

Appendix R.

CEQ GUIDANCE, POLLUTION PREVENTION

MEMORANDUM TO HEADS OF FEDERAL DEPARTMENTS AND AGENCIES

January 12, 1993

SUBJECT: Pollution Prevention and the National Environmental Policy Act

Introduction

Although substantial improvements in environmental quality have been made in the last 20 years by focusing federal energies and federal dollars on pollution abatement and on cleaning up pollution once it has occurred, achieving similar improvements in the future will require that polluters and regulators focus more of their efforts on pollution prevention. For example, reducing non-point source pollution—such as runoff from agricultural lands and urban roadways—and addressing cross-media environmental problems—such as the solid waste disposal problem posed by the sludge created in the abatement of air and water pollution—may not be possible with "end-of-the-pipe" solutions. Pollution prevention techniques seek to reduce the amount and/or toxicity of pollutants being generated. In addition, such techniques promote increased efficiency in the use of raw materials and in conservation of natural resources and can be a more cost-effective means of controlling pollution than does direct regulation. Many strategies have been developed and used to reduce pollution and protect resources, including using fewer toxic inputs, redesigning products, altering manufacturing and maintenance processes, and conserving energy.

This memorandum seeks to encourage all federal departments and agencies, in furtherance of their responsibilities under the National Environmental Policy Act (NEPA), to incorporate pollution prevention principles, techniques, and mechanisms into their planning and decisionmaking processes and to evaluate and report those efforts, as appropriate, in documents prepared pursuant to NEPA.

Background

NEPA provides a longstanding umbrella for a renewed emphasis on pollution prevention in all federal activities. Indeed, NEPA's very purpose is "to promote efforts which will prevent or eliminate damage to the environment...." 42 USC § 4321.

Section 101 of NEPA contains Congress' express recognition of "the profound impact of man's activity on the interrelations of all components of the natural environment" and declaration of the policy of the federal government "to use all practicable means and measures...to create and maintain conditions under which man and nature can exist in productive harmony...." 42 USC § 4331(a). In order to carry out this environmental policy, Congress required all agencies of the federal government to act to preserve, protect, and enhance the environment. See 42 USC § 4331(b).

Further, Section 102 of NEPA requires the federal agencies to document the consideration of environmental values in their decisionmaking in "detailed statements" known as environmental impact statements (EIS). 42 USC § 4332(2)(C). As the United States Supreme Court has noted, the "sweeping policy goals announced in § 101 of NEPA are thus realized through a set of 'action-forcing' procedures that require that agencies take a 'hard look' at environmental consequences." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989).



The very premise of NEPA's policy goals, and the thrust for implementation of those goals in the federal government through the EIS process, is to avoid, minimize, or compensate for adverse environmental impacts before an action is taken. Virtually the entire structure of NEPA compliance has been designed by CEQ with the goal of preventing, eliminating, or minimizing environmental degradation. Thus, compliance with the goals and procedural requirements of NEPA, thoughtfully and fully implemented, can contribute to the reduction of pollution from federal projects, and from projects funded, licensed, or approved by federal agencies.

Defining Pollution Prevention

CEQ defines and uses the term "pollution prevention" broadly. In keeping with NEPA and the CEQ regulations implementing the procedural provisions of the statute, CEQ is not seeking to limit agency discretion in choosing a particular course of action, but rather is providing direction on the incorporation of pollution prevention considerations into agency planning and decisionmaking.

"Pollution prevention" as used in this guidance includes, and is not limited to, reducing or eliminating hazardous or other polluting inputs, which can contribute to both point and non-point source pollution; modifying manufacturing, maintenance, or other industrial practices; modifying product designs; recycling (especially in-process, closed loop recycling); preventing the disposal and transfer of pollution from one media to another; and increasing energy efficiency and conservation. Pollution prevention can be implemented at any stage--input, use or generation, and treatment--and may involve any technique--process modification, waste stream segregation, inventory control, good housekeeping or best management practices, employee training, recycling, and substitution. Indeed, any reasonable mechanism which successfully avoids, prevents, or reduces pollutant discharges or emissions other than by the traditional method of treating pollution at the discharge end of a pipe or a stack should, for purposes of this guidance, be considered pollution prevention.

