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RULEMAKINGS AND
ADJUDICATIONS STAFF

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In the Matter of

DUKE COGEMA STONE & WEBSTER) Docket No. 070-03098-ML

**(Savannah River Mixed Oxide Fuel)
Fabrication Facility)**

**Blue Ridge Environmental Defense League (BREDL) response to
NRC Memorandum and Order CLI-02-04**

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I. Summary of Recommendations

BREDL makes the following general recommendations:

1. The Commission should urge Congress to repeal provisions of the Atomic Energy Act that mandate governmental promotion of atomic energy and thus undermine, and are incompatible with, the National Environmental Policy Act. (NEPA)
2. Pursue agency reforms in which the primary goal is a measured transition from a technocracy that subverts science and is inherently hostile to the democratic way, to an agency in which public service is paramount, and "licensees." are regulated rather than assisted or coddled.
3. In order to involve the public at the earliest possible time in all proceedings, agency NEPA regulations should be amended to state that:
 - The NRC will adhere to the spirit and the letter of NEPA
 - Public scoping can begin prior to the submittal of an application in complex cases such as new nuclear reactor licensing, plutonium fuel facilities, waste repositories, etc. A general rule of thumb should be that any project requiring a Standard Review Plan requires early scoping.
 - The NRC will proactively coordinate rule makings and the development of Standard Review Plans with the requirements of NEPA

4. Responsibilities of the NRC specific to the MFFF proceedings include:

- Analyzing the risk of unauthorized design, fabrication, and use of a nuclear explosive device derived from surplus weapons plutonium in the U.S. and in Russia.
- Comparing the risks associated with malevolent acts between the various alternatives.

5. Responsibilities of the NRC specific to the MFFF proceedings include: I.

Background and Chronology of Proceeding.

II. Background

In Federal Register Notice 66 FR 19994-19996 of April 18, 2001, the NRC announced that “any person who wishes to participate as a party in an NRC hearing pertaining to the CAR must file a written request for hearing” by May 18, 2001. Such request was made by parties and accepted by NRC.

In its Request for Hearing, BREDL raised the terrorist potential within the transportation issue as cause for standing:

- i. The MOX fuel option substantially increases DOE radioactive material shipments in the area between SRS and irradiation facilities, and thus poses an unnecessary risk of harmful exposure to doses of ionizing radiation during incident free transportation operations as well as unnecessary risks of being involved in, or in close proximity to, a major accident resulting in a nuclear criticality event and/or substantial release of plutonium aerosols to our environment as well as an attempted armed attack on the [shipments].
- ii. making already crowded highways and roadways more dangerous by adding

unnecessary convoys of truck traffic.

iii. creating great public uncertainty and anxiety over the prospect of transportation of MOX Fuel assemblies within yet-uncertified, first-of-its-kind shipping containers that are within unmarked, government-owned Safe Secure Transports (SSTs) or Safe Guarded Transports (SGTs)." BREDL, 5/18/01 at Page 12.

The NRC staff and DCS argued that proliferation issues and transportation issues were outside the scope of this proceeding. In response, in its Introduction to Contentions, BREDL wrote:

The basis for proposed action of licensing a Plutonium/MOX fuel fabrication facility (MFFF) has less to do with science and more to do with evolving national policy, much of it based on actions of the previous Presidential administration and currently under scrutiny by the present administration.

In either case, the entire basis for this proposed action was and continues to be nuclear nonproliferation, and therefore the basis rests on subjective issues of national security and international security that are apparently unquantifiable. Therefore the issue of nonproliferation must be heard at this hearing for the following reasons in addition to those already offered in previous submittals:

a. The Applicant frequently cites nonproliferation policy in the ER as the basis for the need for the facility. Therefore, it is within the scope of the licensing application documents in question, in this case the ER.

i. On Page ES-1 of the ER, the Applicant wrote, "the facility is an integral part of the overall U.S. Government's strategy for the disposition of surplus plutonium in accordance with [U.S. Foreign Policy statements]."

ii. On Page ES-6 of the ER, the Applicant wrote, "Although the proposed action does have environmental impacts, the impacts are small and consequently acceptable. The environmental impacts are outweighed by the benefit of enhancing nuclear weapons reductions."

In its Contention Group 10 submitted on August 11, 2001 BREDL raised terrorism as one of numerous risks found in the plutonium/MOX fuel option that

are absent in the immobilization option (risks related to nuclear security are emphasised):

- substantial risks of plutonium contamination from accidental explosions,
- leaks of plutonium and americium contaminated liquids
- higher risks of nuclear criticality due to liquid acid processing
- higher risks from fires due to use of polycarbonate glove box windows that are not flame resistant;
- large scale americium production from plutonium purification
- *increased proliferation risks due to higher attractiveness of purified weapons-grade plutonium from liquid acid process*
- *risks of Russian Minatom pursuing an export economy involving plutonium fuel¹, possibly to nations on the U.S. Export Control List;*
- Increased risk of failing to meet commitments with Russia to dispose of even 34 MT of weapons plutonium, since the mission reactors can only handle 25.5.
- Increased risks of plutonium contamination and/or accidental criticality during the unnecessary transportation of Plutonium/MOX fuel assemblies to mission reactors;
- Increased and unnecessary risk to the Charlotte, NC and Rock Hill, SC areas from irradiating more dangerous and technically risky plutonium/MOX fuel in Catawba and McGuire NPP;
- *Increased risk of terrorist attack on SST's because MOX shipments are planned in conjunction with refueling, a fact that reveals a much smaller window for shipments to take place and therefore heightens security risks.*

DCS and NRC staff continually responded to proliferation and security issues by labelling them as "outside the scope" of this proceeding. (See Page 202 of Official Transcript).

A prehearing was held on September 21, 2001, 10 days after the

□ ¹ Parties intend to introduce a videotape of a presentation by a Minatom official in Krasnoyarsk, Siberia in June 2000 in which he clearly stated the long-term goal of the Krasnoyarsk plutonium program is to export MOX fuel.

September 11, 2001 terrorist attack. The NRC and DCS staff continued to argue that the issues of sabotage and terrorism were beyond the scope of this proceeding. BREDL urges the Commission to review the transcript for that hearing for the portions involving GANE Contention 12.

The Licensing Board conferred standing upon BREDL and other parties on December 6, 2001, based upon transportation issues that the staff and DCS had argued were "outside the scope

of the proceeding." ² The Board also admitted GANE Contention 12, *Failure to Analyze Malevolent Acts of Terrorism*, writing that:

"it can no longer be argued that terrorist attacks of heretofore unimagined scope and sophistication against previously unimaginable targets are not reasonably foreseeable. Indeed, the very fact that these terrorists attacks occurred demonstrates that massive and destructive terrorists acts can and do occur and closes the door, at least for the immediate future, on qualitative arguments that such terrorist attacks are always remote and speculative and not reasonably foreseeable."

² In footnote 19, Page 17 of the NRC STAFF'S RESPONSE TO SUPPLEMENTAL FILINGS

ON

THE ISSUE OF STANDING, August 11, 2001, the staff wrote: "He states in ¶ 2 (d) of his July 30 Affidavit that because his Charlotte residence is located within two and seven miles of alleged MOX fuel transportation routes (Interstate 77 and South Carolina state highway 274, respectively), he will be impacted by the shipment of MOX fuel to Duke Power's nuclear plants, and vaguely adds that "my work, civic activities, and the fact that I own property in Augusta" requires him "to frequently drive" on various roads (Interstates 77 and 20, U.S. Route 321, State Highway 121, and other unspecified routes) "likely to be used" to ship MOX fuel. Such transportation issues are outside the scope of this proceeding, and thus do not confer individual or representational standing here."

DCS appealed the ruling first to the Board and then to the Commission.

On February 6, 2002, the Commission issued Memorandum and Orders in four ongoing cases³, of which BREDL is involved in two, and stated in each one that:

“The parties to this proceeding shall file briefs that address all issues that the parties determine are relevant to the matters discussed above, and in addition shall address in particular the following question:

What is an agency's responsibility under NEPA to consider intentional malevolent acts such as those directed at the United States on September 11, 2001? The parties should cite all relevant cases, legislative history and regulatory analysis.”

III. NRC Responsibilities, including NEPA

Concerns with the Commission Approach

³ See *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-01-37, 54 NRC __ (Dec. 13, 2001) (denying admission of terrorism contention and referring issue to the Commission), *referral accepted*, CLI-02-__, 55 NRC __ (Feb. 6, 2002); *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Unit No. 3; Facility Operating License NPF-49), LBP-02-05, 55 NRC __ (Jan. 24, 2002) (denying admission of terrorism contention and referring issue to the Commission), *referral accepted*, CLI-02-__, 55 NRC __ (Feb. 6, 2002); and *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), LBP-02-04, 55 NRC __ (Jan. 24, 2002) (certifying terrorism issue to the Commission), *certification accepted*, CLI-02-__, 55 NRC __ (Feb. 6, 2002).

The Commission is to be commended for finally addressing this issue while other agencies like the Department of Energy regress back into Cold War habits of exclusion and secrecy. The concerns BREDL have are two-fold in this case:

- While recognizing that legal proceedings tend to narrowly confine issues, we believe the Commission is obligated to engage the American public outside of these proceedings with a similar question: *What is an agency's responsibilities to consider and prevent, and if necessary react to, intentional malevolent acts such as those directed at the United States on September 11, 2001?*
- The limited involvement of parties that just happen to be involved with legal proceedings raises the issue of whether the Commission is embarking on a potential rule-making and therefore is obligated to solicit wider and deeper public input.

Responsibility Under The U.S. Constitution

The Commission's first responsibility is to uphold the *Constitution of the United States*. In this regard we note two issues pertinent to this hearing. First, "We the People" did not establish a Technocracy⁴ as a form of government.

⁴ Random House. technocracy: n. 1. a theory and movement advocating control of industrial resources, reform of financial institutions, and reorganization

Second, the little-cited Ninth Amendment states that:

“the enumeration in the constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.”

Among the rights not explicitly defined in the Constitution are the right to clean air, water, and soil, which today is collectively referred to as “the environment;” and the right to open government unencumbered by unnecessary secrecy. These two rights suffered immense abuse during the first half of the Cold War, during the rise of technocratic agencies. These abuses were redressed in two powerful pieces of legislation: the Freedom of Information Act (FOIA) and the National Environmental Policy Act (NEPA).

NEPA as policy and law

The purpose of the National Environmental Policy Act of 1969 (as amended), or “NEPA”, is:

of the reform of financial institutions, and reorganization of the social system according to the findings of technologists and engineers. 2. a system of government in which this theory is applied. 3. any application of this theory.

The purposes of this Act 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.⁵

Title I of NEPA is the *Congressional Declaration of National Environmental Policy*, in which the Congress articulated that it is Federal Policy for all federal agencies:

a. "to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consist with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may -

-
fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
preserve important historic, cultural, and natural aspects of our

⁵ **The National Environmental Policy Act of 1969**, as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, §§ 4(b), Sept. 13, 1982)

national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

c. The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."

The remainder of Title I defined the requirements of the policy while Title II created the Council on Environmental Quality. Specifically, Congress mandated that: "the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance" with NEPA, and required agencies to conduct systematic, interdisciplinary analyses during the planning and in decisionmaking "which may have an impact on man's environment". NEPA called for "detailed statements" on potentially harmful or destructive proposals regarding:

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

The statute is simple, elegant, and short; a three-page law representing one of the brightest moments in Congressional and American history. Senator Henry "Scoop" Jackson's description of NEPA, at its passage, as "the most important and far-reaching environmental and conservation measure ever enacted by Congress . . ." ⁶ continues to hold true.

NRC's View of NEPA Must Change

The NRC has always viewed NEPA with grudging indifference. The Commission's rules for following National Environmental Policy and adhering to the CEQ's rules for implementation are found in Subpart A of 10CFR51. In 10CFR51.10, Statment of Purpose, the NRC places qualifiers on its commitments to honor national policy:

..".Commission's announced policy to take account of the regulations of the Council on Environmental Quality published November 29, 1978 (43 FR 55978 - 56007) voluntarily, subject to certain conditions.";

"(b) The Commission recognizes a continuing obligation to conduct its domestic licensing and related regulatory functions in a manner which is both receptive to environmental concerns and consistent with the Commission's responsibility as an independent regulatory agency for protecting the radiological health and safety of the public."

These statements are unnecessary at best and set a bad tone for implementing

⁶ 115 Cong. Rec. 40,416 (1969). Cited in: *THE NATIONAL ENVIRONMENTAL POLICY ACT: A Study of Its Effectiveness After Twenty-five Years* Council on Environmental Quality, Executive Office of the President January 1997

NEPA. For example, compare the Commission's language to that utilized by the Department of Energy, the other half of the former Atomic Energy Commission also known for secrecy, arrogance, and exclusionary practices. Department of Energy's states in its NEPA rules:

Sec. 1021.101 Policy. It is DOE's policy to follow the letter and spirit of NEPA; comply fully with the CEQ Regulations; and apply the NEPA review process early in the planning stages for DOE proposals.

Another assessment of the NRC's approach to NEPA was expressed by Dr. Charles Kelber of the ASLBP in Charlotte, North Carolina on this past December:

"JUDGE KELBER: That's why Mr. Moniak,
very often NEPA has been referred to as excellent
policy and terrible law."

MR. MONIAK: In its implementation,
but in bureaucracies it can be a terrible law."

The reply to Judge Kelber's statement was meant to be:

*NEPA appears to many as a terrible law because unwieldy bureacracies
constantly try to circumvent it during implementation.*

At the September 21, 2001 prehearing in Augusta, BREDL stated, and paraphrases here, that if the NRC implemented NEPA in the same systematic and deliberate approach it took to preparing Standard Review Plans, we would all be better off for it.

The promise of NEPA is as strong today as it was in 1969, what is needed

is for the technocracies like the NRC to hold it paramount, and in doing so it will abide by its commitments to the Atomic Energy Act.

Invite the CEQ in a Reform Effort

The difficulties of implementing NEPA were summarized in a 1997 report by the CEQ in reviewing the first 25 years of the policy.⁷ The CEQ described problems in a generic approach, but cited specific agency examples in making its case for better implementation. It is notable that the NRC was not cited as providing any meaningful examples of implementation.

The report is cited verbatim here because it aptly proves that government can function with good intentions, is not always something to be feared, and can deliver the goods in plain language. First, the CEQ heralded the benefits of NEPA:

“Clearly, NEPA is much more than environmental impact statements and environmental assessments. It is an eloquent and inspiring declaration which, well before the term “sustainable development” became widely used, called for the integration of our varied aspirations as a society. NEPA is a tool with tremendous potential to help build community and to strengthen our democracy.”

“In a piece of legislation barely three pages long, NEPA gave both a voice to the new national consensus to protect and improve the

⁷ THE NATIONAL ENVIRONMENTAL POLICY ACT
A Study of Its Effectiveness After Twenty-five Years Council on Environmental
Quality Executive Office of the President January 1997 (Attached as an electronic
file)

environment, and substance to the determination articulated by many to work together to achieve that goal. To that end, NEPA charges CEQ and all federal agencies with achieving "productive harmony" among our environmental, economic, and social objectives. NEPA directs federal agencies to open their doors, bring the public in, and offer genuine opportunities for participation and collaboration in decision-making."

