ENVIRONMENTAL LAW

DESKBOOK

Administrative and Civil Law Department
The Judge Advocate General's School
United States Army
Charlottesville, Virginia
22903-1781

JA 234

September 1995

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	November 1995	Final

4. TITLE AND SUBTITLE

Environmental Law Deskbook

5. FUNDING NUMBERS

6. AUTHOR(S)

Administrative and Civil Law Division, TJAGSA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

The Judge Advocate General's School, Army
Chralottesville, VA 22903-1781

8. PERFORMING ORGANIZATION REPORT NUMBER

JA-234-1(95)

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Same as 7.

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

Same as 8.

11. SUPPLEMENTARY NOTES

Replaces AD A277440 Environmental Law Deskbook, JA-234-1(93)

12a. DISTRIBUTION/AVAILABILITY STATEMENT

A

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

This deskbook was developed to provide an overview in the area of environmental law.

19951106 036

14. SUBJECT TERMS

Environment, National Environmental Policy Act, Clear Water Act, Clean Air Act, Endangered Species Act, CERCLA, RCRA, Underground Storage Tanks, Release Reporting

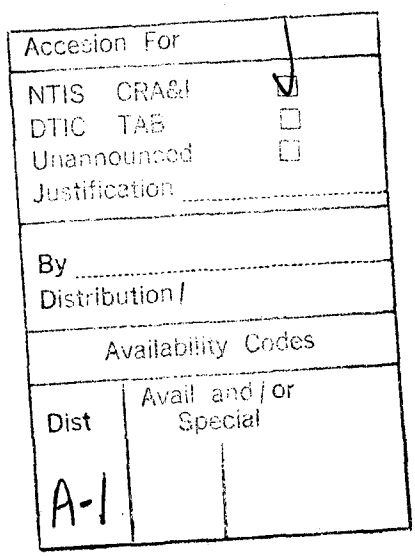
15. NUMBER OF PAGES

268

16. PRICE CODE

N/A

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unclassified



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CHAPTER I -- INTRODUCTION

I. A BRIEF HISTORY.

A. American society's widespread concern about the environment is a relatively recent development which has fueled rapid growth in environmental regulation. In 1970, there were only 500 pages in the Code of Federal Regulations (C.F.R.) devoted to environmental protection. Today, there are over 13,000 pages of environmental regulations in the Code of Federal Regulations (C.F.R.) implementing over 56 pieces of environmental legislation. In addition, many states have enacted environmental regulatory schemes that rival their federal counterparts in scope and complexity.

B. DOD installations must interact with multiple sources of environmental regulators.

1. At the federal level, most environmental statutes are primarily administered and enforced by the Environmental Protection Agency (EPA). EPA has divided the country into 10 regions. While subject to direction from EPA National Headquarters in Washington, D.C., each EPA region has a distinctive "personality" that is often displayed when enforcing environmental requirements at federal facilities.

a. Section 104 of the **Federal Facility Compliance Act** (FFCA) (Pub. L. No. 102-386, 106 Stat. 1505) requires EPA to conduct annual inspections of federal facilities for compliance with RCRA hazardous waste requirements. During the first inspection of a facility, EPA will also be required to conduct comprehensive ground water monitoring evaluation unless such an evaluation was conducted by agency since October 6, 1991. **Note that the FFCA requires federal agencies to reimburse EPA for the costs of the inspections.**

b. EPA has announced that during FY 93/94, it intends to conduct multi-media inspections (i.e., by combining the usually separate inspections conducted to determine

compliance with air, water, and solid and hazardous waste requirements) of selected federal facilities. Each of the EPA regions will select and maintain a list of their 10 "top priority" federal facilities.

(1) The facilities will be selected based on:

(a) Historic non-compliance.

(b) Regional risk rankings or other identified impacts on human health and/or threats to aquatic systems.

(c) Significance of the facility in relation to other EPA national or regional initiatives (e.g., Chesapeake Bay; Great Lakes); and

(d) Potential for pollution prevention.

(2) One "top priority" federal facility per region will be selected for inspection every other quarter.

(3) Advance notice to the facilities selected for inspection will be at the discretion of the respective EPA Regions.

2. Increasingly, state and local agencies are administering and enforcing environmental requirements that impact on federal facilities. Some of these requirements are based on federal programs that have been delegated by EPA or other federal agencies to the state. Other requirements are unique to the state, products of local initiative. Typically, states assign principal responsibility for environmental regulation to various branches or divisions within their existing Departments of Natural Resources or Health.

3. Currently, the is no direct application of U.S. environmental laws to DOD overseas operations. Many U.S. environmental standards will apply to DOD overseas operations via **DOD Dir. 6050.16**. DOD Dir. 6050.16:

   a. Applies to all DOD components including unified and specified commands.

   b. It explicitly does not apply to:

      (1) The operation of naval vessels or military aircraft.

      (2) Determination or conduct of remedial or cleanup actions necessary to correct environmental problems arising from past DOD activities.

   c. Under 6050.16, DOD components operating abroad must develop a country specific "baseline" document. The baseline will consist of standards applicable to similar operations conducted in the U.S. and all U.S. environmental laws with extraterritorial effect.

   d. Once developed, the baseline will be compared with existing host nation law. After consultation with the U.S. Diplomatic Mission in the host country, the "Executive Agent" will determine whether to apply baseline standards or host nation standards.

   e. Disposal of hazardous wastes in the host country will be limited to instances where:

      (1) Disposal complies with the baseline guidance and any applicable international agreements; or,

      (2) Disposal complies with the baseline guidance and host nation authorities have concurred with disposal in their country.

(3) Waivers from applicable standards can be obtained from the Executive Agent where "compliance would seriously impair operations, adversely affect relations with the host country, or require substantial expenditure of funds not available for such purpose." Consultation with the Diplomatic Mission must occur before compliance with a host nation standard is waived.

C. In most cases, federal environmental laws apply to federal agencies and their facilities. Enforcement of federal law against non-complying federal agencies, however, has sometimes proven problematic. EPA cannot sue another federal agency and has been able to unilaterally issue compliance orders or assess fines only in very limited circumstances because of the "unitary executive doctrine." In 1987, Henry Habicht III, then the Department of Justice's Assistant Attorney General for the Land and Natural Resources Division, described the unitary executive doctrine as follows:

> [T]he president has the ultimate duty to ensure that federal facilities comply with the environmental laws as part of his constitutional responsibilities under Article II, even though Executive branch agencies are subject to EPA's regulatory oversight. Accordingly, Executive Branch agencies may not sue one another, nor may one agency be ordered to comply with an administrative order *without the prior opportunity to contest the order within the executive Branch*. (Emphasis in original.)

Environmental Compliance by Federal Agencies: Hearing Before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, 100th Cong., 1st Sess., 210 (1987).

D. EPA has responded to the unitary executive doctrine by establishing a Federal Facilities Dispute Resolution Process (dispute process). Basically, this dispute process offers federal agencies the opportunity to challenge the terms of an EPA proposed order through various levels of EPA's regional and national bureaucracy. If the dispute cannot be resolved between EPA and the concerned agency, the dispute process requires utilization of **Executive Order 12088** for those disputes revolving primarily around

funding and scheduling issues. The provisions of **Executive Order 12146** are used if the dispute involves differing legal interpretations relating to environmental compliance.

E. States have also experienced problems trying to force federal facilities to comply with state environmental requirements. While Congress has included a waiver of sovereign immunity provision in virtually all environmental legislation, courts have frequently found that the waivers were not broad enough to permit effective enforcement. Initially, disputes focused on whether federal facilities were required to obtain state issued permits. In *Hancock v. Train*, 426 U.S. 167 (1976), the Court held that the waiver provision in the Clean Air Act did not constitute the "clear and unequivocal waiver" required to constitutionally subject federal facilities to state permitting requirements. Congress responded to *Hancock* by amending the Clean Air Act waiver and ensuring that all environmental statutes passed or amended subsequently contained waivers of immunity that clearly required federal agencies to obtain applicable state permits. Congress' response to *Hancock* did not, however, answer what is arguably the hottest environmental issue facing federal agencies today, i.e., whether or not states can impose fines on federal agencies for environmental violations at federal facilities.

F. In 1975, the Department of Defense created the Installation Restoration Program (IRP). Today, DOD places considerable emphasis on dealing with environmental problems caused by past practices and in ensuring that current environmental standards are achieved at all facilities subject to regulation. This emphasis has been reflected in the budget process. Perhaps even more important, DOD's leadership has demanded that protection of the environment be considered part of the military's mission. As Secretary Cheney said in a 1989 memorandum to the Service Secretaries:

Federal facilities, including military bases, must meet environmental standards. Congress has repeatedly expressed a similar sentiment. As the largest Federal agency, the Department of Defense has a great responsibility to meet this challenge. It must be a command priority at all levels. We must demonstrate commitment with accountability for responding to the Nation's environmental agenda. I want every command to be an environmental standard by which Federal agencies are judged.

II. THE JUDGE ADVOCATE'S ENVIRONMENTAL ROLE.

A. Until AR 200-1 (Environmental Protection and Enhancement) was revised in 1990, JAGs lacked a clearly defined role in assisting commanders to comply with environmental requirements. As amended, AR 200-1 specifies that responsibilities for JAGs at the installation level include:

1. Providing advice and guidance to commanders on their legal responsibilities for complying with *all* applicable environmental requirements.

2. Providing guidance and legal opinions to commanders on applicability of Federal, State, and local laws and regulations governing hazardous materials and solid and hazardous waste for Army installations.

3. Providing advice on the appropriateness of paying taxes or fees. AR 200-1, para. 1-15.

B. The responsibilities assigned to JAGs are complementary to the expectations outlined by The Judge Advocate General in TJAG Policy Letter 85-7. Pursuant to Policy letter 85-7, each installation is required to have an **Environmental Law Specialist (ELS)**.

C. The ELS must be familiar with all federal, state, and local environmental compliance requirements affecting their installation. Equally important, the ELS must be fluent in the Army's program and requirements for environmental compliance. As such, Army Regulations, particularly AR 200-1 and AR 200-2, must be reviewed frequently and thoroughly to determine if current or proposed installation activities are being conducted in accordance with Army policy.

1. An excellent resource available to installation attorneys to assist in identifying state-specific environmental requirements is the Computer-aided Environmental Legislative Data System (CELDS). CELDS, one part of the Environmental Technical Information System, is a database containing abstracted federal and state environmental regulations and standards.

2. Use of CELDS is comparable to use of LEXIS or WESTLAW. One important difference, however, is that it is available for use at **no cost** to DOD attorneys through use of an "800" telephone number.

D. To be effective, an ELS must be actively involved in ensuring that installation activities comply with environmental requirements. This requires an ELS to:

1. Review environmental documentation and plans prepared by other agencies (*e.g.*, Corps of Engineers and tenant commands).

2. Be an active participant in internal environmental compliance inspections/audits of installation activities and facilities.

a. By virtue of their training and experience, there are usually a number of personnel at an Army installation better qualified than an attorney to physically conduct an audit of an installation's activities for compliance with environmental requirements.

b. At a minimum, however, an attorney should meet with the audit team prior to the audit's initiation, review the audit protocol(s), and ensure that the audit team understands the environmental requirements applicable to the activities and facilities scheduled for auditing.

c. The attorney should stress during the pre-audit meeting that:

(1) Any limitations in conducting the audit should be clearly stated in the audit report (shortage of time; lack of supporting documentation, unavailability of key personnel, etc.).

(2) All documents reviewed and persons interviewed that become the basis of findings should be clearly identified. Particularly significant documents should be copied and attached as enclosures.

(3) All conclusions stated in the audit report should be based on facts. Facts relied on should be cited as justification for each conclusion.

(4) Anecdotal information should be clearly identified and qualified as appropriate (e.g., "It was reported by Mr. John Smith, the assistant Sewage Treatment Plan Operator, that over the last year . . . .")

(5) Recommendations for site specific corrective action and ways to avoid or minimize future risks of noncompliance should be included as part of the audit report.

(6) The audit team should be primarily concerned with making **factual** observations and conclusions; **legal** conclusions **should not** be made a part of the audit report unless first reviewed for accuracy by an attorney.

3. Be familiar with the purpose of and procedures applicable to the Environmental Compliance Assessment System (**ECAS**) and participate in the ECAS process as appropriate. The Environmental Assessment Management (TEAM) Guide is the standard DOD protocol manual used by ECAS auditors. The TEAM Guide contains Federal regulations, DOD Directives and Executive Orders and is supplemented with an Army Manual and a state and local manual.

a. ECAS is a centrally funded program managed by the Army Environmental Center (AEC). The program is intended to monitor the Army's compliance with federal, state, and local environmental laws and regulations.

(1) External ECAS audits, using non-installation personnel will be conducted at active Army installations every 3 years.

(2) In addition to the external audits, installations are responsible for performing an in-house audit, using the ECAS protocols, each year that an external ECAS is not conducted.

b. The Environmental Law Division has promulgated detailed guidance for ELSs and other installation level attorneys regarding their roles in:

(1) Pre-audit activities. Attorneys should give special attention to ensuring that applicable state and local environmental requirements are integrated into the ECAS protocols.

(2) Review of the Environmental Compliance Assessment Report (ECAR) that results from the audit.

(3) Protecting the ECAR from pre-mature release to the public.

4. Be advised of all environmental inspections by Federal, State, or external Army agencies, observe most of these inspections and receive a copy of all inspection reports, notices of violation, administrative orders, etc.

5. Participate in all environmental consultations and review all command responses.

6. Educate command/installation personnel concerning environmental requirements and responsibilities and develop user-friendly rules tailored to the installation's units and missions which make compliance reasonably understandable.

7. Participate in drafting local installation supplemental regulations to protect the environment and facilitate compliance with regulatory requirements.

8. Closely coordinate their activities with the MACOM ELS and the Environmental Law Division, as appropriate.

9. Be a major player in the Environmental Quality Control Committee (EQCC).

III. THE ENVIRONMENTAL QUALITY CONTROL COMMITTEE (EQCC).

A. Formation of the EQCC is required at every installation except satellites. AR 200-1, para. 12-13. The purpose of the EQCC is to advise the installation commander on environmental priorities, policies, strategies, and programs. Normally meeting **monthly**, membership on the EQCC is **mandatory** for all major staff sections, directorates, and tenant activities.

B. The installation commander or his designated representative **must** chair the EQCC. It is important that any delegate also be given authority to assign coordination responsibilities to resolve problems that are identified.

C. The EQCC should be the focal point for coordinating installation activities with environmental requirements.

D. At many installations, meetings of the entire EQCC on a monthly basis may not be practical. At a minimum, however, the ELS should meet formally on a monthly basis with the installation's environmental coordinator, representatives from the safety, training, and preventative medicine offices, and also with the direct overseers of the installation's building and maintenance activities. This "mini-EQCC" should examine all ongoing and upcoming installation activities for their environmental impacts and determine what, if any, permits or corrective actions are required. Informal discussion between members of the mini-EQCC should occur frequently on an "as needed" basis.

E. Minutes of all EQCC and mini-EQCC meetings should be taken and maintained. A summary of the minutes should be provided to the chairman of the EQCC. The summary should highlight problems identified and recommend courses of action to resolve those problems. Problems that are identified that could result in adverse publicity for the installation or command should be discussed thoroughly with the installation's public affairs officer.

IV. ADDRESSING ENVIRONMENTAL NON-COMPLIANCE.

A. Federal facilities are required to comply with applicable federal law and also state environmental laws that are encompassed by a waiver of sovereign immunity. A sample waiver of sovereign immunity reads as follows: "Each Federal agency shall be subject to and comply with all Federal, State, interstate, and local requirements, both substantive and procedural, respecting abatement and control of [air, water, etc.] pollution in the same manner, and to the same extent, as any person is subject to such requirements."

--Caution: this is a *sample* waiver provision. Each statutory waiver has its own unique language, and the applicable waiver must be reviewed in analyzing any specific problem.

B. In determining whether or not a state environmental requirement is binding on a federal facility, use the following analysis:

1. Starting point: *Hancock v. Train*.

--We need not comply unless Congress has relinquished federal supremacy (and we *cannot* pay money to the state unless Congress has authorized the expenditure).

a. Identify exactly what is it that the state is requiring us to do.

b. What waiver of federal supremacy is the state relying on?

c. Does the state requirement fit within the federal statutory program that creates the waiver? *See, e.g., Kelley v. United States*, 618 F. Supp. 1103 (W.D. Mich 1985) (CWA waiver does not render federal agency liable for violation of state law designed to protect underground water because the CWA generally does not address underground water issues); *Goodyear Atomic Corp. v. Miller*, 108 S. Ct. 1704, 1712-1717 (1988) (dissenting opinion) (state work place regulatory scheme is not encompassed within the federal waiver of sovereign immunity regarding workman's compensation laws).

2. Are there other "defenses?"

a. What about exclusive federal legislative jurisdiction? While it should insulate a federal facility from state regulation, DOJ has declined to raise this defense.

b. Typical waiver language: "...in the same manner, and to the same extent as any person..." Does state law discriminate (e.g., are municipalities or state agencies exempted)?

c. Does the state's law or regulation embody a "requirement" that is encompassed within the limits of the waiver of sovereign immunity?

(1) Based on language in *Hancock*, some courts have distinguished between environmentally protective provisions of state law and remedial provisions, finding that the latter do not constitute "requirements." *See, e.g., Florida Dep't of Envir. Reg. v. Silvex Corp.*, 606 F. Supp. 159 (M.D. Fla. 1985) (state provision creating liability for environmental damage held not to be a "requirement" for RCRA purposes).

(2) Has the requirement been regularly promulgated through a routine administrative process, or is it *ad hoc*?

(3) Does the requirement mandate "relatively precise standards capable of uniform application?" *Romero-Barcelo v. Brown*, 643 F.2d 835, 855 (1st Cir. 1979), rev'd on other grounds, sub nom. *Weinberger v. Romero-Barcelo*, 456 U.S. 305 (1982) (criminal and civil nuisance statutes held not to create specific standards that a federal agency must adhere to); *see also Kelley v. United States*, 618 F. Supp. 1103, 1108 (W.D. Mich. 1985) (state statute proscribing discharging "any substance which is or may become injurious to the public health, safety or welfare" does not create a "requirement" that a federal agency must comply with).

C. If we must comply...

1. Make arrangements to do so, or

2. If there are problems, seek to negotiate a delayed compliance agreement with the state.

3. If only a portion of the state's requirements can be achieved immediately negotiate a compliance timetable for actions that cannot be accomplished immediately.

4. **Caution:** do not negotiate an agreement with obligations that the command cannot meet.

5. **Caution:** note the fiscal law considerations discussed in Section IV F., below.

6. Should we try to comply with state requirements even if we are not required to as a matter of law? Ask:

   a. Will it improve our relationship with the regulators?

b. Is it the **smart thing to do**:

(1) Environmentally.

(2) Economically.

D. Installations receiving a notice of non-compliance/violation (NOV) with any environmental compliance requirement are required to **immediately** notify their MACOM by telephone. Within 5 working days of receipt, installations must forward notification of violations and provide copies of any associated documents received to the U.S. Army Environmental Center (AEC). Installation commanders must provide written notice of NOVs through command channels and provide copies of any documents or proposed agreements received within 14 calendar days of their receipt by the installation. AR 200-1, para. 12-7.

E. Within 45 days of receiving an NOV, the installation will forward through command channels a plan for corrective action. The plan will include corrective milestones, cost estimates, and any associated 1383 report numbers.

F. If an installation cannot immediately comply with State or Federal environmental requirements, the ELS will help negotiate a delayed compliance schedule **that can be achieved.**

1. Compliance orders/agreements may shield the command from citizen suits and other enforcement actions.

2. On the other hand, the order/agreement can result in an obligation enforceable in court, through injunctions and possibly penalties for violations.

3. **Compliance orders/agreements are negotiated at the installation level, but must be coordinated with the Environmental Law Division prior to being signed by the Installation Commander.** AR 200-1, para. 1-15.d.(2).

4. **Caution: the Anti-deficiency Act**, 31 U.S.C. § 1341 (ADA). Negligent violations of the ADA trigger a requirement that administrative discipline (up to removal from office) be imposed against the violator. Knowing and willful violation of the ADA can expose violators to possible criminal sanctions. 31 U.S.C. §§ 1349, 1350 and 1518, 1519. To avoid ADA violations:

   a. Observe the limitations on using OMA funds for construction projects.

   b. Avoid incurring an unconditional obligation to install pollution control equipment or otherwise spend money in future fiscal years in advance of an appropriation of funds.

   c. Include a condition that the required actions will be taken subject to availability of funds.

      (1) If possible, condition action upon the installation receiving funding that Congress authorizes **for the specific project necessary to achieve compliance**.

      (2) Alternatively, make action subject to funding that Congress authorizes for the project coupled with a commitment to request such funds (and then **ensure** that they are requested).

      (3) Alternatively, condition action upon the availability of funding **allocated to the installation** that can be used for the project.

      (4) Alternatively, make action subject to the availability of **any** funding that can used for the project. This provision, if used, typically requires the installation to seek funding directly from its MACOM; It is particularly important, therefore, to coordinate closely with the MACOM before proposing the use of such a provision.

5. What about presidential exemptions?

a. The president may exempt federal activities from compliance with most environmental requirements for up to a year at a time if this would be in the paramount interests of the U.S. *See, e.g.*, 42 U.S.C. § 7418(b).

b. DOD has received exemptions only twice:

(1) To allow settlement of Haitian Refugees at Ft. Allen, P.R., during the 1979-80 time period without the need to comply with the Resource Conservation and Recovery Act, Clean Water Act, Clean Air Act, or Noise Control Act.

(2) More recently, pursuant to 40 C.F.R. § 1506.11, DOD was permitted to execute two missions in support of Desert Shield/Desert Storm without complying with the formal documentation requirements of the National Environmental Policy Act. DOD was, however, required to use "alternative methods of considering environmental impacts."

See Swenson, *Desert Storm, Desert Flood: A Guide to Emergency and Other Exemptions from NEPA and Other Environmental Laws*, 2 Fed. Facility Envtl. J. 3 (1991).

c. Absent a war or other exigent circumstances, however, it is highly unlikely that presidential exemptions will be sought in the future to excuse federal facilities from complying with federal, state, or local environmental requirements.

V. FUNDING, FEES, FINES, TAXES, PENALTIES, PERSONAL LIABILITY.

A. In the Army, funding for environmental compliance and restoration (cleanup) can come from four sources:

1. The Defense Environmental Restoration Account (DERA).

2. Operations and Maintenance Account (OMA).

3. Research, Development, Testing and Evaluation (RDT&E).

4. Military Construction Account (MCA).

B. DERA is centrally managed at the Secretariat (DAESOH) level and is used only for environmental restoration projects and activities.

1. DERA shields installations from the immediate impact of funding environmental cleanups. Instead of using OMA or RDT&E money, DERA is used to fund most installation level restoration activities.

2. Many restoration actions, however, will require long-term operation to be effective (*e.g.*, ground water pump and treat operations). Current DOD policy is that DERA can be used to fund operation and maintenance of restoration projects for 10 years. After that, operational and maintenance expenses must be funded with OMA money.

C. Current compliance requirements (including training) must be satisfied through use of OMA money.

D. Budgeting for environmental compliance projects is facilitated through the A-106 process (Environmental Pollution Prevention, Control, and Abatement at DOD Facilities Report (DD 1383)). AR 200-2, para. 12-11.b.

1. Commanders must ensure that **all** pollution control projects and programs needed to achieve and maintain environmental compliance for the next 5 years are identified. Items identified (to include training) are divided into three categories:

a. Category I is for "must fund" requirements. Included within Category I are items necessary to resolve notices of violations

(NOVs), necessary to meet promulgated standards whose implementation deadline has already passed, will pass in a current budget cycle, or are needed to support a signed compliance agreement.

b. Category II is for items necessary to meet established standards whose compliance date falls in a future budget cycle.

c. Category III is for items needed to demonstrate leadership or which will require replacement in the future because of physical or technological obsolescence.

2. Installation compliance with the 1383 process is likely to receive increased scrutiny in the future. DOD is now required to forward an installation-by-installation listing of environmental compliance requirements to accompany the President's annual budget submission to Congress. In imposing this requirement, Congress stated: "**[K]nowing that their input on environmental funding requirements is going to subject [them] to Congressional oversight will provide a greater incentive to base commanders to improve the accuracy and realism of their funding estimates.**" *National Defense Authorization Act For Fiscal Year 1991: Report of the House of Representatives Armed Services Committee on H.R. 4739*, 101st Cong., 2nd Sess. 250 (1990).

3. JAGs must play a prominent role in ensuring that the command understands what the **current** requirements are. To the extent possible, JAGs should also assist the command in forecasting **future** environmental requirements.

E. Fees and Taxes.

1. The Army's policy is to pay "reasonable fees" for state and local permits re: air pollution facilities, water pollution facilities, and hazardous and solid waste activities.

2. Sovereignty has not been waived for State taxation, however. "Excessive" environmental permit and operating fees can constitute disguised taxes. States and local governments often assess three generic types of "fees" against federal facilities, which do not normally constitute reasonable service charges:

   a. Remedial Fund Fee - Fees that fund cleanup activities, or mini-superfunds, do not constitute reasonable service charges and should not be paid. DOD conducts its own cleanups and receives no benefits from programs funded by these fees.

   b. Broad "Program" Fees - States typically establish broad programs to address particular environmental media. Some program elements, such as permit review and processing, inspections, and compliance monitoring, may be paid as reasonable service charges. Other portions, such as special grant or loan programs of which we cannot take advantage, are objectionable and should not be paid. Commands must analyze these programs on a case-by-case basis and negotiate with regulators to determine the proportion of the fee to be paid.

   c. Insurance-type programs - Many states require regulated facilities of certain types, especially underground storage tanks, to pay into an insurance fund that is available to help pay the cost of pollution caused by the facility. Because DOD funds its own cleanup efforts, payment of the fee violates the second prong of the *Massachusetts* test and the fiscal self-insurance rule.

3. The label placed on the requested payment is not important. A fee is an amount which, if calculated correctly, allows an agency to recover a reasonable approximation of the costs it incurs in acting on a license request and providing a benefit or a service. A tax is an enforced contribution to provide for the general support of the government.

4. A three step test is used to determine if a "fee" is actually a tax (*see Massachusetts v. United States*, 435 U.S. 444, 464-67 (1978)). Under the *Massachusetts* test, it is determined whether or not:

   a. **The fee is imposed in a nondiscriminatory manner.** I.e., are local governmental or other entities exempted?

      --Theory: a tax can be discriminatory, but a valid permit fee or user fee cannot.

   b. **The fee is a fair approximation of the cost of the benefit received.** The "benefit" is generally the overhead expense for operating the permit system and the costs of conducting inspections.

   c. The fee is structured to produce revenues that will exceed the total cost to the State of the "benefits" it confers. Fees that are structured to produce excess revenue are often structured so that all funds received are channeled into the state's general revenue fund.

   d. **Fee/tax issues arising under the CAA or RCRA (except for underground storage tanks), however, cannot be resolved through application of the *Massachusetts* test.**

      (1) Section 118 of the CAA (42 U.S.C. § 7418(a)), waives the federal government's sovereign immunity for the payment of all fees and charges used to defray the cost of a state's air pollution regulatory program.

      (2) Section 102 of the Federal Facility Compliance Act (FFCA) amended the waiver of sovereign immunity in RCRA (42 U.S.C. § 6961 to require federal agencies to pay "**reasonable service charges** . . . includ[ing], but . . . not limited to, fees or charges assessed in connection with the processing and issuance of permits, renewal of permits, amendment to permits, review of plans, studies, and other documents, and inspection and monitoring of facilities, **as well as any other nondiscriminatory charges that are assessed in connection with a Federal, State, interstate, or local solid waste or hazardous waste regulatory program.**"

5. **REMEMBER!** Unless the fee is discriminatory, some portion (i.e., the reasonable portion) of a state imposed fee is payable.

F. Payment of Fines and Penalties.

1. Federal enforcement.

a. EPA generally cannot assess penalties against other federal agencies.

b. EPA can, however, assess federal agencies fines for failures to comply with Inter-Agency Agreements (IAGs) entered into pursuant to Section 120 of the Comprehensive Environmental Response, Compensation and Liability Act. 42 U.S.C. § 9609(a)(1)(e) (1988).

c. Pursuant to § 102(b) of the FFCA, RCRA § 6001 (42 U.S.C. § 6961) has been amended to allow the EPA Administrator to "**commence an administrative enforcement action** against any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal Government. . . . **No administrative order** issued to such a [federal] department, agency, or instrumentality **shall become final** until such department, agency, or instrumentality has had the **opportunity to confer with the Administrator**."

d. If it is constitutional (*see* discussion concerning the unitary executive doctrine at paragraph I.C. of this chapter), § 102(b) of the FFCA will enable EPA to fine other federal agencies for violations of federal solid and hazardous waste requirements. EPA's civil penalty policy (*see* EPA, "RCRA Civil Penalty Policy" § I (rev. Oct. 1990), *reprinted in*, [Administrative Materials] 17 Envtl. L. Rep. (Envtl. L. Inst.) 35089) works as follows:

(1) Penalties are assessed by determining a gravity-based penalty for a particular violation, considering any economic benefit, and adjusting the penalty for special circumstances.

(2) The gravity-based penalty is determined by reference to a matrix illustrated at page I-23.

(3) "Potential for harm," as used by the penalty matrix is defined as follows:

(a) Major: substantial likelihood of exposure to hazardous waste (HW) or may have substantial adverse effect on purposes or procedures for implementing RCRA.

(b) Moderate: significant likelihood of exposure to HU, or may have significant adverse effect on purposes or procedures for implementing RCRA.

(c) Minor: relatively low likelihood of exposure to HW, or may have an adverse effect on purposes or procedures for implementing RCRA.

(4) "Extent of deviation for requirement," as used by the penalty matrix, is defined as follows:

(a) Major: substantial noncompliance.

(b) Moderate: significantly deviates, but some of the requirements are implemented as intended.

(c) Minor: deviates somewhat, but most of the requirements are met.

(5) Multiple penalties for each violation are a distinct possibility: "A separate penalty should be assessed for each violation that results from an independent act (or failure to act) . . . [that] is substantially distinguishable from any other charge." (e.g., where different elements of proof are required multiple penalties are appropriate).

(6) Multi-day penalties are also distinct possibilities. They "should generally be calculated in the case of continuing egregious violations. However, per day assessment may be appropriate in other cases."

e. EPA also attempts to recoup, as part of any penalty assessed, the **Economic Benefit of Noncompliance**.

(1) The "benefit" is calculated based on computation of interest earned on avoided costs during period of noncompliance and marginal tax rate of company.

(2) It would seem to be inappropriate for application to Federal facilities.

f. There are a number of penalty adjustment factors.

(1) Good faith effort to comply/lack of good faith can justify 25-40% reduction/increase in otherwise appropriate fine. Examples of good faith efforts:

(a) Self-audits.

(b) Internal disciplinary action.

(c) Anything else you're not *required* by RCRA to do to comply, *e.g.*, the EQCC or any of its working groups?

(2) Degree of willfulness and/or negligence.

(a) Mitigation or aggravation of 25-40% may be justified.

(b) Factors: control over events, speed of remedy, foreseeability, precautions.

(c) Note: "knowledge of the law should serve only to enhance the penalty."

(3) History of noncompliance (upward adjustment only, of 25-40%): "The [EPA] may find a consistent pattern of noncompliance by many divisions or subsidiaries of a corporation even though the facilities are at different geographic locations. This often reflects, at best, a

corporate wide indifference to environmental protection." As a result of this, an installation's past compliance problems could subject it to a substantially enhanced fine.

(4) "Other unique factors" provision may permit argument of military-unique factors, e.g., short-notice deployment of personnel contributed to violation. These factors can either result in reduction or enhancement of the fine.

g. If EPA fines a federal agency pursuant to its authority under the FFCA, the federal agency can contest the fine pursuant to EPA's "Consolidated Rules of Practice. *See* 40 C.F.R. Part 22.

2. State enforcement.

a. As a legal matter, the issue is controlled by the applicable waiver of federal supremacy. As illustrated below, for most statutes, courts have been divided on whether the waiver of sovereign immunity is broad enough to allow a state to impose a fine or penalty for violation of environmental requirements.

(1) Clean Water Act penalties.

-- Congress has not waived sovereign immunity for state imposed civil fines resulting from past violations of the CWA. *Dep't of Energy v. Ohio*, 112 S.Ct. 1627 (1992).

(2) Clean Air Act penalties -- DOJ has opined that the CAA does not waive immunity from such penalties.

-- On August 2, 1995, the Federal District Court for the Northern District of Georgia held that the Clean Air Act does not waive federal sovereign immunity from civil fines and penalties assessed by state and local authorities. *United States v. Georgia Department of Natural Resources*, Civil Action # 1:94-CV-2993-JOF (Aug. 2, 1995). Georgia had assessed fines under

the CAA in separate cases against Fort Benning and the Federal Bureau of Prisons. The Court's decision is the first to specifically address the CAA sovereign immunity issue in light of the Supreme Court's holding in *Dep't of Energy v. Ohio*. While the Supreme Court's reasoning in that case had suggested that the CAA did not waive sovereign immunity from fines and penalties, it did not resolve the issue, and states have continued to assess fines against federal facilities. *United States v. Georgia Department of Natural Resources* now provides clear precedent in support of the position that federal facilities are not subject to fines by states and localities under the CAA.

(3) Penalties for violation of RCRA.

(a) Pursuant to the § 102(a) of the FFCA, RCRA § 6001 (42 U.S.C. § 6961) has been amended to subject federal agencies to "**all administrative orders and all civil and administrative penalties and fines, regardless of whether such penalties or fines are punitive or coercive in nature or are imposed for isolated, intermittent, or continuing violations. The United States hereby expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement . . . .**"

(b) **Note: It is DOD's position that the FFCA's broadening of the waiver of sovereign immunity in RCRA does not extend to RCRA's Underground Storage Tank (UST) program.** The UST program (Subchapter IX of RCRA) has a separate waiver of sovereign immunity which is found at 42 U.S.C. § 6991f.

b. Other than in the case of violation of state or local solid or hazardous waste laws, DA policy remains that the Army is not subject to state imposed fines and penalties for violation of environmental requirements. In some instances, however, accommodations have been reached with individual states.

Bottom line: Coordinate with the MACOM ELS and the Environmental Law Division before advising your command about whether or not to pay *any* fines or penalties.

3. Sources of funds to pay fines and penalties.

   a. Congress prohibits the use of DERA funds to pay fines and penalties for violations of environmental requirements (*See, e.g.*, National Defense Authorization Act for Fiscal Year 1995, Pub. L. 103-337, § 321, 108 Stat. 2663 (October 5, 1994).

   b. As a result, it is likely that fines and penalties will be paid out of **O&M** funds.

G. Personal liability of government employees.

1. Federal employees can be held individually liable for fines and penalties resulting from violation of some environmental statutes.

   a. *See, e.g.*, 16 U.S.C. § 1540 (Endangered Species Act). Nearly 30 soldiers and civilian employees at Ft. Bragg have paid fines ranging from $50 to $300 over the last 18 months for violations of the Endangered Species Act.

   b. Currently, only three statutes specifically provide that federal employees can not be held individually civilly liable for environmental violations resulting from performance of their official duties; *see* 33 U.S.C. § 1323 (Clean Water Act); 42 U.S.C. § 7418(a) (Clean Air Act); 42 U.S.C. § 6961 (RCRA).

2. Criminal liability, has also been a problem for federal employees.

   a. EPA has about 50 criminal investigators who investigate about 150-200 cases each year. Congress has authorized EPA to hire 200 additional investigators.

b. The EPA refers about 55 cases each year to DOJ for prosecution. The Environmental Crimes Section is the fastest growing section at the DOJ. This is likely to remain the case as more of the new EPA investigators come on line.

c. The number of federal criminal prosecutions has been increasing steadily. Moreover, jail time adjudged by federal judges and actually served by individual defendants has also been increasing. Generally speaking, **individuals convicted of a federal environmental crime have a 50% chance of being sentenced to jail.** The **average jail term adjudged in those cases is 10 months.**

d. As of 1 August 1992, the Army has had five civilian employees convicted of environmental crimes. The details of the Army personnel's cases as well of descriptions of cases involving other DOD personnel are described below:

(1) *United States v. Dee*, 912 F.2d 741 (4th Cir. 1990), *cert. denied*, __ U.S. __, 113 L.Ed.2d 242 (1991) (the "Aberdeen Case"). In May 1989 three civilians (SES, GM-15, GM-14) of the Army Chemical Research and Development Command, Aberdeen Proving Ground, were convicted of various RCRA violations involving illegal treatment, storage and disposal of hazardous wastes. Their claim of immunity from Federal prosecution because of their status as Federal employees was rejected by the courts. The three were sentenced to three years of probation and 1,000 hours of community service. DoJ denied requests to reimburse them for attorney fees of about $108,000 each. *Matter of: William Dee, et al. -- Requests for Payments of Attorneys' Fees*, Comp. Gen. Op. B-242891 (Sep. 13, 1991).

(2) *United States v. Carr*, 880 F.2d 1550 (2d Cir. 1989). David Carr, a civilian range foreman at Fort Drum, was initially charged with 37 counts of violation of the Clean Water Act, four counts of illegal disposal of hazardous wastes in violation of RCRA, and the two CERCLA counts for which he was convicted. The indictment charged Carr with the supervision and

direction of other civilian employees in the disposal of about 100 to 150, 5-gallon cans of paint into a pond on the base. In December 1988, Carr was sentenced for two violations of CERCLA for twice failing to report a spill of hazardous substances. On each count imposition of a prison sentence was suspended. Carr was given one year of probation; he also paid $300 in fines and assessments.

(3) *United States v. Bond*, Cr. 91-0287-GT (S.D. Cal. Apr. 9, 1991). Mr. Cletus Bond, a civilian employee of the Navy, pled guilty to one count of negligent discharge of pollutants (radiator fluid contaminated with anti-freeze) in violation of the Clean Water Act. He was sentenced to one year of probation and a $500 fine. Mr. Bond was a supervisor at the Navy Exchange Auto Repair Facility, San Diego, California. The radiator fluid was discharged into a storm drain and flowed into a nearby Creek.

(4) *United States v. Pond*, Cr. S-90-0420 (D. Md. Apr. 17, 1991). Mr. Richard Pond, civilian manager of the wastewater treatment plant at Fort Meade, was convicted in January 1991 of one felony count of violating a Clean Water Act permit, eight felony counts of making false statements on discharge monitoring reports, and a misdemeanor violation for theft of government property by using government lab equipment to analyze water samples for a privately-owned wastewater treatment plant. Pond was sentenced to eight months in prison, to be followed by one year of supervised release which will include four months of home detention, 60 hours of community service, and restitution of $99.99.

(5) *United States v. Curtis*, Cr. (S.D. Ak. May 26, 1992). From 1986 to 1989, John Curtis, was the director of the fuels division at Adak Naval Air Station, Alaska. Among his responsibilities was the operation of several miles of pipelines. Over a five month period spanning from October 1988 to February 1989, Curtis ignored repeated employee warnings of a pipeline leak. As a

result, thousands of gallons of fuel flowed into an inlet of the Bering Sea. The employees finally took Curtis to the site of the leak, but the pipeline was not turned off until the base environmental manager was told what was happening. In October 1991, Curtis was indicted on five felony counts for knowing violations of the Clean Water Act. He was convicted in March 1992, of three counts of violating the Clean Water Act: one felony count for a knowing violation and two lesser-included misdemeanor counts for negligent violations. Curtis was sentenced to serve 10 months in jail.

(6) *United States v. Dunn, Larimore, and Divinyi*, Cr. no. 92-117-COL (JRE) (M.D. Ga. 1992). Three civilian employees (two GS-12s and one GS-11) at Fort Benning, Georgia were indicted on 29 Jan 1992, for one count of conspiracy to violate the Endangered Species Act. Two of the individuals (the chief of natural resources management division and the forestry supervisor) were also indicted on six counts of making false official statements. The chief of the environmental management division was also indicted on one count of making a false official statement. The offenses revolved around requests submitted from 1985-1989 for commercial timber harvesting at Fort Benning, on which requests defendants are alleged to have knowingly failed to note habitat of the red cockaded woodpecker, an endangered species.

(7) *California v. Hernandez*, No. 25148 (Riverside Mun. Ct. May 11, 1992). In March 1991, Andy Hernandez, sewage treatment plant foreman at March AFB, changed sludge test results for biochemical oxygen demand to bring the results within the level authorized by the plant discharge permit. Hernandez made these changes without doing any additional tests. In May 1992, Hernandez plead guilty to falsifying a wastewater test record. He was given a suspended sentence to pay a $5,000 fine and placed on probation for 18 months.

(8) *California v. Lam* (Ca. May 29, 1992). Sam Lam, an environmental manager at the Marine Corps' El Toro Air Station, was initially charged with felonies based on reports he caused to be dumped in a municipal landfill ninety 55-gallon drums containing leaded paint waste and heavy metals. In May 1992, Lam was convicted of five misdemeanor counts each for unlawful transportation and disposal of hazardous waste. He was sentenced on one count to pay a $5,000 fine, ordered to complete a hazardous materials handling course, and placed on probation for three years. Sentencing on the remaining nine counts was suspended for the period of probation. The Navy/USMC concluded that while Lam's conduct was negligent, he had acted in good faith, and therefore was within the scope of his employment. As a result, they supported his request that DOJ pay his private attorney fees. DoJ approved Lam's request, authorizing payment of attorneys fees of up to $90.00 per hour.

3. There is **no attorney client privilege** between an attorney and a commander on environmental compliance issues -- at least in cases involving federal investigations and prosecutions.

4. If a federal employee is indicted for an environmental crime, and it is a:

   a. Federal prosecution: representation will normally be provided by a private attorney hired at the employee's expense. *See* 28 C.F.R. § 50.15.

   b. State prosecution: representation by DOJ is possible if it is in the government's best interests (i.e., acting within scope of duties and not in violation of federal law). *See* 28 C.F.R. § 50.15.

      (1) Satisfying the second prong of the test (not in violation of federal law), however, may prove

especially difficult since many state environmental statutes are modeled after federal statutes.

(2) The Marine Corp, however, was recently able to persuade DOJ to pay (up to $99.00 per hour) to represent a civilian employee charged with criminal violations of California environmental law. *See* discussion of *California v. Lam* at page 28 in this chapter.

5. Official immunity in the environmental arena.

a. Basic requirements.

(1) Actions are necessary and proper; i.e., they are reasonably required to accomplish a government objective, task, or mission, and they are taken with due regard for the safety, well-being, and property interests of others.

(2) The actions that were taken did not violate federal law.

b. Immunity is not available in federal criminal prosecutions; it is theoretically available in state prosecutions. Because most state environmental requirements are based on federal requirements, however, immunity will likely be precluded.

6. Levels of criminal intent.

a. Air, water, and hazardous waste laws proscribe "knowing violations."

(1) In the hazardous waste area, there is authority for the proposition that elements of the offense include proof that the accused knew the material was hazardous and that the employer did not have a permit for the hazardous waste operation. U.S. v. Johnson &

Towers, Inc., 741 F.2d 662 (3d Cir. 1984); *see also U.S. v. Hayes Intern. Corp.*, 786 F.2d 1499 (11th Cir. 1986).

(2) Scienter, however, can be proven through circumstantial evidence. In one case, "knowledge" was imputed where a defendant failed to inquire about permits (*Hayes*, above, at 1504).

b. In the "Aberdeen Case" (*United States v. Dee*, 20 Env't Rep. (BNA) 166 (D.C. Md. May 11, 1989), *aff'd*, 912 F.2d 741 (4th Cir. 1990)), in which three senior Army civilian employees were convicted of violating the Resource Conservation and Recovery Act, the judge instructed the jury that:

"The element of knowledge may be satisfied by inference drawn from proof that the defendants deliberately closed their eyes to what would otherwise have been obvious to you. . . . Stated another way, the defendant's knowledge may be inferred from a willful blindness to the existence of a fact."

c. In certain circumstances, negligent violations can also subject federal employees to criminal violations. *See, e.g.*, 33 U.S.C. § 1319 (CWA); 42 U.S.C. § 7413(c) (CAA).

CHAPTER II -- THE NATIONAL ENVIRONMENTAL POLICY ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370a (published as Appendix C in AR 200-2).

2. 42 U.S.C. § 7609 (EPA review of EISs).

3. 40 C.F.R. §§ 1500-1508 (Council on Environmental Quality Regulations on Implementation of NEPA) (published as Appendix E in AR 200-2).

4. 40 C.F.R. Part 6 (EPA Regulations Implementing NEPA).

B. Executive Orders.

1. Executive Order 11524, Protection and Enhancement of Environmental Quality, March 5, 1970, *reprinted at* Appendix E, AR 200-2.

2. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, January 4, 1979, *reprinted at* 42 C.F.R. § 4321.

C. Related DOD Directives.

1. DOD Dir. 6050.1, Environmental Effects in the United States of DOD Actions (30 July 1979).

2. DOD Dir. 6050.7, Environmental Effects Abroad of Major DOD Actions (31 March 1979).

D. Related Service Regulations, Pamphlets, and Technical Manuals.

1. AR 200-2, Environmental Effects of Army Actions (23 December 1988) (implementation of NEPA).

2. AR 420-40, Historic Preservation (15 April 1984). (implementation of the National Historic Preservation Act).

3. AR 5-10, Reduction and Realignment Actions (26 August 1977).

4. AR 95-2, Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigational Aids (15 September 1988).

5. AR 210-20, Master Planning for Army Installations (12 June 1987).

6. AR 360-5, Army Public Affairs, Public Information (31 May 1989).

7. Air Force Regulation (AFR) 19-2, Environmental Impact Analysis Process.

8. SECNAV Instruction 5090.6 Evaluation of Environmental Effects from Department of the Navy Actions (26 Jul 91).

9. OPNAVINST 5090.1A, Procedures for Implementing the National Environmental Policy Act (NEPA) (2 Oct 90).

II. KEY DEFINITIONS.

A. The "Council on Environmental Quality" (CEQ) is a staff Office of the Executive Office of the President created by NEPA. 42 U.S.C. § 4342. The purpose of the CEQ is to "provide a consistent and expert source of review of national policies, environmental problems and trends, both long-term and short-term" 115 Cong. Rec. 26572 (1969) (statement of Rep. Dingell). NEPA is implemented through the CEQ regulations and agency regulations that are consistent with the CEQ regulations.