Federal Agency Responsibilities

Pursuant to the policy goals found in NEPA Section 101 and the procedural requirements found in NEPA Section 102 and in the CEQ regulations, the federal departments and agencies should take every opportunity to include pollution prevention considerations in the early planning and decisionmaking processes for their actions, and, where appropriate, should document those considerations in any EISs or environmental assessments (EA) prepared for those actions. In this context, federal actions encompass policies and projects initiated by a federal agency itself, as well as activities initiated by a non-federal entity which need federal funding or approval. Federal agencies are encouraged to consult EPA's Pollution Prevention Information Clearinghouse which can serve as a source of innovative ideas for reducing pollution.

1. Federal Policies, Projects, and Procurements

The federal government develops and implements a wide variety of policies, legislation, rules, and regulations; designs, constructs, and operates its own facilities; owns and manages millions of acres of public lands; and has a substantial role as a purchaser and consumer of commercial goods and services--all of these activities provide tremendous opportunities for pollution prevention which the federal agencies should grasp to the fullest extent practicable. Indeed, some agencies have already begun their own creative pollution prevention initiatives:

Land Management

The United States Forest Service has instituted best management practices on several national forests. These practices include leaving slash and downed logs in harvest units, maintaining wide buffer zones around streams, and encouraging biological diversity by mimicking historic burn patterns and other natural processes in timber sale design and layout. The beneficial effects have been a reduction in erosion, creation of fish and wildlife habitat, and the elimination of the need to burn debris after logging--in other words, a reduction of air and water pollution.

The National Park Service and the Bureau of Reclamation have implemented integrated pest management programs which minimize or eliminate the use of pesticides. In addition, in some parks storm water runoffs from parking lots have been eliminated by replacing asphalt with the use of a "geo-block" system (interlocking concrete blocks with openings for grass plantings). The lot is mowed as a lawn but has the structural strength to support vehicles.

The Tennessee Valley Authority (TVA) has developed a transmission line right-of-way maintenance program which requires buffer zones around sensitive areas for herbicide applications and use of herbicides



which have soil retention properties which allow less frequent treatment and better control. TVA is also testing whole tree chipping to clear rights-of-way in a single pass application, allowing for construction vehicle access but reducing the need for access roads with the nonpoint source pollution associated with leveling, drainage, or compaction. In addition, TVA is using more steel transmission line poles to replace traditional wooden poles which have been treated with chemicals.

For construction projects it undertakes, the Department of Veterans Affairs discusses in NEPA documents and implements pollution prevention measures such as oil separation in storm water drainage of parking structures, soil erosion and sedimentation controls, and the use of recycled asphalt.

Office Programs

Many agencies, including the Department of Agriculture's Economic Research Service and Soil Conservation Service, Department of the Army, Department of the Interior, Consumer Product Safety Commission, and Tennessee Valley Authority, have implemented pollution prevention initiatives in their daily office activities. These initiatives embrace recycling programs covering items such as paper products (e.g., white paper, newsprint, cardboard), aluminum, waste oil, batteries, tires, and scrap metal; procurement and use of "environmentally safe" products and products with recycled material content (e.g., batteries, tires, cement mixed with fly ash and recycled oil, plastic picnic tables); purchase and use of alternative-fueled vehicles in agency fleets; and encouragement of carpooling with employee education programs and locator assistance.

In planning the relocation of its headquarters, the Consumer Product Safety Commission (CPSC) is considering only buildings located within walking distance of the subway system as possible sites. By conveniently siting its headquarters facility, CPSC expects to triple the number of employees relying on public transportation for commuting and to substantially increase the number of agency visitors using public transportation for attendance at agency meetings or events.

Waste Reduction

The Department of Energy (DOE) has instituted an aggressive waste minimization program which has produced substantial results. DOE's nuclear facilities have reduced the sizes of radiological control areas in order to reduce low-level radioactive waste. Other facilities have scrap metal segregation programs which reduce solid waste and allow useable material to be sold and recycled. DOE facilities also are replacing solvents and cleaners containing hazardous materials with less or non-toxic materials.

