. Cir. 1973); *cf.* North Slope Borough v. Andrus, 642 F.2d 589, 605 (D.C. Cir. 1980) (quoting North Slope Borough v. Andrus, 486 F. Supp. 326, 347 (D.D.C. 1979): worst case analysis in lease sale EIS " 'was a reasonable means of alerting the decisionmaker to the dangers presented by proceeding in the face of uncertainty' "). Because NEPA requires an agency to predict the environmental consequences of its proposed actions, it necessarily requires an agency to speculate on what those consequences will be. *See Scientists' Inst.*, 481 F.2d at 1092.

220. 48 Fed. Reg. at 36,486.

221. *See* Sierra Club v. Sigler, 695 F.2d 967, 974-75 (5th Cir. 1983).

222. In comments submitted to the CEQ during rulemaking, Interior continued to contend that "[t]he record disclosed no credible, scientific evidence that 2,4-D or any of the other proposed herbicides has any carcinogenic effect; and there was no data base upon which any meaningful evaluation of the herbicides' supposed carcinogenicity could be based." Comments to CEQ by Interior on the CEQ's Advance Notice of Proposed Rulemaking at 11 (Feb. 15, 1985). Interior also criticized the Ninth Circuit for "not even consider[ing] whether a worst case analysis on the herbicides' effect(s) on human health would reasonably affect the BLM's decision to proceed with its proposal." *Id.* at 10. *But see* Friends of River v. FERC, 720 F.2d 93, 108 (D.C. Cir. 1983) ("Courts have low tolerance for futility arguments pressed by parties who seek release from an obligation to engage in serious environmental decisionmaking on the ground such an enterprise would not change the party's mind about a planned development").

stantial time and resources to analyses that agency decisionmakers did not consider useful recalls early agency reactions to the NEPA process.[223] Such an argument is an attempt to excuse non-compliance with NEPA on the basis of administrative convenience. Similar arguments have been frequently rejected by the courts.[224] The CEQ also overlooks the fact that agencies have always had difficulty in complying with NEPA's statutory mandate of forecasting the nature of their projects' environmental effects in addition to complying with the worst case analysis regulation.[225] Mere difficulty in carrying out a congressional mandate, however, does not excuse agencies from complying with it. Therefore, agencies may not weaken NEPA's statutory mandate solely in order to comply more easily with it.[226]

Finally, the CEQ's conclusion that the worst case analysis regulation required agencies to go beyond the rule of reason[227] has no basis in fact. According to the CEQ, "a specific component of the 'rule of reason' " is "that the analysis of impacts be based on credible scientific evidence . . . ."[228] The Ninth Circuit decision cited by the CEQ did not abandon the rule of reason but stated that worst case analyses should be reasonable,[229] as should the

223. *See generally NEPA Oversight Hearings*, *supra* note 60, at 8 (statement of Charles Warren, Chairman, CEQ) (describing grudging compliance with NEPA by agencies in the early 1970's); Cortner, *A Case Analysis of Policy Implementation: The National Environmental Policy Act of 1969*, 16 NAT. RESOURCES J. 323, 324-25 (1976) (describing agency complaints that "NEPA procedures are too costly, time-consuming, inflexible, cumbersome, and detailed").

224. *See* Calvert Cliffs' Coordinating Comm. v. AEC, 449 F.2d 1109, 1121 (D.C. Cir. 1971); Brooks v. Volpe, 350 F. Supp. 269, 283 (W.D. Wash. 1972); *cf.* Conservation Law Foundation of New England, Inc. v. GSA, 707 F.2d 626, 633 (1st Cir. 1983) (rejecting GSA's argument that speculation required by NEPA "is meaningless and a waste of agency resources" because of circumstances); Prince George's County v. Holloway, 404 F. Supp. 1181, 1184 (D.D.C. 1975) (NEPA is more than "a mere formality which busy bureaucrats can treat as an annoyance").

225. *See* Lynch, *supra* note 28, at 329. Mr. Lynch attributed the difficulty in forecasting to bureaucratic caution about speculating. *Id.*

226. *See* Letter from Senators J. Randolph, R. Stafford, D. Durenberger & M. Baucus of the Senate Committee on Environment and Public Works to A. Alan Hill, Chairman, CEQ (Feb. 22, 1984) (new regulation weakens environmental protection provided by NEPA).

227. 50 Fed. Reg. at 32,234.

228. 51 Fed. Reg. at 15,624.

229. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1245 (9th Cir. 1984) (citing Sierra Club v. Sigler, 695 F.2d 957, 974 (5th Cir. 1983)); *see also* Village of False Pass v. Watt, 565 F.2d 1123, 1152 (D. Alaska 1983) (rule of reason mandates against requiring worst case analysis on oil spill at early stage of offshore oil and gas lease), *aff'd sub nom.* Village of False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984).

speculation and forecasting involved.[230] Indeed, the court had required plaintiffs to show that a credible scientific database existed before ordering the BLM to prepare the analysis.[231]

Surprisingly, in the preamble to the final version of the superseding regulation, the CEQ advocates "evaluation of reasonably foreseeable significant adverse impacts *even in the absence of all information.*"[232] The CEQ is thus endorsing the preparation of evaluations based on pure conjecture, a requirement which directly contradicts one of its purported reasons for issuing the new regulation.[233]

The CEQ's superseding regulation reads:

> When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.
>
> (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.
>
> (b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement: (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon the theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occur-

230. 747 F.2d at 1246 n.9 (citing Scientists' Inst. for Public Information, Inc. v. AEC, 481 F.2d 1079, 1092 (D.C. Cir. 1973)).

231. *See id.* at 1246. *See generally* Comments of the Western Natural Resources Law Clinic to the CEQ on the Proposed Amendment to the Worst Case Analysis Regulation at 2 (Sept. 27, 1985) (Professor Axline of the Western Natural Resources Law Clinic was an Attorney for Save Our Ecosystems in the case of the same name).

232. 51 Fed. Reg. at 15,620 (emphasis added).

233. *See* 50 Fed. Reg. at 32,236 ("Council believes that pure conjecture . . . is *not* useful to either the decision maker or the public") (emphasis in original).

> rence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.[234]

The regulation, which was reworked numerous times before its publication,[235] is confusing.[236] After repeating five times that only "reasonably foreseeable significant adverse effects" were to be evaluated,[237] the regulation defines "reasonably foreseeable" to include low-probability impacts.[238] Thus, the superseding regulation applies to the same situations that triggered the old regulation.[239]

The superseding regulation is also circular in its operation. Under the regulation, an agency that cannot evaluate the potential environmental consequences of its action because of missing scientific information must disclose that fact and state the relevance of the missing information to its decision. The agency must then summarize the "existing credible scientific evidence"[240] and evaluate the adverse impacts using that evidence. A major portion of the relevant information, however, is missing. If the agency could evaluate the potential environmental effects of its action with the aid of existing credible scientific evidence, it would not have had to state that relevant information was missing, and the regulation would not have been triggered.

The CEQ's rationale for adopting the superseding regulation is an anticipated improvement in the quality of EISs and subsequent agency decisionmaking.[241] According to the CEQ, this improvement will occur because the new regulation requires "more accurate and relevant information about reasonably foreseeable

234. 40 C.F.R. § 1502.22 (1987). The new regulation applies to EISs prepared after May 27, 1986. *Id.* § 1502.22(c).

235. In Spring 1985, nearly one year before the new regulation was published in final form in the *Federal Register*, 28 drafts had been prepared. *See* discussion following Bear, *Worst Case Analysis: The Federal Regulation 40 C.F.R. 1502.22*, in PROCEEDINGS OF A SYMPOSIUM ON WORST CASE ANALYSIS 3, 10 (1985) (statement of D. Bear, General Counsel, CEQ).

236. *Cf.* Whitney, *Demise of the Council on Environmental Quality's "Worst Case" Analysis Regulation*, 8 GEO. MASON U.L. REV. 447, 478 (1986) (describing sentence defining "reasonably foreseeable" in proposed regulation as "self-contradictory or incomprehensible"; definition is basically unchanged in final regulation).

237. *See* 40 C.F.R. § 1502.22 (1986).

238. *Id.* § 1502.22(b).

239. *See* 51 Fed. Reg. at 15,624 ("amended regulation will apply, of course, to the very same situations to which the original regulation applies").

240. 40 C.F.R. § 1502.22(b) (1987).

241. 51 Fed. Reg. at 15,624.

significant adverse impacts."[242] Because of the improved quality of EISs, decisionmakers and the public will be better informed,[243] and environmental protection will be strengthened.[244] Also, the gloss of the rule of reason will be added to the regulation.[245] However, the CEQ's rationale is flawed.

