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The Rise and Fall of Worst Case Analysis

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ARTICLES

THE RISE AND FALL OF WORST CASE ANALYSIS

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The National Environmental Policy Act (NEPA) was designed to protect the environment by requiring federal agencies to consider environmental factors in their decisionmaking processes.[1] In 1978, the Council on Environmental Quality (CEQ), as part of its comprehensive review of the NEPA regulations, enacted a regulation requiring federal agencies to address incomplete or unavailable information in their Environmental Impact Statements (EISs).[2] The regulation instructed federal agencies, when addressing "scientific uncertainty" or "gaps in relevant information" regarding significant adverse environmental effects which were "essential to a reasoned choice among alternatives" or "important to the decision," to obtain such information and include it in

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1. 42 U.S.C. §§ 4321-4370a (1988).

2. 40 C.F.R. § 1502.22 (1991). Section 1502.22, entitled "Incomplete or unavailable information," stated:

> 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.
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> 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.

Id.

the EIS.[3] If this information could not be acquired because the "overall costs of obtaining it [were] exorbitant" or "the means for obtaining it were beyond the state of the art," the agency was required to conduct a worst case analysis and indicate the probability of such an occurrence.[4]

Federal agencies were reluctant to comply with the worst case analysis regulation.[5] Federal agencies asserted that the regulation involved excessive speculation and exceeded the rule of reason which defined the parameters of NEPA analysis.[6] In addition, the worst case analysis wasted valuable time and resources, and produced information which was of little use to decisionmakers.[7] Environmental interest groups brought several suits to compel various federal agencies to comply with the worst case regulation.[8] The courts were required to interpret the regulation and review the federal agencies' compliance with the regulation.[9] Subsequently the courts upheld and clarified the dictates of the worst case regulation.[10]

In 1986, the CEQ rescinded the worst case regulation and promulgated a new regulation pertaining to incomplete or unavailable information.[11] Federal agencies must now identify incomplete or unavailable information regarding reasonably foreseeable significant adverse envi-

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3. *Id.*

4. *Id.*

5. 50 Fed. Reg. 32,236-37 (1985) (codified at 40 C.F.R. § 1502.22) (1991).

6. *Id.* at 32,237. The rule of reason holds that, "[t]he statute must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible . . . ." Scientists' Inst. for Pub. Info., Inc. v. United States Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973) (quoting Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972)). "But implicit in this rule of reason is the overriding statutory duty of compliance with impact statement procedures 'to the fullest extent possible.' " *Id. See also* County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1375 (2d Cir. 1977), *cert. denied*, 434 U.S. 1064 (1978).

7. 50 Fed. Reg., *supra* note 5, at 33,236-37.

8. *See infra* notes 14-19. *See also* Vicki O'Meara Masterman, *Worst Case Analysis: The Final Chapter?*, 19 ENVTL. L. REP. 10,026, 10,030 n.41 (1989).

9. Calvert Cliffs' Coord. Comm. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1111 (D.C. Cir. 1971). *See also* Harold Leventhal, *Environmental Decisionmaking and the Courts*, 122 U. PA. L. REV. 509, 516-17 (1974); James L. Oakes, *The Judicial Role in Environmental Law*, 52 N.Y.U. L. REV. 498, 512 (1977); Richard B. Stewart, *The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decisionmaking: Lessons from the Clean Air Act*, 62 IOWA L. REV. 713 (1977).

10. *See infra* notes 14-19.

11. 40 C.F.R. § 1502.22 (1991). Section 1502.22 provides:

> When an agency is evaluating reasonably foreseeable significant adverse impacts 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.

ronmental impacts, which is "essential to a reasoned choice among alternatives," and include this information in the EIS. If the federal agency cannot acquire such information because "the overall costs of obtaining it are exorbitant or the means to obtain it are not known," the agency must include in the EIS:

> 1) a statement that such information is incomplete or unavailable; 2) a statement of the relevance of the incomplete or unavailable information; 3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant impacts; and 4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.[12]

In 1989, the United States Supreme Court upheld this new regulation in *Robertson v. Methow Valley Citizens Council*.[13]

This article will analyze the rise and fall of the worst case analysis regulation. Part I will provide an overview of the NEPA. Part II will examine the CEQ's promulgation of the worst case analysis regulation and its early interpretation of the regulation. Part III will review the judicial decisions regarding federal agencies' noncompliance with the worst case regulation, specifically *Sierra Club v. Sigler*,[14] *Southern Oregon Citizens Against Toxic Spraying v. Clark*,[15] *Save Our Ecosystems v. Clark*,[16] and *Village of False Pass v. Watt*.[17] Part IV will discuss the CEQ's recision of the worst case analysis regulation, as well as the establishment of its new regulation concerning incomplete or un-

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(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 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 occurrence 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.

(c) The amended regulation will be applicable to all environmental impact statements for which a Notice of Intent (40 C.F.R. § 1508.22) is published in the FEDERAL REGISTER on or after May 27, 1986. For environmental impact statements in progress, agencies may choose to comply with the requirements of either the original or amended regulation.

Id.

12. *Id.*
13. 490 U.S. 332 (1989).
14. 695 F.2d 957 (5th Cir. 1983).
15. 720 F.2d 1475 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).
16. 747 F.2d 1240 (9th Cir. 1984).
17. 733 F.2d 605 (9th Cir. 1984).

available information. Part V will examine the judicial review of a federal agency's worst case analysis in *Northwest Coalition for Alternatives to Pesticides v. Lyng*.[18] Part VI will discuss the Supreme Court's decision in *Robertson v. Methow Valley Citizens Council*[19] upholding the new regulation. This article points out that the new regulation maintains the spirit of the worst case analysis regulation, which was to address incomplete or unavailable knowledge regarding significant adverse environmental impacts, but recasts the methodology for achieving these ends in response to the prior judicial decisions. Finally, this article analyzes the relationship between the courts and administrative agencies on the frontiers of science.

I. NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA), which was enacted in 1969, establishes a national commitment by the federal government to the protection of the environment.[20] The NEPA backs this commitment with requirements that force action.[21] When a federal agency contemplates a major federal action which significantly affects the environment, the agency must prepare an Environmental Impact Statement (EIS) which discusses:

1. the environmental impact of the proposed action;
2. any adverse environmental effects which cannot be avoided should the proposal be adopted;
3. alternatives to the proposed action;
4. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
5. any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented.[22]

The EIS insures that federal decisionmakers have considered environmental factors in their decisionmaking process. Further, the EIS in-

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18. 844 F.2d 588 (9th Cir. 1988).
19. 490 U.S. 332 (1989).
20. The purposes of NEPA are:

> To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

42 U.S.C. § 4321 (1988).

21. *See id.* § 4332(C).
22. *Id.*

forms the public and other political actors about the potential consequences of the proposed federal activity.[23]

Federal agencies were, initially, very reluctant to comply with the NEPA.[24] Federal agencies asserted that the NEPA interfered with their developmental missions and was contrary to the orientation and training of their staffs.[25] Federal agencies contended that the NEPA threatened relationships with their clientele interests.[26] By forcing activity contrary to the agencies' missions and disrupting the relationship with clientele interests, the NEPA undermined political support for the agencies.[27] Furthermore, federal agencies complained that the NEPA requirements were "costly, time-consuming, inflexible, cumbersome, . . . detailed" and caused unnecessary and unreasonable delays in agency projects.[28]

Various studies were critical of the federal agencies' initial NEPA compliance.[29] A 1972 General Accounting Office (GAO) report concluded that the implementation of the NEPA by federal agencies was neither systematic nor uniform.[30] Federal agencies did not utilize their EISs as an integral part of their decisionmaking process.[31] Another 1972 GAO report concluded that EISs did not pay sufficient attention to the environmental impacts, the alternatives, or the comments from other government agencies, thus limiting their effectiveness.[32] Other studies confirmed the GAO's conclusions that EISs were being used to justify agency projects after the fact, rather than serving as decisionmaking instruments. These studies noted that EISs were being prepared late in the process when there was little chance of modifying or canceling the project.[33] Furthermore, many federal agencies only en-

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23. Calvert Cliffs' Coord. Comm. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1114 (D.C. Cir. 1971).

24. Hanna J. Cortner, *A Case Analysis of Policy Implementation: The National Environmental Policy Act of 1969*, 16 NAT. RESOURCES J. 323, 324-27 (1976); David M. Lesser, *Putting Bite in NEPA's Bark: New Council on Environmental Quality Regulations for the Preparation of Environmental Impact Statements*, 16 MICH. J.L. REF. 367, 372-73 (1980).

25. Cortner, *supra* note 24, at 324.

26. Cortner, *supra* note 24, at 325.

27. Cortner, *supra* note 24, at 326.

28. *See* Cortner, *supra* note 24, at 325.

29. Cortner, *supra* note 24, at 323-27.

30. Comptroller General, Report on Improvements Needed in Federal Efforts to Implement NEPA of 1969 (1972).

31. *Id.*

32. Comptroller General, Report on Adequacy of Selected Environmental Impact Statements Prepared Under the National Environmental Policy Act of 1969 (1972).

33. Gordon A. Enk, Beyond NEPA: Criteria for Environmental Impact Statement Review (Institute on Man and Science 1973); Leonardo Orotolano & William Hill, An Analysis of Environmental Statements of Corps of Engineers Water Projects (Technical Information Service 1972); H. Paul Fresema & Paul J. Culhane, *Social Impacts, Politics, and the Environmental*

gaged in a *pro forma* procedural compliance with the NEPA in order to avoid rigorous public scrutiny of their decisions.[34]

Given the federal agencies' reluctance to comply, and the broad goals and vague wording of the statute, a great deal of litigation ensued.[35] The courts were required to interpret the statute and review federal agency action to ensure compliance with the statutory mandate.[36] The NEPA mandate and the role of the courts when reviewing federal agencies' NEPA compliance was articulated in 1971 by the D.C. Circuit in *Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission* (AEC).[37] The court invalidated the AEC regulations prohibiting the consideration of environmental issues in certain procedures.[38] The court held that the NEPA "makes environmental protection a part of the mandate of every federal agency and department."[39] Federal agencies must use a " 'systematic, interdisciplinary approach' to environmental planning and evaluation 'in decisionmaking which may have an impact on man's environment,' "[40] and also " 'identify and develop methods and procedures . . . which will insure [sic] that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations.' "[41] The NEPA mandates that a

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Impact Statement Process, 16 NAT. RESOURCES J. 339 (1976); William V. Kennedy & Frank Hanshaw, *The Effectiveness of Impact Statements*, 37 EKISTICS 19-22 (1974); Bruce B. Kreith, *Lack of Impact*, 15 ENVIRONMENT 26-33 (1973); Cortner, *supra* note 24, at 324-27.

34. Report on Improvements Needed in Federal Efforts to Implement NEPA of 1969, *supra* note 30, at 1-4, 22, 42-44; Lesser, *supra* note 24, at 371; Richard Mott, *NEPA Violations and Equitable Discretion*, 64 OR. L. REV. 497, 507 (1986); Charles F. Weiss, *Federal Agency Treatment of Uncertainty in Environmental Impact Statements Under CEQ's Amended NEPA Regulation § 1502.22: Worst Case Analysis or Risk Threshold*, 86 MICH. L. REV. 777, 783 (1988).

35. Justice Marshall has stated, "this vaguely worded statute seems designed to serve as no more than a catalyst for development of a 'common law' of NEPA. . . . [C]ourts have responded in just that manner and have created such a 'common law.' " Kleppe v. Sierra Club, 427 U.S. 390, 421 (1976).

36. *See supra* notes 14-19 and accompanying text. Kenneth Culp Davis has stated that:

> NEPA calls into plan [sic] many basic principles of administrative law. It does not break or bend any of them but, like a magnet, it applies a new force. NEPA teaches a good lesson about delegation. It seems to make reviewable some action that would be unreviewable without NEPA. It introduces an unfamiliar problem about scope of review. Some administrative action that has never been subject to a requirement of a statement of findings and reasons is pulled into that requirement, and some information must be disclosed under NEPA that is exempt from required disclosure under the Information Act. NEPA provides new testing for emerging ideas about fair informal procedure and for the most difficult portion of the problem of requirement of opportunity to be heard.

KENNETH KULP DAVIS, ADMINISTRATIVE LAW: CASES—TEXT—PROBLEMS 587 (1973).

37. 449 F.2d 1109 (D.C. Cir. 1971).

38. *Id.* at 1129.

39. *Id.* at 1112.

40. *Id.* at 1113.

41. *Id.* (quoting 42 U.S.C. § 4332(B) (1971)).

"finely tuned and 'systematic' balancing analysis"[42] be included in the EIS which covers "the impact of particular actions on the environment, the environmental costs which might be avoided, and alternative measures which might alter the cost-benefit equation."[43] The EIS is designed "to aid in the agencies' own decision making process and to advise other interested agencies and the public of the environmental consequences of planned federal action."[44] Further, the NEPA's requirement that federal agencies comply " 'to the fullest extent possible' sets a high standard for the agencies, a standard which must be rigorously enforced by the reviewing courts."[45] Judge Skelly Wright stated, "[O]ur duty, in short, is to see that important legislative purposes, heralded in the halls of Congress, are not lost or misdirected in the vast hallways of the federal bureaucracy."[46]

The courts view the NEPA as a procedural, rather than a substantive, statute.[47] The NEPA is an environmental full disclosure law which does not require a federal agency to choose the most environmentally benign course of action.[48] The courts review a federal agency's NEPA compliance under the Administrative Procedures Act to determine if the agency's action was "arbitrary, capricious, an abuse of discretion, or otherwise not according to law"[49] or "without observance of the procedure required by law."[50] The Supreme Court explained that:

> To make this finding the court must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment. Although this inquiry into the facts is to be searching and careful, the ultimate standard of review is a narrow

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42. *Id.*

43. *Id.* at 1114.

44. *Id.*

45. *Id.*

46. *Id.* at 1111.

47. Stryker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 233, 227-28 (1980); Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 558 (1978); *see also* Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976).

48. In Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989), the Court stated:

> The sweeping goals announced in § 101 of NEPA are thus realized through a set of 'action-forcing' procedures that require that agencies take a 'hard look at environmental consequences' and that provide for broad dissemination of relevant environmental information. Although these procedures are almost certain to affect the agency's substantive decision, it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.

Id. (citations omitted).

49. 5 U.S.C. § 706(2)(A) (1988).

50. *Id.* § 706(2)(D).

one. The court is not empowered to substitute its judgment for that of the agency.[51]

Furthermore, the Supreme Court noted that an agency's decision is entitled to a "presumption of regularity. But that presumption is not to shield [the agency's] action from a thorough, probing, in-depth review."[52]

II. COUNCIL ON ENVIRONMENTAL QUALITY

Section II of the NEPA created the Council on Environmental Quality (CEQ) in the Executive Office of the President.[53] The CEQ has three members who are appointed by the President with the advice and consent of the Senate.[54] The CEQ prepares an annual report on environmental quality, defines environmental trends, appraises federal programs, and makes recommendations to the President regarding environmental protection.[55] On March 5, 1970, President Richard M. Nixon issued Executive Order 11,514 which instructed the CEQ to issue guidelines which would assist federal agencies in their compliance with the NEPA.[56] Pursuant to the executive order, the CEQ issued guidelines in 1970, 1971, and 1973.[57]

Federal agencies initially differed in their utilization of the CEQ guidelines for NEPA compliance.[58] The CEQ could not compel adherence to its guidelines because the CEQ lacked statutory authority. The CEQ had to persuade federal agencies to follow its guidance. Often the CEQ had to rely on the courts to compel federal agencies to follow its guidelines.[59] The courts, however, adopted different positions regarding the CEQ guidelines.[60] Some courts considered the guidelines to be

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51. Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971) (citations omitted).

52. *Id.* at 415 (citations omitted).

53. 42 U.S.C. § 4342 (1988).

54. *Id.*

55. *Id.* § 4344.

56. Executive Order No. 11,514, 3 C.F.R. § 902 (1966-1970).

57. Andrus v. Sierra Club, 442 U.S. 347, 356-57 n.15 (1979).

58. NEPA assumed that each federal agency would develop its own environmental review process. 42 U.S.C. § 4332(2)(A)(1988). WILLIAM H. ROGERS, JR., ENVIRONMENTAL LAW 705-08 (1977); Dinah Baer, *NEPA at 19: A Primer on "Old" Law with Solutions to New Problems*, 19 ENVTL. L. REP. 10,060, 10,062 (1989); Robert P. Frank, *Delegation of Environmental Impact Statement Preparation: A Critique of NEPA's Enforcement*, 13 B.C. ENVTL. AFF. L. REV. 79, 87 (1985); Cortner, *supra* note 24, at 327-30; Weiss, *supra* note 34, at 782-83.

59. Cortner, *supra* note 24, at 327; Weiss, *supra* note 34, at 782-83; Lawrence R. 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. 50,039, 50,045 (1980).