B. "Human environment" means the natural and physical environment and the relationship of people with that environment. . . . **This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement.** When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment. 40 C.F.R. § 1508.14.

C. "Impacts" and "effects" are synonymous under the CEQ regulations.

1. "Effects" include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. 40 C.F.R. § 1508.8.

2. As defined by 40 C.F.R. § 1508.7, "impacts" include both direct, indirect, and cumulative impacts.

a. Direct impacts are caused by an action and occur at the same time and place as the action.

b. Indirect impacts are caused by an action but occur later in time or distance from the action that caused them, but are still reasonably foreseeable.

c. Cumulative impacts result from the incremental impact of an action when added to past, current, reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

d. An agency need not consider impacts or effects which are highly speculative or indefinite in nature. *Sierra Club v. Marsh,* 769 F.2d 8868, 875 (1st Cir. 1985). As seen from the different regulations, an agency need only consider those effects which are reasonably foreseeable. An agency does not have to let "its imagination run wild as to whether there will be **any** environmental impact." *First National Bank of Homestead v. Watson,* 363 F. Supp. 466, 473 (D.C.D.C. 1973) (emphasis in original).

D. "Mitigation" consists of actions which reduce the severity or intensity of impacts of other actions. 40 C.F.R. § 1508.20.

E. "Categorical Exclusions" (CXs) are actions, which under normal circumstances, do not have, individually or cumulatively, a significant effect on the quality of the human environment...and for which neither an environmental assessment nor an environmental impact statement is required. 40 C.F.R. § 1508.4.

F. "Environmental Assessments" (EAs) are concise public documents which provide sufficient evidence and analysis to determine if an Environmental Impact Statement is required...and aid an agency's compliance with NEPA when no environmental impact statement is necessary. 40 C.F.R. § 1508.9.

G. "Finding of No Significant Impact (FONSI)" is a document prepared by a Federal agency briefly presenting the reasons why an action will have no significant effect on the human environment and for which an environmental impact statement will not be prepared. It is a possible finding resulting from an environmental assessment. 40 C.F.R. § 1508.13.

H. "Environmental Impact Statements" (EISs) are detailed written statements, whose purpose is to: 1) serve as an action- forcing device to insure that the policies and goals defined in NEPA are infused into the ongoing programs and actions of the Federal Government, 2) provide full and fair discussion of significant environmental impacts, and 3) inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. 40 C.F.R. § 1502.1.

I. A "proponent" is the lowest level decision maker for the proposed action in question. A proponent is the unit, element, or organization that is responsible for initiating and/or carrying out the proposed action. **The proponent has the responsibility for preparing and/or securing funding for the preparation of any necessary environmental documentation.** AR 200-2, Glossary.

J. A "proposal" exists at that stage in the development of an action when an agency subject to NEPA has a goal and is *actively* preparing to make a decision on one or more alternative means of accomplishing that goal and the effect can be meaningfully evaluated. 40 C.F.R. § 1508.23.

III. OVERVIEW.

A. History -- In 1969, Congress enacted the National Environmental Policy Act ("NEPA"). The Act was intended by Congress:

> to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality. 42 U.S.C. § 4321

This national policy pledges:

> 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.

42 U.S.C. § 4332 (a).

B. Requirements -- NEPA imposes two basic requirements on federal agencies.

1. **First, it requires the agency to consider every significant aspect of the environmental impact of a proposed action.**

2. **Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision-making process.**

NEPA does not, however, require agencies to elevate environmental concerns over other appropriate considerations. Rather, it requires that agencies take a "hard look" at the environmental consequences before taking a major action.

C. NEPA was not designed to prevent all possible harm to the environment, but rather to influence the decision making process by making government officials notice environmental considerations and take them into account.

1. **NEPA does not mandate particular results, but simply prescribes a decision-making process.**

2. "[I]f the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs. . . . NEPA merely prohibits uninformed -- rather than unwise -- agency action." *Robertson v. Methow Valley Citizens Council,* 109 S.Ct. 1835, 1846 (1989).

D. The scope of NEPA is further limited given the fact that **economic or social effects of federal actions are not intended by themselves to require preparation of an EIS.** 40 C.F.R. § 1508.14.

1. "Socio-economic, or secondary, effects alone are not protected by NEPA." *National Ass'n of Government Employees v. Rumsfeld*, 413 F. Supp. 1224 (D.C.D.C. 1976), *aff'd*, 556 F.2d 76. *See also Como-Falcon Community Coalition, Inc. v. United States Department of Labor,* 609 F.2d 348, 345 (8th Cir. 1979), *cert denied*, 446 U.S. 936 (1980).

2. The primary concern of NEPA is with the physical environmental resources of the nation, and secondary socio-economic effects may be considered only when an action will have a primary impact on the *natural* environment. *Image of Greater San Antonio v. Brown*, 570 F.2d 517, 522 (5th Cir. 1978).

IV. TYPES OF ACTIONS COVERED BY NEPA.

A. *Major Federal Actions.* NEPA applies only to actions with effects that may be major and which are potentially subject to Federal control and responsibility. 40 C.F.R. § 1508.18. Actions include:

1. Projects and programs partly or entirely financed, assisted, conducted, regulated, or approved (issued permit) by federal agencies.

2. New or revised federal agency rules, regulations, plans, policies, or procedures, as well as legislative proposals.

B. General Guidance. Federal Actions tend to fall within one of the following categories: 40 C.F.R. § 1508.18(b).

1. Adoption of official policy (rules regulations, agency interpretations).

2. Adoption of formal plans or official documents prepared or approved by federal agencies, which guide future uses of federal resources.

3. Adoption of programs to implement a specific policy or plan.

4. Approval of, or issuing a permit for, specific projects located in a defined geographic area.

C. Army Guidance. Excerpt from para. 2-2, AR 200-2. (Actions requiring environmental documentation.)

1. Policies, regulations, and establishment of procedures, or other forms of guidance.

2. New management and operational concepts and programs (in areas such as logistics, R&D, procurement, personnel assignment).

3. Projects (e.g., facilities construction, weapons and vehicle research and development, etc.).

4. Activities (e.g., individual and unit training, flight operations, and facility test and evaluation programs).

5. Activities involving radioactive materials.

6. Leases, easements, permits, licenses, and other forms of permission for use of Army land.

7. Research and development in such areas as genetic engineering, laser testing, and electromagnetic pulse generation.

8. Installation restoration projects (e.g., hazardous materials clean-up).

9. Federal contracts, grants, subsidies, and loans.

V. EXCEPTIONS TO THE REQUIREMENT FOR NEPA COMPLIANCE.

A. Proposed actions involving classified information -- 40 C.F.R. § 1507.3(c); para. 2-5, AR 200-2.

1. "[Classified information] does not relieve a proponent [of an action] of the necessity to assess and document the environmental effects of the proposed action." Para. 2-5c, AR 200-2.

2. However, where classified information would be compromised, a full EIS need not be produced. *See e.g., Weinberger v. Catholic Action of Hawaii,* 454 U.S. 139 (1981); *Laine v. Weinberger*, 541 F. Supp. 599 (C.D. Cal. 1982).

3. Possible approach--segregate classified data and process unclassified material routinely.

B. Statutory Exemptions.

1. Non-compliance must be **explicitly** excused by Congress.

2. Few such exemptions have been enacted that impact on the military. Two examples, however, are the 1988 and 1990 Base Realignment and Closure Acts. These Acts specifically exempted the Commissions on Base Realignment and Closure from having to prepare an EIS concerning their selection of bases for closure or realignment.

C. Statutory Conflicts.

1. If the requirements of another federal statute make NEPA compliance impossible, then NEPA compliance is excused.

2. Interpreted narrowly by the courts; compliance must be **impossible**, not merely inconvenient. *See e.g., Flint Ridge Development Co. v. Scenic Rivers Ass'n,* 426 U.S. 776 (1976); *U.S. v. Students Challenging Regulatory Agency Procedures (SCRAP I)*, 412 U.S. 669, 694-95 (1973); *Cf. Weinberger v. Catholic Actions of Hawaii,* 454 U.S. 139 (1981).

D. Emergency Actions--40 C.F.R. § 1506.11; AR 200-2, para. 2-3b.

1. Actions taken in response to emergencies need not be preceded by the NEPA decision-making process.

2. Emergencies are situations requiring immediate action to--

a. protect life and property.

b. protect national defense and national security.

3. Exemption from NEPA process only applies to actions necessary to control the immediate effects of the emergency.

4. Even when granted an emergency exemption, agency must still develop an alternative to the proposed action. *See, Valley Citizens for a Safe Environment v. Vest,* 1991 WL 330963 (Civ-A No. 3077-F) (D. Mass. May 30, 1991).

VI. NEPA DOCUMENTATION REQUIREMENTS.

A. General Requirements for Analyzing Environmental Impacts of major federal actions.

1. "[All agencies must] utilize a systematic, interdisciplinary approach to 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." 42 U.S.C. § 4332(2)(A).

2. "[All agencies must] identify and develop methods and procedures which will insure that presently unqualified environmental amenities and values will be given appropriate consideration in decisionmaking along with economic and technical considerations." 42 U.S.C. § 4332 (2)(B).

B. In determining what type of documentation is necessary for a particular action, it first must be determined whether the action: 1) qualifies for a categorical exclusion, 2) normally requires an environmental assessment, or 3) normally requires an environmental impact statement.

VII. CATEGORICAL EXCLUSIONS (CXs).

A. CXs reduce unnecessary paperwork and delay by eliminating EA and EIS procedures when clearly not necessary. Currently, the Army has identified 29 types of activities that qualify as CXs. *See* 40 C.F.R. § 1508.4; Chapter 4 and Appendix A, AR 200-2. Subordinate commands can not modify this CX list. They can, however, request modifications of the CX list through the Army Environmental Office. AR 200-2, para. 4-4.

B. Criteria for establishing CX categories.

1. Minimal or no individual or cumulative effect on the quality of the environment.

2. No environmentally controversial change to existing conditions.

3. Similar actions have been examined and qualify for CX treatment.

1. The project is greater in scope or size than that normally encompassed in the CX category.

2. Poor environmental conditions may be degraded. See *Hanly v. Kleindienst (Hanly II),* 471 F.2d 823 (2d Cir. 1972).

3. The proposal will initiate degrading influence in areas still in substantially natural condition.

4. Unproven technology will be employed.

5. Threatened or endangered species, archeological or historic sites, or other protected resources are present.

6. Hazardous or toxic substances will be used with risk of exposure to the environment.

7. The project will affect prime or unique agricultural land, wetlands, coastal zones, wilderness areas, floodplains, or "Wild and Scenic River" areas.

D. Many federal agencies do not require any formal documentation if a proposed action qualifies as a CX. The Army, however, requires a "Record of Environmental Consideration" (REC) for some CX actions. See para. 3-1a, Fig. 3-1, and App. A, AR 200-2. While a particular format is not absolutely prescribed, AR 200-2 recommends that the format illustrated at Figure 3-1, AR 200-2, be used.

VIII. ENVIRONMENTAL ASSESSMENTS (EAs).

A. EAs are primarily intended to determine whether an EIS must be prepared and to provide a public record of environmental considerations. Secondarily, EAs aid NEPA "compliance" (environmental consideration) when no EIS is required and also facilitate the preparation of an EIS if one is necessary. 40 C.F.R. § 1508.9.

B. Under para. 5-2, AR 200-2, an EA is required when the proposed action **has the potential** for:

1. Cumulative impact on environmental quality when combining effects of other actions or when the proposed action is of lengthy duration.

2. Release of harmful radiation or hazardous/toxic chemicals into the environment.

3. Violation of pollution abatement standards.

4. Some harm to culturally or ecologically sensitive areas.

C. Actions normally requiring an EA are listed at paras. 5-2 and 5-3, AR 200-2. They include:

1. Special field training or testing on the installation, beyond the scope of the annual training cycle.

2. Military construction.

3. Herbicide, insecticide, or rodenticide use programs. But note *Society for Animal Rights v. Schlesinger,* 512 F.2d 915 (D.C. Cir. 1975) (uncontested CEQ decision that EIS was required for extermination of 10 million blackbirds at Ft. Campbell).

4. Preparation of regulations, etc. which have a potential for a measurable impact on the environment, and which address actions that do not qualify for CX treatment.

5. Changes in installation land use which may be expected to have some impact on the environment.

6. Repair or alteration which affects historically significant structures.

7. Development of a laboratory using dangerous or hazardous chemicals, drugs, and other materials.

8. Actions which could cause soil erosion or potentially affect prime or unique farm land, wetlands, floodplains, coastal zones, wilderness areas, "Wild and Scenic River" areas, or areas of critical environmental concern.

9. New weapon systems development and acquisition.

10. Significant alterations of the installation master plan and land and natural resource management plans.

11. Proposals that may lead to excessing of Army property which are environmentally controversial.

12. Actions which take place in wildlife refuges.

13. Timber management and harvesting programs.

14. Field activities on land not controlled by the military, including firing missiles and weapons over navigable waters of the U.S. *See Citizens for Reid State Park v. Laird,* 336 F. Supp. 783 (S.D. Me. 1972).

15. Actions with significant local or regional effects on energy availability.

16. Actions which affect any species on, or proposed to be placed on, federal lists of endangered or threatened species, or are on applicable state or territorial lists of endangered or threatened species.

17. Production of hazardous or toxic materials.

D. Proponents may, but need not, follow the format established for EISs in preparing an EA. (see App. D, AR 200-2). At a minimum, however, para. 5-4, AR 200-2, requires that each EA:

1. Describe the proposed action.

2. Discuss the purpose of, and need for, the proposed action.

3. Identify appropriate and reasonable alternative actions that have been considered, including the no-action alternative, and alternatives eliminated from consideration.

4. Describe the affected environment.

5. Discuss the environmental impacts of the proposal and the alternatives in comparative form.

   a. The no-action alternative serves as the baseline for comparison of environmental effects of the proposed action and other alternatives.

   b. The no-action alternative may result in degraded environmental conditions over time due to predictable consequences from not fulfilling the proponent's need.

6. List the agencies and persons consulted in preparing the EA. While scoping (a determination of overall extent of project and potential of its cumulative environmental effects) is not absolutely required for an EA, some facsimile of scoping should be used to identify relevant environmental concerns.

7. Contain an explicit "Finding of No Significant Impact" (FONSI) or a conclusion that an EIS is necessary and a statement that a notice of intent will be published prior to preparation of the EIS.

   a. Specific guidance on preparing FONSIs can be found at para. 5-5, AR 200-2.

   b. A FONSI must include a discussion of: (40 C.F.R. § 1508.13.)

      (1) The reasons why the action will not have a significant impact.

      (2) The mitigation necessary to reduce significance of impacts to insignificance (mitigated FONSI). (Not preferred method.)

(3) The public review of a FONSI. (There is no requirement for agency to provide a written response to specific public comments as is required with draft EISs.).

8. Contain evidence that the decision maker has reviewed the EA along with other appropriate planning documents.

E. As of 26 October 1991, there are additional processing requirements for processing and signing EAs.

1. **All EAs must be reviewed by the installation or activity SJA or chief legal advisor before submission to the commander.**

2. All EAs must be signed by the project's decisionmaker. **In no case will this approving official be lower than the installation or activity commander.**

3. If the scope of the project is local in nature, the FONSI will be published in the local media. If the project is:

a. of national interest, or

b. a base realignment and closure action, or

c. a HQDA sponsored action,

the proponent will submit the EA and FONSI to HQDA before public release.

F. Common EA Shortfalls are listed below.

1. An EA must be a planning document. As such, an EA must be prepared before work on the project is begun. Doing EA documentation after the fact is an invitation for a lawsuit from a concerned/ disgruntled individual or citizen group.

2. The EA must be prepared using an "interdisciplinary approach."

   a. Find and use experts. Experts can, of course, be hired. The Army has diverse experts available to it internally through such agencies as United States Army Environmental Center (AEC), Army Center for Health Promotion and Preventative Medicine (CHPPM), and the Corps of Engineers.

   b. Other federal and state agencies should also be consulted in order to take advantage of their expertise.

3. As the proposal gets amended, the EA must be reevaluated to ensure it covers the pertinent aspects of the current project.

4. Provide for public participation to the "extent practicable." See para. 5-6 and Chap. 7, Ar 200-2.

5. Ensure discussions are not simply conclusory statements without any analytical data to support a FONSI. *Protect Key West v. Cheney,* 795 F. Supp. 1552 (S.D. Fla. 1992).

6. Ensure cumulative impacts are considered, i.e. specific impacts of the project when combined with other past, present and reasonably foreseeable future actions that are related to the proposed project. *Fritiofson v. Alexander,* 772 F.2d. 1225 (5th Cir. 1985).

7. An Administrative Record (AR) must be compiled to support the EA. The Administrative Record must thoroughly document all records, resources, and information on which the decision maker is expected to make his decision. Use of the scoping process assists in compiling the AR.

8. The EA must actually be considered by the decision maker prior to any irretrievable commitment of resources being made to the proposed action. The decision maker must either review the AR or a carefully prepared executive summary of the AR prior to signing the Record of Decision (ROD).

IX. ENVIRONMENTAL IMPACT STATEMENTS (EISs).

A. General. "[An EIS is required in] every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment." 42 U.S.C. 4332(C). Socioeconomic impacts alone do not necessitate the preparation of an EIS. *See Tongass Conservation Society v. Cheney,* 924 F.2d 1137 (D.C. Cir. 1991)

B. Conditions requiring an EIS. Para. 6-2, AR 200-2, requires the preparation of an EIS by the proponent when a proposed action has the potential to:

1. Significantly affect environmental quality or public health or safety.

2. Significantly affect historic or archaeological resources, and recreational or ecologically significant areas.

3. Several sections in the CEQ regulations clarify when a proposed action is one which significantly affects [impacts on] the human environment. 40 C.F.R § 1508.3 defines "affecting" as "will or may have an effect on." "Effects" include:

   a. Direct effects, which are caused by the action and occur at the same time and place.

   b. Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

4. The determination of whether an effect is "significant" requires an analysis of both context and intensity:

   a. Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific

action, significance would usually depend upon the effects in the local rather than in the world as a whole. Both short- and long-term effects are relevant.

b. Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

40 C.F.R. § 1508.27.

C. Actions normally requiring an EIS according to para. 6-3, AR 200-2, are:

1. Significant expansion of a military facility (such as a depot or major training installation).

2. Construction in an environmentally sensitive area (e.g., wetlands, coastal zone).

3. Disposal of nuclear materials and other hazardous or toxic waste (except, in most routine cases, when a RCRA permit has been obtained).

4. Land acquisition, outleasing, and other actions which may lead to a significant change in land use.

5. CONUS realignment of brigade or larger units in peacetime (unless the only impacts are socioeconomic).

6. Closure of a major installation (unless the only impacts are socioeconomic).

7. Training exercises conducted outside the installation when significant environmental damage might occur.

8. Major changes in the installation's mission affecting areas of critical environmental concern.

D. Key Steps in the EIS process:

1. Scoping. Scoping is a mandatory process designed primarily to identify environmental, social and economic impacts of and alternatives to a complex or segmented proposed project through public participation.

a. Tests to determine the extent of the scoping requirement:

(1) Would it be "irrational an unwise to implement the proposal unless further steps were to be pursued later? *Trout Unlimited v. Morton,* 509 F.2d 1276, 1285 (9th Cir. 1974); *Thomas v. Peterson,* 753 F.2d 754 (9th Cir. 1985).

(2) Does the proposal have an "independent utility" apart from possible related future actions? *Daly v. Volpe,* 514 F.2d 1106, 1110 (9th Cir. 1975).

(3) CEQ Tests. 40 C.F.R. § 1508.25(a).

(a) Connected Actions are closely related actions if they: 1) automatically trigger other actions which require an EIS, 2) cannot or will not proceed unless other actions are taken, 3) are interdependent parts of a larger action or depend on the larger action for their justification.

(b) Cumulative actions are those that when viewed with other proposed actions have cumulatively significant impacts.

(c) Similar actions are those that when viewed with other reasonably foreseeable agency actions, have similarities that provide a basis for evaluating their environmental consequences.

(d) Through the scoping process the following questions should be answered:

(4) What alternative actions should be evaluated?

(5) What environmental impacts should be evaluated?

(6) What evidence is available?

(7) Who will be responsible for obtaining the data and preparing the EIS?

(8) What time limits should be established?

b. A good scoping process is not a defense when an EIS fails to address an important point, but a good faith effort may lead a court to be favorably disposed to the agency's position.

c. Starting points.

(1) Develop a coherent statement of the proposal and alternative courses of action to achieve the proposal.

(2) Conduct preliminary research regarding potential environmental impacts, and identify potentially interested parties and groups.

d. Determine how the public will participate.

(1) Public notice is required.

(a) Make a concerted, good-faith effort to reach potentially interested parties.

(b) Publication of notice in the Federal Register may be required.

(2) Invite written comments.

(3) Invite telephonic input.

(4) Conduct one or more public meetings or hearings. Arguably, this is the best approach--it allows the development of working relationships, and it lets people see that their input is being considered. In conducting a public meeting, however, it is **very important** to keep an open mind while also focusing on gathering specific input from attendees and not debating or defending the proposed action or any alternative.

e. Prepare and distribute information packets.

(1) Briefly explain the proposal.

(2) Identify alternatives the agency proposes to consider.

(3) Identify environmental issues and impacts.

(4) Explain the purpose of the scoping process--i.e., to gather *specific* comments to guide preparation of an EIS.

(a) What environmental impacts should be addressed?

(b) What alternatives should be evaluated?

(c) What resources should be consulted?

(5) Explain that no decision has been made on the contents of the EIS, or whether to proceed with the proposal, or how to proceed it if it is pursued.

(6) Explain how the public can participate in the process.

2. Prepare a Preliminary Draft EIS (PDEIS).

a. Follow the format described at para. 6-4, AR 200-2.

b. Identify environmental issues and adequately evaluate environmental impacts.

c. Address all concerns raised during the scoping process. Explain why comments received lack relevance or significance if it is appropriate to do.

d. Discuss the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity.

e. Consider all reasonable alternative courses of action, including--

(1) The alternative of "no action."

(2) Reasonable alternatives beyond the decision maker's authority.

f. Identify irreversible commitments of resources.

g. Identify unavoidable adverse consequences if the proposal is implemented.

h. If there is one, identify the preferred alternative.

i. Identify mitigation measures that will be implemented and discuss how mitigation will be ensured.

j. Distribute copies of the PDEIS to HQDA agencies for review and comment

3. Prepare the Draft EIS (DEIS).

a. Incorporate comments and suggestions, as appropriate, from the PDEIS review.

b. Submit to HQDA for approval.

c. Have Notice of Availability published in the Federal Register.

d. Allow for the required public comment period.

4. Prepare the Final EIS (FEIS).

   a. Acknowledge and address public comments on the DEIS.

   b. Make corrections or additions as necessary.

   c. Prepare Notice of Availability (NOA) for publication by the EPA in the Federal Register.

   d. Take **no action** for 30 days following publication of the NOA.

   e. Prepare a Record of Decision (ROD), which becomes part of the EIS documentation.

5. Issue the Record of Decision (ROD). The ROD must include:

   a. A concise statement of the final decision.

   b. An identification of all alternatives to the proposed action and the preferred alternative.

   c. A statement of any mitigation adopted, or reasons why mitigation was not adopted.

E. Mitigation Plans.

1. NEPA requires federal agencies to mitigate the adverse effects of their actions to the extent possible.

2. Agencies must include in an EIS a reasonably detailed discussion of possible mitigation measures. However, while discussion is required, agency implementation is not. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989).

3. AR 200-2 emphasizes the need to develop and implement mitigation plans. Para. 6-51 and App. F, AR 200-2.

F. Supplemental EISs. Agencies are required to supplement an EIS or DEIS if there "are significant new circumstances or information relevant to environmental concerns and bearing on the proposed actions or its impacts." 40 C.F.R. § 1502. Courts are, however, required to defer to an agency's determination regarding the significance of new information unless the agency has acted arbitrarily or capriciously. *Marsh v. Oregon Natural Resources Council,* 109 S.Ct. 1851, 1961 (1989).

G. Common Shortcoming of EISs.

1. Failure to compile an adequate administrative record detailing all information relied on in reaching a decision regarding the proposed action.

2. Sweeping conclusions unsupported by facts.

3. Vagueness regarding important issues.

4. Internal contradictions.

5. Disregard for local land use plans.

6. Inadequate treatment of secondary and cumulative environmental impacts.

7. Failure to adequately address realistic alternatives.

8. Failure to make an unbiased comparison between realistic alternatives.

X. NEPA COMPLIANCE OVERSEAS.

A. In 1979, President Carter issued Executive Order (E.O.) 12114 formally adopting the position that NEPA does not apply to the actions of federal agencies overseas. Nevertheless environmental groups have steadily challenged federal actions overseas for failing to abide by the EIS requirement of NEPA. The most significant challenge to date came in the case, *Environmental Defense Fund v. Massey,* 986 F.2d 528 (D.C. Cir. 1993). The court in this case held that the National Science Foundation should

have complied with NEPA before deciding to build an incinerator to burn refuse in Antarctica. The Court's holding relied on: 1) NEPA only regulates domestic procedural decisionmaking, 2) Antarctica has no sovereign, thus there can be no conflicts-of-laws dilemma, and 3) the U.S. exercises extensive legislative control over Antarctica anyway. The next court to review NEPA's extraterritorial reach, however, viewed the *Massey* decision as being limited to its unique facts. Additionally, the court in *NEPA Coalition of Japan v. Aspin,* 837 F. Supp. 466 (D. D.C. 1993) followed previous court rulings on this issue, (*See Greenpeace U.S.A. v. Stone,* 748 D. Supp. 749 (D.Haw. 1990); *Nuclear Resource Defense Council (NRDC) v. Nuclear Regulatory Commission,* 647 F.2d 1345 (D.C.Cir. 1981)), and found that since Congress has not clearly expressed an intent in NEPA to apply it abroad, the presumption against the extraterritorial application of statutes clearly applies (*See also E.E.O.C. v. Arabian American Oil Co. (ARAMCO),* 111 S.Ct. 1227 (1991); *Smith v. United States,* 113 S.Ct. 1178 (1993)). This is especially true since the plaintiffs were attempting to force DOD to prepare EISs for the operation of U.S. military installations in Japan, and these operations are governed by complex and long standing treaty arrangements. Any requirement to prepare these EISs would risk intruding upon a security relationship between the US and a sovereign power.

B. Notwithstanding the position in E.O. 12114 that NEPA does not apply overseas, the Order still requires consideration of environmental impacts of actions taken abroad in certain circumstances. These requirements, as they apply to DOD, are set out in DOD Dir. 6050.7, Environmental Effects Abroad of Major DOD Actions (31 March 1979), and in Appendices G and H, AR 200-2, Environmental Effects of Army Actions (23 December 1988).

1. Appendix G, AR 200-2, requires that proposed **actions affecting "global commons"** be subject to a documented decision making process. "Global commons" are areas outside the jurisdiction of any nation, including such areas as the oceans and Antarctica. AR 200-2, Glossary.

   a. The focus is not on the place of action -- instead, the focus is on the location of the environment with respect to which there is significant harm.

b. An EA and/or EIS styled documentation requirement exists. Public comment is required. App. G, para. c, AR 200-2.

2. Appendix H, AR 200-2, requires that proposed actions significantly harming the environment of a **foreign nation or a protected "global resource"** be subject to a documented decision making process.

a. Focus is on major Federal actions that harm the environment of a foreign nation, which is not participating with the U.S. in the action, or a protected global resource in a manner that is strictly regulated or prohibited under U.S. law.

b. Documentation requirements.

(1) Environmental Studies (ES) - conducted bilaterally or multilaterally. The ES should contain a review of the affected environment, significant actions taken to avoid environmental harm, and a description of other significant environmental considerations as appropriate.

(2) Environmental reviews - prepared unilaterally by the U.S. This is supposed to be a case specific document. In general, however, it should include a description of the affected environment, predicted effect of the proposed action on the affected environment, and significant actions being taken to protect or improve the environment in light of the proposed action.

c. General Exemptions from the Document Requirements. App. H, para. C.3, AR 200-2.

(1) Actions that DOD components concerned determine do not create significant environmental harm outside the U.S.

(2) Actions taken by the President.

(3) Action taken by or pursuant to the President or a cabinet officer in the course of armed conflict or when the national security the national interest is involved.

The determination that the national security or interest is involved must be made in writing by the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics)

(4) The activities of the intelligence components utilized by the Secretary of Defense, and arms transfers.

(5) Disaster and emergency relief actions.

d. Limitations on Document Requirements. App. H, paras. D6 and E6, AR 200-2.

(1) The requirements with respect to the preparation , content, and distribution of environmental studies or reviews must remain flexible, and be determined on a case-by-case basis, where necessary to:

(a) Enable the component to act promptly.

(b) Avoid adverse impacts on relations between the U.S. and foreign governments and international organizations.

(c) Avoid infringement or the appearance of infringement on the sovereign responsibilities of another government.

(d) Ensure considerations of governmental confidentiality, national security requirements, and the availability of meaningful information on foreign environmental circumstances.

XI. ADDITIONAL NEPA ISSUES.

A. Remedies for Violations.

1. NEPA itself provides no remedy for failing to meet its requirements. Suits must be brought under the Administrative Procedure Act

(APA) alleging the agency acted in an arbitrary and capricious manner, in preparing the EA or EIS, or issuing a FONSI. Challenges may also be brought to the agency decision not to prepare an EA or EIS on the same, or a "reasonableness" basis (see below). The most common remedy sought is an injunction, which stops further agency action until it fully complies with NEPA's mandates.

2. Upon proving a violation has occurred, the plaintiff is entitled to *some* remedy. *Tennessee Valley Authority v. Hill,* 437 U.S. 153 (1978).

3. However, there is precedent suggesting that courts still can apply equitable principles in deciding whether to enjoin the violation.

   a. *Amoco Production Co. v. Village of Gambell, Alaska,* 480 U.S. 531 (1987) (Court overruled the 9th Circuit's opinion that a violation of an environmental statute almost automatically requires an injunctive remedy).

   b. *Weinberger v. Barcelo-Romero,* 465 U.S. 305 (1982) (Court refused to enjoin a Clean Water Act violation, instead ordering the Navy to apply for a discharge permit).

   c. *Wisconsin v. Weinberger,* 745 F.2d 412, 424-28 (7th Cir. 1984) (in dicta, the court states that an injunction should not be the automatic remedy when NEPA is violated).

   d. *Concerned About Trident v. Rumsfeld,* 555 F.2d 817 (D.C. Cir. 1976) (court fashioned a remedy other than an injunction for a violation of NEPA).

   e. But note *Sierra Club v. Marsh,* 872 F.2d 497 (1st Cir. 1989) (The court distinguished *Amoco Production Company*, found that unimpeded bureaucratic inertia may foreclose serious re-evaluation of a project after a NEPA violation has been identified, and held that the resulting commitment to the project may constitute irreparable harm to the decision-making process that NEPA requires.)

B. Judicial Review.

1. Standing - A person seeking judicial review under the general review provisions of the APA must identify some final agency action that has injured him in a manner that falls within the "zone of protected interests" sought to be protected by the statute. *Lujan v. National Wildlife Federation*, 110 S.Ct. 3177 (1990).

2. Standard for reviewing decision not to prepare an EIS.

a. Split of authority on applicable standard of review. *See River Alliance, Inc. v. Corps of Engineers,* 475 U.S. 1055, 106 S.Ct. 1283 (1986) (White, J, dissenting from denial of certiorari); *Gee v. Boyd,* 471 U.S. 1058, 105 S.Ct. 2123 (1985) (White, J, dissenting from denial of certiorari).

b. Arbitrary, capricious, or abuse of discretion --1st, 2d, 4th, and 7th Circuits.

c. Reasonableness--5th (and probably 11th), 8th, 9th, and 10th Circuits, and possibly the 3d Circuit.

d. Hybrid--Court of Appeals for the District of Columbia Circuit; *See Sierra Club v. Peterson,* 717 F.2d 1409, 1413 (D.C. Cir. 1983).

e. The Supreme Court probably answered the question in *Oregon Natural Resources Council v. Marsh,* 109 S.Ct. 1851 (1989) when it ruled that the arbitrary and capricious standard should be used in reviewing an agency decision not to prepare a supplemental EIS.

CHAPTER III -- THE CLEAN WATER ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. Federal Water Pollution Control Act (a/k/a Clean Water Act), as amended, 33 U.S.C. §§ 1251-1386.

2. Rivers and Harbors Act of 1899, 33 U.S.C. §§ 403, 407.

3. 33 C.F.R. §§ 320-330.

4. 40 C.F.R. Parts 100-140, 231, 400-700.

B. State Authority.

-- Federal facilities are required to comply with all state and local laws and regulations regarding the control and abatement of water pollution. 33 U.S.C. § 1323.

C. Related DOD Directives.

-- DOD Instruction 4120.14, Policies for Improvements Needed to Abate Water Pollution Emanating from DOD Facilities.

D. Related Army Regulations.

-- AR 200-1, Environmental Protection and Enhancement, Chapter 3 (23 May 1990).

II. KEY DEFINITIONS.

A. "Waters of the United States" means "all waters which are currently used or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide...interstate wetlands, intrastate lakes, rivers, streams, mudflats...wetlands...prairie potholes." 33 C.F.R. § 328.3(a).

B. "Navigable waters" means "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). These waters include primary and secondary tributaries to navigable rivers and lakes, and wetlands adjacent to such waters. 40 C.F.R. § 122.2.

C. "Wetlands" are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." 33 C.F.R. § 328.3(b) (1990) (e.g., swamps, bogs, bottomland forests, pine savannahs, and meadows).

D. "Pollutants" include "dredged spoil, solid waste, incineration residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological material, radioactive materials, heat, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water . . . ." 33 U.S.C. § 1362(6).

E. "Point source" means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." The term does not include agricultural storm water discharges and return flows from irrigated agriculture. 33 U.S.C. § 1362(14).

F. "Person" means an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State or any interstate body. 33 U.S.C. § 1362(5). Any responsible corporate officer is also considered a "person" for enforcement purposes. 33 U.S.C. § 1319(c)(6).

III. OVERVIEW.

A. *Refuse Act.* The grandfather of water pollution control laws in the United States is the Refuse Act (§ 13 of the Rivers and Harbors Act of 1899). The Refuse Act prohibits discharges of "any refuse matter of any kind or description" into navigable waters without a permit from the Secretary of the Army. 33 U.S.C. § 407. The Act's prohibition of any discharges without a Corps of Engineer's permit was largely ignored, however, until the Summer of 1970, when the Corps announced that industrial discharges into navigable waters would be subject to new permit procedures. 35 Fed. Reg. 200005 (1970). The Refuse Act did not prove to be a satisfactory mechanism for controlling water pollution, however, primarily because:

1. there were no standards for granting or denying permits.

2. environmental impact statements had to be prepared for every permit decision. *Kalur v. Resor*, 335 F. Supp. 1 (D.D.C. 1971).

3. penalties for non-compliance ($2500, maximum, per offense) were inadequate.

In practice, the Refuse Act has largely been displaced by the Clean Water Act (CWA). Operation in compliance with a National Pollution Discharge Elimination System (NPDES) permit effectively exempts those point sources from suit under the Refuse Act. 33 U.S.C. § 1342(a). Theoretically, however, the Refuse Act can still be used against polluters and is often cited as a cause of action in suits alleging non-permitted discharges of pollutants into navigable waters.

B. The goal of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." 33 U.S.C. § 1251. In essence, it seeks to eliminate the discharge of all pollutants into the waters of the United States. While waters of the United States is broadly defined, it does not clearly include ground water. As a result, EPA has come to rely heavily on RCRA (*see* 40 C.F.R. Part 146) and the Safe Drinking Water Act (Part C) as its authority for regulating discharges of pollutants through underground injection wells that could affect ground water.

C. "Point source" discharges of pollutants into "navigable waters" are regulated through the National Pollution Discharge Elimination System (NPDES). All point source dischargers must have an NPDES permit. 33 U.S.C. § 1311. For a variety of regulatory purposes, there are two types of point sources--publicly-owned treatment works (POTWs, a/k/a sewage treatment plants), and all others. As a result of the Federal Facility Compliance Act, federally owned sewage treatment facilities (FOTWs) are treated as POTWs if they treat only domestic sewage or treat domestic sewage and hazardous waste that has been "pre-treated" pursuant to 33 U.S.C. § 1317 before being introduced into the FOTW. In essence, what this should mean is that the domestic sewage exclusion under the Resource Conservation and Recovery Act has been extended to federal sewage treatment facilities. Follow your Federal Register.

D. Federal law specifies a minimum level of pollution control technology that must be employed by each point source. 33 U.S.C. § 1311.

1. Point sources are grouped by industry or subgroup of industry for purposes of identifying technology requirements.

2. If a source does not fit into any existing industrial category, then the EPA (or state) uses its "best professional judgment" (BPJ) in establishing a control technology requirement.

E. Pollution sources that discharge into POTWs must meet pre-treatment standards to insure their effluent can be processed by the POTW. 33 U.S.C. § 1317.

F. In addition to control technology requirements, more stringent treatment requirements can be imposed on particular effluent sources in order to achieve specific water quality standards applicable to a particular body of water. 33 U.S.C. §§ 1313,1314.

IV. EFFLUENT LIMITATIONS - CONTROL TECHNOLOGY REQUIREMENTS.

A. Under the CWA, the universe of industrial operations is divided into 51 source categories, which in turn encompass over 700 subcategories. For each industrial category subject to regulation, a base level of treatment is required. The level of treatment depends on the type of pollutant involved and whether the source is new or existed at the time the regulations were promulgated. *See* 40 C.F.R. Parts 403-471. Industrial categories that often apply to Army installations include:

1. Electroplating -- 40 C.F.R. Part 413.

2. Steam Power Generating -- 40 C.F.R. Part 423.

3. Metal Finishing -- 40 C.F.R. Part 433.

4. Photography -- 40 C.F.R. Part 459.

5. Hospital -- 40 C.F.R. Part 460.

B. EPA's regulations do not mandate the use of specific pollution control equipment. Instead, they specify maximum levels of permissible pollution based on the performance of equipment identified as meeting the appropriate technological requirement for each industrial category. EPA is required to periodically review, pursuant to a published schedule, effluent guidelines for industrial categories as technology improves and the economics of pollution control change. 33 U.S.C. §§ 1314(b), 1314(m).

C. "Existing" direct dischargers of pollutants were required to have applied **best practicable control technology (BPT)** by July 1, 1977. BPT is the "average of the best existing performance by well operated plants within each industrial category or subcategory." In setting BPT standards, EPA is required to balance cost against the benefits realized from effluent reduction. 33 U.S.C. § 1314(b)(1)(B). While the scheduled time for compliance with BPT standards is long since passed, BPT standards can still apply to newly constructed facilities ("new sources") for which no new source performance standard has been promulgated pursuant to 33 U.S.C. § 1316.

D. Sources of toxic pollutants are required to utilize **best available technology (BAT)** by 31 March 1989, or three years after the standards are promulgated by EPA, whichever is earlier. 33 U.S.C. § 1311(b). Best available technology is defined as the "very best control and treatment measure that have been or are capable of being achieved." Toxic pollutants are listed at 40 C.F.R. § 401.15. Although EPA is required to consider cost in determining BAT standards, it is not required to using a cost-benefit balancing test. 33 U.S.C. § 1314(b)(2)(B).

E. Conventional pollutants are controlled by **best conventional technology (BCT)**. Conventional pollutants include:

1. Suspended solids.

2. Fecal coliform.

3. Extreme pH level pollutants (i.e., acidity/alkalinity balance).

4. Biological oxygen demanding (BOD) pollutants.

5. Oil and grease.

33 U.S.C. § 1314(a)(4); 40 C.F.R. § 401.16. Sources of conventional pollutant effluent are required to achieve compliance with EPA BCT regulations by 31 March 1989, or within three years of promulgation, whichever is sooner.

F. Nonconventional, nontoxic pollutants (i.e., all pollutants not listed above) are regulated using BAT. Sources of nonconventional pollutants must achieve BAT standards not later than 31 March 1989, or within three years of the standards being promulgated, whichever is sooner. 33 U.S.C. § 1311(b)(2)(F).

G. A "new source" is any facility which is constructed or modified in a major way after the publication of proposed regulations prescribing an applicable standard of performance. 33 U.S.C. § 1316(a)(2). New source performance standards (NSPS) are effluent limits applied to new sources that require use of the "best available demonstrated control technology,

processes, operating methods and other alternatives" (NSPS). 33 U.S.C. § 1316(a)(1). Unlike BAT and BPT standards, NSPS standards:

1. consider alternative production processes and operating techniques in addition to pollution control techniques.

2. do not take into account cost or other technological standards.

3. generally, cannot be changed to moderate their impact on a specific facility (i.e., no variances).

Significantly, where EPA is the permit authority for a new source, that action is subject to scrutiny under the provisions of NEPA. Accordingly, installations seeking to permit a new source should anticipate a lengthy review process. NSPS standards can apply to direct discharge sources and also sources discharging effluent into POTWs, thereby needing to meet pre-treatment standards. *See e.g.,* 40 C.F.R. § 433.17, Metal Finishing Point Source Category, Pretreatment Standards For New Sources.

H. *Pretreatment Standards.* Industrial facilities that discharge their effluent into POTWs (i.e., through sewers) are regulated under pretreatment standards adopted pursuant to 33 U.S.C. § 1317(b).

1. These pretreatment standards protect the POTWs from damage resulting from influxes of untreated industrial wastes and the corresponding discharge of untreated wastes from POTWs. Limitations on discharges into POTWs include restrictions on:

   a. effluent that creates a danger of fire, explosion, or which result in the presence of toxic gases or fumes that could endanger human health.

   b. effluent with a pH lower than 5.0 unless the POTW is specifically designed to accommodate such a flow.

   c. effluent that would obstruct the flow through the system because of it solid or viscous nature.

d. effluent that interferes with biological treatment or that is hotter than 104 degrees fahrenheit unless the system is specifically designed to accommodate such a flow.

e. petroleum or its derivatives in quantities that would interfere with the POTW treatment process.

In addition to these substantive requirements and limitations, industrial users of POTWs must notify the POTW, the EPA, and state hazardous waste regulators of discharges of effluent into the POTW that would qualify as hazardous waste under 40 C.F.R. Part 261. 40 C.F.R. Part 403; as amended by 55 Fed. Reg 30082 (1990).

2. Industrial discharges into POTWs may also be subject to "categorical" pretreatment regulations. 40 C.F.R. § 403.6.

a. Categorical pretreatment regulations apply to wastes other than BOD, suspended solids, pH and fecal coliform pollutants. These other wastes, deemed "incompatible" with the typical POTW treatment process, trigger categorical pretreatment requirements unless the POTW has been specifically designed to treat the incompatible wastes.

b. Under the categorical pretreatment requirements, industrial dischargers are required to achieve treatment performance equivalent to BAT or NSPS effluent limitations for direct dischargers into a receiving water.

c. Industrial activities on Army installations likely to be subject to categorical discharge limitations include:

(1) Electroplating -- 40 C.F.R. Part 413.

(2) Steam Power Generating -- 40 C.F.R. Part 423.

(3) Metal Finishing -- 40 C.F.R. Part 433.

Where the receiving POTW has an approved pretreatment plan, the industrial discharger can be relieved from complying with the

categorical pretreatment requirements if the POTW requests from the appropriate regulators (state or federal) a "removal credit" against the applicable pretreatment requirement. POTWs earn removal credits by demonstrating that their treatment process consistently removes a particular pollutant. 40 C.F.R. § 403.7.

V. WATER QUALITY STANDARDS.

A. By themselves, technology based effluent limitations are sometimes inadequate for bodies of water whose natural ability to assimilate pollution has been reduced (e.g., as a result of modifications made for flood control) or that require higher water quality standards (for recreational, wildlife conservation purposes, etc.). In those cases, water quality standards are established and imposed as NPDES permit conditions in addition to the technology based effluent limitations.

B. States are required to develop water quality standards and implementation plans for enforcing those standards. 33 U.S.C. § 1313; 40 C.F.R. Part 131. State standards, referred to as the **total maximum daily load** (**TMDL**), must use numerical or mathematical criteria where possible to protect specified water uses, particularly fishing and swimming. The standards must be sufficiently stringent to ensure that current designated uses can be achieved, unless:

1. there are natural concentrations of pollutants.

2. there are human causes of the pollution that cannot be remedied.

3. dams or other diversions preclude the attainment of water quality standards.

4. natural features of the body of water preclude attainment of the water standards.

5. attainment of standards in excess of those required by 33 U.S.C. §§ 1311(b), 1306, would result in widespread economic or social impact.

40 C.F.R. § 131.10(g).

C. Under 33 U.S.C. § 1314(l), each state is required to identify bodies of water within the state that cannot achieve appropriate water quality standards through technology based limitations on discharges of toxic or priority pollutants. By June of 1989, after reviewing the lists of waters submitted by states, EPA had identified 595 water bodies whose water quality was substantially impaired by toxic discharges. Sources of toxic effluent discharging into those bodies of water require that individual control strategies be integrated into the sources' NPDES permits. EPA has established water quality standards for a number of toxic pollutants. 40 C.F.R. Part 129. If a state does not adopt its own standard, EPA's standards control. 55 Fed. Reg. 14350 (1990). *See* Section VIII of this chapter for further information concerning regulation of toxic pollutants.

VI. VARIANCES AND MODIFICATIONS.

A. *Fundamentally Different Factors Variance.* A given point source may use a process different from that normally employed within its industry. As a result, the EPA's model control technology may be inapplicable. Where that is the case, under 40 C.F.R. § 403.13, it may be possible to obtain a "fundamentally different factors" modification to BPT, BCT, and BAT requirements if achieving the specified level of pollution control would:

1. result in a cost wholly out of proportion to the cost EPA considered in developing the regulation for the industry group, or

2. create nonwater quality environmental impacts fundamentally more adverse than those that EPA considered in developing the regulation for the industry group.