"The Department of Energy Leadership Changes an Agency Mission

"Thank God for NEPA because there were so many pressures to make a selection for a technology that

might have been forced upon us and that would have been wrong for the country

Then-Secretary of Energy James Watkins made this statement to the House Armed Services Committee in 1992, regarding his decision to defer selection of a tritium production technology." (Page 13)

However, the CEQ also stated that "despite these successes, however, NEPA's implementation at times has fallen short of its goals." The problems it found in implementation perfectly describe the NRC's current problems with NEPA:

Unfortunately, NEPA's role as a strategic planning tool has not been fully realized. Agencies differ in the extent to which they integrate NEPA's framework into their internal planning processes. How early an agency integrates NEPA into its internal planning will dramatically affect the length of time for approval, the cost, and the ultimate success of a proposal. If an agency focuses on analyzing individual projects, rather than analyzing the program that calls for those projects, the NEPA process will likely take longer, cost more, and yield fewer alternatives for a final decision. Regardless of whether an agency in a particular case should analyze a proposal as part of a larger scheme, when agencies forgo the alternatives analysis — making decisions first and then beginning the NEPA process — they rob NEPA of its strategic planning value." (Page 11)

Some citizens' groups and concerned individuals view the NEPA process as largely a one-way communications track that does not use their input effectively. The Study concluded that creating a true partnership with the community involves more than holding a hearing and making documents available. Public involvement takes effort — and time.

"Citizens are frustrated when they are treated as adversaries rather than welcome participants in the NEPA process. When they are invited to a formal scoping meeting to discuss a well-developed project about which they have heard little, they may feel they have been invited too late in the process. In addition, public "hearings" at times are seen as parties "talking past each other," with very little listening. Some citizens complain that their time and effort spent providing good ideas is not reflected in changes to proposals or satisfying explanations for why suggestions were not incorporated. Citizens report that they often feel overwhelmed by the resources available to proponents and agencies. As a consequence, litigation can be seen as the only means to affect environmental decisions significantly." (Page 18).

On August 11, 2001, BREDL submitted a group of contentions (Contention Group 2) that outlined how poorly the NRC was implementing NEPA in this proceeding, outlining how the NRC failed to incorporate the public early in its NEPA process, failed to consult with other agencies such as the DNFSB, and allowed DCS to negotiate with the NRC staff to define scope.

NEPA Vs. The Atomic Energy Act. Incompatibilities

The NRC's primary responsibility stemming from this proceeding is to advocate Congress to repeal the promotional aspects of the Atomic Energy Act of 1954. The stipulation that the government promote and encourage atomic energy is based on obsolete Cold War ideology and is inappropriate for modern times. Furthermore, promotion of atomic energy undermines and subverts national environmental policy.

The NRC's NEPA problems are rooted in the antagonism of the Atomic Energy Act towards the environmental policy. *Calvert Cliffs' Coordinated Committee v. Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971), *cert. denied*, 404 U.S. 942 (1972) was "one of the first cases interpreting NEPA, and set the tone for all subsequent NEPA cases."⁸ According to Swartz, the court's many points included:

"The AEC's interpretation of its NEPA responsibilities was "crabbed" and made "a mockery of the Act." Section 102's requirement that the "detailed statement" 'accompany' a proposal through agency review means more than physical proximity and the physical act of passing papers to reviewing officials. It is not enough that environmental data and evaluation merely "accompany" an application through the review process but receive no consideration from the hearing board as contemplated by the AEC regulations.

The AEC improperly abdicated its NEPA authority by relying on certifications by federal, state, and regional agencies that the applicant complied with specific environmental quality standards. NEPA mandates a case-by-case balancing judgment on the part of federal agencies; in each case, the particular economic and technical benefits of an action must be weighed against the environmental costs. Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgement and attend to only one aspect of the problem—the magnitude of certain environmental costs. Their certification does not mean that they found no environmental damage, only that it was not high enough to violate applicable standards. The only agency in a position to balance environmental costs with economic and technical benefits is the agency with the overall responsibility for the project."

⁸ **From: MAJOR CASES INTERPRETING THE NATIONAL ENVIRONMENTAL POLICY ACT. Prepared by Lucinda Low Swartz, Esq. Battelle Memorial Institute. In, the DOE Handbook to NEPA.**

Conflict over NEPA in this and other proceedings continue to have a root cause in the Atomic Energy Act of 1954 because the act mandated the federal government to promote the cause of Atomic Energy:

CHAPTER 1– DECLARATION, FINDINGS, AND PURPOSE

Sec. 1. Declaration 42 USC 2011.

Declaration:

Atomic energy is capable of application for peaceful as well as military purposes. It is therefore declared to be the policy of the United States that–

- a. the development, use, and control of atomic energy shall be directed so as to make the maximum contribution to the general welfare, subject at all times to the paramount objective of making the maximum contribution to the common defense and security; and
- b. the development, use, and control of atomic energy shall be directed so as to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.

Sec. 3. Purpose. 42 USC 2013. Purpose.

It is the purpose of this Act to effectuate the policies set forth above by providing for–d. a program to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public;

This institutionalized promotion of one energy source to the exclusion of others amounts to a subversion of science, democracy, and environmental policy as defined by NEPA, and must be repealed. Although the Commission prefaces its own remarks by stating that the NRC is not a promotional agency, the fact remains that it is widely perceived to be a promoter of atomic energy, it is rooted in an atomic-energy promotion culture, and its defense of atomic energy is

probably more effective than any promotion activities could ever be.

A perfect example is the Commission's letter to Vice President Cheney in February 2001.

In the last paragraph of his February 28, 2001 letter to Vice President Dick Cheney, Chairman Meserve wrote that

"The Commission is aware that actions relating to nuclear matters can raise significant public concerns. We believe that any such concerns must be openly acknowledged and directly confronted."

The word "confront" was absent throughout the rest of the four-page letter to Vice President Cheney detailing the NRC's recommendations for national energy policy legislation. When it came time to describe its approach to industry, Chairman Meserve resorted to much softer language:

"we believe there are legislative opportunities to reduce unnecessary burdens to the consideration of nuclear power";
"facilitate consideration of nuclear power by the private sector";
"The Commission, working with the industry and other stakeholders, has put in place a more efficient licensing procedure, which could be utilized in the event that society should decide to construct new nuclear power plants."

In other words, while the NRC claims its primary mission is protection of public

health and safety and our environment, it clearly advocated making it easier to construct and operate the only major

power source that also functions as potential radiation weapon of mass destruction.⁹

The February 2001 letter also provides precedent for BREDL's recommendation for the Commission to advocate the legislative repeal of the promotional stipulations in the Atomic Energy Act. In that letter the Commission advocated eliminating a number of requirements such

as antitrust review, the the ban on foreign ownership of nuclear power plants, the requirement under the National Environmental Policy Act (NEPA) requiring a

⁹ http://www.ucsusa.org/energy/nuc_risk.html

"An accident at a US nuclear power plant could kill more people than were killed by the atomic bomb dropped on Nagasaki. The financial repercussions could also be catastrophic. The 1986 accident at the Chernobyl nuclear plant cost the former Soviet Union more than three times the economical benefits accrued from the operation of every other Soviet nuclear power plant operated between 1954 and 1990."

"Forces operating in a theater with nuclear power reactors may be at risk if enemy forces target these reactors and containment facilities. Downwind service members could internalize significant amounts of iodine-131 and other fission products." In: Page 48. *First Edition of the Medical Management of Radiological Casualties*.

Armed Forces Radiobiology Research Institute. <http://www.afrrri.usush.mil>

review of the evaluation of the need for electric power, claiming it is "distant" from its mission, and, most importantly, called for renewal of the public liability subsidy called the Price-Anderson Act in a clear admission that nuclear power is still too dangerous for the insurance industry:

"Extend the Price-Anderson Act. The Price-Anderson Act, which expires on August 1, 2002, establishes a framework that provides assurance that adequate funds are available in the event of a nuclear accident and establishes the framework for consideration of nuclear claims. Without the framework provided by the Act, private-sector participation in nuclear power would be discouraged by risks of large liabilities." (emphasis added).

Even if the Commission continues to deny its role as a promoter of atomic energy, it must acknowledge the impact of the Atomic Energy Act's mandate to the DOE on this proceeding. The promotional aspects of atomic energy have compromised NEPA in this proceeding because the basis for the proposal derived from the federal promoter of atomic energy, the Department of Energy.

DOE's obligations and tendencies to promote nuclear power undermined the integrity of the surplus plutonium management NEPA documents in favor of the reactor-based alternative for "disposition." As pointed out in BREDL Contention Group 8:

DOE irreparably biased the SPDEIS towards MOX through the premature solicitation of a MOX contractor. The 1998 DOE Request for Proposals (RFP) for *MOX Fuel Fabrication and Irradiation services* (Solicitation Number DE-RP0298CH10888 and subsequent amendments) in which DOE requested consortiums of fuel fabricators, engineering firms, and nuclear reactor operators to submit proposals for *"design, licensing, construction, operation, and eventually decontamination and decommissioning of a MOX [fuel fabrication] facility as well as irradiation of the MOX fuel in existing domestic, commercial reactors should the decision be made by DOE in the SPD EIS ROD to go forward with the MOX program."*(BREDL Contentions, 8/11/01).

As with Contention Group 2, the merits were not decided upon because DOE's NEPA process is considered out side the scope of this proceeding.

The institutionalized bias towards nuclear energy continues to undermine the very basis of NEPA, the development and analysis of reasonable alternatives. Government agencies like the DOE that view their mandate as nuclear power promotion will continue to make decisions that are contrary to sound analysis under NEPA. The AEC culture that lingers in both the DOE and NRC continues to be hostile towards, or perhaps at best ambivalent, towards the idea of analyzing alternatives or conducting honest and fair appraisals of the impacts of radiation, alternative energy sources, etc.

IV. Malevolent Acts involving Plutonium Fuel

DCS has misrepresented the issue to the Board and the Commission

The Commission should recognize that DCS has distorted and misrepresented GANE's original contention and this entire issue to both the Board and the Commission. For example, in its first appeal of the Board's 12/6/01 decision, DCS wrote:

"The Board's decision has significant generic implications for future NEPA analyses performed by the NRC for other facilities. Moreover, there is no guidance for performing an evaluation of the environmental impacts of a deliberate crash of a large airplane causing "massive and destructive" damage to a nuclear facility."DCS, Page 26, 12/17/01¹⁰.

DCS also placed the aircraft issue at the forefront in its list of questions for the Commission to consider issuing guidance:

"(1) Whether, and under what circumstances, a terrorist-caused beyond design basis accident (such as the deliberate crash of a large airplane) must be considered under NEPA;" (DCS to Board, 12/17/01, Page 27). "

In fact, GANE's contention predated by September 11 by a month and did not

¹⁰ While objecting to DCS's fixation on airplane crashes, it is important to recognize the inaccuracies in this statement. The evaluation of the environmental impacts of an *accidental* crash of a large airplane causing a fire and massive release of plutonium to the atmosphere was conducted at the Pantex nuclear weapons plant in the 1990's during the several NEPA processes, most notably the *Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons-Usable Fissile Materials*. While the guidance for assessing aircraft crashes is contained in DOE guidance (cite), this guidance could be applied during an NRC proceeding.

mention aircraft. It was DCS that, completely unprovoked, raised the issue of a deliberate crash by a large airplane, during the September 21, 2001 prehearing. DCS's obsession with placing this issue within the narrow confines of terrorism-by-aircraft is a disservice by a government contractor in that it obscures and distorts the whole picture and ignores the essential questions that were posed to it by the Board on September 21. For example, DCS has yet to address the issue as posed by Judge Kelber on September 21 regarding the intentional disabling of ventilation safety systems.

DCS arguments are self-contradicting

"DCS' response stated, among other things, that: (1) acts of terrorism are intentionally performed and therefore inherently unpredictable; (2) a review under NEPA need not include all theoretically possible environmental effects; (3) a NEPA review may be limited to those effects which are shown to have some likelihood of occurring at a particular site; and (4) the NEPA rule of reason does not require the performance of a "worst case analysis." (Page 25 of 12/17/2001 DCS Submittal to Licensing Board).

At the same time, In arguing against quantitative assessments, DCS took the bold and contradictory step of making its own--albeit completely unsubstantiated--qualitative assessment that bordered on oddsmaking:

“Furthermore, while the Board has apparently concluded that since September 11, the likelihood or foreseeability of a terrorist attack has increased, an alternative conclusion is also reasonable. That is, that given the dramatic increase in resources and attention being paid to this issue since September 11 by federal, state and local authorities, the likelihood or foreseeability of such an event has actually decreased.” Footnote, Page

This reasoning should be rejected because it is untrue and merely represents wishful thinking rather than a recognition of harsh and sober realities. Dramatic increases in resources and attention accompanied the bombing of the World Trade Center in 1993 and the Oklahoma City Bombing. The likelihood of an act of mass destruction has been predicted for years. As Rand Corporation expert Brian Jenkins succinctly stated the evening of September 11: “I am shocked, but not surprised.”

DCS’ arguments also misrepresent and distort the issue because:

1. Acts of sabotage are predictable enough to require stringent safeguards, and arguably are as likely to occur at a plutonium fuel facility as a design basis earthquake. The likelihood of malevolent acts involving the use of plutonium for nuclear terrorism is highly unlikely and inherently unpredictable, yet the National Academy of Science’s subjective rhetoric of surplus plutonium posing a “Clear and Present Danger” remains the official motto for the plutonium management program and the justification for this proceeding.
2. There are no requests to consider all theoretically possible environmental effects.

3. The determination of "design basis" earthquakes, tornadoes, and other natural phenomenon is as much an art as it is an exact science; yet these determinations are made with confidence and optimism;

4. The general public inherently understands uncertainty and in fact laypersons raise uncertainties during NEPA far more often than industry.

DCS's Request for Guidance.

In asking the Board to certify the issue to the Commission, DCS wrote in December 17, 2001 that:

"Therefore, in the interests of administrative consistency, economy and efficiency, the Board should certify its substantive determination on GANE Contention 12 for consideration by the Commission. In so certifying, the Board should explicitly request direction on the following questions:

- (1) Whether, and under what circumstances, a terrorist-caused beyond design basis accident (such as the deliberate crash of a large airplane) must be considered under NEPA;
- (2) Whether a quantitative assessment of the likelihood or consequences of such an event is practicable or required under NEPA to determine if such an event is reasonably foreseeable;
- (3) If the impacts of a terrorist-caused beyond design basis event must be considered under NEPA, what assumptions or guidance should be used in performing such an evaluation; and
- (4) What range of alternatives should be considered for mitigating the environmental impacts?"

The Board's Ruling was Appropriate for this Proceeding.

"it can no longer be argued that terrorist attacks of heretofore unimagined scope and sophistication against previously unimaginable targets are not reasonably foreseeable. Indeed, the very fact that these terrorists attacks occurred demonstrates that massive and destructive terrorists acts can and do occur and closes the door, at least for the immediate future, on qualitative arguments that such terrorist attacks are always remote and speculative and not reasonably foreseeable."

The ruling is more appropriate in this proceeding for one simple reason: The plutonium/MOX fuel fabrication facility, and the entire plutonium disposition program, is officially justified as a means to prevent nuclear terrorism. The probability of a terrorist group obtaining weapons plutonium and then making a bomb is no longer considered "remote and speculative," yet it has not been quantified.

The fact that malevolent acts are increasingly foreseeable is reflected in the updated security measures and the drastic measures taken by the NRC and DOE to withhold unclassified, non-safeguards information from the public. The new public information standard, although it lacks any regulatory basis and contravenes the Freedom of Information Act and the public right to know, is that information should be withheld that falls under the vague criteria of "might be useful to a terrorist."

Of course, following this vague criteria to its logical extension would put Rand McNally out of business, since it publishes detailed maps showing the locations of major dams in addition to very detailed maps showing likely hazardous waste routes. Still, it would be hypocritical of the NRC to rule that the threat from terrorists is so great today to warrant suppressing unclassified safety and health information and denying the public its right- to- know under the 9th Amendment, but too "remote and speculative" to warrant a careful analysis under NEPA.

Furthermore, one only has to look at the Middle East, and Israel in particular, to realize that terrorism prevention is not solely a function of devoting "resources and attention to this issue."

