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Capt John R. Perry

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CHAPTER 1

ENVIRONMENTAL ISSUES, OBJECTIVES, AND OVERVIEW

PURPOSE OF THIS GUIDE

The Environmental Contracting Reference Guide provides an overview of environmental issues confronting Air Force organizations, including operational contracting offices. This guide can be used by anyone in contracting from the commander to the contract specialist; any person working environmental procurements or issues.

This guide is not an administrative, technical, or regulatory directive. It will not make you an environmental contracting expert; you do not need to be. There are many technical experts within the Air Force, DOD, and the Federal Government that can assist you when addressing environmental issues**.** It will provide you with information useful in understanding the base environmental program. It will summarize key issues, terms, and regulations. **This guide will help you ask additional questions that may reduce potential contracting problems in the future.** It will provide you with a source of technical experts that can help answer these questions.

Environmental consideration must be given to everything that Contracting does. This includes the way we review specifications, administer contracts, purchase products, and ensure our contractors meet environmental requirements. In many ways environmental contracting is not any different, than say, buying construction, services, or commodities. Environmental issues are very similar to the process we, in contracting, go through to train our customers. Like contracting, environmental issues are driven by a wide variety of laws and regulations that impact every project and decision our customers make. How can we comply with these laws if we do not know what they are and what we are liable for under each? In addition, many actions taken by the base environmental organizations are beyond their control. This is due to the many federal, state, and local regulatory bodies that set requirements and enforce these laws. This results in a degree of complexity that is difficult to incorporate contractually. **If there is an environmental issue in any of your contracts, no matter what the dollar value, talk to legal.** They are there to help you comply with the maze of environmental laws. These key environmental issues require a general understanding by the contracting community if we are to provide efficient and timely contracting support.

INTRODUCTION

The Federal environmental objective is to “Protect the Environment.” This objective starts at the highest levels of leadership and concludes with you!

The Problem

"We have, in the course of a single life span managed to grasp the levers of our own destruction; first, in the form of nuclear weapons; and second, in the form of the industrial destruction of the biosphere... We must remember what we cannot forget."

- Senator Albert Gore, Jr., 1989

The Priority

Today... in the Air Force **Environmental Cleanup, Compliance, Pollution Prevention, and Reduction of the Solid Waste Streams** have the highest priority from the Secretary of Defense throughout all military services.

The mission of the Air Force has resulted in operations that generated toxic and hazardous materials. In the past, many substances were released into the environment on our bases through disposal methods that contaminated water supplies, soils, and facilities. Recognizing this, the Air Force has established itself in the role of environmental leader within the DOD and the Federal Government. Former Chief of Staff General Merrill A. McPeak, defined the Air Force goals for environmental leadership in a policy letter:

1. Complete cleanup of the past. Restore our contaminated sites.
2. Ensure our present operations comply with all federal, state, and local environmental standards. No notices of violation are the measure of merit.
3. Prevent future pollution by reducing generation of hazardous wastes to as near zero as feasible.
4. Use the Environmental Impact Analysis Process (EAIP) (plan before you act) to support Air Force decision-making and to protect the environment.
5. Protect and enhance our natural resources including: wetlands, historic sites, and endangered species through sound stewardship and management.

The final paragraph of the policy letter spells out our responsibilities as members of the Air Force:

Our Policy

"Every member of the Air Force community is responsible for the safe, efficient use of our scarce resources in meeting the Air Force mission. Proper attention to the environment today will ensure that we can perform our mission in the future. I expect the Air Force to lead the DOD in environmental protection and compliance. Your support is essential in meeting that goal."

-Merrill A. McPeak, General, USAF Chief of Staff,
Policy letter to All MAJCOM Commanders, 17 April 1991.

ENVIRONMENTAL QUALITY OVERVIEW

The heart of the Air Force environmental program centers around what is called the "four pillars." These four pillars are the foundation for meeting federal environmental requirements.

CLEAN UP	Dealing with the Past
CONSERVATION	Planning and Protection
COMPLIANCE	Working with the Present
POLLUTION PREVENTION	Insuring the Future

The four pillars are summarized below. More information on each area is addressed in the guide.

CLEAN UP

The goal of the Air Force is the "complete clean up of the past" (General McPeak). This means the remediation of all sites that pose a threat to public health, welfare, or the environment. With over 4900 identified sites and an annual budget exceeding $2 billion, this is a monumental task. The original goal was to restore at least 10 percent of Air Force waste sites annually completing all sites by the year 2000. This goal may be beyond reach, as more sites are identified and the complexities of the existing sites are exposed.

The Air Force program for environmental clean up is the Installation Restoration Program (IRP). IRP is designed to meet the requirements for site clean up under the Comprehensive Environmental Response, Compensation Liability Act (CERCLA) and the Superfund Amendments & Reauthorization Act (SARA). Funding for these programs comes from the Defense Environmental Restoration Program (DERP).

A standard IRP project is comprised of a number of steps. These include:

1. Discovery and Notification
2. Preliminary Assessment/Site Inspection
3. Remedial Investigation/Feasibility Study
4. Remedial Design/Remedial Action

Other important milestones within an IRP project are the development of the Federal Facilities Agreement (FFA), Record of Decision (ROD), installation or project community relations plan, and the Technical Review Committee (TRC). In addition, while many bases have contracted for IRP services, the vast majority have agreements for contract services with federal, DOD, or Air Force Service Centers. The most actively used includes the Air Force Center for Environmental Excellence, and the Army Corp of Engineers. Chapter 6 will cover IRP in more detail.

CONSERVATION

Protect and enhance our natural and cultural resources including: wetlands, historic sites, and endangered species through sound stewardship, management, and the use of the environmental impact analysis process.

Conservation focuses on the development of sound planning practices that incorporate environmental considerations into all aspects of base operations and the overall mission.

Tools for conservation planning and implementation include: the Air Force, MAJCOM, and Base Environmental Protection Committees, the Base Comprehensive Plan, and the many organizations supporting the base environmental program.

The second area of conservation is the protection of our natural and cultural resources. Public concern over sensitive resources like endangered species, wetlands, historic properties, and the cultural history of native Americans have resulted in enactment of legislative acts that impacts installations. **These laws need to be considered when planning future construction and service contracts.** Congress has established the Legacy funding program to protect and enhance these resources. More information on this subject is covered in Chapter 4.

COMPLIANCE

Air Force Goal: To ensure our present operations comply with all federal, state, and local environmental standards. No notices of violation are the standard of merit.

The Air Force goal is to comply with all federal and state laws, executive orders, DOD regulations and guidelines, and Air Force policy. Compliance applies to our operation and mission requirements, how we do things, and to our past that requires the restoration of sites contaminated by previous Air Force operations. Compliance is one of the major challenges facing Air Force installations. Congress, the Environmental Protection Agency, states, and political and environmental groups will continually expand the portfolio of environmental laws to meet the challenges of a clean and healthy environment.

The compliance challenge facing Air Force bases is easily illustrated by the amount of and extended time line of federal environmental legislation. Since the 1970's over 50 environmental laws have been enacted. Throw in the other statutes, and executive orders and this creates a compliance challenge. These laws called "environmental drivers" in this guide are the major environmental laws and regulations designed to protect human health and the environment. They are briefly summarized in this chapter to show how it impacts the Air Force and Contracting.

POLLUTION PREVENTION

Prevent future pollution by reducing use of hazardous materials at the source, and prevent releases of pollutants into the environment to as near zero as feasible.

Pollution prevention focuses on issues within all areas of Air Force operations and the Air Force acquisition process. New weapons systems will to the maximum extent possible reduce hazardous materials and use alternative materials and processes. Existing systems, are being evaluated to use alternative materials and substances. These results are being incorporated into MILSPECS, MILSTANDARDS, and Technical Orders. The third area is the reduction of hazardous waste use and waste generation at all installations. New programs at installation level include: the hazardous material pharmacy, affirmative

procurement, recycling programs, and the purchase of new technologies to reduce hazardous waste streams.

The Four Pillars involve all environmental issues, so what is Contracting's role in meeting the Air Force's environmental objectives? Contracting needs to provide active support in planning, procuring, and administering environmental projects for products and services. Environmental planning should be incorporated in all acquisitions, from the smallest purchase that may have recycled materials to major construction projects that addresses environmental laws, processes, and materials. It can also include insuring that all contracts are structured so that contractors understand and comply with all federal, state, and local environmental laws and regulatory authority's responsibilities. Environmental purchases cover a broad product and service base. This can include buying environmentally approved products from lead-free crayons to permits for a variety of air, water, and hazard material requirements. Development of testing and analysis contracts for hazardous wastes. Finally, the procurement and administration of multi-million dollar remediation contracts. Incorporate environmental planning into all phases of the acquisition process, even if it is not a specific environmental purchase. **The result will not only help the base but also the environment. "THINK GREEN!"**

THE ENVIRONMENTAL DRIVERS

The driving force behind the United States environmental thrust is the vast number of environmental laws, programs, acts, regulations, and executive orders. It is a dynamic and constantly changing field of study and an even more dynamic political process (it could make portions of this publication obsolete before it's published.)

Environmental regulations impact virtually every operation throughout your installation. Your base customer's requirements are driven to meet these vast number of laws. Many of your customers may have limited knowledge of environmental regulatory requirements. Your understanding of these environmental laws may prevent possible administrative or legal action to base personnel, and senior leadership. You are not an environmental policeman, but do not hesitate to question a purchase when you have doubts about its coordination or possible environmental impact on the base.

Contracting's responsibilities are not limited just to our customers. Our contractors must comply with all environmental laws and regulations while performing on base. Failure to do so can have an adverse affect on the base. The following list of important environmental laws passed by Congress promulgates federal regulations and additional DOD and Air Force directives. We will describe each major environmental law that will make an impression on the base. Each law will have its primary requirements highlighted. These requirements can impact the operation of the contracting squadron. This section will conclude with a brief, easy-to-remember summary of the primary environmental laws.

National Environmental Policy Act (NEPA) is the first and basic national policy for the protection of the environment. NEPA requires federal agencies to consider environmental impacts in making decisions. NEPA mandates environmental impact analysis and supporting documentation (Environmental Impact Statements). A key area of NEPA is that it provides the statutory basis to force reviews of federal decisions that

may impact the environment. It also establishes the President's Council on Environmental Quality (CEQ) to appraise the programs and activities of the Federal Government in relation to the policies set forth in the Act.
Code of Federal Regulations: Title 40, Parts 1500-1508
Air Force Directives:
AFPD23-3 Pollution Abatement and Environmental Quality OPR: CEV
AFI 32-7004 Environmental Impact Analysis Process OPR: CEV
AFI 32-7062 Air Force Comprehensive Planning OPR: AFCEE/DGP

Clean Air Act of 1970 as amended through 1990 (CAA) requires prevention or control and abatement of air pollution from stationary and mobile sources and protection from emissions that pollute ambient, or outdoor air. This also includes asbestos removal and disposal regulations. General responsibility for enforcement and implementation of the CAA rests with the states or Regional Air Pollution Control Authorities. The states obtain their authority from EPA with approval of their State Implementation Plan.