B. *Economic Variance.* Modification of BAT requirements may also be obtained if a lower level of control represents the "maximum use of technology within the economic capability of the owner or operator." 33 U.S.C. § 1311(c).

C. The BAT requirement can also be reduced if a lower level of control presents no unacceptable impacts on water quality, human health, or the environment. 33 U.S.C. § 1311(g). Reduced requirements under this provision are only applicable for ammonia, chlorine, color, iron, and total phenols. The variance cannot result in a requirement lower than BPT.

D. A source of effluent may receive a "credit" for the pollutants in the intake water, thus allowing a greater effluent level in the outflow into the same body of water. Regulations outlining the procedures and requirements for obtaining credits are promulgated at 40 C.F.R. § 122.45(g).

E. If a source can demonstrate that technology based or NSPS limitations on thermal discharges are more stringent than necessary to protect and assure propagation of indigenous wildlife in and around the body of water where the discharge occurs, the source can receive a thermal pollution variance. 33 U.S.C. § 1326(a); 40 C.F.R. § 125.70-73.

VII. NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMITS.

A. Any facility that directly discharges a pollutant from a point source into a water of the United States must obtain a National Pollution Discharge Elimination System (NPDES) permit. 33 U.S.C. § 1311.

B. Under 33 U.S.C. § 1362(12), "discharge of a pollutant" is defined to mean the **addition** of a pollutant to the waters of the United States. The discharge limitations under the NPDES do not apply to pollutants discharged solely because of the facility's intake and discharge of polluted water. 40 C.F.R. § 122.45(h).

C. The term "Waters of the United States" has been broadly defined by EPA to include:

1. Navigable waters.

2. Tributaries of navigable waters.

3. Interstate waters including wetlands.

4. Intrastate waters:

   a. Used by interstate travelers for recreation or other purposes.

b. Which are a source of fish or shellfish sold in interstate commerce.

c. Which are used by industries engaged in interstate commerce.

40 C.F.R. § 122.2.

D. NPDES permits can be issued by EPA or by states with EPA approved permit programs. Thirty-eight states have NPDES permitting authority. States and territories without permitting authority are Massachusetts, Maine, New Hampshire, Florida, Louisiana, Texas, Oklahoma, New Mexico, South Dakota, Arizona, Alaska, Idaho, District of Columbia, Puerto Rico, Guam, American Samoa, Northern Mariana Islands, and the Trust Territory of the Pacific islands.

1. Permits issued by states are subject to review by EPA. The state cannot issue a permit if EPA objects to the permit within 90 days of the states proposed issuance. 33 U.S.C. § 1342(d). Issuing of state permits is accomplished pursuant to state law, however, and not the CWA or federal Administrative Procedures Act. Permits issued by states are not considered federal actions. As a result, they are not subject to the requirements of NEPA.

2. Permit applications to EPA:

a. must be submitted at least 180 days prior to the date the discharge is expected to commence or the current permit is due to expire. 40 C.F.R. § 122.21(c)(1).

b. from new sources (as defined at 40 C.F.R. § 122.29(b)) must include an environmental assessment on the impact of the proposed discharge to assist EPA in determining if an environmental impact statement is required pursuant to NEPA. 40 C.F.R. § 122.21(l).

c. are provided to the Corps of Engineers, the Fish and Wildlife Service, and the National Marine Fisheries Service for an opportunity to comment on the permit application.

d. must be accompanied by a certification from the state in which the discharge will occur that the discharge complies

with applicable provisions of 33 U.S.C. §§ 1311, 1312, 1313, 1316, and 1317 (dealing primarily with water quality requirements). 33 U.S.C. § 1341.

e. are subject to public review and comment as provided for at 40 C.F.R. part 124, Subparts A and D.

E. NPDES permits have two primary functions.

1. They specify the types and amounts of pollutants that may be discharged.

2. They specify effluent monitoring requirements pursuant to 33 U.S.C. § 1318. Pursuant to 40 C.F.R. § 122.44(i), permittees are required to monitor to determine:

a. Compliance with limitations in amounts and concentrations of pollutants discharged contained in the permit.

b. The total amount of effluent discharged.

c. Compliance with any other requirements specified in the permit.

Results of monitoring must be reported periodically to the permitting authority. These **Discharge Monitoring Reports** (DMRs) must be submitted at least annually; certain toxic discharges must be reported within 24 hours. 40 C.F.R. § 122.41(j). Failure to properly monitor and report is a violation of the permit and can potentially result in criminal and civil liability. (In 1991, the former operator of Fort Meade's waste water treatment facility was sentenced to 8 months in prison for falsifying DMRs.)

F. NPDES permits are issued for a maximum period of 5 years. 33 U.S.C. § 1342. They can, however, be revoked or modified at anytime upon a showing of cause. Timely (at least 180 days prior to expiration) submission of a complete application for renewal automatically extends an existing permit until the regulator takes action on the permit renewal application. 40 C.F.R. § 122.6.

G. *Excusable Permit Violations.*

1. **Bypassing** (the intentional diversion of waste streams from any treatment facility) is allowed to prevent loss of life, personal injury, or severe property damage. 40 C.F.R. § 122.41(m).

2. An **upset** is an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. It does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. 40 C.F.R. § 122.41(n).

   a. An upset is an affirmative defense to an enforcement action for noncompliance. The permittee seeking to establish the occurrence of an upset has the burden of proof.

   b. It does not, however, excuse violation of water quality standards.

VIII. INDIVIDUAL CONTROL STRATEGIES FOR TOXIC POLLUTANTS (ICS). 33 U.S.C. § 1314(L).

A. Section 304(l) of the CWA (33 U.S.C. § 1314(l)) is designed to force states and EPA to identify and control point sources of toxic pollutants. EPA has identified, pursuant to § 307(a) of the CWA, 126 toxic pollutants as "**priority pollutants**" because they are common, widely present chemicals for which toxicological data is available. These priority pollutants are the primary focus of § 304(l) regulation.

B. Pursuant to § 304(l), states must submit four lists to EPA. They are the:

1. "**A(i)**" list - Listing state waters that after the application of technology based effluent limits cannot reasonably be anticipated to attain or maintain water quality standards for priority pollutants adopted pursuant to § 303(c)(2)(B) of the CWA. This list is referred to as the "**mini list.**"

2. "**A(ii)**" list - Listing state waters that after application of technology based effluent limits cannot be reasonably expected to attain or maintain a level of water quality that will assure protection of public health, public water supplies, agricultural and industrial uses, recreational uses, and the propagation of shellfish, fish, and other wildlife. This list is referred to as the "**long list.**"

3. "**B**" list - Listing of all state navigable waters that after application of technologically based effluent requirements, will not meet state water quality standards due entirely or substantially to point source discharges of priority pollutants. This list is referred to as the "**short list.**"

4. "**C**" list- Listing point sources of priority pollutants which are believed to be preventing or impairing water quality for water on the mini, long, and short lists. In addition, the amount of each priority pollutant discharged by each point source is listed. This list is referred to as the "**facility list.**"

C. Each state authorized to issue NPDES permits is required to identify the waters within the state that did not meet numerical water quality standards established by EPA or the state for toxic pollutants. Where there is no numerical criteria, states are required to adopt criteria based on "whole effluent toxicity testing." If a state fails to adopt either numerical standards or mathematical methods to calculate toxic effluent limitations, EPA water quality guidelines become the enforceable state water quality standard.

D. States must develop "**individual control strategies**" (**ICSs**) to bring waters on the short list into compliance. An ICS is defined as "a final NPDES permit . . . [with] effluent limits [that] are consistent with an approved wasteload allocation . . . which shows that applicable water quality standards will be met not later than 3 years after the ICS is established. 40 C.F.R. § 123.46(c).

1. As a result, point source discharge limitations into impaired waters will be significantly more stringent for toxics and also (as a matter of EPA policy) for pollutants that can cause toxic effects (e.g., ammonia).

2. Non-point discharge control strategies are also supposed to become more stringent.

3. As of September 1992, EPA was in the process of deciding whether or not to require ICSs for all point sources discharging toxic pollutants which are believed to be preventing or impairing water quality on any of the state lists of impaired waters previously identified pursuant to § 304(l) of the CWA. *See* 57 Fed. Reg. 33051 (1992).

IX. STORM WATER DISCHARGE PERMIT REQUIREMENTS.

A. On 16 November 1990, the EPA published new NPDES permit requirements for storm water sewer discharges. The regulations, which became effective on December 17, 1990, are intended to limit the amount of pollutants that are washed into storm water drains and discharged into lakes, streams, and rivers without treatment.

B. The storm water permit requirements will affect Army installations having "discharge[s] from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage at an industrial plant." 40 C.F.R. § 122.26(a)(14)).

C. Facilities engaged in vehicle maintenance, painting, fueling, and lubrication are included among those "industrial" facilities regulated. Consequently, many motorpools at major installations will probably qualify as industrial facilities. AAFES gas stations, however, would not since they are a "retail" establishment that is not subject to these regulations. Other regulated facilities include:

1. Hazardous waste treatment, storage, and disposal facilities.

2. Landfills and dumps that have received industrial wastes.

3. Facilities engaged in recycling (primarily metals).

4. Steam electric power generating facilities.

40 C.F.R. § 122.6(a)(14)). The scope of a facility will be broadly defined. For example, water from a parking lot adjacent to a motorpool maintenance facility that is collected in a storm sewer could be subject to the regulations.

D. Construction activities, involving the disturbance of more than five acres of land, are also subject to the new regulations. 40 C.F.R. § 122.6(a)(14)).

E. Installations with facilities engaged in regulated industrial activities will have to seek coverage under a "promulgated storm water general permit." *See* 40 C.F.R. § 122.28 Otherwise, they must apply for either:

1. an individual permit. *See* 40 C.F.R. § 122.26(c)(1)); or,

2. a "group application permit." *See* 40 C.F.R. § 122.26(c)(2) ("to be filed by an entity representing a group of applicants. . .that are part of the same [industrial] subcategory. . . .").

F. Installations should first determine if their regulated facilities qualify under a **general permit** issued by EPA or an authorized state. Qualifying under a general permit allows an installation to completely avoid the time consuming and expensive individual permit process. Regulations governing what activities will qualify for a general permit, however, are still in proposed status.

G. Installations with regulated industrial facilities that are not connected to a separate municipal storm water sewer system, however, must seek an **individual permit**. 40 C.F.R. § 122.26(a)(6)(i)).

1. Individual permit applications must be filed with the EPA by October 1, 1992. 40 C.F.R. § 122.21.

2. Installations in states with NPDES permitting authority should check with state regulators to determine applicable state imposed deadlines. These individual permits will contain detailed data concerning storm water discharges collected from all outfalls during storm events. 40 C.F.R. §§ 122.21(g)(3), 122.21(g)(7), and 122.26(c)(i)(E)

H. Installations not automatically required to seek an individual permit and not qualifying for coverage under a general permit should determine if inclusion in a **group permit** is possible to save time and money. The ability to participate in a group permit depends on whether the facility is a member of the same industrial category(ies) as other members of the group or is sufficiently similar to justify general treatment. Obtaining a group permit involves a two-step process.

1. Initial group applications had to be filed by 30 September 1991. Based on the information in the permit application, EPA is supposed to determine if the proposed members are an appropriate group. Individual facilities denied group membership will then have 12 months to file an individual application. 40 C.F.R.§ 122.26(c)(2).

2. Part 2 of the permit process will involve a segment of the group (expected to be approximately 10%) submitting detailed qualitative data. 40 C.F.R. §§ 122.21(g)(3), 122.21(g)(7), and 122.26(c)(i)(E). Part 2 of the group permit application was due to EPA by 1 October 1992. 40 C.F.R. §§ 122.26(c)(1)(ii); 122.26(e).

X. NONPOINT SOURCE POLLUTION CONTROL.

A. General. Section 319 of the CWA (33 U.S.C. § 1329) requires states to identify and assess nature and extent of nonpoint source water pollution. Nonpoint source pollution is defined as the introduction of toxic, nonconventional and conventional pollutants into surface waters from any source other than a point source (e.g. runoff from construction sites, streets, parking lots, mining, and agricultural activities).

B. Section 319(a) specifies that states must:

1. Identify those navigable waters within the state which, without additional action to control nonpoint sources pollution cannot reasonably be expected to attain or maintain the state's water quality standards;

2. Identify categories and subcategories of nonpoint sources which add significant pollution to each portion of the navigable waters that have been marked as failing to attain or maintain the state's water quality standards;

C. States must also identify and describe **best management practices (BMPs)** and measures to control each category and subcategory of nonpoint pollution sources, and reduce the level of pollution resulting from such sources. 33 U.S.C. § 1329(a), (b). BMPs should include nonregulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfers and demonstration projects.

D. Any reauthorization of the CWA is expected to include new initiatives to strengthen nonpoint source pollution control requirements.

XI. PROTECTION OF WETLANDS - (404 PERMIT PROGRAM).

A. General. Unless exempted by regulation, or statute, a permit issued by the Army Corps of Engineers (COE) or a state (that has been granted permitting authority by the Administrator of EPA) is required for any discharge of dredged or fill material into the waters of the United States. 33 C.F.R.§ 323.3(a). The discharge of dredged material means "the addition of dredged material to a specified discharge site...the runoff or overflow from a contained land or water disposal area...redeposit of dredged material...incidental to any activity." 33 C.F.R.§ 323.2(d). The discharge of fill material means "the addition of fill material into the waters of the United States [including] the placement of fill necessary for the construction of any structure into the water...site development fills for recreational, industrial, commercial, residential uses." 33 C.F.R.§ 323.2(f).

B. Activities of federal agencies. Federal agencies must obtain a 404 permit when discharging dredged or fill material into the waters of the United States, even if the work is done by the Corps of Engineers. 33 C.F.R.§ 323.3(b). The only exception to this requirement is when the federal project has been specifically authorized by Congress and the information of the effects of such discharge is included in an environmental impact statement prepared pursuant to the National Environmental Policy Act. 33 U.S.C. § 1344.(r).

C. Exceptions to the Permit Requirement. Permits are not required for discharges of dredged or fill material into the waters of the United States when the discharge results from normal farming, silviculture, or ranching activities, maintenance of drainage ditches, reconstruction of currently serviceable structures such as dikes, dams, levees, bridges, or the construction or maintenance of temporary sedimentation basins on a construction site. *See* 33 C.F.R.§ 323.4.

D. Permit Approval Authority. Permits are issued by the Corps of Engineers (except in Michigan, which has authority to issue them at the state level). Permits can be issued by either the district engineer, division engineer, or Chief of Engineers. In general, the more controversial the proposed project, the higher the approval authority. 33 U.S.C. § 325.8.

E. Types of Permits Issued.

1. *General Permit*. General permits may be issued for discharges of dredge and fill materials that are similar in nature and will only have a minimal individual or cumulative impact on the environment.

a. Nationwide Permits. These permits are a type of general permit which authorizes activities on a nationwide basis. 33 C.F.R. Part 330.2(b). Where a nationwide permit is applicable, the COE usually does not even have to be notified so long as all conditions of the nationwide permit are observed. (Nationwide permits are listed at 33 C.F.R. Part 330, Appendix A.) Examples of nationwide permits are:

- Repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill constructed prior to the requirement for authorization so long as there is no deviation from the original purpose or plans.

- Minor road crossing fills that are culverted or bridged.

- Dredge or fill activities in headwaters or isolated waters that adversely affect wetlands of less than 1 acre. Activities in 1-10 acres of wetlands must be

reported to the local Corp District are subject to pre-discharge notification-- within 20 days of notification, the COE can require an individual permit.

b. Regional Permits. These permits are similar to nationwide permits except that they only apply to similar activities within specific regions.

c. Programmatic permits. These permits are based "on an existing state, local, or other federal agency program and are designed to avoid duplication with that program." 33 C.F.R. Part 325.5(c)(3). They must be applied for like individual permits.

2. *Individual (or Standard)* Permit. This permit must be processed through the public interest review process. All activities that adversely affect ten acres of wetlands (and usually more than acre) require an individual permit.

F. Permitting Process. The process for obtaining The process for obtaining an individual permit is described at 33 C.F.R. Part 325.2; it typically involves:

1. A pre-application consultation with the COE.

2. Submission of the application.

3. The COE assigning the application an identification number.

4. The COE issuing public notice of the application within 15 days of the COE's receipt of all information necessary to process the application.

5. A 15-30 day public comment period.

6. Review of the proposal and any public comment by the COE .

7. Consultation by the COE with other federal agencies (particularly if endangered or threatened species or historic properties are impacted as a result of the proposed action).

8. A public hearing is held.

   a. Must be held upon request of any interested person unless the concerns stated as reasons for having the public hearing are determined to be "insubstantial."

   b. In case of doubt, the hearing "shall" be held.

9. All public comment is reviewed and considered by the COE.

10. The COE makes a decision and issues a permit or denies the application. On average, individual permit decisions are made within 2-3 months of the COE's receipt of a complete application.

11. Note that the decision by the COE on whether or not to issue a permit is subject to NEPA. **Where an EIS is required, it takes an average of 3 years to process a permit.**

G. Permit-Granting Evaluation Factors.

1. "The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest...The benefit which reasonably may be expected to accrue from the proposed action must be balanced against its reasonably foreseeable detriments." 33 C.F.R. Part 325.3(c)(1). The COE will consider the following factors: conservation, economics, aesthetics, flood hazards, navigation, recreation, extent of public concern, water quality, practicability of alternative locations or methods.

2. Where wetlands are potentially affected by a proposed activity, permit evaluation focuses on:

   a. Whether there is a practicable alternative.

      (1) If the project is not water dependant, the COE presumes that practicable alternatives are available unless it is clearly demonstrated otherwise.

      (2) Practicable alternatives that do not require discharges into wetlands are presumed to have less adverse impact on aquatic ecosystems unless clearly demonstrated otherwise.

      (3) The practicable alternatives analysis requires consideration of the project's economics as well as the use of sites not presently owned by the applicant if they can be reasonably obtained.

   See 40 C.F.R. Part 230.10.

   b. Whether there is a significant adverse impact on the wetlands.

   c. Whether all reasonable mitigation efforts have been employed. Implementation of this requirement is facilitated through use of the *Memorandum of Agreement Between the EPA and the Department of the Army Concerning the Determination of Mitigation Under the CWA Section 404(b)(1) Guidelines* (February 7, 1990). *See also* 33 C.F.R. Part 325.4.

      (1) Mitigation generally includes minimizing adverse impacts through avoidance.

      (2) Where adverse impacts still occur, mitigation by repairing, restoring, or replacing the affected wetlands is required.

(a) EPA requires a one-for-one replacement of the area lost for ponded, emergent, or herbaceous wetlands.

(b) For forested wetlands, a two-for-one replacement is required.

d. The project violates any other federal or state statute.

H. EPA Veto Authority over 404 Permit Issuance.

1. 33 U.S.C. § 1344(c) authorizes the Administrator of EPA to veto COE permits by denying or restricting the use of any area as a disposal site for dredged or fill material "whenever he determines the discharge of such materials will have an unacceptable adverse impact on the municipal water supplies, shellfish beds and fishery areas, wildlife or recreational areas." The proposed decision to veto a permit must occur after a public comment period of between 30-60 days. If the Regional Administrator determines that there is "significant public interest" in the proposed determination a public hearing *shall* be held. 40 C.F.R. § 231.4. Since 1979, EPA has vetoed only 12 of the approximately 150,000 404 permit applications that have been filed.

2. The COE will not issue a 404 permit where the regional administrator of EPA has notified the regional engineer in writing that he intends to issue a public notice of a proposed determination to deny, restrict, or withdraw an area from consideration for use as a disposal site. 33 C.F.R. § 323.6(b).

I. State Involvement in Wetlands Protection.

1. 33 U.S.C. § 1344(g), allows states to run 404 permit programs for all waters that are or could be used for navigation in interstate or foreign commerce (only Michigan has done so).

2. All applicants for federal permit to discharge into navigable waters must provide the COE with a state certification (33 U.S.C. § 1341) that any such discharge will meet applicable state water quality standards.

3. § 307(c) of Coastal Zone Management Act (CZMA) (16 U.S.C. § 1458 (c)) requires a 404 permit applicant to certify that the project complies with an approved state coastal zone management program and that the state concurs with the applicant's certification prior to the issuance of a COE permit.

4. Some states have modeled their programs after the federal 404 program and use the same definitions, exemptions, and permit requirements utilized by the COE and EPA.

5. Note that the COE's standard permit form contains a statement that the federal permit does not remove any requirements for state or local permits.

XII. OIL SPILLS AND ACCIDENTAL DISCHARGES OF HAZARDOUS SUBSTANCES.

A. Report of Spills. If a "reportable quantity" of oil or a hazardous substance is spilled or discharged into navigable waters, the discharge must be reported. 33 U.S.C. § 1321. What constitutes a reportable quantity depends on the material spilled.

1. For oil, a reportable quantity is enough oil to cause a sheen on the surface of the water, or a discoloration of the water, or sludge on the shore. 40 C.F.R. Part 110.

2. Reportable quantities for other hazardous substances are divided into five categories. The categories, and their associated reportable quantities, are as follows:

a. "X" -- 1 pound.

b. "A" -- 10 pounds.

c. "B" -- 100 pounds.

d. "C" -- 1000 pounds.

e. "D" -- 5000 pounds.

The substances are listed with their respective categories at 40 C.F.R. § 117.3.

B. Spills or discharges into navigable waters require a report to the Coast Guard's National Response Center at (800) 424-8802. *See* 33 C.F.R. Part 153, Subpart B. Some states require that state agencies be notified, also.

C. Spill Prevention Control and Countermeasure Plan. Installations with tanks containing oil or hazardous substances that, because of their location, could reasonably be expected to cause substantial harm to the environment by discharging their contents into navigable waters, adjoining shorelines, or the exclusive economic zone of the United States are required to have a spill prevention control and countermeasure plan (SPCC). 33 U.S.C. 1321(j)(5). The SPCC must:

1. be consistent with the National Contingency Plan (40 C.F.R. Part 300) and area spill contingency plans.

2. identify the person at the facility who is in charge and who has the authority to implement the plan.

3. require immediate communication between the person in charge and appropriate federal officials and response action contractors.

4. ensure that sufficient personnel and equipment will be available to remove the worst case spill to the maximum extent practicable.

5. require testing and training to ensure that the plan can be complied with.

6. be updated periodically.

7. be submitted for reapproval upon each significant change in the plan.

33 U.S.C. § 1321(j)(5(C). SPCC plans will have to be submitted to EPA or the Coast Guard for approval by February 1993. Facilities submitting plans can continue to operate for up to 2 years pending approval from the regulators. Facilities for which a SPCC plan has not been submitted are not permitted to handle, transport, or store oil. 3 U.S.C. § 1321 (j)(5)(E).

D. Fines and Penalties for Spills. Any owner, operator, or person in charge of any vessel, onshore or offshore facility from which oil or a hazardous substance is discharged in quantities determined by regulations to be harmful to the public health or welfare of the United States, shall be subject to administrative or civil penalties. Administrative penalties shall not exceed $10,000 per day for each day of violation or a total amount of $125,000. 33 U.S.C. § 1321(b)(6). Civil fines may be imposed instead of the administrative penalty in an amount up to $25,000 per day of violation or an amount up to $1,000 per barrel discharged. 33 U.S.C. § 1321(b)(7)(A). If the spill was the result of gross negligence, the civil penalty will be not less than $100,000, plus not more than $3,000 per barrel spilled. 33 U.S.C. § 1321(b)(7)(D).

E. Fines and Penalties for Failure to Remove Spills. Any owner, operator, or person in charge of any vessel, onshore or offshore facility from which oil or a hazardous substance is discharged in quantities determined by regulations to be harmful to the public health or welfare of the United States, and who fails to properly carry out removal of he discharge under an order of the President shall be subject to civil penalty in an amount up to $25,000 per day of violation or an amount up to 3 times the cost incurred by the Oil Spill Liability Trust Fund as a result of such failure 33 U.S.C. § 1321(b)(7)(B).

XIII. ENFORCEMENT OF THE CWA.

A. *Civil Penalties*. Any person who violates section 1311, 1312, 1316, 1317, 1318, 1328, 1345 or any permit condition or limitation issued under section 1342 or 1344, or any requirement imposed in a pretreatment program under section 1342(a)(3) or 1342(b)(8), or who fails to meet proper monitoring requirements under section 1318(a) shall be subject to civil penalty not to exceed $25,000 per day for each violation. 33 U.S.C. § 1319(d).

B. *Criminal Penalties.*

1. Negligent Violations. Any person who negligently violates section 1311, 1312, 1316, 1317, 1318, 1321(b)(3), 1328 or 1345 or any permit condition or limitation issued under section 1342, 1344 or any requirement imposed in a pretreatment program under section 1342(a)(3) or 1342(b)(8), shall be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation and/or by imprisonment of up to 1 year. 33 U.S.C. § 1319(c)(1).

2. Knowing Violations. Any person who knowingly violates section 1311, 1312, 1316, 1317, 1318, 1321(b)(3), 1328 or 1345 or any permit condition or limitation issued under section 1342, 1344 or any requirement imposed in a pretreatment program under section 1342(a)(3) or 1342(b)(8), shall be punished by a fine of not less than $5,000 nor more than $50,000 per day of violation and/or by imprisonment for not more than 3 years.

3. Knowing Endangerment. Any person who knowingly violates section 1311, 1312, 1316, 1317, 1318, 1328 or 1345 or any permit condition or limitation issued under section 1342, 1344 or any requirement imposed in a pretreatment program under section 1342(a)(3) or 1342(b)(8), and who knows at the time he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be punished by a fine of not more than $250,000 and/or imprisonment for not more than 15 years ($500,000 and 30 years for second conviction).

4. False Statements of Tampering with Monitors. Any person who knowingly makes any false material statement or record required to be maintained by under a provision of the CWA, or who renders any monitoring device or method required under the CWA shall, upon conviction, be punished by a fine of not more than $10,000 and/or imprisonment for not more than 2 years ($20,000 and 4 years for second conviction).

CHAPTER IV -- THE CLEAN AIR ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. Clean Air Act, 42 U.S.C. §§ 7401-7671q *as amended* by the Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399.

2. 40 C.F.R. Part 50, EPA Regulations on National Primary and Secondary Ambient Air Quality Standards.

3. 40 C.F.R. Part 60, EPA Regulations on New Source Performance Standards.

4. 40 C.F.R. Part 69, EPA Special Exemptions from Requirements of the Clean Air Act.

5. 40 C.F.R. Part 70, State Operating Permit Programs.

6. 40 C.F.R. Part 372, EPA Toxic Chemical Release Reporting Regulations.

B. State Regulatory Authority.

-- Federal facilities are subject to state and local air pollution regulations pursuant to the waiver of sovereign immunity found in Section 118 of the CAA. 42 U.S.C. § 7418.

C. Related DoD Directives.

1. DoD Dir. 4120.14, Environmental Pollution Prevention and Control (30 August 1977).

2. DoD Dir. 6050.9, Ozone Depleting Substances (13 February 1989).

D. Related Army Regulations.

-- AR 200-1, Environmental Protection, Chapters 4, 10 (23 April 1990).

II. KEY DEFINITIONS.

A. "AQCRs" are Air Quality Control Regions. Geographical subdivisions established pursuant to CAA § 107 for coordinated planning of air pollution control activities. 42 U.S.C. § 7407.

B. An "Attainment Area" is an area considered to have air quality as good as or better than the National Ambient Air Quality Standards.

C. "Criteria Pollutants" are those compounds regulated under §§ 108 & 109. EPA has listed 6 which are currently being regulated (Particulates, Sulfur Dioxide, Carbon Monoxide, Nitrogen Oxides, Lead, Ozone).

D. "FIP," or Federal Implementation Plan, § 110(c)(1), § 302(y), is a plan EPA must promulgate pursuant to § 110 if states fail to develop approvable State Implementation Plans (SIPS).

E. "LAER" is Lowest Achievable Emission Rate, § 171. Degree of control required pursuant to § 173 on new major sources and major modifications in nonattainment areas; technology must be best in use or most stringent in any SIP (cost not taken into account). 42 U.S.C. § 7501(3).

F. A "major source" of hazardous air pollutants means any stationary source or group of stationary sources within a contiguous area and under common control that emits, or has the potential to emit, in the aggregate, 10 tons per year of any hazardous air pollutant or 25 tons, or more, per year of any combination of hazardous air pollutants. 42 U.S.C. § 7412(a)(1), CAAA § 112(a)(1). It is also any stationary source that emits, or has the potential to emit, 100 tons or more per year of any air pollutant. 42 U.S.C. § 7602(j), CAA § 302(j). Other definitions come into play in 42 U.S.C. § 7661(2), CAA § 501. (The Act contains 15 different definitions of a "major" source.)

G. "National Ambient Quality Standards" (NAAQS) are standards that EPA sets under § 109 to protect public health with an adequate margin of safety (primary standards) and to protect the environment (secondary standards). 42 U.S.C. § 7409.

H. "NESHAP" is the National Emissions Standard for Hazardous Air Pollutants. Program established under § 112 to regulate hazardous air pollutants; under the 1990 Amendments, Maximum Available Control Technology (MACT) standards, and a second round of residual risk standards, must be set. CAA Title III.
42 U.S.C. § 7412.

I. A "new source" is a stationary source, the construction or reconstruction of which is commenced after the EPA Administrator first proposes regulations establishing an emission standard applicable to such a source. 42 U.S.C. §§ 7411(a)(2), 7412(a)(4).

J. "Notice of Violation" is a formal notice of a CAA violation that is a prerequisite to many enforcement actions. § 113(a).

K. "PM_{10}" means particulate matter less than 10 micrometers in diameter. It is regulated as a criteria pollutant under § 109. 42 U.S.C. § 7602(t), CAA § 302(t). (Includes such matter as dust, dirt, sand, etc.)

L. "SIP," or State Implementation Plan, is the plan states must develop pursuant to § 110 and Part D of Title I to provide for attainment and maintenance of NAAQS.

M. A "stationary source" is not a mobile source. It can be any building, structure, facility, or installation which emits, or may emit, any air pollutant. 42 U.S.C. § 7411(a)(3). *See* 42 U.S.C. § 7411(a)(3), CAA § 111(a); also defined at 42 U.S.C. § 7412(r)(2)(C), CAA § 112(r)(2)(C); also defined at CAA § 709 adding CAA § 302(z).

III. OVERVIEW OF THE CLEAN AIR ACT AMENDMENTS OF 1990.

A. President Johnson signed the original Clean Air Act in 1963. (Pub. L. No. 87-761) There have been many revisions since, but the Clean Air Act Amendments of 1990 (Pub. L. No. 101-549) are the first significant revisions since 1977.

B. This new statute strengthens and broadens the earlier legislation by setting specific goals and timetables for reducing urban smog, airborne toxics, acid rain, and stratospheric ozone depletion throughout this decade and beyond.

C. The Clean Air Act Amendments of 1990 are composed of seven major titles which address various aspects of the national air pollution control program. These titles include:

Title I: Attainment and Maintenance of National Air Quality Standards

Title II: Mobile Sources

Title III: Hazardous Air Pollutants

Title IV: Acid Deposition Control

Title V: Permits

Title VI: Stratospheric Ozone Protection

Title VII: Enforcement

D. Titles I and III mandate technology-based emission controls for new and existing major air pollution sources. Title II deals primarily with emission control for motor vehicles in the form of tailpipe standards, use of cleaner fuels, and mandatory acquisition of clean-fuel vehicles. Title IV is primarily concerned with reducing SO_2 emissions from commercial electric power plants. It is also concerned with the reduction of NO_x emissions. Title V promulgates a new permit program for air pollution sources which will be enforceable on a nationwide basis. Title VI restricts production and use of chlorofluorocarbons (CFCs), halons, and other halogenated solvents

which contribute to the decomposition of stratospheric ozone. Title VII describes civil and criminal penalties which may be imposed for violation of new and existing air pollution control requirements.

IV. FEDERAL AND STATE GOVERNMENT ROLES.

The Clean Air Act has been described as a "partnership" between federal and state government and as an "experiment in cooperative federalism."[1] However, the Clean Air Act gives most of the power to the EPA and places most of the responsibility on the states to achieve compliance with the air quality standards. The prime vehicle for implementation is known as the State Implementation Plan or "SIP"[2] which outlines how States plan to establish, regulate, and enforce air pollution standards.[3] Congress intended that all Federal facilities and activities be subject to all the provisions of State and local pollution laws. This broad waiver of sovereign immunity requires Federal facilities to comply with states' EPA-approved SIPs.

V. AIR QUALITY STANDARDS.

A. Title I of the CAA-90 fundamentally restructures the air pollution program to attain and maintain National Ambient Air Quality Standards (NAAQS). It primarily describes air pollution control requirements for geographic areas in the United States which have failed to meet the National Ambient Air Quality Standards (NAAQS). These standards are the basic barometers against which our conventional air pollution problems are measured. Urban areas that do not meet NAAQS for ozone, CO, or PM_{10} are placed in nonattainment areas. "Areas" are often portions of an AQCR. The NAAQS are limits placed on the level of six air pollutants.

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[1]See Bethlehem Steel Corp. v. Gorsuch, 742 F.2d 1028, 1036 (7th Cir. 1984); Connecticut v. EPA, 696 F.2d 147, 150 (2d Cir. 1982).

[2]Clean Air Act Amendments of 1990, Pub. L. No. 101-549, sec. 101(b), § 110(a)(1), 104 Stat. 2399 (codified at 42 U.S.C.A. § 7410(a)(1) (West Supp. 1991)).

[3]Id. § 119(a)(2), 104 Stat. at 2404-06 (codified at 42 U.S.C.A. § 7410(a)(2)).

These areas are further classified based on the degree of nonattainment for three pollutants:

Ozone (6 classifications)
- Marginal
- Moderate
- Serious
- Severe I
- Severe II
- Extreme

Carbon Monoxide
- Moderate
- Serious

PM_{10}
- Moderate
- Serious

B. EPA is required to publish and periodically revise a list of pollutants which "may reasonably be anticipated to endanger" public health or welfare and which are emitted from numerous or diverse stationary or mobile sources. 42 U.S.C. § 7408. Once a pollutant is listed, EPA must determine an air quality standard for it. Pollutants that are listed pursuant to this process are called *criteria pollutants*.

C. Currently, there are six criteria pollutants plus one "unlisted" criteria pollutant. (The designation of "unlisted" criteria pollutant is not a technical designation but one coined by Professor Arnold Reitze of George Washington University.) They are:

1. Sulphur Dioxide (SO_2)

   a. 66% fossil fuel power plants.

   b. 16% industrial processes.

c. 14% non-utility, stationary source fuel combustion.

d. 4% transportation.

2. Carbon Monoxide (CO)
(A product of incomplete combustion due to cold weather, high altitudes.)

a. 84% vehicular.

b. 14% "area" sources.

c. 2% large "point sources."

3. Nitrogen Oxides (NO_x)
(A product of complete combustion.)

a. 45% vehicular.

b. Nitrogen Oxides are also regulated in industrial and commercial boilers.

4. Ozone (0_3) (Smog)

a. Almost 78% of smog precursors have natural sources.

b. Regulated via "ozone" precursors."

c. The regulated precursors are:
(1) Carbon Monoxide.

(2) Nitrogen Oxides.

(3) VOCs (considered the 7th "unlisted" criteria pollutant.)

5. Particulate Matter (PM_{10})

a. 67% stationary sources.

b. 20% vehicles.

c. 5% solid waste disposal.

d. 5% natural sources.

6. Lead (Pb)

a. Gasoline was primary source.

b. Only unqualified success of CAA.

7. Volatile Organic Compounds (VOCs) (The "unlisted" criteria pollutant.)

a. 45% vehicular sources.

b. 40% small "area" sources.

c. 15% large "point" sources.

D. EPA is required to establish primary and secondary National Ambient Air Quality Standards (NAAQS) for each criteria pollutant. 42 U.S.C. § 7409.

1. The NAAQS are published at 40 C.F.R. Part 50.

2. Primary standards must be set at a level, with an adequate margin of safety, that will protect human health. 42 U.S.C. § 7409(b)(1).

3. Secondary standards must be set at a level that protect public welfare (i.e., agriculture, property, aesthetics, etc.) from known and anticipated adverse impacts resulting from the presence of the pollutant in the ambient air. 42 U.S.C. § 7409(b)(2). (After the CAA-90, only one secondary standard remained which is the 3-hour standard for SO_2.)

4. All NAAQS must be reviewed for adequacy every 5 years by EPA. 42 U.S.C. § 7409(d).

5. Primary NAAQS must be established using only health protecting criteria. Cost, technical feasibility, or other factors cannot be considered when setting primary NAAQS. *NRDC v. EPA*, 902 F.2d 962, 973 (D.C. Cir. 1990).

E. The country is divided into 247 air quality control regions (AQCRs). 42 U.S.C. § 7407; 40 C.F.R. Part 81. Compliance with NAAQS is typically assessed under 42 U.S.C. § 7407 within each state on an area-by-area basis. The 1990 CAA Amendments, however, expanded the geographic scope of serious, severe, and extreme ozone nonattainment areas to include an entire metropolitan statistical area (MSA) or consolidated metropolitan statistical area (CMSA). Because NAAQS establish ceilings for individual pollutant concentrations throughout the United States, their impact in a given locality depends on the existing air quality in that location. Where air quality is deficient, significant restrictions can be imposed on new and existing air pollution sources based on NAAQS driven emission limitations.

F. State Implementation Plans (SIPs) are the primary regulatory mechanism used by states to ensure emissions of stationary sources comply with the NAAQS. 42 U.S.C. § 7410. SIPs must be approved by EPA.

1. SIPs are the blueprint for a geographical region to achieve primary and secondary NAAQS.

2. Each state has a complicated array of SIPs. A SIP is required to address each criteria pollutant in each air pollution control region within the state. Moreover, state law may require SIPs for additional pollutants beyond the federal criteria pollutants.

3. Once approved by the EPA, SIPs become enforceable by the EPA as federal pollution control law. They remain state law as well. States can attempt to modify SIPs and waive SIP requirements, but the original SIP remains federally enforceable until the EPA approves the change.

Failure of a state to develop a SIP(s) that meets the NAAQS requires EPA to develop a Federal Implementation Plan(s) (FIP) within two years of when the

state SIP was due. Failure of a state to develop an adequate SIP can subject a state to various sanctions, including the cutoff of federal highway money and the imposition of more stringent standards for new or modified sources. 42 U.S.C. §§ 7410, 7509. As a result of the 1990 CAA Amendments, state SIPs must include a requirement that all major sources within their jurisdiction obtain a permit and pay permit fees sufficient to cover the costs of issuing and enforcing the conditions of a permit. 42 U.S.C. § 7410(a)(2)(L).

G. States are also required to establish minimum control technology for categories of new and modified pollutant sources (New Source Performance Standards (NSPS)). 42 U.S.C. § 7411(c). The degree of control depends on whether or not the new or modified source is located in a nonattainment area or a prevention of significant deterioration (PSD) area. States also **may** develop programs for control of hazardous air pollutants (National Emission Standards for Hazardous Air Pollutants (NESHAP) 42 U.S.C. § 7412.

VI. NEW SOURCE PERFORMANCE STANDARDS.

A. New Source Performance Standards (NSPS) apply to all new facilities or modified facilities whose construction or modification begins after the date of **proposal** of the NSPS by EPA. 42 U.S.C. § 7411. Currently, EPA has set NSPS for 65 categories of new or modified stationary sources. 40 C.F.R. Part 60 Additional NSPS will be set over the coming years according to a schedule at 42 U.S.C. § 7411(f).

B. States develop control strategies in their SIPs to achieve compliance with the NAAQS, but the federal government promulgates nationally uniform new source performance standards. These standards are not developed on the basis of air quality and they take into consideration cost.

C. NSPS are designed to achieve two major goals.

1. They place a special burden on new and modified plants on the theory that they have the greatest flexibility to incorporate the newest pollution control technology into their construction plans.

2. They ensure that the same degree of technological control is exercised over all new sources of air pollution. This prevents jurisdictions from competing with each other for industry through adoption of more lenient air pollution requirements.

D. States are also required to regulate emissions from existing sources in any source category for which EPA sets a NSPS for new and modified sources if the emissions include pollutants not covered by NAAQS or are hazardous air pollutants (air toxics) listed at 42 U.S.C. § 7412.

VII. PREVENTION OF SIGNIFICANT DETERIORATION.

A. The Prevention of Significant Deterioration (PSD) program applies in "attainment areas," i.e., geographic regions which have achieved the NAAQS or for which there is insufficient data to determine whether the NAAQS have been achieved (unclassified). Its purpose is to keep clean areas clean. Each area is designated as either attainment or nonattainment for each criteria pollutant. Therefore, in any given AQCR, there will be both nonattainment and PSD requirements. Rarely are any areas designated for nonattainment for more than two criteria pollutants.

B. Areas designated as "attainment" for any given criteria pollutant are subject to the PSD requirements. These areas are then further divided into one of three classes, depending on the extent of additional particulate matter, sulfur oxides, and nitrogen dioxide pollution to be allowed under the PSD program. Each area then has a separate "increment" of allowable pollutant increases.

C. Generally "Nonattainment" rules apply where the primary or secondary NAAQS have not been achieved. The consequences include more stringent permitting and control requirements for new and modified sources of pollution. A location can be attainment for some criteria pollutants and nonattainment for others.

D. Under the PSD program:

1. All new or modified sources considered a major emitting facility (larger than certain thresholds) must use best available control technology (BACT) which is at least as stringent as NSPS for the applicable source category. Modified sources include those sources where there has been a physical change or change in operating procedures that would result in a significant net emissions increase. 40 C.F.R. § 52.21(b)(2).

2. Major new or modified sources are those sources that

   a. fall into one of 28 specifically designated industrial categories that have the potential to emit more than 100 tons per year of any pollutant regulated by the CAA; or

   b. outside of the 28 designated industrial sources are those sources that have the potential to emit 250 tons or more of any air pollutant regulated under the CAA.

   These major new or modified sources must undergo a rigorous air quality review that is administered by a state pursuant to a SIP (or EPA (FIP) if no SIP exists). This review results in a permit.

3. The "source" regulated is the largest grouping of pollutant-emitting activities located on contiguous or adjacent properties which are under the control of the same person and that fall within the same Standard Industrial Classification (SIC) code major group. 40 C.F.R. § 52.21(b)(6). **The definition of the source is important because a new source review is necessary only if there is a net increase in emissions from that source.** In other words, reducing

emissions from other emitting activities at a source so that total emissions of CAA regulated pollutants are reduced below 100 tpy at designated facilities and 250 tpy at non-designated facilities ("netting") can result in avoidance of new source review procedures.

4. A **new major source** seeking a PSD permit must demonstrate pursuant to 42 U.S.C. § 7475 that:

   a. It will use "Best Available Control Technology" (BACT). BACT is defined as "the maximum degree of [emissions] reduction . . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility" and is as stringent as the new source performance standards. 42 U.S.C. § 7479(2)(C)(3).

   b. It will not violate any NAAQS.

   c. It can satisfy all statutory requirements for new and modified sources in PSD areas that are at 42 U.S.C. §§ 7470-7491 and the statutory requirements for new and modified sources in nonattainment areas that are at 42 U.S.C. §§ 7501-7514.

   d. It can satisfy permit conditions required by the SIP.

   e. It can satisfy permit requirements that are part of state law or regulations that are not required by the SIP.

VIII. NONATTAINMENT AREAS--CRITERIA POLLUTANTS.

A. Areas with air quality violating the NAAQS are "nonattainment areas." Prior to construction or modification of a major source in a nonattainment area, that source must obtain a permit. 42 U.S.C. § 7502(c)(5).

B. Traditionally, States reviewed air quality data and asked EPA to designate areas as not meeting air quality standards. These areas are called "nonattainment" areas because they were violating the NAAQS. The amended CAA gives EPA authority to modify an area's nonattainment boundary. In addition, for areas with serious ozone or carbon monoxide problems, the entire metropolitan area will be included in the nonattainment area unless the state shows why a smaller boundary is more appropriate. These boundaries are important because more stringent control requirements apply within nonattainment areas. The type of controls imposed depends on the severity of the problem and which of the NAAQS the area does not comply with.

C. *Ozone Nonattainment Areas.*

Ozone is currently the most pervasive nonattainment pollutant in the United States. It is the least tractable pollutant in terms of attainment of the ambient standard and, therefore, receives the most attention. Ozone is an elusive pollutant because it is not emitted directly from any source, such as a stack; it is considered a secondary pollutant because it is formed in the atmosphere. It is a measurement pollutant that is a surrogate for photochemical oxidants that can be thousands of complex organic chemicals. Ozone is formed by the interaction of nitrogen oxide (NO_x) and hydrocarbon (HC) with the sun forming "smog" in the atmosphere. A subset of Hydrocarbons, called "volatile organic compounds" (VOCs), which are reactive, are the primary chemicals controlled to reduce ozone.

The CAA-90 divides the ozone nonattainment areas into five classifications based on the severity of their pollution and the time given to meet NAAQS requirements for ozone of 0.12 parts per million (ppm). EPA will designate cities that only slightly exceed the Federal air quality standards "Marginal" or "Moderate" areas, depending on how far beyond the standard their air quality measures. Cities furthest from the standard, thus having the highest pollution, will be "Serious," "Severe" or, in the case of Los Angeles, "Extreme." The Act requires "Marginal" areas to do very little beyond what they are already doing, while "Moderate" through "Extreme" areas must adopt gradually tighter requirements.

Some of the major specific requirements for the five categories of ozone nonattainment are:

1. Installations located in *marginal ozone nonattainment areas* which have major sources (defined as a source with the potential to release 100 tons per year or more of any pollutant) are subject to emission controls and specific requirements.

   a. The state must promulgate revisions to its SIP designed to meet the three-year deadline for attainment. Such SIP revisions must include, at a minimum, the implementation of Reasonably Available Control Technology (RACT), permit programs for new and modified sources, and the retention of any vehicle inspection and maintenance program previously required for the area. 42 U.S.C. § 7511a(a)(1), (2).

   b. These installations are required to submit a comprehensive emissions inventory within two years after November 15, 1990. They must ensure that new or modified sources obtain permits and undergo new source review as required in sections 172 and 173 of the CAA. All new or modified major VOC sources must offset all new VOC emissions 1.1 to 1. 42 U.S.C. § 7511a(a)(4).