The superseding regulation will not cause agencies to prepare better EISs, thereby improving environmental quality. Under the superseding regulation, a low probability/catastrophic consequences impact must meet a three-prong test in order to be evaluated by the agencies. The impact must be: (1) supported by credible scientific evidence; (2) not based on pure conjecture; and (3) within the rule of reason. At first glance this test bears a strong similarity to the Fifth Circuit's test, enunciated in *Sierra Club v. Sigler*, which required worst case analyses to be based on existing data, and to be informative, useful and not unreasonably speculative.[246] But the new test attempts to remove the determinations of "credible scientific evidence" from judicial review by requiring an agency to consider only the scientific evidence that *it* determines to be credible. The courts, however, have been the traditional fora for determining credibility. In the NEPA context, courts have reviewed the credibility of scientific opinions, not in order to judge whether an agency has made the correct decision, but to determine whether it has followed the procedures required by law in disclosing those opinions.[247] Apart from disagreeing with the Ninth Circuit in *Save Our Ecosystems* and *SOCATS*, the CEQ offered no evidence to support its contention that courts are no longer capable of determining when scientific evidence is credible.

To summarize, the worst case analysis regulation was withdrawn by the CEQ because of a change of opinion in the CEQ regarding the wisdom of the regulation. The CEQ, therefore, was

242. *Id.*

243. *Id.* at 15,620.

244. *Id.* at 15,624.

245. *Id.* at 15,622.

246. *See* 695 F.2d 957, 975 n.14 (5th Cir. 1983).

247. *See* Sierra Club v. Corps of Engineers, 772 F.2d 1043, 1053-54 (2d Cir. 1985); *see also* Missouri *ex rel.* Ashcroft v. Corps of Engineers, 526 F. Supp. 660, 672 (W.D. Mo. 1980) (rejecting hydrologist's opinion concerning increase of erosion caused by dam as not credible), *aff'd*, 672 F.2d 1297 (8th Cir. 1982); Hart & Miller Islands Area Envtl. Group, Inc. v. Corps of Engineers, 505 F. Supp. 732, 755 (D. Md. 1980) (determining that scientific opinions of environmental consequences of marine facility were credible but declining to referee conflict of scientific opinions).

required by the Supreme Court's decision in *State Farm* to provide a reasonable explanation for changing its course of action as well as for promulgating the superseding regulation. The CEQ has failed to provide a reasonable explanation for either action.

The reasons the CEQ gave for withdrawing the worst case analysis regulation do not have an evidentiary basis. The superseding regulation, meanwhile, will not improve the quality of EISs and agency decisionmaking. The new regulation permits agencies to shield their determinations of credibility from judicial review and thus to consider only the scientific evidence that they themselves consider to be credible. Such unsupervised determinations are clearly open to abuse. In enabling agencies to ignore bodies of evidence in cases where scientific evidence is necessarily scarce and usually conflicting, the superseding regulation violates NEPA's mandate of full disclosure.

VII. EFFECT OF THE CEQ'S WITHDRAWAL OF THE WORST CASE ANALYSIS REGULATION

A. *Agency Decisionmaking*

The effect of the CEQ's withdrawal of the worst case analysis regulation may be negligible. The requirement for preparation of a worst case analysis is gone but a similar analysis may be required by the courts in order to ensure that an agency has considered the full range of environmental concerns encompassed by NEPA.

The CEQ, by means of its superseding regulation, has attempted to limit judicial review of agency determinations as to which scientific evidence must be considered by agencies in order to achieve compliance with NEPA. For example, in writing the superseding regulation, the CEQ rejected a suggestion from the EPA that the regulation or its preamble should state that agencies must investigate "the available *body* of scientific evidence" and include the rationale used to select which evidence was credible.[248] The superseding regulation contains no requirement that an agency disclose the rationale behind its selection of credible evidence.

248. Letter to Dinah Bear, General Counsel, CEQ, from Allan Hirsch, Director, Office of Federal Activities, Environmental Protection Agency, Sept. 23, 1985 (emphasis in original).

The new regulation[249] seems to imply that an agency would be able to reject, and thus to exclude from its decisionmaker's consideration, the scientific opinions such as those the Ninth Circuit ordered the BLM to consider in its worst case analysis of the herbicide spraying program in *Save Our Ecosystems*.[250] Despite the contrary finding of the court in that case,[251] the CEQ continued to characterize the scientific opinions that the herbicides could cause cancer at any dose as "pure conjecture."[252] The CEQ's criticism of this case seems to suggest that the definition of "credible scientific evidence" may exclude "responsible opposing views," despite its subsequent assertion to the contrary.[253] Courts, however, have long held that responsible opposing views concerning significant information must be disclosed in EISs,[254] "even if the responsible agency finds no merit in them whatsoever."[255]

If an agency fails to discuss an area of environmental concern because it determines that no "credible scientific evidence" exists, it is exposing itself to a lawsuit challenging the omission. Whereas a discussion of "responsible opposing views" resulting in a determination that the opposing views are less than credible is the type of agency decision that has traditionally been awarded deference by the courts, a lack of any consideration of those views exposes an agency to a judicial determination that the ignored evidence was credible, and should have been discussed.