The "Practicality" of Quantifying the Risk of Sabotage

The commercial nuclear industry is loathe to attempt to quantify the probability of sabotage using probabilistic risk assessments. The NRC, as an independent regulator, is not obligated to honor or codify the industry's resistance.

In a recent pleading to the Security Exchanges Commission, Duke energy recently argued:

To the extent that the Proposal requests an analysis of risk likelihood (utilizing probabilistic risk assessment methods) with respect to attack or acts of sabotage, however, such an analysis is not capable of being produced since information concerning prior terrorist attacks and acts of sabotage against nuclear power plants or involving the transportation or storage of nuclear fuel, which would

be necessary for probabilistic risk assessments, does not exist

In this proceeding DCS argued:

While the Board has stated that DCS and the NRC Staff "are still free to challenge quantitatively the likelihood of such a terrorist-initiated event," DCS does not believe that such a quantitative analysis is possible. In *Limerick Ecology Action, Inc. v. NRC*, the court upheld the NRC's determinations that the risk of a sabotage event was beyond the state of the art of probabilistic risk assessment methodology, was not amenable to quantification, and need not be considered in an EIS.⁴³ It was the NRC's position then, and to the best of DCS' knowledge, it remains the Commission's position now, that no such quantification is practical, or necessary under NEPA."

Two interrelated arguments can be made against this line of reasoning:

1. Progress has been made developing probabilistic risk assessments for malevolent acts involving nuclear weapons, which are safeguarded at a far higher level than nuclear power plants or fuel fabrication plants. For example, James W. Purvis wrote in 1999, *Sabotage at Nuclear Power Plants*. Sandia National Laboratory SAND-99-1850C. Public Domain document, that:

Several organizations, such as the IAEA and the US NRC [2,8-11], have guidelines, recommendations, and formal threat and risk-assessment processes for the protection of nuclear assets. Some other examples include the former Defense Special Weapons Agency, which used a risk-assessment model to evaluate force-protection security requirements for terrorist incidents at DOD military bases. The US DOE uses a graded approach to protect its assets based on risk and vulnerability assessments. The Federal Aviation Administration and Federal Bureau of Investigation conduct joint threat and vulnerability assessments on high-risk US airports. Several private companies under contract to government agencies use formal risk-assessment models and methods to identify security requirements.

If the sabotage considerations are expanded for NPPs, it might be useful to examine in detail all of the existing risk assessment methodologies and then use the most applicable ideas. A uniform, consistent national or international risk assessment process could be beneficial in areas other than just physical protection.

Analysis data, along with consequence values and response force capabilities, should be used to make risk predictions. However, risk calculations might also take into account the proposed new consequence tables for the various targets and types of sabotage. As previously mentioned, there are many agencies and organizations which use risk analysis. A consistent, standardized risk assessment methodology using consequence value tables appears to be the most desirable.

If analysis and risk evaluation show that a facility has an unacceptable risk level against a certain type of sabotage, the physical protection for the target should be upgraded. For example, if a target is at risk from a vehicle bomb attack, the installation of vehicle barriers at least 120 meters away [4] should mitigate the problem.

Quantifying the probability of sabotage is also a logical extension of Human Reliability Analyses, particularly in the realm of insider-assisted terrorism and/or disgruntled employees. In the 1990's, the NRC devoted considerable resources to research on HRA's and their use is fully integrated into NPP PRA's today.

2. The case law supporting this argument was based on data and methods that are now decades old, and was made at a time when PRA's were still in pioneering stage. The body of knowledge and data to support PRA's that assess risk of sabotage is, unfortunately, greatly expanded, and the state of the art in probabilistic risk assessment methodology has certainly advanced since *Limerick Ecology Action Inc v. NRC*.

The fact is that under NEPA, the NRC is obligated to answer, in comparing alternatives, which alternative poses the greatest risks and effects.

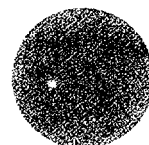
where are the probabilities of terrorism/insider acts higher? Transportation, criticality with solutions, explosive solutions, use in reactors, etc. As already stated in the Introduction, the differences between MOX and immobilization are numerous. In comparison to immobilization, MOX poses numerous hazards, that, when viewed from the perspective of malevolent acts, greatly increases the vulnerabilities due to terrorism, insiders, et al:

- substantial risks of plutonium contamination from accidental explosions,
- leaks of plutonium and americium contaminated liquids
- higher risks of nuclear criticality due to liquid acid processing
- higher risks from fires due to use of polycarbonate glove box windows that are not flame resistant;
- large scale americium production from plutonium purification
- *increased proliferation risks due to higher attractiveness of purified weapons-grade plutonium from liquid acid process*
- *risks of Russian Minatom pursuing an export economy involving plutonium fuel, possibly to nations on the U.S. Export Control List;*
- Increased risk of failing to meet commitments with Russia to dispose of even 34 MT of weapons plutonium, since the mission reactors can only handle 25.5.
- Increased risks of plutonium contamination and/or accidental criticality during the unnecessary transportation of Plutonium/MOX fuel assemblies to mission reactors;
- Increased and unnecessary risk to the Charlotte, NC and Rock Hill, SC areas from irradiating more dangerous and technically risky plutonium/MOX fuel in Catawba and McGuire NPP;
- *Increased risk of terrorist attack on SST's because MOX shipments are planned in conjunction with refueling, a fact that reveals a much smaller window for shipments to take place and therefore heightens security risks.*

For Blue Ridge Environmental Defense League

Janet Marsh Zeller
Janet Marsh Zeller, Executive Director

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THE NATIONAL ENVIRONMENTAL POLICY ACT

A Study of Its Effectiveness After Twenty-five Years

Council on Environmental Quality

Executive Office of the President

January 1997

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January 1997

On the occasion of the 25th anniversary of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) set out to examine NEPA's effectiveness, and to identify the factors critical to ensuring success in the NEPA process. As the federal office responsible for overseeing NEPA implementation, CEQ also wanted to see how agency implementation of NEPA could be streamlined to make it more efficient; promote the integration of social, environmental and economic factors; and ensure openness in government — as called for under the Act.

Overall, what we found is that NEPA is a success — it has made agencies take a hard look at the potential environmental consequences of their actions, and it has brought the public into the agency decision-making process like no other statute. In a piece of legislation barely three pages long, NEPA gave both a voice to the new national consensus to protect and improve the environment, and substance to the determination articulated by many to work together to achieve that goal. To that end, NEPA charges CEQ and all federal agencies with achieving "productive harmony" among our environmental, economic, and social objectives. NEPA directs federal agencies to open their doors, bring the public in, and offer genuine opportunities for participation and collaboration in decision-making.

Despite these successes, however, NEPA's implementation at times has fallen short of its goals. For example, this NEPA Effectiveness Study finds that agencies may sometimes confuse the purpose of NEPA. Some act as if the detailed statement called for in the statute is an end in itself, rather than a tool to enhance and improve decision-making. As a consequence, the exercise can be one of producing a document to no specific end. But NEPA is supposed to be about good decision-making — not endless documentation.

The Study finds that agencies sometimes engage in consultation only after a decision has — for all practical purposes — been made. In such instances, other agencies and the public at large believe that their concerns have not been heard. As a result, they may find themselves opposing even worthy proposed actions. This may in turn lead to agencies seeking "litigation-proof" documents, increasing costs and time but not necessarily quality. In such cases, potential cost savings are also lost because a full range of alternatives has not adequately been examined. Other matters of concern to participants in the Study were the length of NEPA processes, the extensive detail of NEPA analyses, and the sometimes confusing overlay of other laws and regulations.

Clearly, NEPA is much more than environmental impact statements and environmental assessments. It is an eloquent and inspiring declaration which, well before the term "sustainable development" became widely used, called for the integration of our varied aspirations as a society. NEPA is a tool with tremendous potential to help build community and to strengthen our democracy.

Today, a renewed commitment is necessary to seize the opportunities NEPA presents and use NEPA as fully as its authors intended. CEQ plans to launch a major effort to improve the implementation of NEPA. The NEPA Effectiveness Study will help point the way.

Sincerely,

Kathleen A. McGinty
Chair

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EXECUTIVE SUMMARY

While United States conservation efforts began more than one hundred years ago, the National Environmental Policy Act (NEPA) was the first law to focus environmental concerns within a comprehensive national policy. NEPA's call for "productive harmony" between "man and nature" presaged today's interest in "sustainable development." On the occasion of the 25th anniversary of the act, the Council on Environmental Quality (CEQ) initiated a NEPA Effectiveness Study to examine NEPA's effectiveness and prospects for improvements to the NEPA process. CEQ included in the Study organizations and individuals who are knowledgeable and experienced in the application of NEPA, both those who support NEPA, and those who are critical. The findings of this Study can be summarized as follows:

The Study participants felt that NEPA's most enduring legacy is as a **framework for collaboration** between federal agencies and those who will bear the environmental, social, and economic impacts of agency decisions. However, Study participants also stated that frequently NEPA takes too long and costs too much, agencies make decisions before hearing from the public, documents are too long and technical for many people to use, and training for agency officials at times is inadequate.

The participants in the NEPA Effectiveness Study identified five elements of the NEPA process that are critical to its effective and efficient implementation.

- **Strategic planning** — the extent to which agencies integrate NEPA's goals into their internal planning processes at an early stage;
- **Public information and input** — the extent to which an agency provides information to and takes into account the views of the surrounding community and other interested members of the public during its planning and decision-making process;
- **Interagency coordination** — how well and how early agencies share information and integrate planning responsibilities with other agencies;
- **Interdisciplinary place-based approach to decision-making** that focuses the knowledge and values from a variety of sources on a specific place; and
- **Science-based and flexible management approaches** once projects are approved.

Strategic planning. Study participants found that the "NEPA process" is often triggered too late to be fully effective. At the same time, agency managers who have learned to use NEPA have discovered it helps them do their jobs. NEPA's requirements to consider alternatives and involve the public and other agencies with expertise can make it easier to discourage poor proposals, reduce the amount of documentation down the road, and support innovation. NEPA helps managers make better decisions, produce better results, and build trust in surrounding communities. Fortunately, many agencies are making progress by taking a more comprehensive and strategic approach to decision-making.

Public information and input. Study participants applauded NEPA for opening the federal process to public input and were convinced that this open process has improved the effectiveness of project design and implementation. Nonetheless, the success of a NEPA process heavily depends on whether an agency has systematically reached out to those who will be most affected by a proposal, gathered information and ideas from them, and responded to the input by modifying or adding alternatives; this desired level of public involvement is not always achieved. Citizens sometimes feel frustrated that they are being treated as adversaries rather than welcome participants in the NEPA process. Increased public involvement in the common, but less comprehensive, environmental analysis process leading to EA can help overcome these difficulties and help forge true partnerships with other agencies and the surrounding communities.

Interagency coordination. Study participants concluded that interagency coordination under NEPA has avoided or resolved many conflicts, reduced duplication of effort, and improved the environmental permitting process. Uncoordinated processes, on the contrary, put agencies — and the public — in adversarial positions and delay federal actions that are important to local and regional economies, as well as actions that are intended to improve the environment. Interagency coordination is hampered because agencies often have different timetables, requirements, and modes of public participation. Federal, state and local agencies are increasingly using tools such as interagency agreements at the start of a planning process to coordinate timetables and resolve disputes.

Interdisciplinary place-based approach to decision-making. Experience with the NEPA process has shown that better decisions — those that meet the needs of the community and minimize adverse impacts on the environment — require the integrated perspective that can only be obtained by incorporating expertise and information from many fields and sources, including state and local agencies. The keys to implementing an interdisciplinary place-based approach, and addressing the full range of cumulative effects, are obtaining adequate environmental data and finding the tools to use it. Although the current lack of quality environmental baseline data can hamper the requisite comparison of alternatives, federal agencies are employing or developing new environmental indicators (comparable to economic indicators) to provide more consistent information on the status of resources over time and geography. At the same time, new methods and tools such as geographic information systems (GIS) are beginning to help agencies consider cumulative effects and focus analyses.

Science-based and flexible management approaches. Most Study participants believed that agencies should monitor actual impacts once a project is begun both to ensure that mitigation measures are effective and to verify predictions of impact. Agencies can improve environmental protection, get projects underway earlier, and dramatically reduce costs by monitoring actual impacts and modifying project management, rather than aiming to answer every potential question with certainty before a project is approved. Several agencies are already using the experience gained from monitoring to improve analyses of similar projects in the future. Most Study participants felt that where resources are not likely to be damaged permanently and there is an opportunity to repair past environmental damage, an adaptive environmental management approach may be the best means for an agency to meet its specific and NEPA missions.

INTRODUCTION

The National Environmental Policy Act (NEPA) is the foundation of modern American environmental protection. While United States conservation efforts began more than one hundred years ago, and continued throughout the twentieth century, NEPA focused environmental concerns within a comprehensive national policy.

One quarter of a century ago, NEPA set forth clear goals for agencies to foster "productive harmony" between "man and nature," so as to "fulfill the social, economic, and other requirements of present and future generations of Americans." Under NEPA, for the first time, agencies were required to prepare environmental analyses, with input from the state and local governments, Indian tribes, the public, and other federal agencies, when considering a proposal for a major federal action.

The authors of NEPA were well ahead of their time. In light of the increased currency of the notion of "sustainable development," their call (quoted below) for "productive harmony" between "man and nature" seems prescient indeed.

*The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, . . . declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in **productive harmony**, and fulfill the social, economic, and other requirements of present and future generations of Americans (42 U.S.C. sec. 431(a)). (emphasis added)*

NEPA provides that federal agency decision-makers, in carrying out their duties, have the responsibility to "use all practicable means" to

- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) assure for all Americans safe, healthful, productive and aesthetically and culturally pleasing surroundings;
- (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.¹

I believe, Mr. President, when historians look back to the years 1969 and 1970, they will say those were watershed years in terms of the U.S. environmental movement. Congress, concerned that the environment needed greater protection, took the lead and enacted major environmental statutes. . . . Of all these and other significant actions that took place in those 2 years, few can rival in importance the creation of the National Environmental Policy Act. Signed into law by President Nixon on January 1, 1970, it is a short and simple law with dramatic purpose. To declare a national policy which will encourage productive and enjoyable harmony between man and his environment. . . . NEPA has been a tremendous success and has changed forever the way our Government makes decisions affecting the environment.

Senator John Chafee statement from "TWENTY YEARS OF ENVIRONMENTAL PROGRESS," Senate proceedings, March 25, 1992, Congressional Record p. S4141.

The Foresight of NEPA

With these provisions, NEPA set forth an inclusive, comprehensive vision for the environment. NEPA 25 years ago anticipated today's calls for enhanced local involvement and responsibility, sustainable development, and government accountability.

NEPA anticipated the idea that society could have "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," the definition given worldwide attention by the Brundtland Commission's report, entitled *Our Common Future*, in 1987 and the 1992 U.N. Conference on Environment and Development in Rio de Janeiro.²

NEPA also anticipated the 1996 findings of the President's Council on Sustainable Development (PCSD).³ Much like NEPA, the PCSD envisioned

[a] sustainable United States [with] a growing economy that provides equitable opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations. Our nation will protect its environment, its natural resource base, and the functions and viability of natural systems on which all life depends.⁴

¹ 42 U.S.C. sec. 4331(b).

² *The World Commission on Environment and Development, Our Common Future* (1987).

³ The PCSD included 25 representatives of business, environmental organizations, federal agencies, state government, tribal governments, and academia, with over 400 public and private volunteers serving on seven task forces.

⁴ PCSD, *Sustainable America: A New Consensus* (1996), pp. 12 and 13.