The 1990 Amendments added new provisions and changed existing ones that have impacted federal and commercial industrial operations. New provisions include the development of an acid rain control program, a state-run program requiring permits for the operation of many sources of air pollutants and fees to cover administrative costs.

Changes to existing provisions include: the classifying of areas that exceed air quality standards and to develop deadlines to address the problem; develop tighter automobile emission standards including reformulated and alternative fuels; revise the air toxic regulation section; change ozone protection standards with the phase-out of most ozone-depleting chemicals; and update enforcement provisions that gives EPA the authority to assess administrative penalties. Major CAA provisions and programs that affect the installation include:

- National Ambient Air Quality Standards (NAAQS): EPA must set these standards for each pollutant that it determines may reasonably be anticipated to endanger public health or welfare. Criteria pollutants under the NAAQs include: particulates, sulfur oxides, nitrogen oxides, lead, carbon monoxide, and ozone.
- State Implementation Plan (SIP) process: SIP is used to implement state and federal controls on sources that must meet the above NAAQS.
- National Emission standards for Hazardous Air Pollutants (NESHAPS): are air pollutants that are not identified under NAAQ. However, they are reasonably expected to adversely impact human health and the environment. Common substances identified include: asbestos, mercury, benzene, vinyl chloride and other substances. The 1990 Clean Air Amendments identified 189 additional substances to be regulated by the year 2000.
- Permits: CAA requires States to administer a comprehensive permit program for the operation of sources emitting air pollutants. Sources are classified by the amount of air pollution emitted. Permits establish which air pollutants sources are allowed to emit and require sources to submit compliance plans. Permits are limited to five years or less; sources are required to renew permits upon expiration.

Code of Federal Regulations: Title 40, Parts 50-52, 60-80, 82, 85
Air Force Directives:

AFR 19-6 Air Pollution Control Systems for Boilers and Incinerators OPR: CE
AFI 32-7080 Pollution Prevention Program, OPR: CEV

Clean Water Act of 1972, as amended through 1987 (CWA) is the principal law governing pollution of the nation's waterways. Working in partnership with the states, the CWA, also known as the Federal Water Pollution Control Act, regulates the discharge of wastewater from any direct point source including industrial facilities, Air Force installations, and sewage treatment plants. The CWA requires reporting and cleanup of oil and hazardous substance spills in waterways and provides enforcement authority for the protection of waterways. States are required to develop nonpoint (i.e. stormwater runoff from urban, farmland, and forest areas) pollution management programs which also encourages ground water protection. Other requirements include:

- Permits, Regulations, and Enforcement: CWA states that all hazardous discharges into the nation's waterways are unlawful, unless specifically authorized by permit. Dischargers must obtain permits from EPA or qualified states under the Act's National Pollutant Discharge Elimination System (NPDES) program. The permit establishes effluent levels, maintenance of records, and use of monitoring procedures. Permits are issued for five years and require renewal. Separate permits are required for dredging or fill of waterways and wetlands.

Code of Federal Regulations: Title 40, Parts 110, 112, 116, 117, 122, 124. 125, 131, 133
Air Force Directives:
AFI 32-1067 Water Systems OPR: AFCESA/ENC
AFI 48-119 Environmental Pollution Monitoring (AFR 19-7) OPR: SGPA
AFM 88-11 Series Sanitary and Industrial Wastewater Supply OPR: AFCESA/EN
AFI 32-7041 Water Quality Compliance OPR: CEVC

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and Superfund Amendments and Reauthorization Act of 1986 (SARA) also known as "Superfund," regulates the prevention, control, and compensation relating to environmental pollution. CERCLA addresses past, present, and threatened releases of hazardous substances, pollutants, and contaminants that may pose an imminent and substantial danger to the public health and welfare. CERCLA establishes the National Priority List of hazardous sites, reportable quantities of hazardous substances, and the National Contingency Plan to control or eliminate these sites. See Chapter 6 for more information.

Code of Federal Regulations: Title 40, Parts 300, 302, 303, 310, 311
Air Force Directives:
AFI 32-4001 Disaster Preparedness Planning and Operations OPR: AFCESA/DXD
AFI 32-7020 The Environmental Restoration Program OPR: CEVR

Federal Insecticide, Fungicide and Rodenticide Act of 1972 (FIFRA) requires the licensing or registration and proper labeling of pesticide products and requires proper management of pesticide use, storage, and disposal.

Code of Federal Regulations: Title 40, Parts 165, 167, 171
Air Force Directives:

Noise Control Act 1972 (NCA) establishes a national policy to promote an environment free from noise that jeopardizes health and welfare and regulates noise emissions from commercial products such as transportation and construction equipment.

Solid Waste Disposal Act/Resource Conservation Recovery Act, 1976, as amended through 1984 (RCRA) establishes guidelines, standards, and permits for solid/hazardous waste generation, transportation, treatment, storage, and disposal. RCRA requires the EPA to establish a complete "cradle-to-grave" (from generation to disposal) management and tracking system for the treatment of hazardous waste. RCRA establishes the national policy to reduce or eliminate hazardous waste. Many states have assumed responsibilities for their hazardous waste programs. These programs, called Cooperative Agreements, assist in the program by operating the manifest system or evaluating permit applications. The Federal Facility Compliance Act is a major amendment under RCRA and places federal facilities under enforcement requirements under RCRA. RCRA also establishes guidance on the regulation of underground storage tanks.

- Hazardous Waste, Subtitle C of RCRA created the hazardous waste management program. A waste is hazardous if it contains one or more of the following characteristics: ignitable, reactive, toxic, and corrosive. It may qualify as hazardous if it is listed as one of 100 industrial process waste streams and more than 500 discarded commercial products and chemicals identified by EPA.

The Air Force, as a hazardous waste generator, must comply with regulations concerning record keeping; the labeling of wastes; the use of appropriate containers; the provision of information on the waste's general chemical composition to transporters, treaters, and disposers; and the use of a manifest system.

Transporters of hazardous waste also must meet RCRA standards. EPA and the Department of Transportation coordinated their regulations and established requirements for transport. Transport of hazardous waste requires the use of a manifest system. Wastes are tracked from the point of generation, along transportation routes, to the place of final treatment, storage, or disposal.

- Solid Waste: RCRA requirements prohibit the use of open dumps. Additional requirements call for landfills to have liners, leachate collection, groundwater monitoring, and corrective action standards.
- Treatment, Storage, and Disposal (TSD) Facilities are required to have permits to comply with operating standards, financial responsibilities, and closure requirements in accordance with EPA regulations. The goal is to minimize disposal of hazardous liquids and materials and to coordinate their disposal location based on their toxicity.
- Underground Storage Tanks (UST): Subtitle I established technical standards for USTs performance and management. Specific areas addressed include: release detection, design and construction of new USTs, upgrading existing tanks, release reporting, operation of USTs, corrective action, closure, and financial responsibilities of the owners.

Code of Federal Regulations:
(For Hazardous and Solid Waste) Title 40, Parts 241, 243, 247, 255-257, 259, 260-271,
(For Underground Storage Tanks) Title 40, Part 280

Air Force Directives
(For Hazardous and Solid Waste)
AFI 32-7042 Solid and Hazardous Waste Compliance OPR: CEVC

Federal Facilities Compliance Act (FFCA) is an amendment under RCRA and waives federal facility sovereign immunity. Federal, state, and local regulatory agencies have authority to enforce compliance upon federal agencies. The FFCA establishes criminal liability of federal employees to criminal prosecution under state solid or hazardous waste laws. It also establishes the requirement for annual Environmental Protection Agency Multi-Media inspections (all major environmental program areas are liable for review).

Safe Drinking Water Act of 1974 (SDWA) regulates drinking water quality from contaminants that may have an adverse effect on human health or negatively affect the aesthetic quality of drinking water. SDWA directs the EPA to develop: national drinking water regulations that establish maximum contaminant levels or treatment techniques; underground injection control regulations to protect underground sources of drinking water; and groundwater protection programs. SDWA prohibits the use of lead pipe, solder, and flux and requires plumbing materials to be lead free.
Code of Federal Regulations: Title 40, Parts 141 through 149
Air Force Directives:
AFM 88-10 Series on water supply
AFR 161-44 Management of Drinking Water Surveillance Program

Toxic Substances Control Act, 1976 (TSCA) authorizes EPA to screen existing and new chemicals used in manufacturing and commerce and to identify potentially dangerous products or uses that should be subject to federal control. TSCA regulates such hazardous substances as polychlorinated biphenyls (PCBs), asbestos, chlorofluorocarbons (CFCs), radon, lead, and other substances. TSCA requires testing of chemical substances entering the environment and regulates releases where necessary.
Code of Federal Regulations: Title 40, Part 280

Pollution Prevention Act (PPA) establishes national policy on the prevention or reduction of pollution at the source. It required the EPA to establish the Office of Pollution Prevention to develop and coordinate a nationwide pollution prevention strategy, and the key requirement to develop source reduction models. The focus outlined by Congress changed from an "end of pipe, repair of damage" requirement to the reduction of the generation of pollutants at the "point of origin" (source reduction.) Thus, source reduction is the first step in EPA's pollution prevention strategy. PPA also provides regulatory guidance on reducing the use of hazardous substances (EPA 17 Industrial Toxics Program), the generation of solid and hazardous wastes, and requirements for air emissions and wastewater discharges. The goal and steps of this act is to prevent, reduce, recycle, treat, and dispose of hazardous wastes.
Air Force Directives:

AFI 32-7080 Air Force Pollution Prevention Program OPR: CEV
Hazardous Materials Transportation Act provides overall requirements for the transportation of hazardous waste. It also identifies responsibilities of generators (Air Force Installations) that create hazardous waste and offer it for transport. Additional requirements identified in the act include: packaging, marking, and labeling hazardous waste; provides guidance on hazardous substance spills; and regulates the transportation of CERCLA hazardous substances. This act is regulated by the Department of Transportation.
Code of Federal Regulations: Title 49, Parts 171-179