249. 40 C.F.R. § 15022.22 (1987).

250. *See* Save Our Ecosystems v. Watt, 13 E.L.R. 20,887, 20,888 (D. Or. 1983), *aff'd in part and rev'd in part sub nom.* Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984).

251. *See id.*

252. Council on Environmental Quality, Proposed Amendment to 40 C.F.R. § 1502.22, 50 Fed. Reg. 32,234, 32,236 (1985).

253. In the comments to the new regulation, the CEQ included "responsible opposing views" under its definition of "credible scientific evidence." *See* 51 Fed. Reg. at 15,623.

254. *See* Enos v. Marsh, 769 F.2d 1363, 1373 (9th Cir. 1985); *see also* Committee for Nuclear Responsibility, Inc. v. Seaborg, 463 F.2d 783, 787 (D.C. Cir. 1971) (court's "function is only to ensure that the statement sets forth the opposing scientific views"); Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1973) (comments from responsible experts require the response of a good faith reasoned analysis); Save the Niobrara River Ass'n v. Andrus, 483 F. Supp. 844, 866 (D. Neb. 1979) (opposing scientific views must be disclosed together with synopses of scientific views and methods of dealing with conditions asserted by them).

255. Environmental Defense Fund v. Corps of Engineers, 325 F. Supp. 749, 759 (E.D. Ark. 1971), *vacated*, 342 F. Supp. 1211 (E.D. Ark.), *aff'd*, 470 F.2d 289 (8th Cir. 1972).

The CEQ's statement that "[i]nformation which is unworthy of belief should not be included in an EIS"[256] seems logical at first glance. However, views that conflict with those held by an agency or with an agency's goals may be more likely to be found unworthy of belief.[257] Courts, therefore, have required the consideration of such views by agencies.[258] A decision taken in the absence of adequate scientific data is more likely to appear to be a value judgment than a rational and principled decision. In order to avoid the appearance of bias, therefore, an agency should disclose to the public as many scientific opinions regarding the action's environmental effects as possible. Omission of conflicting views could also limit NEPA's public participation process by restricting debate on a project.[259] By encouraging agencies not to promote full debate of the environmental consequences of their actions, the CEQ frustrates the congressional purpose in enacting NEPA.[260] A full discussion of available facts rather than a constrained one would more effectively eliminate scientific uncertainty.

B. *Judicial Review*

In reviewing a worst case analysis under the superseded regulation, a court could determine that an agency acted arbitrarily by failing to consider scientific evidence found to be credible by the court. According to Ninth Circuit precedent, agency consideration of the scientific evidence must take place whether or not the agency considers it to be credible.[261] Although courts have traditionally deferred to agency determinations involving evidence on

256. 51 Fed. Reg. at 15,623. The CEQ derives its definition of "credible" from WEBSTER'S DICTIONARY. *Id.* at 15,622-23 (quoting WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY (1984)) (defining "credible" as " 'capable of being believed' ").

257. *Cf.* Rosenbaum, *Amending CEQ's Worst Case Analysis Rule: Towards Better Decisionmaking?*, 15 Envtl. L. Rep. (Envtl. L. Inst.) 10,275, 10,277 n.26 (1985).

258. *See* Environmental Defense Fund v. Corps of Engineers, 325 F. Supp. 728, 759 (E.D. Ark. 1971) (EIS must contain opposing views), *vacated*, 342 F. Supp. 1211 (E.D. Ark.), *aff'd*, 470 F.2d 289 (8th Cir. 1972).

259. *Cf. id.*; Anderson, *supra* note 23, at 381 ("[e]ven if the agency disagrees violently with a particular point of view, it should include it in the final statement").

260. *See* 42 U.S.C. § 4331(a) (1982) (NEPA process involves "the Federal Government, in cooperation with state and local governments, and other concerned public and private organizations").