Similarly, both the PCSD's "sustainability elements" and NEPA call for

- the integration of human, environmental, and economic needs;
- public participation in decision-making;
- intergenerational equity;
- the recognition of relationships among population growth and density, technology, industry, and other influences on the environment;
- the incorporation of these goals in all federal agency policies;
- consistency of policies within agencies; and
- cooperation among agencies, state and local governments, private entities, and the international community.⁵

Worldwide, the United States has been recognized as a leader in environmental management in large part because of NEPA. NEPA has been emulated by more than 25 states and over 80 countries around the world, and serves as a model for environmental impact assessments for such global institutions as the World Bank. In 1996, the Organization for Economic Cooperation and Development (OECD) commended the United States in its Environmental Performance Review for "exemplary practices, such as environmental impact assessment, [and] public participation . . ."⁶ In 25 years, NEPA has done much to merit Senator Henry "Scoop" Jackson's description of NEPA, at its passage, as "the most important and far-reaching environmental and conservation measure ever enacted by Congress . . ."⁷

The Future of NEPA and the Effectiveness Study

Recognizing the importance of NEPA as the nation's central environmental statute, the Council on Environmental Quality (CEQ) has taken the occasion of the 25th anniversary of the Act to examine NEPA's effectiveness and prospects for improvements in the NEPA process. As the federal office responsible for overseeing NEPA implementation, CEQ wanted to see whether agency implementation of NEPA could be streamlined to make it more efficient; promote the integration of environmental, social, and economic factors; and ensure openness in government — as called for under the Act. With the completion of this Study, CEQ will be planning how to build upon NEPA's accomplishments and ensure

⁵ Holly Kaufman, *The National Environmental Policy Act — Its Role in Sustainable Development* (1995).

⁶ Organization for Economic Cooperation and Development (OECD), *Environmental Performance Reviews: United States* (1996).

⁷ 115 Cong. Rec. 40,416 (1969).

that NEPA achieves its stated purposes well into the 21st century. This report presents the findings of this Study.

NEPA Glossary

Section 102(2)(C) of the National Environmental Policy Act of 1969 requires federal agencies to prepare a "detailed statement" for proposed major actions which significantly affect the quality of the human environment. The statement must include the environmental impacts of the proposed action, alternatives to the proposed action, and any adverse environmental impacts which cannot be avoided should the proposal be implemented. In 1978 the CEQ issued binding regulations which implement the procedural provisions of NEPA. The following are key terms:

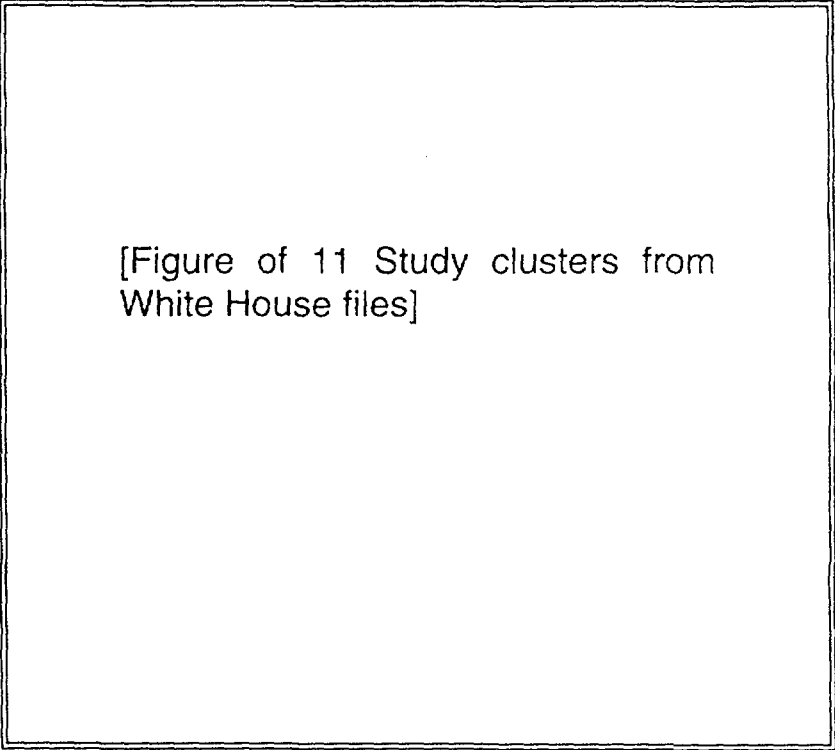
- **Environmental Assessment (EA).** A concise public document that analyzes the environmental impacts of a proposed federal action and provides sufficient evidence to determine the level of significance of the impacts.
- **Finding of No Significant Impact (FONSI).** A public document that briefly presents the reasons why an action will not have a significant impact on the quality of the human environment and therefore will not require preparation of an environmental impact statement.
- **Environmental Impact Statement (EIS).** The "detailed statement" required by Section 102(2)(C) of NEPA which an agency prepares when its proposed action significantly affects the quality of the human environment.
- **Record of Decision (ROD).** A public document signed by the agency decision-maker at the time of a decision. The ROD states the decision, alternatives considered, the environmentally preferable alternative or alternatives, factors considered in the agency's decision, mitigation measures that will be implemented, and a description of any applicable enforcement and monitoring programs.
- **Categorical Exclusion (CATEX).** Categories of actions which normally do not individually or cumulatively have a significant effect on the human environment and for which, therefore, an EA or an EIS is not required.
- **Cumulative Impact.** The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency, federal or nonfederal, or what person undertakes the action.

HOW THE EFFECTIVENESS STUDY WAS CONDUCTED

The NEPA Effectiveness Study was designed to engage the people who know NEPA best — who know what works and what does not. CEQ included in the Study organizations and individuals who are knowledgeable and experienced in the application of NEPA, both those who believe NEPA works well, and those who are critical. Participants were anxious to contribute to the Study and provided constructive comments aimed at improving the current implementation of NEPA, identifying the strengths to be maintained and the areas which are ripe for innovation, re-invention, and improvement. The views of the Study participants form the basis for this report and its conclusions.

In addition to soliciting input from some of the original framers of NEPA, Members of Congress, state and local agencies, those who drafted the CEQ regulations, and federal agencies with experience implementing the Act, CEQ made a major effort to include the opinions of the public. For the purposes of this Study, the public was defined as any entity outside the federal government, including (1) academicians, (2) non-governmental organizations (NGOs), (3) citizens, and (4) businesses. In all, 11 "clusters" representing these different constituencies were involved (see Figure on next page). To obtain public advice, a number of steps were taken: a citizen survey, meetings with NGOs in Washington, DC (as well as in a few states), a survey of businesses, and a survey of academicians. The U.S. Environmental Protection Agency (EPA) conducted a survey of states, focusing primarily on New York, Washington, and California. CEQ, U.S. EPA, and the North Carolina Department of Environment, Health, and Natural Resources held a regional conference to investigate the effectiveness of state-federal interaction with respect to Environmental Impact Statements (EISs). In addition, CEQ sponsored an analysis focusing on the efficiency and effectiveness of NEPA's consideration of the cultural environment.

Although the Study sought to distinguish NEPA's strengths, it focused more effort on identifying limitations to the effective and efficient implementation of the Act. Four criteria for identifying priority areas to be addressed were (1) consensus among the majority of stakeholders that the problem was significant, (2) potential for realistic solutions to the problem, (3) adequate authority at CEQ to address the problem, and (4) potential for cost-effective improvement.



[Figure of 11 Study clusters from White House files]

A FRAMEWORK FOR COLLABORATION

NEPA was the crucial first step toward a comprehensive national policy integrating environmental, economic, and social concerns. With the passage of NEPA, agencies began to take a hard look at the environmental consequences of their actions **before** they made a final decision. They began to consult with the public on what they were proposing to do, accept public views on their proposals, and respond to those views. NEPA also called for agencies to consult with state, local, and tribal governments concerning their plans, and provided agencies with a mechanism to coordinate overlapping jurisdictional responsibilities.

The Study participants felt that NEPA's most enduring legacy is as a framework for collaboration between federal agencies and those who will bear the environmental, social, and economic impacts of their decisions. Federal agencies today are better informed about and more responsible for the consequences of their actions than they were before NEPA was passed. As a result, agencies today are more likely to consider the views of those who live and work in the surrounding community and others during the decision-making process.

Notwithstanding these benefits, the Study determined that frequently NEPA takes too long and costs too much, agencies make decisions before hearing from the public, documents are too long and technical for many people to use, and training for agency officials, particularly senior leadership, is inadequate. According to many federal agency NEPA liaisons, the EIS process is still frequently viewed as merely a compliance requirement rather than as a tool to effect better decision-making. Because of this, millions of dollars, years of time, and tons of paper have been spent on documents that have little effect on decision-making.

[P]rocesses that have evolved to implement NEPA have often led to delay, confusion and litigation . . . That outcome fails to honor the intention of NEPA's authors and misses the promise and opportunity NEPA truly presents.
Kathleen McGinty testimony to Senate Energy and Natural Resources Committee, Subcommittee on Oversight, October 19, 1995.

Proposals for Building on the Framework

The participants in the NEPA Effectiveness Study identified five elements of the NEPA process that are critical to its effective and efficient implementation. One element is **strategic planning** — the extent to which agencies integrate NEPA's goals into their internal planning processes at an early stage. The second element is **public information and input** — the extent to which an agency makes information available to and takes into account the views of the surrounding community and other interested members of the public during its planning and decision-making process. The third element is **interagency coordination** — how well agencies share information and integrate planning responsibilities with other agencies early in the process. The fourth element is applying an **interdisciplinary, place-based approach to decision-making** that focuses the knowledge and values from a variety of scientific and design fields on specific places. The fifth element is using **science-based and flexible management approaches** once projects are approved. The findings of the NEPA Effectiveness Study are presented in the following

chapters, highlighting when and how these elements of the NEPA process have been effectively implemented, as well as the consequences when they have not been completed successfully.

With these findings, CEQ plans to launch a major effort to streamline and improve the implementation of NEPA. CEQ's goal is to build on the strengths of the NEPA mandate and endeavor to fulfill NEPA's purpose — i.e., truly to integrate environmental considerations into all major decision-making and achieve a “productive harmony” among our various social, economic and environmental objectives as a society. In addition, CEQ will work to improve the NEPA process by cutting the time and costs associated with implementation and ensure that agencies hear from those who will be affected most by proposed actions before decisions are made. CEQ will be reaching out to those who make their living from the land, as well as other citizens who are affected by federal agency decisions of all kinds. CEQ plans to consult with states and local governments as well as tribal governments to improve communication, and reduce duplication and costs for environmental reviews. CEQ will also be looking at improving how federal agencies work together in order to streamline the process.

A One-Stop Environmental Process for Highways

NEPA as a Framework for Agency Decision-Making

A federal-aid highway project can easily involve 30 to 40 statutory, regulatory, and executive order requirements. Environmental and permit reviews for such projects require coordination with as many as 30 federal, state, and local highway, environmental, and planning agencies, as well as the public. Usually it is two to eight years before a federal-aid highway project can begin construction. Often this delay results from inadequate early and continued coordination with federal and state resource agencies.

In 1985, the Federal Highway Administration (FHWA) recognized that early and continued coordination with the resource agencies is essential to reaching federal-aid highway decisions and formed a workgroup to identify methods for improving interagency coordination. In 1988, the FHWA, U.S. EPA, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and National Marine Fisheries Service prepared the "Red Book" — *Applying the Section 404 Permit Process to Federal-Aid Highway Projects*. In 1992, the Department of Transportation, U.S. EPA, and Department of the Army signed a Memorandum of Understanding making the Red Book official policy.

Two examples illustrate the beneficial effect of coordinating environmental review of federal-aid highway projects. In 1973, before implementation of the Red Book, the Connecticut Department of Transportation (CDOT) began an exhaustive 12-year NEPA process to prepare an EIS for a new expressway. The state's preferred alternative was to relocate an existing highway by constructing a 12-mile expressway. In 1987, CDOT submitted its application for a Section 404 permit to the Corps, proposing to fill 77 acres of wetlands to accommodate the expressway. In 1989, the Corps of Engineers denied Connecticut's permit application to build a new expressway because (1) the project would significantly degrade the wetlands, (2) because the state had no plan for mitigating the impacts on the wetlands, and (3) because there was another practicable alternative to meeting the purpose and need — widening the existing highway — that had less impact on wetlands. On the basis of the permit denial, the state decided to start the NEPA review over and prepare a new EIS for the project.

In 1992, after the Red Book became official policy, the Pennsylvania Department of Transportation found that implementing management techniques outlined in the Red Book on three highway projects saved \$119 million (10-13% of total construction costs) and reduced the time needed to obtain NEPA and Section 404 approvals by nearly 70% of the 5.6 year average. Specifically, interagency management teams at several levels were coupled with an aggressive schedule for completion, enabling the agencies to focus their efforts on creating an environmentally sound project.

In 1994, the General Accounting Office prepared a report, "Agencies Are Attempting to Expedite Environmental Reviews, But Barriers Remain." [GAO/RCED-94-211, August 1994], concluding that the Red Book efforts had made the environmental review process more efficient, by making reviews concurrent rather than sequential, emphasizing early interagency coordination and including processes to resolve disputes. The FHWA is committed to expanding the principles of the Red Book to include other aspects of interagency coordination and further streamline the NEPA process.

The intent of the FHWA's NEPA process is to establish a streamlined "one-stop environmental process" that fully integrates public involvement with other project development and environmental procedures. Specifically, the document prepared to comply with NEPA is used to address the requirements for all other related environmental laws, such as the Clean Air Act, Clean Water Act, and the National Historic Preservation Act. This one-stop process is the FHWA's framework of policies and procedures to help meet its social, economic, and environmental responsibilities while accomplishing its transportation mission.

STRATEGIC PLANNING: An Unfulfilled Promise

Strategic planning — the extent to which agencies integrate NEPA's framework for collaboration into their internal planning processes at an early stage.

Congress envisioned that federal agencies would use NEPA as a planning tool to integrate environmental concerns directly into policies and programs. The "detailed statement" (commonly known as the EIS process) was an innovation in administrative reform. This flexible, open-ended approach to protecting the environment stands in contrast to the prescribed-solution approach of national standards and technology-based pollution controls. It established environmental quality as an essential component of federal policy-making and project planning.

NEPA also gives agencies a structured, analytical framework within which to make decisions integrating environmental, social, and economic factors. NEPA and CEQ's implementing regulations call for agencies to identify reasonable alternatives, identify and analyze the potential impacts of these alternatives, look at the potential cumulative impacts of a proposal in the context of local and regional activities, and develop proposals to monitor and mitigate potentially significant environmental impacts. NEPA's consultation and public input provisions provide agencies with additional information. As discussed in the next section, these provisions ensure that state, local, and tribal governments, and the public, will be consulted and have the opportunity to help shape a federal proposal.

Unfortunately, NEPA's role as a strategic planning tool has not been fully realized. Agencies differ greatly in the extent to which they integrate NEPA's framework into their internal planning processes. How early an agency integrates NEPA into its internal planning will dramatically affect the length of time for approval, the cost, and the ultimate success of a proposal. If an agency focuses on analyzing individual projects, rather than analyzing the program that calls for those projects, the NEPA process will likely take longer, cost more, and yield fewer alternatives for a final decision. Regardless of whether an agency in a particular case should analyze a proposal as part of a larger scheme, when agencies forgo the alternatives analysis — making decisions first and then beginning the NEPA process — they rob NEPA of its strategic planning value.

Study participants found that the "NEPA process" is often triggered too late to be fully effective. Generally, agency and private sector planning processes begin long before the NEPA process. By the time an environmental impact analysis is started, alternatives and strategic choices are foreclosed.