Emergency Planning and Community Right to Know (EPCRA) establishes requirements for emergency planning, notification, inventory requirements, and Material Safety Data Sheets. These requirements are communicated to state and local environmental, health and safety, and emergency organizations. Each state operates a State Emergency Response Commission (SERC), designates emergency planning districts, and establishes Local Emergency Planning Committees (LEPCs). Air Force installations that store hazardous materials are required to notify the LEPC of their use. EPCRA maintains a national inventory of releases of toxic chemicals from manufacturing facilities. This information is used in the event of an environmental accident to plan and coordinate quick responses to limit potential health and safety risks.
Code of Federal Regulations: Title 40, Parts 355, 370, 372
Air Force Directives:
AFI 32-4002 Hazardous Material Emergency Planning and Response Compliance OPR: CEVC

Occupational Safety and Health Act (OSHA) governs issues related to occupational safety and health. The act requires that workers have a safe and healthy work environment. OSHA regulates worker exposure and identifies permissible exposure limits. OSHA has developed and published a series of occupational safety and health standards and requirements for Material Safety Data Sheets. The Act created NISOH, the National Institute for Occupational Safety and Health, that provides research and establishes standards for hazards in the workplace.
Code of Federal Regulations: Title 29, Part 1910, Subparts H, I, and Z
Air Force Directives:
AFOSH Standard 127-68 Chemical Safety

Endangered Species Act requires the protection and conservation of federally listed endangered and threatened plants and wildlife. This act requires coordination with the Departments of the Interior and Commerce and the United States Fish and Wildlife Service if a project impacts these categories.
Code of Federal Regulations: Title 50, Parts 17, 450 - 453
Air Force Directives:
AFR 126-1 Conservation and Management of Natural Resources OPR: CEV

National Historic Preservation Act (NHPA) is designed to protect, rehabilitate, restore, and reconstruct districts, sites, buildings, structures, and objects with historic significance. This act established the Advisory Council on Historic Preservation. Bases may nominate eligible properties to the National Historic register. This is the regulatory body at the federal level for overall cultural resource protection and management. NHPA requires bases to inventory all historical properties.
Code of Federal Regulations: Title 36, Parts 60 61, 63, 65, 68,78, and 800
Air Force Directives:
AFR 126-7 Historic Preservation (AFI 32-7065) OPR: CEV

Archeological Resources Protection Act provides for the protection of United States archaeological resources and sites. Projects that may disturb an archaeological site require a permit. Federal agencies are required to survey sites to determine the nature and extent of archeological resources on federal property.
Code of Federal Regulations:
Title 36, Part 79, Title 43, Part 7
Title 43, Part 7
Air Force Directives:
AFR 126-7 Historic Preservation (AFI 32-7065) OPR: CEV

EXECUTIVE ORDERS

The Executive Branch has been active in meeting environmental requirements specified in the federal laws. The Executive Orders mandate requirements for federal agencies including the Air Force. We will briefly summarize some of the key executive orders.

Executive Order 11593 Protection and Enhancement of the Cultural Environment directs federal agencies to provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the nation. Agency responsibilities include: locate, inventory, and nominate to the National Register all properties under their control that meet the criteria for nomination.

Executive Order 11990 Protection of Wetlands directs federal agencies to conduct surveys of all federal wetlands and to avoid construction on these lands.

Executive Order 12088 Federal Compliance with Pollution Prevention Standards requires federal facilities to comply with applicable federal, state, and local pollution control standards.

Executive Order 12856 Federal Compliance with Right-to-Know laws and Pollution Prevention Requirements is the central directive for pollution prevention for federal agencies. It requires federal agencies to develop specific plans, and to set goals for eliminating acquisition, manufacturing, processing, or use of toxic chemical, and extremely hazardous substances. It also requires agencies to meet reporting procedures under EPCRA and PPA.

Executive Order 12873 Federal Acquisition, Recycling, and Waste Prevention directs federal agencies to implement acquisition programs aimed at encouraging new technologies and building markets for environmentally preferable and recycled products. Responsibilities include: the review of specifications, product descriptions, and standards; establishing goals for waste prevention; the purchase of recycled products; and reporting progress in meeting these goals.

Executive Order 12902 Energy Efficiency and Water Conservation at Federal Facilities requires federal agencies to develop and conduct surveys and audits with the goal of increased conservation and efficient use of energy and water sources. Specific usage reduction goals are established for each area.

Executive Order 12843 Procurement Requirements and Policies for Federal Ozone-Depleting Substances requires federal agencies to change their procurement policies to reduce the use of ozone depleting substances.

Executive Order 12844 Federal Use of Alternative Fueled Vehicles requires federal agencies to be the leader in the use of alternative fuel vehicles.

Executive Order 12845 Purchase of Energy Efficient Computer Equipment: This is known as the Energy Star Computer Program. These are computers and printers that save energy by powering down when not in use.

Executive Order 12902 requires the Department of Energy to implement this order through the Federal Energy Management Program. The order requires each federal agency to develop and implement a program with the intent of reducing energy consumption by 30 percent by the year 2005. The goal is to increase the use of solar and other renewable energy sources while reducing the use of petroleum.

The following is an easy ways to remember key environmental laws.

- National Environmental Policy Act (**NEPA**): You must tell what you're going to do before you do it.
- Pollution Prevention Act (**PPA**) If you don't buy hazardous it won't be hazardous.
- Occupational Safety and Health Administration (**OSHA**): You must tell how you're doing it.
- Clean Air Act (**CAA**): You don't put anything up the stack.
- Clean Water Act (**CWA**): You don't put it out the pipe.
- Safe Drinking Water Act (**SDWA**): You don't put it in a hole in the ground.
- Resource Conservation and Recovery Act (**RCRA**): You don't put it in anywhere else.
- Hazardous Material Transportation Act (**HMTA**): You don't carry it around.
- Toxic Substance Control Act (**TSCA**): If it is such bad news, don't make it in the first place.
- Comprehensive Environmental Response Compensation and Liability Act (**CERCLA**): If you put it in the ground in the past, dig it up.
- Superfund Amendments and Reauthorization Act (**SARA**): Now, tell everyone what you're doing.

- Finally there is the Federal Facilities Compliance Act (**FFCA**) - This waives our sovereign immunity under RCRA and puts the responsibility squarely on the shoulders of base leadership. This is affectionately known as "stars behind bars." Be smart. Don't let this happen.

ACRONYMS

The environmental field is full of unique acronyms, definitions and phrases. Before we get into a more indepth review of what environmental is all about, take a few minutes and review the acronyms and definitions. It will make you more familiar as we plunge into the following chapters.

AF	Air Force
AFCEE	Air Force Center for Environmental Excellence
AFCESA	Air Force Civil Engineering Support Agency
AFIT	Air Force Institute of Technology
AFOSH	Air Force Occupational Safety and Health
ARAR	Applicable or Relevant and Appropriate Requirement
ARCS	Alternative Remedial Contracting Strategy
AICUZ	Air Installation Compatible Use Zone Program
BCP	Base Comprehensive Plan
BEE	Bio-Environmental Engineer
BOD	Biological Oxygen Demand
BOR	Bureau of Reclamation
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEV	Civil Engineering Environmental Flight
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
COE	Army Corp of Engineers
CSI	Construction Specification Institute
CWA	Clean Water Act
DD	Decision Document
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOE	Department of Energy
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment

EC	Environmental Coordinator
ECAMP	Environmental Compliance Assessment and Management Program
ECP	Environmental Compliance Program
EIAP	Environmental Impact Analysis Process
EIL	Environmental Impairment Liability
EIS	Environmental Impact Statement
EMO	Environmental Management Office
EPA	Environmental Protection Agency
EPC	Environmental Protection Committee
ERCS	Emergency Response Cleanup Services
ETCM	Estimated Total Cost Method
FFCA	Federal Facilities Compliance Act
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FONSI	Finding of No Significant Impact
FFA	Federal Facilities Agreement
FWPCA	Federal Water Pollution control Act
HAZCOM	Hazardous Communications Program
HAZMIN	Hazardous Minimization
HM	Hazardous Materials
HAZWRAP	Hazardous Waste Remedial Action Program
HRS	Hazardous Ranking System
HSC	Human Systems Center
HSD	Human Systems Division
HSWA	Hazardous and Solid Waste Amendments
HTRW	Hazardous, Toxic and Radiological Waste
HTW	Hazardous and Toxic Waste
HW	Hazardous Waste
IAG	Interagency Agreement
IRP	Installation Restoration Program
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Command
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NFA	No Further Action
NON	Notice of Non-compliance
NOV	Notice of Violation
NPDES	National Pollution Discharge Elimination System

NPL	National Priorities List
OA	Opportunity Assessment
ODC	Ozone Depleting Compound
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PA/SI	Preliminary Assessment/Site Investigation
POL	Petroleum, Oils, and Lubricants
ppB	Parts Per Billion
ppM	Parts Per Million
PPP	Pollution Prevention Program
PRP	Potentially Responsible Party
RAC	Remedial Action Contractor
RACER	Remedial Action/Cost Estimating Risk Model
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
RRRP	Resource Recovery and Recycling Program
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SWMU	Solid Waste Management Unit
TERC	Total Environmental Restoration Contract
TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage and Disposal
USGS	United States Geological Survey
UST	Underground Storage Tank

SUMMARY

Environmental compliance starts with understanding the large number of federal laws and regulations. Many of these laws will have a direct impact on contractor performance while working an installation contract. The environmental program has a language all of its own. You will hear these terms and acronyms spoken frequently at meetings both dealing directly with environmental issues, but also more commonly discussed during the daily operations on the base. Take time to learn these terms. It will better prepare you to support your customers. Definitions are found at the end of this guide.

CHAPTER 2

FEDERAL, STATE, DOD, AND AIR FORCE ENVIRONMENTAL PLAYERS

INTRODUCTION

This chapter covers the key players that are responsible for the compliance and enforcement of federal environmental legislation, the federal and state regulators. We will also discuss some of the key federal service centers. Finally, we will briefly cover the key DOD and Air Force agencies responsible for environmental compliance and clean up.

THE ENVIRONMENTAL REGULATORS

Federal, state, and local environmental regulators carry the broad responsibility for ensuring compliance with environmental laws and the protection of human health and safety. They are semi-autonomous organizations that have a broad range of powers. These agencies have what is called the "power of the pen." This can result in enforcement action taking place without prior coordination with base leadership if the regulators believe there is a threat to the health of the population or the environment. These powers can range from issuing administrative orders and fines, notice of violations and notices of noncompliance for failure to comply, to shutting down facilities for endangering the public health. These agencies can not be taken lightly. The key to establishing a good working relationship and reducing the power of the pen is to create professional, easily understood communication channels between the Air Force and these regulators.

The Environmental Protection Agency is the lead federal agency for the protection and improvement of the environment. Its authority comes from the many federal laws that were discussed in Chapter 1. The EPA regulations are the baseline for environmental laws used by federal and state agencies.