60. Liebesman, *supra* note 59, at 50,045; ROGERS, *supra* note 58, at 708.

"merely advisory,"[61] while other courts held that the guidelines were virtually binding on federal agencies.[62]

By 1976, federal agencies were following the CEQ's guidelines in their NEPA compliance.[63] A 1976 CEQ report concluded that "serious delay problems have greatly diminished; the backlog of pre-NEPA proposals has been reduced substantially; and delays caused by faulty timing are disappearing as agencies improve their environmental analysis and integrate [the] EIS requirement into their decisionmaking processes."[64] Nevertheless, inconsistencies in the federal agencies' NEPA compliance procedures still existed.[65]

In 1977, President Carter determined that uniform binding NEPA regulations should be developed.[66] On May 23, 1977, President Carter issued Executive Order 11,991 which instructed the CEQ to consult with federal agencies to develop a single set of mandatory uniform regulations implementing the procedural provisions of the NEPA which would be binding on all federal agencies.[67] The order stated that the regulations must be "designed to make the environmental impact statement process more useful to decisionmakers and the public; and to reduce paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives."[68]

The CEQ underwent an extensive rulemaking process over the next eighteen months.[69] In June 1977, the CEQ held public hearings in which many diverse interests participated. The CEQ then circulated a thirty-eight page questionnaire based on the issues raised in the hearings and received over 300 replies. On June 9, 1978, the CEQ published the new proposed regulations.[70] During the two month comment period, the CEQ received over 500 written comments regarding the proposed regulations. The new CEQ regulations were published in final

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61. Hiram Clarke Civic Club, Inc. v. Lynn, 476 F.2d 421, 424 (5th Cir. 1973); *see generally* Liebesman, *supra* note 59, at 50,045 n.61.

62. Warm Springs Dam Task Force v. Gribble, 417 U.S. 1301, 1309-10 (1974).

63. Report of the Council on Environmental Quality, *Environmental Impact Statements: An Analysis of Six Years Experience by Seventy Federal Agencies*, 2-3 (1976) (on file with the *University of Dayton Law Review*).

64. *Id.* at 3.

65. *Id.* at 3-4; Liebesman, *supra* note 59, at 50,045 n.62.

66. Liebesman, *supra* note 59, at 50,045 (citing U.S. General Accounting Office, The Environmental Impact Statement - It Seldom Causes Long Delays But Could Be More Useful If Prepared Earlier (August 1977)).

67. Executive Order No. 11,991, 42 Fed. Reg. 26,967 (1977).

68. *Id.*

69. Liebesman, *supra* note 59, at 50,046.

70. 43 Fed. Reg. 25,231 (1978).

form on November 29, 1978.[71] One of the new CEQ regulations dealt with incomplete or unavailable information.[72] This new regulation required a federal agency to disclose any scientific uncertainty or gaps in the relevant information when evaluating significant adverse environmental impacts in the EIS.[73] If the information was "essential to a reasoned choice among alternatives" or "important to the decision," and "the overall costs of obtaining it [were] exorbitant" or "the means to obtain it [were] not known," the agency was required to perform a worst case analysis and to indicate the probability of such an occurrence.[74]

The new regulation was "a major innovation and improvement in the EIS process."[75] Federal agencies could no longer hide behind a veil of ignorance when contemplating the environmental impacts of their decisions.[76] The new regulation required federal agencies to confront incomplete or uncertain knowledge and consider the potential impacts and the probability of their occurrence in their decisionmaking processes.[77] The CEQ stated that the worst case regulation was "a device to require agencies to complete the analysis in the EIS, rather than allowing the agencies to disregard uncertainties as having no weight in the balancing process."[78]

The new regulation was praised by various commentators. One commentator stated that:

> The imposition of an affirmative obligation to go beyond the limits of currently available information when necessary for an informed decision is a major innovation and improvement in the EIS process. Current ecological knowledge is still in many instances quite limited, and a duty to develop new information will serve both to expand the frontiers of environmental knowledge and prevent agencies from hiding behind this ignorance of a project's true environmental ramifications.[79]

Another commentator, extolling the regulation, noted that the worst case analysis serves two purposes: "to force a systematic balancing of the conflicting needs for action and complete information, and to remove the potential for ignoring unfavorable information—a loophole

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71. National Environmental Policy Act - Regulations, 43 Fed. Reg. 55,978 (Nov. 29, 1978).
72. 43 Fed. Reg. 55,994, 55,997 (1978) (codified at 40 C.F.R. § 1502.22 (1991)).
73. 40 C.F.R. § 1502.22 (1991).
74. *Id.* § 1502.22(b).
75. Comment, *New Rules for the NEPA Process: CEQ Establishes Uniform Procedures to Improve Implementation*, 9 ENVTL L. REP. 10,005, 10,008 (1979).
76. *See* Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983).
77. 43 Fed. Reg. 55,984 (1978) (codified at 40 C.F.R. § 1502.22) (1991).
78. 50 Fed. Reg. 32,236 (1985) (codified at 40 C.F.R. § 1502.22) (1991).
79. Comment, *supra* note 75, at 10,008.

otherwise available to agencies that want to proceed with undesirable courses of action."[80]

In 1981, the CEQ, in *The Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, stated that the purpose of the worst case analysis was "to carry out NEPA's mandate for full disclosure to the public of the potential consequences of agency decisions, and to cause agencies to consider those potential consequences when acting on the basis of scientific uncertainties or gaps in available information."[81] The CEQ held that a worst case analysis is "formulated on the basis of available information, using reasonable projections of the worst possible consequences of a proposed action."[82] The CEQ instructed federal agencies that their worst case analysis should contain "an analysis of a low probability/catastrophic impact event[s]" and "a spectrum of events of higher probability but less dramatic impact."[83]

III. Judicial Decisions

Federal agencies were reluctant to comply with the worst case analysis regulation. In 1980, the CEQ conducted a preliminary review of the federal agencies' compliance with its new regulations.[84] Regarding the worst case regulation, the CEQ found that "EIS's rarely even address the requirement. The need to address this and include a worst case analysis is especially critical for many new energy development projects where considerable important information is not available."[85]

Environmental groups brought suits challenging several federal agencies' refusals to conduct worst case analyses.[86] The courts were required to determine if the CEQ's regulation was consistent with the NEPA, and to define the specific dictates of the regulation.[87] The courts then had to review the agencies' actions to determine if the actions complied with the regulation.[88]

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80. Melanie Fisher, *The CEQ Regulations: New Stage in the Evolution of NEPA*, 3 Harv. Envtl. L. Rev. 347, 374 (1980).

81. 46 Fed. Reg. 18,032 (1981).

82. *Id.*

83. *Id.*

84. Liebesman, *supra* note 59, at 50,048 (citing Council on Environmental Quality, Talking Points on CEQ's Oversight of Agency Compliance with NEPA Regulations (1980) (paper prepared by CEQ for interagency meetings)); *see also* Sierra Club v. Sigler, 695 F.2d 957, 973 n.13 (9th Cir. 1983).

85. Liebesman, *supra* note 59, at 50,048 (citing 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)).

86. *See supra* notes 14-19.

87. Calvert Cliffs' Coord. Comm. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1111 (D.C. Cir. 1971); *see also supra* text accompanying note 9.

88. *Calvert Cliffs'*, 449 F.2d at 1111; *see also supra* text accompanying note 9.

The courts ensure that administrative agencies take a "hard look" at the salient problems and engage in reasoned decisionmaking.[89] In examining the agency's record, a court must "penetrate to the underlying decisions of the agency" to determine that the "agency has exercised a reasoned discretion, with reasons that do not deviate from or ignore the ascertainable legislative intent."[90] The court is not to substitute its judgment for that of the agency. Instead, the court must recognize that "the agency has latitude not merely to find facts and make judgments, but also to select policies deemed [to be] in the public interest."[91] The court's role is "to assure that the agency has given reasoned consideration to all the material facts and issues."[92] This requires the agency to "articulate with reasonable clarity its reasons for decision, and identify the significance of the crucial factors."[93]

This "hard look" approach, which combines judicial supervision with judicial restraint, recognizes "that agencies and courts together constitute a 'partnership' in furtherance of the public interest, and are 'collaborative instrumentalities of justice.' "[94] It demonstrates that the courts are "in a real sense part of the total administrative process, and not a hostile stranger to the office of first instance."[95] Furthermore, this approach advances the public interest "by requiring the agency to focus on the values served by its decision" and "enabling the public to repose confidence in the process as well as the judgments of its decisionmakers."[96]

A. Sierra Club v. Sigler

In *Sierra Club v. Sigler*,[97] the Army Corps of Engineers issued five permits for the construction of a multi-purpose deepwater port and crude oil distribution system in Galveston Bay, Texas. The construction would permit supertankers to pass through Galveston Bay which is a wildlife estuary. This was the first time that supertankers would be allowed to operate in a wildlife estuary.[98] The Corps' Final EIS (FEIS) contained an oil spill analysis which discussed (1) the probability of an oil spill, (2) the dispersion of an 18,717 gallon oil spill (the average size of an American spill occurring in the Inner Bay Channel over a

89. Greater Boston Television Corp. v. FCC, 444 F.2d 841, 851 (D.C. Cir. 1970).
90. *Id.* at 850.
91. *Id.* at 851.
92. *Id.*
93. *Id.*
94. *Id.* at 851-52 (citation omitted).
95. *Id.* at 852.
96. *Id.*
97. 695 F.2d 957 (5th Cir. 1983).
98. *Id.* at 962.

twenty-four hour period), and (3) the environmental impacts of such a spill. The FEIS concluded that the project would not increase the probability of an oil spill. If a spill did occur, it "might have a severe local impact, the impact within Galveston Bay or along the Texas Gulf Coast would be minor."[99] The FEIS did not contain a worst case analysis.

The Sierra Club brought suit challenging the Corps' action. The Sierra Club questioned the validity of the oil spill analysis contained in the EIS. The Sierra Club also asserted that the FEIS should include a worst case analysis which discussed the effects of a total loss of a supertanker and an assessment of the environmental impacts of various oil spill scenarios.[100]

The federal district court, upholding the Corps' action, found that the oil spill analysis in the FEIS was adequate, even though it contained several errors.[101] The court held that a worst case analysis was only required when the information in the FEIS was insufficient to permit a reasoned evaluation and decision. Otherwise, such an analysis would be "an exercise in frivolous boilerplate."[102] The court determined that the total loss of a supertanker was too remote and speculative to warrant a worst case analysis, even though such accidents had previously occurred.[103] The court also found that the Corps did not have to discuss various spill scenarios in the FEIS. Since the Sierra Club had not demonstrated how an oil spill would be transported into the bay or the methodology for analyzing oil spill impacts beyond twenty-four hours, such an analysis would be "guesswork."[104] The court concluded that a worst case analysis did not have to be included in the EIS because such an analysis would not have "meaningfully illuminated the dangers or materially added to the decisionmakers' awareness of the spectrum of consequences involved."[105]

The Fifth Circuit Court of Appeals reversed the district court's decision.[106] The Fifth Circuit concluded that even though a worst case analysis requirement was not specifically stated in the statute, such a requirement could be inferred from the legislative history and the language of the NEPA.[107] The court noted that the CEQ considered the

99. *Id.* at 968.
100. *Id.* at 963.
101. Sierra Club v. Sigler, 532 F. Supp. 1222, 1229-33 (S.D. Tex. 1982).
102. *Id.* at 1233 (quoting Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978)).
103. *Id.*
104. *Id.* at 1234.
105. *Id.*
106. Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983).
107. *Id.* at 969-70.

worst case regulation to be "very important and [had] resisted suggestions to weaken it."[108] The court determined that the worst case regulation followed NEPA case law regarding the consideration of uncertainty in the EIS.[109] The court stated that the regulation "merely codifies these judicially created principles."[110]

The Fifth Circuit concluded that the total loss of a supertanker in the Bay was precisely the type of situation that the worst case regulation was designed to address: a low probability catastrophic event.[111] Both parties "agree that a total cargo loss could occur" and that such an event would "wreak catastrophic environmental damage in the Bay."[112] There was "considerable uncertainty about its likelihood, scope, and consequences."[113] This information was "certainly important, if not essential, to the Corps' decision, yet that information [was] beyond the state of the art."[114] The Sierra Club presented "a body of data with which a reasonable worst case analysis could be made that is not unreasonably speculative."[115] Consequently, the court concluded that the "FEIS must be rewritten by the Corps to include a worst case analysis.[116]

1. Prior NEPA Case Law

Contrary to the Fifth Circuit's decision, the worst case regulation did not codify prior judicially created NEPA principles. Prior NEPA case law only required a federal agency to engage in "reasonable forecasting and speculation" in the EIS.[117]

In 1973, in *Scientists' Institute for Public Information, Inc. v. United States Atomic Energy Commission*[118] (AEC), the D.C. Circuit required the AEC to perform a programmatic EIS for its liquid metal fast breeder reactor program. The court pointed out that "one of the functions of a NEPA statement is to indicate the extent to which environmental effects are essentially unknown."[119] This required the federal agency "to predict the environmental effects of proposed action before

108. *Id.* at 971.
109. *Id.*
110. *Id.*
111. *Id.* at 972-73.
112. *Id.* at 974.
113. *Id.*
114. *Id.*
115. *Id.*
116. *Id.* at 975.
117. Scientists' Inst. for Pub. Info., Inc. v. United States Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973).
118. 481 F.2d 1079 (D.C. Cir. 1973).
119. *Id.* at 1092.

the action is taken and those effects [are] fully known."[120] The federal agency must engage in "reasonable forecasting and speculation."[121] The court admonished federal agencies that they could not avoid "their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.' "[122] The NEPA "must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible."[123] Nevertheless, the court noted that "implicit in this rule of reason is the overriding statutory duty of compliance with the impact statement procedures to 'the fullest extent possible.' "[124]

In 1975, in *Carolina Environmental Study Group v. United States Atomic Energy Commission*[125] (AEC), the D.C. Circuit upheld the EIS by the AEC dealing with the licensing of a nuclear reactor, which merely noted the effects of a Class Nine meltdown. The court stated that the EIS must "consider the probabilities as well as the consequences of certain occurrences in ascertaining their environmental impact."[126] The court also noted that "[t]here is a point at which the probability of an occurrence may be so low as to render it almost totally unworthy of consideration."[127]

Previous judicial decisions also required federal agencies to address scientific uncertainties and gaps in the relevant information in their EISs, but such uncertainty or gaps would not halt a project.[128] In 1973, in *Alaska v. Andrus*,[129] the D.C. Circuit stated:

> One of the costs that must be weighed by decisionmakers is the cost of uncertainty—*i.e.*, the costs of proceeding without more and better information. Where that cost *has* been considered, and where the responsible decisionmaker has decided that it is outweighed by the benefits of proceeding with the project without further delay, the courts may not sub-

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120. *Id.*

121. *Id.*

122. *Id.*

123. *Id.* (quoting Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972)).

124. *Id.* (quoting Calvert Cliffs' Coord. Comm. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1114-15 (D.C. Cir. 1971)).

125. 510 F.2d 796 (D.C. Cir. 1975).

126. *Id.* at 799.

127. *Id.*

128. Jicarilla Apache Tribe of Indians v. Morton, 471 F.2d 1275, 1280 (9th Cir. 1973); Frederick Anderson, *NEPA In the Courts* 214-18 (1973) (on file with the *University of Dayton Law Review*).

129. 580 F.2d 465 (D.C. Cir. 1973), *vacated, in part*, Western Oil & Gas Ass'n v. Alaska, 439 U.S. 922 (1978) (citing Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976)).

> stitute their judgment for that of the decisionmaker and insist that the project be delayed while more information is sought.[130]

Previously a federal district court in *Environmental Defense Fund, Inc. v. Corps of Engineers of United States Army*[131] observed that the NEPA does not require "a moratorium on all projects which had an environmental impact while awaiting compliance with § 102(2)(B)."[132] The EIS need only note this deficiency. It was left up to the federal decisionmaker to "determine whether any purpose would be served in delaying the project while awaiting the development of such criteria."[133]

Prior NEPA case law required federal agencies to engage in "reasonable forecasting and speculation"[134] and to disclose uncertainty or gaps in the relevant information in their EISs. The courts, however, never identified the methodology for federal agencies to follow in achieving these purposes. The worst case analysis was simply the means devised by the CEQ to meet these judicial dictates. The CEQ stated that "nothing in the official regulatory record reveals the reason that the Council chose the 'worst case analysis' construct, which was not required by previous judicial opinions construing NEPA or by CEQ guidelines."[135]

2. CEQ Regulations

The CEQ regulations were interpretative, not legislative, regulations.[136] When Congress delegates authority to a federal agency to promulgate regulations, the agency is empowered to issue legislative regulations. Courts should follow these regulations unless they are arbitrary and capricious or contrary to the statute.[137] The CEQ's regulations were not legislative regulations because Congress never delegated

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130. *Andrus*, 580 F.2d at 473-74.

131. 325 F. Supp. 749 (E.D. Ark. 1971), *dismissed*, 342 F. Supp 1211 (E.D. Ark. 1971), *aff'd*, 470 F.2d 289 (8th Cir. 1972).

132. *Environmental Defense Fund*, 325 F. Supp. at 758.

133. *Id.*

134. Scientists' Inst. for Pub. Info., Inc. v. United States Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

135. 50 Fed. Reg. 32,236 (1985) (codified at 40 C.F.R. § 1502.22) (1991).

136. Professor Davis explains the difference between legislative and interpretive rules as follows: "A legislative rule is the product of an exercise of delegated legislative power to make law through rules. An interpretative rule is any rule an agency issues without exercising delegated legislative power to make law through rules." 2 KENNETH C. DAVIS, ADMINISTRATIVE LAW TREATISE § 7:8 at 36 (2d ed. 1979 & Supp. 1982).