Congress envisioned that federal agencies would use NEPA as a planning tool to integrate environmental, social, and economic concerns directly into projects and programs. However, during the first 25 years of NEPA, application has focused on decisions related to site-specific construction, development, or resource extraction projects. NEPA is virtually ignored in formulating specific policies and often is skirted in developing programs, usually because agencies believe that NEPA cannot be applied within the time available or without a detailed proposal. Instead, agencies tend to examine project-level environmental effects in microscopic detail. The reluctance to apply NEPA analysis to programs and policies reflects the

fear that microscopic detail will be expected, even when such depth of analysis is not possible that early in the proposal development stage.

Agency Leadership Can Point the Way

It is critical for top policy leaders and managers to integrate NEPA early into their policymaking and programming if their agencies are to get the full benefit of NEPA. Agency managers who have learned to use NEPA have discovered it **helps** them do their jobs. It can make it easier to discourage poor proposals, reduce the amount of documentation down the road, and support innovation. NEPA helps managers make better decisions, produce better results, and build trust in surrounding communities. It makes good economic sense, and it is, quite simply, good government.

Three stages of agency response to NEPA have been described as (1) strong resistance, (2) minimal procedural compliance to avoid litigation, and (3) making NEPA a vital part of the decision-making process. *Whether an agency reaches this [third] stage of evolution seems to depend largely on the commitment of individuals in an agency. . . .* N.A. Robinson, Environmental Impact Assessment: Proceedings of a Conference on the Preparation and Review of Environmental Impact Statements, West Point, New York (statement of Dinah Bear, CEQ General Counsel, p. 238).

Over the last 25 years, new agency appointees were often not aware of the benefits of NEPA. Increasingly, with time, however, agency decision-makers have embraced NEPA to improve planning. This was the case for Secretaries of Energy Admiral James Watkins and Hazel O'Leary. They viewed NEPA as a tool for policy leaders and top managers in agency decision-making — not a routine activity for environmental technicians. They discovered that detailed analyses done by technical teams, consultants, and lawyers can support agency decision-makers, but cannot replace their involvement, commitment, and guidance (see following case example).

Many agencies are making progress in moving NEPA "up front" in the agency planning process by taking a more comprehensive approach to decision-making. For example, the Federal Highway Administration (FHWA), in cooperation with CEQ, is developing a "blueprint for the future" entitled, *NEPA During Transportation Decision-making*, that truly merges these two processes. By placing NEPA "up front," FHWA will ensure that the social, economic, technical, and environmental requirements of a project are evaluated together. By doing so, the quality of decision-making, as measured by community acceptance, social and cultural appropriateness, and environmental sustainability will be enhanced.

The Department of Energy Leadership Changes an Agency Mission

[T]hank God for NEPA because there were so many pressures to make a selection for a technology that might have been forced upon us and that would have been wrong for the country

Then-Secretary of Energy James Watkins made this statement to the House Armed Services Committee in 1992, regarding his decision to defer selection of a tritium production technology.

Moving from an emphasis on weapons production to a cleanup of production facilities, the Department of Energy (DOE) used NEPA to move from secrecy to public disclosure and involvement. Secretary Watkins, Admiral, U.S. Navy (Retired) said:

As Secretary of Energy I quickly learned that the NEPA process was not being used to provide complete and unbiased information that top-level managers needed to make the best decisions. Therefore, I established new policies to enhance and reinvigorate the DOE NEPA process.⁸

Secretary Watkins's efforts included notifying affected states and tribes of DOE's intent to prepare EAs, providing an opportunity to review analyses before approval, and preparing a Mitigation Action Plan to minimize or eliminate adverse environmental impacts in certain EISs and EAs. Senior officials that propose actions are personally responsible for the quality and sufficiency of EAs and EISs. NEPA milestones are incorporated into planning and budget documents at an early stage.

In a remarkable show of continuity and enhancement, Secretary of Energy Hazel O'Leary further opened the process and files of DOE to the public. In June 1994, her "Policy Statement on NEPA" concluded that in order for DOE to reap the full benefits of the NEPA process, it needed to streamline the process, minimize the cost and time required for NEPA document preparation and review, emphasize teamwork, and make the process more useful for decision-makers and the public.

Under Secretary O'Leary's leadership, DOE has been using programmatic and site-wide NEPA reviews extensively and effectively for (1) determining how to transform its nuclear weapons complex to appropriate post-Cold War functions and configurations and (2) dealing with environmental cleanup obligations. For example, DOE reinvented its NEPA process to deal with the problems of hydrogen generated in underground radioactive waste storage tanks, resulting in a modified proposal that saved about \$435 million. Innovations included (1) for the first time, approval authority for an EIS was delegated to a field office manager, (2) DOE joined with the State of Washington Department of Ecology to produce a single EIS which met the requirements of both agencies, and (3) scoping was combined with scoping for another major EIS on tank waste remediation saving additional time and money. DOE has also established a network of relationships with its stakeholders, including numerous site-specific advisory boards. For its accomplishments, DOE was awarded the Third Annual Federal Environmental Quality Award for the best agency NEPA program, given jointly by CEQ and the National Association of Environmental Professionals. The award highlighted DOE's effort to use NEPA in the transition of its mission, to reduce costs and saving time, and to include cooperative consultation with other government agencies, tribes, and the public.

An Ecosystem-based Approach Can Integrate NEPA into Strategic Planning

Other agencies are using NEPA more strategically as part of embracing the ecosystem approach to planning and decision-making (see the Interagency Ecosystem Management Task Force box below). Specifically, these agencies are merging their historical and new regional planning activities with NEPA analyses.

The Bureau of Land Management (BLM) started in 1979 to integrate EISs fully into the land use planning process, preparing Resource Management Plans/EISs which combined the requirements of the Federal Land Policy and Management Act with those of NEPA and other federal laws. BLM has since approved 100 combined RMP/EISs, at a savings of more than \$30 million. BLM also assigns the full responsibility for preparing a RMP/EIS to the area land manager — and trains the local staff to be the technical support for the manager. When the plan is complete, it is "owned" by the manager and the staff. With such a strategic RMP/EIS or major investment study in place, the agency can "tier" specific proposals, i.e., indicate that they conform with the strategic EIS or analyze them using a much shorter, streamlined process than preparing a new EIS. The combined RMP/EIS are the Bureau's primary vehicle for complying with NEPA.

Many other agencies are using the ecosystem approach to develop regional planning EISs. Strategic use of NEPA is proving to be a useful mechanism for attaining the sustainable development goals of communities. The Corps of Engineers recently used a programmatic EIS for the coastal Louisiana restoration plan to provide for early public comment on an ecosystem-based plan. In the multi-state southern Appalachian region, several federal agencies are coordinating NEPA analyses for the entire ecosystem. These analyses are founded on a local vision for the region developed through public participation under the Southern Appalachian Man and the Biosphere (SAMAB) program. SAMAB's vision reflects the strategic planning goals of NEPA, which SAMAB stated as "the achievement of a sustainable balance between the conservation of biological diversity, compatible economic uses, and cultural values."

An ecosystem, or place-based, approach to strategic planning through NEPA can provide a framework for evaluating the environmental status quo and the combined cumulative impacts of individual projects. Analyzing similar but individual projects on a watershed basis, for example, can be very efficient, reducing the number of analyses and documents, and allowing agencies to focus on cumulative impacts within a geographic area. Almost all the Study participants believed that applying NEPA strategically at the ecosystem level would enhance the attainment of environmental quality objectives on a broader, more cost-effective, and realistic scale than current practices.

Interagency Ecosystem Management Task Force

The ecosystem approach is a method of sustaining or restoring natural systems and their functions and values. It is goal driven, and it is based on a collaboratively developed vision of future desired conditions that integrates ecological, economic and social factors. It is applied within a geographic framework defined primarily by ecological boundaries.

The Ecosystem Approach: Healthy Ecosystems and Sustainable Economies, Interagency Ecosystem Management Task Force, June 1995.

Regional planning of federal activities under the NEPA process is recommended by the Interagency Ecosystem Management Task Force (IEMTF): Agencies should develop regional ecosystem plans to coordinate their review activities under NEPA. These ecosystem plans can provide a framework for evaluating the environmental status quo and the combined cumulative impacts of individual projects. They also give citizens an opportunity to help shape those plans. The overall goal of regional ecosystem plans should include identifying appropriate opportunities to maintain sustainable ecosystems in a cost-effective and coordinated manner. Such an approach is consistent with the 1993 recommendations from the CEQ aimed at saving time and financial resources in preparing NEPA analyses while at the same time increasing consideration of biodiversity." Applying the ecosystem approach to NEPA's scoping process, provides a forum for the public and other agencies to participate more systematically and effectively.

The IEMTF suggested 8 steps in *The Ecosystem Approach* which are complementary with NEPA:

- define the areas of concern or interest
- involve stakeholders
- develop a shared vision of the ecosystem's desired future conditions
- characterize the historical ecosystem and the present environmental, economic, and social conditions and trends
- establish ecosystem goals
- develop and implement an action plan for achieving the goals
- monitor conditions and evaluate results
- adapt management according to new information.

⁹ CEQ. *Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act* (1993).

The President's Pacific Northwest Forest Plan

The Pacific Northwest Forest Plan is based on five principles: (1) long-term sustainability; (2) inclusion of human and economic dimensions; (3) decisions that are scientifically sound, ecologically credible, and legally responsible; (4) a predictable and sustainable level of timber sales; and (5) making the federal government work together, with and for the people. By moving the NEPA process into the realm of strategic planning across agencies, the Forest Plan represents a new way of doing business. It includes (1) an ecosystem-based management plan for 25 million acres of federal forests in the coastal regions of Washington, Oregon, and northern California, fully integrated with a cumulative regional EIS; (2) an economic assistance plan; and (3) a blueprint for improved federal coordination to manage, monitor, and adapt. The Pacific Northwest Forest Ecosystem Management Assessment Team (FEMAT) brought together managers and planners from five federal agencies — the Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, Environmental Protection Agency, and National Marine Fisheries Service — to prepare an assessment of options for future management of federal forests. Note that prior to this plan individual agencies had already begun a number of plans and EISs on these same ecosystems. The Forest Plan works because of collaboration among these five federal agencies, the States of Washington, Oregon, and California, local governments, and tribes. This strategic use of NEPA has been upheld by the Court of Appeals for the Ninth Circuit, which had ruled that earlier NEPA analyses were inadequate.

PUBLIC INFORMATION AND INPUT: A Critical Innovation

Public information and input — the extent to which an agency takes into account the views of the surrounding community and other interested members of the public during its planning and decision-making process.

Since its enactment, NEPA has significantly increased public information and input into agency decision-making. NEPA opened up for public scrutiny the planning and decision-making processes of federal agencies, in many cases providing the only opportunity for the public to affect these processes.

Partly as a result of NEPA, public knowledge of and sophistication on environmental issues have significantly increased over the last 25 years. So too have public demands for effective and timely involvement in the agency decision-making processes. The success of a NEPA process heavily depends on whether an agency has systematically reached out to those who will be most affected by a proposal, gathered information and ideas from them, and responded to the input by modifying or adding alternatives, throughout the entire course of a planning process.

NEPA Fosters Public Involvement and Government Responsiveness

The Congress recognizes that . . . each person has a responsibility to contribute to the preservation and enhancement of the environment. 42 U.S.C. 4331.

Environmental problems are not just a government problem, they are a community problem. Prior to NEPA, however, the public had limited opportunities to engage in the debate about social, economic, and environmental costs and benefits. Nor did the public have much recourse to challenge the federal government on decisions affecting their communities. Study participants applauded NEPA for opening the federal process to public input and were convinced that this open process has improved project design and implementation.

NEPA provides agencies an extraordinary opportunity to respond to citizen needs and build trust in surrounding communities. Agencies that are responsive exceed legal requirements and involve communities early and often in the NEPA process, study the issues they have been asked to study, and incorporate citizens' comments and concerns. Many study participants believed that this interchange has improved the quality of projects and reduced impacts on the environment.

Houston-Galveston Navigation Channels Supplemental EIS

In 1996, the U.S. Army Corps of Engineers won the Federal Environmental Quality award for its project, *Houston-Galveston Navigation Channels — Supplemental Environmental Impact Statement*. The award was based on 11 criteria defining how well the project reflected the purpose, policies, and environmental values embodied in NEPA, including public participation.

The project was the result of successful collaboration between the partnership of the Port of Houston Authority and Galveston Wharves, and seven federal and state agencies, including the U.S. Army Corps of Engineers, U.S. EPA, U.S. Fish and Wildlife Service, National Marine Fisheries Service, National Resources Conservation Service, Texas Parks and Wildlife Department, and Texas General Land Office. Between 1990 and 1995, the Houston Ship Channel Beneficial Uses Group developed a list of sites where beneficial uses of the 350 million cubic yards of material dredged from the widening and deepening of the channel would result in improvement to aquatic resources habitat. Based on these results, an interagency Dredged Material Management Plan to create 4,250 of intertidal habitat over the next 50 years was developed that engendered broad support among the federal and state agencies, Congress, local citizens, and environmental groups. This plan became a centerpiece of the Supplemental EIS.

A pilot project was initiated in 1993 to pump approximately 1.6 million cubic yards of dredged material into a diked area on Atkinson Island. Marsh vegetation was planted in test plots to evaluate the best way to achieve maximum vegetative cover. Further experiments to evaluate the wetland functions on the site are planned for coming years. This 220-acre "living laboratory" serves as an example of how collaboration among federal and state agencies can benefit both commerce and natural resources.

Agencies Should Be More Creative in Their Outreach

Although providing for a new level of public information and input into the environmental decision-making process is one of NEPA's inarguable successes, the desired level of public involvement is not always achieved. Some citizens' groups and concerned individuals view the NEPA process as largely a one-way communications track that does not use their input effectively. The Study concluded that creating a true partnership with the community involves more than holding a hearing and making documents available. Public involvement takes effort — and time.

Citizens are frustrated when they are treated as adversaries rather than welcome participants in the NEPA process. When they are invited to a formal scoping meeting to discuss a well-developed project about which they have heard little, they may feel they have been invited too late in the process. In addition, public "hearings" at times are seen as parties "talking past each other," with very little listening. Some citizens complain that their time and effort spent providing good ideas is not reflected in changes to proposals or satisfying explanations for why suggestions were not incorporated. Citizens report that they often feel overwhelmed by the resources available to proponents and agencies. As a consequence, litigation can be seen as the only means to affect environmental decisions significantly.

At the same time that some citizens feel unable to participate effectively in the NEPA process, agencies have expressed concern about the difficulty of obtaining constructive input from the public (and other federal and state agencies) early in the planning and scoping process. Some agency personnel believe they are constrained by the requirements of the Federal Advisory Committee Act, which imposes procedural

requirements on federal agencies when they solicit and receive collective advice from citizens and non-governmental organizations. Even within these constraints, however, agencies such as the Federal Highway Administration are implementing innovative public involvement approaches to ensure that no component of the local communities is inadvertently excluded.

Environmental Assessments (EAs) Are a Promising Tool For Maintaining Public Involvement While Streamlining the Process

Since NEPA was passed, the role of the EA has evolved to the point where it is the predominant way agencies conduct NEPA analyses. Conceived as a brief analysis to determine the significance of environmental effects, the EA today increasingly includes mitigation measures that reduce adverse effects below significant levels. With the increased use of EAs, often to the overall benefit of the environment, comes the danger that public involvement will be diminished and that individually minor actions will have major adverse cumulative effects. Therefore, as agencies rely more heavily on EAs, agencies need to ensure that they forge true partnerships with other agencies and the surrounding communities. Only then will stakeholders trust that EAs are honestly serving to protect the environment.

Some states, citizen groups, and businesses believe that certain EAs are prepared to avoid public involvement (i.e., because public meetings are not always required). The preparation of an EA, rather than an EIS, is the most common source of conflict and litigation under NEPA. Avoiding an opportunity for public comment on draft EAs and FONSI's can create mistrust and add costs and time as projects are delayed by ensuing controversy and legal challenges. When agencies do not seek interagency and public review of an EA, a fundamental opportunity is lost to build trust with the neighboring community.