2. Installations located in *moderate ozone nonattainment areas* are subject to all requirements in marginal nonattainment ozone areas.

   a. In addition, these installations must provide Reasonably Available Control Technology (RACT) for each category of VOC sources covered by an existing Control Technique Guideline (CTG) issued by EPA as well as all other major stationary sources of VOCs. (Note: RACT is not defined in the statute. It is implemented at the state level, but is essentially a national standard. EPA has issued a number of control technology guidelines (CTGs) and other documents to assist the state in identifying RACT for particular sources and categories of sources. CTGs are used by EPA to define reasonably available control technology which must be applied to existing emission facilities to reduce VOC emissions. (42 U.S.C. § 7511a(b)(2)(A), (B)) The general offset requirement for new sources and modification is increased to 1.15 to 1. 42 U.S.C. § 7511a(b)(5).

b. All large service stations, including retail gasoline stations and fleet fueling facilities, dispensing more than 10,000 gallons per month of gasoline, or distributing more than 50,000 gallons per month for independent small business marketers, must install and operate a system for recovery of gasoline vapor emissions from the refueling of motor vehicles. This system captures and prevents volatile gasoline components from entering the atmosphere. 42 U.S.C. § 7511a((b)(3).

c. All moderate areas are required to establish an inspection and maintenance program meeting EPA specifications. 42 U.S.C. § 7511a(b)(4) Section 118(c) of the CAA requires all government vehicles, except tactical vehicles, to be inspected and to comply with state inspection and maintenance programs. Additionally, section 118(d) requires that all employees who operate motor vehicles on a federal property or facility must furnish proof of compliance with vehicle inspection and maintenance (I&M) program requirements for the state in which the facility or government property is located, effective 15 November 1990 "without regard to whether such vehicles are registered in the State." The requirements of this section are determined by the location of the Federal property or facility not the place the employees live and garage their cars at night.

3. Installations in *serious ozone nonattainment areas* must meet all the requirements imposed with respect to a moderate area as well as additional requirements.

a. For the serious areas, a "major" source is redefined to include any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least fifty tons per year of VOCs. 42 U.S.C. § 7511a(C) The state must also revise its SIP to require an enhanced vehicle inspection and maintenance program for urban areas with a population of 200,000 or more. 42 U.S.C. § 7511a(c)(3)(A), (B).

b. Serious, severe, or extreme ozone nonattainment areas having a 1980 population of 250,000 or more, or any carbon

monoxide nonattainment area having a 1980 population of 250,000 or more, are subject to the clean fuel fleet provisions of Title II. Federal owners of vehicle fleets are required to purchase increasing numbers of alternative fuel vehicles (AFVs) over the next decade which use clean alternative fuels. 42 U.S.C. § 7586 ("Covered fleets" are 10 or more motor vehicles which are owned or operated by a single person. This includes motor vehicles owned or operated, leased, or otherwise controlled by a single person. "Covered fleet vehicles" are motor vehicles which are centrally fueled. 42 U.S.C. § 7581(5), (6).

c. Federal facilities have an additional requirement under section 246 of the CAA. Section 246 requires Federal facilities to make clean fuels available to the public, unless there is a commercial alternative fuel facility within the vicinity that sells the same type of clean fuel. 42 U.S.C. § 7586 Look for DoD policy guidance on this issue.

d. Serious ozone nonattainment areas are also subject to transportation control measures. Congress recognized in the CAA-90 that motor vehicles are the single largest source of ozone and carbon monoxide pollution, and that a solution to reduce these emissions is to reduce vehicle miles traveled.

e. Within four years following enactment of the 1990 Amendments, each state containing all or part of a serious ozone nonattainment area must revise its SIP to include an "attainment demonstration"--that the revised plan "will provide for attainment of the ozone (NAAQS) by the applicable attainment date." 42 U.S.C. § 7511a(c)(2)(A) If actual emissions exceed projected emission levels, the state must submit a SIP revision that includes a "transportation control measures" program based on measures from, but not limited, to those set out in section 108(f) of the CAA. (Transportation control measures (TCM) are also required for serious carbon monoxide nonattainment areas. 42 U.S.C. § 7512a(a)(2)(B) Some popular measures are:

(1) On-site carpool and ride-sharing measures.

(2) Preferred parking for carpools and vanpools.

(3) Guaranteed ride home.

(4) Bicycle racks and lockers.

(5) Flexible work schedules.

(6) Elimination of free parking.

(7) Public transportation subsidies to employees.

(8) Subsidies for employees not utilizing public transportation and not using privately owned transportation.

4. In *severe ozone nonattainment areas*, all requirements applicable to serious areas are also applicable to severe areas to include additional requirements.

a. The definition for "major source" or "major stationary source" has changed to include any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit 25 tons or more of VOCs. 42 U.S.C. § 7511a(d).

b. Transportation control measures (TCM) must be developed to offset any growth in emissions resulting from growth in vehicle miles traveled since enactment. 42 U.S.C. § 7511a(d)(1)(A) In addition, employers of 100 employees or more must increase average employee vehicle occupancy during commuting hours by at least 25 percent. 42 U.S.C. § 7511a(d)(1)(B).

c. A vitally important provision that applies in severe areas is section 211(k) of the CAA-90. Reformulated gasolines are expected to produce the greatest reduction in emissions of ozone-forming volatile organic compounds (VOCs) (during the high-ozone season) and emissions of toxic air pollutants (during the entire year). 42 U.S.C. § 7545(k)(10)(E) To achieve this goal, section 211(k) requires the use of reformulated gasolines in the nine worst National Ambient Air Quality Standard ozone nonattainment areas beginning

January 1, 1995. (The 9 areas are: Los Angeles, California; Baltimore, Maryland; Chicago, Illinois; Indiana; Wisconsin; Houston, Texas; Milwaukee, Wisconsin; Muskegon, Michigan; New York City, New York; New Jersey; Delaware; Maryland; San Diego, California.) The Act makes it unlawful to sell *conventional* gasolines in any of these affected areas. 42 U.S.C. § 7545(k)(5) This provision makes the use of reformulated gasolines optional in the remaining 86 NAAQS ozone nonattainment areas.

5. In an *extreme ozone nonattainment area*, sources must implement all of the requirements applicable to all of the other areas.

   a. A "major source" is one that has the potential to emit at least 10 tons of VOCs per year. The offset requirement for new sources and modifications is 1.5 to 1. Any change that causes any increase in emissions from a discrete operation, unit, or activity will be considered a modification, whether or not the increase in emissions might otherwise be characterized as *de minimis*. 42 U.S.C. § 7511a(e)(2).

   b. SIPs for extreme areas must be revised to provide that beginning November 1990, all electric utilities and commercial boilers that emit more than 25 tons per year of NO_x either burn as a primary fuel natural gas, methanol, ethanol, or a comparably low polluting fuel, or use advanced control technology. Such SIPs must also provide for additional traffic control measures during heavy traffic hours. 42 U.S.C. § 7511a(e)(3), (4).

6. In some regions of the U.S., cities are so closely spaced and aligned with prevailing wind patterns that it is difficult to identify a particular city with a downwind ozone level. For ozone control of a super region, CAA § 184 established a "transport region." It is located in the northeast U.S. extending from the Washington, DC metropolitan area to Maine and includes the major cities of Washington, Baltimore, Philadelphia, New York, and Boston, as well as 11 entire states from Maryland to Maine. 42 U.S.C. § 7511c. Each state in the transport region is required to submit a revised SIP that includes:

a. an enhanced vehicle and inspection program for metropolitan statistical areas with a population over 100,000; and

b. reasonably available control technology for sources of VOCs covered by the EPA control technique guidelines.

7. In addition, EPA is to study controls comparable in effect to refueling controls and implement them or implement refueling controls within one year of the completion of the study. Stationary sources under this section that emit 50 tons per year of VOC are considered to be major stationary sources and are subject to the requirements of major stationary sources in moderate nonattainment areas.

8. All areas in the transport region are required to adopt a minimum set of control measures on existing hydrocarbon sources. These include some of the requirements which apply to the Moderate ozone areas.

9. The CAA extends these minimum control measures beyond the nonattainment boundary to the entire state. States in transport regions are also required to install controls on NO_x sources unless the area can prove to the EPA's satisfaction that NO_x control does not help to reduce ozone pollution.

10. Finally, § 184(c) allows the interstate transport commission created under § 176 to impose additional control measures necessary to bring any area in the region into attainment.

11. The interstate transport commissions can be established for other regions when the interstate transport of air pollutants causes a violation of a NAAQS in one or more states.

12. The transport requirements are in addition to any requirements that may apply to nonattainment areas within the transport region. This

means that a Marginal area in a transport region would have more stringent requirements than a Marginal area outside of the region.

D. *Carbon Monoxide Nonattainment Areas.*

The CAA classifies carbon monoxide (CO) nonattainment areas according to pollution level. Unlike ozone, however, the Act does not require CO areas to achieve a specified level of annual reductions in emissions. For CO, nonattainment areas are either classified as being moderate or serious. 42 U.S.C. § 7512. Even though the CAA-90 sets out the two designations, it effectively subdivides moderate areas into two subcategories: (a) areas having design values of 9.1 to 12.7 ppm ("good quality moderate" areas [not a technical term]); and areas having design values greater than 12.7 ppm ("poor quality moderate" areas [not a technical term]). 42 U.S.C. § 7512a(a)(1)-(7).

1. "Good quality moderate" carbon monoxide nonattainment areas have only three requirements: (a) to submit an accurate inventory within two years of enactment; (b) a revised inventory; and (c) if the nonattainment area has an inspection and maintenance program, it must be maintained and must meet certain requirements. If the area was not previously required to have a vehicle inspection program, there is no requirement to start one. 42 U.S.C. § 7512a(a)(4).

2. "Poor quality moderate" carbon monoxide nonattainment areas must meet four requirements: (a) forecasts of vehicle miles traveled; (b) contingency provisions; (c) enhanced vehicle inspection and maintenance program; and (d) attainment demonstration. Of significance, these areas must start an enhanced vehicle I&M program even if they were not previously required to have one. 42 U.S.C. § 7412a(a)(6).

3. Serious carbon monoxide nonattainment areas must meet three major requirements. They must implement transportation control measures 42 U.S.C. § 7511a(d)(1); they must provide for the use of oxygenated gasoline during periods of the year when the area is prone to high CO concentrations (the winter months) 42 U.S.C. § 7512a(b); and they must demonstrate that the area has achieved a reduction in carbon monoxide emissions "equivalent to the total of

the specific annual emission reductions required by December 31, 1995. 42 U.S.C. § 7512(d)(1) If these areas fail to meet the air quality standard by the deadline, they must achieve a five percent reduction in CO emissions per year. 42 U.S.C. § 7512a(g).

E. *PM_{10} Nonattainment Areas.*

PM_{10} pollutants are airborne particles which can pass through the natural filters in the nose, mouth, and throat, penetrate the upper airways, and travel deep into the lungs. PM_{10} Particulates have a diameter less than one-tenth the width of a human hair. PM_{10} is a complex pollutant because it crosses many boundaries of other pollutants. It consists of many different components such as dust, dirt, soot, smoke, and "secondary particles." The latter are formed by the transformation of pollutant gases, such as SO_2 (sulfur oxides), NO_x (oxides of nitrogen) or VOCs (volatile organic compounds) into airborne Particulates.

1. PM_{10} nonattainment areas are classified based on their level of non-compliance with the NAAQS and also on whether the area can achieve the NAAQS in six years or less. They are either "Moderate" or "Serious." 42 U.S.C. § 7513.

2. Areas which EPA determines can practicably attain the NAAQS in six years or less are classified Moderate. These areas must meet three relatively easy requirements. The revised SIP must include a nonattainment permit program covering the construction and operation of new and modified major stationary particulate sources. 42 U.S.C. § 7513(a)(2)(B) These areas must adopt reasonably available control measures (RACM) for particulate-emitting sources such as wood stoves, urban road dust and agricultural burning by 10 December 1993. 42 U.S.C. § 7513a(a)(1)(C). Finally, the area must demonstrate that attainment deadlines will be met. Presumably, if they cannot, the area should be reclassified as "Serious."

3. Areas which cannot practicably attain the NAAQS in six years or less are classified Serious. These areas must adopt best available control measures (BACM) for controlling particulates within four years of being designated a Serious area. 42 U.S.C. §

7513a(b)(1)(B). Serious areas which fail to reach attainment by the applicable attainment date must achieve five percent reduction in PM_{10} emissions per year. 42 U.S.C. § 7513(d)

4. The terms "major stationary source" and "major source" are statutorily redefined for Serious areas to include sources emitting or having the potential to emit "at least 70 tons per year of PM_{10}."

F. *Sulfur Oxides, Lead and Nitrogen Dioxide Nonattainment Areas.*

States with nonattainment areas for sulfur oxides, lead, and nitrogen dioxide are required to submit SIP revisions within 18 months after EPA designates nonattainment areas. 42 U.S.C. § 7514. Under 42 U.S.C. § 7514a, the revised SIP must require that the nonattainment area will achieve compliance as soon as possible but not later than:

1. November 1995 for areas which were previously nonattainment areas.

2. Five years for areas designated after enactment of the 1990 CAA amendments.

G. *Permits.*

To obtain a permit to construct and operate new or modified major stationary sources in a nonattainment area, 42 U.S.C. § 7503 requires that the owner or operator of the new source demonstrate that:

1. The source will meet lowest achievable emission rates (LAER) in addition to the NSPS.

2. Construction or modification of the source is compatible with NAAQS attainment.

3. By the time the source is to commence operation, sufficient offsetting emission reductions will have been obtained. 42 U.S.C. § 7503(c).

   a. Offsets are obtained by reducing emissions from existing sources.

   b. These offsets can come from operations owned or operated by the party seeking to construct or and/or operate the new facility.

   c. Offsets can be bought and sold within nonattainment areas.

4. All other major emitting sources in the state that are subject to emission limitations are in compliance with those limitations or are on a schedule to achieve compliance.

5. An analysis of alternative sites, sizes, production processes and environmental control techniques shows that the benefits of the source outweigh its environmental and social costs.

IX. HAZARDOUS AIR POLLUTANTS (AIR TOXICS).

A. As a result of the 1990 CAA Amendments, 189 toxic air pollutants are regulated under 42 U.S.C. § 7412(a)(1).

B. EPA must publish a list of source categories that emit certain levels of these pollutants within one year after the new law is passed. The list of source categories must include major sources and area sources. 42 U.S.C. § 7412(a).

1. A major source is a stationary source, or group of stationary sources within a contiguous area under common control which emits or has the potential to emit:

   a. 10 or more tons of any hazardous air pollutant; or

b. 25 tons per year or more of any combination of hazardous air pollutants. 42 U.S.C. § 7412(a)(1).

2. An area source means any stationary source of hazardous air pollutants other than a major source, excluding vehicles (e.g., a dry cleaner).

EPA is required to formulate a national strategy for controlling area sources by November 1995. 42 U.S.C. § 7412(k)(3).

C. The heart of the Air Toxics program is the technology based standards required by 42 U.S.C. § 7412(d). EPA must issue "Maximum Achievable Control Technology" (MACT) standards for each listed source category according to a prescribed schedule.

1. EPA will define "major source categories" which emit at least one of these pollutants in threshold quantities.

2. The technology standards will be based on the best demonstrated control technology or practices within the regulated industry.

3. EPA must issue MACT standards for 40 source categories by 1993. The remaining source categories will be controlled according to a schedule that ensures all controls will be achieved within 10 years of enactment. 42 U.S.C. § 7412(e)(1).

4. Owners or operators that voluntarily reduce emissions according to certain conditions can get a six year extension from meeting the MACT requirements. In order to qualify for this extension, the reductions must occur after 1987 and before an applicable regulation is proposed, except for the source categories achieving reductions after proposal of MACT but before 1994. These source categories may receive an extension if they committed to the reductions before the proposal. 42 U.S.C. § 7412(i)(5)

5. MACT standards cannot be less stringent than those imposed under any other provision of the CAA. 42 U.S.C. § 7412(e)(7)

6. Standards for hazardous air pollutants promulgated prior to the 1990 CAA Amendments (including asbestos, arsenic, mercury, beryllium, vinyl chloride, benzene, and radionuclides) are preserved. 42 U.S.C. § 7412(q)(1)

7. New MACT standards will be effective upon promulgation. 42 U.S.C. § 7412(e)(10)

D. EPA is allowed to distinguish between new and existing major sources, and to set less stringent technologically based standards for existing sources compared to those imposed on new sources. 42 U.S.C. § 7412(d)(3)

1. A *new source* is any source for which construction or reconstruction commenced after the proposal of emission standards applicable to the source. 42 U.S.C. § 7412(a)(3)

2. An *existing source* is any source not a new source. 42 U.S.C. § 7412(a)(10)

3. *New source* MACT must equal emission reduction achieved by the best controlled similar source. It is applicable immediately after the standard is adopted by EPA.

4. For source categories or subcategories with less than 30 sources, the emission standard for an *existing source* must be at least as stringent as the average limitation achieved by the five best performing sources for which EPA has obtained emission data. 42 U.S.C. § 7412(d)(3)(B)

5. For source categories or subcategories with more than 30 sources, existing source emission standards must be at least as stringent as

the best performing twelve percent of *existing source* for which EPA has data. 42 U.S.C. § 7412(d)(3)(A)

E. After the effective date of an EPA-approved state air pollution permit program, no construction or reconstruction of a source of hazardous air pollutants will be allowed unless the state determines that the new or modified source will comply with MACT standards. 42 U.S.C. § 7412(g)(2)

1. If EPA has not yet promulgated applicable MACT standards, the state is to make a case-by-case determination.

2. A physical change in, or modification of, the method of operation of a major source that results in more than a de minimis increase in actual hazardous pollutant emissions, constitutes a modification. 42 U.S.C. § 7412(g)(1)

3. A major source can keep changes in its operations from constituting a modification if it offsets its emissions of hazardous pollutants with decreases in emissions from elsewhere. The offset pollutant being reduced must be at least as dangerous to human health as the one whose emissions are increasing. 42 U.S.C. § 7412(g)(1)(A)

F. To address the potentially serious problem of accidental releases into the environment, EPA will determine *reportable quantity* for accidental releases of at least 100 substances within two years, including sixteen substances named in the statute. Owners of storage or operating facilities which possess in excess of a threshold quantity of a listed substance will have three years to prepare a Risk Management Plan which must include:

1. A Hazard Assessment detailing possible releases and potential downward impacts;

2. A release prevention program;

3. An emergency response program.
42 U.S.C. § 7412(r)(7)(B)(ii)

Essentially, these plans would constitute an audit of the hazardous chemicals stored at the installation. This audit would determine where an accident might occur and what the appropriate measures are to prevent the accident or detect and respond to the accident. EPA will have to promulgate rules to implement these requirements, and sources will have until November 1996 to come into compliance. 42 U.S.C. § 7412(r)

X. STATE PERMIT PROGRAMS.

A. Prior to the 1990 Amendments, the CAA required a construction permit for certain air pollution sources. In addition, approximately 35 states had their own laws requiring operating permits for sources of air pollution. The 1990 CAA Amendments require that all states have an operating permit program modeled after the one used for the Federal National Pollution Elimination Discharge System (NPDES) of the Clean Water Act. States were required to develop and implement the program pursuant to EPA regulations by November 1993. EPA was responsible for issuing the permit program regulations, and is responsible for reviewing each State's proposed program and overseeing the state's efforts to implement any approved program. EPA must also develop and implement a federal permit program if a State fails to adopt and implement its own program. The permit program will ensure that all of a source's obligations with respect to its pollutants will be contained in one permit document, and that the source will file periodic reports identifying the extent to which it has complied with those obligations. Both of these requirements will greatly enhance the ability of Federal and State agencies to evaluate its air quality situation.

B. Under 42 U.S.C. § 7661a(a), the permit program applies to:

1. All major stationary air pollution sources, meaning:

a. Those with the potential to emit at least 100 tons per year (tpy) of any regulated air pollutant. 42 U.S.C. § 7602(j).

b. 50 tpy sources in severe ozone nonattainment areas.

c. 10 tpy sources in extreme ozone nonattainment areas.

d. 70 tpy sources of PM_{10} in serious PM_{10} nonattainment areas.

2. All major sources under 42 U.S.C. § 7412 (hazardous air pollutants) if the source emits or has the potential to emit at least:

a. 10 tpy of any single hazardous air pollutant.

b. 25 tpy of any combination of hazardous air pollutants.

The permit program also applies to any other source subject to acid rain, air toxics, New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD) or New Source Review (NSR) requirements, plus any source categories that EPA determines to be applicable by rule making.

C. Permits must be for a fixed term, not to exceed five years. 42 U.S.C. § 7661a(b)(5)(B).

D. A source may continue to operate under the terms of an expired permit if a timely and complete renewal application has been submitted and the permitting authority has not acted on the renewal application. 42 U.S.C. § 7661b(d).

E. Permits must contain sufficient limits and conditions to assure compliance with all applicable requirements under the Clean Air Act (including requirements of the applicable SIP). It must also include a schedule of compliance.

F. A single permit can also be obtained for emissions from similar operations at multiple temporary locations. 42 U.S.C. § 7661c(e).

G. EPA may exempt a source category if it is determined that permits for that category are "impracticable, infeasible, or unnecessarily burdensome." However, under no circumstances can EPA exempt a major air pollution source. 42 U.S.C. § 7661a(a).

H. Pursuant to regulations that EPA issued, each State must develop and submit to EPA an operating permit program by November 1993. (57 Fed. Reg. 32295) EPA then approves or disapproves the program, in whole or in part, within one year of receiving the proposed program from the State. If EPA disapproves either all or part of the program, the Administrator must notify the State and explain what revisions are necessary to obtain approval. The State must revise and resubmit the program to EPA within 180 days after receiving notification.

I. Under 42 U.S.C. § 7661a, the minimum elements of the permit program to be administered by the state or local air pollution control agency are:

1. A standard application form and a process for determining the completeness of permit applications.

   a. The permitting authority must approve or disapprove a complete permit application within 18 months of the date it receives the application.

   b. For those complete applications submitted within one year of the effective date of the program, the permitting authority must establish a schedule for acting on permit applications. This schedule must assure that at least one-third of the permit applications submitted will be acted upon annually over a period of no more than three years from the program's effective date.

2. Monitoring and reporting requirements.

3. A permit fee system.

   a. The program must collect an annual fee (or the equivalent over some other period) sufficient to cover all "reasonable (direct and indirect) costs required to develop and administer the permit program requirements."

   b. The fee must be at least $25 per ton of regulated pollutant (except CO) up to 4,000 tons per year, unless EPA determines that a lesser amount adequately reflects the reasonable cost of the permit program. The established fee amount will be adjusted according to the Consumer Price Index (CPI).

   c. If a state does not collect fees, EPA may collect the amount needed to cover reasonable costs of administering the program.

   d. Any source failing to pay a permit fee must be penalized 50% of the fee amount, plus interest. Federally collected fees will go to a special U.S. Treasury fund for permitting activities.

4. Provisions for adequate personnel and funding to administer the program.

5. Enforcement authorities, including authority to recover civil penalties in a maximum amount of not less than $10,000 per day for each violation, and appropriate criminal penalties.

6. Procedures for processing applications, for public notice, and for judicial review in state court of the final permit by:

   a. The applicant.

   b. Any person who participated in the public comment process.

c. Anyone else who could obtain judicial review. (See below for more discussion.)

7. Procedures providing that failure of the permitting authority to act on a permit application or a permit renewal application shall be treated as a final permit only for the purposes of judicial review.

8. Provisions for permit term extensions pending action on renewal applications.

9. Provisions for public availability of permit applications, compliance plans, permits, and monitoring or compliance reports.

10. A requirement that for permits with a term of three or more years for major sources, the permitting authority must require revisions to the permit to incorporate applicable standards promulgated under the CAA after the permit was issued. The revisions must occur within 18 months of promulgation of the standards.

11. Provisions for allowing a source to make certain changes within its facility without revising its permit. Specifically, facilities would be allowed to make changes in operations without a permit revision if:

    a. The changes are not "modifications" under Title I of the CAA;

    b. The changes would not result in emissions that exceed emissions allowable under the permit; and,

    c. The facility provides EPA and the permitting authority seven days written notice in advance of the changes (or such other advance notice as the permitting authority might require for emergency situations).

J. EPA has the authority to review each permit and to object to permits that violate the CAA. 42 U.S.C. § 7661d(b). EPA is allowed 45 days to review and object to the permit. EPA must provide a statement of reasons for the objections to both the permitting authority and the applicant.

1. If EPA fails to object to a permit that violates the Act, any person may petition EPA and to make an objection to the permit within 60 days after the expiration of EPA's review period. The petition must be based on grounds that were raised during the comment period on the permit, unless the petitioner demonstrates that it was impracticable to raise the objections or unless the grounds for the objections arose after the comment period. Once the objections have been filed with EPA, EPA must grant or deny the petition within 60 days.

2. If EPA concludes that the petitioner has met its burden of demonstrating that the permit is not in compliance with the CAA, EPA must then object to the permit being issued and modify, terminate, or revoke the permit.

3. Permitting authorities have 90 days to revise permits to meet an EPA objection. If the permitting authority fails to revise the permit, EPA must issue or deny the permit. If the permitting authority issued the permit after the 45 day review period but prior to receiving an EPA objection, EPA must modify, terminate, or revoke the permit, and the State is then given 90 days to revise the permit. If the State fails to revise the permit, EPA may issue or deny it.

4. If EPA terminates or revokes the permit, the source can continue to operate, under the conditions of the previous permit or the SIP, because it would have filed a complete permit application.

5. Judicial review of the Administrator's decision on an applicant's or citizen's petition will occur in the appropriate Federal court of appeals.

K. State permitting authorities must provide EPA with a copy of each permit application and permit issued. In addition, the permitting authority must notify all contiguous states whose air quality may be affected or that are within 50 miles of the source whose permit the state intends to issue. Such states must be provided a copy of the proposed permit and an opportunity to comment on the permit decision. The permitting authority must respond to the comments and provide EPA with a copy of its response. 42 U.S.C. § 7661(d)

XI. CONFORMITY DETERMINATION.

A. Under § 176(c) of the 1990 CAA Amendments federal agencies are precluded from engaging in any way (*e.g.* proving financial assistance, a license or permit) in an activity which does not conform to an applicable State Implementation Plan (SIP), or a Federal Implementation Plan (FIP).

B. Conformity is defined as *not*:

1. Causing or contributing to any new violation of any quality standard in any area;

2. Increasing the frequency or severity of any existing violation of any air quality standard in any area; or

3. Delaying timely attainment of any air quality standard or any required interim emission reductions or other milestones in any area.

C. EPA has promulgated a final rule for conformity determinations applicable to nonattainment areas and maintenance areas (areas that were once nonattainment, but have reached attainment status. (58 Federal Register 63214, 30 Nov 93, amending 40 CFR pts. 51 and 93). (At least one court has assumed that the final conformity rules also apply to NAAQSs in attainment areas. *See, Conservation Law Foundation v. Department of the Air Force,* No. C-92-156-L (D.N.H., August 29, 1994).)

1. The rule mandates opportunity for public participation in the conformity determination process:

   a. Agencies must make public their draft conformity determinations and provide 30 days for written public comment prior to taking formal action on the draft determinations.

   b. Agencies must also document their responses to all public comments on the draft determinations.

   c. Agencies must make public their final conformity determinations.

2. The rule exempts certain classes of federal activities from the need to produce a conformity determination (*e.g.* actions where the total direct and indirect emissions will be clearly *de minimis*, and actions in response to emergencies and natural disasters).

D. Conformity status of a federal action automatically lapses 5 years from the date a final conformity determination was made, unless the action was completed or is a continuous program.

E. If after the conformity determination is made, the action is changed, increasing total direct and indirect emissions above stated thresholds, a new determination is required.

F. *NEPA Interface.*

1. Draft conformity determinations should be released along with a draft Environmental Impact Statement (EIS) (if one is required).

2. Failure to summarize conformity analysis and conclusions in a final EIS or an Environmental Assessment (EA) could delay federal action. *Conservation Law Foundation v. Department of the Air Force*, No. C-92-156-L (D.N.H., August 29, 1994).

XII. ENFORCEMENT.

A. The Clean Air Act includes a comprehensive range of criminal and civil penalties. The sanctions range from misdemeanor penalties up to six months imprisonment and $10,000 fine for the knowing falsification of records, to 15 years and $1 million for "knowing endangerment."

B. Enforcement of environmental laws on a federal facility involves both state and federal enforcement issues because both entities are responsible for enforcement. The state issues revolve around the extent of the congressional waiver of sovereign immunity with respect to state-imposed civil penalties and criminal prosecution. The CAA contains a broad waiver of sovereign immunity, similar to those found in other environmental statutes (excluding any reference to the Federal Facilities Compliance Act). *See* CAA § 118(a). It is interpreted to mean that the CAA waives sovereign immunity to criminal sanctions, meaning that federal employees (such as military officers in positions of responsibility, i.e., the Post Commander, or civil engineers) or federal contractors, who violate state criminal environmental provisions are subject to state prosecution--not the federal agency. The Supreme Court has, however, held that liability for civil fines or penalties imposed by a state for past violations of environmental mandates have not been waived for federal agencies. *See Department of Energy v. Ohio*, 112 S.Ct. 1627 (1992).

C. Whether a federal employee may be criminally prosecuted is, however, not always clear. If a certain set of factual circumstances occur, sovereign immunity may apply to that federal employee preventing prosecution. However, the federal contractor may stand in a somewhat more precarious position than someone actually employed by the federal government because the defense of sovereign immunity is not available to contractors in most cases. Contractors are usually considered nonfederal employees, i.e., private individuals and subject to state control. (For a contrary holding see *Goodyear Atomic Corp. v. Miller*, 486 U.S. 174.) As a result, federal contractors may be fined for past violations of the CAA and may be criminally prosecuted.

D. The Environmental Protection Agency (EPA), as an equal enforcer of the CAA, clearly distinguishes nonfederal operators of federal facilities from federal entities because of the *unitary executive theory*. Under this theory, everyone who works in the Executive Branch of the federal government works for the President carrying out Presidential wishes. For one executive agency to bring suit against another would mean the executive agency was suing itself. In other words, EPA, through DOJ, cannot sue another executive agency, DOD or DOE. This reduces EPA to utilizing interagency agreements with other federal agencies. This, of course, does not preclude EPA from bringing suit against states.

E. Federal agencies, therefore, are only subject only to injunctive relief for violations of the CAA. Otherwise, federal agencies may choose to adhere to the CAA provisions due to the pressure of poor press, and a good "environmental" conscience.

F. Under the *citizen suit provision*, any person can sue the Federal government. EPA can only be sued for nondiscretionary actions, but all other Federal agencies can be sued for any violation, i.e., violating SIP requirements, violating permit requirements, violating emissions requirements. *Any person* has been interpreted by a number of courts to mean a state government. Usually, when a state government cannot reach the federal agency by any other means, it can become a citizen and seek equitable relief and other similar orders (no money damages).

G. *Implementation.*

1. The first step in implementation is determining compliance. Section 114 of the CAA authorizes the Administrator to establish record keeping, monitoring and reporting requirements for stationary sources. Stationary sources are monitored by the states which submit emission data to EPA. When necessary, EPA and its authorized representative can enter a source's premises to inspect and copy its records and reports and to conduct sampling of the emissions or discharges of the source.

2. When a source does not achieve initial compliance or falls out of compliance, EPA has a broad range of remedies to consider. They include:

   a. Informal resolution.

   b. Notice of Violation.

   c. Administrative Orders. (Not applicable against Federal agencies under most environmental statutes.)

   d. Assessment of administrative penalties. (Not applicable for past punitive fines against Federal agencies under the majority of environmental statutes.)

   e. Initiation of a civil or criminal action.

   f. Contractor debarment.

3. Since September 1977, EPA's primary enforcement objective has been to bring all major stationary sources into final compliance. If the state has not taken adequate action, EPA's regional office prepares and forwards to headquarters a litigation report. These reports describe the violation and request the filing of a civil action pursuant to Section 113, seeking, as appropriate, injunctive relief and civil penalties.

4. Successful conclusion of a civil action usually involves a Consent Decree or a judgment establishing a compliance schedule and setting forth both civil penalties and stipulated penalties; the latter penalties are established in the event the source does not achieve interim or final compliance. Under the Memorandum of Understanding, EPA and DOJ headquarters must review all consent decrees and authorize and concur in all settlements.

H. *Criminal Action.* As discussed in detail below, EPA can bring a criminal action against a person who "knowingly" violates an enforceable provision of the Clean Air Act. Section 113(c) also makes it a crime to knowingly make any false statement, representation or certification in any required

document or to render inaccurate any monitoring device or method. Both EPA and DOJ emphasize the need to bring a criminal action in all instances where one is warranted.

I. *Overview of Available Enforcement Actions.*

1. Informal Actions.

These actions consist of informal discussions between EPA and the source to address the perceived compliance problem, its seriousness, and the actions the source can take to bring itself into compliance.

2. Notice of Violation.

a. Under Section 113(a)(1) of the Clean Air Act, a Notice of Violation is the first formal step in the process of enforcing the statutory requirements.

b. Notice to the source and to the state is a prerequisite before commencing a civil action. If the violation continues for 30 days, the Administrator may proceed with further remedies. Issuance of a Notice is NOT discretionary, and the Administrator is obligated to make a finding regarding an alleged implementation plan violation when such information is presented to him.

c. Section 113(b) as amended now requires the Administrator to commence a civil action against major stationary sources in violation of the Act's provisions. For minor sources, further action is still a discretionary decision.

3. Administrative Orders.

a. Section 113(a)(1) authorizes the Administrator to issue an order requiring a source to comply with the applicable State Implementation Plan if it is still not in compliance 30 days after issuance of a Notice of Violation. Section 113(a)(3)

authorizes immediate issuance of compliance orders for violations of Sections 111 (New Source Performance Standards), 112 (Hazardous emissions), and 114 (data maintenance and disclosure and inspections).

b. Section 113(a)(4) requires that the source be given an opportunity to confer with EPA concerning the alleged violations prior to issuance of an Order; it excepts orders relating to a hazardous emission violation.

c. A copy of any order must be sent to the state and the order must state the nature of the violation along with specifying a time for compliance, taking into account the seriousness of the violation and good faith efforts of the source.

d. Under Section 113(d), the only sources eligible for extended Compliance Orders are stationary air pollution sources which have had less than 3 years to meet the requirements in the applicable implementation plan.

4. Administrative Penalties.

a. The Clean Air Act has provisions for the collection of administrative penalties for certain violations.

b. The Agency issues notices of noncompliance which trigger the administrative penalty liability.

5. Injunctive Relief.

a. Stationary Sources.

(1) Section 113(d) now requires the Administrator to bring an action for a permanent or temporary injunction against the owner or operator of a major stationary source whenever such person:

(a) violates or fails to comply with a Section 113(a) Order; or

(b) violates any requirements of an applicable implementation plan (A) during any period of Federally assumed enforcement, or (B) more than 30 days after having been notified by the Administrator under subsection (a)(1) of this section of a finding that such person is violating such requirement; or

(c) violates section 111(e), 112(c), 119(g), 113(d((5); or

(d) fails or refuses to comply with any requirement of sections 114 or 113(d); or

(e) attempts to construct or modify a major stationary source in any area where the Administrator has found the state is not acting in compliance with the requirements of section 110(a)(2)(1) of Part D of the Act.

6. Civil Penalties.

Section 113(b) authorizes the Administrator to bring a civil action against a violating major stationary source for a civil penalty of not more than $25,000 per day per violation of the Act's provisions.

7. Criminal Actions.

a. Section 113(c)(1) provides criminal sanctions for any person who knowingly violates orders issued under Section 113(a) or the other enforceable provisions of the Act.

b. A criminal action can also be taken under Section 113(c)(2) against one who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained under the Act or who falsifies, tampers with or

knowingly renders inoperative any monitoring devices or method required to be maintained under the Act.

c. The term "person" has a broad definition including any responsible corporate officers as set forth in Sections 113(c)(3) and 302(e).

d. EPA cases have not been limited to the criminal sanctions contained in environmental statutes since violations of EPA's environmental statutes can also trigger provisions of Title 18. Two statutes which have been used are 18 U.S.C. § 1001 and 371. Section 1001 prohibits the submittal of false information to a government Agency. This section also prohibits the concealment of information within the jurisdiction of an Agency of the government. Section 371 makes it a crime to conspire to defraud the United States Government.

8. Listing.

a. A facility which is in noncompliance with Clean Air standards and which satisfies one of several minimal criteria will be placed, following notice and comment, on the EPA List of Violating Facilities.

b. A listed facility is ineligible to receive any nonexempt Federal contract, grant or loan involving that facility.

c. A facility is listed until it comes into, or agrees to come into, compliance.

J. *Range of Remedies by Section:*

1. Section 113(a)(1): When a person violates a requirement of an applicable SIP or a permit, EPA must notify the violator and the state. Thirty days after the notice, EPA can exercise its enforcement options.

The options are:

a. issue a compliance order;

b. issue an administrative penalty order; [Note § 113(D) provides for two kinds of administrative orders--*See* discussion below.]; or

c. bring a civil action under § 113(B).

(Thus EPA has four choices: A or B or A and B or C.)

2. EPA can also pursue:

a. criminal penalties under § 113.

b. noncompliance penalties under § 120.

c. seek an emergency order under § 303.

3. Section 113(a)(2) provides for federally assumed enforcement. If the Administrator finds widespread violations of either an applicable SIP or an approved permit program under Title V, public notice must be given. Thirty days after the notice of SIP violations or 90 days after notice of permit program violations, EPA can take over the state program.

4. Section 113(a)(3) provides EPA with the authority to enforce most other provisions of the CAA with the approaches provided under § 113(a)(1) or criminal actions under § 113(c). Note, however, that Title II has its own enforcement mechanisms for mobile source requirements and is not enforced using § 113.

5. Section 113(a)(4) requires EPA to provide a violator with an opportunity for a conference before an administrative order takes effect except for hazardous emissions covered by § 112.

6. Section 113(a)(5) deals with violations of a new source performance standard. If a state is not enforcing a new source requirement, EPA

can issue an order, issue an administrative penalty or bring a civil action. They can also seek criminal penalties.

7. Section 113(b): Civil Judicial Enforcement. EPA can use the courts to seek an injunction and civil penalties of up to $25,000 per day for each violation. Most of the requirements of the CAA are subject to this section except for Title II requirements.

Jurisdiction is placed in the Federal District Courts and a number of venues are specified. If the government brings an unreasonable action, the court may award costs of litigation including reasonable attorney and expert witness fees to the defendant.

8. Section 113(c) provides criminal sanctions for a variety of CAA violations. After a first conviction, subsequent similar convictions result in both the maximum fines and imprisonment period doubling.

(c)(1) Generally, a knowing violation of the CAA after federally assumed enforcement or more than 30 days after a § 113(a)(1) notice of
violation subjects the violator to fines provided in Title 18 of the United States Code and/or imprisonment for not more than five years.

(c)(2) Knowingly making a false statement, representation, certification, or failing to file a required document or falsifying data required by the CAA exposes the violator to Title 18 U.S.C. fines and/or imprisonment for up to two years.

(c)(3) A failure to pay a fee owed to the United States under the CAA Titles III, IV, V, VI, or VII brings fines under 18 U.S.C. and/or up to one year in prison.

(c)(4) A negligent release of a hazardous air pollutant listed under CAA § 112 or that is on the extremely hazardous list under CERCLA (42 U.S.C. 11002(a)(2)) that places another person in imminent danger of death or serious bodily injury is punished by a fine under 18 U.S.C. and/or imprisonment for not more than one year.

(c)(5) A knowing endangerment because of the release of hazardous air pollutants as described in (c)(4) can result in an 18 U.S.C. fine and/or imprisonment for not more than 15 years. However, section (c)(5)(B) limits the imposition of penalties for knowing endangerment to those with actual knowledge or who take "affirmative steps to be shielded from relevant information." § (c)(5)(C) provides additional affirmative defenses. (c)(5)(D) allows all defenses under criminal law.

Section 113(d) provides for two types of civil penalties.

(d)(1) provides for a civil penalty of up to $25,000 per day per violation with a cap of $200,000. To impose this penalty, the Administrator must provide an opportunity for a hearing on the record subject to APA requirements in 5 U.S.C. §§ 554 and 556. Before imposing a civil penalty order, EPA must give notice of the proposed penalty and provide a 30-day period for the person to request a hearing. Under § 113(d)(2)(B) the Administrator may compromise, modify or remit any administrative penalty.

(d)(3) For minor violations, the 1990 CAA Amendments added this field citation program. Penalties not to exceed $5,000 per day per violation can be assessed by EPA. A person receiving a field citation can pay it or request a hearing. The hearing is an informal one, not subject to the APA requirements in 5 U.S.C. §§ 554 or 556. The time for appeal and the appeal process is to be prescribed in regulations to be promulgated by EPA. Payment of the penalty does not preclude other EPA or state enforcement action if the violation continues.

Section 113(d)(4). A civil penalty under (d)(1) or (d)(3) can be reviewed in a Federal District Court by filing within 30 days following the date the administrative order becomes final. Venue is in the Federal District Court for the District of Columbia or the place of violation, residence, or the principal place of business of the defendant. The scope of review limits a set aside or remand by the court to cases where EPA has no substantial evidence in the record or has abused its discretion. A penalty assessment is not subject to any other court review according to the statute.

Section 113(d)(5). If a person fails to pay a civil penalty or to comply with a penalty order, a civil action can be brought in the

appropriate district court to recover the penalty, interest, and additional costs and penalties specified in this subsection. Precluded from judicial review is the validity, amount, and appropriateness of the assessment or order.

Section 113(e). The penalty under §§ 113 or 304(a) will be based on the: size of the business; economic impact of the penalty; violator's compliance history; good faith efforts to comply; duration of the violation; economic benefit of noncompliance; and seriousness of the violation.

Section 113(e)(2) provides each day is a violation, and after EPA has notified the source of a violation, the burden of proof shifts to the source to show the violation is not continuing.

Section 113(f) provides EPA can pay up to $10,000 to any person who furnishes information that leads to a criminal conviction or civil penalty for violating Titles III through VII of the CAAA.

Section 113(g) provides for public notice by DOJ and public participation before a consent order or settlement agreement is signed to which the United States is a party (other than because the U.S. is enforcing the CAA).

Section 113(k) "Operator" is defined to limit liability to senior management personnel or corporate officers unless a knowing or willful violation is involved.

CHAPTER V -- THE ENDANGERED SPECIES ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. The Endangered Species Act, 16 U.S.C. §§ 1531-1544.

2. The National Environmental Policy Act, 42 U.S.C. §§ 4321-4347.

3. 50 C.F.R. Parts 17, 401-4-3, 424, 450-453.

B. State Authority.

1. 16 U.S.C. § 1535(f) provides that state laws that prohibit the "taking" of endangered or threatened species may be more, but not less, restrictive then federal law.

2. The Sikes Act, 16 U.S.C. §§ 670a-670f, requires installations to execute cooperative plans for the conservation and management of fish and wildlife. It allows installations to charge fees for hunting and fishing permits with the proviso that any money generated be used for fish and wildlife conservation on the installation.

3. 10 U.S.C. § 2671 requires that all hunting, fishing, and trapping on military installations be in accordance with state law, and that appropriate state licenses be obtained for such activities on the installation.

C. Related DOD Directives.

-- DOD Dir. 4700.4, Natural Resources Management Program (24 January 1989) (requires that natural resources be utilized and cared for in a manner best serving the present and future needs of United States. Installations are directed to regard conservation as vital elements of the military mission).

D. Related Army Regulations.

-- AR 200-3 Natural Resources requires that Army actions do not jeopardize the continued existence of endangered or threatened species or damage their critical habitat).

II. KEY DEFINITIONS.

A. An "endangered species" is a species in danger of extinction throughout all or a significant portion of its range. 50 C.F.R. § 424.02 (e) (1984).

B. A "threatened species" is a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. 50 C.F.R. § 424.02(m).

C. "Critical habitat" consists of specific areas in which are found those physical or biological features essential to the conservation of the species and which may require special management consideration or protection. 16 U.S.C. § 1532(5) (1988).

D. "Take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19) (1988). There is a split in the circuit courts over whether significant habitat modification or degradation, which potentially harms an endangered or threatened species by impairing essential behavioral patterns, (*e.g.* breeding, feeding or sheltering) also constitutes a taking for purposes of ESA Section 9-enforcement actions against any person.

E. "Incidental taking" means a "taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." 50 C.F.R. § 17.3(c).

F. "Major construction activity" is a construction project or other similar activity on a scale that would trigger the requirement for an Environmental Impact Statement by significantly affecting the quality of the human environment. 50 C.F.R. § 402.02.

G. "Conserve" means to use all means necessary to bring an endangered or threatened species to the point where the protection of the ESA is no longer needed. 16 U.S.C. § 1532(3) (1988).

H. "Person" means and individual, corporation, partnership; or any officer, employee or agent, department or instrumentality of the federal government, subject to the jurisdiction of the United States.

III. INTRODUCTION.

A. The ESA is primarily administered by the United States Fish and Wildlife Service (FWS) and the National Marines Fishery Service (NMFS) (together, the "Service"). Terrestrial biology is primarily the responsibility of FWS. Marine biology is primarily the responsibility of NMFS.

B. Endangered and threatened animal species are listed at 50 C.F.R. § 17.11.

C. Endangered and threatened plants are listed at 50 C.F.R. § 17.12.

D. The ESA requires Federal agencies to act to conserve and restore endangered and threatened species. In furtherance of those goals, the ESA prohibits the "taking" of any endangered fish or wildlife species and the removal or destruction of any endangered plant species. 16 U.S.C. § 1538 (1988). When a federal agency proposes to take any action that would affect an endangered or threatened species, the agency must "**consult**" with the Service. Where a species that is proposed for listing under the ESA is likely to be affected by agency action, the agency must "**confer**" with the Service.