137. *See id.*; *see also* Kenneth L. Rosenbaum, *Update: The NEPA Worst Case Analysis Regulation*, 14 ENVTL. L. REP. 10,267, 10,268 n.13 (1984); Kevin W. Saunders, *Interpretative Rules With Legislative Effect: An Analysis and a Proposal for Public Participation*, 1986 DUKE L.J. 346 (1986).

rulemaking authority to the CEQ.[138] In fact, Congress had inferred that the Office of Management and Budget (OMB) should oversee NEPA compliance.[139] The CEQ received its regulatory authority by executive order.[140] The CEQ recognized the interpretative nature of its regulations, stating that the regulations provide "formal guidance . . . on the requirements of NEPA for use by the courts in interpreting this law."[141]

Federal agencies and courts had given the CEQ guidelines different weight.[142] In 1978, the Supreme Court, in *Andrus v. Sierra Club*,[143] addressed the issue of whether legislative proposals were subject to NEPA compliance. The Court declared that the "CEQ's interpretation of NEPA is entitled to substantial deference." The Court noted that the CEQ "was created by NEPA" and authorized "to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth in . . . this Act."[144] The Court acknowledged the recent changes in the CEQ regulations and stated that it generally was not inclined to follow " 'administrative guidelines' when they have 'conflicted with earlier pronouncements of the agency.' "[145] Nevertheless, because the change in the regulations "occurred during the detailed and comprehensive process, ordered by the President, of transforming advisory guidelines into mandatory regulations applicable to all federal agencies," the Court would accord them the proper weight.[146]

The Supreme Court's decision in *Andrus* legitimized the CEQ's expanded role in the NEPA process.[147] The CEQ, which is in the Executive Office of the President, was situated in a good position to supervise federal agencies that were reluctant to comply with the NEPA mandate.[148] The CEQ regulations carried out the NEPA mandate to protect the environment and filled a regulatory vacuum. Prior to the

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138. Valerie Fogelman, *Worst Case Analyses: A Continued Requirement under the NEPA?*, 13 COLUM. J. ENVTL. L. 53, 80-82 (1987); Rosenbaum, *supra* note 137, at 10,268; Saunders, *supra* note 137, at 350-51.

139. ROGERS, *supra* note 58, at 704-05.

140. Executive Order No. 11,991, 42 Fed. Reg. 26,967 (1977).

141. 43 Fed. Reg. 55,978 (1978) (codified at 40 C.F.R. §§ 1500-08 (1991)).

142. *See supra* notes 58-62 and accompanying text.

143. 442 U.S. 347 (1978).

144. *Id.* (quoting 42 U.S.C. § 4344(3) (1978)).

145. *Id.* (quoting General Electric Co. v. Gilbert, 429 U.S. 125, 143 (1976)).

146. *Id.*

147. Note, *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, 846 (1980); *see* Susan L. Lore, *Environmental Law - The National Environmental Policy Act:* Andrus v. Sierra Club, 26 N.Y.U. L. REV. 385 (1981).

148. Note, *supra* note 147, at 850-55.

regulations, different federal agencies and courts had viewed the CEQ's regulations differently. Following *Andrus*, the federal agencies were required to adhere to a uniform standardized set of procedures in their NEPA compliance and federal courts were forced to accord "substantial deference" to the CEQ regulations.[149] Furthermore, both federal agencies and the courts could no longer refuse to follow CEQ regulations on the grounds that the CEQ lacked statutory authority to issue such regulations.[150]

In *Sigler*, the Fifth Circuit granted substantial deference to the CEQ regulations regarding incomplete or unavailable information. The court stated that "if the CEQ interprets NEPA as mandating a particular worst case analysis, the CEQ's interpretation is binding on this court and on agencies preparing EISs unless it is shown that the interpretation conflicts with the language or legislative intent of NEPA or the teachings of the Supreme Court."[151]

The worst case regulation was consistent with the language of the NEPA.[152] Section 4331(b)(3) of the NEPA states that it is the responsibility of the federal government to avoid "unintended" consequences of environmental use.[153] Section 4332(C) of the NEPA declares that an EIS should "disclose all environmental impacts."[154] The worst case regulation was also consistent with the legislative history of the NEPA.[155] Congress was aware of the limited knowledge regarding the environmental consequences of federal actions, yet federal agencies were required to fully disclose the environmental consequences. Congress apparently assumed that the courts and the CEQ would determine "the extent of the mandate when information was missing and expensive, or impossible, to obtain."[156] Furthermore, the worst case regulation, as previously demonstrated, was consistent with prior NEPA case law concerning "reasonable forecasting and speculation" by federal agencies. The worst case regulation was also concerned with the disclosure of uncertainty or gaps in the information in the EIS.

In *Sigler*, the Fifth Circuit was carrying out the CEQ regulation, not creating its own procedures for the agency to follow.[157] In 1978, in *Vermont Yankee Nuclear Power Corp. v. NRDC*,[158] the Supreme

149. Note, *supra* note 147, at 850-55.
150. Note, *supra* note 147, at 860.
151. Sierra Club v. Sigler, 695 F.2d 957, 972 (5th Cir. 1983).
152. *Id.* at 969.
153. *Id.*; *see also* 42 U.S.C. § 4331(b)(3) (1988).
154. *Sigler*, 695 F.2d at 969; *see also* 42 U.S.C. § 4332(c) (1988).
155. *Sigler*, 695 F.2d at 970 n.9.
156. *Id.*
157. *Id.* at 957.
158. 435 U.S. 519 (1978).

Court reviewed the Atomic Energy Commission's (AEC) rulemaking proceedings which granted nuclear power plants operating licenses. The D.C. Circuit found that the AEC procedures violated the NEPA and suggested additional procedures for the AEC to follow.[159] The Supreme Court reversed the D.C. Circuit, characterizing the court's decision as "judicial intervention run riot."[160] The Supreme Court held that federal courts could not require additional procedures beyond those existing in the statute or the Administrative Procedures Act.[161] Since the Fifth Circuit granted "substantial deference" to the CEQ's regulations in *Sigler*, as instructed by the Supreme Court in *Andrus*, the court did not violate *Vermont Yankee*.

3. The Threshold Determination

One of the major issues regarding the worst case regulation was whether the "scientific uncertainty" or "gaps in the relevant information" had to pertain to a *reasonably foreseeable* significant adverse environmental impact. In *Sigler*, the Fifth Circuit rejected the government's contention that a threshold of reasonable foreseeability had to be met before the worst case analysis regulation was invoked.[162] The court held that the worst case regulation was triggered by scientific uncertainty or gaps in the information which were "essential" or "important" to the federal agency's decision.[163] The court determined that the probability of a worst case occurrence needed to be addressed, but that the probability did not trigger the regulation.[164] Moreover, the court noted that "all parties agree that a total cargo loss could occur and could wreak catastrophic environmental damage in the Bay."[165]

The Fifth Circuit's literal reading of the worst case regulation was correct. Nothing in the plain language of the regulation required that significant adverse environmental impacts be reasonably foreseeable before the worst case analysis was required. The CEQ's definition of the terms in the regulation could, however, support a contrary conclusion. The CEQ defines "significantly" as "the degree to which the possible effects on the human environment are highly uncertain, or involve unique or unknown risks."[166] The CEQ defines effects as "direct effects" and "indirect effects, which are caused by the action and are

159. NRDC v. United States Nuclear Regulatory Comm'n, 547 F.2d 633, 643-46 (D.C. Cir. 1976).
160. *Vermont Yankee*, 435 U.S. at 557.
161. *Id.* at 547-48.
162. Sierra Club v. Sigler, 695 F.2d 957, 973-74 (5th Cir. 1983).
163. *Id.* at 974.
164. *Id.* at 974-75 n.14.
165. *Id.* at 974.
166. 40 C.F.R. § 1508.27(a)(5) (1991).

later in time or farther removed in distance, but are still reasonably foreseeable."[167] Nevertheless, if the reasonably foreseeable threshold of indirect effects was applied to the worst case regulation, it would make the worst case regulation redundant. The NEPA already required agencies to consider the reasonably foreseeable indirect effects of their actions.

The CEQ specifically rejected a reasonably foreseeable threshold for the worst case regulation. In its 1978 response to comments on the proposed regulation, the CEQ noted that "several commentators expressed concern that this requirement would place undue emphasis on the possible occurrence of adverse environmental consequences regardless of how remote the possibility might be."[168] The CEQ, to allay this fear, "added a phrase designed to ensure that the improbability as well as the probability of adverse environmental consequences would be discussed . . . under this section."[169] Furthermore, in 1981, the CEQ stated that the worst case analysis should examine "a low probability/catastrophic impact event" and "should also include a spectrum of events of higher probability, but less drastic impact."[170]

4. Speculation

The Fifth Circuit was concerned that the worst case analysis would not be "based on 'unreasonable speculation.' "[171] The court held that the Sierra Club had presented sufficient evidence "that it is possible to create an informative and useful worst case scenario that reasonably limits speculation."[172] The court found that even though the Corps' twenty-four hour dispersion model was the state of the art, the worst case analysis "could go beyond that state of the art based on *known* information about tides and currents in the Bay."[173] The court further noted that the Corps' worst case analysis would not be subject "to the same rigorous scrutiny other information in the EIS must endure."[174]

The court's decision ensured that worst case analysis would not be a purely conjectural exercise. The Sierra Club provided a "base of information upon which a worst case analysis could be premised."[175] The existence of this information was crucial to the court's decision. If this

167. *Id.* § 1508.8(a),(b).
168. 43 Fed. Reg. 55,984 (1978) (codified at 40 C.F.R. § 1502.22 (1991)).
169. *Id.*
170. 46 Fed. Reg. 18,032 (1981).
171. Sierra Club v. Sigler, 695 F.2d 957, 975 (5th Cir. 1983).
172. *Id.* at 974.
173. *Id.* (emphasis in original).
174. *Id.*
175. *Id.*

evidence were lacking, the court would have exceeded the rule of reason expressed in prior NEPA case law.[176]

The court's decision not to vigorously scrutinize the future worst case analysis was consistent with Supreme Court's decisions regarding judicial review of agency activity on the frontiers of science.[177] In 1983, in *Baltimore Gas & Electric Co. v. NRDC*,[178] the Supreme Court upheld the Nuclear Regulatory Commission's decision to evaluate the environmental impacts of the nuclear fuel cycle generically and to preclude such consideration from individual plant licensing decisions. The Supreme Court stated that: "a reviewing court must remember that the Commission is making predictions within its area of special expertise, at the frontiers of science. When examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential."[179]

B. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark (SOCATS)

The United States government's herbicide spraying of the federal forests in Oregon was controversial. In 1977, Oregon citizens brought suit to halt the United States Forest Service's spraying in the Siuslaw National Forest of phenoxy herbicides including 2,4-D, 2,4-T, and silvex.[180] The citizens claimed that "the EIS failed to address adequately the substantial scientific controversy over the health hazards posed by these herbicides."[181] The citizens were concerned because one of the by-products of 2,4-T and silvex was dioxin, "one of the most toxic chemicals known to man."[182] The dangers of dioxin had been demonstrated by the spraying of Agent Orange in Vietnam and also in laboratory studies.[183]

In 1977, the federal district court, in *Citizens Against Toxic Sprays, Inc. v. Bergland*,[184] determined that the EIS prepared by the Forest Service must "indicate the extent to which environmental effects are uncertain or unknown."[185] The court held that the EIS failed to

176. See *supra* note 6 for an explanation of the rule of reason.

177. The Supreme Court has stated that "a high level of technical expertise . . . is properly left to the informed discretion of the responsible federal agencies." Kleppe v. Sierra Club, 427 U.S. 390, 412 (1976).

178. 462 U.S. 87 (1983).

179. *Id.* at 103.

180. Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908 (D. Or. 1977).

181. *Id.* at 912.

182. *Id.* at 914.

183. *Id.*

184. *Id.* at 908.

185. *Id.* at 922.

adequately address "the potential effects of the phenoxy herbicides upon animal and human health."[186] The court halted spraying of the dioxin contaminated phenoxy herbicides, 2,4-T and silvex, but allowed the use of the non-dioxin contaminated 2,4-D to continue.[187]

In 1978, the Bureau of Land Management (BLM) completed its Programmatic EIS (PEIS)[188] which covered its spraying of silvex and thirteen other herbicides, including 2,4-D, over the next ten years in western Oregon. The herbicide spraying was designed to promote the growth of timber by eliminating the competing vegetation.[189] The PEIS concluded that "except for silvex, no potential long term human health effects are known to result from the proposed action."[190] Subsequently, the use of silvex was suspended. The use of other herbicides, including 2,4-D, however, continued.[191] The BLM performed annual Environmental Assessments (EAs) to update its PEIS.[192] The EA's set forth the BLM's plans concerning the specific areas to be sprayed in the following year, including an analysis of the weather conditions, terrain, wildlife, human population, spraying techniques, and the herbicides to be used.[193]

The BLM's 1982 EA included a proposal to spray forests in Oregon's Medford District in 1983. Citizens living near the forests brought suit in federal district court to halt the proposed spraying, alleging NEPA violations.[194] The federal district court reached four conclusions. First, the shift from silvex to other herbicides did not constitute a major federal action or a substantial change warranting a new or supplemental EIS.[195] Second, the 1982 spraying proposal for the Medford District was not a major federal action requiring the preparation of a

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186. *Id.* at 932.

187. *Id.* at 932-33.

188. The PEIS was entitled "Vegetation Management with Herbicides: Western Oregon, 1978 through 1987." Section 1502.4(b) states:

> Environmental impact statements may be prepared, and are sometimes required, for broad Federal actions such as the adoption of new agency programs or regulations (§ 1508.18). Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decisionmaking.

40 C.F.R. § 1502.4(b) (1991).

189. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1477 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).

190. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,174, 20,174 (D. Or. 1982).

191. *Id.*

192. Diane P. Donaghy, *NEPA's Worst Case Analysis Requirement: Cornerstone or Stumbling Block*, 25 NAT. RESOURCES J. 495, 501 (1985).

193. *Watt*, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,174 (D. Or. 1983).

194. *Id.* at 20,174.

195. *Id.* at 20,175.

new or supplemental EIS.[196] Third, the BLM had not violated the NEPA by failing to evaluate the health effects of 2,4-D and other herbicides in the PEIS.[197] Fourth, there were scientific uncertainties and gaps in the information concerning the effects of 2,4-D, even in small doses.[198] Consequently, the court issued an injunction halting the spraying until a worst case analysis was performed.[199]

The BLM then filed motions for reconsideration and clarification with the district court.[200] The court first rejected the BLM's contention that the worst case analysis was only applicable to an EIS, not an EA.[201] The court held that the EA and the Finding of No Significant Impact (FONSI) were part of the PEIS.[202] The court reviewed each of the documents prepared at different stages as an integrated part of the agency's entire environmental review.[203] Second, the court rejected the BLM's assertion that the worst case analysis was only required for reasonably foreseeable significant adverse environmental impacts. The court determined that scientific uncertainty, not reasonable foreseeability, triggered the worst case regulation.[204] The probability of the worst case occurrence must be dealt with separately.[205] Finally, the court, in addressing the BLM's motion for clarification, held that the BLM was required to address the carcinogenic and mutagenic potential of "2,4-D and the other herbicides" utilized.[206]

The Ninth Circuit Court of Appeals, in upholding the district court's decision, found that "the worst case analysis codified prior NEPA case law."[207] The Ninth Circuit determined that the worst case analysis regulation applied to the BLM's herbicide spraying program. The court explained that the BLM's contention that a worst case analysis was not required unless such an occurrence was probable contradicted the regulation which required an analysis of the environmental impacts of the worst case and the "probability or improbability of its occurrence."[208] A federal agency could not omit such an analysis be-

196. *Id.*
197. *Id.*
198. *Id.* at 20,176.
199. *Id.*
200. *Id.* at 20,176-77.
201. *Id.* at 20,177.
202. *Id.*; *see also infra* note 267 (defining FONSI).
203. *Watt*, 13 Envtl. L. Rep. (Envtl. L. Inst.) at 20,177.
204. *Id.*
205. *Id.*
206. *Id.*
207. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1478 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).
208. *Clark*, 720 F.2d at 1479 (quoting 40 C.F.R. § 1502.22 (1982)).

cause it felt that the occurrence was unlikely.[209] Further, the BLM's own experts had admitted "that there is substantial uncertainty."[210]

The Ninth Circuit determined that Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)[211] registration did not alter the BLM's duty under the NEPA to perform a worst case analysis.[212] The court held that "[o]ne agency cannot rely on another's examination of environmental effects under the NEPA."[213] FIFRA registration "does not exempt the program from the requirement of the NEPA."[214] The court required the BLM to assess the safety of the herbicides it employed.[215]

Finally, the Ninth Circuit held that the worst case regulation applied to an EA.[216] The court determined that a federal agency has a continuing duty to evaluate new information regarding the environmental impacts of its actions, especially when such actions occur over an extended period of time.[217] Since the BLM utilized the EA to determine if a supplementary EIS was necessary, the EA must include a worst case analysis.[218]

1. Threshold Determination

The Ninth Circuit's decision followed the Fifth Circuit's decision in *Sigler* in many respects. The Ninth Circuit, like the Fifth Circuit, held that the worst case analysis codified prior NEPA case law.[219] The Ninth Circuit, like the Fifth Circuit, rejected the federal government's contention that the worst case analysis was required only for reasonably foreseeable environmental impacts.[220] The Ninth Circuit, like the Fifth Circuit, adopted a literal reading of the regulation. The court determined that there was scientific "uncertainty about what is the safe level of dosage—or if there is one."[221] The question of a safe dosage level created the possibility of "significant adverse effects on the human environment," which required a worst case analysis.[222]

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209. *Id.*
210. *Id.*
211. 7 U.S.C. §§ 136-136y (1988).
212. *Clark*, 720 F.2d at 1479-80.
213. *Id.* at 1480 (quoting Oregon Envtl. Council v. Kunzman, 714 F.2d 901, 905 (9th Cir. 1983)).
214. *Id.* (quoting Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908, 927 (D. Or. 1977)).
215. *Id.*
216. *Id.* at 1480-81.
217. *Id.* at 1480.
218. *Id.* at 1480-81.
219. *Id.* at 1478.
220. *Id.* at 1478-79.
221. *Id.* at 1479.
222. *Id.* at 1479 (quoting 40 C.F.R. § 1502.22 (1982)).