261. *See* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1245-46 (9th Cir. 1984). *See generally* Comment, *Update: The NEPA Worst Case Analysis Regulation*, 14 Envtl. L. Rep. (Envtl. L. Inst.) 10,267, 10,271 (1984) (discussing "unusual nature of judicial review of a worst case choice").

the cutting edge of science,[262] the award of that deference depends on the court's determination that the scientific evidence has in fact been considered.[263] Upon a challenge to an agency's omission, if the agency is shown to have ignored relevant scientific evidence and has not explained the reasons for its decision, courts themselves may undertake determinations of credibility. The District of Columbia Circuit has stated that "only responsible opposing views need be included [in an EIS] and hence there is room for discretion on the part of the officials preparing the statement; but there is no room for an assumption that their determination is conclusive."[264]

VIII. CONCLUSION

The worst case analysis regulation undoubtedly caused problems for agency personnel in analyzing worst case scenarios for their proposed projects.[265] Guidance from the CEQ on the

262. *See, e.g.*, Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87, 103 (1983) ("[w]hen examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential"); Ethyl Corp. v. EPA, 541 F.2d 1, 28 (D.C. Cir.) (en banc) ("rigorous step-by-step proof of cause and effect" is not required when "evidence [is] difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge"), *cert. denied*, 426 U.S. 941 (1976); Reserve Mining Co. v. EPA, 514 F.2d 492, 519-20 (8th Cir. 1975) (deferring to agency decision based on medical and scientific conclusions on "frontiers of scientific knowledge"); *modified*, 529 F.2d 181 (8th Cir. 1976).

A less rigorous standard is, similarly, used for review of worst case analyses because the data on which they are based are at the frontiers of science. *See* Sierra Club v. Sigler, 695 F.2d 957, 976 (5th Cir. 1983).

263. *See* Foundation on Economic Trends v. Heckler, 756 F.2d 143, 153-54 (D.C. Cir. 1985).

264. Committee for Nuclear Responsibility v. Schlesinger, 463 F.2d 783, 787 (D.C. Cir. 1971).

265. For example, the BLM prepared a worst case analysis for a proposed wildcat oil well in mountainous terrain in the Shoshone National Forest in Wyoming. The proposed well site was to occupy five acres accessible only by helicopter. Extensive discussions on environmental protection for the site had taken place between all interested parties. Scientific uncertainty did not exist because the environmental consequences of drilling the well were known, as were the environmental effects of a potential blow out and concomitant release of hydrogen sulfide gas. Nevertheless, the BLM prepared an EIS in which it concluded that no significant impact on the environment existed. The agency then compounded its error (an EIS is not required if the agency makes a finding of no significant impact after it has prepared an environmental assessment, 40 C.F.R. § 1501.4(e) (1987)), by labeling its worst case analysis as its first alternative. The worst case analyzed was a fully developed oil field of 210 wells. The worst case analysis, which was not the environmental effect of drilling the wildcat well, caused a huge public reaction. *See* Comments by the Rocky Mountain Oil and Gas Association, Inc. to the CEQ on the Advance Notice of Proposed Rulemaking at 4-6 (Feb. 15, 1985).

proper preparation of a worst case analysis could presumably have resolved agency difficulties in determining which scenarios to analyze, however.[266] The regulation had been in effect since 1978. By 1984, when the CEQ began considering amending the worst case analysis regulation, the courts had their own framework in place establishing when a worst case analysis should be required. The framework required that worst case analyses be based on existing data, that they be informative, useful and not unreasonably speculative.[267] If scientific data were complete for all significant impacts of an agency's action, a worst case analysis was not required.[268]

By withdrawing the regulation and imposing new requirements, the CEQ has merely created a situation of uncertainty. Agencies are bound to follow the superseding regulation but, at least in the Fifth and Ninth Circuits, they are also bound to follow judicial precedent requiring the preparation of worst case analyses in situations involving scientific uncertainty. In addition, NEPA's full disclosure mandate arguably requires more information than does the superseding regulation. Thus, compliance with the superseding regulation may not satisfy the demands of either judicial precedent or NEPA's statutory mandate.

266. The CEQ previously published guidance to aid agencies in implementing NEPA. *See, e.g.*, Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (1981). *See generally* Comment, *The Council on Environmental Quality's Guidelines and Their Influence on the National Environmental Policy Act*, 23 CATH. U.L. REV. 547, 559-70 (1974) (describing CEQ memos).

267. Sierra Club v. Sigler, 695 F.2d 957, 974-75 (5th Cir. 1983).

268. Friends of Endangered Species, Inc. v. Jantzen, 589 F. Supp. 113, 116 n.1 (N.D. Cal. 1984), *aff'd*, 760 F.2d 976 (9th Cir. 1985); *see also* Village of False Pass v. Clark, 733 F.2d 605, 616 (9th Cir. 1984) (analysis of 100,000 barrel oil spill in St. George Basin not required when less catastrophic worst case was analyzed and when subsequent offshore leasing process required preparation of EIS).