E. When the proposed agency action can not be undertaken without jeopardizing the endangered species or its habitat, the preservation of the species must be accorded priority. *See e.g., T.V.A. v. Hill,* 437 U.S. 153 (1978). **Once it is determined that the agency's action would harm a listed species, there is no balancing of competing interests, unless those interests are between or among endangered species.** *See e.g., Palila v. Hawaii Dep't of Natural Resources,* 852 F.2d 1106 (9th Cir. 1988).

F. To date, approximately 1100 endangered animal species have been identified. Installations are increasingly having to cope with the presence

of indigenous endangered species (*e.g.,* the desert tortoise at Ft. Irwin and the red-cockaded woodpecker at Forts Benning, Bragg, Polk and Stewart). Moreover, there has been increased pressure by environmentalists to use military installations as habitat for endangered species being reintroduced into the wild from captive breeding programs. This trend culminated in litigation which will require the Department of Interior to introduce the Mexican Grey Wolf onto White Sands Missile Range.

IV. GENERAL PROCEDURES FOR IMPLEMENTING THE ESA.

A. *Determination of Endangered or Threatened Species.* The Secretary of the Interior and the Secretary of Commerce are required to determine whether a species is endangered or threatened. This determination must be based solely n the best scientific and commercial data regarding a species' status available at the time. 16 U.S.C. § 1533(b)(1)(A); 50 C.F.R. § 424.1(b). Economic considerations may not be considered. Once a species is determined to be either endangered or threatened it is list in the Federal Register. Such a listing decision must be accomplished within a maximum of eighteen months from the date the Secretary proposes a species be listed, otherwise the eventual listing could be successfully challenged in court for being arbitrary and capricious. *See e.g., Idaho Farm Bureau v. Babbitt,* 839 F.Supp. 739 (D.Idaho 1993). After a species has been listed, it may only be removed if the Secretary of the Interior finds that the species has become extinct, has recovered sufficiently to no longer be endangered or threatened, or the original listing was in error. 50 C.F.R. § 424.11.

B. *Designation of Critical Habitat.* The Secretary of the Interior must also make a determination of a critical habitat associated with a listed species "to the maximum extent prudent and determinable" at the time the species is listed as endangered or threatened. 16 U.S.C. § 1533(a)(3)(A). Concurrent critical habitat determinations are rarely made. Political, commercial, and economic interests lobby FWS to avoid making such determinations out of fear that critical habitat designations will negatively impact on land use. The designation of critical habitat must take into consideration the economic or any other relevant impact of the designation. Areas may be excluded from critical habitat if it is determined that the benefits of such exclusion outweigh the benefits of inclusion, unless the failure to include the area will result in the extinction of the species

concerned. 16 U.S.C. § 1533(b)(2) (1988). Maps of critical habitat for fish and wildlife and also plants are listed at 50 C.F.R. §§ 17.95 & 17.96, respectively.

C. *Recovery Plans*. Once a species is listed, the Secretary must develop and implement recovery plans for the conservation and survival of the endangered or threatened species, unless he finds that such a plan will not promote the conservation of the species. These plans detail passive as well as affirmative steps required to save a species from extinction. 16 U.S.C. § 1533(f).

V. AFFIRMATIVE DUTIES OF FEDERAL AGENCIES UNDER THE SECTION 7 OF THE ESA -- 16 U.S.C. § 1536.

A. Federal agencies are required to carry out programs for the conservation of listed species. 16 U.S.C. § 1536(a)(1). Agencies will, however, be given some discretion in carrying out their duties to conserve listed species. *See Pyramid Lake Piaute Tribe of Indians v. Navy,* 898 F.2d 1415 (9th Cir. 1990)

B. Federal agencies are required to ensure that agency actions are not likely to jeopardize the continued existence of any listed species or result in the destruction of adverse modification of its habitat. If an area on the installation is designated "critical habitat," the commander has a duty to protect the critical habitat **even if the threatened or endangered species is not present on the installation**. 16 U.S.C. § 1536(a)(2).

C. Federal agencies must prepare a biological assessment if major construction is scheduled to occur in an area that is inhabited by a listed or candidate protected species. 16 U.S.C. § 1536(c).

1. The biological assessment should be prepared primarily by installation wildlife and operational personal. Outside experts and consultants should be retained as appropriate to ensure that the assessment is thorough and scientifically defensible. At a minimum, the assessment must contain:

a. A description of the proposed action to include any appropriate environmental enhancements/mitigation to be conducted concurrently.

b. A description of the affected environment (to include the endangered species).

c. A description of how the proposed action will affect the endangered species.

2. Although only required when major construction is involved, **biological assessments should be prepared whenever possible.** Doing so:

a. Satisfies the agency's obligation to use the best scientific and commercial data in fulfilling our Section 7 consultation responsibilities. 16 U.S.C. § 1536(a)(2).

b. Helps address the practical problems caused by lack of Service expertise concerning a particular listed species and the Service's lack of interest in finding creative solutions which will protect the species and still allow for completion of the military mission.

3. If the biological assessment results in a determination that the proposed action may **affect** an endangered or threatened species, **consultation** with the Service is required. 16 U.S.C. § 1536(a)(3).

4. If the biological assessment results in a determination that the proposed action **is likely to jeopardize the continued existence of a candidate protected species or result in the destruction or adverse modification of the species critical habitat**, the Agency must confer with the FWS.

D. Federal agencies must "**consult**" with the appropriate Service (Fish and Wildlife or National Marine Fisheries Service) whenever the commander carries out a required program for the conservation of a listed species, or

anticipates taking any action that **may** impact on a listed species or its habitat. 16 U.S.C. § 1536(a). The term "action" is **very** broadly defined, and includes virtually any conceivable activity which could affect (positively or adversely) a listed species. *See* 50 C.F.R. § 402.14. *See also, Lane County Audubon Society v. Jamison,* 958 F.2d 290 (9th Cir. 1992) where the court held that the Bureau of Land Management's strategy for managing 1,149,954 acres of old-growth timber associated with the endangered norther spotted owl constituted "agency action" requiring consultation. Upon initiation of consultation, an agency is not permitted to make an irretrievable commitment of resources which has the effect of foreclosing the formulation or implementation of reasonable and prudent alternatives. 16 U.S.C. § 1536(d).

1. Consultation can be either "formal" or "informal."

2. Informal consultation, consisting of discussions and exchange of correspondence, is an optional process. 50 C.F.R. § 402.02. It should be used when it is unclear whether or not the proposed agency action will affect a listed species. The informal consultation process will result in a decision by the agency on whether or not it is appropriate to engage in formal consultation with Service. Note that **formal consultation is mandatory where it is determined that a protected species may be affected by the proposed action.**

E. Federal agencies must "**confer**" with the Service whenever a proposed action is likely to jeopardize any species **proposed** to be listed under the ESA or result in the destruction or adverse modification of critical habitat **proposed** to be designated for the species. Unlike the consultation process, federal agency's are not prohibited from making irretrievable commitment of resources once beginning the conferring process. A conference generally consists of informal discussions resulting in the FWS making recommendations on appropriate agency actions. These discussions can be used to assist in:

1. Preparing agency comments on the economic impact of designating an area as critical habitat.

2. Pre-planning for agency actions necessary if the species is listed.

3. Deciding whether or not consultation will be required if the species is listed.

VI. THE BIOLOGICAL OPINION.

A. Based on consultation with the agency and the biological assessment (if any), the Service will issue a "biological opinion." 16 U.S.C. § 1536(b)(3)(A). The purpose of the biological opinion is to advise the commander on how the action proposed will affect the endangered species or its critical habitat. There are three possible findings in a biological opinion:

1. The proposed action will not adversely affect the endangered or threatened species or critical habitat of a protected species.

2. The proposed action will adversely affect an endangered or threatened species or critical habitat and there are no prudent alternatives.

3. There are reasonable and prudent alternatives to the action proposed that would not adversely affect an endangered or threatened species or critical habitat and there are no prudent alternatives.

B. If the Service's biological opinion concludes that:

1. The proposed action will not adversely affect the protected species or critical habitat; **or**

2. There are reasonable and prudent alternatives which would not adversely affect the protected species or critical habitat; **and**

3. The "incidental taking" of a listed species would not violate the ESA, the Service provides an "Incidental Take Statement" with the biological opinion. The Incidental Take Statement specifies:

   a. The impact of the incidental taking on the species; and

   b. The measures necessary or appropriate to minimize the impact of the taking; and

   c. The terms or conditions which the commander must comply with to implement the measures necessary to minimize the impact of the taking. 16 U.S.C. § 1536(b)(4) (1988).

C. Courts will review biological opinions based on an arbitrary and capricious standard. *See Greenpeace v. Franklin,* 982. F.2d 1342 (9th Cir. 1992). Also, an agency may not blindly rely on the biological opinion if such reliance is arbitrary and capricious. *See Pyramid Lake Piaute Tribe of Indians v. Navy,* 898 F.2d 1415 (9th Cir. 1990)

D. A federal agency **is not** absolutely bound by the Service's biological opinion. If it deviates from the recommended alternatives, however, it has no protection from the opinion's Incidental Take Statement. Any taking without the protection of an Incidental Take statement or a permit will be a violation of the ESA **and could result in criminal or civil penalties.** So long as there is no incidental taking as a result of the agency deviation from the biological opinion, the agency will not be in violation of the ESA if it takes "alternative, reasonably adequate steps to insure the continued existence of any endangered or threatened species." *Village of Akutan v. Hodel,* 859 F.2d 651 (9th Cir. 1988).

E. *Overseas Applicability of Section 7 Requirements.* Section 7 does not contain any express language indicating Congress intended that it apply to federal agency actions overseas. However, several other provisions of the ESA do expressly relate to government action designed to protect endangered species overseas. These provisions have caused one court in *Defenders of Wildlife, Friends of Animals v. Lujan,* 911 F.2d 117 (8th Cir. 1990) to conclude that Section 7 consultation requirements also apply overseas. This decision meant that federal agencies, prior to engaging in overseas projects, would have to take all necessary measures outlined in Section 7 to conserve any endangered species located ar the project site. The Supreme Court in *Lujan v. Defenders of Wildlife,* 112 S.Ct. 2130 (1992), overturned the circuit court decision, holding that the plaintiffs did not have proper standing to challenge this issue. The Supreme Court, however, did not address the extraterritorial applicability issue, which will undoubtedly be raised in a later suit.

VII. EXEMPTIONS.

A. *Permits.* FWS can issue permits for takings of protected species for scientific purposes or to enhance the propagation or survival of the affected species. Permittees must submit a conservation plan that specifies:

1. The impact resulting from such takings.

2. The mitigating steps that will be taken to minimize the effects of the taking, including their source of funding.

3. What alternatives to taking were considered and why they could not be utilized. 16 U.S.C. § 1539(a).

B. *Endangered Species Committee.* As a result of *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978) (the snail darter case), Congress created the Endangered Species Committee (ESC). 15 U.S.C. § 1536(e). The ESC (a.k.a. "God Committee") is composed of seven members, including the Secretary of the Army. This Committee can grant federal agencies an exemption from the requirement to ensure all actions are not likely to jeopardize an endangered or threatened species or its associated critical habitat. Such an exemption is normally permanent with respect to all endangered or threatened species associated with the federal action (16 U.S.C. § 1536(h)(2)(A), and is considered final agency action for purposes of citizen suits. 16 U.S.C. § 1536(n). The Committee shall grant an exemption if it determines (16 U.S.C. § 1536(h)) that:

1. There are no reasonable and prudent alternatives to the agency action.

2. The benefits clearly outweigh the benefits of alternative courses of action consistent with preserving the species or critical habitat.

3. The action is of regional or national significance.

4. There has been no irretrievable commitment of resources.

5. Necessary and appropriate mitigation and enhancement measures are established.

6. It is determined that consultation was carried out in good faith and any required assessments were completed.

C. *National Security Exemption.* The Environmental Species Committee shall grant an exemption for any agency action if the Secretary of Defense finds that such an exemption is necessary for reasons of national security. 16

U.S.C. § 1536(j). The intent of Congress was that this exemption would be used only in cases on imminent danger to the United States. Under normal circumstances, the agency should first seek a routine exemption from the Committee.

VIII. PROHIBITED ACTS UNDER THE ESA -- 16 U.S.C. § 1538 (SECTION 9).

A. The ESA makes it unlawful for any person subject to the jurisdiction of the United States to import into or export any listed species from the United States, or "take" any such species within the United States or its territorial seas. 16 U.S.C. § 1538(a).

B. "Taking" a listed species may include destructive or adverse modification of a listed species' critical habitat. The Fish and Wildlife Service promulgated a regulation, 50 C.F.R. § 17.3, which included any degradation of habitat associated with a listed species in the definition of "take". The court in *Palila v. Hawaii,* 852 F.2d 1106 (9th Cir. 1988), upheld a challenge to this regulation by concluding that Congress intended in the ESA to define "take" broadly, in an effort to conserve listed species. The Supreme Court ruled on this issue in *Sweet Home Chapter of Communities v. Babbitt,* 115 S.Ct. 2407 (1995), agreeing with the court in *Palilia* that habitat modification that adversely affects species can constitute harm (which is a taking) under section 9 of the ESA.

IX. ENFORCEMENT OF THE ESA -- 16 U.S.C. § 1540 (Section 11).

A. Violations of the ESA can result in either civil or criminal sanctions.

1. *Civil Penalties* -- Each knowing violation can result in penalties of up to $25,000. Other violations (negligence) can result in penalties of up to $500 per violation. **Government employees are not immune.**

2. *Criminal Penalties* -- Any person can face criminal charges for a knowing violation of the ESA. The government need only prove the person had the general intent to commit the act which constituted a violation of the ESA - specific intent to violate the ESA (knowingly

harm/kill an endangered species) is not required. *See United States v. Billey,* 667 F. Supp. 1485 (S.D. Fla. 1987); *United States v. St. Onge,* 676 F. Supp. 1044 (D. Or. 1988); *United States v. Ivey,* 949 F.2d 759 (5th Cir. 1991). Maximum penalty is 1 year and up to a $50,000 fine.

B. Civil and criminal sanctions can be sought for violations of omission (e.g., failing to carry out programs to conserve an endangered species or confer with the Service), as well as for commissions of prohibited acts (actual taking or importing/exporting a listed species)

C. "Citizen suits" can also be brought against a federal agency for violation of the ESA.

1. Under the ESA, "any person may commence a civil suit . . . to enjoin any person, including the United States " from violating the Act. 16 U.S.C. § 1540(g)(1)(A).

2. The standard of review of an agency's action is the Administrative Procedures Act's (APA) "arbitrary or capricious standard." Application of the APA standard, however, must be accomplished consistent with the commander's responsibility to use "all methods and procedures which are necessary to prevent the loss of any endangered species, regardless of cost." *Tennessee Valley Authority v. Hill,* 437 U.S. 153 (1978).

3. Significantly, the ESA provides that courts may award the **costs** (including reasonable attorney and expert witness fees) of litigation to either party. 16 U.S.C. § 1540(g)(4).

CHAPTER VI -- THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendment and Reauthorization Act of 1986, 42 U.S.C. §§ 9601 - 9675.

2. Emergency Planning and Community Right to Know Act of 1986 (EPCRA), 42 U.S.C. §§ 11001 - 11050.

3. 10 U.S.C. §§ 2701-2707 (establishes the Defense Environmental Restoration Program (DERP)).

4. 29 C.F.R. § 1910.120, OSHA Regulations on Hazardous Waste and Emergency Response.

5. 40 C.F.R. Part 264, EPA Regulations for Owners and Operators of Permitted Hazardous Waste Facilities.

6. 40 C.F.R. Part 300, EPA National Oil and Hazardous Substance Pollution Contingency Plan (National Contingency Plan or NCP).

7. 40 C.F.R. Part 302, EPA Designation, Reportable Quantities, and Notification Requirements for Hazardous Substances Under CERCLA.

8. 40 C.F.R. Part 355, EPA Regulations for Emergency Planning and Notification Under CERCLA.

B. Related Army Regulations.

1. AR 200-1, Environmental Protection and Enhancement (23 April 1990).

2. AR 200-2, Environmental Effects of Army Actions (23 December 1988) (*see* para. 2-2(a)(8) for coordination of NEPA and CERCLA requirements).

II. KEY DEFINITIONS.

A. "Removal actions" are those actions taken to cleanup or remove hazardous substances from the environment or monitor, evaluate and access the release or threat of release of hazardous substances into the environment. 42 U.S.C. § 9601(23). Removal actions include such actions as security fencing, provision of alternate water supplies, and temporary evacuation and housing of individuals threatened by the release of hazardous substances. Removal actions are generally considered more temporary in nature and limited in expense than remedial actions. Superfund financed removal actions are limited to 12 months in duration and $2 million in expenditures. 40 C.F.R. § 300.415.

B. "Remedial actions" are those actions consistent with the permanent remedy taken instead of, or in addition to, a removal action, in the event of a release of a hazardous substance into the environment. Remedial actions include such actions as storage, confinement, perimeter protection, groundwater treatment, incineration, neutralization, and cleanup of hazardous substances. 40 C.F.R. § 300.5.

C. "Response actions" include both remedial and removal actions. *See* 42 U.S.C. § 9601(25).

D. "Remedial Project Manager" (RPM) is the person designated by the lead agency to coordinate, monitor, or direct remedial or response actions. Sometimes the RPM is referred to as the "on-scene coordinator (OSC)." The OSC, however, can also be a person appointed by EPA or the United States Coast Guard (USCG) to supervise operational response phases for oil removal. 40 C.F.R. § 300.5.

E. "Lead agency" is the agency that provides the RPM or OSC to implement response actions. Where the release of a hazardous substance is on, or the sole source of the release is from, a facility under the jurisdiction, control, or custody of the Army, then the Army is the lead agency. 40 C.F.R. § 300.5.

F. "Hazardous substances" include any substance designated pursuant to:

1. 33 U.S.C. §§ 1317(a), 1321(b)2(A) (Clean Water Act (CWA)).

2. 42 U.S.C. § 9602 (CERCLA).

3. 42 U.S.C. § 6921 (Resource Conservation and Recovery Act (RCRA) - including both listed and hazardous characteristic wastes).

4. 42 U.S.C. § 7412 (Clean Air Act (CAA)).

5. 13 U.S.C. § 2606 (Toxic Substances Control Act (TSCA)).

The term does not include natural gas or petroleum, including crude oil or any fraction thereof, even if the petroleum contains hazardous substances, as long as the hazardous substance was part of the original product as sold on the market. *See Wilshire Westwood Associates v. Atlantic Richfield Corp.,* 881 F.2d 801 (9th Cir. 1989). *See also* 42 U.S.C. §9601(14).

G. "Formerly Used Defense Site" (FUDS) are properties previously owned, leased, or used by DOD for military purposes; or other properties conveyed to a contractor for industrial purposes and later legally disposed of. AR 200-1, Glossary Section II.

H. "Release" "means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant). . ." Exclusions include:

1. Releases that result in exposure to persons solely within a work place.

2. Engine emissions.

3. Releases caused by response actions taken pursuant to CERCLA § 104 (42 U.S.C. § 9604).

4. Normal applications of fertilizer. 42 U.S.C. § 6901(22).

I. "Pollutants of contaminants" includes any substance which after release into the environment causes death, disease, behavioral abnormalities, cancer, genetic mutation, or physiological mutations in any organism or offspring of such organism that is exposed to the substance either directly or indirectly by ingestion through food chains. In general, petroleum is not a pollutant or contaminant. Neither is natural gas. 42 U.S.C. § 9601(33).

J. "National Priority List" (NPL) is the list compiled by the EPA of uncontrolled hazardous substance releases in the United States that are priorities for long term remedial evaluation and response. 40 C.F.R. § 300.5. The NPL is found at 40 C.F.R. Part 300, Appendix B. Federal facilities on the NPL are listed separately from non-federal facility NPL sites.

K. The "National Contingency Plan or NCP" are the short names for the National Oil and Hazardous Substance Pollution Contingency Plan. The NCP is found at 40 C.F.R. Part 300. It provides detailed guidance on the implementation of CERCLA.

III. INTRODUCTION.

A. In late 1980, Congress passed CERCLA to meet the perceived threat to the country's environment resulting from an estimated 30,000-50,000 improperly managed hazardous waste sites that existed nationwide. Where RCRA is commonly thought of as a "cradle to grave" mechanism for safely managing hazardous wastes from generation through disposal, CERCLA focused more narrowly towards cleaning up "releases" of "hazardous substances, pollutants, or contaminants" that already have occurred and that pose a threat to human health or the environment. Often these releases began or occurred decades ago.

B. CERCLA requires that abandoned and inactive hazardous waste sites be identified, evaluated, and assigned a numerical score under the Hazard Ranking system. Once evaluated, sites scoring 28.5 or higher are placed on the National Priority List (NPL). 40 C.F.R § 300.425(c)(1). Sites on the

NPL are then targeted for further study and cleanup by EPA or parties responsible for contamination at the sites. This process is implemented through the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), which is found at 40 C.F.R. Part 300.

C. CERCLA was initially ineffective. As one court stated: "CERCLA is a hastily-drawn statute quickly passed through a lame-duck Congressional session. '[It] has acquired a well-deserved notoriety for vaguely-drafted provisions and an indefinite, if not contradictory, legislative history.'" *Violet v. Picillo,* 648 F. Supp. 1283 (D.R.I. 1986) (citations omitted).

1. Responding to CERCLA's shortcomings, in 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA). SARA substantially strengthened CERCLA by providing mandatory schedules for the completion of various phases of response activities and by establishing more detailed cleanup standards.

2. As part of the SARA amendments, Congress also created the Defense Environmental Restoration Program (DERP). The DERP, operating within the CERCLA framework, provides for the cleanup of inactive hazardous waste sites at DOD facilities. *See* 10 U.S.C. 2701-2707.

D. EPA is charged with the overall administration of CERCLA. Unlike most other statutes dealing with hazardous waste and materials, CERCLA has no provision for delegation of EPA's regulatory authority to states. As a result, EPA makes the final decision regarding remedial actions at NPL sites.

1. **NPL Sites.** State and local requirements are integrated into the process of selecting a remedial action at an NPL site, however, if the standards are determined to be applicable and relevant or appropriate requirements (ARARs). 42 U.S.C. § 9621(f).

2. **Non-NPL Sites.** State and local hazardous waste requirements control response actions at non-NPL sites. 42 U.S.C. § 9620(a)(4). Many states have their own programs for hazardous waste sites (mini-Superfunds), and some are using their RCRA permitting

authority to regulate inactive waste site cleanups at facilities that have ongoing hazardous waste operations. 42 U.S.C. § 6924(u).

E. Money for CERCLA remedial actions conducted by the EPA comes from the Hazardous Substance Superfund (Superfund). 26 U.S.C. § 9507. **Only non-federal sites on the NPL are eligible for Superfund financing of remedial actions.** 40 C.F.R. § 300.425(b)(1). Superfund consists primarily of general tax revenues and taxes imposed on the manufacture of chemicals and generators of hazardous wastes. The fund is replenished with amounts recovered by EPA from parties responsible for the release of hazardous wastes at sites where Superfund is used to finance the cleanup. Money recovered is then returned to Superfund where it is used to fund response costs incurred by EPA at other hazardous waste sites. Today, the American public routinely refers to the entire CERCLA program as "the Superfund program."

F. Superfund cannot be used to fund response actions at federal facilities. Instead, **for DOD facilities, the Defense Environmental Restoration Account (DERA) is used to fund response activities taken pursuant to CERCLA and the Defense Environmental Restoration Program (DERP).** 10 U.S.C. § 2703.

IV. TRIGGERING CERCLA CLEANUP ACTIONS.

A. CERCLA is triggered by:

1. The release or substantial threat of a release into the environment of a **hazardous substance**; or

2. The release or substantial threat of release into the environment of any **pollutant or contaminant** which presents an imminent and substantial danger to the public health or welfare.

42 U.S.C. § 9604(a).

B. "Superfund" funding eligibility and cleanup priority are established through the National Priorities List (NPL). 42 U.S.C. § 9605. The NPL listing process is essentially an administrative function of the EPA--no hearing is required or provided. Administrative guidelines are published and used to make decisions on NPL listings. In general, sites are added to the NPL if:

1. The site achieves a Hazard Ranking System (HRS) score of 28.5 or better (*see* 40 C.F.R Part 300, Appendix A, for a description of the HRS); or

2. A state designates a site as its highest cleanup priority; or

3. The following three criteria are satisfied:

   a. The Agency for Toxic Substances and Disease Registry (ATSDR) has issued a health advisory concerning human contact with the release of a hazardous substance at the site; and

   b. EPA determines that the release poses a significant threat to public health; and

   c. EPA determines that it would be more cost effective to conduct the cleanup as a remedial action rather than as a removal action.

40 C.F.R § 300.425(c).

C. Army hazardous waste sites **are not eligible to receive Superfund money**. It is often to the Army's advantage, however, to have sites listed on the NPL.

1. Listing means that EPA **should** have the ultimate say on how the cleanup will be accomplished on federal installations (after consultation with the Army). *But See United States v. Colorado,* 990 F.2d 1565 (10th Cir. 1993). If the site is not on the list, state agencies will likely control the cleanup.

2. Listing means that CERCLA concepts control the cleanup, and CERCLA requires selection of a **cost effective** cleanup plan. *See* 42 U.S.C. § 9605(a)(7). Cleanup actions controlled by states are not required to include cost-effectiveness as a selection criterion.

3. No state permits are necessary to perform remedial actions under CERCLA that occur entirely on NPL sites. 42 U.S.C. § 9621(e)(1).

D. Under CERCLA, cleanups are accomplished by means of **response actions**. There are two types of response actions that can be taken under CERCLA § 104 (42 U.S.C. § 9604).

1. **Removal actions** are relatively short-term actions to prevent or mitigate an emergency situation arising from a release or threatened release. Removal actions are generally limited to $2 million dollars or 12 months of work, whichever occurs first.

2. **Remedial actions** are long-term actions designed to provide a permanent solution for any releases that have occurred .

All response actions must be consistent with the National Contingency Plan (NCP).

E. Removal actions may be undertaken by EPA whether or not the site is on the NPL, but remedial actions cannot be financed with Superfund money unless the site is on the NPL. The Army, must however, (except in rare circumstances) use **Defense Environmental Restoration Account (DERA)** funds for CONUS-based removal and remedial actions taken pursuant to the **Defense Environmental Restoration Program (DERP)** regardless of whether the site in question is on the NPL.

1. The DERP encompasses both the Installation Restoration Program (IRP) and the Formerly Used Defense Site program (FUDS). DERA-funding of response actions occurring outside the boundaries of Army installations or FUDS are permitted only where it is reasonably certain that the installation is the sole or major source of the release which is in issue. Special notification and response plan procedures apply in such situations. AR 200-1, para. 9-8.

2. DERA funds are centrally managed at the DA level. In general, both installation restoration projects and FUDs are eligible for DERA funding. Long term remedial action operating units can be operated for up to ten years using DERA funds; after 10 years, Operation and Maintenance or Research Development Testing and Evaluation funding must be used. DERA funds are also transferable in that they can be transferred into any other DOD account (e.g. Operation and Maintenance). Once transferred, however DERA funds must be used solely on environmental restoration activities. *See* AR 200-1, para. 9-4 for other specifics regarding eligibility for and use of DERA funding.

V. LIABILITY UNDER CERCLA.

A. Under CERCLA, "responsible parties" are held liable for the costs associated with releases of hazardous substances, pollutants, and contaminants. Responsible parties include:

1. The current owner and operator of the facility.

2. Any person who at the time of disposal of any hazardous substance owned or operated the facility. *See Kelley v. United States EPA,* 15 F.3d 1100 (D.C.Cir. 1994); *United States v. Fleet Factors Corp.,* 901 F.2d 1550 (11th Cir. 1990, *cert denied,* 498 U.S. 1046 (1991).

3. Any person who by contractual agreement or otherwise arranged for disposal, treatment, or transportation for disposal or treatment, of hazardous substances owned or possessed by such person or by any other party or entity, **if the hazardous substances are at the facility.**

4. Any person who accepted any hazardous substances for transport to the disposal or treatment facility, if such person selected the facility.

42 U.S.C. § 9607(a). This means that if a command shipped hazardous substances to a site that is releasing or threatening to release a hazardous substance, the command is a responsible party, whether or not the waste shipped is part of the threat.

B. Responsible parties can be required to pay:

1. All costs of removal and remedial action incurred by the U.S. government, or a state, or an Indian tribe, which are not inconsistent with the NCP.

a. Response costs (costs of removal/remedial actions) are not specifically defined but can include the costs of investigations, monitoring, testing, legal costs, and expert witness fees, as well as cleanup costs. *See, e.g., U.S. v. Northeastern Pharmaceutical & Chemical Company (NEPACCO),* 579 F.2d 823 (W.D. Mo. 1984).

b. Recovery of remediation oversight costs are likely recoverable under CERCLA. *See United States v. Lowe,* No H-92-830 (D.Tex Sept. 20, 1994); *Colorado v. U.S. and Shell Oil Company,* 867 F.Supp 948 (D.Colo. 1994). *But See United States v. Rohm & Haas Co.,* 2 F.3d 1265 (3rd Cir. 1993).

2. Any necessary response costs, consistent with the NCP, incurred by any other person.

3. Damages for injury to, destruction of, or loss of natural resources.

4. Costs of any health assessment or health effects study carried out under 42 U.S.C. § 9604(i).

42 U.S.C. § 9607(a)(4).

C. Response costs are recovered through negotiations or by "cost recovery actions." Elements for establishing liability in a cost recovery action are that:

1. There is a release or threatened release . . .

2. Of a hazardous substance . . .

3. From a vessel or a facility . . .

4. And the defendant is a "responsible party" . . .

5. And the plaintiff has incurred necessary "response costs" because of the release or threatened release. *See* 42 U.S.C. § 9607.

D. **Liability.** Liability of responsible parties is joint and several. unless the PRP an prove that the harm is divisible. *In re Bell Petroleum Services, Inc.,* 3 F.3d 889 (5th Cir. 1993); *United States v. Alcan Aluminum Corp.,* 990 F.2d 711 (2d Cir. 1993). *See also New York v. Shore Realty Corp.,* 759 F.2d 1032 (2d Cir. 1985); *NEPACCO, supra. But see United States v. Chem-Dyne Corp.,* 572 F. Supp. 802, 808 (S.D. Ohio 1983) (joint and several liability principles from the Restatement (Second) of Torts §§ 433A, 881 (1976) apply); *cf. United States v. Stringfellow,* 20 ERC 1905, 1910 (C.D. Cal. 1984) and *United States v. A & F Materials, Inc.,* 578 F. Supp. 1249 (S.D. Ill. 1984) (courts have power to apportion damages, even if the harm is indivisible). Responsible parties, however, have the right to seek contribution from other responsible parties. 42 U.S.C. § 9613.

E. Liability is strict: good faith efforts to preclude releases, the absence of fault, acts were lawful when performed, and the exercise of due care are all irrelevant. *See Shore Realty* and *NEPACCO*, listed above; *see also Violet v. Picillo,* 648 F. Supp. 1283 (D. R.I. 1986) (generator held liable for cleanup even though its waste was improperly diverted to a disposal site not chosen by the generator).

F. So far, cases have apportioned liability based on respective volumes of hazardous substances at the site. CERCLA states, however, that costs may be allocated "using such equitable factors as the court determines are appropriate." 42 U.S.C. § 9613(f)(1). Possible factors that a court could use in apportioning response costs include:

1. Toxicity of the various wastes at the site.

2. Persistence of the various chemicals.

3. Mobility of the various chemicals.

4. Care exercised in preventing leaks.

5. Length of time the waste has been stored.

6. Legality of deposit at the time of disposal.

7. Reasonableness of using the disposal site for the wastes involved.

8. Other aggravating factors.

G. **Defenses.** There are only a few statutory defenses to a CERCLA response cost action. 42 U.S.C. § 9607(b). They are:

1. Acts of God.

2. Acts of war.

3. Act of a 3d party (not directly or indirectly contractually related to the defendant), if defendant took all reasonable precautions against actions of a 3d party and if defendant exercised due care. *See, e.g., Violet v. Picillo,* 648 F. Supp. 1283 (D. R.I. 1986) (3d party defense disallowed).

4. Any combination of 1-3.

These defenses are narrowly construed and are interpreted as to being identical to the defenses available under § 311 of the Clean Water Act (33 U.S.C. § 1321). Other defenses such as laches, waiver, and unclean hands, and affirmative defenses such as *res judicata* and payment might be available in an appropriate case. *See, e.g., U.S. Conservation Chemical Co.,* 619 F. Supp. 162, 205 (W.D. Mo. 1985); *Mardan Corp. v. C.G.C. Music, Ltd.,* 600 F. Supp. 1049, 1056 n.9 (D. Ariz. 1984). Most likely, however, they will not provide a defense to liability but instead will go to the issue of damages. *See Southland Corp v. Ashland Oil, Inc.,* 696 F. Supp 994 (D. N. J. 1988).

H. **Third Party Sites.** At third party (i.e., non-federal sites) EPA and the Army negotiate over the amount of liability the Army must bear if Army owned or generated wastes are present. *See Tenaya Associates Limited Partnership v. United States Forest Service,* No. CV-F-92-5375 REC (E.D.Cal.May 18, 1993); *Redland Soccer Club, Inc. v. Department of the Army,* 801 F. Supp. 1432 (M.D. Pa. 1992). Usually, the amount we pay is proportionate to the volume of hazardous wastes we generated that are found at the site.

I. In response cost actions involving non-federal parties, however, the Army is placed in a difficult position. To non-federal plaintiffs, the Army is just another PRP, albeit one with "deep pockets." To other defendants, the Army is "the government," and cannot be trusted. In fact, since the Army is part of "the government," its ability to participate in joint defense arrangements is constrained. While the Army **can** participate in steering committees and shared technical expense arrangements, the Army **cannot** join in shared counsel expense arrangements.

VI. AGENCY ASSESSMENT OF RESPONSIBLE PARTY LIABILITY.

A. Prior to being adjudged a responsible party or admitting responsibility, parties facing CERCLA liability as responsible parties are commonly referred to as PRPs (potentially responsible parties).

B. Once an installation is notified that it is a PRP, the installation's attorney should immediately request from the EPA (or other plaintiff) a copy of all information connecting the installation with the site to be cleaned up. This information will help determine if:

1. EPA (the plaintiff) has read the records correctly.

2. The installation is listed in the documents as having deposited (through contract or otherwise) waste at the site.

3. The waste the installation is listed as having deposited is hazardous.

C. Following receipt and review of records from EPA or other plaintiffs, the installation's attorney should conduct a command/installation records check to determine what records are available that reflect the installation's use of the site in question. Information should be sought regarding:

1. Amounts of waste deposited at the site.

2. The type of waste actually deposited at the site. In this regard, do not automatically rely on labels found on barrels at the site. Prior to the passage of RCRA, there was no requirement to characterize

hazardous wastes being disposed of. As a result, the barrel's label may bear no relationship to what was actually disposed of in the barrel.

3. How complete the records are.

4. Anyone the installation can turn to for indemnification (e.g., a transporter who took the waste to the wrong site or who mixed it with someone else's waste without proper authorization).

VII. CLEANUP STANDARDS.

A. Determining "how clean is clean" is addressed by CERCLA § 121. (42 U.S.C. § 9621). CERCLA does not contain and specific cleanup standards. Instead, under § 121, it "borrows" cleanup standards from federal, state, and local environmental laws and regulations. Standards from these environmental regulations that are determined to be applicable, or relevant and appropriate (ARARS) are selected as guidance for the cleanup.

B. The process by which ARARs are selected is detailed at 40 C.F.R. §§ 300.430(d) - 300.430(f). The lead agency is primarily responsible for identifying ARARs. Prior to selection of a remedy, states are given an opportunity to comment on the ARARs that have been selected for appropriateness, completeness, etc. 40 C.F.R. § 300.430(e)990(iii)(H)(2).

C. Generally speaking, remedies should attain all ARARs. A remedy not attaining all ARARs can be selected, however, if:

1. The remedial action selected is only a part of a remedy that will attain the ARARs when completed.

2. Compliance with the ARARs would result in a greater risk to human health and the environment.

3. Compliance is technically impracticable from an engineering perspective.

4. The remedial action selected will attain an equivalent standard of performance through an alternative method.

5. In cases involving a state ARAR, the state has not consistently applied the ARAR in similar circumstances. 42 U.S.C. §9621(d)(4).

VIII. IMPLEMENTATION OF THE CERCLA CLEANUP PROCESS.

A. All Army installations are required to be screened for past use of and contamination from hazardous substances that indicate possible endangerment to public health, safety, and welfare and the natural environment. This inventory process is referred to as the Preliminary Assessment/Site Investigation (PA/SI). The PA involves examination of all readily available information concerning current and former activities of the installation. The SI involves field reconnaissance, sampling, and analysis. Where possible, individual sources of contamination should be identified by the PA/SI process. *See generally* AR 200-1, para. 9-7.

B. If levels of contamination discovered during the PA/SI suggest that the release of the hazardous substances was in an amount constituting a reportable quantity (*See* 42 U.S.C. § 9602), EPA must be notified. 42 U.S.C. § 9603. Through use of the Hazard Ranking System (HRS), EPA will then evaluate the site for inclusion on the NPL. Sites scoring 28.5 or higher on the HRS will be proposed for inclusion on the NPL. Once the site is placed on the NPL, a Remedial Investigation/Feasibility Study (RI/FS) must be commenced within six months. 42 U.S.C. § 9620(e)(1).

C. At installations where action is necessary to deal with a release or threatened release of a hazardous substance, a technical review committee (TRC) must be established by the installation commander whenever practicable. 10 U.S.C. § 2705; AR 200-1, para. 9-10.

1. The TRC serves as a working group that discusses the technical, logistical, and scheduling aspects of necessary response actions.

2. On a quarterly or milestone generated basis, the TRC will hold a public information meeting to discuss the progress of ongoing response actions and to serve as a forum for comments and questions by the public. **All meetings of the TRC are open to the public.**

3. Membership on the TRC should include representatives of the installation, the U.S. Army Environmental Center (AEC) (or the COE's supporting Field Operating Agency), the MACOM, Army contractors working on the project, the EPA, state regulators, local governments, and concerned citizen groups.

4. Minutes of all TRC meetings must be maintained. These minutes and associated TRC documents must be maintained in a publicly accessible file. Eventually, this file will most likely become part of the response action's administrative record.

D. CERCLA § 120(e)(2) requires that federal agencies enter into Inter-Agency Agreements (IAGs) with EPA within 180 days of the completion of the RI/FS. 42 U.S.C. § 9620(e)(2). Army policy, however, is to negotiate IAGs with EPA as soon as a site is **proposed** for the NPL. In effect, IAGs govern the coordination process between the EPA and the lead agency. **Note that violation of IAGs can result in EPA assessing a fine against the signatory federal agency.** 42 U.S.C. § 9609(a)(1)(E).

1. DOE has, in the past, agreed to pay EPA $100,000 for violation of the IAG governing the cleanup of DOE's facility at Fernald, Ohio.

2. On August 6, 1992, EPA proposed to fine the Air Force $180,000 for failure to comply with the Castle AFB IAG.

E. **IAGs are negotiated at the installation level.** Any proposed deviations from the model language must be coordinated with the Environmental Law Division (ELD), Compliance and Policy Branch. Completed IAGs must be submitted to ELD for review.

1. It is expected that the negotiations will be conducted in an expedited manner. Disagreements occurring during negotiations that result in delays of more than 45 days must be reported to the Environmental Law Division, Compliance and Policy Branch.

2. The concurrence of the Deputy Assistant Secretary of Defense (Environment) is required prior to the IAG being signed. This concurrence is obtained by the Environmental Law Division following its review of the document.

3. The installation commander and the Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) will be signatories to all IAGs.

AR 200-1, para. 12-6. Only the EPA and the lead federal agency must sign an IAG. **Whenever possible, however, state participation in the IAG as a signatory should be encouraged.** Having the state as a signatory lessens the likelihood of a state attempting to use RCRA corrective action authority (42 U.S.C. § 6924(u) to control response actions at the facility or otherwise later challenging the choice the selected remedy pursuant to 42 U.S.C. § 9613.

F. Within six months of a federal facility being placed on the NPL, a Remedial Investigation/Feasibility Study (RI/FS) must be initiated. 42 U.S.C. 9620(e)(1). The RI/FS will be conducted by either the installation, USATHAMA, or another Corps of Engineers Field Operating Agency (e.g., Waterways Experiment Station (WES) or the Construction Engineering Research Laboratory (CERL)). AR 200-1, para. 9-7(2). Typically, a Remedial Project Manager (RPM) will be assigned to manage the RI/FS.

G. Through the RI process, enough data must be collected to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives. Characterization requires:

1. Conducting field studies.

2. Conducting treatability studies.

3. Conducting a baseline risk assessment of the potential exposures and associated impacts on human receptors. 40 C.F.R. § 300.430(d).

H. Through the FS process, alternative remedies must be developed that protect human health and the environment. The number and type of alternatives developed depends on the scope, characteristics, and complexity of the site problem that is being addressed. 40 C.F.R § 300.430(e).

I. **The administrative record is critical to the success of the RI/FS.** The administrative record documents all the information that will be used to select interim response actions (if any) and the final remedy. Privileged documents need not be included in the administrative record. 40 C.F.R. § 300.810(c). The administrative record must be maintained at or near the facility. In addition, it can be placed at other locations. **In any event, the administrative record must be accessible by the public.** EPA has established detailed requirements for establishing and maintaining the administrative record for both remedial and removal actions. See 40 C.F.R. §§ 300.800 - 300.825.

J. Following completion of the RI/FS, the Army must provide notice to the public of the availability of the administrative record and its proposed remedy and a remedial action (implementation) plan.

K. An opportunity for public comment on the RI/FS (including, in many cases, a public meeting) must be provided. *See* 40 C.F.R. §300.430(f)(3). Following closure of the public comment period, responses to significant comments, criticisms, and information received must be prepared. Assuming that the public comments received do not significantly alter the proposed remedy, the selected remedy is memorialized in the form of a record of decision (ROD).

L. **Record of Decision (ROD).** The agency must publish is final remedy as the record of decision. The ROD must, at a minimum, take into account:

1. The long-term uncertainties associated with land disposal of contaminated material.

2. The goals and objectives of RCRA.

3. The subject hazardous substances' persistence, toxicity, mobility and propensity to bioaccumulate.

4. Short and long term potential for adverse health effects from human exposure.

5. Long-term maintenance costs.

6. The potential for future remedial action costs if the alternative remedial action under consideration were to fail.

7. The potential threat to human health and the environment associated with excavation, transportation, redisposal, and/or containment.

8. Whether the alternatives satisfy all identified ARARS.

9. Whether the community affected by the hazardous substances accepts the proposed remedy.

Other required contents of the ROD are described at 40 C.F.R § 300.430(f)(5)(ii).

M. **Statutory Remedy Preference.** CERCLA § 121 mandates that the final remedy contained in the ROD **must** be protective of human health and the environment, cost effective, and use permanent solutions and alternative treatment technologies to the maximum extent practicable. If the remedy does not involve treatment which permanently and significantly reduces the volume, toxicity or mobility of hazardous substances, the Agency, in conjunction with the EPA, must publish an explanation why such remedial action was not selected. 42 U.S.C. §§ 9621(b)(1).

N. If the proposed remedy is to be implemented at an NPL site, EPA concurrence in the selected remedy is sought. Ultimately, however, EPA has the final decision making authority at NPL sites. 42 U.S.C. § 9621(a);

40 C.F.R. § 300.430(f)(4)(iii). At non-NPL sites, states will often have the final decision making authority pursuant to state law. 42 U.S.C. § 9620(a)(4).

IX. EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986.

A. The Emergency Planning and Community Right To Know Act (EPCRA) was enacted in 1986 as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA is intended to protect communities located near industrial facilities from catastrophic releases of toxic substances, such as that which occurred in Bhopal, India, in 1984.

B. EPCRA applies to:

1. Owners and operators of a facility at which a **hazardous chemical** is *produced, used, or stored.*

2. "**Transportation related**" releases of hazardous and extremely hazardous substances. A release is "transportation related" if the substance is being shipped or stored incident to shipment and has not reached the ultimate consignee. Owners and operators of transportation facilities (including vehicles and rolling stock, but ships are exempted) can report a transportation related release to the local 911 number or, if there is no 911 service, to the local telephone operator.

C. On 13 August 1993 President Clinton signed Executive Order 12856, making EPCRA applicable to federal facilities. The major provisions of EPCRA are summarized below:

1. Establishment of a local emergency planning committee. 42 U.S.C. § 11001(c)(1).

2. Appointment of a representative from the installation to participate in the emergency planning process of the local emergency planning district.

3. **Immediate notification** of the local community emergency coordinator of the local community emergency planning committee of any release of:

   a reportable quantity of a *CERCLA hazardous substance* **or** an *EPCRA extremely hazardous substance*. Thus, **any release that must be reported to the National Response Center should also be analyzed for EPCRA reporting requirements to state and local authorities under EPCRA § 304; reports to the NRC do not fulfill EPCRA requirements. Additionally, releases of EPCRA extremely hazardous substances may have to be reported locally even though certain of these releases need not be reported to the National Response Center.**

   a. CERCLA hazardous substances and their reportable quantities are listed in 40 C.F.R. Part 302 and Table 302.4.

   b. EPCRA § 302 creates the category of extremely hazardous substances, which are listed in 40 C.F.R. Part 355. Some of these substances are also CERCLA hazardous substances, and, if so, Table 302.4 shows their reportable quantities. The reportable quantity for EPCRA extremely hazardous substances that are not CERCLA hazardous substances is 1 pound.

D. **Exceptions**. The EPCRA § 304 reporting requirement does not apply if:

1. The release results in exposure to persons solely within the boundaries of the facility (but, even the **potential** for exposure of a person outside the facility renders this exception inapplicable).

2. The release is federally permitted, as defined in 42 U.S.C. § 9601(10).

3. The release is "continuous," as defined in 42 U.S.C. § 9603(f).

4. The released substance is a pesticide and the release is exempted from reporting under CERCLA § 103(e) (42 U.S.C. § 9603(e)).