The Department of the Army has a similar waste reduction program and is vigorously pursuing source reduction changes to industrial processes to eliminate toxic chemical usage that ultimately generates hazardous wastes. The Army's program includes material substitution techniques as well as alternative application technologies. For example, in an EIS and subsequent record of decision for proposed actions on Kwajalein Atoll, the Army committed to segregate solvents from waste oils in the Kwajalein power plant which will prevent continual contamination of large quantities of used engine oil with solvents. Oil recycling equipment will also be installed on power plant diesel generators allowing reuse of waste oil.

The Federal Aviation Administration (FAA) has also implemented a waste minimization program designed to eliminate or reduce the amount and toxicity of wastes generated by all National Airspace System facilities. This program includes using chemical life extenders and recycling additives to reduce the quantity and frequency of wastes generated at FAA facilities and providing chlorofluorocarbon (CFC) recycling equipment to each sector in the FAA to that CFCs used in industrial chillers, refrigeration equipment, and air conditioning units can be recaptured, recycled, and reused.

Inventory Control

DOE is improving procurement and inventory control of chemicals and control of materials entering radiologically controlled areas. This can minimize or prevent non-radioactive waste from entering a radioactive waste stream, thus reducing the amount of low-level waste needing disposal.

In two laboratories operated by the Consumer Product Safety Commission, pollution prevention is being practiced by limiting quantities of potentially hazardous materials on hand.

The Tennessee Valley Authority's nuclear program has established a chemical traffic control program to control the use and disposal of hazardous materials. As a result of the program, hazardous materials are



being replaced by less hazardous alternatives and use of hazardous chemicals and products has been reduced by 66%.

2. Federal Approvals

In addition to initiating their own policies and projects, federal agencies provide funding in the form of loans, contracts, and grants and/or issue licenses, permits, and other approvals for projects initiated by private parties and state and local government agencies. As with their own projects and consistent with their statutory authorities, federal agencies could urge private applicants to include pollution prevention considerations into the siting, design, construction, and operation of privately owned and operated projects. These considerations could then be included in the NEPA documentation prepared for the federally-funded or federally-approved project, and any pollution prevention commitments made by the applicant would be monitored and enforced by the agency. Thus, using their existing regulatory authority, federal agencies can effectively promote pollution prevention throughout the private sector. Below are some existing examples of incorporation of pollution prevention into federal approvals:

- The Nuclear Regulatory Commission has required licensees to perform mitigation measures during nuclear power plant construction. These measures include controlling drainage by means of ditches, berms, and sedimentation basins; prompt revegetation to control erosion; and stockpiling and reusing topsoil. Similarly, mitigation measures required during the construction of transmission facilities include the removal of vegetation by cutting and trimming rather than bulldozing and avoiding multiple stream crossings, wet areas, and areas with steep slopes and highly erodible soils. The mitigation conditions in licenses serve to prevent pollution from soil erosion and to minimize waste from construction.
- In the implementation of its programs, the Department of Agriculture encourages farmers to follow management practices designed to reduce the environmental impacts of farming. Such practices include using biological pest controls and integrated pest management to reduce the toxicity and application of pesticides, controlling nutrient loadings by installing buffer strips around streams and replacing inorganic fertilizers with animal manures, and reducing soil erosion through modified tillage and irrigation practices. Further, encouraging the construction of structures such as waste storage pits, terraces, irrigation water conveyances or pipelines, and lined or grassed waterways reduces runoff and percolation of chemicals into the groundwater.
- The Department of Transportation's Maritime Administration is conducting research on a Shipboard Piloting Expert System. If installed on vessels, this system would provide a navigation and pilotage assistance capability which would instantly provide warnings to a ship master or pilot of pending hazards and recommended changes in vessel heading to circumvent the hazard. The system could prevent tanker collisions or groundings which cause catastrophic releases of pollutants.
- The Department of the Interior's Minerals Management Service (MMS) prepares EISs which examine the effects of potential outer continental shelf (OCS) oil exploration on the environment and the various mitigation measures that may be needed to minimize such effects. Some pollution prevention measures which are analyzed in these EISs and which have been adopted for specific lease sales include measures designed to minimize the effects of drilling fluids discharge, waste disposal, oil spills, and air emissions. For example, MMS requires OCS operations to use curbs, gutters, drip pans, and drains on drilling platforms and rig decks to collect contaminants such as oil which may be recycled.