The *SOCATS* decision represented a change in the Ninth Circuit's position regarding a reasonable foreseeability threshold for the impacts to be discussed in the EIS. In 1974, prior to the promulgation of worst case regulation, the Ninth Circuit in *Trout Unlimited v. Morton*,[223] upheld an EIS by the Bureau of Reclamation for the proposed construction of a dam, stating that "[a]n EIS need not discuss remote and highly speculative consequences."[224] The court restated this position in 1976 in *Sierra Club v. Hodel*.[225]

Following the implementation of the worst case regulation, the Ninth Circuit continued to adhere to a reasonable foreseeability threshold. In 1980, in *Warm Springs Dam Task Force v. Gribble*,[226] the Ninth Circuit rejected a challenge that an EIS was inadequate because it "contain[ed] no discussion of the consequences of [the] total failure of the dam in the wake of a catastrophic seismic event."[227] The court held that discussion of such "remote and highly speculative consequences" was unnecessary.[228] In 1981, the Ninth Circuit reiterated this position in *Save Lake Washington v. Frank*.[229]

The Ninth Circuit distinguished several of these cases in its decision.[230] Regarding *Trout Unlimited*, the court stated that the case "was decided prior to the 1979 CEQ regulations and involved consequences . . . that were distantly connected to the agency action."[231] Regarding *Warm Springs Dam Task Force*, the court pointed out that the gaps in the information concerned "the effect of a newly discovered fault system on a proposed dam."[232] The agency remedied the defect "by commissioning an extensive study that supplied the missing information."[233] There was no reference to the *Save Lake Washington* decision in the court's opinion.[234] In *SOCATS*, the Ninth Circuit clearly abandoned the reasonable foreseeability threshold regarding the worst case analysis.

The Ninth Circuit was correct that there was scientific uncertainty regarding the use of 2,4-D which was important to the BLM's herbi-

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223. 509 F.2d 1276 (9th Cir. 1974).

224. *Id.* at 1283 (citing Envtl. Defense Fund v. Corps of Eng'rs of United States Army, 348 F. Supp. 916, 933 (N.D. Miss. 1972), *aff'd*, 492 F.2d 1123 (5th Cir. 1974)).

225. 544 F.2d 1036, 1039 (9th Cir. 1976) (citing *Trout Unlimited*, 509 F.2d at 1283).

226. 621 F.2d 1017 (9th Cir. 1980).

227. *Id.* at 1026.

228. *Id.* (citing *Trout Unlimited*, 509 F.2d at 1283).

229. 641 F.2d 1330, 1335 (9th Cir. 1981).

230. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).

231. *Id.*

232. *Id.*

233. *Id.*

234. *See* Donaghy, *supra* note 192, at 504.

cide spraying program. First, 2,4-D had been registered for use before the testing for carcinogenic potential was required. There were two subsequent studies which examined the carcinogenicity of 2,4-D.[235] In the first study, a large number of rats were administered 2,4-D orally for eight months. No significant increase in the incidence of cancer was discovered.[236] In the second study, fifty rats were exposed to different doses of 2,4-D for two years. The same number of tumors appeared in the exposed and control groups.[237] Both studies were accepted by the EPA, the National Cancer Institute and Toxicology, and the Journal of Applied Pharmacology.[238] Nevertheless, the BLM's expert, Dr. Frank Dost, admitted that the studies were "less comprehensive than current research standards dictate."[239]

Second, the findings of the studies were questioned by Dr. Melvin Reuber, who was an expert witness for SOCATS. Dr. Reuber agreed that no carcinogenic potential had been revealed by the two studies, but his reexamination of the tissues demonstrated evidence of carcinogenic change.[240] Further, Dr. Reuber questioned whether the two year time period of the second study was sufficient to support its conclusions.[241]

Third, the EPA expressed doubts about the safety of 2,4-D.[242] In 1977, the EPA disclosed that there was "widespread fraud in the tests performed by independent labs."[243] The EPA, referring to 2,4-D, stated that:

> a number of the currently available studies are inconclusive or scientifically invalid. Significant gaps were also found in the existing data base. In addition, no sound clinical studies are available to answer questions raised by accident reports and other reports of adverse effects. These problems make it impossible, at this time, to complete a comprehensive scientifically sound assessment of any potential hazards associated with the chemical.[244]

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235. Southern Oregon Citizens Against Toxic Sprays v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,174, 20,176 (D. Or. 1982).

236. Allan D. Brock, *Abolishing the Worst Case Analysis*, 2 NAT. RESOURCES & ENV'T. 22, 64-66 (1986).

237. *Id.* at 66.

238. *Id.*

239. *Watt*, 13 Envtl. L. Rep. (Envtl. L. Inst.) at 20,176.

240. *Id.*

241. *Id.*

242. *Id.*

243. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1247 n.12 (9th Cir. 1984); *see also* R. Jeffrey Smith, *Creative Penmanship in Animal Testing Prompts EPA Controls*, 198 SCIENCE 1227-29 (1977).

244. *Clark*, 747 F.2d at 1247 n.12.

In 1980, the EPA requested the manufacturers of 2,4-D to submit additional information regarding its safety.[245] Following the announcement, the EPA's Scientific Advisory Panel examined the data gaps concerning 2,4-D "to determine the test requirements needed to support continued registration of the substance."[246] The Panel concurred with the EPA that tests should be performed, "including tests for oncogenicity," because the "information from existing studies is either insufficient or is disputed by Dr. Reuber."[247]

Finally, the BLM's own expert, Dr. Dost, conceded that there was uncertainty in the scientific community regarding the carcinogenicity of 2,4-D.[248] Dr. Dost cited Swedish studies and a Russian study of dubious methodology which indicated the potential carcinogenicity of 2,4-D.[249]

2. FIFRA Registration

The Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) requires that pesticides be registered with the EPA.[250] The manufacturer must submit to the EPA a complete formula, a proposed label, and the test results supporting its claims for the pesticide.[251] The EPA administrator must register the pesticide if:

> (1) its composition is such to warrant the proposed claims for it; (2) its labeling and other material required to be submitted comply with the requirements of this subchapter; (3) it will perform its intended function without unreasonable adverse effects on the environment; and (4) when used in accordance with widespread and commonly recognized practice, it will not generally cause unreasonable adverse effects on the environment.[252]

Each pesticide is classified for either "general" or "restricted" use.[253] The registration is valid for five years and will expire after that time period unless the registrant petitions the EPA for renewal and provides any additional data requested by the EPA.[254]

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245. *Watt*, 13 Envtl. L. Rep. (Envtl. L. Inst.) at 20,176.
246. *Id.*
247. *Id.*
248. *Id.*
249. *Id.*
250. 7 U.S.C. §§ 136-136y (1988 & Supp. 1992). Section 136(u) defines pesticide as follows: "(2) any substance or mixture or substances intended for use as a plant regulator, defoliant, or desiccant. . . ." *Id.* § 136(u) (1988).
251. *Id.* § 136a. *See also* ROGERS, *supra* note 58, at 857-71.
252. 7 U.S.C. § 136a(c)(5)(A)-(D) (1988).
253. *See id.* § 136a(d)(1)(A).
254. *See id.* § 136d(a)(1)-(2).

The Ninth Circuit was correct that the FIFRA registration for 2,4-D did not constitute compliance with the NEPA.[255] When registering a substance, the EPA Administrator must balance the overall risks and benefits regarding the use of the substance.[256] The administrator must assure that the substance does not pose "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."[257] The NEPA, on the other hand, requires a federal agency to focus on the specific environmental effects of its proposed federal action on a particular area.[258] The NEPA requires the federal agency to engage in "a case-by-case balancing judgment."[259] The NEPA's requirements are directed to "the agency with overall responsibility for the proposed federal action."[260] If the BLM could have relied on the FIFRA registration of 2,4-D to comply with the NEPA, it would have circumvented the mandate of the NEPA.[261]

This same issue was addressed by the Ninth Circuit in 1983 in *Oregon Environmental Council v. Kunzman*,[262] which involved the spraying of carbaryl by the State of Oregon and the Department of Agriculture (DOA) over populated areas to control the spread of gypsy moths. The DOA submitted a Programmatic EIS (PEIS) which discussed a similar spraying program in forested areas of the northeast and a three-page Environmental Assessment (EA) which described the Oregon program. The Ninth Circuit determined that the PEIS and the EA had failed to provide the information "necessary reasonably to enable the decision-maker to consider the environmental factors and to make a reasoned decision."[263] The court held that the licensing of pesticides with carbaryl did not "reflect a conclusion that a pesticide is safe under *any* conditions."[264] The Ninth Circuit stated that, "[o]ne agency cannot rely on another's examination of environmental effects under NEPA . . . thus, the mere fact that a program involves the use

255. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479-80 (9th Cir. 1983), *cert denied*, 469 U.S. 1028 (1984); *see also* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1248 (9th Cir. 1984).

256. *See* 7 U.S.C. § 136a(c)(2)(A) (1988).

257. *Id.* § 136(bb).

258. See 42 U.S.C. § 4332(C) (1988).

259. Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908, 927 (D. Or. 1977).

260. *Id.*

261. Tamzin G. Brown, *SOCATS: Worst Case Analysis in the West*, 6 PUB. LAND L. REV. 183, 190-92 (1985); *see also* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1248 (9th Cir. 1984).

262. 714 F.2d 901, 902 (9th Cir. 1983).

263. *Id.* at 904 (quoting Westside Property Owners v. Schlesinger, 597 F.2d 1214, 1217 (9th Cir. 1979)).

264. *Id.* at 905 (emphasis in original).

of substances registered under FIFRA does not exempt the program from the requirements of the NEPA."[265]

3. Environmental Assessment

A federal agency must make an initial determination, in an Environmental Assessment (EA), whether it is involved in a major federal action which significantly affects the environment.[266] If the determination is negative, the agency submits a Finding of No Significant Impact (FONSI).[267] If the determination is positive, the agency proceeds to conduct an EIS.[268]

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265. *Id.* (citing Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908, 927 (D. Or. 1977)); *see also* Calvert Cliffs' Coord. Comm. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1123 (D.C. Cir. 1971). Following the Ninth Circuit's decision, the Department of Agriculture issued a new Programmatic EIS on March 16, 1984. The plaintiffs in *Kunzman* brought suit, alleging that the PEIS was deficient in a number of ways. Oregon Envtl. Council v. Kunzman, 614 F. Supp. 657, 658 (D. Or. 1985). The district court upheld the government's position on nine of the ten counts, but found that "the worst case analysis does not meet the requirements of § 1502.8." *Id.* at 665. The court held that "[a]lthough the worst case analysis contains all the necessary information, it fails to communicate that to the persons entitled to be so informed." *Id.* The court "enjoin[ed] the use of carbaryl, trichlorofon, acephate, and diflubenzuron commencing immediately in Oregon, and after Janaury 1, 1986, on a nationwide basis." *Id.* at 666.

The federal defendants rewrote the worst case analysis and filed a "Final Addendum to the Final Environmental Impact Statement as supplemented-1985." Oregon Envtl. Council v. Kunzman, 636 F. Supp. 632, 634 (D. Or. 1986), *aff'd*, 817 F.2d 484 (9th Cir. 1987). The district court determined that the revised worst case analysis was "readable and understandable by its intended audience." *Kunzman*, 636 F. Supp. at 641. Consequently, the court concluded that "the FEIS as supplemented meets the requirements of NEPA and the regulations governing its implication." *Id.*; *see also* Oregon Envtl. Council v. Kunzman, 817 F.2d 484 (9th Cir. 1987).

266. 40 C.F.R. § 1508.9 (1991) states:

> 'Environmental Assessment': (a) means a concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. (2) Aid an agency's compliance with the Act when no environmental impact statement is necessary. (3) Facilitate preparation of a statement when one is necessary. (b) Shall include brief discussions of the need for the proposal of alternatives . . . of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

267. Federal regulations state:

> "Finding of no significant impact" means a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (§ 1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (§ 1501.7(a)(5)). If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference.

40 C.F.R. § 1508.13 (1991).

268. 40 C.F.R. § 1502.4 (1991).

The Ninth Circuit correctly stated that the BLM should have included a worst case analysis in its EA.[269] In 1978, the BLM filed its Programmatic EIS (PEIS), "Vegetation Management with Herbicides: Western Oregon, 1978 through 1987." The PEIS did not have to include a worst case analysis because the PEIS had been filed prior to the operative date of the new CEQ regulations, July 30, 1979.[270] The BLM, however, supplemented the PEIS annually through EA's which discussed the "site specific environmental impacts of each district's herbicide program proposals."[271] The worst case regulation did apply to the EA and FONSI which occurred after July 30, 1979.

This issue was addressed in 1980 by a federal district court in *National Indian Youth Council v. Andrus*.[272] The court held that two EISs which were filed prior to the effective date were exempt from the regulations, but that the CEQ regulations were applicable to the EA and FONSI filed after July 30, 1979.[273] The court stated that:

> the first sentence of part 1506.12 clearly states that the 1979 regulations are to be applied to "the fullest extent practicable to ongoing activities and environmental documents begun before the effective date." Both the FONSI and the EA are "environmental documents" within the meaning of 40 C.F.R. Part 1508.10 (1979).[274]

Consequently, the worst case regulation was applicable to the EAO.

The Ninth Circuit adopted a functional view of the worst case regulation. The court, noted that "the label of the document was unimportant," and instead focused on the purpose of the document.[275] The court recognized that the BLM utilized the EA for its initial finding of whether an EIS was necessary for a specific project and also to supple-

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269. Southern Oregon Citizens Against Toxic Waste, Inc. v. Clark, 720 F.2d 1475, 1480-81 (9th Cir. 1983).

270. The regulation became effective July 30, 1979. Federal regulations provide:

> (a) These regulations shall apply to the fullest extent practicable to ongoing activities and environmental documents begun before the effective date. These regulations do not apply to an environmental impact statement or supplement if the draft statement was filed before the effective date of these regulations. No completed environmental documents need be redone by reason of the regulations . . . . However, nothing shall prevent an agency from proceeding under these regulations at an earlier time.

40 C.F.R. § 1506.12(a) (1991); *see also* Southern Oregon Citizens Against Toxic Sprays v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,174, 20,175 (D. Or. 1982).

271. *Southern Oregon Citizens Against Toxic Sprays*, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,174; *see also supra* note 193.

272. 501 F. Supp. 649 (D.N.M. 1980).

273. *Id.* at 655.

274. *Id.*

275. Southern Oregon Citizens Against Toxic Waste v. Clark, 720 F.2d 1475, 1480 (9th Cir. 1983).

ment the PEIS.[276] The court, by viewing the EA as "an integrated part of the overall environmental analysis," was able to evaluate the EA as an extension of the PEIS.[277] As the CEQ noted:

> Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take action that protect[s], restore[s], [and] enhance[s] the environment.[278]

Hence, the court in this way realized the purpose of the NEPA, as described by the CEQ.

The Ninth Circuit's requirement that the BLM include a worst case analysis in the EA was consistent with the CEQ regulations which recommend that federal agencies "tier" their EISs "to eliminate repetitive discussion of the same issues and to focus on the actual issues ripe for decision at each level of environmental review."[279] The BLM utilized the EA's for site specific analysis of its herbicide spraying which occurred over a ten year period. The EA's discussed new circumstances or information "relevant to environmental concerns and bearing on the proposed action or its impacts."[280] If the worst case analysis was not included in the EA, there would have been no discussion of scientific uncertainty or gaps in the relevant information. This would have permitted the BLM to hide behind a cloak of ignorance. Furthermore, by allowing the BLM to include a worst case analysis in the EA, the court precluded the necessity of "prepar[ing] a new or supplemental EIS."[281]

C. Save Our Ecosystems v. Clark

In 1983, the Bureau of Land Management (BLM) planned to spray 6,000 to 7,000 acres of public forest in the Eugene District of Oregon with Picloram and 2,4-D. The BLM updated its 1978 PEIS with an Environmental Assessment (EA). Responding to the *SOCATS* decision, the BLM included in its EA a worst case analysis which asserted that there was a safe level of exposure to the herbicides. Save our Ecosystems brought suit challenging the adequacy of the BLM's worst case analysis.[282]

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276. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1247 (9th Cir. 1984).
277. *Southern Oregon Citizens*, 720 F.2d at 1480.
278. 40 C.F.R. § 1500.1(c) (1991).
279. *Id.* § 1502.20; *see also* 40 C.F.R. § 1508.28 (1991).
280. 40 C.F.R. § 1502.9(c)(1)(ii) (1991).
281. *Southern Oregon Citizens*, 720 F.2d at 1480-81.
282. Save Our Ecosystems v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,887 (D. Or. 1983).