5. The "release" does not meet the definition of a "release" in CERCLA § 101(22) (42 U.S.C. § 9601(22)) and therefore is exempt from reporting under CERCLA.

6. The released substance is a radionuclide that is exempted from reporting under CERCLA; *see* 40 C.F.R. § 302.6(c).

E. What must be reported, and to whom is detailed at EPCRA § 304(b) & (c), 42 U.S.C. § 11004(b) & (c). The reporting requirements are summarized below.

1. **Initial report**. Owners and operators must include the following information in the initial report to the extent it is known at the time of the report.

   a. The chemical name or identity of the released substance.

   b. Whether or not the substance is an extremely hazardous substance.

   c. An estimate of the quantity released.

   d. The time and duration of the release.

   e. The environmental media (i.e., air, land, water) receiving the release.

   f. Any known or anticipated acute and chronic health risks arising from the release, including advice concerning medical attention for exposed individuals.

   g. Proper precautions to take as a result of the release (e.g., evacuation).

   h. The name and telephone number of the point of contact.

   This report must be made immediately after the release, and it should be transmitted by expeditious means such telephone, radio, or in person. **Installation personnel should not, however, delay**

taking response actions in order to gather this information for reporting purposes.

2. **Follow-up report**. As soon as practicable after a release, the owner or operator must provide written follow up emergency notice (or notices) which:

   a. Updates the information provided in the initial notice.

   b. Provides information on actions taken to respond to the release.

   c. Provides additional information on any known or anticipated acute and chronic health risks associated with the release.

   d. Provides additional information on medical attention for exposed individuals.

3. **Agencies Receiving Reports**. Release reports required by EPCRA § 304 must be submitted to the following individuals and agencies.

   a. The Community Planning Coordinator(s) for local emergency planning committees (LEPC's) for any area(s) likely to be affected by the release; **and**

   b. The state emergency response commission(s) (SERC's) for any state(s) likely to be affected by the release.

   c. Transportation related releases can be reported to the local 911 number, or, if there is no 911 service, to the telephone operator.

F. Executive Order 12856 contained a number of new requirements that substantially enlarged federal facility practice in this area. The most significant new requirements are summarized below:

1. By 31 December 1993 (**DONE**)--Provide EPA with a list of facilities that may require Toxic Release Inventory reports.

2. By 3 August 1994-- (**DONE**) Develop a pollution prevention strategy emphasizing source reduction in facility management and acquisition.

3. Develop voluntary goals to reduce total releases of toxic chemicals by fifty percent by 31 December 1999. Again, source reduction will be a priority in meeting this goal.

4. By 3 August 1995--Review and revamp procurement and acquisition procedures to reduce or eliminate procurement of extremely hazardous substances or toxic chemicals. This includes any changes to the Federal Acquisition Regulation necessary to implement the new procedures.

5. Federal agencies must place high priority on obtaining funding to implement all aspects of the executive order.

X. RCRA/CERCLA AND STATE/FEDERAL AUTHORITY INTERFACES.

A. Dissatisfaction with CERCLA led Congress to enact extensive revisions to RCRA in 1984. These amendments, collectively referred to as the Hazardous and Solid Waste Act (HSWA), created the potential for significant regulatory overlap between RCRA and CERCLA. Under RCRA, the permit authority (often a state) must require a permitted facility to take "corrective action" regarding any releases of hazardous waste from any solid waste management unit located on the facility or installation. RCRA § 3004(u), 42 U.S.C. § 6924(u). In other words, if an installation has a single permitted Treatment, Storage, or Disposal Facility located on it, the permit must include conditions that regulate the cleanup of any release on contiguous property that is under the ownership or control of the permit holder. Corrective action is discussed in greater detail in Chapter VII (RCRA).

B. The significance of overlapping regulatory authority is not academic. The EPA sometimes is more reasonable than state agencies in developing clean-up programs, and therefore it is usually better to have a cleanup program under EPA control. Moreover, disputes concerning fiscal or legal

matters between the Army and the EPA can be elevated to OMB or DOJ for resolution pursuant to Executive Orders 12146 and 12088.

C. CERCLA suggests that the EPA should control cleanups at NPL sites. *See* 42 U.S.C. 9622(e)(6). But, if a state has authority to issue RCRA permits, the state may use this authority to control the cleanup pursuant to 42 U.S.C. § 6924(u) (the "corrective action" provision under RCRA). State officials may or may not be reasonable in establishing corrective action requirements or in prioritizing cleanups. As a result, those states that have been delegated corrective action authority can require the immediate cleanup of hazardous waste sites within their states, delaying the cleanup of more hazardous sites located in other states.

D. EPA's policy is that RCRA corrective authority is irrelevant at an NPL site if the RI/FS was initiated prior to the existence of the corrective action provision in the RCRA permit. 42 U.S.C. § 9622(e)(6). If the RI/FS is started after that date, then the federal agency must comply with state corrective action requirements imposed as part of the RCRA permitting process. States, however, are not absolutely bound by this policy.

E. DOD has implemented two initiatives to try and limit the number and severity of problems possible because of overlapping regulatory authority and lack of centralized priority setting on the order of cleanups.

1. The first is the development of the **Defense Priority Model (DPM)**. First implemented during fiscal year 1990, the DPM "is a waste site scoring system that evaluates relative risk based on information gathered during the Preliminary Assessment/Site Inspection and the Remedial Investigation/Feasibility Study." Through the use of risk assessment, DPM is intended to "help assure that sites are addressed on a "worst first" basis nationwide with the funding available from the Defense Environmental Restoration Account." 54 Fed. Reg. 43104 (1989).

2. States seeking to enforce their environmental compliance requirements are not bound by the priority DPM assigns to the installations in their territory. To deal with that problem, DOD has encouraged states to execute DOD and State Memorandum of

Agreements (DSMOAs). DSMOAs are negotiated at the DOD level. Once a state executes a DSMOA and its associated Cooperative Agreement, the state is guaranteed the greater of 1% of the money expected to be spent out of the DERP within its boundaries or $50,000 dollars to cover reimbursable state expenses associated with a DOD facilities' cleanup. In return, the states agree:

a. That the use of DPM "is needed and provides a reasonable basis for allocating funds among sites in the interest of a national worst first cleanup program."

b. That the state will make every effort to abide by the priorities set by DPM.

c. To use bilateral dispute resolution procedures at facilities where an IAG has not been signed.

d. To settle all of the state's claims for hazardous waste cleanup costs, for those costs that were incurred after 17 October 1986 (the date that SARA was signed into law). *See* 54 Fed. Reg. 31358 (1989).

XI. ENFORCEMENT OF CERCLA.

A. **Abatement Actions**. Abatement actions can be ordered administratively by EPA pursuant to CERCLA § 106 (42 U.S.C. § 9606). An abatement action encompasses those actions necessary to protect public health and welfare and the environment from the threat of an "imminent and substantial endangerment to public health or welfare or the environment" from an actual or threatened release of a hazardous substance from a facility. Use of § 106 is not limited to emergency situations. Note that:

1. "Endangerment" has been interpreted to mean "potential harm," assuming that the risk of such harm is imminent. The actual harm need not be felt for years, however. *B.F. Goodrich v. Murtha,* 697 F. Supp 89 (D. Conn. 1988).

2. At least one court has held that the substantiveness of the risk need not be quantifiable. *United States v. Conservation Chemical Co.,* 619 F. Supp. 162 (W.D. Mo. 1985).

3. **Pursuant to Executive Order 12580, EPA can issue an administrative abatement orders to other federal agencies after consultation with the Department of Justice.**

4. **Fines.** The statutory sanction for failure to comply with an abatement order is a fine of up to $25,000 per day of violation, plus treble "damages." (EPA cannot enforce such sanctions directly against federal agencies due to the unitary executive doctrine).

B. **Civil Penalties and Awards.** A civil penalty of not more than $25,000.00 per violation per day may be assessed by the EPA for:

1. Failure to report releases of hazardous substances equal to or exceeding "reportable quantities." (Reportable quantities for hazardous substances, typically one pound, are listed at 40 C.F.R. Part 302.4).

2. Knowing destruction, mutilation, concealment, or falsification of records relating to the identity,
characteristics, quantity, origin, or condition of any hazardous substances contained or deposited in a facility.

3. Violations of, or refusal to comply by, a potentially responsible party of an EPA order to undertake investigations, monitoring, surveys, testings or other information gathering necessary and appropriate to identify the existence and extent of a release or threat of hazardous substances, and the extent of danger to public health or welfare or to the environment. 42 U.S.C. § 9609.

C. **Citizen Suits.**

1. CERCLA § 310 authorizes any person to bring a civil suit, on his own behalf, against **any person**, including the United States, who is

alleged to be in violation of any standard, regulation, condition, requirement, or order issued pursuant to the act. 42 U.S.C. § 9659(a)(1).

2. Citizen suits must be brought in the district court for the district in which the alleged violation occurred.

3. The court has jurisdiction to enforce the standard, regulation, condition, requirement, or order concerned, to order such action as may be necessary to correct the violation, and to impose a civil penalty provided for the violation. The court may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or substantially prevailing party, as appropriate.

D. **Criminal Liability**. Any person who fails report releases of hazardous substances equal to or exceeding "reportable quantities," (*see* above for definition), or who knowingly destroys, mutilates, conceals, or falsifies records relating to the identity, characteristics, quantity, origin, or condition of any hazardous substances contained or deposited in a facility, is subject to a maximum punishment of a $250,000.00 fine and imprisonment for three (five for a second conviction) years .

CHAPTER VII -- THE RESOURCE CONSERVATION AND RECOVERY ACT

I. REFERENCES.

A. Federal Statutes and Regulations.

1. Solid Waste Disposal Act of 1965 as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), the Hazardous and Solid Waste Amendments of 1984 (HSWA, a/k/a the 1984 RCRA Amendments), and various other statutes. 42 U.S.C. §§ 6901-6991h. The entire body of law is now generally referred to as "RCRA."

2. 40 C.F.R. Parts 124, 190-299 (EPA public disclosure regulations and RCRA implementing regulations).

3. 49 C.F.R. Parts 100-199 (Hazardous Materials Transportation Act implementing regulations).

B. State Authority.

1. Federal facilities are subject to state and local laws regulating solid and hazardous waste and pursuant to a waiver of supremacy and sovereign immunity found at 42 U.S.C. § 6961.

2. Federal facilities are subject to state and local laws regulating underground storage tanks pursuant to a waiver of supremacy and sovereign immunity found at 42 U.S.C. § 6991f.

3. Statutory authority for EPA to delegate the RCRA program to the states is at 42 U.S.C. § 6926 (implemented by 40 C.F.R. Parts 271 & 272).

C. Related DOD Directives.

1. DOD Dir. 4001.1, Installation Management (4 September 1986).

2. DOD Dir. 4120.14, Environmental Pollution Prevention, Control, and Abatement (30 August 1977).

3. DOD Dir. 4165.60, Solid Waste Management - Collection, Disposal, Resource Recovery, and Recycling Program (4 October 1976).

4. DOD Dir. 4210.15, Hazardous Material Pollution Prevention (27 July 1989).

5. DOD Dir. 5030.41, Oil and Hazardous Substance Pollution Prevention and Contingency Planning (1 June 1977) (C1 26 September 1978).

6. DOD Dir. 6050.8, Storage and Disposal of non-DOD Owned Hazardous and Toxic Materials on DOD Installations (27 February 1986).

D. Related Army Regulations and Technical Manuals.

1. AR 200-1, Environmental Protection and Enhancement (23 April 1990). Note that AR 200-1, para. 5-4, generally prohibits the storage or disposal of non-DOD toxic or hazardous materials on Army installations.

2. AR 420-47, Solid and Hazardous Waste Management (1 December 1984). **Beware!** AR 200-1, chapter 6, has replaced the policies, procedures, and responsibilities set forth in AR 420-47, chapters 5 and 6, appendixes A, B, C, and the glossary.

3. TM 5-634, Solid Waste Management (May 1990). This manual is directed primarily towards engineers. Appendix B, however, contains technical requirements and guidelines for solid waste management contracts. It also includes a complete sample contract.

4. DA Policy Memorandum on RCRA's application to munitions, dated 1 Nov. 1993.

II. KEY DEFINITIONS.

A. "Solid wastes" include liquid, semi-solid, or containerized gaseous materials that have been discarded, served their intended purpose, or are a manufacturing by-product. Exclusions from solid waste include domestic

sewage and discharges from National Pollution Discharge Elimination System (NPDES) point sources. 40 C.F.R. § 261.2.

B. "Hazardous wastes" are *solid* wastes that are:

1. "Listed."

a. There are three hazardous waste lists.

b. The first list contains hazardous wastes (e.g., spent halogenated solvents) from nonspecific sources. These wastes are assigned a three digit number preceded by the letter "F." 40 C.F.R. § 261.31.

c. The second list contains hazardous wastes from specific sources (e.g., waste water treatment sludge from the manufacture and processing of explosives). These wastes are assigned a three digit number preceded with the letter "K." 40 C.F.R. § 261.32.

d. The third list contains commercial chemical products. This list is actually composed of two distinct sublists.

(1) The first sublist is composed of chemicals (e.g., sodium cyanide) that are characterized as acutely hazardous when discarded. These wastes are assigned a three digit number preceded with the letter "P." 40 C.F.R. § 261.33(e).

(2) The second sublist contains chemicals (e.g., trichloroethylene) that are characterized as being toxic when discarded. These wastes are assigned a three digit number preceded with the letter "U." 40 C.F.R. § 261.33(f).

e. Generators can seek to have wastes "delisted," thereby avoiding the need to comply with the hazardous waste requirements. The proponent of delisting, however, must demonstrate that the waste contains neither the hazardous constituents that caused EPA to list the waste in the first place nor any other hazardous constituents that cause the waste to be hazardous. 40 C.F.R. § 260.22 .

2. Ignitable, corrosive, reactive, or that have the toxicity characteristics defined in RCRA Subpart C (40 C.F.R. §§ 261.20 - 261.24)).

-- Toxicity is measured through use of the Toxicity Characteristic Leaching Procedure (TCLP), which tests for 25 organic compounds, 8 inorganic compounds, and 6 insecticides/herbicides under conditions that EPA believes simulates the leaching that occurs naturally in landfills. 40 C.F.R. Part 261, Appendix II.

3. A mixture of a solid waste and a hazardous waste listed in RCRA Subpart D.

a. Under EPA rules, a mixture of a listed hazardous waste and solid waste must be considered a hazardous waste unless the mixture qualifies for an exemption. 40 C.F.R. § 261.3(a)(2). Wastes that are intentionally mixed for the purposes of dilution can not qualify for an exemption because dilution is considered treatment that requires a permit.

b. Exemptions apply when the mixture occurs during normal waste management or production processes. These exemptions include situations where:

(1) The listed hazardous waste in the mixture was listed solely because it had a hazardous characteristic not exhibited by the mixed waste; or

(2) The mixed waste consists of waste water and specified hazardous wastes in dilute concentrations whose discharge is regulated under the CWA; or

(3) A characteristic hazardous waste is mixed with a solid waste and the entire mixture does not continue to exhibit a hazardous characteristic.

c. Note that waste oil containing levels of halogenated solvents of up to 1,000 parts per million (ppm) may be *blended* pursuant to 40 C.F.R. Part 266, Subpart E, for the purpose of burning for energy recovery if:

(1) The level of halogenated solvents in the used oil does not exceed 1,000 ppm in the batches of used oil being blended; and,

(2) The solvent contamination in the used oil is the result of the normal operation which generated the used oil; and,

(3) The facility burning the used oil has met the EPA notification requirements of 40 C.F.R. § 266.40(b) and obtained any required Federal, State or local permits.

(4) Records of analyses showing that the batches of used oil being blended to burn for energy recovery are in compliance with the requirements of 40 C.F.R. § 266.40 must be maintained for three years.

Used oil containing levels of halogenated solvents in excess of 1000 ppm, or used oil containing between 100 and 1,000 ppm halogenated solvents as a result of other than normal operations, must either be managed and disposed of as a hazardous waste or burned for energy recovery under the more stringent requirements of 40 C.F.R. Part 266, Subpart H. *See* Burning of Hazardous Waste in Boilers and Industrial Furnaces, 56 Fed. Reg. 7134 (1991).

4. Certain wastes are excluded from the definition of hazardous waste at 40 C.F.R. § 261.4. Three prominent exclusions are household wastes, domestic sewage treated by POTWs, and industrial waste discharges subject to NPDES permitting.

C. "Persons" subject to regulation under RCRA do not include federal governmental agencies. 42 U.S.C. § 6903(14). Refer to 42 U.S.C. §§ 6961 & 6991f to determine the extent to which federal agencies must comply with RCRA. *But see,* Federal Facility Compliance Act, which amended RCRA definition of "person" to include the Federal Government. RCRA § 1004(15) (42.U.S.C. § 6903(15)).

D. "Facility" under the RCRA permit system means any hazardous waste management facility or activity (including land or appurtenances thereto) that is subject to the regulation under RCRA. 40 C.F.R. § 270.2. The term is generally defined to mean all contiguous land and structures, other improvements and appurtenances on the land used for treating, storing, or disposing of hazardous waste. 40 C.F.R. § 260.10.

E. "POTW or Publicly Owned Treatment Works" under the RCRA permit system means any device or system used in the treatment of municipal sewage or industrial wastes that is owned by a *State of municipality*, 40 C.F.R. § 270.2. Sewage treatment plants at Army installations *are not,* POTWs. They are treated as POTWS if they treat only domestic sewage or treat domestic sewage and hazardous waste that has been "pre-treated" pursuant to 33 U.S.C. § 1317 before being introduced into the FOTW.

F. "Operator" is the person overall responsible for operation of the facility. 40 C.F.R. § 260.10. This definition has led to confusion over who should sign an RCRA permit application at a government owned - contractor operated (GOCO) facility. As a matter of policy, EPA has defined the term to mean those responsible or partially responsible for the operation, management, or oversight of hazardous waste activities at a facility. As such, EPA believes that in most cases both the federal agency owner *and* the contractor operator at a GOCO facility should sign the RCRA permit application.

G. "Generator" means any person whose act or process produces hazardous waste or whose act first causes a hazardous waste to become subject to regulation. 40 C.F.R. § 260.10.

H. "Transporter" means any person who transports hazardous waste off-site by air, rail, highway, or water. Transportation "off-site" means moving hazardous waste any distance along (as opposed to crossing) a public or private right-of-way. 40 C.F.R. 260.10.

I. "Treatment" means any method, technique, or process designed to change the physical, chemical, or biological character or composition of waste for virtually any reason, including making it safer or less voluminous. 40 C.F.R. § 260.10.

J. "Storage" means the holding of hazardous waste for a temporary period, after which the hazardous waste is treated, disposed of, or stored elsewhere. 40 C.F.R. § 260.10.

K. "Disposal" means the discharging, depositing, injecting, dumping, spilling, leaking, or placing of hazardous or solid waste into or on land or water so that the waste or constituent thereof can be emitted into the air or discharged into surface or ground water. 40 C.F.R. § 260.10.

III. OVERVIEW.

A. RCRA was designed to provide "cradle to grave" regulation of solid and hazardous waste. Generators, transporters, and owners and operators of treatment, storage, and disposal (TSD) facilities are subject to its regulatory scheme. In general, RCRA regulates all wastes that are not subject to regulation under another statute. Recently, special attention has been paid to regulating Underground Storage Tanks under RCRA. Those requirements are discussed separately in Chapter VIII.

B. Army installations are subject to all "Federal, State, interstate and local hazardous or solid waste requirements, both substantive and procedural." 42 U.S.C. § 6961. As a result of the Federal Facilities Compliance Act (FFCA), Army facilities are subject to fines and penalties under state or local hazardous waste laws. The FFCA also permits EPA to fine the Army for violations of RCRA. In addition, EPA can fine Army contractors if they are the operators of Army owned RCRA regulated facilities.

Moreover, the provisions and requirements of RCRA are enforceable through citizen suits that can result in an injunction, enforceable by the court's power of contempt, being issued against the owner or operator. 42 U.S.C. § 6972. Soldiers and DOD civilians are subject to criminal prosecution under RCRA. 42 U.S.C. § 6928(d) & 6928(e). Chapter I further discusses criminal and civil enforcement of RCRA (including the impact of the FFCA) and other environmental statutes.

C. The installation commander (IC) is the person overall responsible for an installation's compliance with Federal, State, and local solid and hazardous waste laws and regulations. AR 200-1, para. 6-4, requires that each Army installation have a written hazardous waste management plan. The plan is prepared by the installation engineer and signed by the IC. This document must cover all aspects of hazardous waste management, disposal, and minimization. The Defense Reutilization and Marketing Service (DRMS), through field Defense Reutilization and Marketing Offices (DRMOs), is primarily responsible for the reutilization and disposal of hazardous waste generated on DOD installations. AR 200-1, para. 1-33. Because ICs are considered generators or permit holders, however, local DRMO's failure to meet regulatory requirements or suspenses can result in adverse actions being taken against the installation or the IC by state or federal regulators.

D. The President can exempt a federal agency from complying with federal, state, or local hazardous or solid waste requirements. 42 U.S.C. § 6961(a). An exemption is good for only one-year. It can, however, be renewed. Exemptions are based upon a Presidential determination that such an action is in the "paramount interests of the United States." Lack of funding is a basis for an exemption only if an appropriation has been sought from (i.e., a budget line item) and denied by Congress. To date, only one Army installation has received an exemption from RCRA requirements. It is considered highly unlikely that additional Presidential exemptions will be granted during peacetime.

E. The Federal RCRA program has four functional prongs.

1. It provides a system for tracking and preserving a record of hazardous wastes throughout the lifecycle of the wastes through use of a manifest system.

2. It ensures that wastes are disposed of in a manner calculated to prevent the escape of the waste into the environment through implementation of a "permitting" system for TSD facilities.

3. It provides a mechanism for correction of historical releases of hazardous materials at permitted facilities.

4. It provides an enforcement mechanism to ensure that the objectives of the first three prongs are satisfied.

F. RCRA is divided into nine subchapters (I through IX). The subchapters and particularly significant sections are as follows:

SUBCHAPTER	CONTENTS
I.	**Policy, Definitions, and General Information.**
	--42 U.S.C. § 6903--definitions.
II.	**Office of Solid Waste: Authorities of the EPA Administrator.**
III.	**Hazardous Waste Management.**
	--42 U.S.C. § 6922--standards for generators.
	--42 U.S.C. § 6923--standards for transporters.
	--42 U.S.C. § 6924--standards for owners and operators of treatment, storage, and disposal (TSD) facilities.
	--42 U.S.C. § 6925--permits for TSD facilities.
	--42 U.S.C. § 6929--state authority.

--42 U.S.C. § 6991f--separate waiver of federal supremacy.

--42 U.S.C. § 6991g--state authority.

G. The RCRA **Subtitle C (hazardous waste)** program operates under strict Federal supervision. States can, however, be authorized by EPA to run their own hazardous waste program. To obtain EPA approval, the state program must be as stringent as, and consistent with, the federal program and other authorized state programs, and must provide adequate enforcement of compliance with RCRA Subtitle C (hazardous waste). As they qualify, States are delegated the authority by EPA to administer portions of the hazardous waste program. *See* 40 C.F.R. Part 272. EPA retains parallel legal authority and responsibility to enforce RCRA at federal facilities even when the program has been delegated to a state. States, however, can generally exercise a broader range of authorities and enforcement tools at federal facilities than EPA.

H. The **RCRA Subtitle D (solid waste)** program is designed to be run by the states. Federal involvement is limited to establishing minimum criteria for siting of solid waste disposal facilities, and specifying best practicable controls and monitoring requirements for solid waste disposal units.

1. In general, the Federal requirements in this area are designed to ensure that solid waste is not disposed of in "open dumps" that could generate leachate which, in turn, could contaminate groundwater. Instead, all solid waste is to be disposed of in "sanitary landfills" or recycled. See 40 C.F.R. Parts 257 and 258).

2. In general, the following requirements apply to all new, laterally expanded, and existing landfills.

   a. The rules prevent or restrict the siting of new landfills in areas that are especially vulnerable to contamination (e.g., 100 year floodplains) unless special features are incorporated into the facility's design.

   b. New landfills must have a composite liner or use an approved alternate design that will prevent unacceptable releases from the landfills.

c. Public access to landfills has been sharply curtailed.

d. Daily cover of landfill contents is required.

e. Most open burning at the landfill is prohibited.

f. Methane gas controls must be installed.

g. Eliminate disposal of most liquid wastes.

(1) Household (other than septic) wastes are exempt.

(2) Leachate or gas condensate that is derived from the landfill is exempt.

h. Control discharges to surface water and construct run-on and run-off controls.

i. An extensive groundwater monitoring program must be implemented. The schedule for compliance with the groundwater monitoring requirement will vary depending on the location of the landfill in relation to the nearest drinking water intake.

3. Landfills which receive less than 20 tons of solid waste per day are exempt from these regulations and groundwater monitoring criteria if:

a. There is no evidence of existing groundwater contamination.

b. The community serviced by the landfill has no other practicable alternative to continued use of the landfill.

c. The landfill is located in area which receives 25 inches or less of precipitation on a yearly basis.

40 C.F.R. § 258.1(f).

4. Landfills which do not meet the requirements outlined above must have quit receiving waste on or before October 9. 1993, or be considered an "open dump."

5. Smaller Army installations can be required to use a municipal waste disposal contractor even if the installation could contract for cheaper solid waste disposal on its own.

a. The City of Monterey enacted an ordinance designating Monterey City Disposal Services, Inc., (MCDS) as the exclusive agent for trash collection within city limits. As a result, MCDS demanded that it be awarded the contract for disposal of the Presidio of Monterey's trash on a sole-source basis. Citing the breadth of RCRA's waiver of sovereign immunity (42 U.S.C. § 6961), both the GAO and the 9th Circuit ruled that the Army must award the contract to MCDS on a sole-source basis because use of Monterey's agent for trash collection was a valid "local requirement" under RCRA. Using MCDS cost the Army approximately $65,000 extra per year. *See Monterey City Disposal Service, Inc.,* 64 Comp.Gen 813 (1985), and *Parola v. Weinberger,* 848 F.2d 956 (9th Cir. 1988).

b. The GAO has subsequently refined its approach in these situations if a "major installation" is involved. *See Solano Garbage Company,* 66 Comp. Gen. 237 (1987), and the denial of Solano's request for reconsideration (B-225397.2 & B-225398.2 (1987); *Waste Management of North America, Inc.,* Cont. App. Dec. (CCH) 91-1-59 (1991); *Oakland Scavenger Company,* B-241577; B-241584, 91-1 CPD ¶ 166 (1991).

c. These later decisions recognize that under EPA's guidelines at 40 C.F.R. Part 255, a "major federal installation" is to be treated as a separate incorporated municipality for purposes of solid waste disposal.

d. The term "major federal installation" is not defined in the RCRA regulations. As a result, GAO's decisions have focused on:

(1) The size and function of the installation to see if an installation can be reasonably characterized as "major."

(2) The size of the population working on the installation and whether the installation is "self-contained."

(3) Whether the installation has historically provided for its own solid waste disposal is also a critical factor.

IV. RECYCLING. 40 C.F.R. § 261.6.

A. Recycling of solid waste material will not necessarily preclude classifying the material as solid waste. Materials are not treated as solid wastes, however, if they are being recycled by being:

1. Used as a substitute for a commercial product.

2. Used as an ingredient in an industrial process to make a product, provided that the materials are not being "reclaimed."

   -- A material is "reclaimed" if it is processed to recover a usable product or if it is regenerated (e.g., recovery of lead values from spent batteries and regeneration of spent solvent). 40 C.F.R. § 261.1(c)(4).

3. Returned to the original process from which they are generated without first being reclaimed (the material must be used as a substitute for a raw material feedstock in a process that uses raw materials as principal feedstocks).

B. Materials that are always solid waste even if they are recycled include:

1. Materials used in a manner constituting disposal or used to produce products used on the land.

2. Materials burned for energy recovery.

3. Materials accumulated speculatively.

4. Materials that are inherently waste-like (F020, F021, F022, F023, F026, or F028) regardless of use.

C. Certain recyclables are not subject to the generator, transporter, or TSD facility rules. These include:

1. Used batteries and used battery cells being returned to the manufacturer for regeneration.

2. Used oil that exhibits one or more hazardous waste characteristics but that is recycled in a manner other than being burned for energy recovery.

3. Scrap metal.

D. As a practical matter, the principal advantage to recycling is that recycling of hazardous waste does not constitute "treatment". As result, the recycler does not require a RCRA permit. Recyclers of hazardous waste are, however, required to comply with the RCRA requirements regulating the activities of generators and transporters.

V. REQUIREMENTS FOR GENERATORS OF HAZARDOUS WASTE

A. As a starting point, solid waste generators must determine if they are generating a hazardous waste by:

1. Determining if the waste is excluded from regulation under 40 C.F.R. § 261.4.

2. Determining if the waste is a listed hazardous waste or is a hazardous waste because of its hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity). *See* 40 C.F.R. Part 261, Subparts C & D.

B. Upon determining that they are generating hazardous waste, generators must obtain an EPA identification number from EPA prior to treating, storing, disposing of, or offering the hazardous waste for transport. 40 C.F.R. § 262.12(a).

C. Unless they qualify as either **conditionally exempt small quantity generators (CESQGs) or as small quantity generators (SQG)**, generators usually cannot accumulate hazardous waste for more than 90 days without becoming an operator of a defacto storage facility.

D. CESQGs are generators who generate 100 KG or less of hazardous waste or 1 KG or less of acutely hazardous waste in a calendar month. If the facility qualifies as a CESQG, other than registering as a generator, few other requirements apply.

E. SQGs are generators who usually produce 100 kg or more but less than 1000 kg of hazardous waste in a calendar month.

1. Post-1984 rules now impose nearly all the requirements of larger generators on SQGs. See 40 C.F.R. §§ 262.34(d)(2) - 262.34(d)(4).

2. The storage rules differ, however, if special safety rules are met. 40 C.F.R. § 262.34(d)(5). Where those rules are complied with, SQGs can store up to 6000 kg of hazardous waste for a period of up to 180 days before shipping to a TSD site. 40 C.F.R. § 262.34(d).

3. If the hazardous waste is to be transported 200 miles or more, up to 6000 kg can be stored for up to 270 days prior to shipment. 40 C.F.R. § 262.34(e).

F. A **regular generator** is a generator who generates over 1000 KG of hazardous waste, or over 1 KG of acutely hazardous waste. Most Army installations are regular generators. Note, that under the federal rules, a facility can be a regular generator one month and a SQG the next month. Most states' rules dictate, however, that once a regular generator, always a regular generator.

G. Generators can store hazardous wastes without a permit at either **satellite accumulation points (SAPs)** or **accumulation points (APs)**.

1. Generators can accumulate not more than 55 gallons of hazardous waste or one quart of acutely hazardous waste at SAPS.

a. A SAP is defined to be a "container at or near the point of generation" of the hazardous waste. 40 C.F.R. § 262.34(c)(1). **Remember, individual SAPs must be established for each type of hazardous waste generated -- commingling of different types of hazardous wastes is not allowed!**

b. **There is time limit on how long a generator can take to accumulate the 55 gallons of hazardous waste at a SAP.** If, however, more than 1 year passes, a report to EPA is necessary.

c. On the day the 55 gallon container at a SAP is full, that date must be listed as the **"accumulation start date"** on the hazardous waste label affixed to the container.

d. Within three days of the container at the SAP becoming full, it must be moved to the AP, be sent for recycling, or be sent to a permitted **treatment, storage, or disposal facility (TSDF).**

2. **APs** are place where generators can store hazardous wastes for **up to 90 days from the accumulation start date listed on the container's hazardous waste label.** Unlike SAPs, there are no quantity limits on the amount of hazardous waste that can be stored at an AP. Because they can be storage areas for significant quantities of hazardous waste, there are significant regulatory requirements.

a. APs must be inspected weekly.

b. Drums stored at an AP must be arranged to provide sufficient aisle space to allow for unobstructed movement.

c. Ignitable and reactive (explosive) wastes must be kept at least 15 meters from the property line.

d. Although not federal requirements, many states require that the APs be roofed and have secondary containment.

e. Fire extinguisher and water, with adequate volume and pressure, must be available.

f. An internal and external communication is necessary.

(1) The internal system must be capable of providing immediate emergency instruction, by either voice or signal, to facility personnel.

(2) The external system must be capable of summoning outside assistance from the police, fire department, or emergency response teams.

g. Operators of APs must also meet the rigorous training requirements specified at 40 C.F.R. § 265.16. Initial training must be conducted within 6 months of personnel being assigned to or reassigned to duties involving the operation of an AP.

3. Both regular generators and SQGs can obtain extensions of up to 30 days to the allowable storage periods upon a showing of "unforeseen, temporary, and uncontrollable circumstances." 40 C.F.R. §§ 262.34(b) and 262.34(f). These extensions are granted on a case-by-case basis by the EPA Regional Administrator. Failure to have hazardous waste removed within the regulatory time limits (including any applicable extensions) renders the facility a defacto storage facility subject to the requirements of 40 C.F.R. Parts 264 and 265 and the permitting requirements of 40 C.F.R. Part 270. 40 C.F.R. § 262.34(b).

H. A generator can not offer hazardous waste to a transporter or TSD facility that does not have an EPA identification number. 40 C.F.R § 262.12(c).

I. Record keeping requirements for generators are detailed at 40 C.F.R. Part 262, Subpart D.

1. Generators transporting hazardous waste or offering hazardous waste for transport must prepare a manifest (EPA Form 8700-22 and/or 8700-22a) according to the instructions in the appendix to 40 C.F.R. Part 262.

2. Both the generator and any initial transporter must sign the manifest. 40 C.F.R. § 262.33.

3. The initial manifest, or a copy of the manifest signed by a representative of the facility designated to receive the waste, must be maintained for at least three years. 40 C.F.R. § 262.40(c). Because these manifests are critical to proving where an installation's waste was disposed of, these manifests and other records documenting the quantity and quality of the waste should be retained indefinitely.

4. Generators of more than 1000kg of hazardous waste per calendar month must:

   a. Make inquiries with the waste transporter if they do not receive a copy of the manifest signed by a representative of the designated TSD within 35 days of shipment.

   b. If a signed copy of the manifest is not received from the TSD within 45 days of shipment, the generator must file an Exception Report with the Regional EPA. 40 C.F.R. § 262.42.

J. Generators must package hazardous waste, and label and mark those packages, in accordance with Department of Transportation (DOT) regulations found at 49 C.F.R. Parts 172, 173, 178, and 179.

VI. REQUIREMENTS FOR TRANSPORTERS.

A. Anyone who transports hazardous waste off the site from which it was generated is subject to regulation as a hazardous waste transporter. Activities as innocuous as transporting used motor oil and dirty solvent from an off the installation field training exercise back to the installation can trigger the transporter regulations. These regulations are set out at 40 C.F.R. Part 263.

B. Requirements for transporters include:

1. Registration with the EPA. 40 C.F.R. § 263.11.

2. Accepting for transport only those hazardous wastes that have been manifested in accordance with 40 C.F.R. § 262.20. (Note that special manifesting requirements apply if the waste is shipped by water or rail or if the waste is transported overseas).

3. Strict compliance with the manifest. The transporter must deliver the entire quantity of waste accepted to either:

   a. The next designated transporter.

   b. The primary TSD facility designated on the manifest.

   c. Or, in the case of an emergency, to the alternate TSD facility.

   40 C.F.R. § 263.21.

4. Keeping a copy of the manifest, signed by the generator, a subsequent transporter, or operator of a TSD facility, for at least 3 years from the date the hazardous waste was accepted for initial transport. 40 C.F.R. § 263.22.

5. In case of an accidental discharge of hazardous waste during transport, the transporter is required to take immediate and appropriate action to protect human health and the environment. Typically, this includes taking action to contain the spill and notifying local police and fire departments. Discharges of reportable quantities of hazardous waste, as defined at 49 C.F.R. § 171.15, must be reported verbally and in writing to the National Response Center (800-424-8802 or 202-426-2675/Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590). 40 C.F.R. § 263.31. State and local law may require additional notifications.

C. Transporters may store manifested hazardous wastes without a TSD permit at transfer facilities for up to ten days if the containers in which the wastes are stored comply with DOT packaging requirements set out at 49 C.F.R. Parts 173, 178, and 179. "Transfer facilities" include loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste are held during the normal course of transportation. 40 C.F.R. § 260.10.

D. Transporters transporting hazardous waste into the United States from abroad or who mix hazardous wastes of different DOT shipping descriptions into the same container must also meet the standards applicable to hazardous waste generators. 40 C.F.R. § 263.10(c).

VII. REQUIREMENTS FOR OPERATORS OF TSD FACILITIES.

A. TSD facilities regulated include containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, thermal treatment units, chemical, physical, and biological treatment units, and underground injection wells.

B. Two categories of TSD facilities currently exist -- interim status facilities and permitted facilities. Within these two categories, all TSD facilities are regulated throughout their lifecycle -- from design through post-closure care and monitoring.

C. Pursuant to 42 U.S.C. § 6925(e), interim status facilities are TSD facilities:

1. That were in existence on November 19, 1980, or the effective date of statutory or regulatory changes that subjected the facility to the RCRA permitting scheme; and

2. Whose operator notified EPA pursuant to RCRA Section 3010(a) (42 U.S.C. § 6930(a)) of the facility's hazardous waste management activities; and

3. Whose management filed a preliminary permit application. This preliminary permit application is call a "Part A" application.

Interim status continues until a regulator takes final administrative action on the permit or the permittee fails to timely file a complete Part B application. 40 C.F.R. § 270.73. The permitting process is explained in greater detail at Section VII of this chapter.

D. Interim and permitted status facilities are regulated under separate standards. Regulations for interim status facilities are found at 40 C.F.R. Part 265. Regulations for permitted facilities are found at 40 C.F.R. Part 264.

E. Both interim and permitted facilities are subject to requirements of general applicability and requirements specific to the type of TSD facility being regulated. Owners or operators of *all* interim and permitted status TSD facilities must:

1. Obtain an EPA identification number. 40 C.F.R. §§ 264.11, 265.11.

2. Notify the EPA Regional Administrator in writing at least four weeks in advance of the anticipated receipt of hazardous waste from a foreign source. 40 C.F.R. §§ 264.12(a), 265.12(b).

3. Obtain or conduct a detailed chemical analysis of the wastes associated with the facility. 40 C.F.R. §§ 264.13, 265.13.

4. Install a security system or barrier system around the facility and post warning signs to prevent unknowing or unauthorized entry of people or livestock onto the active portion of the TSD facility. 40 C.F.R. §§ 264.14, 265.14.

5. Prepare and implement a facility and circumstance specific inspection plan of the TSD facility. 40 C.F.R. §§ 264.15, 265.15.

6. Train TSD facility personnel about RCRA requirements applicable to the functional areas in which they are assigned. Training can be conducted in a classroom or on the job. The training must be directed by an individual trained in hazardous waste management procedures. Initial training must be conducted within 6 months of personnel being assigned to or reassigned within a TSD and annually updated thereafter. 40 C.F.R. §§ 264.16, 265.16.

7. Take special precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes. Compliance with these precautions must be documented. 40 C.F.R. §§ 264.17. 265.17.

8. Have certain equipment at the TSD facility to minimize the effects of an explosion, fire, or spill. Under 40 C.F.R. §§ 264.30-.49, and 265.30-.49, the following equipment is required, unless it is clearly unnecessary due to the nature of the hazardous waste handled at the TSD facility:

   a. An internal alarm or communications system capable of providing immediate emergency instruction to facility personnel.

   b. A device (e.g., telephone) capable of summoning emergency assistance from police and fire departments and hazardous materials emergency response teams.

   c. Fire extinguisher.

   d. Automatic sprinklers or water spray equipment.

   e. Spill control equipment.

   f. Decontamination equipment.

9. Retain all manifests of hazardous waste handled at the facility for at least three years from the initial date of handling. 40 C.F.R. §§ 264.71, 265.71.

10. Maintain a complete operating record of the facility's operation pursuant to 40 C.F.R. §§ 264.73, 265.73. Among other items, this operating record must include:

    a. A description of the type and quantity of each hazardous waste handled at the TSD facility.

    b. The location of each hazardous waste within the TSD facility.

    c. Results of inspections and waste analyses.

    d. Summaries of reports of incidents requiring implementation of the emergency contingency plan.

11. File a number of reports with EPA or an authorized state. These include:

    a. A biennial report of waste management practices for the previous calendar year. 40 C.F.R. §§ 264.75, 265.75

    b. Reports of receiving unmanifested wastes. 40 C.F.R. §§ 264.76, 265.76.

    c. Incident reports when there is a fire, explosion, or release. 40 C.F.R. §§ 264.77, 265.77.

12. Have a detailed closure and post-closure plan for the TSD facility. The plan must include a cost estimate. These plans must be amended as necessary to reflect changes in waste handling practices. The cost estimates must be revised annually to account for inflation. 40 C.F.R. §§ 264.110-.120, 265.110-.120.

F. Location standards sharply limit the ability to locate new TSD facilities in areas that are floodplains or are subject to seismic activity. 40 C.F.R. § 264.18.

G. Besides standards of general applicability, EPA has issued specific standards for each type of TSD facility and also for certain types of equipment found in a TSD facility. These requirements are summarized as follows:

1. CONTAINERS (Subpart I, 40 C.F.R. Parts 264 & 265). A container is any portable device used to handle or store a hazardous waste. Containers must be constructed of materials that are compatible with the waste they are designed to hold (i.e., non-reactive). Wastes that are not compatible must not be mixed in containers or placed in unwashed containers that previously held non-compatible wastes. Containers must be in good condition (e.g., not leaking) and always be kept closed unless waste is being added to the container or emptied from the container. Container storage areas must be checked at least weekly to detect leaks and other potential problems.

2. TANK SYSTEMS (Subpart J, 40 C.F.R. Parts 264 & 265). A tank system is any tank, including its ancillary equipment, that is used to store or treat hazardous waste. Generally, tank systems are required to have a secondary containment system (e.g., an impervious dike or berm and a sump) to collect spills and accumulated rainfall. In addition, they must have leak detection equipment installed. Existing tank systems without secondary containment must be assessed for leakage, general fitness, and compatibility for use with the hazardous waste to be placed in the tank. New tank systems are subject to rigorous design and installation requirements. Tank systems must be checked daily for leaks, corrosion, and other potential problems. Incompatible wastes can not be stored in the same tank. Except in emergencies, ignitable or reactive wastes can not be stored in a tank without special treatment of the waste. There are also special requirements for closure and post-closure care of tanks.

3. SURFACE IMPOUNDMENT (Subpart K, 40 C.F.R. Parts 264 & 265). A surface impoundment is any natural or man-made excavation or diked area designed to hold hazardous waste liquids. Examples of surface impoundments include lagoons, ponds, and pits. Since November 1988, all active surface impoundments have been subject to "minimum technological requirements" (MTRs). The MTRs require that the surface impoundments have double liners, leachate collection systems, leak detection, groundwater monitoring systems, and corrective action plans (to control leaks if they are detected). The level of the surface impoundment must be checked daily to ensure there is enough free board to preventing overtopping of the dike by overfilling, wave action, or storm. At least once a week, the surface impoundment and surrounding area must be checked for leaks or deterioration. Use of surface impoundments for storage of ignitable or reactive wastes is restricted by 40 C.F.R. Part 268; in any event, reactive or ignitable wastes must be treated to remove their ignitable or reactive characteristics or managed to prevent ignition or reaction. There are also special provisions dealing with closure and post-closure care of surface impoundments.

4. WASTE PILES (Subpart L, 40 C.F.R. Parts 264 & 265). A waste pile consists of hazardous waste that has been piled for treatment or storage. A waste pile that is used as a disposal facility is a landfill and is governed by Subpart N (40 C.F.R. Parts 264 & 265). No free liquids can be added to a waste pile. Waste piles must be protected

from the rain and dispersal by the wind. Incoming wastes must analyzed prior to being added to the pile unless only known compatible wastes are accepted for piling. Piles that have leachate or run-off that is hazardous must be located on an impermeable base compatible with the waste stored there and have leachate control and collection equipment. There are special requirements for storing incompatible, ignitable, or reactive waste and also for closure and post-closure care.

5. LAND TREATMENT FACILITY (Subpart M, 40 C.F.R. Parts 264 & 265). A land treatment facility is a facility or part of a facility where hazardous waste is applied onto or incorporated into the soil surface. These facilities are also disposal facilities if the waste remains in the soil after closure. Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous by degradation, transformation, or immobilization processes occurring in or on the soil. The effectiveness of this treatment must be demonstrated for each hazardous waste to be treated. Note that a special permit must be obtained before engaging in such a demonstration. 40 C.F.R. § 270.63. Rain run-on and run-off must be controlled through construction of collection basins or other holding facilities. The unsaturated zone must be monitored to detect vertical and horizontal migration of hazardous waste through the soil under the waste pile. There are special requirements for storing incompatible, ignitable, or reactive waste and also for closure and post- closure care.

6. LANDFILLS (Subpart N, 40 C.F.R. Parts 264 & 265). A landfill is a disposal facility where hazardous waste is placed in or on the land and which is not a waste pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome or bed formation, or a cave. Typically, a landfill facility is divided into separate "cells." Each cell isolates a discrete portion of hazardous waste from other hazardous waste stored at the facility. Except in unusual cases, neither bulk, containerized, nor non-containerized liquid hazardous waste can be disposed of in a landfill. Like surface impoundments, landfills are subject to "minimum technological requirements" (MTRs). The MTRs require that the surface impoundments have double liners, leachate collection systems, leak detection, groundwater monitoring systems, and corrective action plans (to control leaks if they are detected). Landfills must be

protected from the rain and dispersal by the wind. Rain run-on and run-off must be controlled through construction of collection basins or other holding facilities. The operating records of the facility must include a map that records the exact location, depth, and contents of each cell, and the approximate location of each hazardous waste type within the cell. There are special requirements for storing incompatible, ignitable, or reactive waste and also for closure and post-closure care.