The EPA has delegated many of the legislative responsibilities to the state environmental agencies. Each state is unique in organization, compliance, and enforcement philosophy. States are organized independently of each other. This is based on the complexities found within each of their state boundaries. A point you will hear repeatedly with regard to the states is that a state is responsible for meeting federal legislative requirements, but they also have the authority to create more stringent requirements. Many local agencies have lesser roles in the regulatory process for their communities.

Finally, there are other federal agencies that have regulatory requirements that involve environmental issues. These agencies include the Department of Transportation with regulatory authority over the transport of hazardous waste, the Department of Interior with historical and cultural sites, and the Department of Labor with occupational, health and safety requirements. There are other agencies that have a lesser role in the environmental process that will be discussed throughout this guide.

ENVIRONMENTAL PROTECTION AGENCY

The EPA is the federal regulatory agency for environmental compliance. EPA was created in 1970. This action by the President consolidated the Federal Government's environmental regulatory responsibilities into a single agency. EPA is responsible for a broad range of activities that includes: research, monitoring, establishment of standards, regulatory development, and enforcement activities. In addition, EPA coordinates and supports research and anti-pollution activities with state and local governments, private and public groups, individuals, and educational institutions. EPA monitors environmental compliance and programs of federal agencies, including the Department of Defense. The EPA organizational chart on page 24 gives you a good idea how broad their responsibilities are. These responsibilities were created with the enactment of federal environmental legislation. The EPA is the implementation and regulatory agency for federal laws designed to protect the environment; these laws include:

The Clean Air Act,
The Clean Water Act,
The Safe Drinking Water Act,
The Comprehensive Environmental Response, Compensation, and Liability Act,
The Emergency Planning and Community Right-To-Know Act,
The Resource Conservation and Recovery Act,
The Federal Insecticide, Fungicide, and Rodenticide Act,
The Toxic Substances Control Act,
The Marine Protection, Research, and Sanctuaries Act,
The Uranium Mill Tailings Radiation Control Act,
The Indoor Radon Abatement Act,
The Ocean Dumping Ban Act,
The Coastal Zone Management Act,
The Pollution Prevention Act.

The key organizations within the EPA organizational structure, that bases deal with routinely, are the 10 EPA Regions. These autonomous regions are responsible, within the boundaries of their regions, for the execution of EPA's regional environmental programs. Headed by a regional administrator, the region cooperates with federal, state, interstate and local agencies, industry, academic institutions, and private groups to ensure that regional needs are considered and federal environmental laws implemented.

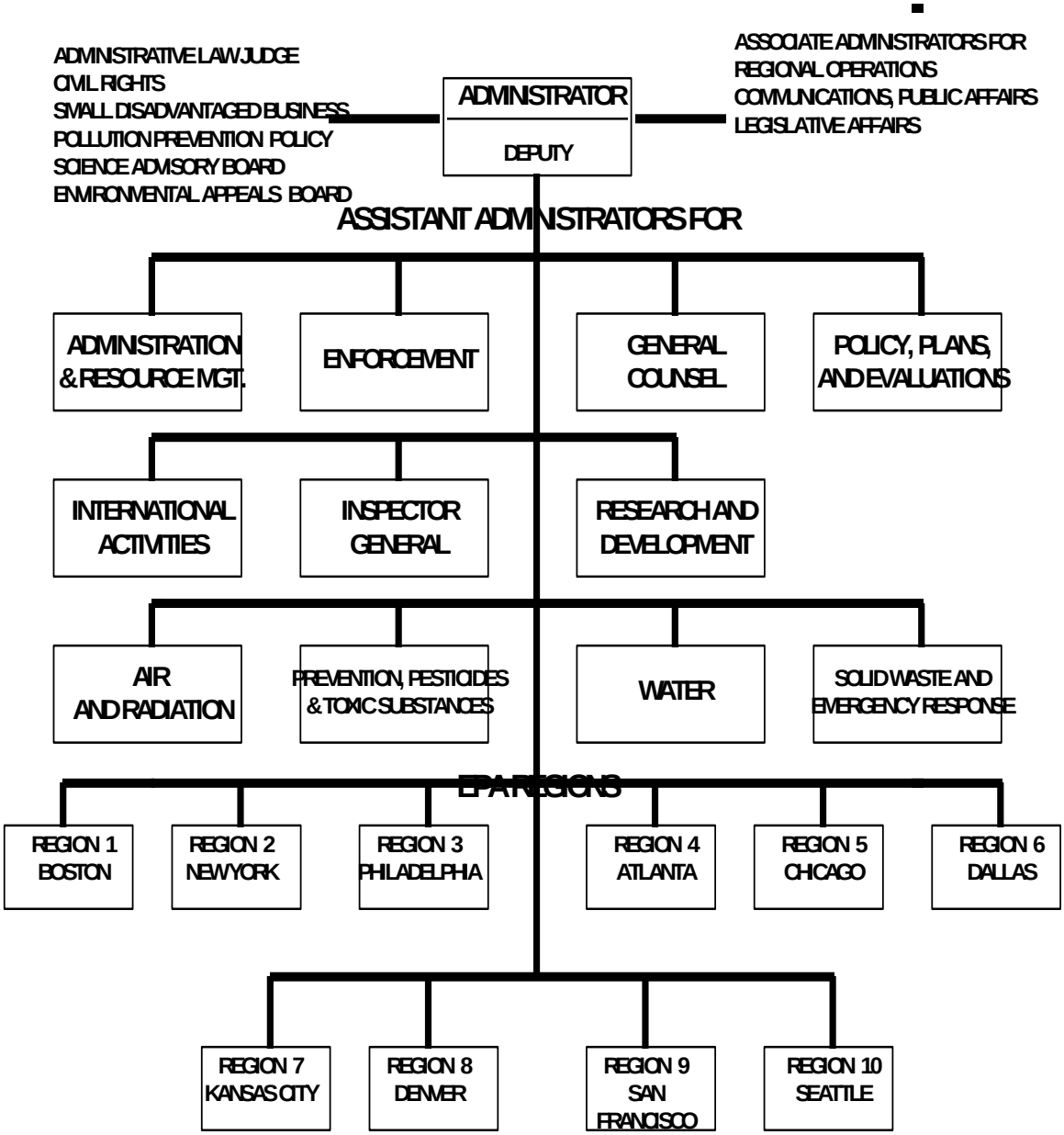
The EPA Regions are responsible for developing, proposing, and implementing regional programs for complete and integrated environmental protection activities. EPA regions also conduct regional enforcement and compliance programs. They translate technical program direction and information from the various internal EPA organizations to federal, state, and commercial activities. The regions exercise approval authority for proposed state standards and implementation plans. They conduct multi-media compliance inspections in coordination with state agencies. They provide overall and specific evaluations of regional programs.

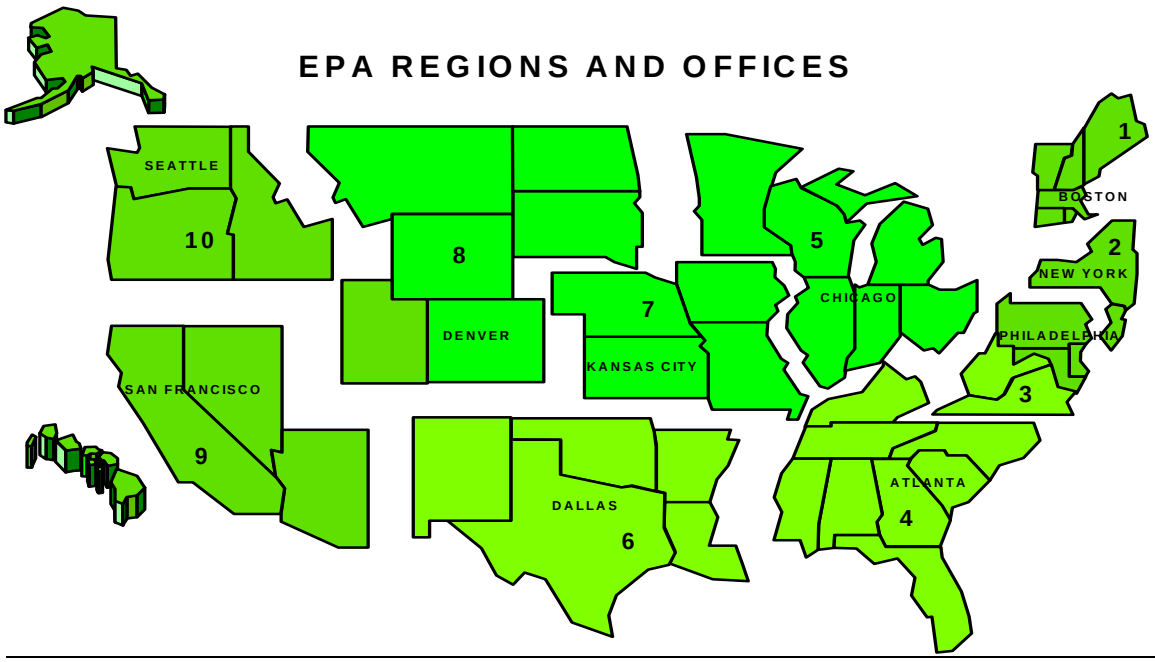
EPA’s guiding principles are the core of their five year strategic plan. These principles apply to all their programs and activities. These guiding principles include:

ecosystem protection, environmental justice, pollution prevention, strong environmental science and data development, partnerships with science, industry, and government agencies, reinventing EPA management, and environmental accountability.

EPA provides an extensive resource library of publications and studies on many of their environmental regulations and associated programs. EPA also conducts training in support of regulatory compliance and program initiatives. For information on these programs call your regional EPA Public Affairs office. Their numbers are found on page 26 of this chapter.

EPA ORGANIZATIONAL CHART





--- Environmental Protection Agency Regional Offices

If you don't know where your local EPA office is, don't feel alone. Use this table to get in touch with the regional EPA Public Affairs offices that can direct you to technical sources that can answer your questions.