The federal district court determined that there was credible scientific evidence that the herbicides used by the BLM could cause cancer and birth defects.[283] The court held that the BLM's worst case analysis was defective because the BLM "at no point assumes, for the purposes of discussion, that these herbicides are carcinogens or mutagens."[284] The court instructed the BLM to prepare a worst case analysis which was based on the premise that the herbicides caused cancer and birth defects and which discussed the impacts and probabilities of this worst case scenario.[285]

The Ninth Circuit concluded that the BLM's worst case analysis was "brief and cursory, and proceeds from an entirely wrong assumption."[286] The Ninth Circuit agreed with the district court's finding that "the worst result that can occur as a result of proceeding in the face of uncertainty as to whether a herbicide causes cancer is that it *does* cause cancer."[287] Citing *SOCATS*, the Ninth Circuit held that "the possibility that the safe level of dosage for herbicides is low or nonexistent creates a possibility of significant adverse effect on the human environment . . . This potential calls for a worst case analysis."[288]

The Ninth Circuit rejected the BLM's assertion that such a worst case analysis would be based on pure guesswork because there was no credible scientific evidence that the herbicides caused cancer at any dosage level.[289] The court found this contention to be specious in light of the evidence presented by the plaintiff's experts and the holding of *SOCATS* that "the agency may not omit the analysis only because it believes that the worst case is unlikely."[290] The Ninth Circuit held that the BLM was required to analyze the costs and effects of the worst case scenario, and to provide an assessment of the likelihood of its occurrence.[291] Further, because the EA was the functional equivalent of an EIS, it was subject to the same time period for public comment.[292]

1. Threshold Determination

The Ninth Circuit held that scientific uncertainty or gaps in the relevant information, which were important or essential to the decision

283. *Id.* at 20,888.
284. *Id.*
285. *Id.*
286. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1245 (9th Cir. 1984).
287. *Id.* at 1246 (citing Southern Oregon Citizens Against Toxic Waste, Inc. v. Clark, 720 F.2d. 1475, 1479 (9th Cir. 1983).
288. *Id.*
289. *Id.*
290. *Id.*
291. *Id.*
292. *Id.* at 1247.

and which could not be obtained because the costs were exorbitant or the means of acquiring the information were unknown, triggered the worst case analysis.[293] It was not determinative whether the information was "important" or "essential" as long as it was "significant."[294] Further, the scientific uncertainty or gaps in the information did not have to pertain to reasonably foreseeable adverse environmental impacts. The probability of a worst case occurrence simply had to be discussed by the federal agency.[295]

There were scientific uncertainties and gaps in the information concerning the herbicides that the BLM proposed to employ in its spraying of the Eugene District. In *SOCATS*, Dr. Ruth Whisler Shearer discussed Picloram, Tordon 101, Roundup, Krenite, and Garlon. She concluded that gaps existed in the data regarding the herbicides used by the BLM.[296] Dr. Reuber also indicated that Picloram, 2,4-D, and other herbicides were potential carcinogens.[297] This evidence led the court in *SOCATS* to require a worst case analysis.

The EPA also acknowledged that the data on the herbicides in this case was inadequate because their FIFRA registration was conditional.[298] FIFRA permits the EPA to conditionally register individual pesticides with less than a full array of tests results and analysis when: (1) the pesticide is identical or similar to other registered products; (2) there is a new use for the registered pesticide; and (3) the pesticide has active ingredients not currently contained in any registered pesticide and requires further testing to demonstrate its safety.[299] Beginning in 1979, the EPA considered all pesticide registrations to be conditional. Registrants were required to supply any missing data required by the Registration Statement upon request by the EPA. Pesticides that were registered prior to 1978 were also subject to Registration Standard Re-

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293. *Id.* at 1243-45.

294. *Id.* at 1244 n.5; *see also* Mark Reeve, Note, *Scientific Uncertainty and the National Environmental Policy Act- The Council on Environmental Quality's Regulation 40 C.F.R. Section 1502.22*, 60 WASH. L. REV. 101, 105-07 (1984).

295. *Save Our Ecosystems*, 747 F.2d. at 1244-45.

296. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,176, 20,177 (D. Or. 1982).

297. *Id.*

298. 7 U.S.C. § 136a(c)(7) (1988); *see also Save Our Ecosystems*, 747 F.2d at 1246. Under FIFRA § 136a(c)(7)(C), the EPA can conditionally register pesticide products containing a new active ingredient not contained in any previously registered product in the absence of certain required test data, if the EPA determines that (a) insufficient time has elapsed since the imposition of the data requirements for those data to have been developed, (b) use of the pesticide product(s) containing the new active ingredient during the conditional period would not cause any unreasonable adverse effects, and (c) conditional registration of the pesticide product and its uses are in the public interest. 7 U.S.C. § 136a(c)(7) (1988).

299. 7 U.S.C. § 136a(c)(7) (1988).

view and were required to re-register once the data gaps were filled.[300] In 1986, the General Accounting Office reviewed the EPA's conditional registration of pesticides from 1978 through 1984 and concluded that, contrary to congressional intent, the "EPA had been lenient in granting conditional registrations of pesticide products containing new active ingredients without full testing and appears not to have routinely monitored registrants' compliance with conditions imposed."[301]

2. Speculation

The BLM, admitting that there was scientific uncertainty regarding the herbicides,[302] included a worst case analysis in its 1983 EA. In its worst case analysis, the BLM first established a dosage level at which there were no observed adverse effects on humans from exposure to the herbicides. This point was treated as the highest dosage level which was safe for humans. The BLM did not, however, assert that the observed effect level was proven safe regarding carcinogenic and mutagenic effects. Next, the BLM calculated the highest dose that might be received by a person applying the herbicide and by an individual living near or using the affected area. The BLM then compared the observed effect level with the exposure level and concluded that the herbicides posed no health hazard.[303] Furthermore, the BLM asserted that, in the absence of meaningful data correlating the incidence of cancer to specific dosage levels, any projections about the herbicides' carcinogenic potential "would be pure fantasy."[304]

The Ninth Circuit correctly rejected the BLM's worst case analysis. The BLM's refusal to premise the worse case analysis on the carcinogenic potential of the herbicides directly contradicted the Ninth Circuit's decision in *SOCATS*.[305] The BLM also failed to comprehend the nature of the worst case analysis. The worst case regulation required federal agencies to address scientific uncertainty and gaps in the relevant information pertaining to significant adverse environmental effects through "reasonable forecasting and speculation." This duty was analogous to other statutory mandates which require federal agencies to act

300. 7 U.S.C. § 136a(c)(1)(F)(i) (1988).

301. U. S. General Accounting Office, The Formidable Task: Assessing Pesticide Risks, GAO/RCED-86-125, at 92 [hereinafter GAO].

302. *Save Our Ecosystems*, 747 F.2d at 1245.

303. Save Our Ecosystems v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,887, 20,887-88 (D. Or. 1983).

304. *Id.* at 20,888.

305. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479 (9th Cir. 1983).

when there is uncertainty regarding risks and hazards.[306] When federal agencies make such decisions, which are often on the frontiers of scientific knowledge, the courts are very deferential.[307] The courts give a "soft glance" to agency judgments which rest on scientific uncertainty.[308] The courts recognize agency expertise and the need for discretion when federal agencies act in the face of unknown risks to protect human health[309] and the environment,[310] as evidenced by the D.C. Circuit's decision in *Ethyl Corporation v. EPA*.[311]

In *Ethyl Corporation v. EPA*, the manufacturers of lead additives and refiners brought suit challenging the EPA's regulations requiring a reduction in the amount of lead in gasoline.[312] Section 211 of the Clean Air Act allows the EPA to regulate fuel additives if their emission will "endanger the public health or welfare."[313] The D.C. Circuit determined that the " 'will endanger' standard is precautionary in nature and does not require proof of actual harm before regulation is appropriate."[314] The court explained that danger "is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity."[315] The court noted that "[d]anger depends upon the relation between the risk and harm presented by each case, and cannot legitimately be pegged to 'probable' harm, regardless of whether that harm be great or small."[316] The court stated that the "magnitude of risk sufficient to justify regulation is inversely proportional to the harm to be avoided."[317] The court found that since the statute was precautionary, the administrator had to engage in risk assessment.[318] This required the administrator to make "an essentially legislative policy judgment, rather than a factual determina-

306. Federal Water Pollution Control Act, 33 U.S.C. § 1364 (1988); Resource Conservation and Recovery Act, 42 U.S.C. § 7003 (1988); Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9606 (1988).

307. *See* United States v. Waste Indus., Inc., 734 F.2d 159 (4th Cir. 1984); Reserve Mining Co. v. EPA, 514 F.2d 492 (8th Cir. 1975); United States v. Vertac Chem. Corp., 489 F. Supp. 870 (E.D. Ark. 1980).

308. William H. Rogers, Jr., *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 HARV. ENVTL. L. REV. 191, 216-18 (1980).

309. *See* Society of Plastics Indus., Inc. v. OSHA, 509 F.2d 1301 (2d Cir.), *cert. denied*, 421 U.S. 992 (1975); Industrial Union Dep't, AFL-CIO v. Hodgson, 499 F.2d 467 (D.C. Cir. 1974).

310. *See Reserve Mining Co.*, 514 F.2d 492.

311. 541 F.2d 1 (D.C. Cir.), *cert. denied*, 426 U.S. 941 (1976).

312. *Id.* at 10.

313. 42 U.S.C. § 7545(c)(1)(A) (1988).

314. *Ethyl Corp.*, 541 F.2d at 17.

315. *Id.* at 18.

316. *Id.*

317. *Id.* at 19.

318. *Id.* at 20.

tion, concerning the relative risks of underprotection as compared to overprotection."[319] The court pointed out that, when reviewing the federal agency's precautionary decision, it would "not demand rigorous step-by-step proof of cause and effect" because "[s]uch proof may be impossible to obtain if the precautionary purpose of the statute is to be served."[320] The court would, however, examine the agency's decision to ensure that it rested on a "rational basis."[321]

The BLM's responsibility under the worst case regulation was analogous to the EPA's duty under section 211. Both statutes were precautionary in nature. The BLM, like the EPA, had to act in the face of the scientific uncertainty and proceed beyond existing data to make a decision which protected the environment. Judicial review of the BLM's worst case analysis would have been as deferential as that given to the EPA's decision. Consequently, no reason remained for the BLM to refuse to discuss the prescribed worst case scenario.

The worst case defined by the Ninth Circuit may have had only a limited impact, as evidenced by *City of New York v. United States Department of Transportation (DOT)*.[322] In 1976, the City of New York enacted a municipal ordinance which prohibited the transportation of large quantities of radioactive wastes through the city. In 1981, the DOT published HM-164 which declared that the interstate highway system was the preferred route for the land transport of radioactive materials. HM-164 preempted the municipal ordinance. The DOT submitted an EA which concluded that the chance of a catastrophic accident was once every 300 million years.[323] The DOT determined that the remote possibility of such a catastrophic impact event did not create a significant risk to the environment which warranted an EIS.[324]

The City of New York brought suit challenging HM-164. The federal district court found the DOT's EA inadequate because it failed to sufficiently analyze the probability and consequences of a catastrophic accident.[325] The Second Circuit Court of Appeals reversed the lower court's decision and held that the EA prepared by the DOT had

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319. *Id.* (quoting Industrial Union Dep't, AFL-CIO v. Hodgson, 499 F.2d 467 (D.C. Cir. 1974)).

320. *Id.* at 28.

321. *Id.*

322. 715 F.2d 732 (2d Cir. 1983), *appeal dismissed* and *cert. denied*, 465 U.S. 1055 (1984); *see also* Scott C. Whitney, *Demise of the CEQ's Worst Case Analysis Regulation*, 8 GEO. MASON L. REV. 447, 470-75 (1986); Eveleen Henry, Note, *The Council on Environmental Quality's Worst Case Regulation: The Recent Litigation*, 64 OR. L. REV. 547, 561-65 (1986).

323. *City of New York*, 715 F.2d at 752.

324. *Id.*

325. City of New York v. United States Dep't of Transp., 539 F. Supp. 1237 (S.D.N.Y. 1982).

considered the consequences and probabilities of a worst case accident.[326] The court noted that there was a difference between evaluating future consequences of agency actions which "will affect the environment" and assessing the risks that a proposed action might have environmental effects in the event of an accident.[327] The court stated that the possibility of adverse environmental effects did not insulate the proposal from NEPA consideration, but did accord the agency latitude in determining whether the risks required the preparation of an EIS.[328] The court should be "most deferential" because the agency was making a decision within its area of expertise on the frontiers of science.[329]

D. Village of False Pass v. Clark

The St. George Basin, which is located in the southeastern Bering Sea between the eastern Aleutian and the Pribilof Islands, is the gateway between the Northern Pacific and the Bering Sea. The basin serves as a migratory corridor and breeding and feeding grounds for many species of birds, fish, and marine mammals. In 1979, the Secretary of the Interior began planning for Lease Sale 70 in the St. George Basin. In 1982, the Final EIS was released which contained an analysis of both a 1,000 and 10,000 barrel oil spill.

The Village of False Pass brought suit challenging the lease sale.[330] The Village asserted that the EIS should have contained a worst case analysis which discussed the possibility of a 100,000 barrel oil spill occurring under poor conditions, affecting sea life, lingering in the environment, and causing psychological impact, as well as the impacts of noise on the endangered whales in the region.[331]

The federal district court concluded that, at the lease sale stage of the Outer Continental Shelf (OCS) development process, the EIS need not include speculative and incremental information about environmental consequences that might occur at later stages of the OCS development process, such as a large oil spill.[332] The district court did, however, find that there was a lack of knowledge regarding the impacts of an oil spill, noise pollution, and seismic testing on the eight endangered species of whales which inhabited the region.[333] The court noted that existing data "indicates that the dangers of oil exploration and develop-

326. *City of New York*, 715 F.2d at 747.
327. *Id.* at 746 n.14.
328. *Id.*
329. *Id.*
330. Village of False Pass v. Watt, 565 F. Supp. 1123, 1123 (D. Alaska 1983), *aff'd sub nom.*, Village of False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984).
331. *Village of False Pass*, 565 F. Supp. at 1149.
332. *Id.* at 1149, 1152.
333. *Id.* at 1149-53.

ment pose a real threat to the whales."[334] The court held that the Department of the Interior need not discuss the impacts of an oil spill, but should examine the effects of noise pollution and seismic testing on the whales.[335] If such information was available, the Department of the Interior should prepare a supplemental EIS.[336] If such information was not available, the Department of the Interior should conduct a worst case analysis.[337] The worst case analysis would not be difficult to perform because the Department of the Interior had conducted such an analysis regarding the impacts on gray and bowhead whales in connection with the 1979 Beaufort Sea lease sale.[338]

Following the court's decision, the Department of the Interior prepared a supplemental statement which discussed the effects of preliminary seismic testing on endangered whales. The Department of the Interior also adopted seasonal and operational restrictions on seismic testing in its Notice to Lessees No. 83-4. The federal district court found these restrictions to be satisfactory.[339]

The Ninth Circuit affirmed the district court's decision.[340] The Ninth Circuit held that OCS oil and gas development was a multistage development project which consisted of four stages: (1) the establishment of a five year leasing program; (2) the lease sale; (3) exploration; and (4) development and production.[341] The court concluded that the completion of each stage did not insure entry into the next stage.[342] The Secretary of the Interior retained considerable authority at each stage to establish the conditions under which OCS development would occur. The Secretary could suspend or cancel the leases at any stage. Since the Secretary retained considerable discretionary authority throughout the process, a consideration of the large oil spill scenario was not necessary at the lease sale stage.[343]

The court distinguished the *Sigler* case on the grounds that the issuance of the construction permits in *Sigler* presented the last opportunity for the government to conduct a worst case analysis, whereas the Department of the Interior could still perform a worst case analysis after the lease sale.[344] Furthermore, the court noted that the CEQ reg-

334. *Id.* at 1152.
335. *Id.* at 1153.
336. *Id.*
337. *Id.*
338. *Id.* at 1152.
339. Village of False Pass v. Clark, 733 F.2d 605, 612 (9th Cir. 1984).
340. *Id.*
341. *Id.* at 614.
342. *Id.*
343. *Id.* at 614-17.
344. *Id.* at 614.

ulations regarding the tiering of NEPA compliance warranted deferring the consideration of the possibility of a large oil spill until a later stage in the process.[345]

The Ninth Circuit failed to appreciate the significance of the lease sale stage of the OCS development process. Prior to leasing, important decisions are made pertaining to "the size and location of the tracts, the timing of the sale and the stipulations to which the leases are subject."[346] Each of these planning decisions "establish the timing of OCS development and production."[347] The leasing process "sets in motion the entire chain of events which culminates in oil and gas development."[348] There were gaps in the information regarding the impacts of a large oil spill, which, as even the majority opinion recognized,[349] were important to the Department of the Interior's decision to lease. The Department of the Interior should have addressed these gaps in the information by including a worst case analysis in the EIS for Lease Sale 70.[350]

The Ninth Circuit's failure was surprising given the court's position on the issue in *California ex rel Brown v. Watt*,[351] which dealt with whether OCS lease sales were subject to consistency review under section 307(c)(1) of the Coastal Zone Management Act (CZMA).[352] In *Watt*, the Ninth Circuit determined that OCS lease sales were subject to state consistency review because they directly affected the coastal zone.[353] The court determined that pre-lease decisions "estab-

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345. *Id.* at 615. The Ninth Circuit continued to adhere to this tiered approach in Friends of Endangered Species, Inc. v. Jantzen, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20,455 (9th Cir. 1985) stating:

> [t]he fact that the staged development of the Mountain calls for corresponding staged reconsideration of environmental impacts under the Plan, as well as for possible revocation or suspension of the Permit, further supports our conclusion that the Service acted reasonably in determining that a 'worst case' analysis was not necessary in the present case.