7. INCINERATORS (Subpart O, 40 C.F.R. Parts 264 & 265). An incinerator is an enclosed hazardous waste treatment device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace. (See 40 C.F.R.§ 260.10 for the definitions of "boiler" and "industrial furnace" -- when burning hazardous waste they are regulated at 40 C.F.R. Part 266, Subpart D.) Note that not all hazardous waste burned in an incinerator is subject to strict regulatory requirements. See 40 C.F.R. §§ 264.340(b) and 265.340(b). For wastes not exempt, however, owners or operators of incinerators must conduct a detailed waste analysis and conduct trial burns of wastes that are intended to be burned. Note that a special permit is required to conduct trial burns of new hazardous waste incinerators. 40 C.F.R. § 270.62. From these trial burns, a "steady state" (i.e., normal operating condition) is determined that will achieve a destruction and removal efficiency (DRE) rate of 99.9% for the principal organic components of the hazardous waste burned. 40 C.F.R. Part 266 Subpart D. Required automatic operating controls and monitoring equipment must be monitored at least every 15 minutes to ensure that the incinerator operates within the steady state parameters and that air emission standards are complied with. The incinerator and all associated equipment must be inspected daily for leaks, spills, fugitive emissions, and proper operation of emergency shutdown controls and alarms. If residue (ash, etc.) of the incineration process is a hazardous waste, it must be managed in accordance with all applicable requirements of 40 C.F.R. Parts 262-266.

8. THERMAL TREATMENT (Subpart P, 40 C.F.R. Parts 264-265.) Thermal treatment occurs in facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion. As with incinerators, owners or operators of a thermal treatment facility must conduct a detailed waste analysis and

conduct trial burns of wastes that are intended to be burned. From these trial burns, a "steady state" (i.e., normal operating condition) is determined that will achieve a destruction and removal efficiency (DRE) rate of 99.9% for the principal organic components of the hazardous waste burned. 40 C.F.R. Part 266, Subpart D. Required automatic operating controls and monitoring equipment must be monitored at least every 15 minutes to ensure that the thermal treatment unit operates within the steady state parameters and that air emission standards are complied with. The thermal treatment unit and all associated equipment must be inspected daily for leaks, spills, fugitive emissions, and proper operation of emergency shutdown controls and alarms. Stack plumes (emissions) from the unit must be monitored at least hourly for color and opacity. In general, open burning of hazardous waste is prohibited. Open burning and detonation of waste explosives and propellants is allowed, however, if the wastes can not be safely disposed of through other means of treatment. If residue (ash, etc.) of the thermal treatment process is a hazardous waste, it must be managed in accordance with all applicable requirements of 40 C.F.R. Parts 262-266.

9. CHEMICAL, PHYSICAL AND BIOLOGICAL TREATMENT (Subpart Q, 40 C.F.R. Parts 264 and 265). Treatment facilities that are not tanks, impoundments, or land treatment facilities, and that treat hazardous waste through chemical, physical, or biological processes, are separately regulated. Wastes treated at these facilities must be tested to ensure that they cannot cause treatment equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life. Equipment used in the treatment process must be equipped with the means to stop the inflow of hazardous waste (e.g., a waste feed cutoff valve or bypass switch). Discharge control and safety equipment must be inspected daily to ensure operational effectiveness. The equipment used in treatment must be monitored daily to ensure that it is being operated as designed. In addition, the equipment must be checked weekly to detect corrosion or leaking of the fixtures or seams. Discharge confinement structures (e.g., dikes) and surrounding areas must be inspected weekly for signs of erosion or leakage. If the residue of the treatment process is a hazardous waste, it must be managed in accordance with all applicable requirements of 40 C.F.R. Parts 262-265.

10. MISCELLANEOUS UNITS (Subpart X, 40 C.F.R. Parts 264 & 265). The requirements of Subpart X are fairly general, reflecting the role that the Subpart plays in the RCRA regulatory scheme. Unlike the other facility specific Subparts, Subpart X gives the requires the regulator substantial discretion on how to regulate the facility, including design, operating, monitoring, and release response requirements) so long as the permit contains terms and conditions which "are protective of human health and the environment" in light of the type(s) of hazardous waste(s) being treated at the permitted unit. **DOD open-burning/ open-detonation (OB/OD) facilities are being regulated under this provision.** *See* Section X of this Chapter for further discussion of OB/OD issues.

11. AIR EMISSION STANDARDS FOR PROCESS VENTS (Subpart AA, 40 C.F.R. Parts 264 & 265). Regulatory requirements applying to process vents are very technical. In general, however, owners or operators of TSD facilities are required to severely limit organic emissions from process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations exceeding 10 ppm. These limitations can be met by installing either a closed vent system or a control device. Methods for testing compliance are mandated. There are very detailed recordkeeping requirements. These include documenting location of each facility's process vents, and the design, operation, and monitoring the effectiveness of the systems used to control emissions from the vents.

12. AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS (Subpart BB, 40 C.F.R. Parts 264 & 265). These provisions regulate allowable emissions of hazardous wastes from certain equipment located in TSD facilities. Equipment regulated includes certain pumps, valves, and compressors that contain or come into contact with hazardous wastes with organic concentrations in excess of at least 10% by weight. This equipment must be marked in a manner that distinguishes it from other equipment in the facility and monitored for leaks. Once discovered, initial attempts to stop leaks must be made within 5 days. Generally, repairs must be completed within 15 days. Repairs can be delayed for up to six months if the repair would require the facility to shut down. Very detailed recordkeeping requirements exist. These include documenting types

and location of regulated equipment, the existence of leaks, steps taken to repair leaks, and efforts to monitor for leaks.

VIII. THE PERMITTING PROCESS.

A. All TSD facilities must obtain an RCRA permit. The permit is issued either by EPA or by an authorized state. The RCRA permit process is detailed at 40 C.F.R. Part 270. Permits are valid for not more than 10 years. 40 C.F.R. § 270.50(a). Permits for land disposal facilities must be reviewed by EPA or an authorized state every 5 years. 40 C.F.R. § 270.50(d). When an EPA issued permit expires, the permit continues in force until the effective date of a new permit so long as the permittee has submitted a timely and complete application for renewal. 40 C.F.R. § 270.51.

B. Operators of facilities are primarily responsible for obtaining an RCRA permit. If the facility is owned by a person other than the operator (e.g., at a government owned - contractor operated facility), however, both the owner and operator must sign the permit application. 40 C.F.R. § 270.10(b).

C. Army Installation Commanders (colonel or higher) at installations employing more than 250 persons sign the RCRA permit as the facility owner. If a tenant activity (such as DRMO) operates the facility, the tenant signs as the operator. Where a tenant is the operator, the tenant is responsible for preparing the RCRA permit and paying any fees associated with its processing. AR 200-1, para. 6-4d.

D. The RCRA permit application consists of two parts, Part A and Part B.

1. Under 40 C.F.R. § 270.10(e), owners and operators of hazardous waste management units in existence on the effective date of statutory or regulatory amendments to RCRA that subject the facility to permitting requirements must submit Part A of their permit application no later than the earlier of:

a. Six months after publication of regulations requiring them to comply with the standards of 40 C.F.R. Parts 265 or 266, or

b. Thirty days after the date they first become subject to the standards set forth in 40 C.F.R. Parts 265 or 266.

2. Under 40 C.F.R. § 270.10(e)(4), owners and operators of hazardous waste management units in existence on the effective date of statutory or regulatory amendments to RCRA that subject the facility to permitting requirements must submit Part B of their application:

a. Within six months of EPA "calling" (requesting) their Part B; or

b. Voluntarily, at any time.

In any event, however, the permittee must comply with deadlines specified at 40 C.F.R. § 270.73.

3. In general, owners and operators of new TSD facilities must submit both Part A & B applications and receive a finally effective RCRA permit prior to beginning construction of the TSD facility. 40 C.F.R. § 270.10(f).

E. Part A of the RCRA application process consists of a standard form (EPA Form 3510-1) designed to obtain background information about the facility. The content of the Part A is detailed at 40 C.F.R. § 270.13. Required information includes the name and address of the facility, identification of the activity requiring the permit, a listing of all hazardous wastes treated, stored, or disposed of at the facility, and a description of the processes used to accomplish any regulated activities.

F. Once the Part A application for an existing TSD facility has been filed with EPA or an authorized state, the facility has "interim status" and can legally be operated. Under 40 C.F.R. § 270.73, interim status continues:

1. Until final administrative action on a permit application is taken; or

2. Unless the permittee fails to timely file or provide complete information for their Part B application. Time limits for submitting Part B applications for various types TSD facilities are listed at 40 C.F.R. §§ 270.3(c) - 270.3(g).

G. There is no standard form used for Part B of the application process. It is designed to provide EPA or an authorized State with detailed information concerning how the owner/operator proposes to operate the TSD facility. Two types of information are provided in the Part B application.

1. Required general information is detailed at 40 C.F.R § 270.14. Information required must describe and/or include:

a. The facility's physical layout and location.

b. An analysis of the hazardous wastes managed at the facility.

c. Security and emergency (fire, explosion and unplanned release) contingency plans.

d. An internal inspection schedule.

e. Procedures to prevent groundwater contamination.

f. Personnel training programs.

g. Procedures and precautions taken to prevent accidental ignition or reaction of ignitable or reactive hazardous wastes managed at the facility.

h. A vehicular traffic control plan.

i. Closure and post-closure monitoring plans.

j. A description and delineation on a topographic map of any plume of contamination that has entered the groundwater at the time the Part B is submitted.

2. Additional specific information is required for certain types of TSD facilities. Requirements for these specially regulated facilities are found at:

   a. Containers -- 40 C.F.R. § 270.15.

   b. Tank Systems -- 40 C.F.R. § 270.16.

   c. Surface Impoundments -- 40 C.F.R. § 270.17.

   d. Waste Piles -- 40 C.F.R. § 270.18

   e. Incinerators -- 40 C.F.R. § 270.19.

   f. Land Treatment Facilities -- 40 C.F.R. § 270.20.

   g. Landfills -- 40 C.F.R. § 270.21

   h. Miscellaneous Units (See 40 C.F.R. § 260.10) (e.g., Thermal Treatment; Chemical, Biological, Physical Treatment) -- § 270.23. These standards are particularly important to the military because they regulate the open-burning/open-detonation of munitions when the munitions are classified as RCRA regulated "waste." *See* Section X of this Chapter for a discussion of Army/DOD policy on when munitions are to be considered RCRA regulated wastes.

   i. Process Vents -- 40 C.F.R. § 270.24.

   j. Equipment (pumps or valves) -- 40 C.F.R. § 270.25.

   Note that the information required by 40 C.F.R. §§ 270.14 - 270.25 largely mirrors the operating standards specified at 40 C.F.R. Part 264. To ensure that the permit is written by the regulators as quickly as possible, installations should draft their Part B application so that the regulator can adapt the Part B language for use in the permit or even incorporate the language of the Part B into the permit by reference.

IX. PUBLIC COMMENT PROCEDURES.

A. Pursuant to 40 C.F.R. Part 124, once a draft permit is prepared by EPA or an authorized state, or once a tentative decision to deny a permit for a TSD facility is made, the public is generally given an opportunity to comment on the proposed action. The public comment procedures are generally a responsibility of the EPA or state. The impact of the public comment procedures must be carefully considered, however, in planning for new TSD facilities. At a minimum, time delays associated with public comment procedures must be taken into account. Moreover, installations must be prepared to assist regulators in responding to attacks on proposed decisions to issue a permit. Conversely, proposed decisions to deny a permit must be effectively attacked during the public comment period.

B. When required, the public comment period must extend for at least 45 days prior to the final decision concerning issuance of the permit. In practice, this comment period is often extended. At least 30 days notice must be given prior to any public meeting being held. A public meeting must be held if EPA receives any written opposition to the draft permit during the 45 day comment period. 40 C.F.R. § 124.12. The public comment period is automatically extended to the end of any public hearing, and can be extended for an additional period by the presiding hearing officer. Where it is known in advance that the draft permit will be controversial, the installation should consider seeking to have EPA issue notice of the public meeting at the same time it issues notice of the draft permit. Taking this course will minimize delays.

C. The EPA Regional Administrator has the discretion to order that the public hearing requirements be satisfied through operation of Subpart F, 40 C.F.R. Part 124, which provides for a non-adversarial panel hearing. The panel consists of three or more EPA experts not involved in processing the draft permit, and an administrative law judge who presides. A hearing is held in which witnesses are examined by the panel and subject to cross examination by interested parties. Based on material including the supporting administrative record, public comment on the administrative record, evidence gathered during the hearing, and interested parties' proposed findings of fact and law, the panel proposes a decision that can be adopted, modified, or denied by the EPA Regional Administrator.

X. CORRECTIVE ACTION.

A. All RCRA permits issued since November 8, 1984, must include a requirement that the TSD facility operator or owner take corrective action to stop ongoing releases threatening human health and the environment, or to clean up past releases, of hazardous waste from any solid waste management unit located on the facility. 42 U.S.C. § 6924(u); 40 C.F.R. § 264.101(a). Corrective action can also be required beyond the facility boundary where the cleanup of the release from a solid waste management unit is necessary to protect human health and the environment. 42 U.S.C. § 6924(v); 40 C.F.R. § 264.101(c). For corrective action purposes, the time at which the waste was placed in a solid waste management unit is irrelevant.

B. The term "facility" has been broadly defined by EPA to include all contiguous land and structures, other improvements and appurtenances on the land used for treating, storing, or disposing of hazardous waste. 40 C.F.R. § 260.10.

C. A solid waste management unit (SMU) is any area on a facility where hazardous waste was collected, separated, stored, transported, processed, treated, recovered, or disposed of.

D. EPA has not issued final implementing regulations for corrective action requirements. In 1990, however, EPA did issue proposed corrective action regulations. 55 Fed. Reg. 30978 (1990) (July 27, 1990). While it is anticipated that it will be several years before the corrective action requirements are finalized, the proposed regulations are being used by the EPA regions as a starting point for drafting the corrective action requirements for TSD facility permits.

E. Highlights of the proposed regulations are as follows:

1. RCRA-regulated facilities will be required to undertake a RCRA Facility Assessment (RFA). The RFA will be analogous to CERCLA Preliminary Assessment/Site Investigation.

2. If the RFA detects solid waste management units that are releasing hazardous wastes into the environment, a RCRA Facility Inspection will be undertaken (RFI). The permittee will be required to develop an RFI plan and submit it to EPA or an authorized state for approval. The RFI, analogous to a CERCLA Remedial Investigation, will involve:

   a. Characterization of the environmental setting.

   b. Characterization of SMUs on the facility.

   c. Characterization of human and environmental systems that are, or have been, exposed to releases of hazardous waste from an SMU.

   d. Developing information to assist the regulators to assess risks to human health and the environment (risk assessment).

   e. Extrapolating the movement of contaminants.

   f. Testing data to determine the feasibility or effectiveness of potential treatment technologies.

3. Based on the results of the RFI, a Corrective Measures Study may be conducted to identify and evaluate possible remedial strategies. The CMS, analogous to a CERCLA Feasibility Study, will be conducted by the permittee under the supervision of EPA or an authorized state. CMSs will normally be required if regulatory action levels (e.g., MCLs under the Safe Water Drinking Act) are exceeded. A CMS may be required by the regulators, however, even if no action levels are exceeded if specific site conditions exist. Cleanup levels will be provided to the permittee by the regulators involved. The CMS concludes with the permittee identifying possible remedies and recommending a remedy (or combination of remedies) to the regulator that:

   a. Protects human health and the environment.

   b. Attains cleanup standards.

c. To the extent practicable, controls sources of releases to reduce, or eliminate, further releases that may pose a threat to human health or the environment.

d. Complies with applicable RCRA standards for management of the hazardous wastes.

4. The regulator will then approve, modify, disapprove, or return the proposed action based on its evaluation of the proposed remedy and other remedies identified during the CMS. Factors considered during the evaluation process are:

a. Long term effectiveness.

b. Capability for reduction of the toxicity, volume, or mobility of the hazardous waste.

c. Short term effectiveness.

d. Implementability.

e. Cost. Note that cost is used only as a tie-breaker to decide between equally effective remedies.

XI. RCRA/CERCLA INTERFACE (FEDERAL INSTALLATIONS).

A. Areas of Overlap.

1. RCRA. States often have permit authority to take corrective action regarding any releases of hazardous waste from any solid waste management unit (SMU) located on the facility or installation. 42 U.S.C. § 6924(u). The state does not have consider cost-effectiveness in taking corrective action. (The EPA has similar authority to order corrective action for facilities with interim status. 42 U.S.C. § 6928(h)).

2. CERCLA.

a. If a federal facility is on the National Priorities List (NPL), the EPA has final authority to select a cleanup program. 42

U.S.C. § 9620. The EPA's decision should include cost-effectiveness as a consideration. *See* 42 U.S.C. §§ 9620(a)(2), 9604(a)(1), 9605(a)(7).

b. The EPA and the federal agency enter into an interagency agreement, under CERCLA, that addresses the following areas:

(1) A review of alternative remedial actions and a selection of one of them.

(2) A schedule for completion of the remedial action.

(3) Arrangements for the long-term operation and maintenance of the facility.

(4) DOD takes the position that no state permits are necessary to perform remedial actions at a site governed by CERCLA (42 U.S.C. §9620).

c. If the facility is not on the NPL, the state is free to control the cleanup, including state permit requirements under RCRA. *See* 42 U.S.C. § 9620.

B. Cases where both RCRA and CERCLA apply.

1. CERCLA suggests that the EPA *should* control cleanups at NPL sites.

2. States that have authority to issue RCRA permits are using this authority to attempt to control the clean-up.

3. There is no dispute resolution mechanism between federal agencies and the state in RCRA actions, unlike the one established with OMB for federal CERCLA actions.

4. In *United States v. Colorado*, 990 F.2d 1565 (10th Cir. 1993) *cert denied* 1994 U.S. LEXIS 1182, the court upheld Colorado's right to enforce its RCRA authority on Rocky Mountain Arsenal (an NPL site). The court held that even though Rocky Mountain Arsenal was listed on the NPL, the state's RCRA corrective action order did

not constitute an impermissible challenge to the ongoing remedial CERCLA action. The result of this opinion is that state's can largely ignore cost-effectiveness and the CERCLA process in enforcing its state law cleanup program requirements under RCRA.

XII. RCRA'S APPLICATION TO MILITARY MUNITIONS AND ORDNANCE.

A. Army policy for application of RCRA's hazardous waste management requirements to military munitions and ordnance is outlined in a policy memorandum dated 1 November 1993. This memorandum supersedes the guidance contained at paras. 6-7, AR 200-1.

B. Strict compliance with the DA policy memorandum governing the handling of military ordnance is **mandatory**. EPA reviewed the policy memorandum and returned comments on 23 June 1994. EPA generally approved of the guidance in the policy memorandum but suggested that DOD should work closely with the state regulators on this issue and not rely totally on the federal policy. Where adherence to the DA guidance is not acceptable to state or federal regulators, the issue must be forwarded through the MACOM to the Environmental Law Division for resolution.

C. As a result of § 107 of the Federal Facility Compliance Act, RCRA § 3004 was amended to require EPA to propose, by 6 April 1992, regulations identifying when military munitions become hazardous waste. 42 U.S.C. § 6924(y). EPA is expected to propose these rules in the Fall 1995.

XIII. ENFORCEMENT.

A. Administrative.

1. EPA has authority to issue cleanup orders to any past or present generator, transporter of hazardous waste, or past of present owner or operator of a TSD facility as necessary to abate an imminent and substantial endangerment to health or the environment. 42 U.S.C. § 6973. EPA may also assess a penalty of $5,000.00 per day against

persons who willfully violates, fails or refuses to comply with the cleanup order. 42 U.S.C. § 6973(b)

2. EPA has the authority to issue a civil penalty for past or present violations of Hazardous Waste Management Regulations provided that the penalty not exceed $25,000.00 per day per violation. 42 U.S.C. § 6928(a).

3. EPA has the authority to issue orders to past or present owners of a TSD site to monitor, test, analyze and report to EPA on the nature and extent of any hazard that EPA determines may present a substantial hazard to human health or the environment. Penalties of up to $5,000.00 per day may be assessed through a civil action for non-compliance.

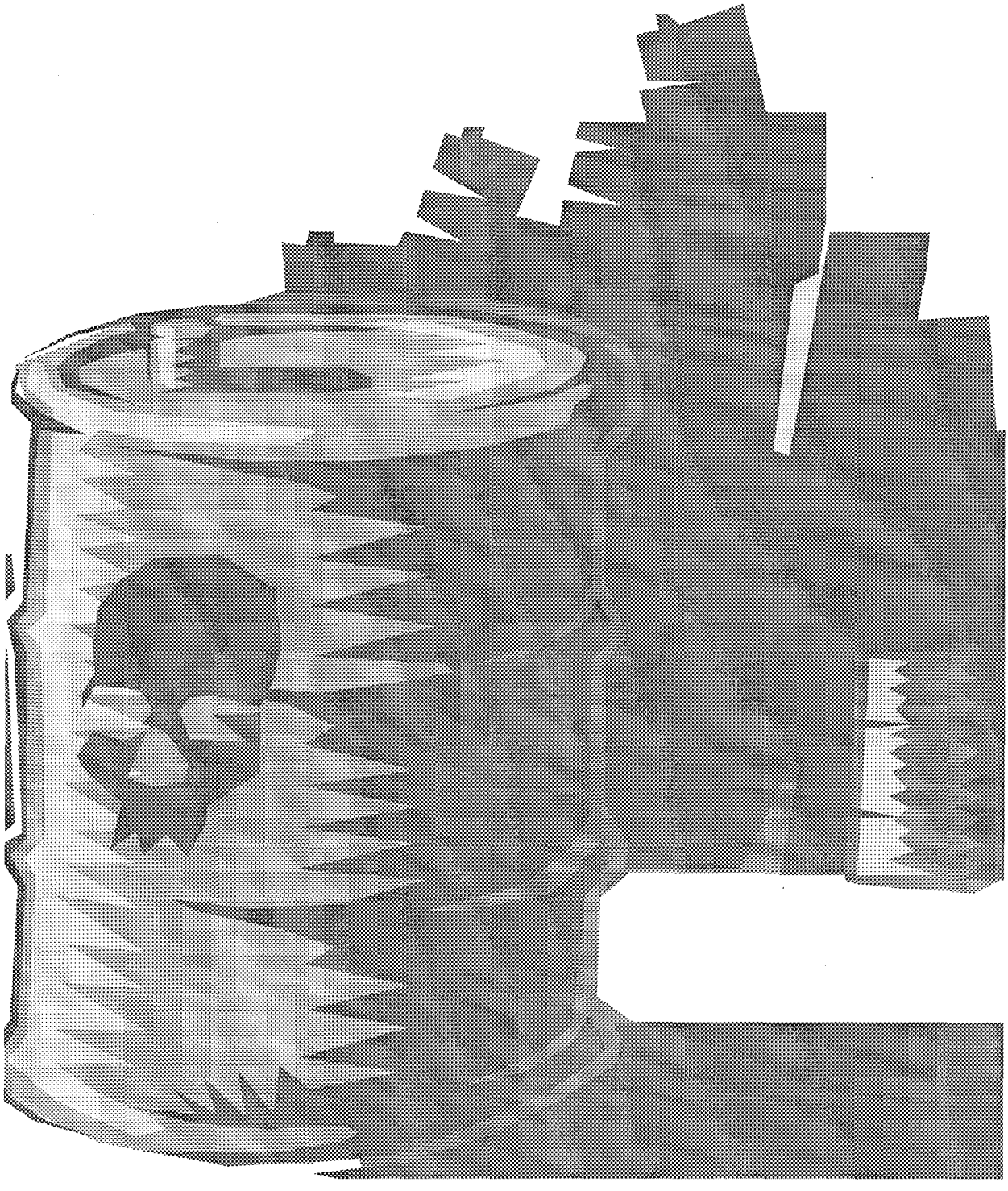
B. State Civil Actions. Since EPA cannot bring civil enforcement actions against Federal Facilities, states generally do so pursuant to state hazardous waste laws. (See discussion of waiver of sovereign immunity in Chapter I.) State penalties generally mirror EPA's as established in RCRA.

C. Citizen Suits. 42 U.S.C. § 6972 provides for citizen suits against any person (including the Federal Government) who is alleged to be in violation of any permit, standard regulation or order pursuant to RCRA (federal or state). A citizen suit cannot be brought on matters that EPA or a state is already diligently prosecuting. Nor can a citizen suit be brought with respect to the siting of a hazardous waste TSD facility. Citizen suits must be brought in the Federal District Court where the alleged violation or endangerment occurred. Courts may issue any orders or injunctive relief necessary as well as award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or substantially prevailing party.

D. Criminal Penalties.

1. Any person who knowingly violates any RCRA provision may face criminal sanctions (fines up to $50,000.00, per day, per violation, and imprisonment up to 5 years). A knowing violation requires only that the person know of the act, not that he/she knew the act involved hazardous waste.

2. Federal officials are subject to any criminal sanction under RCRA. However, Federal officials acting within the scope of their employment may be immune from criminal prosecution. *See California v. Walters,* 751 F.2d 977 (9th Cir.1984).



CHAPTER VIII -- GLOSSARY

This glossary defines key acronyms, phrases and words frequently used when discussing environmental issues or working with environmental statutes and regulations.

Readers are cautioned, however, to check the definitional sections of environmental statutes and regulations for the specific meaning assigned to a particular word or term by that statute or regulation.

Acid Deposition (often referred to as acid rain). Occurs when acidic pollutants return to earth in the form of rain, snow, fog, mist and gases. The phenomenon is caused by emissions of sulfur dioxide (from the combustion of fossil fuels containing sulfur) and nitrogen oxides (from the combustion of fossil fuels). These pollutants form solutions of sulfuric, nitric and other acids in the atmosphere, which can be carried by winds as small particles or droplets of water for hundreds of miles.

Advanced Treatment. Cleanup of wastewater beyond primary and secondary treatment. Advanced treatment requires greater than 85 percent reduction in conventional pollutants (organic waste such as sewage) or a significant reduction in nonconventional pollutants (such as nitrogen, phosphorus and ammonia).

AHERA (Asbestos Hazard Emergency Response Act (1986)). Requires studies determining the extent of danger to human health from asbestos in public and commercial buildings.

Ambient Air Quality Standards. Standards, established by the Clean Air Standards Act to protect the public welfare from air pollutants in a certain area.

Anthracite ("hard coal"). A hard, black, lustrous coal containing a high percentage of fixed carbon (86 percent to 97 percent) and a low percentage of volatile matter. Principally located in Pennsylvania, it has a heating value of 15,000 Btu per pound.

Anti-Backsliding. Describes proposed Clean Water Act provisions preventing the weakening -- backsliding -- of effluent limits when a National Pollutant Discharge Elimination System water pollution permit is renewed, reissued or modified. Anti-backsliding provisions were included in the 1987 Clean Water Act amendments.

Appropriation. Law containing specific amounts of federal funds that can be spent for specific purposes. Normally an appropriation must be preceded by an authorization.

CHAPTER VIII -- GLOSSARY

Aquifer. Underground layer of permeable rock holding a reservoir of slow flowing water, often used for drinking and irrigation.

Architectural Coatings. Coverings, such as paint and roof tar, used on exteriors of residential, commercial and industrial structures. When coatings are applied, hydrocarbons evaporate and contribute to formation of ozone pollution.

Area Source. Air pollution source that is neither a major stationary source nor a mobile source. Includes residential furnaces, gas stations and dry cleaners.

Aromatic. Organic compounds derived from benzene.

Arsenic. Heavy metal poisonous to animals and humans. Emitted as an air pollutant by smelters and other sources.

Asbestos. Generic name for a group of naturally occurring minerals that separate into extremely fine fibers. Used widely as a building material until the 1970's, asbestos is a known human carcinogen that can cause lung cancer and other lung diseases when inhaled.

ATSDR (Agency for Toxic Substances and Disease Registry). Established within U.S. Public Health Service by CERCLA §104(i) (42 U.S.C. § 9604(i). Carries out health-related provisions of CERCLA, such as performing health studies, to determine whether illnesses among people near a hazardous waste site are caused by exposure to toxic substances.

Attainment Area. Region meeting the National Ambient Air Quality Standard for a criteria pollutant under the Clean Air Act.

Authorization. Law establishing or continuing a federal program, project or agency and providing the legal authority to operate. Authorizations may be for a specific period of years, and can set funding ceilings for the program, project or agency. Actual funding is provided by a separate appropriations law.

Background Radiation. Occurs in the natural environment, including cosmic rays and naturally radioactive elements in soil. Background radiation levels vary depending on local conditions and, in the United States, vary from 100 to 200 (excluding radon) millirems per year.

Backsliding. Weakening effluent limits when an National Pollutant Discharge Elimination System water pollution permit is renewed, reissued or modified. *See also anti-backsliding.*

BACT. *See Best Available Control Technology.*

Baghouse. Air pollution control device used to trap particulates by filtering gas streams through large (usually glass fiber) fabric bags.

Baler. Machine compressing and binding solid wastes or other materials.

Barrel. Measure of petroleum and petroleum products equal to 42 U.S. gallons.

Basket-Grate Incinerator. Agitated bed incinerator where refuse is burned in a perforated grate shaped like a truncated cone and rotated about its axis of symmetry.

BAT (Best Available Technology economically achievable). Technological level the Clean Water Act requires to control industrial discharges of toxic pollutants, such as metals and organic chemicals. The Clean Water Act required EPA to establish BAT effluent limits, which are more stringent than Best Practicable Control Technology (BPT) limits. About 50 industries have such limits.

Benzene. Simplest aromatic hydrocarbon benzene, a known carcinogen. Benzene is used as an industrial solvent, gasoline additive, and as an additive in some paints and varnishes.

Beryllium. Hard, poisonous, metallic element used in the production of corrosion-resistant alloys.

Best Available Control Technology (BACT or BAT). The Clean Air Act requires new industrial facilities constructed in clean air areas to install BACT. Determined by states, on a case-by-case basis, BACT standards must be at least as rigorous as industry-wide "new source performance standards." Costs are considered in determining BACT.

Biochemical Oxygen Demand (BOD). Amount of dissolved oxygen required to decompose organic matter in water. BOD is a measure of pollution.

Biological Diversity. Genetic and ecological diversity, encompassing all species and ecosystems.

Biomass. Energy produced from biological sources (e.g., wood, grain, animal manure). Can be released through combustion, gasification or conversion to alcohol.

Biotechnology. Application of biological systems and organisms to technical and industrial processes. Involves the use of genetic engineering (techniques used to alter the hereditary apparatus of a living cell so that the cell can produce more or different chemicals or perform completely new functions). Altered cells are then used in industrial processes.

Bituminous Coal ("soft coal"). High carbon content coal (45 percent to 86 percent) with greater volatility than anthracite and greater energy content (10,500 Btu per pound to 15,500 Btu per pound) than subbituminous coal and lignite. Used primarily for electricity generation, coke production and space heating.

BLM (Bureau of Land Management). Agency of the Department of the Interior. Largest federal land owner, managing 270 million acres, mostly in the West and Alaska.

BMP (Best Management Practice). Designed to prevent or reduce non-point source water pollution. Examples include no-till farming, terracing of farmland, replanting eroding surfaces, construction of runoff-retention basins, city street sweeping, manure management and use of hay bales to block runoff from construction sites.

BOD. *See biochemical oxygen demand.*

BPT or BPCT (Best Practicable Control Technology currently available). Minimum level of pollution control industry is to achieve by July 1, 1977, under the Clean Water Act. Most facilities now meet BPT. Based generally on the average of the best existing performance by industrial plants of various sizes, ages and processes within an industry. BPT limits apply to pollutants such as biochemical oxygen demand, suspended solids, oil and grease, and dissolved solids.

BTU (British thermal unit). Amount of energy required to raise the temperature of a pound of water 1 degree Fahrenheit from 39.2 degrees Fahrenheit. According to the Energy Information Administration, a barrel of gasoline contains 5.25 million Btu, a barrel of home heating oil contains 5.83 million Btu, the average ton of coal used in the United States contains 21.4 million Btu, and a thousand cubic feet of natural gas contains 1.03 million Btu.

Bubble Concept. Type of emissions trading in which separate sources of air pollution are treated as one larger source -- as though there was a giant plastic bubble over them with a single opening for emissions. A facility can lower emissions from one source that is inexpensive to control and raise emissions from another source that is expensive to control, as long as overall emissions are reduced by the same amount.

Budget Resolution. Concurrent resolution on the budget. Passed by both houses but not requiring presidential approval, it sets forth overall targets for federal spending, revenues and the deficit for the coming fiscal year. May include additional "reconciliation" instructions directing committees to achieve further savings or increase revenues to meet a deficit target.

BuRec (Bureau of Reclamation). Agency of the Department of the Interior responsible for construction and maintenance of major hydroelectric, irrigation and water supply projects in 17 Western states. Roughly 10 million acres in 146,000 farms are irrigated by BuRec projects.

Byproduct Material. Radioactive material produced or irradiated during the production or use of "special nuclear material" (e.g., enriched uranium and other nuclear fuel).

Carbon Dioxide (CO_2). Colorless, odorless, tasteless gas about 1.5 times as dense as air, released by plant and animal respiration and consumed by photosynthesis. Also a product of combustion of carbon-containing materials such as fossil fuels.

Carbon Monoxide (CO). Colorless, odorless, poisonous gas produced by incomplete fossil-fuel combustion. One of six pollutants for which there is a National Ambient Air Quality Standard. *See also criteria pollutants.*

Carcinogen. Substance causing cancer.

CASAC. *See Clean Air Scientific Advisory Committee.*

CBO (Congressional Budget Office). Congressional support agency set up by the budget act to report on the potential cost of proposed legislation and to prepare an annual series of analyses on the federal budget and the U.S. economy.

CEQ (Council on Environmental Quality). Established by the National Environmental Policy Act of 1969, (NEPA), the council advises the president on environmental matters, coordinates federal environmental programs, monitors environmental trends, and oversees implementation of NEPA.

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act (1980)). Informally called "Superfund". Amended by SARA.

CFCs. *See chlorofluorocarbons.*

C.F.R. (Code of Federal Regulations). Annual compilation of regulations published by the GPO.

Charging Hopper. Enlarged opening at the top of incinerator through which waste materials drop into the combustion chamber.

Chlorine. Chemical used in water purification for removal of bacteria.

Chlorofluorocarbons. Family of chemicals believed to contribute to the breakup of ozone molecules in the stratosphere, causing depletion of the ozone layer that protects the earth from damaging ultraviolet radiation. Primary uses include refrigeration, manufacture of insulation and packaging, air conditioning, and cleaning of electronic parts.

Civilian Munition Destroyers. Civilian personnel of DOD components who undergo formal training in, and whose mission is, the identification, handling, removal, and treatment of PEP materials and miscellaneous ordnance.

Class I, II and III. Clean air areas are divided into three classes under the Clean Air Act. Little pollution increase is allowed in Class I areas, some increase in Class II areas, and more in Class III areas. National parks and wilderness areas receive mandatory Class I protection. Other areas start out as Class II. States can reclassify Class II areas subject to federal requirements.

Clean Air Act (CAA). Passed in 1963, the law was rewritten by the Clean Air Act of 1970. Congress made major revisions in the Clean Air Act Amendments of 1977 and 1990. Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for common and widespread pollutants. To achieve the standards, states and EPA require industries, businesses and motor vehicles to reduce emissions. Separate requirements apply to clean air (attainment) and dirty air (non-attainment) areas. The CAA also establishes programs to control acid rain, toxic air pollution, and stratospheric ozone layer depletion.

Clean Air Scientific Advisory Committee (CASAC). Committee of the Science Advisory Board, which is a group of independent scientists who review and evaluate Environmental Protection Agency (EPA) studies of regulatory significance.

Clean Water Act (CWA). *See FWPCA.*

Closure. Procedure under the Resource Conservation and Recovery Act for closing a hazardous waste disposal facility. The facility must submit a closure plan, receive approval of the plan and complete cleanup and groundwater contamination prevention activities outlined in the plan.

CMSA. *See consolidated metropolitan statistical area.*

CO. *See carbon monoxide.*

CO_2. *See carbon dioxide.*

Co-Firing. Burning two fuels in the same combustion unit (e.g., coal and natural gas, oil, and coal).

Coastal Waters. Generally, waters subject to tidal influences.

Consolidated Metropolitan Statistical Area (CMSA). A statistical area that contains one million people or more and meets other criteria.

Consumer Solvent. Volatile liquid capable of dissolving or dispersing other substances used in consumer products (e.g., household cleaning fluids and paint thinner).

Control Technique Guidelines (CTGs). Documents issued by the Environmental Protection Agency to assist state and local pollution control authorities to achieve and maintain air quality standards for certain types of pollution sources through Reasonably Available Control Technologies (RACT).

Controlled-Air Incinerator. Two-chamber incinerator. The first chamber is kept oxygen deficient and the second chamber is oxygen rich. The second chamber uses large amounts of clean fuel to complete combustion.

Convention. Legal agreement among a number of nations. If presented to the Senate for advice and consent, can be generally referred to as a treaty.

Conventional Munitions. Includes liquid and solid propellants and explosives, pyrotechnics, riot control agents, smokes, and incendiaries used by DOD components. Includes bulk munitions, rockets, missiles, warheads, devices, and components thereof. Excludes wholly inert items, toxic chemical agents and munitions, and nuclear warheads and devices.

Conventional Pollutants. Pollutants consisting of organic wastes (e.g., biochemical oxygen demand (BOD), suspended solids (SS)). Domestic sewage and industrial wastes of plant and animal origin contribute to the formation of these conventional pollutants.

Corps of Engineers (U.S. Army Corps of Engineers or COE). Largest federal water resources development agency. Responsible for construction and maintenance of inland waterway, port and dam projects throughout the country.

Criteria Document. Detailed review of the health and environmental impacts of a criteria air pollutant, prepared by the Environmental Protection Agency (EPA) and expert advisers.

Criteria Pollutants. Sulfur dioxide, carbon monoxide, particulates, nitrogen dioxide, ozone and lead. The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set air quality standards for these common and widespread pollutants.

CTG. *See control technique guideline.*

Curie. Unit radioactivity measuring the number of atomic disintegrations during a given time period. *See also rems* and *rads.*

Cyanide. Highly poisonous, carbon-nitrogen compound.

CZMA (Coastal Zone Management Act). Provides authority and federal aid to states and territories for developing and implementing management plans for coastal areas. Fully operational plans are the states' responsibility. Established estuarine sanctuaries as natural laboratories. The Act was reauthorized and expanded in 1990 to include a non-point source water pollution control program.

DB (Decibel). Measure of loudness or intensity of sound.

Decontamination. Removal of unwanted material (e.g.,radioactive, toxic or explosive material) from facilities, soils or equipment by techniques including washing, chemical action and mechanical cleaning.

Defense Reutilization and Marketing Office (DRMO). Component of the Defense Logistics Agency responsible for disposal of DOD property, including most hazardous wastes.

Demilitarization. The act of removing the military offensive or defensive advantages of ammunition and explosives, which may or may not include the disposal of the item. The term encompasses various approved methods for example, mutilation, destruction, or alteration to prevent further use for its originally intended military purpose, including the procedures followed by EOD units, civilian munition destroyers, and properly certified contract personnel. It applies equally to material in unserviceable or serviceable condition.

DERA (Defense Environmental Restoration Account). Account used to fund DOD environmental cleanup activities such as those performed under the Installation Recovery Program (IRP).

DERP (Defense Environmental Restoration Program). General program for environmental cleanup of DOD facilities.

Designated Uses. State-designated uses for rivers, lakes and other water bodies that must be achieved and maintained under the Clean Water Act (e.g., fishing, swimming, public water supply and agriculture).

Design Value. Monitor reading used by the Environmental Protection Agency (EPA) to determine an area's NAAQS status. For example, the design value for ozone is the fourth highest reading measured over the most recent three years. The design value for carbon monoxide is the second highest non-overlapping 8-hour concentration for one year.

DESR (Defense Environmental Status Report). Annual summary of environmental programs and regulatory compliance within DOD.

Dioxin. Highly toxic chlorinated compound associated with herbicides and pesticides.

Direct Dischargers. Sources including municipal sewage treatment plants and industrial facilities that discharge effluent directly into rivers, streams and other water bodies.

Discharge. Describes any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of a substance.

Disposal. The discharging, depositing, injecting, dumping, spilling, leaking, or placing of any solid waste or hazardous waste on or into any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters. (40 CFR 260.10)

Distillate Fuel Oil. Refined fuel oil of grades one, two and four. Used primarily for space heating, and as on- and off- highway diesel engine fuel used in diesel cars and trucks, railroad engines and farm machinery.

DOE (Department of Energy). Established in 1977 under the Carter administration.

DOI Department of the Interior.

DSMOA Defense - State Memorandum of Agreement.

EA (Environmental Assessment). A study to determine if significant environmental impacts are expected from a proposed federal action.

Effluent Limit. Limit established by the Environmental Protection Agency (EPA), on the amount of a specific pollutant municipal sewage treatment plants and industrial facilities are allowed to discharge in their effluent (wastewater). Also called a discharge limit.

EIS (Environmental Impact Statement). Document analyzing the effects of major federal projects on the environment. Under the National Environmental Policy Act (NEPA), must be filed with the President and the Council on Environmental Quality, and must be made available to the public.

Electrostatic Precipitator (ESP). Device removing dust or other fine particles from a gas by charging the particles with an electric field and attracting them to highly charged collector plates.

Emergency Planning and Community Right-to-Know Act (1986). Provides local governments with information about possible chemical hazards in the community. Also referred to as SARA Title III.

Emission Standards. Permissible limits of air emissions established by Federal, Regional, State, and local authorities.

Emissions Trading. Since 1979, the Environmental Protection Agency (EPA) has been developing regulatory approaches that allow firms to trade air pollution control requirements within a facility and among facilities and firms under the supervision of EPA, state and local pollution control agencies. Involves reducing emissions beyond that required by law at one pollution source and using the excess reduction to permit higher emissions at another source. Storing emissions reductions for later use in emissions trading is called "banking." *See also bubble concept.*

Encapsulated. Method used in the disposal of hazardous substance. Uses an impervious container made of plastic, glass, or other material that will not be chemically degraded by the contents. The container is sealed within a durable container made from steel, plastic concrete, or other material to resist physical damage during and after burial or storage.

Endangered Species. Under the 1973 Endangered Species Act (ESA), the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) were assigned the task of determining species threatened with extinction. As of 1 November 1990, the act protected 1,117 species including 331 mammals, 238 birds, 105 reptiles, 242 plants, 97 fish, 41 clams, 19 amphibians, 21 insects, 10 snails, 10 crustaceans and 3 arachnids. 596 of the species are found in the United States.

Environmental Restoration. Cleanup and restoration of sites contaminated with radioactive or hazardous substances during past production or disposal activities.

EPA (Environmental Protection Agency). Created in 1970 by an executive reorganization plan during the Nixon administration, EPA conducts pollution control activities mandated by the Clean Air Act (CAA); the Clean Water Act (CWA); the Marine Protection, Research and Sanctuaries Act (MPRSA); the Safe Drinking Water Act (SDWA); the Resource Conservation and Recovery Act (RCRA); the Federal Insecticide Fungicide and Rodenticide Act (FIFRA); the Toxic Substances Control Act (TSCA); and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA (a.k.a. Superfund)).

ESP. *See electrostatic precipitator.*

Estuary. Body of water in which river and ocean waters interact. Tidal action and river flow create a mixing of fresh and salt water.

Ethanol. Grain alcohol, often blended with gasoline to form gasohol. Derived from agricultural commodities such as grain and corn. Motor vehicles can, with minor engine modifications, run on nearly pure, ("neat") ethanol.

Ethylene Dibromide (EDB). Gasoline additive used with leaded fuels to scavenge lead. EDB is a suspected carcinogen.

Evaporative Emissions. Emissions of volatile organic compounds caused by evaporation from the fuel tank and fuel lines of a parked vehicle.

Explosive Ordnance. Any chemical compound, mixture, or device, the primary purpose of which is to function by detonation or deflagration with instantaneous release of heat and gases. the term is not limited to those materials or items to be used directly against an enemy, but includes those utilizing PEP in such applications as illumination, signalling, catapulting personnel or material, mining, cutting, and demolition.

Explosive Ordnance Disposal (EOD). EOD means the recovery, evaluation, and render-safe procedures that may result in destruction of the ordnance and does not necessarily mean the RCRA regulated treatment or disposal of a hazardous waste.

Explosive Ordnance Disposal (EOD) Emergency. A situation involving the suspected or detected presence of unexploded ordnance that creates an immediate safety threat to civilian or military personnel or property; range clearance operations are excluded. The situation calls for immediate action by EOD personnel or civilian munition destroyers, to include properly certified civilian contractor personnel, to eliminate the threat by treating the ordnance in place or rendering the ordnance safe and removing it to another location. The emergency action includes transportation and treatment to the extent necessary to abate the immediate threat. EOD emergencies can occur off-installation in the public sector or on-installation.

Explosive Ordnance Disposal (EOD Operations). EOD operations refer to those operations conducted by specially trained military personnel or properly certified contract personnel known as EOD personnel. In 1971, the U.S. Navy was designated as the single-service manager within DOD for EOD technology and training.

Federal Facility Docket. Method developed under SARA to identify and gather information on federal facilities which manage hazardous wastes or may be contaminated with hazardous substances.

Federal Implementation Plan (FIP). Federally-imposed air quality plan required by the Clean Air Act. It supersedes a State Implementation Plan (SIP) if state fails to develop adequate plan for attaining and maintaining the National Ambient Air Quality Standards.

Federal Register. A daily federal publication that formally documents proposed and promulgated (final) regulations.

FIFRA (Federal Insecticide, Fungicide and Rodenticide Act). Basic federal statute governing the sale and use of pesticides. Requires a pesticide to be registered by the Environmental Protection Agency (EPA) before it can be marketed. EPA registers only if it determines that use will not cause any unreasonable risk to humans or the environment, taking into account the benefits of using the pesticide. EPA relies on health and safety tests performed by the pesticide producer.

FIP. *See Federal Implementation Plan.*

Floodplain. Flat area adjacent to a river or stream that is subject to flooding.