Many More EAs Are Written Than EISs. Unfortunately, accurate comparisons of the numbers of EISs and EAs prepared are not available. Annual EIS numbers include draft, revised, supplemental, and final EIS documents for single projects, while EAs are often not reported at all. Nonetheless, since the CEQ regulations were promulgated, all signs point to a significant increase in EAs and a decrease in EISs. The annual number of draft, revised, supplemental, and final EISs prepared has declined from approximately 2,000 in 1973 to 608 in 1995, averaging 508 annually between 1990-1995. By 1993, a CEQ survey of federal agencies estimated that about 50,000 EAs were being prepared annually. That survey also found that five federal agencies — the U.S. Forest Service, the Bureau of Land Management, the Department of Housing and Urban Development, the U.S. Army Corps of Engineers, and the Federal Highway Administration — produce more than 80% of the EAs. While some agencies — such as the Department of Energy, Department of the Army, and U.S. Forest Service — provide for a public comment period on EAs, many do not.

"Mitigated FONSI's" Are On the Rise. Another significant trend is that of agencies increasingly identifying and proposing measures to mitigate adverse effects of proposed actions during the preparation of EAs. While preparing EAs, agencies often discover impacts that are "significant," which would require preparation of an EIS. Agencies may then propose measures to mitigate those environmental effects. If an agency finds that such mitigation will prevent a project from having significant impacts on the environment, the agency can then conclude the NEPA process by issuing a FONSI, rather than preparing

an EIS. The result is a "mitigated FONSI." The 1992 CEQ survey and informal opinions of U.S. EPA officials responsible for reviewing NEPA analyses indicate an increase in the number of mitigated FONSIs.

While mitigated FONSIs are a good way to integrate NEPA into planning, some Study participants felt that not all EAs resulting in mitigated FONSIs are meeting the spirit and intent of NEPA. When the EIS process is viewed as merely a compliance requirement rather than a tool to improve decision-making, mitigated FONSIs may be used simply to prevent the expense and time of the more in-depth analysis required by an EIS. The result is likely to be less rigorous scientific analysis, little or no public involvement, and consideration of fewer alternatives, all of which are at the very core of NEPA's strengths. Moreover, not all agencies that commit to mitigation monitor to determine whether the mitigation was actually implemented or whether it was effective.

Consider mitigation throughout the NEPA process. When an EIS or EIS Supplement is prepared, the ROD will state specific mitigation measures taken to reduce or avoid the selected action's adverse environmental effects. For EAs, the FONSI will state, when applicable, the appropriate mitigation measures that will be implemented. The proponent must ensure such mitigation measures become a project line item in the proposal budget line item in the proposal budget. Mitigations that are committed to in an EA, but that are eventually not funded, must lead to re-evaluation of the project and the significance of its impacts. In addition, the FONSI will state those practicable mitigation measures that have not been adopted. (40 CFR 1505.2(c)).

Department of the Army Regulations, 32 CFR 651.13.

Using EAs and Mitigated FONSIs More Effectively. Fortunately, CEQ survey results indicate that a number of agencies do use EAs to (1) integrate environmental values into agency decisions and (2) disclose information to affected parties. These agencies have discovered that increasing the level of scoping in their EA analyses reaps multiple benefits. It not only builds trust in the community, but it often identifies potential impacts and mitigation earlier, saving time and money. Scoping, when embraced not as a formal exercise but as a flexible process, is an invaluable tool for identifying public and agency stakeholders, setting geographic and time boundaries of the study, identifying key concerns and issues, finding available baseline data, and defining the initial range of reasonable alternatives.

There is a great deal of confusion about what public involvement is required, appropriate, or allowed in the preparation of EAs, because NEPA regulations and guidance are primarily oriented to the preparation of EISs. Participants in the Study encouraged CEQ to provide more guidance on increasing public involvement in the EA process, including improving mechanisms for public comment and agency incorporation of these comments. Specifically, alternatives to public hearings were cited as especially appropriate for EAs, for example, using roundtables, workshops, and informal dialogues.

INTERAGENCY COORDINATION: An Opportunity for Streamlining

Interagency coordination — how well agencies share information and integrate planning responsibilities with other agencies early in the process.

During the debate preceding the passage of NEPA, many members of Congress expressed concern that federal agencies were not working cooperatively and in some cases were working at cross purposes. As a result, one of the underlying purposes of NEPA was to provide a framework for a coordinated approach to environmental problem-solving across agencies. Specifically, NEPA recognized that more than one agency may have jurisdiction over or expertise concerning an agency's proposed project. Following the enactment of NEPA, CEQ regulations established a mechanism for federal agencies to resolve issues during the decision-making process by designating those with an interest as "joint" or "cooperating" agencies, and encouraging their participation in the primary decision-making process.¹⁰ The regulations also provide that state and local agencies may be included in these categories as well, further encouraging early consultation and resolution of issues. In this way, interagency coordination under NEPA has avoided or resolved many conflicts, reduced duplication of effort, and improved the environmental permitting process.

To the fullest extent possible, agencies shall prepare [environmental impact analyses] concurrently with and integrated with . . . related surveys and studies required by . . . other environmental review laws and executive orders. CEQ Regulations 40 CFR 1502.25

Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork. CEQ Regulations 40 CFR 1506.4

Since the enactment of NEPA in 1970, numerous other laws have been passed that require environmental analyses, consultation, and documentation, often duplicating the requirements of NEPA. This development makes it essential that agencies use NEPA as a key integrating tool to bring into one coherent whole the various requirements of the law. CEQ regulations specifically call for integrating the analyses required by other environmental laws in a single analysis. Specific tools for achieving this integration include (1) using scoping and tiering to prevent duplication of analyses, (2) preparing environmental studies under NEPA and other laws concurrently, (3) combining documents under NEPA and other laws, and (4) combining public participation under NEPA and other laws.

Agencies Can Integrate Reviews

As a vehicle for interagency coordination and the integration of environmental reviews, NEPA provides a unique opportunity for streamlining efforts. Experience has shown that where agencies use NEPA to share information and planning responsibilities with other affected agencies early on, the environmental

¹⁰ CEQ, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (1978). 40 CFR 1501.5(b) and 1501.6.

review process will take less time and lead to decisions that enjoy greater support. Uncoordinated processes, on the contrary, put agencies — and the public — in adversarial positions and delay federal actions that are important to local and regional economies, as well as actions that are intended to improve the environment.

While an efficient NEPA process requires that all interested agencies become involved in proposals early on and remain involved until solutions are found, many agencies have failed to use NEPA in this way. The Study uncovered some potential reasons for this. First, many participants noted that agencies often have different (sometimes conflicting) timetables, requirements, and modes of public participation. After preparing an EIS or EA for a project, an agency may find itself facing conflicting requirements from a variety of agencies with differing statutory missions. The potential for conflicting requirements is illustrated by the fact, noted by the National Rural Development Partnership, that states, local governments, and tribes must meet 26 federal planning requirements to obtain federal assistance. All such plans must comply with NEPA, but communities and regions find it difficult to develop one plan and use one public involvement process. In one hopeful development, the U.S. EPA has issued a new enforcement policy statement that supports regional efforts to help small communities streamline their environmental reviews (see case example below).

Environmental Partnerships for Oregon Communities

As environmental and public health regulations have grown in number, communities are faced with a multitude of federal requirements, including participating in NEPA compliance for activities involving federal permits or funding. Small communities have fewer administrative, technical and financial resources to address these requirements. Environmental Partnerships for Oregon Communities (EPOC) was established with support of the Governor, state Departments of Environmental Quality, Health [Drinking Water Division], and Economic Development, and the League of Oregon Cities. In 1993, the Oregon State Legislature funded a 3-person staff to (1) establish multi-agency project teams to work with small communities (under 2,500 population); (2) inform and involve local citizens; (3) help communities identify, define, evaluate, and prioritize requirements; and (4) negotiate an enforceable agreement and schedule for achieving compliance (four cities have agreements and four more are negotiating). In November 1995, the U.S. EPA issued a new enforcement policy statement for small communities that supports EPOC and similar efforts.

For Further Information, Contact: Peter Dalke, EPOC Interagency Coordinator, Oregon Department of Environmental Quality, 2020 SW 4th Avenue, Suite 400, Portland, Oregon 97201-4987; phone 503/229-5588; FAX 503/229-6957.

At the federal level, CEQ is directing interagency task forces of environmental regulatory agencies to streamline environmental reviews and to ensure reviews are completed simultaneously with the NEPA process, rather than after the NEPA process is complete. In March 1995, the U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. EPA agreed to streamline the NEPA process and Endangered Species Act consultation on forest health and salvage timber sales. The initiative was expanded a few months later to include consultation on all U.S. Forest Service and Bureau of Land Management projects the affected states. These efforts have resulted in a 50% reduction in the time needed for environmental review, including a 75% reduction in time needed for Endangered Species Act consultations. The U.S. Fish and Wildlife Service is also working with CEQ to ensure that NEPA compliance for Habitat Conservation Plans (HCPs) under the Endangered Species

Act provides for meaningful public involvement while eliminating duplicative paperwork and other redundant processes. Rather than having the applicant go through the entire HCP process before the agency initiates the NEPA process, the two processes will generally run concurrently.

Integration of NEPA and Florida Coastal Zone Management Reviews

In 1981, the State of Florida entered the federal Coastal Zone Management (CZM) Program. Due to its low elevation, extensive coastline, and numerous rivers and estuaries, the entire state was declared a coastal zone. The CZM program brought the state into the federal consistency review process, which Florida found to be duplicative of the NEPA process — it involved the same set of state agencies reviewing many projects for basically the same purposes. In an attempt to enhance efficiency and avoid duplication and confusion, Florida combined the coastal zone consistency and NEPA reviews. As a result, consolidated NEPA/CZM consistency reviews culminate in a single state response regarding a proposed federal action or grant. These combined reviews have helped the State more effectively respond to proposals by petroleum companies that want to drill for oil and gas in federal waters off the coast of Florida. In general, using NEPA as the framework for all environmental decision-making has resulted in higher quality projects and enhanced cooperation between federal agencies and the State of Florida.

INTERDISCIPLINARY, PLACE-BASED APPROACH TO DECISION-MAKING: A Good Beginning

Interdisciplinary place-based approach — focusing the knowledge and values from a variety of sources on the decision-making needs of a specific place.

Section 102 of NEPA specifically calls for an interdisciplinary approach to decision-making. This interdisciplinary approach, drawing on the full range of natural and social sciences and their related arts, anticipated the trend toward integrated and ecosystem thinking that is now recognized as critical to sustaining the environment in the 21st century.

(1) [T]he Federal Government shall. . .

(A) utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and decision-making which may have an impact on man's environment;

(B) identify and develop methods and procedures . . . which will insure that presently unquantified environmental amenities and values may be given appropriate consideration along with economic and technical considerations. . . .

Section 102 of NEPA

Experience with the NEPA process has shown that better decisions — those that meet the needs of the community and minimize adverse impacts on the environment — require the integrated perspective that can only be obtained by incorporating expertise and information from many fields.

NEPA's interdisciplinary approach helps balance and integrate competing goals by focusing on all the environmental, economic, and social factors affecting a single place. This is likewise the premise behind the ecosystem approach to management and planning (see box on Interagency Ecosystem Management Task Force on page 15). One of the most promising trends in government today is the coming together of local, state, and federal stakeholders in regional planning efforts. By working at the level of specific places, and involving the planning goals of local and state agencies, federal agencies can make better decisions for an ecosystem and its surrounding communities.

Focusing on Places

A place-based, interdisciplinary approach triggers the collection of the full range of ecological, social, and economic data for use in improving federal decisions. It draws upon the training and perspectives of a wide range of sciences and humanities. It creates a synergy among disciplines as it encourages the development of comprehensive strategies and plans for larger-scale ecosystems that cross administrative and political boundaries, such as river basins, plateaus, and mountain ranges.

Glen Canyon Environmental Studies

In a remarkable change, the Bureau of Reclamation recognized the need to adopt an interdisciplinary approach to managing the Glen Canyon Dam and asked 11 other agencies — three Interior bureaus, DOE, an Arizona state agency and six Native American tribes — to join it as full cooperating partners. The Glen Canyon Environmental Studies mandated by Congress and started in 1983, indicated significant impacts on the Grand Canyon and other downstream resources due to the operation of the Glen Canyon Dam, and provided the basis for a science-based, multi-disciplinary EIS with eight operational alternatives. The Bureau used a geographic information system to manipulate and map critical information so that partners could understand the complex data and find new solutions. Public interest was very high. More than 33,000 people commented on the draft EIS. As part of the EIS preferred alternative, an "adaptive management" scheme involving all 12 agencies was implemented to release higher flows while serving recreation and power needs. This flexible management program is now underway as agencies evaluate the effects of Secretary of the Interior Babbitt's release of flows to build beaches and river habitat in the Grand Canyon.

As described in the previous sections, the interagency coordination provisions of NEPA precipitated some of the first regional syntheses of information from many disciplines. Especially in the western United States, the combination of several federal agencies' land holdings can make up large-scale ecosystems. Multi-agency NEPA analyses in these areas have led to a greater understanding of how ecosystems function and how they support biodiversity. As place-based, interdisciplinary NEPA analyses and other ecosystem initiatives increase across the country, the lessons from these first regional efforts can be used to better address the cumulative environmental effects of a multitude of human activities. The most important lesson is invariably to integrate the efforts of local, state, and federal agencies as much as possible.

The Ozark Mountain Highroad: Integration and Accelerated Project Planning

Branson, Missouri is one of the hottest entertainment centers in the country, receiving more than 3.7 million visitors during the six month tourist season in 1991. At peak times, 30,000 cars are jammed onto Country Music Boulevard each day, resulting in average speeds of 10 mph for much of the day and intolerable delays. In early June, 1992, the governor of Missouri declared the traffic congestion in the Branson area an "economic emergency" and announced a plan to fast-track the planning and design process of a proposed four-lane \$160 million Ozark Mountain Highroad. The challenge to the Missouri Highway and Transportation Department was to plan a totally new highway in six months without compromising safety or the integrity of the environmental process. With the fast track in mind and the NEPA process in hand, an interdisciplinary team of agencies met on a regular and frequent basis. This resulted in the preparation of a quality project that integrated the needs of the environmentally sensitive Ozark Mountain Ecosystem with the need for increased recreational traffic in the area. With all the players and disciplines involved, every reasonable design alternative and associated impact was on the table for discussion.

There were those on the team who, in the past, had seen NEPA as a burden, a hindrance, and something to be overcome. But as a result of the Highroad experience, these same people came to realize that NEPA could help to shape projects in a way that met the project purpose and need while serving to protect the environment and preserve other community values. Most important, the new attitudes forged during the NEPA planning process have carried over into other projects that involve the same local, state, and federal agencies, and consulting firms.

The Interdisciplinary Approach Requires Comprehensive Data

The key to implementing an interdisciplinary place-based approach, and addressing the full range of cumulative effects, is obtaining adequate environmental data. This is both good and bad news. On the good side, increased data across the board improves federal decisions. As noted previously, NEPA has caused agencies to "look before they leap." Prior to NEPA, the collection and analysis of data was inconsistent or nonexistent and management decisions were made without the benefit of environmental information. Under NEPA, environmental considerations in decision-making are better integrated with economic and technical considerations. Today, agencies often use these data to discover adverse environmental impacts early on and then either modify the impacts or, in some cases, abandon proposals with unacceptable impacts. Grossly adverse impacts are increasingly rare. This is as it should be — NEPA was designed to give managers the information to design the best possible project.