Id. at 20,460.

346. California *ex rel.* Brown v. Watt, 520 F. Supp. 1359, 1371 (C.D. Cal. 1981).

347. *Id.*

348. *Id.*

349. In *Village of False Pass v. Clark*, the majority opinion stated:

> The Village would have a better argument for the importance of a worst case analysis at the lease sale stage of a 100,000 barrel oil spill if that were the only time the Secretary could review the potential environmental impacts of those leases and their possible exploration and development and production.

733 F.2d at 614.

350. *Id.* at 617-20 (Canby, J., dissenting).

351. 683 F.2d 1253 (9th Cir. 1982).

352. Section 307(c)(1) states, "Each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." 16 U.S.C. § 1456(c)(1) (1988).

353. 683 F.2d at 1260.

lish the basic scope of the charter for subsequent development and production."[354] The court recognized that the OCS lease sale stage was the only time each multistage OCS energy development project was evaluated in its entirety, and the only stage when the cumulative impacts of offshore energy development on state coastal resources were considered.[355]

In reversing the Ninth Circuit, the Supreme Court held that OCS lease sales did not directly affect the coastal zone, and thus were not subject to state consistency review.[356] Justice O'Connor determined that the Outer Continental Shelf Lands Act (OCSLA) divided OCS development into four distinct stages.[357] The lease sale was clearly separated from the issuance of subsequent exploration, development, and production permits.[358] Since the lease sale only entitled the lessee to priority in the submission of subsequent plans, it could not directly affect the coastal zone.[359] Consistency review was reserved for the later two stages of the OCS development process under section 307(c)(3)(B) of the CZMA.[360]

Congress responded to the Supreme Court's decision in *Secretary of Interior v. California* by amending section 307(c)(1) in the Coastal Zone Management Act Amendments of 1990.[361] Section 307(c)(1) of the CZMA now provides that "[e]ach Federal agency activity within or outside of the coastal zone that affects any land or water or natural resources of the coastal zone," shall be conducted in a manner consistent with the state's coastal zone management program.[362] The conference committee report stressed that the principal objective of the conferees was "to overturn the decision of the Supreme Court in *Secretary of the Interior v. California*" and to clarify that OCS oil and gas leases

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354. *Id.*

355. *Id.*

356. Secretary of Interior v. California, 464 U.S. 312 (1984). For a full discussion of this case, see Edward A. Fitzgerald, Secretary of Interior v. California: *Should Continental Lease Sales be Subject to Consistency Review*, 12 B.C. ENVTL. AFF. L. REV. 425 (1985).

357. *Secretary of Interior*, 464 U.S. at 335-43.

358. *Id.*

359. *Id.*

360. *Id.*

361. The 1990 amendments are contained in the Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, §§ 6202-17, 104 Stat. 1388 (codified at 16 U.S.C. §§ 1451-64 (Supp. II 1990); 136 CONG. REC. H12510-18 (daily ed. Oct. 26, 1990); 1990 U.S.C.C.A.N. (104 Stat.) 299-319; *see also*, Jack Archer, *Evolution of Major 1990 CZMA Amendments: Restoring Federal Consistency and Protecting Coastal Water Quality*, 1 TERR. SEA J. 191 (1991); Tim Eichenberg, *State Jurisdiction Under the Coastal Zone Management Act After the Extension of the U.S. Territorial Sea*, 2 TERR. SEA. J. 115 (1992).

362. Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, § 6208, 104 Stat. 1388 (1990).

were "subject to the requirements of section 307(c)(1)."[363] The amendment of the CZMA evidences congressional recognition that the lease sale is a crucial stage in the OCS development process.

The OCS lease sale is a vital "link in [the] chain of bureaucratic commitment that will become progressively harder to undo the longer it continues."[364] Once the leases have been granted, the Secretary's authority becomes circumscribed.[365] The Secretary can temporarily suspend the leases[366] or cancel the leases under the OCSLA if they "would probably cause serious harm . . . to the marine, coastal, or human environment."[367] The threat of an oil spill, which is a low probability/catastrophic event,[368] would not represent such a contingency.[369] If the Secretary did cancel the leases, the federal government would be required to pay large sums in compensation to the leaseholders.[370] This would waste the federal government's valuable time and resources, and would frustrate state and local government planning efforts. Consequently, the Department of the Interior should have addressed the gaps in the information regarding a large spill prior to the lease sale by a worst case analysis because, once the leases were granted, it would have been very difficult to prevent subsequent oil and gas development.

IV. The CEQ's Recission of the Worst Case Analysis

In 1983, the CEQ, as part of its oversight function, published a draft guidance memorandum on the worst case analysis.[371] The CEQ noted in the memorandum that in the absence of direct guidance, the worst case regulation "has been subject to a wide variety of conflicting interpretations by both federal agencies and reviewing courts."[372] The CEQ found that the "worst case analysis requirements are being read to require federal agencies to conduct such analyses for potential effects that may well be highly remote or unlikely."[373]

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363. House Conf. Rep. No. 101-964, cited *supra* note 361.

364. Massachusetts v. Watt, 716 F.2d 946, 952 (1st Cir. 1983).

365. Village of False Pass v. Clark, 733 F.2d 605, 617-18 (9th Cir. 1984).

366. *Id.* at 618 (citing Union Oil Co. of Ca. v. Morton, 512 F.2d 743, 750-51 (9th Cir. 1975)).

367. 43 U.S.C. § 1334(a)(2)(A) (1988); 30 C.F.R. § 250.12(a)(1)(i) (1991).

368. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479 (9th Cir. 1983); *see also False Pass*, 733 F.2d at 618.

369. *False Pass*, 733 F.2d at 618.

370. *Id.* at 619; 43 U.S.C. § 1334(a)(2)(C) (1988); James W. Hill, Jr., Note, *The Requirement of Worst Case Analysis When Approving Oil Leasing Under the Outer Continental Shelf Lands Act*: Village of False Pass v. Clark, 1985 B.Y.U. L. Rev. 347, 356-58 (1985).

371. 48 Fed. Reg. 36,486 (1983).

372. *Id.*

373. *Id.* at 36,487.

The CEQ declared that the obligation to perform a worst case analysis was analogous to "the duty to provide information essential to a reasoned choice among alternatives."[374] The CEQ defined "reasonable foreseeability" as the threshold of probability which triggered the worst case analysis.[375] The CEQ stated that a worst case analysis was required "when an effect of a proposed federal action is reasonably foreseeable and the consequences of that effect cannot be ascertained because of scientific uncertainty or gaps in available knowledge."[376] Alternatively, the CEQ asserted that "speculative information or potential adverse impacts with an extremely low probability of occurrence could not be considered 'essential to a reasoned choice among alternatives.' "[377]

The CEQ's proposed guidelines regarding the worst case analysis regulation were severely criticized. One commentator alleged that the proposed changes would gut the worst case analysis.[378] He found that the new proposed "reasonably foreseeable" threshold implied a degree of probability.[379] Federal agencies were, however, already required to discuss events of low probability in their EISs.[380] The worst case analysis was different because it mandated a discussion of low probability/catastrophic events which were outside of the purview of the NEPA. The worst case analysis focused on what could happen.[381]

This commentator pointed out that the proposed guidelines contradicted the CEQ's prior interpretation of the regulation and judicial decisions concerning the regulation.[382] If the proposed guidelines were to be adopted, federal agencies would cease to examine low probability/catastrophic impacts.[383] The worst case analysis had not caused any undue administrative burden or generated excessive litigation.[384] Furthermore, the proposed guidelines would undermine the consensus regarding the CEQ's regulations, which the CEQ had achieved by fashioning compromises among competing interest groups. The worst case analysis had been an important component of the bargain.[385]

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374. *Id.*
375. *Id.*
376. *Id.*
377. *Id.*
378. *See, e.g.*, Nicholas Yost, *Don't Gut the Worst Case Analysis*, 13 ENVTL. L. REV. 10,394 (1983). Nicholas Yost was the General Counsel for the CEQ from 1977-81, with the principal responsibility for drafting the new CEQ regulations.
379. *Id.* at 10,394-95.
380. *Id.* at 10,395.
381. *Id.* at 10,394-95.
382. *Id.* at 10,395-96.
383. *Id.* at 10,396.
384. *Id.*
385. *Id.*

As a result of the criticism, the CEQ withdrew the proposed guidelines on February 8, 1984, but indicated that a new proposal would soon be forthcoming.[386] On December 31, 1984, the CEQ solicited comments to five questions in an advance notice of proposed rulemaking concerning the revision of the worst case analysis.[387]

On August 9, 1985, the CEQ published a proposed amendment to the regulation which stated that a worst case analysis would no longer be required because it was "an unsatisfactory approach to the analysis of potential consequences in the face of missing information."[388] The CEQ noted that there had been much criticism of the worst case regulation. First, the worst case analysis entailed limitless inquiry. New worst case scenarios could always be established by changing a particular variable.[389] Second, experts stated that the worst case analysis was not linked to any discipline which dealt with scientific uncertainty. Consequently, federal agencies could not conduct a worst case analysis.[390] Third, the worst case analysis was counterproductive because agencies were required to spend time and resources to prepare the analysis which was not useful to decisionmakers and diverted the EIS process from its intended purposes.[391]

The CEQ was particularly critical of the judicial decisions which required federal agencies to discuss disastrous impacts when the federal agencies believed that there was no credible scientific evidence to support the occurrence of such impacts.[392] The CEQ specifically cited the

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386. 49 Fed. Reg. 4803 (1984).

387. The CEQ requested responses on the following five questions:

1. Under what circumstances and to what extent must a federal agency engage in forecasting or speculation when confronted with scientific uncertainty or gaps in information concerning the environmental effects of a proposed action?

2. How can an analysis be structured to present reasonable forecasting in the face of scientific uncertainty or information gaps about the effects of proposed action to provide more useful and understandable information for decisionmakers and other interested parties?

3. Does the type of analysis called for in 40 C.F.R. § 1502.22 require federal agencies to go beyond the 'rule of reason', as traditionally expressed in judicial decisions interpreting NEPA?

4. Should a threshold standard be established which would trigger the preparation of the type of analysis identified in response to question one, such as a threshold of probability, or a threshold of scientific credibility?

5. Is the term 'worst case' appropriate for this type of analysis? If so, how should it be defined? If not, what is the most appropriate terms for this type of analysis, and how should it be defined?

49 Fed. Reg. 50,744 (1984).

388. 50 Fed. Reg. 32,234, 32,236 (1985); *see also* Whitney, *supra* note 322, at 470-75.

389. 50 Fed. Reg. 32,234, 32,236 (1985).

390. *Id.*

391. *Id.*

392. *Id.*

Ninth Circuit's decision in *Save Our Ecosystems v. Clark*[393] as an example.[394] The CEQ found that the type of analysis required in *Save Our Ecosystems* was useless and simply an indulgence in speculation for its own sake because it was not based on credible scientific evidence.[395] Furthermore, the CEQ viewed the judicial decisions as proceeding beyond the rule of reason which the courts employ when reviewing NEPA claims.[396]

On April 25, 1986, the CEQ promulgated a new regulation dealing with scientific uncertainty in the NEPA context.[397] The CEQ stated that it "concur[red] [with] the underlying goals of the original regulation," but found the worst case analysis "an unproductive and inefficient method of achieving those goals."[398] The new regulation requires federal agencies to disclose incomplete or unavailable information regarding reasonably foreseeable significant adverse environmental effects. If such information cannot be obtained because the costs are exorbitant or the means for obtaining it are unknown, the agency shall include in the EIS an analysis of the existing relevant credible scientific evidence. The scientific evidence pertains to the reasonably foreseeable adverse environmental impact, and is obtained by "research methods generally accepted in the scientific community."[399] The CEQ noted that "reasonably foreseeable" effects include "impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that they have credible scientific support, are not based on pure conjecture, and are within the rule of reason."[400] The CEQ stated that the new regulation "will provide more accurate and relevant information"[401] through requirements which "are more clearly articulated and manageable than the 'worst case analysis.' "[402]

V. NORTHWEST COALITION FOR ALTERNATIVES TO PESTICIDES (NCAP) V. LYNG

Northwest Coalition for Alternatives to Pesticides (NCAP) v. Lyng[403] demonstrates the specious nature of the BLM's claims in *SO-*

393. 747 F.2d 1240 (9th Cir. 1984).
394. 50 Fed. Reg. 32,234, 32,236 (1985).
395. *Id.*
396. *Id.*
397. 51 Fed. Reg. 15,618 (1986).
398. *Id.* at 15,620.
399. *Id.* at 15,621.
400. *Id.* at 15,620.
401. *Id.* at 15,624.
402. *Id.* at 15,625.
403. 673 F. Supp. 1019 (D. Or. 1987).

CATS[404] and *Save Our Ecosystems*[405] and the benign nature of judicial review of federal agency compliance with the worst case analysis regulation. The Bureau of Land Management (BLM) and the United States Forest Service (FS) planned to utilize herbicides to control and eradicate noxious weeds on public lands in Oregon.[406] On March 1, 1984, a federal district court enjoined the BLM and the FS from herbicide spraying until a worst case analysis was conducted.[407] The BLM completed its Final EIS (FEIS) in December 1985. On April 10, 1986, the BLM moved to dissolve the injunction. On June 30, 1986, the BLM withdrew its motion, stating its intention to perform a supplemental EIS (SEIS) which would comply with the worst case regulation. In March 1987, the SEIS for the BLM's spraying of herbicides for noxious weed control for five states was completed. The SEIS proposed spraying on public lands using six herbicide formulations: Banvel, Rodeo, Tordon 2K and 22K, Esteron 99, and DMA-4. These herbicides contain different active ingredients. Banvel's active ingredient is dicamba, Rodeo's is glyphosate, Tordon 2K's and 22K's is picloram, Esteron 99's and DMA-4's is 2,4-D. Many of these active ingredients were involved in *SOCATS*[408] and *Save Our Ecosystems*.[409] The BLM moved to lift the injunction. On November 24, 1977, a federal district court ruled that the FEIS and the SEIS complied with the NEPA and the CEQ's regulations, and thus dissolved the injunction.[410] The Ninth Circuit upheld the district court's decision.[411]

A. FIFRA Registration

One of the major issues in *SOCATS* and *Save Our Ecosystems* was the BLM's reliance on FIFRA registration to comply with NEPA requirements. In both cases, the Ninth Circuit determined that the

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404. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475 (9th Cir. 1983).

405. Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984).

406. The District Court in *Northwest Coalition* cited two provisions that allowed the BLM to control noxious weeds. 673 F. Supp. at 1019, 1021 n.2. The Carlson-Foley Act authorizes and directs Federal agencies to provide for the control of noxious plants on land under the control or jurisdiction of the Federal Government. 43 U.S.C. §§ 1241-43 (1988). The Federal Noxious Weed Control Act of 1974 utilizes the government's interstate commerce powers to control and eradicate noxious weeds. 7 U.S.C. §§ 2801-13 (1988).

407. *Northwest Coalition*, 673 F. Supp. at 1021.

408. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,176, 20,177 (D. Or. 1982), *aff'd sub nom.*, Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475 (9th Cir. 1983).

409. Save Our Ecosystems v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,887, 20,888 (D. Or. 1983).

410. *Northwest Coalition*, 673 F. Supp. 1019 (D. Or. 1987).

411. Northwest Coalition for Altns. to Pesticides (NCAP) v. Lyng, 844 F.2d 588 (9th Cir. 1988).

BLM could not rely on FIFRA registration alone.[412] The agency was required to do independent research concerning the safety of a herbicide it proposed to use.[413] In *Save Our Ecosystems*, the Ninth Circuit held that a federal agency could meet this requirement by "appropriately consider[ing] [the] EPA's data on the herbicides in the specific context of the area which it proposes to spray."[414] In *NCAP*, the Ninth Circuit determined that the BLM fulfilled the requirement set forth in *Save Our Ecosystems*.[415] The BLM acknowledged that FIFRA registration was not sufficient to meet the NEPA requirements. To cure this deficiency, the BLM reviewed additional studies and the SEIS utilized the EPA data to examine the effects on humans, wildlife, and the environment which were expected to occur from the use of the herbicides in the proposed area.[416]

B. The Worst Case Analysis

Another critical issue in *SOCATS* and *Save Our Ecosystems* was the BLM's reluctance to comply with the worst case requirement.[417] In *Save Our Ecosystems*, the BLM argued that "no reliable positive evidence exists that 2,4-D does cause cancer; and that in the absence of any data correlating incidence of cancer to specific dosage levels of these herbicides, they cannot make meaningful projections of the chemical's potential, if any, for causing cancer."[418] The BLM stated that "any projections it might attempt of the possible incidence of cancer or genetic effects would be pure fantasy."[419]

In *NCAP*, the BLM decided to comply with the worst case regulations even though it was not required to do so. The BLM had the option of utilizing the amended regulation or the former worst case requirement.[420] In the SEIS, the BLM addressed the potential effects of the herbicides on human health and the environment. The SEIS contained a chemical hazard assessment and carcinogenic potential assessment. These assessments compared the potential exposure to humans from applying or being near an application of the herbicides with safe

412. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1247-48 (9th Cir. 1983); *Southern Oregon Citizens Against Toxic Sprays*, 720 F.2d at 1480.