FLPMA (Federal Land Policy and Management Act of 1976). Basic law regulating management of millions of acres of federal lands under the jurisdiction of the Department of the Interior's Bureau of Land Management (BLM).

Flue-Gas Desulfurization (FGD). Post-combustion sulfur dioxide control technology in which a scrubber is placed in the emission stream between the electrostatic precipitator (or baghouse) and the smokestack. The exhaust gas containing the acidic SO_2 reacts with limestone (or lime) to create a calcium byproduct. Commonly known as scrubbing; FGD systems can be wet, dry or regenerable, although wet systems are the most widely used.

Fluidized Bed Combustion. Process to remove sulfur dioxide during combustion. Crushed coal is fed into a "bed" mixed with limestone or dolomite, the resulting mixture of coal and limestone is held in suspension by air, or fluidized, the SO_2 formed during combustion reacts with the limestone or dolomite to form solid calcium sulfate, and is then removed. The process operates at a lower combustion temperature than a conventional boiler, therefore nitrogen oxide emissions are lower. Burning can be at atmospheric pressure or in a pressurized vessel. This technology offers hope for cleaner combustion of high-sulfur coal.

Fluoride. Naturally occurring contaminant of water and can be added to water to prevent tooth decay.

FNSI or FONSI (Finding of No Significant Impact). Conclusion to an EA stating that no significant effects are anticipated from proposed actions; indicating that an EIS is not needed.

Fossil Fuels. Combustibles such as coal, oil and natural gas derived from the remains of ancient plants and animals.

Friable Asbestos. Asbestos which can be crumbled in the hand; it creates a health hazard due to release of microscopic carcinogenic fibers.

Fuel Switching. Use of a lower sulfur coal, oil or natural gas in place of a higher sulfur coal to reduce emissions of sulfur dioxide.

FWPCA or CWA (Federal Water Pollution Control Act of 1972). Commonly known as the Clean Water Act, the major federal statute aimed at controlling water pollution. The CWA authorizes large federal grant program to help local areas construct sewage treatment plants. It requires the EPA to regulate the discharge of pollutants by industrial and municipal sewage treatment plants.

FWS (U.S. Fish and Wildlife Service). Agency of the Department of the Interior, tasked with administering federal fish and wildlife protection and research programs and advising other federal agencies on fish and wildlife matters. FWS manages approximately 91 million acres of federal lands in the National Wildlife Refuge System.

GAO (General Accounting Office). Investigative arm of Congress.

Garbage. Animal and vegetable waste and containers resulting from the handling, preparation, cooking, and consumption of foods. Edible, or hog-food, garbage is the portion of waste food that has been segregated for salvage.

Gas Reburning. Technique where coal is fired in a main heat-release zone in the lower part of a boiler and natural gas is burned in a cooler, oxygen-deficient zone in the upper part of the boiler. This controls the formation of nitrogen oxide.

Gasohol. Mixture of gasoline and ethanol, made from corn and other agricultural products, that contains at least 9 percent ethanol. 5 to 10 percent of the motor fuel sold is gasohol. Burning gasohol results in less carbon monoxide emissions than straight gasoline.

Gigawatt. One thousand megawatts, or a billion watts. Large power plants often have generating capacity of about one gigawatt (pronounced "jigawatt").

Global Change. Study of the earth as a system of interacting processes. U.S. agencies are cooperating on global change research, which in turn will be coordinated with the International Geosphere-Biosphere Program research effort.

Greenhouse Effect. Warming of the earth caused by the presence in the atmosphere of greenhouse gases. Scientists disagree over whether global warming caused by human activities has begun.

Greenhouse Gas. Gas that absorbs and re-radiates solar radiation in the earth's atmosphere, heating the atmosphere. Carbon dioxide (byproduct of fossil fuel burning and deforestation), chlorofluorocarbons (CFCs), halons, methane, nitrogen oxide and ozone are among the greenhouse gases.

Groundwater. Subsurface water that completely saturates interconnected spaces between soil particles and rocks.

Hammermill. Broad category of high-speed equipment that uses pivoted or fixed hammers or cutters to crush, grind, chip, or shred solid wastes.

Half-Life. Unit of time it takes a radioactive material to lose half of its radioactivity through decay.

Halogenated Organic Compounds. Group of compounds, typically containing chlorine, that tends to have significant environmental impacts. Examples are DDT, PCBs, and TCE.

Halons. Chemicals used in fire extinguishers whose bromine atoms are believed to destroy stratospheric ozone.

Hazardous Air Pollutants (Also called air toxics). 189 are listed in the Clean Air Act Amendments of 1990. The EPA can add others to the list if they present a threat to human health or the environment. Criteria air pollutants cannot be listed as hazardous unless they meet certain conditions. Prior to the 1990 amendments, EPA issued standards for some sources of seven hazardous air pollutants: arsenic, asbestos, benzene, beryllium, mercury, radionuclides and vinyl chloride.

Hazardous Substance. Element, compound, or mixture, when discharged in any quantity, onto land or water, poses an imminent and substantial threat to the public health and welfare.

Hazardous Waste. Any solid waste that exhibits any of the characteristics of hazardous waste (ignitability, corrosivity, reactivity, and toxicity) or is a listed hazardous waste under RCRA. (40 CFR 261.3)

Hazardous Waste Account (BHW). An inventory account system that includes explosive ordnance, manufacturing material, and processing and treatment residue that has been determined to be hazardous waste.

HAZMIN (Hazardous Waste Minimization). Army policy to reduce the quantity or volume and toxicity of hazardous wastes generated by Army operations and activities wherever economically practicable, or environmentally necessary. Emphasis on source reduction methods, recycling, on-site treatment, and other alternatives.

HC. *See hydrocarbons.*

HDT. *See heavy-duty truck.*

Heavy-Duty Truck (HDT). Truck weighing over 8500 pounds, as defined in Environmental Protection Agency (EPA) regulations.

Hold For Reason. Temporarily holding recovered ordnance for a purpose other than treatment. These purposes include such things as evidence in law enforcement proceedings and accident investigations, technical evaluation by EOD personnel, and other purposes unrelated to being held for treatment. Also includes material identified to be held for Research and Development (R&E) requirements.

HPP (Historic Preservation Plan). Installation historic properties protection and compliance document.

HSWA (Hazardous and Solid Waste Amendments (1984)). Amendments to RCRA that regulated waste minimization, land disposal of hazardous wastes, corrective action requirements, and underground storage tanks (USTs).

Hydrocarbons (HC). Family of compounds containing hydrogen and carbon. Term used loosely to include many organic compounds in various combinations. When hydrocarbons mix with nitrogen oxides in the presence of sunlight, ozone is formed. Most fossil fuels are composed predominately of hydrocarbons. Hydrocarbon emissions are hard to regulate because they come from a wide variety of sources such as motor vehicles, oil refineries, gas stations, oil-based paints, solvents, hazardous waste facilities, dry cleaners and bakeries. Hydrocarbons also are referred to as volatile organic compounds (VOCs).

ICUZ (Installation Compatible Use Zone). Program identifying the compatibility of on-post and off-post land uses with noise sources.

Improvised Explosive Device (EID). A non-standard explosive device fabricated from locally available materials, designed to destroy, disfigure, distract, or harass. IED's can be fabricated from military or non-military ordnance and materials.

Incinerator. Controlled chamber where waste substances are burned.

Increments. Allowable air pollution increases in clean air regions are measured in increments above existing "baseline" levels. New industrial sources in clean air areas are allocated portions of the regional increment. No additional industrial growth is permitted once the increment is used up.

Indirect Discharger. Industrial or non-residential source that discharges pollutants into a municipal sewage system, rather than directly into a water body. Under the Clean Water Act, indirect dischargers must "pre-treat" wastes before flushing them into the municipal sewage system.

Indirect Source. Any facility, building structure, installation, real property, road, highway or parking facility that attracts motor vehicle traffic and, indirectly, causes air pollution.

Infectious Waste.

1. Equipment, instruments, utensils, and fomites (any substance that may harbor or transmit pathogenic organisms) of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease;

2. Laboratory wastes, such as pathological specimens (for example: tissues, blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites attendant thereto;

3. Surgical operating room (pathological) specimens and disposable fomites attendant thereto, and similar disposable materials from outpatient areas and emergency.

Inversion. Atmospheric condition caused by a layer of warm air preventing the rise of cool air trapped beneath it. This condition holds down pollutants that might otherwise disperse, causing a serious air pollution episode.

IRP (Installation Restoration Program). Remedial response aspect of DOD's DERP. It requires installations to identify, investigate, and clean up hazardous materials associated with past activities on property controlled by the Army, formerly used by DOD, and beyond the boundaries of such property when the contamination occurred as a result of migration from a source on the property.

ISCP (Installation Spill Contingency Plan). Document detailing resources and procedures for cleanup of spills of oil and hazardous substances.

Installation. A military facility, such as a base or station, owned or leased by DOD operated by a DOD component or its contractor.

Inventory. Military ordnance stores in a serviceable condition, ready for issue and use, or unserviceable stocks pending maintenance or disposition instruction. Includes industrial components and raw materials for production use and other ordnance that is classified in unserviceable condition, pending resolution of disposition instructions.

Land Bans. Prohibitions on dumping into landfills hundreds of hazardous wastes unless they are treated first. The 1984 amendments to the Resource Conservation and Recovery Act (RCRA) required the Environmental Protection Agency (EPA) to issue a series of these land bans over several years.

LDT. *See light-duty truck.*

Leachate. Liquid material produced when surface water or groundwater contacts solid waste; typically generated at landfills.

Lead (Pb). Heavy metal used in many industries. Can accumulate in the body and cause a variety of serious health effects. One of six pollutants for which there is a National Ambient Air Quality Standard. *See criteria pollutants.*

LEPC (Local Emergency Planning Committee). Established in local municipalities to prepare plan to respond to releases of hazardous substances and inform citizens of major facilities managing hazardous substances in the area.

Lifetime Risk. Probability of contracting or dying from a disease, calculated from birth or any subsequent time. EPA assumes a typical lifetime to be 70 years.

Liming. Application of alkaline materials (usually limestone) to lakes, streams or soils. Temporarily increasing the pH to compensate for the effects of acid deposition.

Light-duty truck (LDT). Truck or van weighing less than 8500 pounds as defined in EPA regulations.

LNG (Liquified Natural Gas). Natural gas that has been liquified by reducing its temperature to minus 260 F.

Lowest Achievable Emission Rate (LAER). Stringent level of pollution control required by the Clean Air Act (CAA) for new or modified industrial facilities in non-attainment areas (areas where air pollution exceeds National Air Quality Standards). The lowest achievable emission rate is defined as either the most stringent emission limitation contained in the implementation plan of any state for a category of sources, or as the most stringent emission limitation achieved in practice within an industrial category. Theoretically LAER should be more stringent than new source performance standards. *Compare Best Available Control Technology (BACT), Reasonably Available Control Technology (RACT).*

Load, Assemble, and Pack (LAP) Operations. These are operations conducted by manufacturing/industrial facilities that load, assemble, and pack explosive ordnance.

Major Source. Generally, a stationary source that emits, or has the potential to emit, 100 tons per year or more of any air pollutant. However, in areas with pollution classified as serious or worse, smaller emitters of ozone-causing pollutants and carbon monoxide are defined as major.

Manufacturing Rejects. Explosive ordnance generated during the manufacturing, processing, loading, testing, and depot level work/rework of military ordnance that does not meet specification, but is safe to handle and store.

Manufacturing Residues. Propellants, explosives, and Pyrotechnics (PEP) material or PEP-contaminated material that are generated during the processing, loading, testing, and depot level work/rework of military ordnance.

MCL (Maximum Contaminant Level). Refers to the allowable levels of certain organic and inorganic constituents in drinking water.

Megawatt. One million watts of electricity. A large power plant typically has a capacity of 1,000 megawatts.

Methane. Chief constituent of natural gas, produced by decaying plant material, coal gasification processes or bovine digestion. Methane is a greenhouse gas believed to contribute to global warming.

Methanol (Wood alcohol). Most is currently made from natural gas, but it also can be refined from coal. Can be used as an alternative fuel or as a gasoline additive. Less volatile (evaporates less) than gasoline. When small amounts are blended with gasoline, it lowers carbon monoxide emissions but increases hydrocarbon emissions. When used as a pure, or "neat," fuel, its emissions are less ozone-forming than gasoline emissions.

Metropolitan statistical area (MSA). Large population center, with adjacent communities that have a high degree of economic and social interaction with the center.

MIC. *See methyl isocyanate.*

Micron. Unit of length equal to 1/1,000,000 of a meter.

MMPA (The 1972 Marine Mammal Protection Act). Places a prohibition on the taking of virtually all marine mammals.

Mobile Sources. Motor vehicles (including cars, trucks, busses, trains and planes). Subject to specific pollution controls under the Clean Air Act.

Monitoring. Periodic or continuous sampling to determine the level of contamination in the environment by analytic means.

MSA. *See metropolitan statistical area.*

MSDS (Material Safety Data Sheet). Information sheets describing the potential hazards, chemical or physical properties, and health effects of a substance.

Mutagen. Agent that causes structural alteration in genetic material or in the chromosome.

NO_2 (Nitrogen dioxide). Gases formed primarily from atmospheric nitrogen and oxygen when combustion takes place at high temperature. NO_2 emissions contribute to acid deposition. One of six pollutants for which there is a national ambient standard.

NAAQS. *See National Ambient Air Quality Standards.*

National Ambient Air Quality Standards (NAAQS). The Clean Air Act (CAA) requires the EPA to set national ambient air quality standards for six common and widespread outdoor air pollutants: sulfur dioxide, carbon monoxide, particulate matter, photochemical oxidants, nitrogen dioxide and lead. "Primary" standards must protect public health with a margin of safety (including the health of sensitive groups such as asthmatics). "Secondary" standards are to protect soil, water, crops, visibility and other essentials of public welfare. The CAA requires the standards to be set without regard to cost of compliance. *See criteria pollutants.*

National Primary Drinking Water Regulations. Established by EPA pursuant to the SDWA. Set the maximum contaminant levels for certain chemicals in drinking water to protect the public health.

National Response Center (NRC). Washington, D.C. headquarters that coordinates activities relative to pollution emergencies.

National Secondary Drinking Water Regulations. Drinking water guidelines for contaminants which affect the aesthetic qualities of water.

Natural Gas. Naturally occurring mixture of hydrocarbons (principally methane) and small amounts of other gases found in porous geological formations, often in association with oil.

NCP (National Contingency Plan). Regulations which implement CERCLA provisions for responding to releases of oil and hazardous substances including cleanup of NPL sites.

Neat fuel. Fuel that is nearly 100 percent pure, such as "neat" methanol.

NEPA (National Environmental Policy Act of 1970). Federal statute that requires all federal agencies to assess the environmental impacts of proposed major federal actions significantly affecting the quality of the human environment. *See also CEQ* and *EIS*.

NESHAP (National Emission Standards for Hazardous Air Pollutants). Allowable concentrations of certain hazardous pollutants in air emissions from industrial facilities.

Netting. Type of emission trading under the Clean Air Act (CAA). Modification of an existing source that increases emissions more than a de minimis amount is normally subject to permit and control requirements for new sources. "Netting" allows the source to escape the new source review requirements by obtaining offsetting reductions from elsewhere, at the source that brings the net emissions increase below the de minimis threshold. The 1990 amendments placed new restrictions on netting. *Compare with* the *bubble concept*.

Neurotoxins. Chemicals that poison the nervous system and can permanently damage the ability to feel, remember, think and act. Neurotoxins are found in industrial chemicals, food additives, drugs, pesticides and cosmetics. Human exposure occurs at home and in the workplace.

New Source Performance Standards (NSPS). Minimum federal emissions limits set by EPA for all new or substantially modified sources in major polluting industries. Based on the best technology currently available, taking costs into account.

NIEHS (National Institute of Environmental Health Sciences). One of the National Institutes of Health (NIH) under the Department of Health and Human Services. NIEHS conducts research to identify and study substances in the environment that pose potential hazards to human health.

Nitrates. Compounds essential as a soil nutrient, which can also be pollutants.

Nitrogen Dioxide (NO_2). Gases formed primarily from atmospheric nitrogen and oxygen when combustion takes place at high temperature. NO_2 emissions contribute to acid deposition. One of six pollutants for which there is a national ambient standard. *See criteria pollutants.*

Nitrogen Oxides (NO_x). Formed primarily by fuel combustion and contribute to the formation of acid rain. Hydrocarbons and nitrogen oxides combine in the presence of sunlight to form ozone, a major constituent of smog.

NMFS (National Marine Fisheries Service). In addition to administering the nation's fisheries, this Department of Commerce agency is responsible for conservation activities for anadromous fish and the listing and protection of endangered marine species.

NOAA (National Oceanic and Atmospheric Administration). Agency of the Department of Commerce, NOAA administers many of the nation's oceans and coastal programs, including the Coastal Zone Management Act (CZMA).

Noise Control Act (NCA). Establishes noise standards and regulates noise emissions from commercial products such as transportation and construction equipment.

Nonattainment Areas. Regions that violate Clean Air Act (CAA) primary health standards. Most urban areas in the nation are nonattainment areas for one or more of the primary pollutants. These regions are subject to strict controls to bring them into compliance with health standards.

Nonhazardous Solid Waste. Generally, solid wastes which pose no significant threat to human health or the environment. Examples are household trash and office waste.

Nonpoint Source Pollution. Water pollution emanating from diffuse sources, rather than from a factory or sewage treatment plant discharge pipe (e.g., oil and grease runoff from city streets, pesticide runoff from farmland, and polluted runoff from construction sites, forestry and abandoned mines).

Nonroad Vehicles. Vehicles or machines that use an internal combustion engine but are not regulated as motor vehicles or airplanes under the Clean Air Act (CAA). Construction equipment and trains are two examples of nonroad vehicles.

NOV (Notice of Violation). Formal written document provided to an installation by a regulatory agency as a result of environmental noncompliance.

NO_x. *See nitrogen oxides.*

NPDES (National Pollutant Discharge Elimination System). Program mandated by section 402 of the Clean Water Act (CWA) under which the EPA establishes limits on the amounts of specific pollutants that may be discharged by municipal sewage treatment plants and industrial facilities. "Effluent limits" are incorporated in permits (called NPDES permits) issued to all municipal and industrial dischargers. It is illegal for dischargers to operate without a permit or in violation of permit conditions.

NPL (National Priorities List). List of the nation's most dangerous abandoned hazardous waste sites, compiled by the EPA, pursuant to CERCLA. Inclusion of Army sites on this list targets the site for government cleanup using DERA money. Non-federal agency sites that are on the NPL are targeted for cleanups by EPA using Superfund money or for enforcement efforts to force those responsible to clean the site.

NPS (National Park Service). Agency of the Department of the Interior, administering 80 million acres in 357 management units, including 50 national parks and numerous national monuments, lakeshores and seashores, recreation areas, wild and scenic rivers and trails, battlefields, historic sites, monuments and memorials.

NSPS. *See new source performance standards.*

NSR. *See new source review.*

OEQ (Office of Environmental Quality). Provides administrative support to the Council on Environmental Quality. *See also CEQ.*

OES (Department of State's Bureau of Oceans and International Environmental and Scientific Affairs). Responsible for ensuring that environmental, oceans, population, health, scientific technological and non-proliferation concerns are taken into account when foreign policy decisions are made.

Office Wastes. Solid wastes generated in the building, room, or series of rooms in which the affairs of a business, professional person, branch of government, etc., are carried on. Excludes waste generated in cafeterias, snack bars, or other food preparation and sales activities in those buildings.

Offset Requirement. The Clean Air Act (CAA) requires that, in non-attainment areas, emissions from major new stationary sources, or increased emissions that result from modernization of existing plants, must be more than offset by reductions from existing pollution sources. The 1990 CAA amendments increased offset requirements that apply in ozone non-attainment areas to between 1.1-1 and 1.5-1.

On-Scene Coordinator. Federal official in charge of removal efforts at hazardous substance discharge sites.

Open Burning (OA). Combustion of PEP or explosive ordnance without the control of combustion air, containment of the combustion reaction in an enclosed device, or control of emission of gaseous and particulate combustion products. (40 CFR 260.10)

Open Detonation (OD). Unconfined, violent reaction of PEP or explosive ordnance without the control of combustion air, containment of the combustion reaction in an enclosed device, or control of emission of gaseous and particulate combustion products.

Open Dump. Facility or site where solid waste is disposed of that is not a sanitary landfill meeting the requirement of RCRA Section 6944, and which is not a disposal facility for hazardous waste. RCRA includes a ban on open dumps and provides for state plans to identify and develop measures to eliminate health hazards and minimize potential health hazards associated with existing open dumps.

OPP (Office of Pesticide Programs). A division of EPA.

OSHA (Occupational Safety and Health Administration). Agency responsible for regulating worker safety. Establishes guidelines and training requirements for workers at hazardous waste sites.

OTA (Office of Technology Assessment). Congressional support agency established to advise Congress on technology-related issues.

Oxidant. Substance containing oxygen that reacts chemically in air to produce a new substance. Ozone, the primary constituent of photochemical smog, is an oxidant.

Oxygen Demand. *See biochemical oxygen demand.*

Ozone, Ground Level. Prime ingredient of smog. Ozone is produced by the combination of hydrocarbons and nitrogen oxides in the presence of sunlight and heat. According to EPA, ozone levels at or slightly above its standard can cause reduced functioning of the lungs, lung tissue inflammation, shortness of breath, coughing and other effects in healthy individuals who are exercising. Animal studies have raised concerns that ozone may reduce the ability to fight respiratory infection and that frequent exposure may cause permanent lung damage. Ozone also can lower crop yields and cause forest damage.

Ozone, Stratospheric. A form of oxygen molecules (03) high above the earth that absorb harmful ultraviolet radiation from the sun and protect life below. Ozone in the high-altitude stratosphere is often called the ozone layer. Ozone is naturally present in minute amounts in the atmosphere; levels vary with altitude, but are highest in the stratosphere.

Ozone "Hole." A thinning in ozone over the Antarctic recognized in 1985 and believed to be caused by an interaction of chlorine (from CFCs and other man-made chemicals) and the region's unique climate dynamics.

Ozone Layer. *See ozone, stratospheric.*

Ozone Transport Region. Ozone pollution is carried from one state to another by prevailing winds, particularly in the Northeast. CAA Amendments of 1990 call for establishment of ozone transport regions where certain emissions control measures are required.

PA/SI. Preliminary Assessment/Site Inspection. First phase of the IRP, designed to identify potential sites with hazardous waste contamination.

PAD District (Petroleum Administration for Defense district). United States is divided into five PAD districts for statistical and emergency purposes. District I is the Atlantic Coast, II is the Midwest, III is the Gulf Coast, IV is the Rocky Mountains and V is the Pacific Coast.

Particulate Matter (PM) or Particulates. Wide array of small pieces of solid and liquid matter found in the atmosphere, (e.g., soot, dust, and organic matter).

PCBs (Polychlorinated Biphenyls). Toxic, halogenated organic compounds not easily degraded in the environment.

PCI/L (Picocuries per liter). Unit of measurement for radioactive materials in air. Used to measure radon concentrations in buildings.

PEP. Term used to refer collectively to propellants, explosives, any pyrotechnics.

Percentage Reduction. The 1977 CAA amendments added a requirement that new source performance standards (NSPS) for fossil-fuel-fired stationary sources (such as power plants and industrial boilers) achieve a percentage reduction in emissions, regardless of the amount of pollution emitted, in addition to meeting emission limitations. It was intended to eliminate the option of complying with sulfur dioxide new source standards through use of low-sulfur fuel. The 1990 CAA amendments repealed the provision subject to certain conditions.

Percolate. To seep through a layer of porous material (layers of either earth or refuse). A liquid percolating through a layer of refuse material may become contaminated.

Pesticide. Product that kills or controls pests of any kind.

PH. Measure of the acidity or alkalinity of a substance. Waters that are too acid (low pH) or alkaline (high pH) can be unfit for animal or plant life. On the pH scale, which runs from zero to 14, a value of 7 is neutral. Because the pH scale is logarithmic, there is a tenfold difference between each number. If the pH drops from 7 to 6, the acidity is ten times greater.

Phosgene. Air pollutant that is a potent neurotoxin. Phosgene was used as nerve gas in World War I.

PM. *See particulate matter.*

PM-10. Particulate matter that measures ten microns in diameter or less, small enough to invade the sensitive alveolar regions of the lung. PM-10 is one of six pollutants for which there is a National Ambient Air Quality Standard. *See criteria pollutants.*

Point Source. Sources of water pollution that discharge through a pipe or other discrete point, (e.g., municipal sewage treatment plants, factories, confined animal feedlots, combined sewers and operating mines. Also may be a pipe, ditch, channel, tunnel, conduit or any other discrete conveyance from which pollutants are discharged).

POTW (Publicly Owned Treatment Works). Wastewater treatment plant owned by a state or municipality. May also encompass devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. Army owned sewage treatment facilities are not considered POTWs under EPA's regulations.

PPM. Parts per million.

Pre-Treatment. Clean Water Act requires facilities that discharge wastewater into municipal sewage systems to first clean, or "pre-treat", wastes that will interfere with the sewage treatment process or that contain toxic substances. Standards are promulgated by the EPA.

Prevention of Significant Deterioration (PSD). In the 1977 amendments to the Clean Air Act, Congress mandated that areas with air cleaner than required by National Ambient Air Quality Standards be protected from significant deterioration. Best available control technology is required on major new pollution sources and existing sources that are modified. New sources must comply with an air quality increment system. *See increments.*

Process Chemical. Chemical(s) remaining after, or produced by, a given industrial process (chrome plating, aluminum etching).

Protocol. International agreement that changes an earlier international agreement. Referred to generally as a treaty if presented to the Senate for advice and consent.

Propellant. A reactive, energetic material formulated to deflagrate producing instantaneous energy sufficient to propel an object, such as a bullet, projectile, torpedo, rocket, or missile.

PSD. *See prevention of significant deterioration.*

PSI. Pounds per square inch.

Pyrolysis. Chemical decomposition of a material by heat in the absence of oxygen.

Pyrotechnic. A reactive, energetic material that undergoes reaction to produce audible or visible effects, such as illumination, colored lights, smoke, or noise.

Public Health or Welfare. Factors affecting human health and the natural environment.

RACT. *See reasonably available control technology.*

Rad (Radiation absorbed dose). Measure of energy absorbed by body tissue exposed to radioactivity. Effects of one rad of highly penetrating gamma radiation equal one rem. *See also rem.*

Radiation, Ionizing. Can directly break chemical bonds in substances. Radiation produced by radioactive decay, such as alpha rays and gamma rays, is ionizing radiation, or "radioactivity." Light rays are in a range between ionizing and non-ionizing radiation.

Radiation, Non-Ionizing. Radiation, such as microwaves and radio waves, that generally does not affect chemical bonds.

Radioactivity. Emission of ionizing radiation.

Radioactive Material. Material that spontaneously emits ionizing radiation.

Radionuclides. Radioactive substances.

Radon. Colorless, odorless, radioactive gas formed by the decay of uranium. Found in soils, rocks and some groundwater supplies. Can seep into a building, accumulating to dangerous levels. EPA estimates that 5,000 to 20,000 lung cancer deaths per year are caused by exposure to radon.

RAP (Remedial Action Plan). Strategy for correction of a site or operation which is not in compliance with regulatory requirements.

Range. Designated air, land, or water areas used to test and evaluate ordinance and weapon systems and to train personnel in their use and handling. For the purpose of this guidance, the term "range" includes impact areas, firing lines and positions, and all areas set aside and managed for employing explosive ordnance.

Range Clearance. The periodic elimination of unexploded ordnance that failed to function and is found on ranges. It includes treatment on site; collection and treatment within the range; and removal of RDT&E ordnance subjected to subsequent examination or testing.

RCRA. The Resource Conservation and Recover Act, 42 U.S.C. 6901 *et seq.* A federal law that established the requirement for management of hazardous waste. RCRA established specific requirements for hazardous waste generators and transporters and for facilities for the storage, treatment, and disposal of such waste in regulations found at 40 CFR 260-271.

RDF (Refuse-Derived Fuel). Burnable fuel derived from special processing of various types of solid wastes.

Real Property. Lands, buildings, structures, utilities systems, improvements and appurtenances thereto. Includes equipment attached to and made part of building and structures (such as heating systems) but not movable equipment (such as plant equipment).

Reasonable Further Progress (RFP). Annual incremental reductions in emissions of an air pollutant reflected in a state implementation plan that is sufficient, according to the EPA, to provide for attainment of the applicable National Ambient Air Quality Standard by the statutory deadline.

Reasonably available control technology (RACT). Clean Air Act standard under which existing polluting facilities in a non-attainment area install retrofit equipment to control air emissions. *Compare with best available control technology (BACT)*, and *lowest achievable emission rate (LAER)*.

Recycling. Process transforming recovered materials into new or usable products.

Refuse. Garbage, ashes, debris, rubbish, and other domestic and commercial solid waste material. Not included are garbage or other salable material sold under contract and delivered to a buyer at point of generation; explosive and incendiary wastes; and contaminated wastes from medical and radiological processes.

Regional Response Center. Federal regional site that controls pollution emergency response activities.

Remedial Action (RA). Cleanup of a hazardous waste site under the IRP.

Remediation. Cleanup of a toxic/hazardous waste site.

Remove. The movement of ordnance by EOD personnel or civilian munition destroyers, to include properly trained contract personnel, from the location where it was found to a treatment, holding, or storage area.

Render-Safe. Procedure employed by EOD personnel or civilian munition destroyers on explosive ordnance to interrupt or separate the essential initiation components to prevent an unwanted reaction. A render-safe procedure may make an explosive ordnance item safer to handle, but it does not necessarily remove the safety hazard associated with it. In some cases, the render-safe procedure includes destruction of the explosive ordnance.

Research Development Test and Evaluation (RDT&E) Ordnance. Ordnance utilized in performance of RDT&E mission. It may be standard munitions undergoing comparison tests, standard items that have been modified to gather information, or items generated by them from various ammunition components for RDT&E purposes.

Residential Solid Waste. Food wastes, rubbish, and trash resulting from the normal activities of households.

Residual Fuel Oil. Numbers five and six fuel oil, generally leftover material from the petroleum refining process. Used in commercial and industrial heating, electricity generation, and to power ships.

Retrofitting. Installing modern pollution control devices on older power generating facilities without making major changes in plant design.

RFP. *See reasonable further progress.*

RI/FS (Remedial Investigation/Feasibility Study). Phase of the IRP where the nature and extent of contamination of a hazardous waste site are determined and cleanup strategies are analyzed.

ROD (Record of Decision). Official document detailing the strategy for cleanup of a hazardous waste site under the IRP or the conclusions and decision based on EIS under NEPA.

Rotary-Kiln Incinerator. Two-chamber incinerator whose primary chamber is a refractory-lined cylinder that rotates about its centerline.

Rubbish. Variety of salvageable waste material such as broken glass, crockery, floor sweepings, paper, wrappings, containers, cartons, and similar articles not used in preparing or dispensing food. Subdivided into: combustible rubbish (burned readily in an incinerator), or noncombustible rubbish (cannot be burned at ordinary, 800 to 1800 F, incinerator temperatures).

Salvage or Salable Materials. Metal scrap, scrap lumber, crating materials, empty barrels, boxes, textile bags, waste paper, cartons, kitchen waste, and similar materials which are reclaimable or have sales value for basic material content. These items are processed through Defense Reutilization and Marketing Office (DRMO) and disposed of in accordance with Defense Reutilization and Marketing Manual (DOD 4160.21-M).

Sanitary Landfill. Facility for the disposal of solid waste which meets the criteria of Section 6944 of RCRA; i.e., there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.

SARA (Superfund Amendments and Reauthorization Act (1986)). Amended CERCLA, established standards for cleanup activities and stipulated conditions for off-site disposal of wastes.

Scavenging. Uncontrolled and unauthorized removal of materials at any point in the solid waste management system.

Scrap. Discarded or rejected material or parts of material that result from manufacturing or fabricating operations and are suitable for reprocessing, but excluding paper, cardboard, newspaper, and all high-grade paper to be source separated in accordance with EPA solid waste guidelines.

Scrubber. Any of several forms of post-combustion devices that cause sulfur in gaseous emissions to react with other chemicals to form either a waste product or, in newer technologies, a reusable byproduct.

SDWA (Safe Drinking Water Act (1974)). This Act sets drinking water regulations for any pollutants that may have an adverse effect on human health or negatively affect the aesthetic quality of drinking water.

SEA. Selective enforcement audit.

Secondary Standards. Related to aesthetics, smell and beauty. Standards generally not directly related to human health.

Secondary Treatment. Biological processing of wastewater that reduces the amount of soluble oxygen-demanding materials and suspended solids by 85 percent. This is the minimum level of municipal sewage treatment required under the Clean Water Act. Publicly owned sewage treatment plants were required to provide secondary treatment by 1 July 1988. Not all plants have complied.

Section 404. Clean Water Act section establishing a permit program governing dredging and filling of rivers, streams and other waters. The 404 program is aimed at protecting water and adjacent wetlands from adverse environmental effects resulting from modifications of waterways. The Army Corps of Engineers issues 404 dredging and filling permits, which the Environmental Protection Agency, the Fish and Wildlife Service and other agencies may review and comment upon. EPA can veto Corps of Engineers' issued permits.

Sham Recycling. Pretending to process a hazardous waste for recycling when the actual intent is disposal. Sham recycling developed because recycling is exempt from the strict hazardous waste regulations in the Resource Conservation and Recovery Act.

Short Ton. 2,000 pounds.

Silviculture. Forestry.

SIP. *See state implementation plan.*

SIP call. An EPA action requiring a state to resubmit part or all of its SIP to demonstrate attainment of the National Ambient Air Quality Standards by the statutory deadline.

Smog. Air pollution generated by motor vehicles, industrial activity and other sources over urban areas. One of its major components is ozone. The term was coined by combining "smoke" and "fog," which smog often resembles. *See ozone.*

SNUR (Significant New Use Rule). Requirement under the Toxic Substances Control Act (TSCA) that the Environmental Protection Agency (EPA) review and, if necessary, regulate an existing chemical in commerce if its use, production or exposure to the population changes.

SO_2. *See sulfur dioxide.*

SOCMI. Synthetic organic chemical manufacturing industry.

Solid Waste. Materials that are discarded by being abandoned or by being recycled, or are inherently waste-like. In the case of ordnance, abandoned means to destroy or accumulate before or in lieu of destruction. Recycled means to use, reuse, ore reclaim certain types of materials in certain limited cases as described in Table 1 of 40 CFR 261.2. Since ordnance is not a type of material listed in Table 1, its recycling does not normally make it a solid waste under RCRA. Unused ordnance is normally not inherently waste-like.

Solid Waste Management. Purposeful, systematic control of the generation, storage, collection, transport, separation, processing, recycling, recovery, and disposal of solid wastes.

Solid Waste Management Facility. Broadly defined. Includes any: (1) resource recovery system or component, (2) system, program, or facility for resource conservation, and (3) facility for the collection, source separation, storage, transfer, processing, treatment, or disposal of solid wastes, including hazardous wastes.

Solid Waste Management Unit. Any unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Solidification. Process for stabilizing waste materials to prevent migration of contaminants.

Solvent. Liquid capable of dissolving solids or other liquids.

SO_x. Sulfur oxides.

SPCCP (Spill Prevention Control and Countermeasures Plan). Document which inventories oil and hazardous substance storage and provides procedures to prevent spills and releases of these products.

Specially Designated Landfill. Disposal area where long-term protection is provided to surface and subsurface waters from pesticides, pesticide containers, and pesticide-related wastes deposited there. The facilities must comply with EPA's Guidelines for the Land Disposal of Solid Wastes prescribed in 40 C.F.R. Part 241.

SPUDA. The Special Property Utilization and Disposition Account previously named the Special Defense Property Disposal Account.

STAPPA (State and Territorial Air Pollution Program Administrators).

Stage I Controls. Equipment to control and capture gasoline vapor during bulk gasoline transfer operations.

Stage II Controls. Gasoline-pump nozzles and hoses to capture vapors during refueling. The same vapors can be controlled through onboard systems (i.e. canisters built into new vehicles).

State Implementation Plan (SIP). State's detailed plan for meeting National Ambient Air Quality Standards under the Clean Air Act (CAA). Sips must be reviewed and approved by EPA.

Static-Fire (SF) Functioning an ordnance item, such as a rocket, missile, or catapult while it is securely fastened to prevent flight for the purpose of testing or treatment.

Stationary Source. Any building, structure, facility or installation that emits or may emit an air pollutant for which an NAAQS is in effect.

Stratosphere. Region of the atmosphere above the troposphere. The stratosphere is located about seven miles above the earth and contains relatively large amounts of ozone, which protects the earth from excessive ultraviolet radiation. *Compare with troposphere.*

Strict, Joint and Several Liability. Describes liability for cleanup of hazardous substances under CERCLA, and liability for pollution damage in many states. Strict liability means a person is responsible for all damages stemming from his activity, regardless of whether he acted carelessly or unreasonably. Joint and several liability means any person found liable can be required to pay all of the damages suffered by the plaintiff; it is imposed when there are multiple actors who have contributed to an indivisible harm (when the specific harm contributed by each defendant cannot be determined) suffered by the plaintiff.

Sulfates. Naturally occurring inorganic constituent found in soils and groundwater.

Sulfur. Element present in varying quantities in coal, contributing to environmental degradation when burned. Low sulfur content is 1 percent or less, medium is 1 - 3 percent and high is above 3 percent.

Sulfur Dioxide. Gas that is produced when fossil fuels, such as coal and oil, are burned. SO_2 is the main pollutant involved in the formation of acid rain. SO_2 also irritates the upper respiratory tract and causes lung damage, according to EPA studies. The largest source of SO_2 in the United States is coal-burning electric utilities.

Superfund. Informal name of the trust fund used to pay for non-federally owned abandoned hazardous waste site cleanups by the EPA and pay costs of the CERCLA program. Revenues come mainly from taxes on petroleum and feedstock chemicals, a broad-based tax on corporate income, and general revenues. Created by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), the Superfund Amendments and Reauthorization Act of 1986 (SARA) reauthorized appropriations for Superfund for five years. The 1991 budget reconciliation act extended the authorization for appropriations through fiscal 1994, and the authority to collect Superfund taxes through December 31, 1995.

Surface Water. Water contained in rivers, streams, etc.

Tailings. Sand-like waste particles left over from the milling of mineral ores. Many tailings are considered hazardous waste (e.g., uranium mills).

Tailpipe Standards. Emissions limitations applicable to engine exhausts from motor vehicles.

TCP. *See transportation control plan.*

Technology-Forcing. Describes cleanup requirements intended to encourage innovation in pollution control technology. An example, in the Clean Air Act, is a provision that allows new and modified pollution sources to comply with national emissions limits with any technology they choose.

Teratogen. An agent that causes structural or functional damage to the embryo or fetus.

Therm. 100,000 Btu, or about 100 cubic feet of natural gas.

Thermal Treatment. the treatment of explosive ordnance that uses elevated temperatures as the primary means to change the chemical, physical, or biological character on composition of the explosive ordnance. Examples of thermal treatment processes are incineration, OB, OD SF, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge. (40 CFR 260.10)

1383 Report. Five-year environmental master plan developed by the installation to document the status of and identify funding requirements for environmental projects. Part of the OMB-A-106 process.

Threatened species. Animal populations may be determined to be either threatened or endangered under the Endangered Species Act. Populations listed as threatened are less severely depleted than populations classed as endangered. *See endangered species.*

Treat. Conducting a methodology, technique, or process designed to change the physical, chemical, or biological character or composition of a material to recover energy, render material less or non-hazardous, or reduce material volume. (40 CFR 260.10)

Treat In Place. Destruction of explosive ordnance where it is found because it is too dangerous to move.

Treatment of Hazardous Waste. Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological characteristics or composition of any hazardous waste to neutralize the waste or render it nonhazardous, safe for transport, amenable for recovery or storage, or reduced in volume.

Total Suspended Particulates (TSP). Particulate matter in the ambient air. The previous national ambient air quality standard for particulates was based on TSP levels; it was replaced in 1987 by an ambient standard based on PM-10 levels. *Compare with PM-10.*

Toxic Pollutant. Pollutant or combination of pollutants that may cause death, disease, physiological malfunctions, behavioral abnormalities or birth defects in organisms. Organic and inorganic chemicals, including heavy metals, are the most common toxic water pollutants.

Transportation Control Plan (TCP). Measure adopted by a locality to reduce the amount or improve the flow of traffic to improve air quality; e.g., public transit, right turn on red, bus lanes, or high occupancy vehicle (HOV) or car pool lanes.

Treatment, Storage and Disposal Facility (TSDF). Facility permitted under the Resource Conservation and Recovery Act to handle hazardous waste.

Troposphere. Layer of the atmosphere closest to the earth's surface, within which lower temperatures occur at increasingly higher altitudes. *Compare with stratosphere.*

TSCA (Toxic Substances Control Act of 1976). (Pronounced "tosca"). Gives the Environmental Protection Agency (EPA) authority to require industry to: test potentially harmful chemicals; notify EPA of intent to manufacture or process such chemicals;, and limit or prohibit manufacturing, processing, distribution, use or disposal of such chemicals. This Act regulates PCBs.

TSD (Treatment, Storage, Disposal). Hazardous waste operations requiring permitting under RCRA.

TSDF. *See treatment, storage and disposal facility.*

TSP. *See total suspended particulates.*

UIC (Underground Injection Control). The UIC program, administered by the Environmental Protection Agency and states under the Safe Drinking Water Act, regulates wells used for disposing of wastes underground. Wells are classified based on depth and use.

Underground Injection. Placing fluids below the surface of the ground through wells. Fluids injected include hazardous wastes, brine from oil and gas recovery, liquids used in mining, radioactive waste, sewage, natural gas and oil products, and storm water runoff. EPA and states regulate underground injection under the Safe Drinking Water Act and Resource Conservation and Recovery Act. A study for EPA found that 59 percent of the total volume of hazardous wastes disposed in the United States were disposed by underground injection in 1981.

Uniform Hazardous Waste Manifest. 40 C.F.R. Part 262, Appendix - Uniform Hazard Waste Manifest and Instruction (EPA Forms 8700-22 and 8700-22A) must be completed before transporting, or offering for transport, hazardous waste off the site of generation.

Urban Airshed Model. Sophisticated air quality model that takes meteorological conditions into account and predicts changes in air quality at different locations. It can demonstrate progress in terms of declining peak ozone concentrations, as well as indicate how peak ozone concentrations will change across an entire urban area. It is costly, requires much more data, computer validation and computer capacity than other models; therefore, it has not been used widely by the states.

Used Oil. Any refined oil which, through use, is contaminated by physical or chemical impurities. RCRA places special emphasis on the recycling of used oil.

USFS (U.S. Forest Service). Agency of the Department of Agriculture, that manages 191 million acres in 159 national forests and 19 national grasslands. The national forests are managed for recreation and for production of timber, mineral and petroleum resources. The service manages 33 million acres of wilderness.

USFWS. U.S. Fish and Wildlife Service. *See FWS.*

UST (Underground storage tanks). Below-or-inground tanks, storing oil or hazardous substances. Regulated under the 1984 amendments to the Resource Conservation and Recovery Act (RCRA). Cleanup program for leaking petroleum tanks was enacted as part of CERCLA reauthorization (SARA).

Vector. Carrier, usually an arthropod (insect), that is capable of transmitting a pathogen from one organism to another.

Vibroelutriator. Dry classifier used to separate a light fraction from a heavy fraction. The material on a screen is vibrated while an air stream moves past the screen. The light fraction is removed by the air stream while the heavy fraction falls from the bottom of the moving air column.

Vinyl Chloride. Flammable, explosive gas used in adhesives and is a hazardous air pollutant.

VOC. *See volatile organic compound.*

Volatile Organic Compound (VOC). Group of chemicals that react in the atmosphere with nitrogen oxides, heat, and sunlight to form ozone. Also are referred to as hydrocarbons.

Waste Load Allocation. Mathematical modeling that determines the maximum amount of wastes each water pollution source on a river or stream can discharge while meeting water quality standards.

Waste Reduction, Waste Minimization, Source Reduction. No standard definitions exist for these three terms. Generally, all three refer to practices that reduce, avoid or eliminate hazardous waste. They can refer to techniques that reduce the generation of wastes; or practices that reduce the amount of waste that must be disposed. In the latter case, recycling would be included.

Water Pollutants. The 1977 clean water amendments specify three classes of pollutants to be controlled. They are: (1) Conventional pollutants (such as fecal coliform bacteria), to be controlled by "Best Conventional Technology"; (2) Toxic pollutants (including pesticides, heavy metals and other substances), to be controlled by the more stringent "Best Available Technology"; and (3) Non-conventional pollutants, (a catch-all category for such substances as ammonia, nitrogen, and phosphorus that can cause excessive algae growth), to be controlled by Best Available Technology.

Water Quality Standards. Determinations made by the states of the uses to be made of particular water bodies and the limits on pollutants necessary to achieve and protect the uses. In cases where technology-based controls will not be stringent enough to make water safe for designated uses, the water quality-based approach is used to develop more stringent effluent limits for dischargers. National Pollutant Discharge Elimination System permits based on water quality standards provide greater levels of protection than permits based solely on technological considerations. *See also designated uses, NPDES,* and *BAT.*

Wet Cyclone Scrubber. Device designed for the removal of air-suspended particulates.

Wetlands. Lands that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wilderness. The Wilderness Act of 1964 defines wilderness as a congressionally designated area of federal land "where the earth and its community of life are untrammeled by man, where man himself is a visitor and does not remain." The National Wilderness Preservation System encompasses 94 million acres managed by the National Park Service, U.S. Forest Service, Bureau of Land Management and the U.S. Fish and Wildlife Service.

WL (Working Limit). Standard by which radon levels are measured and compared.

WQS. *See Water Quality Standards.*

WSA (Wilderness Study Area). Candidate for designation under the Wilderness Act of 1964. Pending congressional action, WSAs are protected from new development.

Yellow Book. Short name for EPA's November 1988 *Federal Facilities Compliance Strategy.*