Unfortunately, in many other cases, the current lack of quality environmental baseline data severely hampers the requisite thorough scientific comparison of alternatives. For example, even today, many agencies with large land holdings do not know the extent or location of archeological sites, wetlands, or other important environmental features. In addition, the lack of early participation by resource agencies often leads to the inefficient collection or ineffective use of critical data, or to the unnecessary duplication of data already available. If field work is required to provide adequate baseline environmental data for a location, seasonal and logistical considerations can slow down the entire NEPA process. Early coordination with resource agencies who may already have data and knowledge on specific issues can avoid some of these problems.

Fortunately, many federal agencies are employing or developing new environmental indicators, comparable to economic indicators, that will provide more consistent information on the status of resources over time and geography. Consistency in indicators is still lacking from agency to agency. Vice President Gore, however, recently called for a "report card" on the health of our Nation's ecosystems that would provide a "guide for public and private decisions at all levels and an accounting of the effects of decisions for our citizens."¹¹ The Environmental Monitoring Initiative aims to validate the indicators used to describe the environment in a scientific, systematic manner. The Interagency Ecosystem Management Task Force recommends that the efficient collection, analysis, and sharing of data be accomplished through regional data management efforts. Centralized data bases are not essential, but through efforts such as the Environmental Monitoring Initiative standards and protocols can be developed.

The Interagency Environmental Trends Effort

The longest running set of consistent environmental data is the CEQ *Annual Report*, which starting this year will be available (along with supporting data) on the world wide web via *NEPANet* (<http://ceq.eh.doe.gov>). In addition, through the Interagency Committee on Environmental Trends, CEQ and federal agencies are developing (1) additional analyses of these data for an update of the existing Status and Trends Report and (2) a series of *Environmental Indicator Bulletins* on critical environmental issues.

¹¹ Letter from Vice President Al Gore to National Environmental Monitoring and Research Workshop at the Smithsonian Institution on September 25, 1996.

Methods and Tools for Focusing Analyses

In addition to gathering more and better data, NEPA practitioners need to analyze existing information more effectively. EISs too often have more data than required to make a responsible decision, but not enough analysis of the data focuses on the decision. What is often lacking in EISs is not raw data, but meaning — i.e., a comparison of the potential impacts of choosing particular alternatives at particular locations expressed in clear, concise language. NEPA is about making choices, not endlessly collecting raw data.

How best to perform rigorous and credible environmental analysis has been an ongoing technical issue for over 25 years. Technology-based tools are still being developed for collecting and analyzing data, for modeling impacts, for estimating carrying capacity, for considering cumulative impacts, and for designing effective mitigation. No doubt, enhanced scientific rigor improves decisions; however, Study participants expressed concerns that the search for better information not inordinately delay decisions. Rather, participants emphasized that uncertainties be acknowledged; mitigation measures be put in place; and commitments be made to monitoring and adaptation as project implementation proceeds.

Fortunately, both academics and NEPA practitioners are developing new methods and tools to deal with uncertainty in information and focus analyses in support of decisions. Specifically, principles of risk assessment that describe the likelihood of potential outcomes are available for use in NEPA analyses.¹² More important, the utility of adaptive management — flexible project implementation to increase or decrease mitigation based on monitoring results — is now being recognized (see next chapter). In addition to new analytical approaches, technological innovations are improving the ability of analysts to obtain and manipulate data. The most promising technologies are modern computers, internet communications, and geographic information systems (GIS). GIS provides the analyst with management of large data sets, data overlay and analysis of development and natural resource patterns, trends analysis, mathematical impact modeling with locational data, habitat analysis, aesthetic analysis, and improved public consultation¹³. Using GIS has the potential to facilitate the efficient completion of projects while building confidence in the NEPA process.

In support of the **President's Pacific Northwest Forest Plan**, a common GIS was developed by the Interagency Resource Information Coordinating Council. Building on GISs already underway in the U.S. Forest Service and Bureau of Land Management, the common GIS provided consistent data, reduced duplication of effort, and supported the detailed ecosystem analysis needed for both smaller ecosystem planning and cumulative impact analysis for the entire Pacific Northwest. A similar effort is underway for the Upper Columbia River Basin Study.

¹² Richard Carpenter, *Impact Assessment* 13(2):153-187 (1995) and *The Environmental Professional* 17:127-136 (1995).

¹³ Wilson Eedy, *Impact Assessment* 13(2):199-206 (1995).

Assessing Cumulative Impacts. Perhaps the most significant environmental impacts result from the combination of existing stresses on the environment with the individually minor, but cumulatively major, effects of multiple actions over time. Recognizing the difficulty of assessing adequately the impacts of individual actions, Study participants underscored that assessing cumulative impacts in NEPA analyses magnifies the difficulty, and called for a compilation of the best science and tools to accomplish this.

In their environmental analyses, federal agency staff routinely address a proposed action and its direct and indirect effects on the environment. Cumulative effects analysis is more challenging, primarily because of the difficulty in defining the geographical (spatial) and time (temporal) boundaries. For example, if the boundaries are set too broadly, the analysis becomes unwieldy and, if they are set too narrowly, significant issues may be missed and decision-makers will be incompletely informed about the consequences of their actions. For these reasons, cumulative effects analysis is an emerging discipline which presents challenges for the NEPA practitioner and decision-maker. These challenges manifest themselves especially during the scoping and analytical stages of the NEPA process and tend to overwhelm the NEPA practitioner. Consequently, the ongoing challenge is to refine approaches to cumulative effects analysis, and to recognize that a better decision, rather than a perfect analysis of cumulative effects, is the goal of NEPA and environmental impact assessment professionals.

Conducting Concise and Focused Analysis and More User-friendly Documents. Another challenge facing the analyst dealing with large amounts of interdisciplinary information is producing NEPA documents that are easy to read and understand — documents that facilitate agency and public input to decisions. Although an environmental analysis should certainly present scientifically valid results, it should **not** be written as a scientific paper for peer review. EISs and EAs should address the general public and emphasize points important to the decision-making process. Study participants felt strongly that material should be presented clearly, concisely, honestly, and simply — not in complex technical terms. More rigor in the analysis does not mean more weight in the document. Size can be reduced by referring to technical documents or putting technical results in an appendix. Size can also be reduced by early coordination with other federal, state, local, and tribal agencies, and the public to narrow issues and make use of existing information.

In addition, the Study found that while agencies have revised their NEPA regulations to make use of more categorical exclusions (CATEXs), they are sometimes requiring paperwork not required under the CEQ regulations. CATEXs are meant to identify a proposed action that is routine and generally without significant environmental impacts, such as road repairs or routine electrical maintenance on buildings. Nonetheless, in some instances, agencies have prepared CATEXs that were the size of EAs. Even when an agency determines it wants an administrative record, there is rarely a need for a CATEX to be longer than one page in length.

MONITORING AND ADAPTIVE MANAGEMENT: The Challenge for the Future

Science-based and flexible management approaches — adapting mitigation and project implementation once proposals are approved.

As noted previously, the NEPA process has been increasingly successful in modifying project proposals to minimize or avoid adverse environmental impacts before they occur. At the same time, our improved understanding of the functioning of ecosystems makes it clear that we often cannot predict with precision how components of an ecosystem will react to disturbance and stress over time. What little monitoring information exists seems to bear this out. Most Study participants believed that agencies should conduct monitoring to confirm their predictions of impact, to ensure that mitigation measures are effective, and to adapt projects to account for unintended consequences.

In most cases at present, agencies do not collect long-term data on the actual environmental impacts of the projects. Nor do agencies generally gather data on the effectiveness of mitigation measures. While some states require monitoring following project approval, the courts have not generally found such a legal requirement in NEPA itself. However, for decisions based on EISs, the CEQ regulations require that "a monitoring and enforcement program shall be adopted . . . where applicable for any mitigation."¹⁴ The regulations also state that agencies may "provide for monitoring to assure that their decisions are carried out and should do so in important cases," and that monitoring results shall be made available to other agencies and the public upon request.¹⁵ These provisions are incorporated in agency Records of Decision (RODs); some Study participants recommended increasing the availability of these RODs to ensure that these provisions are carried out.

Three of the five major producers of environmental analyses — the U.S. Army, the Department of Energy, and the Bureau of Land Management — include monitoring in their NEPA guidelines. These agencies' policies anticipate using monitoring both to adapt project management to changing conditions and to gather information for the planning of future projects. Study participants supported the use of monitoring and adaptive management to deal with the uncertainties of environmental impact prediction. By accepting more uncertainty in their initial analyses (and using adaptive management measures during project implementation), agencies can get projects underway earlier and dramatically reduce costs. Agencies can also use the experience gained from monitoring to do better analyses and make better decisions on similar projects in the future.

Agencies are coming to conclude that monitoring and evaluation could be more efficient and effective than [one-time] environmental analyses. GAO Testimony on "Forest Service: Issues Related to Its Decision-making Process," January 25, 1996.

¹⁴ 40 C.F.R. sec. 1505.2(c).

¹⁵ 40 C.F.R. sec. 1505.3.

Monitoring Forest Service Grazing

A Pilot Project for Monitoring, Learning, and Adapting

Decisions about how many cattle and sheep to graze, on what land, and under what conditions are the subject of environmental impact analyses under NEPA. With thousands of grazing permits expiring at the end of 1995, the U.S. Forest Service knew there was no way to do the traditional allotment-by-allotment NEPA analysis before reissuing, adjusting, or denying the permits. In a cooperative effort, a small CEQ and U.S. Forest Service team looked at alternative ways to conduct NEPA analyses more effectively and produce better decisions in fewer documents. Its ecosystem-based approach has two major advantages: (1) it groups permits likely to affect the same ecosystem cumulatively, and (2) it provides for adapting to changing conditions and improving information over the life of a project. In this way, NEPA serves as a tool for environmental improvement, not simply a tool for compliance; it gets managers out of the office and into the range and forest. This model of NEPA is being tested on grazing decisions in six national forests.

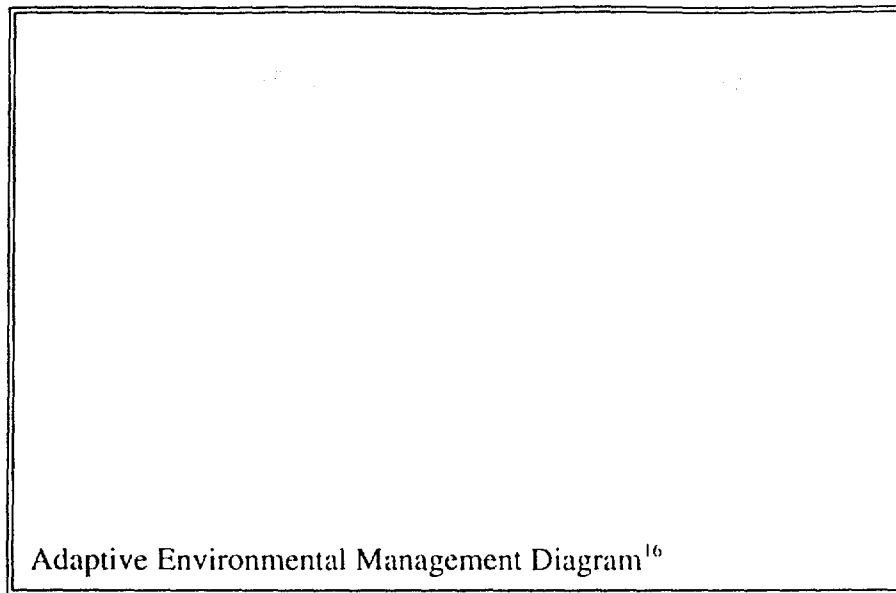
The pilot project emphasizes monitoring, learning, and adapting — rather than a one-time analysis that emphasizes certainty and endless document production. This project changes management techniques by (1) structuring analysis through interdisciplinary teams focusing on the important issues; (2) using larger areas, such as watersheds, that have greater ecological relevance and efficiency of scale; (3) clearly defining the purpose and limiting analysis to issues of importance; (4) assessing requirements for new information using risk/uncertainty/cost analysis; (5) focusing on reasonable alternatives by incorporating mitigation into the proposed action to resolve many of the environmental issues before alternatives are generated; (6) setting environmental thresholds and monitoring to determine when those thresholds are approached; and (7) adapting management, by creating a feedback loop that incorporates lessons learned and information into subsequent analyses in the same landscape.

For Further Information, Contact: Rhey Solomon, Ecosystem Management, U.S. Forest Service, P.O. Box 96090, Washington, DC 20090-6090. Phone: 202/205-0939.

Adaptive Environmental Management

The old paradigm for environmental management was "predict, mitigate, and implement." A new paradigm has emerged: predict, mitigate, implement, monitor, and adapt. The two latest threads — monitor and adapt — reflect the need to monitor the accuracy of predictions and allow enough flexibility in the process for mid-course corrections. A major difficulty with the traditional environmental impact analysis process is that it is a one-time event; i.e., results from intensive research, modeling, and other computations or expert opinions are analyzed, the analysis of potential environmental impacts is prepared, mitigation measures are identified, and a document is released for public review. Unfortunately, most often the process ends there. In such cases, adequate environmental protection depends solely on the accuracy of the predicted impacts and expected mitigation results. Changes in conditions — whether as a result of surprises from nature or human action — are not taken into account. Over the life of the project, these surprises can negate any environmental protections envisioned in the original analysis.

Adaptive environmental management was designed to deal with this situation and is a process of adjusting management actions and directions in light of new information about the ecosystem and its bearing on ecosystem goals. When new information becomes available, project management is reevaluated. Adaptive management recognizes the limits of knowledge and experience and moves iteratively toward goals in the face of uncertainty (see figure).



Where resources are not likely to be damaged permanently, where a project may be modified once begun, and where there is an opportunity to repair past environmental damage, an adaptive environmental management approach may be the best means of attaining both NEPA's goals and an agency's mission. Instead of investing extensive resources into the initial analysis, the adaptive management approach would allow agencies to develop objective criteria for "significant" environmental change in the status of the resource or ecosystem of concern (be it rangelands, wetlands, or forest). An agency can then analyze and approve a plan or project with an uncertain outcome, monitoring the status of the resource to make corrective changes to the project or mitigation plan to ensure that significant degradation does not occur. By incorporating adaptive management into their NEPA analyses, agencies can move beyond simple compliance and better target environmental improvement.

¹⁶ Interagency Ecosystem Management Task Force, *The Ecosystem Approach: Healthy Ecosystems and Sustainable Economies, Volume I - Overview*, 1995

Flower Garden Banks

Long-Term Monitoring of Coral Reefs by the Minerals Management Service

The Minerals Management Service (MMS) of the Department of the Interior is responsible for leasing federal lands of the outer continental shelf (OCS) for oil and gas exploration and development. As industry began planning for operations in the deep water of the Gulf of Mexico in the early 1970s, MMS began writing EISs for lease sales and created an environmental studies program to support analyses. These early studies documented, among other things, thriving coral reef communities at the unique "Flower Garden Banks" in the northwestern Gulf of Mexico. Recognizing the need to ensure the protection of these reefs in the face of uncertain impacts, the MMS sponsored the first "multiple-use" meeting in 1973, which brought together the oil and gas industry, the general public, academia, and private contractors. This and numerous other meetings and public hearings culminated in several mutually agreeable concepts to protect the reef communities, including stipulations for monitoring and adaptive environmental management.

Stipulations to Monitor. The MMS chose an innovative implementation device called a *stipulation* that specified the protective measures. The stipulation became a part of the lease document and thus was binding on the lessee. The stipulation for the Flower Garden Banks established a no activity zone (NAZ) and a four mile "shunt" zone. The NAZ, where no activities can take place, protects the bank's biota from mechanical damage due to drilling, platform and pipeline emplacement, and anchors. The shunt zone, in which all effluent from the drilling process must be shunted to near the sea floor, was designed to prevent the drilling discharge from reaching the bank's unique biota. As part of the stipulation, lessees had to monitor the environmental conditions at production sites and at the banks themselves under strict MMS guidelines.