EPA Region 1: *Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont* JFK Federal Building Boston, MA 02203 617-565-3424	**EPA Region 2:** *New Jersey, New York, Puerto Rico, Virgin Islands* 26 Federal Plaza New York, NY 10278 212-264-2515	**EPA Region 3:** *Delaware, Maryland, Pennsylvania, Virginia, West* Virginia, District of Columbia 541 Chestnut Street Philadelphia, PA 19107 215-597-9370
EPA Region 4: *Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee* 345 Courtland Street, NE Atlanta, GA 30365 404-347-3004	**EPA Region 5:** *Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin* 230 South Dearborn Street Chicago, IL 60604 312-353-2072	**EPA Region 6:** *Arkansas, Louisiana, New Mexico, Oklahoma, Texas* 12th Floor 1445 Ross Ave. Dallas, TX 75202 214-655-2200
EPA Region 7: *Iowa, Kansas, Missouri, Nebraska* 726 Minnesota Ave Kansas City, KS 66101 913-236-2803	**EPA Region 8:** *Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming* 999 18th Street Denver, CO 80202-2405 303-293-1692	**EPA Region 9:** *Arizona, California, Hawaii, Nevada, American Samoa, Guam, Trust Territories of the Pacific* 1235 Mission St. San Francisco, CA 94103 415-744-1020
EPA Region 10: *Alaska, Idaho, Oregon, Washington* 1200 Sixth Avenue, Seattle, WA 98101 206-553-1020		

DEPARTMENT OF TRANSPORTATION

The Department of Transportation (DOT) has broad authority to regulate the shipment of hazardous materials and designate as “hazardous” any materials that pose a risk to health, safety, or property. DOT's Hazardous Materials Transportation regulations govern the classification, packaging, labeling, marking, placarding, and documentation of hazardous materials being shipped. The Hazardous Materials Transportation Act provides DOT the authority for their regulatory actions. DOT regulations are contained in Title 49 of the CFRs.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Federal OSHA is responsible for defining the duties of federal and commercial employers and employees with respect to the control of hazardous substances in the workplace. OSHA has responsibilities for the development of Material Safety Data Sheets and publication of the Occupational Health Guide. OSHA is an independent agency in the Department of Labor. They are assigned Title 29 of the Code of Federal Regulations.

STATE ENVIRONMENTAL AGENCIES

State environmental agencies have assumed extensive regulatory authority in the area of environmental protection, safety, compliance, and clean-up. State programs are designed to meet or exceed existing federal legislation. Authority for the states to assume regulatory primacy comes through the submittal of State Implementation Plans or similar type plans to the EPA. State environmental programs vary. States like California, Florida, and Colorado have very stringent programs with their regulatory requirements exceeding those of the EPA. Other states are developing standards similar to the more progressive states or developing programs that meet state legislative and EPA requirements.

State agencies have broad responsibilities in administering their programs. Specific responsibilities include: enforcement, inspection, policy development, and permits. Areas of enforcement include: air quality and pollution control, drinking water and ground water quality, hazardous substances and wastes, solid waste, and emergency and remedial response. States require many different types of permits for base operations. These may include: wastewater treatment, air, solid waste, water supply and or treatment, underground storage tanks, asbestos, and remediation.

State organizational structures are built around regulatory responsibilities. Their titles and structure are independent from other states. To give you an idea, Alabama’s is called the Alabama Department of Environmental Management, Delaware is Natural Resources & Environmental Control Department, and Illinois is the Illinois Environmental Protection Agency. They can be contacted by checking the local telephone directory under Government “Department of Environmental Quality,” “Department of Health,” or “Department of Natural Resources.” If you have difficulty locating the proper state office contact your EPA regional office for assistance.

FEDERAL AGENCIES THAT PROVIDE ENVIRONMENTAL SUPPORT

The Department of Defense, Department of Energy, EPA, and other federal agencies actively operate environmental programs. The majority contract for environmental services. These agencies, and their associated contracts, gives the Civil Engineering Environmental Flight (CEV) many options to meet environmental compliance, and clean up requirements. We will briefly examine the federal agencies that provide environmental contracts.

Environmental Protection Agency

EPA provides a wide range of contract services for environmental support. General contracting areas include: removal action, remedial response, support services, technical enforcement support, and policy, program management, and administrative support. Major contracts include: the Alternative Remedial Contracting Strategy (ARCS) that is used for the clean up of the country's worst hazardous waste sites and the Response Engineering and Analytical Contract (REAC) which is designed to provide effective use of techniques and technologies for remediation of hazardous waste sites and spills.

DEPARTMENT OF ENERGY (DOE)

The Hazardous Waste Remedial Actions Program (HAZWRAP) is DOE's program designed to develop, promote, and apply innovative and cost-effective waste management and environmental technologies to help control and resolve hazardous waste problems.

US GEOLOGICAL SURVEY (USGS)

The USGS provides remedial investigation and sampling work on contaminated sites through the use of cost contracts. It also has contracts for underground storage tank removal.

BUREAU OF RECLAMATION (BOR)

BOR has established investigation, sampling, and remediation services similar to contracts administered by DOE and USGA.

GENERAL SERVICES ADMINISTRATION (GSA)

GSA is in the process of awarding contracts for a wide range of recycled products to meet federal affirmative procurement requirements. Contact your regional GSA representative for further information on obtaining the GSA Alternative products catalog and other supply information.

Federal agency environmental contracts and services are an option available to CEV for completing with many types of environmental projects. If CEV is planning on using of one of these agencies ensure that all requirements called for by the Economy Act are completed before your Wing Commander or other identified official signs agreements initiating work or transfers funds. The Economy Act is covered in Chapter 6.

DEPARTMENT OF DEFENSE SERVICE CENTERS

The DOD faces major environmental remediation and compliance efforts at most of its installations, arsenals, depots, and smaller facilities. Many are on the National Priority List. DOD has many sources available to meet environmental requirements. The most commonly used organizations by the Air Force are the Army Corp of Engineers and the Air Force Center for Environmental Excellence. To a lesser extent the Air Force has used the Navy, which has also has developed a variety of environmental contracts to meet remediation, studies, and investigation.

ARMY CORPS OF ENGINEERS (CORP)

The Corp provides a wide range of environmental services to numerous federal and DOD installations. The Corp is divided into six districts. The lead district for environmental remediation work is the Missouri River Division; however, each district has or is in various stages of development an innovative portfolio of IRP/Superfund and environmental service contracts to meet the needs of DOD and federal agencies. These Contracting methods are divided into Small Design District work and Large Design District work.

Small Design District Types of Work includes:

- Containerized Hazardous, Toxic, and Radiological Waste (HTRW) for fences, roads and other related work areas
- Study Investigations, Design and Installation Support
- Environmental Services
- Remediation

Large Design Districts Types of Work includes:

- Containerized HTRW for fences, roads and other related work areas
- Study, Investigations, Design, and Installation Support
- Environmental Services
- Remediation
- Study/Design/Remediate, Total Environmental Restoration Contract (TERC)

In addition to these large multi-site, multi-task contracts the Corp also does procurements for individual sites. More information on these types of remediation contracts is covered in Chapter 6.

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

NAVFAC is tasked with the management of the Navy Installation Restoration Program. NAVFAC manages the IRP through their six Engineering Fielding Divisions. They use a variety of contract types to meet assessment, investigation, and remediation projects. The Comprehensive Long-Term Environmental Action Navy (CLEAN) is a multi-year cost plus award fee contract that is used to span the entire IRP from remedial design to remedial action.

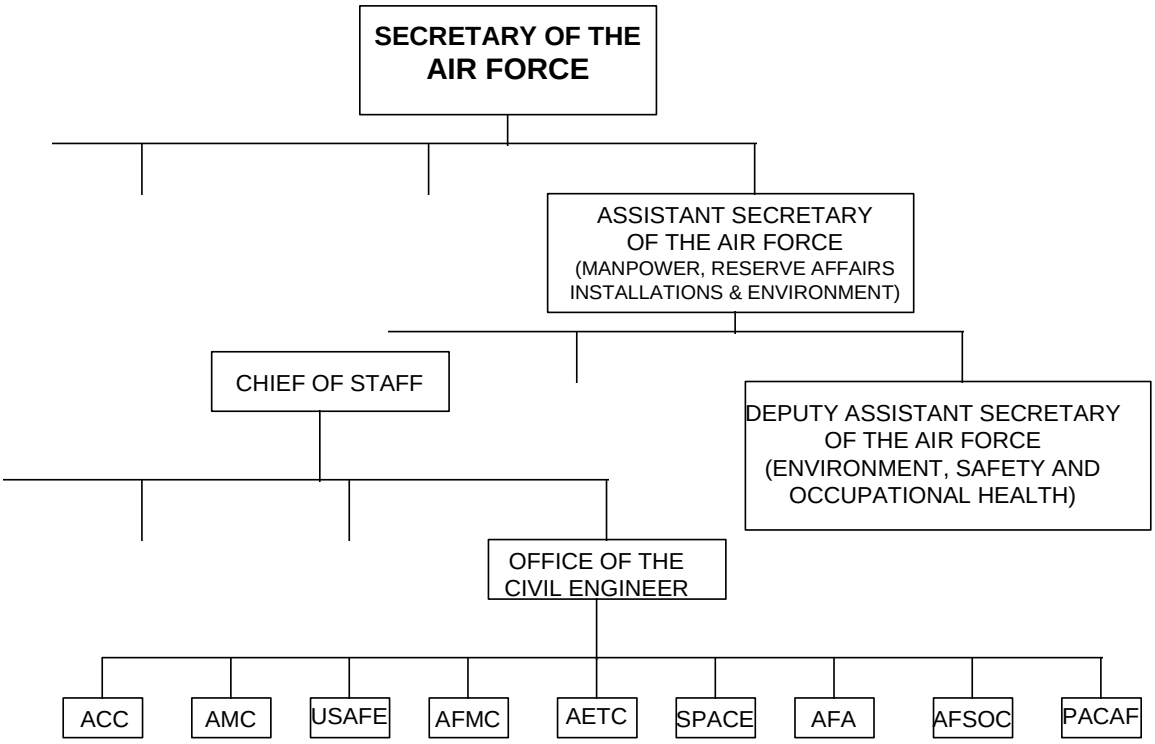
DEFENSE REUTILIZATION AND MARKETING SERVICE (DRMS)

DOD assigned responsibility for redistribution, selling, disposal, and reutilization of excess property to the Defense Logistics Agency (DLA). DLA formed the Defense Reutilization and Marketing Service (DRMS) to perform this mission. DRMS is one of

the larger logistics operations conducted by DOD and is responsible for the disposal of most types of hazardous materials/hazardous wastes that are no longer needed by DOD.

DRMS is headquartered at Battlecreek Michigan and is divided into 3 regions Operations East, headquartered in Columbus Ohio; Operations West headquartered in Ogden Utah; the European Region Office located in Wiesbaden, Germany. Under Operations West is the Pacific Liaison Office at Camp H.M. Smith Hawaii. These regions are responsible for the 197 Defense Reutilization and Marketing Offices (DRMOs). Most DOD installations are supported by a DRMO. The DRMO is the focal point for the temporary storage, transportation, and disposal of hazardous materials and hazardous wastes. It also has recycling responsibilities for strategic materials and metals on the installation.

THE AIR FORCE ENVIRONMENTAL ORGANIZATION



THE SECRETARIAT

The Deputy Assistant Secretary of the Air Force for Environmental, Safety, and Occupational (SAF/MIQ) ensures that all Air Force environmental policies are in agreement with DOD's policy. The Deputy Assistant Secretary coordinates with other federal agencies and DOD organizations at the headquarters level concerning environmental policy.