413. *Southern Oregon Citizens Against Toxic Sprays*, 720 F.2d at 1480.

414. *Save Our Ecosystems*, 747 F.2d at 1247.

415. *Northwest Coalition*, 844 F.2d at 596.

416. *Id.*

417. *Save Our Ecosystems*, 747 F.2d at 1245-46; *Southern Oregon Citizens Against Toxic Sprays*, 720 F.2d at 1479.

418. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Watt, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20,887, 20,888 (D. Or. 1983).

419. *Id.*

420. 40 C.F.R. § 1502.22(c) (1991); *see supra* note 11; *see also infra* note 469.

dosage levels based on animal studies. The SEIS analyzed the four herbicide formulations and their potential risks to the public in performing the cancer analysis.[421] The BLM admitted there were some risks, but found these risks to be acceptable.[422] The BLM's analysis regarding the carcinogenic potential of the herbicides demonstrated the specious nature of its claims in *SOCATS* and *Save our Ecosystems*.

1. Inerts

The Coalition challenged the sufficiency of the worst case analysis on several grounds.[423] In one attack, the Coalition alleged that the impacts of inert ingredients in the herbicides were not adequately discussed. The Ninth Circuit rejected the Coalition's claim and concluded that the BLM had acknowledged the presence of inerts in the six herbicide formulations proposed.[424] Only one inert, Esteron 99, which was on the EPA's more harmful list, was studied. The SEIS recognized that there were gaps in the data regarding the inert ingredients resulting from the EPA's confidential business information policy, which prohibited the EPA from knowing all of the ingredients in the formulations.[425] The BLM also admitted that only the active ingredients, not the entire formulations had been extensively tested. Nevertheless, the BLM asserted that the active ingredients, not the inerts, posed the risks. The BLM supported this contention with "toxicity data which cast doubt on the possibility that the herbicide formulations are more toxic than the active ingredients alone."[426] The Ninth Circuit determined that, in light of the uncertainties, "the BLM overstated the risk

421. Northwest Coalition for Altns. to Pesticides (NCAP) v. Lyng, 844 F.2d 588, 597 (9th Cir. 1988).

422. *Id.*

423. NCAP asserted that the SEIS did not address the possible contamination of 2,4-D with TCDD. The Ninth Circuit determined that this issue had been addressed, but rejected, in the SEIS. The BLM determined that although some 2,4-D had been contaminated in the early 1980's, that version of 2,4-D was no longer being produced. Recent EPA monitoring had not found any contamination, and concluded that such a risk was negligible. The BLM acknowledged this uncertainty, but determined that the danger was low because of the low dosage to which humans were likely to be exposed and the low toxicity of 2,4-D. *Id.* at 598.

NCAP asserted that nonmammalian studies such as those offered by Dr. Shearer had not been included in the SEIS. The Ninth Circuit rejected this claim finding that the BLM had presented a representative range of studies on the matter in the SEIS. Further, the court concluded that it "cannot [be said] that one set of experts is clearly more correct than [an]other." *Id.* The BLM, in summarizing the studies, acknowledged the uncertainty by including the studies with both positive and negative toxicity results. *Id.*

424. *Id.* at 597.

425. *Id.*; *see also* Eric E. Boyd, Note, *Compensating Manufacturers Submitting Health and Safety Data to Support Product Registration After* Ruckleshaus v. Monsanto, 61 IND. L.J. 189 (1986); GAO, supra note 301, at 88-89.

426. *Northwest Coalition*, 844 F.2d at 597-98.

of harm posed by the active ingredients and proceeded to undertake a reasoned analysis."[427]

The court failed to ensure that the BLM took a hard look at the environmental and health effects of the herbicides. FIFRA divides the constituent chemicals of pesticides into two categories, active and inert, depending upon their use.[428] Active ingredients are those which interact directly with the target pest and cause the intended effect.[429] Inert ingredients are all of those chemical components which are not active.[430] Inert ingredients "may be used as solvents, thickeners, propellants, etc. to make pesticide products more effective or useable."[431] "Approximately 1,200 to 1,300 chemicals . . . are registered as inert ingredients in about 50,000 pesticide formulations."[432]

The EPA treats active and inert ingredients differently in many respects.[433] First, the EPA does not require extensive testing data regarding the impacts of inerts on human health and the environment.[434] The EPA assumes that only active ingredients, not inerts, pose a danger.[435] Second, the EPA's classification between active and inert ingredients is based upon their use. An ingredient can be active in one pesticide formulation, yet inactive in another.[436] Third, the EPA does not recognize the synergistic effect between active and inert ingredients.[437] Fourth, many inerts, which have nonpesticide uses, are not made by pesticide manufacturers, and are thus beyond the purview of FIFRA.[438] These factors have led one commentator to conclude that "[t]he active/inert distinction is an illogical basis for evaluating a pesticide product's potential toxicity."[439] The EPA and Congress have also recognized the weakness in this policy.[440]

Contrary to the BLM's assertions, the inert ingredients are often more toxic than the active ingredients.[441] A 1977 EPA sponsored study

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427. *Id.* at 598.

428. 7 U.S.C. § 136(a) (1988); *see also* Kevin M. Hogan, Note, *Inert Ingredients and Pesticide Registration Data Requirement: EPA's Complacency Compounds FIFRA's Inadequacies*, 15 VT. L. REV. 265, 266 (1990).

429. 7 U.S.C. § 136(a)(1) (1988).

430. 7 U.S.C. §§ 136(m), 136h(d) (1988); *see also* Hogan, *supra* note 428, at 272 n.51.

431. GAO, *supra* note 301, at 84.

432. GAO, *supra* note 301, at 84.

433. Hogan, *supra* note 428, at 272.

434. Hogan, *supra* note 428, at 272-80.

435. Hogan, *supra* note 428, at 272-80.

436. Hogan, *supra* note 428, at 280-81.

437. Hogan, *supra* note 428, at 276.

438. Hogan, *supra* note 428, at 288.

439. Hogan, *supra* note 428, at 267.

440. Hogan, *supra* note 428, at 285-92.

441. Hogan, *supra* note 428, at 282-85; *see also* GAO, supra note 301, at 84-85.

of fifty-two inert ingredients determined that the inerts had either "(1) chemical, toxicological, or environmental characteristics requiring immediate attention or (2) available data indicating possible health hazards."[442] Recent studies have also demonstrated that some petroleum surfactants, which spread the pesticides, contain diesel fuel or kerosene.[443] The benezene and polynuclear aromatics, which are components of these petroleum surfactants, are known carcinogens.[444] Other carcinogenic components of petroleum surfactants are extremely persistent.[445] They "accumulate in living organisms, disperse throughout the body, and disrupt cell membrane functions."[446] In addition, various exposure studies have demonstrated the toxicity of inert ingredients.[447]

The 1986 General Accounting Office (GAO) report, entitled *The Formidable Task: Assessing Pesticide Risks*, warned of the dangers of inert ingredients.[448] The GAO determined that the EPA had "only recently begun to review inert pesticide ingredients, although some inerts were known to be hazardous to humans and insufficient information existed to determine the potential risks of many others."[449] The GAO asserted that the "EPA needs to obtain further data in order to determine the potential health risks of inerts about which little is known."[450] The GAO noted that FIFRA's provisions, particularly those regarding confidentiality might "hinder the EPA's review of the safety of inerts by making it difficult for the Agency to develop a practical and equitable means of obtaining data."[451] The GAO recommended that the EPA "examine means to more readily obtain health and environmental effects test data on inerts."[452]

The BLM's assumptions and conclusions regarding inert ingredients in the SEIS were dubious. The BLM focused its attention on the active ingredients, but the effects of the inert ingredients on health and the environment were uncertain. The EPA's policy of distinguishing between active and inert ingredients was flawed, as Congress and the EPA have recognized. Various studies demonstrated that inerts could be more dangerous than active ingredients. The effect of the inert in-

442. GAO, *supra* note 301, at 84.
443. Hogan, *supra* note 428, at 283.
444. Hogan, *supra* note 428, at 283-84.
445. Hogan, *supra* note 428, at 283-84.
446. Hogan, *supra* note 428, at 283.
447. Hogan, *supra* note 428, at 283-84.
448. GAO, supra note 301, at 84-90.
449. GAO, *supra* note 301, at 89.
450. GAO, *supra* note 301, at 89.
451. GAO, *supra* note 301, at 89.
452. GAO, *supra* note 301, at 90.

gredients in the herbicides was important to a decision or "essential to a reasoned choice among alternatives."[453] The BLM should have addressed this issue in the SEIS which was designed to serve as a worst case analysis. Furthermore, the Ninth Circuit failed in its duty to ensure that the BLM took a hard look at this issue.

VI. ROBERTSON V. METHOW VALLEY CITIZENS COUNCIL

The new regulation regarding incomplete or unavailable information was reviewed by the Supreme Court in *Robertson v. Methow Valley Citizens Council*.[454] In 1978, Methow Recreation, Inc. (MRI) applied for a special use permit[455] to develop and operate its proposed "Early Winters Ski Resort" on Sandy Butte Mountain which is located in the Okanogan National Forest overlooking the pristine Methow Valley on the east side of the Northern Cascades in Washington. The project was expected to increase commercial and residential development in the Methow Valley, which is a critical winter range and migration corridor for the mule deer.

In response to MRI's application, the United States Forest Service (FS) prepared an EIS, known as the "Early Winters Alpine Sports Study," to evaluate the potential for skiing at Early Winters and to assist in making the decision regarding the issuance of a special use permit. The Early Winters Alpine Sports Study recommended the issuance of a special use permit for development at the second highest level, allowing sixteen ski lifts to accommodate 8,200 skiers. On July 5, 1984, the Regional Forester issued the special use permit. In his Record of Decision (ROD), the Regional Forester determined that there would be no direct adverse environmental effects from the action, but that secondary effects could include the degradation of the air quality and a reduction of the mule deer range. The Regional Forester, therefore, directed the supervisor of the Okanogan National Forest, both independently and with local officials, to identify and implement mitigation measures.

After the Chief of the United States Forest Service upheld the Regional Forester's decision, the Methow Valley Citizens Council brought suit, challenging the issuance of the special use permit as vio-

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453. 40 C.F.R. § 1502.22(a) (1991); *see also supra* note 6.

454. 490 U.S. 332 (1989).

455. "A special use permit is necessary whenever a private party seeks to use lands owned by the federal government. The Forestry Service issues special use permits under authority derived from 16 U.S.C. § 497." Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 812 n.1 (9th Cir. 1987), *rev'd sub nom.*, Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989).

lating the NEPA.[456] The federal district court held that the EIS had adequately addressed both the primary and secondary effects,[457] as well as the on and offsite impacts of the project on the mule deer.[458] The court concluded that a worst case analysis was not required because the FS had adequate information regarding the alternatives and the means of obtaining such information was known.[459] The court also noted that the CEQ had recently rescinded the worst case regulation.[460] Furthermore, the court found that the EIS had adequately discussed the unavoidable consequences and mitigation measures concerning the mule deer.[461]

The Ninth Circuit, reversing the district court's decision, determined that the EIS had not adequately discussed the environmental impacts of the Early Winters Project.[462] The court found that the FS's distinction between primary and secondary impacts was erroneous.[463] The NEPA and the CEQ regulations required the FS to evaluate the reasonably foreseeable effects proximately caused by the proposed action, whether primary or secondary.[464]

The Ninth Circuit disagreed with the FS's conclusion that, with mitigation efforts, the effects of the project on the mule deer would be minor.[465] The court pointed out that the mitigation measures had not yet been developed and that the FS had admitted that the data supporting its conclusions in the EIS was inadequate.[466] The FS's unfinished study of the mule deer did not constitute an adequate discussion of the environmental impacts under the NEPA.[467] The court noted that since there was a lack of information regarding the mule deer, the FS should have performed a worst case analysis.[468] Even though the worst

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456. There were also allegations concerning violations of the National Forest Management Act, 16 U.S.C. §§ 1600-14, and the Clean Air Act, 42 U.S.C. §§ 7401-7626. These concerns were dismissed upon motions for summary judgment and were not resurrected on appeal. *Methow Valley Citizens Council*, 833 F.2d at 813.

457. Primary effects are those "caused by the construction of runs, and ski lifts and the like on Forest Service land." Methow Valley Citizens Council v. Regional Forester, 16 Envtl. L. Rep. (Envtl. L. Inst.) 20,932, 20,936 (D. Or. 1986). Secondary or indirect effects "are those from development on primarily private property that are expected to follow construction of the ski resort." *Id.*

458. *Id.*

459. *Id.* at 20,937.

460. *Id.* at n.10.

461. *Id.* at 20,938.

462. *Methow Valley Citizens Council*, 833 F.2d at 818.

463. *Id.* at 816-17.

464. *Id.* at 817.

465. *Id.*

466. *Id.*

467. *Id.*

468. *Id.* at 817.

case regulation had been rescinded, the analysis was still mandated by prior NEPA case law.[469]

The Supreme Court reversed the Ninth Circuit's decision, holding that the worst case analysis regulation was not a codification of previous judicial decisions concerning the NEPA.[470] The Court found that prior cases asserting this position had relied upon *Sierra Club v. Sigler*,[471] which "simply recognized that the 'worst case analysis' regulation codified the 'judicially created principl[e]' that an EIS must 'consider the probabilities of the occurrence of any environmental effect it discusses.' "[472] The Court concurred with the CEQ's observation that the NEPA case law prior to the worst case regulation had required federal agencies to examine the environmental effects in the face of scientific uncertainty, but did not mandate that the obligation be satisfied by a worst case analysis.[473] Consequently, the Court held that the CEQ's abandonment of the worst case regulation was not inconsistent with any previous judicial interpretations of the NEPA.[474]

The Court held that the new CEQ regulation was entitled to substantial deference, even though it represented a change in the agency's position.[475] The Court noted that "there appears to have been good reason for the change" and that the change came only "after the prior regulation had been subjected to considerable criticism."[476] Furthermore, the Court determined that the new regulation "better serve[s] the twin functions of an EIS": (1) to require agencies to take a hard look at the consequences of the proposed action, and (2) to provide important information to other groups and individuals.[477]

A. The Legitimacy of the Recision of the Worst Case Analysis Regulation

The Supreme Court's decision in *Robertson v. Methow Valley Citizens Council*[478] regarding the worst case analysis was correct. The

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469. The court noted that the worst case requirement was rescinded in 1986. The court stated that, "[t]his rescission, however, does not nullify the requirement, since the regulation was merely a codification of prior caselaw." *Id.* at 817 n.11 (citation omitted); *see also* Oregon Natural Resources Council v. Marsh, 832 F.2d. 1489, 1496-97 (9th Cir. 1987), *rev'd*, Marsh v. Oregon Natural Resources Council, 490 U.S. 360 (1989).

470. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 354-56 (1989).

471. 695 F.2d 957 (5th Cir. 1983).

472. *Methow Valley Citizens Council*, 490 U.S. at 355 (quoting *Siegler*, 695 F.2d at 970-71).

473. *Id.*

474. *Id.*

475. *Id.* at 355-56.

476. *Id.*

477. *Id.* at 356.

478. 490 U.S. 332 (1989).

worst case analysis regulation was not a codification of prior NEPA case law, but rather a regulatory device developed by the CEQ to require federal agencies to address scientific uncertainty and gaps in the relevant information. The worst case analysis fulfilled the judicial mandate that agencies engage in "reasonable forecasting and speculation" in their environmental analyses.[479] Further, the new amended CEQ regulation regarding incomplete or unavailable information was entitled to substantial deference according to the Court's decision in *Andrus v. Sierra Club*.[480]

The Court's decision was consistent with its ruling in *Chevron U.S.A., Inc. v. NRDC*,[481] which upheld the EPA's changed definition of "source" for purposes of nonattainment area requirements under the Clean Air Act Amendments of 1977.[482] The Court found that the statutory language and legislative history were unclear on the definition of source, but that the legislative intent was to permit economic growth which did not interfere with the attainment air quality standards.[483] The Court determined that when the legislative mandate is unclear, the court should defer to the agency's interpretation of the statute, if the agency has advanced "a permissible construction of the statute."[484] The Court noted the EPA's varying interpretations of the statute, but concluded that "[a]n initial agency interpretation is not instantly carved in stone."[485] A federal agency must "consider varying interpretations and the wisdom of its policy on a continuing basis."[486]

Chevron requires the courts, when reviewing federal agency actions, to engage in a two step inquiry. First, the court must examine the statute to determine if Congress "has directly spoken to the precise question at issue."[487] If Congress has not addressed the issue, the court must assume that Congress delegated interpretative authority to the federal agency.[488] The NEPA did not specify that a worst case analysis

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479. Scientists' Inst. for Pub. Info. v. United States Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973); *see also supra* notes 117-31 and accompanying text.

480. 442 U.S. 347, 348 (1979); *see also supra* notes 142-49 and accompanying text.

481. 467 U.S. 837 (1984).

482. *Id.* at 866. The EPA no longer required compliance with nonattainment area regulations for any new construction or modification of existing sources within plants which crossed particular thresholds of emissions. *Id.* at 854. The EPA adopted the bubble concept which defined a source as the entire plant. *Id.* at 855-57. Consequently, new construction and modifications did not have to comply with nonattainment area requirements if there was no net increase in emissions from the plant. *Id.* at 854.

483. *Id.* at 859-64.

484. *Id.* at 843.

485. *Id.* at 863.

486. *Id.* at 863-64.