Adaptive Environmental Management. As more was learned about the banks through the studies program and monitoring, the stipulation was modified to reflect the best possible information, and the provisions of the latest stipulation applied to appropriate blocks regardless of the older stipulation in the lease. After several years and numerous monitoring reports, MMS knew no damage was being done to the banks or the coral habitat. The MMS showed great flexibility at this time and reduced the stipulation for compliance monitoring at production sites. At the same time, MMS recognized the need to continue to monitor the condition of the living reefs. It became clear that the banks were being severely damaged from sports fishing and commercial vessels anchoring on the shallow coral reefs. Marine scientists from an environmental group, the Gulf Reef Environmental Action Team (GREAT), conceived of a way to prevent anchor damage while not discouraging visitors to the Flower Gardens. The MMS provided personnel to help GREAT install 12 anchor moorings at the banks, so vessels can tie up easily and not drop anchor.

Project Successes. MMS developed a multi-disciplinary long-term monitoring program for the Flower Garden Banks, initially costing over \$1 million per year. As further information was gathered and analyzed in the Study was refined, the number of cruises and dives was reduced, cutting the annual cost to about \$125,000. Performing these reductions in a step-wise fashion assured MMS received the information necessary to monitor the health of the banks. In 1992, the Flower Garden Banks were designated a National Marine Sanctuary. Responsibility for protection of the reefs passed to the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce although MMS continues a cost-sharing agreement with NOAA. In 1994, the NOAA National Marine Sanctuary Program presented a recognition award to MMS for over 20 years of commitment to resource protection and funding of surveys and research at the Flower Gardens. In May 1996, MMS won the Fourth Annual Federal Environmental Quality Award for its outstanding NEPA program, given jointly by the Council on Environmental Quality and the National Association of Environmental Professionals (NAEP).

For Further Information, Contact: Office of Leasing and Environment, MMS Gulf of Mexico OCS Region, 1201 Elmwood Park Blvd., New Orleans LA 70123-2394. Phone: 504: 736-2759.

CONCLUSION

NEPA is critical to meeting the environmental, social, and economic goals this Nation has set for itself. Substantial opportunities exist to improve the effectiveness and efficiency of the NEPA process. With this Study in hand, CEQ is embarking on a major effort to reinvent the NEPA process. Over the next several years, CEQ will be proposing specific actions to strengthen strategic planning, public information and input, interagency coordination, interdisciplinary and place-based decision-making, and science-based and flexible management approaches. Strengthening these elements, those that have been crucial to NEPA's achievements over the last 25 years, will improve NEPA's effectiveness while improving agency efficiency. What we have learned will carry us into the next century of environmental stewardship for the benefit of our Nation's communities.

APPENDIX A: WHAT NEPA SAYS

NEPA eloquently gives a voice to the national consensus to protect and improve the environment, and substance to the determination articulated by many to work together to achieve that goal.

NEPA has five basic mandates:

- *Supplemental mandate* — to add to the existing authority of every federal agency the responsibility and power to protect the environment and integrate environmental, social, and economic objectives when carrying out other agency functions.
- *Affirmative mandate* — not only to preserve existing environmental quality, but to make decisions that restore and enhance the environment.
- *Procedural mandate* — to use a planning and decision-making process for developing or considering the approval of plans, policies, programs or projects that gives "appropriate consideration to environmental values and amenities," which occurs mainly through the analysis of environmental impacts and alternatives, including mitigation measures.
- *Substantive mandate* — to recognize each person should have a healthful environment and has a responsibility to contribute to environmental quality, and to require all federal agencies "to the fullest extent possible" to interpret and administer all laws in ways that implement the policy of serving as trustee of the environment for present and future generations and the other policies set forth in NEPA; in other words, the responsibility to "act" to protect the environment.
- *Integration mandate* — to implement the substantive national environmental policy "to the fullest extent practicable" in manner that is "consistent with other essential policy considerations:" in other words, to take the environmentally preferred course of action unless it poses a conflict with other essential policies, in which case the decision-maker looks to the substantive policies of NEPA as guidance for integrating varied considerations and making decisions directed toward achieving a *productive harmony between people and nature*.

These five mandates are described in more detail in the following text of the Purpose and Title I of NEPA:

TITLE I

CONGRESSIONAL DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

Sec. 101 [42 USC ? 4331].

(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consist with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may --

- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
- (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

Sec. 102 [42 USC ? 4332]. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of

the Federal Government shall --

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

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

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

- (ii) the responsible Federal official furnishes guidance and participates in such preparation,
- (iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and
- (iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by title II of this Act.

Sec. 103 [42 USC ? 4333]. All agencies of the Federal Government shall review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein which prohibit full compliance with the purposes and provisions of this Act and shall propose to the President not later than July 1, 1971,

such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes, and procedures set forth in this Act.

Sec. 104 [42 USC ? 4334]. Nothing in section 102 [42 USC ? 4332] or 103 [42 USC ? 4333] shall in any way affect the specific statutory

obligations of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

Sec. 105 [42 USC ? 4335]. The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.

APPENDIX B: SUMMARY OF COMMENTS BY STUDY CLUSTERS

CEQ included in the Study organizations and individuals who are knowledgeable and experienced in the application of NEPA, both those who support NEPA, and those who are critical. Participants were anxious to contribute to the Study and all the comments were constructive and aimed at improving current NEPA implementation, where some areas of successes are evident and a number of areas are ripe for innovation, re-invention, and improvement. Evident trends and the consensus views of the Study participants form the basis for this report, its conclusions, and its recommendations.

In addition to soliciting input from the original framers of NEPA, those that drafted the CEQ regulations, and federal agencies with experience implementing the Act, a major effort was made to include the opinions of the public, and state and local agencies. For the purposes of this Study, the public was defined as any entity outside the federal government, including (1) academicians, (2) non-governmental organizations (NGOs) and citizens, and (3) businesses. In all, 11 "clusters" representing these different constituencies were involved. To obtain public advice, a number of steps were taken — a citizen survey, meetings with NGOs in Washington, DC (as well as in a few states), a survey of businesses, and a survey of academicians. The U.S. Environmental Protection Agency (EPA) conducted a survey of states, focusing primarily on New York, Washington, and California. CEQ, U.S. EPA, and the North Carolina Department of Environment, Health, and Natural Resources held a regional conference to investigate the effectiveness of state-federal interaction with respect to EISs. In addition, CEQ sponsored a Study focusing on the requirements of NEPA related to the cultural environment.

Conclusions of the Cluster Participants

One of the original purposes of NEPA was to coordinate federal environmental problem-solving. Yet, almost all participants saw the continued need for more coordination among agencies proposing projects. Additionally, almost all participants urged better-coordinated activities among the numerous federal, state, and local environmental laws, regulations, and requirements, even beyond those related to NEPA. The majority of participants applauded NEPA for opening the federal process to public input and were convinced that this open process has improved the effectiveness of project design and implementation, while minimizing environmental impacts. On the other hand, however, they highlighted that this openness and responsiveness still varies considerably from agency to agency.

NGOs and citizens still view the NEPA process as a one-way communication process, skeptical that their input is being effectively incorporated into agency decision-making and hypothesizing that their involvement is often solicited too late in the process, after decisions regarding actions and alternatives have been made. They suggest more attention be given to communication and education efforts (including alternative dispute resolution techniques and the development of more objective and user-friendly environmental analysis) that are needed to achieve informed and effective public participation early in the NEPA process. This lack of public confidence often leads to litigation (or the threat of litigation).

Participants endorsed the need for educating senior agency officials (including political appointees) and their staff in the value of substantive two-way communication and the use of creative outreach mechanisms

(beyond the Federal Register) to facilitate and encourage this interaction. Participants agreed that a well-conducted scoping process can reduce controversy, encourage information exchange, and efficiently focus subsequent analysis of issues and alternatives. However, participants also stated that one-time scoping meetings do not serve to inform the public early in the process and make them fully aware of project and program characteristics. Public and government participants expressed concern for the effective and efficient incorporation of cultural environmental considerations into the NEPA process, recognizing the linkages and importance of needed integration.

Business interests believe that NEPA is more effective in accomplishing its goals than it is efficient. They agreed with other participants regarding the issues of early and complete, informed coordination (among all the players), public involvement (although a distinction was made between meaningful involvement by legitimate environmental stakeholders and the misuse of NEPA by obstructionists), and the integration of environmental requirements and issues. Business groups also emphasized the costs of delays (highlighting the differences between public and private decision-making, particularly the private emphasis on investment costs, the time-value of money, and the need for an acceptable return on investments); and the resultant need for a faster, more responsive process with firm (perhaps project-specific) deadlines for agency and public review, comment, and participation.

State, local, and tribal governments agreed on the aforementioned issues, but emphasized the value of advance notification (even informally), early involvement giving them more time to respond to federal proposals), and integration, particularly between NEPA and related state and federal requirements. They also expressed their concern over the reliance on litigation (or the threat of litigation) to insure the inclusion of their concerns and comments, suggesting the creation of an administrative hearing process to allow State Governors to refer their concerns to CEQ, similar to the federal agency referral process. Tribal governments further identified the value of the often arduous participation process, recommending actions to foster better government-to-government relationships between the tribes and agencies, culturally-relevant NEPA training for the tribes, consistent NEPA implementation among agencies, training of agency staff in tribal governance and cultural resource matters, effective NEPA implementation within the Bureau of Indian Affairs (BIA), and assistance to the tribes in establishing environmental programs.

APPENDIX C: FOR FURTHER READING

Key Documents Created for this Study

Canter, Larry W., "Academic Survey for CEQ on the Effectiveness and Efficiency of NEPA," December 1994, 81 pp.

Canter, Larry W. and Ray Clark, "Scoping in the EIA Process in the United States," 1996, 20 pp.

Carpenter, Richard A., "Ecology, NEPA, and Ecosystem Management," 1995, 8 pp.

King, Thomas and Ethan Rafuse, CEHP Inc., "NEPA and the Cultural Environment — an Assessment and Recommendations," September 1994, 38 pp.

Labat-Anderson, Inc., "A Survey of Citizen Activists," November 1994.

Smythe, Robert B., "Renewing NEPA — NEPA Effectiveness Study Report, Phase II," September 1994, 33 pp.

Documents Used as the Basis for Analysis

Advisory Commission on Intergovernmental Relations (ACIR), "High Performance Public Works - A New Federal Infrastructure Investment Strategy for America," prepared for U.S. Army Corps of Engineers, SR-16, November 1993.

Bausch, Carl, "NEPA Integration - Effective, Efficient Environmental Compliance in the 1990s," Proceedings of CEQ Workshop, March 1991.

Bear, Dinah, "The National Environmental Policy Act," *Intergovernmental Perspective*, Summer 1992, pp. 17-19.

Bear, Dinah, "NEPA — Substance or Merely Process?," *Toward a Stronger National Policy on Environment, Forum for Applied Research and Public Policy*, Summer 1993.

Blaug, Elisabeth A., "Use of the Environmental Assessment by Federal Agencies in NEPA Implementation," *Environmental Professional*, 15:57-65, 1993.

Carpenter, Richard A., "Risk Assessment," *Impact Assessment*, 13(2):153-187, 1995.

Carpenter, Richard A., "Community Environmental Science Uncertainties," *The Environmental Professional*, 17:127-136, 1995.

- Clark, Ray, "Cumulative Effects Assessment: A Tool for Sustainable Development," *Impact Assessment*, 12(3):319-331, 1993.
- Clark, Ray and Larry W. Canter, eds. *Environmental Policy and NEPA: Past, Present, and Future*, St. Lucie Press, Delray Beach, FL, 1996.
- Council on Environmental Quality, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, 1978.
- Council on Environmental Quality, *Incorporating Biodiversity Considerations Into Environmental Impact Analyses under the National Environmental Policy Act*, January 1993.
- Eedy, Wilson, "The Use of GIS in Environmental Assessment," *Impact Assessment*, 13(2): 199-206, 1995.
- English Nature, *Strategic Environmental Assessment and Nature Conservation*, Oxford Brookes University, 1996.
- Environmental Law Institute, *Rediscovering the National Environmental Policy Act — Back to the Future*, Environmental Law Institute Research Report, 1995.
- Fogleman, V., *Toward a Stronger National Policy on Environment*, *Forum for Applied Research and Public Policy*, Summer 1993.
- Government Accounting Office (GAO), *Agencies are Attempting to Expedite Environmental Reviews: But Barriers Remain*, GAO/RCED-94-211, August 1994.
- Gibbons, Boyd, *CEQ Revisited — The Role of the Council on Environmental Quality*, Henry M. Jackson Foundation, 1995.
- Interagency Ecosystem Management Task Force, *The Ecosystem Approach — Healthy Ecosystems and Sustainable Economies, Volume I — Overview*, June 1995.
- Kaufman, Holly, "The National Environmental Policy Act — Its Role in Sustainable Development," July 1995.
- Kemmis, Daniel. *Community and the Politics of Place*, 1990.
- Minnesota Center for Environmental Advocacy, *Unfulfilled Promise — Twenty Years of the Minnesota Environmental Policy Act*, 1994 pp. 1- 25.
- Kathleen A. McGinty, Chair, Council on Environmental Quality, Executive Office of the President, "Statement before the Senate Energy and Natural Resources Committee, Subcommittee on Oversight," October 19, 1995.

APPENDIX D: NEPANet

While NEPA provides a unique and welcome mechanism to insure the responsiveness of the Federal Government, many Study participants felt that the process needs improvement, primarily in the areas of public outreach, communication among those involved in the process, education of high-level agency decision-makers and planners, accessibility to documents, and more mechanisms to resolve disputes and mediate conflicting viewpoints. A key to achieving these improvements is providing better access to NEPA information in a way that is familiar and convenient.

Technological Revolution To the Rescue

World Wide Web technologies present a particularly important opportunity for increasing the effectiveness and efficiency of the NEPA process. CEQ activated the CEQ Web site in March 1995, developed in accordance with standards established by the National and Global Information Infrastructure program. The CEQ Web site contains a one-stop shop that is devoted to the National Environmental Policy Act, called *NEPANet*. NEPANet established a tool for giving the public better access to NEPA information and the agencies a mechanism for coordinating NEPA activities. *NEPANet* access is being provided to all desired participants in the NEPA process — citizens, tribes, interest groups, and government agencies (state, local, and federal). In addition, *NEPANet* will serve as a gateway to other federal resources, academic institutions, scientific and technical organizations, and World Wide Web servers in countries all around the world. For users, *NEPANet* provides the following:

***NEPANet* Contents**

- Legal requirements and interpretations - NEPA (statute), CEQ Regulations, CEQ Guidance Documents, Other Regulations, Agency Regulations, Case Law Summaries, U.S. EPA Review Criteria, Law Library
- International Linkage
- CEQ *Annual Report* and others, such as *The Ecosystem Approach*
- Weekly EIS Summaries

Accessing the CEQ Web Site and NEPANet:

The Uniform Resource Locator (URL) for the CEQ Web Site/NEPANet is:

<http://ceq.eh.doe.gov>

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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| In the Matter of |) | |
| |) | |
| DUKE COGEMA STONE & WEBSTER |) | Docket No. 70-3098-ML |
| |) | |
| Savannah River Mixed Oxide Fuel |) | |
| Fabrication Facility |) | |
| |) | |

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing BRIEF OF THE BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE in response to Commission Memorandum and Order (CLI-02-04) have been served upon the following persons by first class U.S. mail and by electronic mail as indicated.

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BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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A handwritten signature in cursive script, reading "Louis Zeller", followed by a long horizontal line extending to the right.

Louis Zeller
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