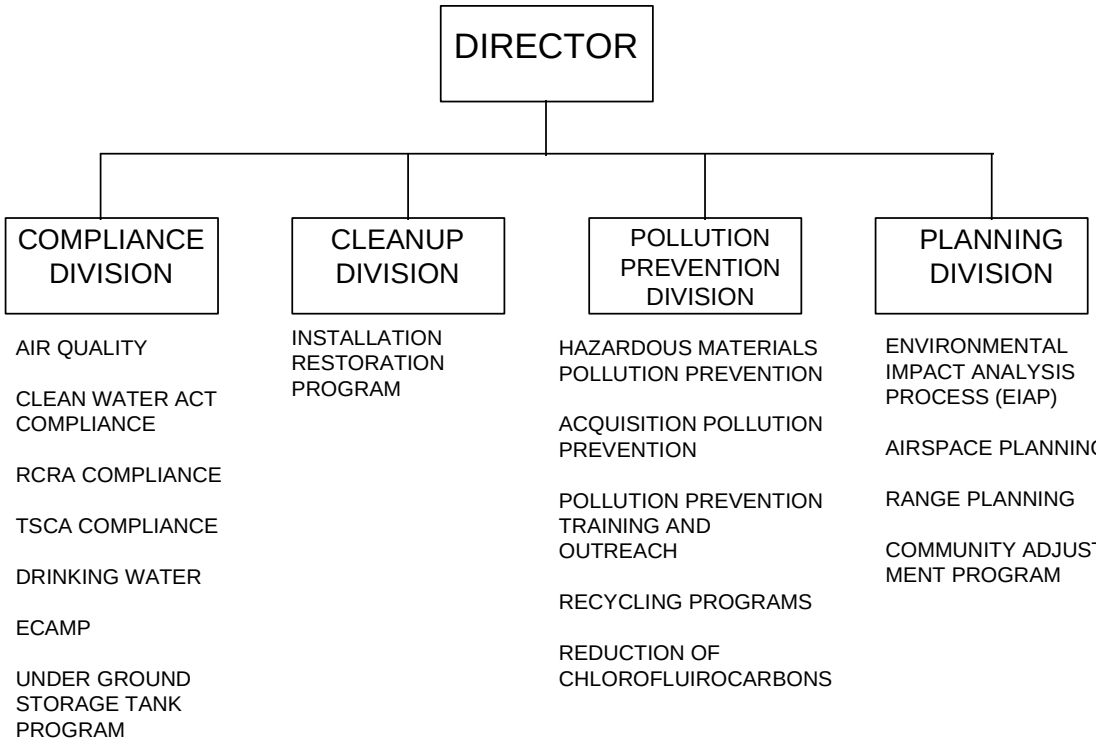
THE AIR STAFF

The Chief of Staff is the starting point for the implementation of environmental policy. Air Staff formulates policy and disseminates it down the chain through the MAJCOMs to

the bases. They are the central point for obtaining resources for environmental programs and has oversight responsibilities for these programs.

The Office of Civil Engineering has primary responsibility for environmental programs. Specific responsibility for environmental issues falls under the Directorate of Environmental Quality Division (AF/CEV). The Directorate is divided into four functional areas with the following responsibilities.

HQ AIR FORCE DIRECTORATE OF ENVIRONMENTAL QUALITY



In addition, AF/CEV has responsibilities for natural resource management. The Air Force Center for Environmental Excellence and Air Force Civil Engineering Support Agency report directly to AF/CE.

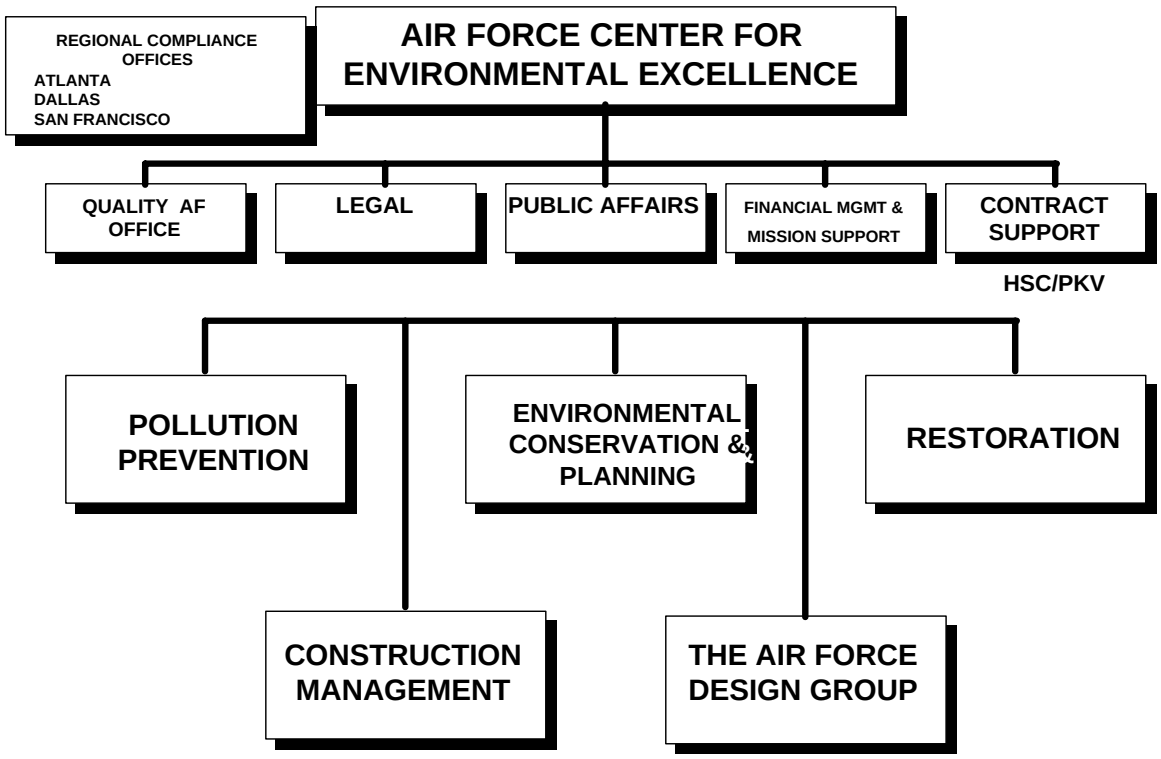
AIR FORCE CONTRACTING ENVIRONMENTAL ORGANIZATION

SAF/AQC has primary responsibility for environmental acquisition policy. Specific responsibility for operational contracting issues is with SAF/AQCO. Policy is developed and passed down to the MAJCOMs. Each MAJCOM has a specialist responsible for addressing environmental issues and formulating MAJCOM requirements. Environmental questions should be directed to your MAJCOM environmental specialist.

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE

The Air Force Center for Environmental Excellence (AFCEE), located at Brooks AFB, Texas, provides a wide variety of technical services to Air Force installations. AFCEE provides design and construction management services for hazardous waste clean

up. AFCEE also provides expertise on environmental compliance matters and enhancement programs, pollution prevention, recycling, environmental planning and impact assessments, and provides environmental analysis and documentation to support decision processes. The Professional Action Program (PROACT) is a contract developed by AFCEE and provides Air Force personnel with an environmental research assistant to help answer environmental questions. PROACT is covered in Chapter 9.



The Human Systems Center/Environmental Contracting Division (HSC/PKV also located at Brooks AFB,) is responsible for negotiating and awarding all AFCEE environmental contracts. HSC/PKV awards cost or firm-fixed price Indefinite Delivery Indefinite Quantity contracts. Delivery orders are issued for each hazardous site or program. Contract administration for AFCEE contracts is divided between HSC/PKV, Defense Contract Management Command (DCMC), and the host installation. HSC/PKV and DCMC are responsible for, but not limited to, issuing delivery order modifications, reviewing and approving final payment vouchers and performing property management duties. Local base contracting responsibilities include: appointing a local contracting point of contact, assisting the HSC/PKV property administrator and base CE in tracking government property and equipment, ensuring contractor compliance with the Davis-Bacon Act, issuing emergency change orders, and attending and conducting the post-award conference.

The specific responsibilities listed above have been incorporated by HSC/PKV into a Memorandum of Agreement (MOA) with a number of Major Commands. The MOA establishes roles and responsibilities for the administration of delivery orders at the various Air Force installations. More information will be provided on specific

responsibilities outlined in the MOA in Chapter 6. HSC/PKV's telephone number is DSN: 240-6306.

AFCEE REGIONAL COMPLIANCE OFFICES

AFCEE operates three Regional Compliance Offices (RCOs) to provide the Air Force with a strong positive interface with federal and state regulators. These offices, located in Atlanta, Dallas, and San Francisco are staffed by civil servants and military and civilian attorneys with specialized environmental and regulatory backgrounds. The RCOs provide information on environmental trends, regional and state environmental laws and regulations that pertain to the full range of environmental protocols. They are an excellent mediator when establishing relationships between the Air Force, federal, state, and local regulatory agencies, and the public. If you have a regional or state issue this is a good source to obtain answers. Their numbers are:

Region	Commercial Phone	DSN: Operator-Assist
Atlanta GA	404-331-6771	797-1001, 331-6776
Dallas TX	214-767-4653	967-1101, 767-4671
San Francisco CA	415-705-2252	859-2110, 705-2252

AIR FORCE ENGINEERING SUPPORT AGENCY

The Environics Laboratory at the Civil Engineering Support Agency (AFCESA), located at Tyndall AFB, Florida is a major center for Air Force environmental research and development. AFCESA also provides technical assistance in many environmental programs. AFCESA is active in the development of environmental specifications in support of Air Force contracts. Their telephone number is DSN: 523-6190.

AIR FORCE BASE CONVERSION AGENCY

The Air Force Base Conversion Agency (AFBCA) oversees environmental remediation, property care and maintenance, and real and personal property disposal for major Air Force bases in the United States. AFBCA comes under the authority of the Base Closure and Realignment Act of 1990. The Air Force currently has 27 installations on the list for realignment or disposal. Responsibilities are shared with the MAJCOMs up to the closure date whereupon installations are transferred to AFBCA for final disposal.

The AFBCA mission is to assist communities in the conversion of closing or realigning bases from military to civilian use. It also ensures that property at these Air Force installations is made available for reuse as quickly and efficiently as possible consistent with the best interests of the Federal Government and the public. AFBCA has responsible for disposal for property. The major emphasis is implementation of the President's Five-Part Plan to speed the economic recovery of those communities affected by base closure. The President's Five-Part Plan calls for jobs creating property disposal, fast-track environmental cleanup, establishment of Base Transition Coordinators at each closing base, easy access to transition and redevelopment help, and larger economic development planning grants and technical assistance.