487. *Id.* at 842-43.

488. *Id.* at 843.

must be performed to satisfy its full disclosure requirement. The CEQ also conceded that the worst case analysis was a regulatory innovation.[489] Second, the court must determine if the agency's interpretation of the statute is reasonable.[490] The CEQ's new regulation regarding incomplete or unavailable information provides a reasonable means for realizing the NEPA's full disclosure mandate. It explicitly delineates the methodology which has been articulated by prior judicial decisions.

The *Chevron* decision, however, fails to reflect the partnership between the courts and administrative agencies in realizing congressional mandates.[491] When reviewing federal agency action, the court must first define the statutory mandate.[492] The court must examine the history, structure, language, and purposes of the legislation to determine congressional intent.[493] According to *Marbury v. Madison*,[494] the court is the final authority regarding statutory construction.[495] The Administrative Procedures Act also declares that the "reviewing court shall decide all relevant questions of law."[496] Since defining the statutory mandate is "the quintessential judicial function,"[497] the court should not be required to uphold the agency's legal interpretations. Instead the court must review the agency action to determine if it conforms to the statutory mandate.[498] The court ensures that the agency has taken a hard look at the relevant factors in arriving at its decision.[499]

In 1971, the Supreme Court endorsed the hard look approach in *Citizens to Preserve Overton Park v. Volpe*.[500] In 1983, in the term preceding *Chevron*, the Court reinvoked the hard look approach in *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*[501] In 1981, the National Highway Traffic Safety Administration (NHTSA) rescinded a regulation which required vehicles produced after September 1982 to be equipped with passive re-

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489. 50 Fed. Reg. at 32,236 (1985); *see also* 40 C.F.R. § 1502 (1991).

490. *Chevron*, 467 U.S. at 843-45.

491. Greater Boston Television Corp. v. FCC, 444 F.2d 841, 850-51 (D.C. Cir. 1970), *cert. denied*, 403 U.S. 23 (1971).

492. Oakes, *supra* note 9, at 501; *see also* Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 414-16 (1971).

493. *See* Oakes, *supra* note 9, at 501-02.

494. 5 U.S. (1 Cranch) 137 (1803).

495. *Marbury*, 5 U.S. (1 Cranch) at 177-79; *see also* Eric M. Brown, Note, *Coring the Seedless Grape: A Reinterpretation of* Chevron v. NRDC, 87 COLUM. L. REV. 986, 987-89 (1987).

496. 5 U.S.C. § 706 (1988).

497. Bureau of Alcohol, Tobacco, and Firearms v. Fed. Labor Relations Auth., 464 U.S. 89, 98 n.8 (1983).

498. *See supra* notes 9, 86-96 and accompanying text.

499. *See supra* notes 9, 86-96 and accompanying text.

500. 401 U.S. 402 (1971).

501. 463 U.S. 29 (1983).

straints.[502] The Supreme Court held that the recision of the regulation could only be set aside if it was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."[503] The Court pointed out that this was a narrow scope of review which did not allow the Court to substitute its judgement for that of the agency.[504] The Court asserted that the "agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between facts found and choices made.' "[505] When reviewing the agency's explanation, the Court would " 'consider whether the decision was based on consideration of the relevant factors and whether that has been a clear error of judgment.' "[506]

The CEQ's recision of the worst case analysis regulation would also have been sustained under the hard look standard of review in *Motor Vehicles Manufacturers Association.*[507] After an extensive and rigorous review process, the CEQ determined that the worst case analysis was deficient.[508] The CEQ then formulated the new regulation regarding incomplete and unavailable information in light of the prior judicial decisions. The new regulation, which incorporates many of the features of the former worst case regulation, is essentially old wine in new bottles.

B. The Amended Regulation: Old Wine in New Bottles

The amended regulation regarding incomplete or unavailable information is similar to the former worst case regulation in many respects. First, the amended regulation is consistent with the purposes of the NEPA to protect the environment by requiring federal agencies to disclose the potential environmental impacts of their decisions. The amended regulation, like the former regulation, requires federal agencies to address incomplete and unavailable information, thus precluding federal agencies from hiding behind a veil of ignorance.[509] The major difference between the amended and former regulation is in terminology, not methodology. The new amended regulation clarifies federal agency responsibilities in terms defined by prior judicial decisions.

Second, the amended regulation does not require federal agencies to "weigh the need for the action against the risk and severity of possi-

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502. *Id.* at 38.
503. *Id.* at 40-41.
504. *Id.* at 43.
505. *Id.* (quoting Burlington Truck Lines, Inc. v. United States, 371 U.S. 156, 168 (1962)).
506. *Id.* (quoting *Volpe*, 401 U.S. at 416).
507. *Id.*; *but see* Fogelman, *supra* note 138, at 80-94
508. 51 Fed. Reg. 15,618, 15,621 (1986); 50 Fed. Reg. 32,234, 32,236 (1985).
509. Sierra Club v. Sigler, 695 F.2d 957, 973 (5th Cir. 1983).

ble adverse impacts were the action to proceed in the face of uncertainty."[510] This requirement was unnecessary, because, as the CEQ noted, this balancing should occur "after completion of the entire NEPA process, and is reflected in the Record of Decision."[511]

Third, the triggering mechanism for the amended regulation, like the former regulation, is "the existence of incomplete or unavailable information."[512] The amended regulation states that incomplete or unavailable information must pertain to a reasonably foreseeable significant adverse environmental impact.[513] This position was advocated by the federal agencies and rejected by the federal courts in the litigation surrounding the former worst case regulation.[514] The amended regulation appears to be a victory for the federal agencies after their defeats in the judicial arenas. Nevertheless, the amended regulation goes on to define reasonably foreseeable as "impacts which have catastrophic consequences, even if their probability of occurrence is low."[515] Consequently, the amended regulation is consistent with the decisions of the Fifth and Ninth Circuits that reasonable foreseeability is not the threshold for requiring an analysis of incomplete or unavailable information.[516]

Fourth, the amended regulation requires that the missing information be "essential to a reasoned choice among alternatives."[517] The former regulation held that the information must be either "essential to a reasoned choice among alternatives" or "important to the decision."[518] The elimination of the "important to the decision" criterion was irrelevant because, as the Ninth Circuit pointed out in *SOCATS*, the difference between "essential" and "important" was not crucial as long as the information was significant.[519]

Fifth, the methodology of the amended and the former regulation are similar. The amended regulation requires a federal agency missing essential information to develop a "summary of existing credible scien-

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510. 51 Fed. Reg. 15,618, 15,621 (1986).

511. *Id.*

512. *Id.* at 15,623.

513. *See supra* note 11.

514. *See, e.g.*, Save Our Ecosystems v. Clark, 747 F.2d 1240 (9th Cir. 1984); Village of False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984); Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475 (9th Cir. 1983); Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983).

515. *See supra* note 11; *see also* 51 Fed. Reg. 15,618, 15,622 (1986).

516. *See* cases cited *supra* note 514; *see also* Melissa P. Corrado, Note, *The NEPA and the Revised Worst Case Regulations*, 60 ST. JOHN'S L. REV. 500, 520 (1986).

517. *See supra* note 11.

518. *See supra* note 2.

519. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479 (9th Cir. 1983), *cert. denied*, 469 U.S. 1028 (1984).

tific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts"[520] and to evaluate such impacts "based upon theoretical approaches or research methods generally accepted in the scientific community."[521] The federal agency must also discuss reasonable opposing views.[522] The federal agency is required to engage in reasonable forecasting and speculation based upon credible scientific evidence.

The worst case analysis regulation mandated a similar analysis. The worst case analysis began with an identification of a hypothetical worst case occurrence, then analyzed the occurrence through reasonable forecasting and speculation from existing credible scientific evidence. Whenever the courts required federal agencies to perform a worst case analysis, the decision was premised on the finding that a worst case analysis could be performed.[523] The agencies could not be required to do the impossible.[524] The courts would not subject such an analysis to rigorous judicial scrutiny because it proceeds "beyond existing knowledge and methods of acquiring knowledge."[525] In addition, the courts required the agencies' worst case analyses to include a discussion of a "spectrum of events" of lesser impacts, but greater probability.[526]

Finally, the amended regulation facilitates judicial review by articulating the agencies' responsibilities under the regulation. The federal agencies must present a summary of credible scientific evidence which is evaluated by accepted scientific methodology. The courts can review this analysis to determine that the agency has considered all of the relevant factors and has made a reasonable decision based on such considerations.[527] Nevertheless, it was the courts' interpretation of the former worst case regulation which provided the foundation for the amended regulation. The CEQ failed to appreciate this when it stated that the former decisions of the Ninth Circuit are "inapplicable to this revision."[528]

One crucial difference exists between the amended regulation and the judicial interpretation of the former worst case regulation which

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520. *See* 40 C.F.R. § 1502.22(b)(3) (1991); *see also* 51 Fed. Reg. 15,618, 15,622 (1986).

521. 40 C.F.R. § 1502.22(b)(3) (1991).

522. *Id.*; *see also* Comm. for Nuclear Responsibility v. Seaborg, 463 F.2d 783, 787 (D.C. Cir. 1971); 51 Fed. Reg. 15,618, 15,623 (1986).

523. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1246 (9th Cir. 1984); Sierra Club v. Sigler, 695 F.2d 957, 974 (5th Cir. 1983).

524. See supra note 6 (explanation of the rule of reason).

525. *Sigler*, 695 F.2d at 974; *accord Save Our Ecosystems*, 747 F.2d at 1246.

526. *Save Our Ecosystems*, 747 F.2d at 1245.

527. Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971).

528. 51 Fed. Reg. 15,618, 15,625 (1986).

must be noted. The amended regulation precludes the analysis of incomplete or unavailable information in the Environmental Assessment (EA).[529] This allows federal agencies to circumvent the regulation and avoid the full disclosure of the environmental consequences of their actions. It also gives undue importance to the label of the document. If a federal agency labels a document an EA when the document serves both to make the threshold determination regarding the need for an EIS and to supplement the existing environmental analysis, the agency does not have to comply with the regulation. Further, if a federal agency is engaged in a long term program which has been discussed in the Programmatic EIS (PEIS), the agency can simply supplement the PEIS with an EA to preclude the regulation. The Ninth Circuit, recognized this problem in *SOCATS* and *Save Our Ecosystems*, and therefore required the federal agency to perform the worst case analysis in the EA.[530]

VII. CONCLUSION

The rise and fall of worst case analysis demonstrates the partnership between the courts and federal administrative agencies in implementing congressional mandates. The courts are called upon to review administrative action. The court must define the congressional mandate, then determine whether the agency's action complies with the congressional mandate. Judicial decisions articulate statutory and regulatory requirements and legitimate subsequent agency action. This dynamic ongoing process refines and improves public policy.

The National Environmental Policy Act (NEPA) protects the environment by requiring federal agencies to investigate and disclose the potential environmental impacts of their proposed activities. The NEPA also established the Council of Environmental Quality (CEQ) to help the President develop environmental policy. In 1978, the CEQ, acting under an Executive Order issued by President Carter, developed uniform and binding regulations for all federal agencies to follow in their implementation of the NEPA requirements. One of these new regulations dealt with incomplete or unavailable information. This regulation required federal agencies to disclose scientific uncertainty or gaps in the information that were important or essential to the federal agency's decision. If the information could not be obtained because the costs were exorbitant or the means were not known, the agency was required to conduct a worst case analysis.

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529. *Id.*

530. Save Our Ecosystems v. Clark, 747 F.2d 1240, 1246 (9th Cir. 1984); Southern Oregon Citizens Against Toxic Sprays, Inc v. Clark, 720 F.2d 1475, 1481 (9th Cir. 1983).

The federal agencies' reluctance to comply with the worst case regulation resulted in judicial challenges. The courts had to first determine if the regulation comported with the NEPA. The courts then had to decide if the agency action complied with the regulation. The courts were required to review agency action to ensure that the agency took a hard look at the relevant factors and made a reasoned decision based upon such considerations. The courts, however, had to be deferential to federal agency action on the frontiers of science. The judicial decisions interpreting the worst case analysis articulated the requirements of the regulation for federal agencies.

In 1983, the Fifth Circuit in *Sierra Club v. Sigler*, held that the Army Corps of Engineers had to perform a worst case analysis of a total loss of a supertanker in a wildlife estuary off the Texas coast. The court mistakenly found that the worst case analysis regulation was a codification of prior NEPA case law. The court, following the Supreme Court's decision in *Andrus v. Sierra Club*, held that the worst case analysis regulation was entitled to substantial deference. The court explained that scientific uncertainty regarding important or essential information was the triggering mechanism for the regulation. The scientific uncertainty did not have to pertain to a reasonably foreseeable event. The probability of a worst case occurrence was just one factor which had to be considered by the agency. The court determined that a worst case analysis would not be too speculative because all of the parties had agreed that a complete loss of a supertanker could occur. Furthermore, there would not be rigorous judicial scrutiny of the agency's worst case analysis because much of the information was beyond existing knowledge.

In 1983, the Ninth Circuit in *Southern Oregon Citizens Against Toxic Sprays v. Clark*, followed the Fifth Circuit's rationale, in holding that the BLM was required to conduct a worst case analysis regarding the possibility that its herbicide spraying caused cancer even at low dosage levels. The Ninth Circuit erroneously held that a worst case analysis was a codification of prior NEPA case law. The court determined that scientific uncertainty, not reasonable foreseeability, triggered the worst case analysis. The federal agency could not refuse to conduct a worst case analysis simply because it felt the worst case was unlikely. The court determined that FIFRA registration did not satisfy the NEPA requirements. Furthermore, the worst case analysis should be included in the Environmental Assessment.

In 1984, the Ninth Circuit, in *Save Our Ecosystems v. Clark*, reviewed the adequacy of the worst case analysis performed by the BLM in response to the *SOCATS* decision. The Ninth Circuit determined that the worst case analysis was inadequate because the BLM had re-

fused to base its worst case analysis on the premise that the herbicides would cause cancer. The BLM considered such an analysis to be "pure guesswork." The court again admonished the BLM that it could not refuse to conduct the worst case analysis because it felt that the worst case occurrence was unlikely. The agency was required to analyze the worst case, then examine a "spectrum of events." Further, the BLM's reluctance to proceed with such an analysis was unfounded because the courts are deferential to the federal agencies' decisions on the frontiers of scientific knowledge.

In 1984, the Ninth Circuit, in *Village of False Pass v. Clark*, held that the Department of the Interior was not required to conduct a worst case analysis of a large oil spill at the lease sale stage of the OCS development process. The court determined that since OCS development was a multistage project, a worst case analysis could be performed later in the process, if necessary. The court failed to realize the importance of the lease sale. At the lease sale stage many crucial decisions are made which will affect subsequent development and production. Furthermore, once the leases are sold, they are unlikely to be revoked because of the serious attendant repercussions. Consequently, the incomplete or unavailable information, which was important or essential to the decision, should have been discussed at the lease sale stage.

The worst case regulation received much criticism. In 1986, the CEQ rescinded the worst case analysis regulation and replaced it with an amended regulation which requires a federal agency to disclose incomplete or unavailable information which is essential to the decision regarding a reasonably foreseeable impact. If this information cannot be obtained because the costs are exorbitant or the means are unknown, the agency is required to compile a summary of credible scientific evidence regarding the missing information and analyze the summary by accepted scientific methods. However, "reasonably foreseeable" is defined to include events of low probability and catastrophic impact.

In 1987, the Ninth Circuit Court's decision in *Northwest Coalition for Alternatives to Pesticides v. Lyng* demonstrated the specious nature of the BLM's contentions in *SOCATS* and *Save Our Ecosystems* as well as the benign nature of judicial review of a federal agency's compliance with the worst case regulation. The BLM performed a worst case analysis which examined the carcinogenic potential of the herbicides which it planned to utilize to control noxious weeds. The BLM's worst case analysis demonstrated that, despite the BLM's assertions in *SOCATS* and *Save Our Ecosystems* that such an analysis would be "pure guesswork," a meaningful worst case analysis was possible. The Ninth Circuit upheld the BLM's worst case analysis

even though it did not discuss the potential adverse impacts of the inert ingredients of the herbicides. Since there was scientific uncertainty regarding the effects of inert ingredients which was "essential to a reasoned choice among alternatives," the BLM should have been required to address this issue in its worst case analysis.

The amended regulation was reviewed by the Supreme Court in 1989 in *Robertson v. Methow Valley Citizens Council*. The Court, upholding the amended regulation, concluded that the former worst case analysis regulation was not a codification of prior case law, but an innovation developed by the CEQ. The Court determined that the amended regulation was entitled to substantial deference. The Court's decision was consistent with the deferential position which was announced in *Chevron U.S.A., Inc. v. NRDC*. The *Chevron* decision, however, did not reflect the relationship between courts and administrative agencies in the modern administrative state. The Court's prior decision in *Motor Vehicles Manufacturers Association v. State Farm Mutual Automobile Insurance Co.* reflected a better understanding of the judicial-agency relationship. Nevertheless, even under the more rigorous *Motor Vehicles* standard of review, the amended regulation would have been upheld. The amended regulation is essentially old wine in new bottles. The amended regulation is a further refinement of the former regulation, which more clearly articulates the requirements for federal agencies in light of prior judicial decisions. The amended regulation, which has been forged on judicial fires, will hopefully provide "a better approach to the problem of analyzing environmental impacts in the face of incomplete or unavailable information" and result in "less litigation."[531]

531. 51 Fed. Reg. 15,618, 15,625 (1986).