Incorporating Pollution Prevention into NEPA Documents

NEPA and the CEQ regulations establish a mechanism for building environmental considerations into federal decisionmaking. Specifically, the regulations require federal agencies to "integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." 40 CFR § 1501.2. This mechanism can be used to incorporate pollution prevention in the early planning stages of a proposal.

In addition, prior to preparation of an EIS, the federal agency proposing the action is required to conduct a scoping process during which the public and other federal agencies are able to participate in discussions concerning the scope of issues to be addressed in the EIS. See 40 CFR § 1501.7. Including pollution prevention as an issue in the



scoping process would encourage those outside the federal agency to provide insights into pollution prevention technologies which might be available for use in connection with the proposal or its possible alternatives.

Pollution prevention should also be an important component of mitigation of the adverse impacts of a federal action. To the extent practicable, pollution prevention considerations should be included in the proposed action and in the reasonable alternatives to the proposal, and should be addressed in the environmental consequences section of the EIS. See 40 CFR §§ 1502.14(f), 1502.16(h), and 1508.20.

Finally, when an agency reaches a decision on an action for which an EIS was completed, a public record of decision must be prepared which provides information on the alternatives considered and the factors weighed in the decisionmaking process. Specifically, the agency must state whether all practicable means to avoid or minimize environmental harm were adopted, and if not, why they were not. A monitoring and enforcement program must be adopted if appropriate for mitigation. See 40 CFR § 1505.2(c). These requirements for the record of decision and for monitoring and enforcement could be an effective means to inform the public of the extent to which pollution prevention is included in a decision and to outline how pollution prevention measures will be implemented.

A discussion of pollution prevention may also be appropriate in an EA. While an EA is designed to be a brief discussion of the environmental impacts of a particular proposal, the preparer could also include suitable pollution prevention techniques as a means to lessen any adverse impacts identified. See 40 CFR § 1508.9. Pollution prevention measures which contribute to an agency's finding of no significant impact must be carried out by the agency or made part of a permit or funding determination.

Conclusion

Pollution prevention can provide both environmental and economic benefits, and CEQ encourages federal agencies to consider pollution prevention principles in their planning and decisionmaking processes in accordance with the policy goals of NEPA Section 101 and to include such considerations in documents prepared pursuant to NEPA Section 102, as appropriate. In its role as a regulator, a policymaker, a manager of federal lands, a grantor of federal funds, a consumer, and an operator of federal facilities which can create pollution, the federal government is in a position to help lead the nation's efforts to prevent pollution before it is created. The federal agencies should act now to develop and incorporate pollution prevention considerations in the full range of their activities.

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NOTE: For a discussion of such strategies and activities, see the Council on Environmental Quality's 20th Environmental Quality report, at 215-257 (1989); 21st Environmental Quality report, at 79-133 (1990); and 22nd Environmental Quality report, at 151-158 (1991). It should be noted that EPA, in accordance with the Pollution Prevention Act of 1990 (Pub. L. No. 101-508, §§ 6601 et seq.), uses a different definition, one which describes pollution prevention in terms of source reduction and other practices which reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources or the protection of natural resources by conservation. "Source reduction" is defined as any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal and which reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants. Under Section 309 of the Clean Air Act (42 USC § 7609), EPA is directed to review and comment on all major federal actions, including construction projects, proposed legislation, and proposed regulations. In addition, the Pollution Prevention Act of 1990 directs EPA to encourage source reduction practices in other federal agencies. EPA is using this authority to identify opportunities for pollution prevention in the federal agencies and to suggest how pollution prevention concepts can be addressed by the agencies in their EISs and incorporated into the wide range of government activities. As a guidance document, this memorandum does not impose any new legal requirements on the agencies and does not require any changes to be made to any existing agency environmental regulations.