AFBCA has a broad range of responsibilities throughout the closure process that includes:

- **PRIOR TO CLOSURE**: AFBCA conducts disposal and reuse environmental analysis, liaison with community reuse planners, environmental restoration (after transition from the host MAJCOM), interim use leasing, and property disposal planning.
- **FOLLOWING BASE CLOSURE**: Civilian reuse transition planning; caretaker services to include installation protection, maintenance and operations; environmental cleanup, compliance and restoration; and the disposal of real property and related personal property.

The AFBCA organization consists of a headquarters staff and seven regional areas. The staff is headed by the Director with support personnel that includes: special assistants and staff divisions. Staff divisions cover legal, executive services, environmental programs, resource management, and facility management.

The seven Regional Program Managers support base operating locations assigned to their region. The AFBCA and its regions consist of experts in environmental and real estate law, real and personal property, environmental cleanup and compliance, financial management, facility maintenance and operational management, external affairs, civilian personnel and personnel, and information systems support. These specialists support all work necessary to transition military facilities and property to civilian use

Program Managers are responsible for all aspects of accelerated cleanup, installation management, and disposal of base property. They work closely with state and local reuse groups to develop reuse opportunities so communities can quickly move into economically productive use. Program managers are aligned with the seven regional areas to promote cooperation and coordination among the various agencies involved in the execution, especially the Environmental Protection Agency.

Each former installation (operating location) has an assigned site manager that reports to the program managers. The site manger coordinates environmental cleanup, operations, reuse planning with the local communities, caretaker responsibilities, and property disposal. The site manager is supported by a staff of real property, contracting, quality assurance, environmental and administrative personnel.

AFBCA is supported by other agencies and organizations to support closure requirements. The General Services Administration, Air Force Center for Environmental Excellence, and Air Force Human Systems Center Contracting Office are used for support in their various specialties.

For more information on base closure issues contract the Air Force Base Conversion Agency, Attn.: External Affairs, 1700 North Moore, Street, Suite 2300, Arlington Virginia 22209-2802, telephone number (703) 696-5500.

The environmental clean up of these installations is a joint effort between the local installation site manager and AFCEE. This is a massive effort involving 27 Air Force installations containing over 900 sites with an estimated cost exceeding $100 million. The goal of the program is to return the installation to an economically beneficial state for use by the local area.

To accomplish these goals the AFBCA site manager establishes boards that address the conversion and clean up of the base. The Base Clean up Team is composed of members from EPA, state and the Air Force. This team conducts a bottom up review of the base environmental program and clean up objectives. The Resource Advisory Board is comprised of members from the community and the Air Force is the focal point for the

clean up of the installation. The RAB is a partnership that explores the use of innovative technologies for site clean up that meets federal and state regulatory requirements.

MAJOR COMMANDS

The Major Commands are responsible for the dissemination of Air Force policy and program execution. These responsibilities include:

- Ensuring compliance with applicable environmental requirements, including federal, state, and local laws and regulations, as well as DOD policies
- Prioritize projects within their funding allocations
- Provide technical assistance as required
- Ensure project completion, either through in-house or contract accomplishment.

A number of MAJCOMs have been active in the development of large dollar environmental contracts for compliance, pollution prevention, and remediation studies and processes. These are either firm-fixed price or cost IDIQ contracts. Delivery orders are awarded for individual projects and contract administration requirements are established by the MAJCOM.

SUMMARY

The federal and state regulatory community has a direct impact on the operations of Air Force installations. The Federal Facilities Compliance Act, numerous executive orders and agreements, and the DOD policy is to comply with environmental regulations or their intent. Establishing the goal of meeting environmental compliance results in the development of a professional working relationship with federal and state environmental agencies. Understanding the impact of regulatory compliance will be discussed in future chapters. Air Force installations are requesting environmental support from both federal agencies and DOD service centers. These agencies have a wide range of contracts in place to support remediation, pollution prevention, compliance, and investigation and studies. Contracting responsibilities will vary with each agency the installation works with. We will discuss some of these responsibilities in the following chapters.

CHAPTER 3

INSTALLATION ENVIRONMENTAL PROGRAM

INTRODUCTION

All Air Force installation personnel are responsible for implementing environmental quality into the Air Force mission. The base environmental program is accomplished through the use of a multi-functional team. Contracting is one of the players that has both direct and indirect responsibilities for environmental compliance. This team has many activities to perform, and as we have seen in Chapter 1, there are many environmental laws that regulate these activities. Failure to comply may not only subject the Air Force to fines and administrative penalties, but can result in civil and criminal liabilities being imposed on commanders and personnel as well. Contracts must be reviewed to ensure that they comply with all federal and state environmental regulations and our contractors must understand these regulations as well. If we fail to adequately address these environmental issues, completion of key construction, service, and commodities contracts can be unilaterally suspended by federal and state regulatory authorities for not complying with environmental regulations. This chapter reviews the key base organizations, committees, and programs that are responsible for environmental compliance.

ENVIRONMENTAL PROTECTION COMMITTEE (EPC)

The National Environmental Policy Act of 1969 requires installations to establish a systematic, interdisciplinary approach to environmental quality and integrate this approach into the installation planning and decision-making process. NEPA requirements effect virtually every aspect of Air Force planning, from military construction projects to installation programs, and mission changes. AFI 32-7005 establishes NEPA requirements for the Environmental Protection Committee and all its functions. All installations with environmental functions are required to establish an EPC. The EPC is the primary executive steering group for all installation environmental cleanup, compliance, conservation, and pollution prevention.

EPC membership is multi-functional and is designed to bridge functional barriers and works together to accomplish the installation environmental program. The installation EPC is normally chaired by the Wing or Vice Wing Commander. The committee is comprised of members from every activity and associate organizations. **Contracting needs to be an advisor to this committee in planning and defining contractual requirements and support installation environmental programs and their projects.** Other important members may include contractors with environmental requirements that directly support the base operations and mission. Responsibilities and requirements of the EPC include:

- The EPC meets at a minimum of quarterly: an active environmental program should meet more often.

- Review, coordination, and implementation of environmental impact analysis on proposed actions and forwards to the Wing Commander.
- Reviews environmental policy, resources, and performance and makes recommendations on changes required.
- Ensures appropriate training and personnel exist to meet environmental responsibilities.
- Monitors, attains, and maintains environmental compliance through ECAMP.
- Monitors the overall conduct of environmental protection on the base.
- Monitors and prevents administrative penalties, NOVs, and NONs for noncompliance.
- Reviews and approves recommendations from environmental subcommittees.
- Evaluates environmental concerns associated with proposed actions and ensures concerns are addressed in any decision making process.
- Maintains and renews environmental permits.
- Approves funding for environmental resource management.
- Develops and promotes environmental awareness among its members who, in turn, are responsible for their functional areas.

The EPC may establish subcommittees to address specific environmental issues. Contracting may be an active member on one or more of these committees. Environmental areas in which subcommittees have been established include:

- Hazardous Materials and Hazardous Waste Management
- Spill Prevention
- ECAMP Review
- Environmental Impact Assessment Program Review
- Environmental Legal Issues
- Recycle Program
- Pollution Prevention

The EPC is the central planning function and authority for the operation of the installation environmental program.

ENVIRONMENTAL IMPACT ANALYSIS PROCESS (EIAP)

EIAP implements the requirements of NEPA and the implementing CE regulations. AFI 32-7004 establishes the EIAP and contains policies, responsibilities, and procedures for its implementation. The EIAP provides a systematic, documented process for analysis of proposed actions. It also identifies and analyzes the environmental impacts associated with implementation of both the proposed action and reasonable alternatives (including no action). EIAP mandates that these impacts are considered in the decision-making process. At the installation level CEV and the environmental protection committee are responsible for review and approval of EIAP documents.

BASE COMPREHENSIVE PLAN (BCP)

As with the Environmental Protection Committee, the BCP fulfills compliance requirements under NEPA. The requirements of the BCP are established in AFI 32-7062. The BCP is both a process and a product. It is a logical process of identifying installation goals and objectives; selection of preferred course of actions; and implementation of schedules and budgets. The BCP is the master document for the installation

environmental program. It integrates separate plans for the installation that includes the natural environment, the built environment, and social-cultural environment.

The BCP is composed of two levels of plans: a general plan and component plans. The general plan describes the installation mission, goals and objectives, a profile of the installation and vicinity, a summary of the component plans, findings and recommendations, implementation, and maintenance. The component plans that must be addressed or incorporated by reference are:

- Composite Natural Resources Plan
- Environmental Protection Plan
- Base Layout and Vicinity
- Land Use Plan
- Airfield and Air Operations Plan
- Air Installation Compatible Use Zone (AICUZ) Study
- Utilities Plan
- Communications Plan
- Transportation Plan
- Energy Plan
- Environmental Design Guidelines-Architectural Compatibility
- Environmental Design Guidelines-Base Landscape development Plan
- Long-Range Facilities Development Plan (Beyond 5 years)
- Contingency Planning
- Quality of Life Planning

The Base Civil Engineer and staff are primarily responsible for developing and implementing the BCP. Development of the BCP within CE is normally with the Community Planner; this can vary with each base.

ENVIRONMENTAL OPERATING PLANS

Current environmental regulations require the preparation of a number of additional environmental plans that are separate from the BCP. These plans deal with the specific procedures for conducting routine operations and responding to unplanned events. Required plans include:

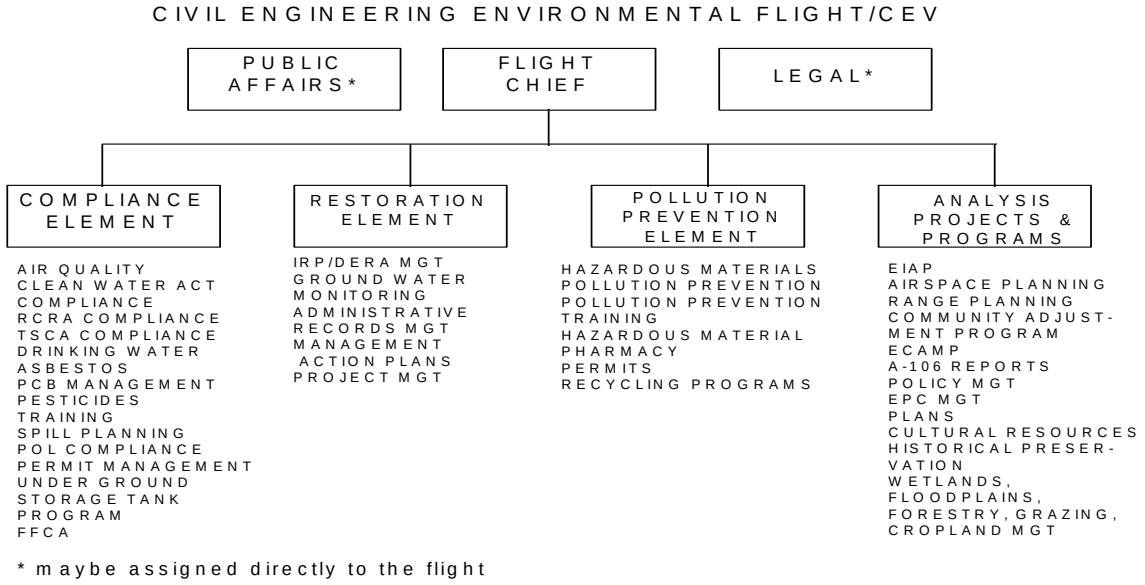
- Air Pollution Plan
- Pollution Prevention Plan
- Halon Plan
- Refrigerants Plan
- Asbestos Management Plan
- Asbestos Operations Plan
- Hazardous Materials Management Plan
- Hazardous Waste Management Plan
- Spill Prevention, Control, and Countermeasures Plan
- Spill Contingency Plan

CE ENVIRONMENTAL FLIGHT (CEV)

The CEV is the specialized environmental flight responsible for compliance, pollution prevention, and clean up for the installation. Occasionally you will hear the term

Environmental Management Office (EMO); this refers to the Air Force Material Command environmental structure and in a few cases operational bases. CEVs report to the wing senior leadership, wing commander or vice commander, or through the Civil Engineering Squadron Commander.

The CEV is normally an independent flight within the Civil Engineering Squadron. The organizational structure varies with the requirements of the installation. Many bases have a staff that consists not only of the environmental specialties, but also a public affairs specialist for media and publicity requirements and a legal officer with specialized training in environmental issues.



The above diagram shows how the CEV flight is grouped into common functional areas.

- **COMPLIANCE:** This Element is responsible for complying with federal, state, and local laws and regulations.
- **RESTORATION:** Plans and cleans past hazardous waste sites as defined under the Defense Environmental Restoration Program (DERP) and the Installation Restoration Program.
- **POLLUTION PREVENTION:** The goal of this Element is to reduce pollution through the reduction of waste streams, recycling, treatment, and disposal.
- **ENVIRONMENTAL PLANNING:** This element plans the environmental program in accordance with the National Environmental Policy Act (NEPA).
- **NATURAL AND CULTURAL RESOURCES:** Many CEVs separate these functions and group them into an individual element. It is responsible for the management of conservation and preservation programs.

The EMO is the primary environmental organizational structure for Air Logistics Centers in Air Force Material Command. The EMO consists of engineers, bioenvironmental, public affairs, and legal. These organizations range in size from 40 to 150 personnel.

A-106 REPORT is an Office of Management and Budget program developed for reporting and tracking of budget requirements for environmental projects. The program is designed to meet planning process requirements described in Executive Order 12088 "Federal Compliance with Pollution Standards." The Analysis, Plans, and Program Element of CEV is responsible for processing the A-106 information. Air Force LEEV submits the A-106 report to the EPA. EPA reviews the information and passes it on to the Office of Management and Budget to justify various federal environmental compliance requirements.

The A-106 Report tracks the status of all environmental projects, regardless of the source of funding and identifies the level of funding that the agencies require for environmental compliance and improvement projects.

BIOENVIRONMENTAL

Bioenvironmental is an office under the Medical Group. It is a focal point for issues associated with industrial hygiene, environmental protection, radiological, and disaster response and its effect on the health of personnel on the installation. Bioenvironmental is an active member of the installation Environmental Protection Committee and subcommittees.

The first area of responsibility is industrial hygiene. Bioenvironmental is responsible for performing industrial surveys and collecting air samples in work areas. This information is used to evaluate and keep environmental and occupational stress to a minimum and to monitor environmental controls and degree of worker exposure. A major responsibility is the evaluation of the use, handling, and disposal of toxic materials. This includes maintaining all Material Safety Data Sheets (MSDS) and the review of supply issue documents for hazardous and toxic substances. Bioenvironmental is actively involved in the planning process through the review of plans, work orders, contracts, and specifications. This is to ensure the installation complies with established safety and health standards. They should have their signature on most specifications that come to Contracting.

The second area Bioenvironmental is responsible for is environmental protection. This includes the collection and sampling of all base water supplies. Bioenvironmental also identifies and evaluates potential pollution sources. They collect and submit samples to Armstrong Laboratory at Brooks AFB and other laboratories in support of the National Pollution Discharge Elimination System (NPDES). Bioenvironmental investigates chemical spills and their impact on wildlife. This includes the collection of samples, monitoring, and coordination of corrective action with federal and state regulatory authorities.

Radiological health is the third area of responsibility for Bioenvironmental. All radiation sources are tracked and inventoried. Bioenvironmental surveys facilities, materials and operations for radiation hazards and waste disposal of radioactive materials. Bioenvironmental ensures safe operation and conformance with current safety and health standards and state and federal permit requirements.

The final area of responsibility is disaster response. Bioenvironmental advises on-scene commanders and disaster preparedness personnel on matters of toxic, biological, and radiological materials. Additional duties include detection and identification of toxic

chemicals, recommendations on personal protective equipment, decontamination, and clean up to minimize contamination to the community.

OFFICE OF SPECIAL INVESTIGATIONS (AFOSI)

AFOSI's role is to support the goals of the Air Force by working with Air Force, federal, state, and local environmental personnel to uncover and investigate significant criminal conduct related to environmental programs. When contract irregularities, inquires, or audits turn up significant problems that indicate potential criminal conduct, AFOSI is prepared to investigate. When regulatory personnel turn up criminal allegations relating to Air Force contractors or personnel, AFOSI will conduct or assist in the ensuing investigation. Most of AFOSI's work in the environmental area involves allegations relating to Air Force cleanup and compliance activities. AFOSI supports these activities primarily with two types of investigations: procurement fraud and environmental crime.

AFOSI has investigated contract fraud involving both locally and centrally procured contractors. A number of contractors have been caught improperly disposing of wastes in violation of their contract and environmental laws. AFOSI has also seen a growing number of procurement fraud cases involving laboratories engaged in environmental testing. This type of fraud has been identified with both prime and sub-contractors.

AFOSI has worked cases ranging from contractors illegally disposing of USAF hazardous waste on private property and in public water systems to military personnel falsifying waste water treatment plant discharge reports filed with state environmental agencies. Examples of typical environmental crime cases are:

- Improper disposal of hazardous waste
- Failure to report spills of hazardous substances
- Discharging pollutants into a water way or sewer system without a permit
- Falsifying environmental compliance documentation or hindering compliance inspections

AFOSI's mission as a criminal investigative organization is to protect Air Force people and resources. AFOSI's mission is as effective as the installation's commitment to compliance and cleanup. The Air Force installation that is committed to environmental compliance and will not tolerate intentional violations of environmental law will enhance the "good faith" effort in environmental compliance when mitigating violations levied by federal, state, and local agencies. AFOSI provides briefings on environmental fraud and criminal awareness. Contact your local AFOSI Detachment for further information.

ORGANIZATIONS WITH ENVIRONMENTAL RESPONSIBILITIES

Every organization on base is responsible to comply with all environmental regulations. Many have unique responsibilities that protect the installation from potential environmental problems when performing mission requirements. Contracting needs to understand their customer's environmental responsibilities; this can result in better planning and ultimately better support.

- Civil Engineering has a number of responsibilities for environmental compliance and prevention. Besides owning CEV, they have responsibilities for spills and recycling. The Fire Department has responsibilities for hazardous material response and spill control.

Engineering incorporates environmental technology, conservation, and prevention into MILCON and construction designs.

- Operations and Logistics Groups are the biggest generators of hazardous waste. These groups are big supporters of hazardous waste prevention and conservation through the use of source reduction, technology, and recycling. Both groups must meet all environmental compliance regulations for the use and disposal of hazardous substances. They develop and support environmental plans for spill response and corrective actions.
- The Base Safety Office is responsible for worker safety and involvement in hazardous material management.
- Public Affairs (PA) is actively involved in meeting media requirements for all environmental regulations. Examples of PA involvement include publicizing Federal Facilities Agreements and Environmental Impact Statements. PA is the primary speaker for the base in the event an environmental action or incident becomes a media or community issue. Work closely with PA if there is to be distribution of environmental information to the public.
- Legal is the environmental advisor and expert for contractual and regulatory issues. Any contract or small purchase instrument that has an identified environmental requirement should have a legal review to ensure it meet all regulatory responsibilities. Contracts for underground storage tanks, lead, and asbestos for any dollar amount will require a legal review.
- Contractors handle a large amount of the environmental work on the installation. Contract work may include IRP planning and cleanup, pollution prevention opportunity assessments, recycling, site surveys, hazardous waste testing and disposal, and hazardous waste transport. Contractors must comply with all federal and state environmental laws.
- Universities are actively involved in a wide range of environmental activities that can include, historic preservation, cultural and natural resources, and studies and surveys.
- Defense Reutilization and Management Office (DRMO) is the primary storage and disposal facility for the installation.

Chapter 4 expands on the specific responsibilities of base organizations as it relates to the specific environmental protocols.

ENVIRONMENTAL COMPLIANCE ASSESSMENT AND MANAGEMENT PROGRAM (ECAMP)

The Environmental Compliance Assessment and Management Program is a comprehensive self-evaluation and program management system for achieving, maintaining, and monitoring Air Force compliance with environmental laws and regulations. ECAMP accomplishes this through the use of formalized compliance evaluations, checklists and management action plans. The primary objectives of ECAMP are to:

- Improve Air Force environmental management;
- Improve Air Force environmental compliance and compliance management;
- Build supporting financial programs and budgets for environmental compliance; and
- Assure Leadership that base programs are environmentally effective.

There are 11 general categories known as the Environmental Protocols. These protocols are addressed in more detail in Chapter 4. The 11 protocols are:

- Air Emissions
- Hazardous Materials
- Hazardous Waste
- Natural/Cultural Resources
- Noise Management
- Pesticides
- Petroleum, Oils, & Lubricants (POL)
- Solid Waste
- Special Programs (PCBs, Asbestos, Radon, IRP, EIAP, A-106)
- Water Quality
- Pollution Prevention

The Wing Commander is responsible for ensuring that base organizations meet the expanding number of environmental laws and regulations. The Wing Commander is supported by base environmental organizations that have wide flexibility on just how to comply with these requirements. This can include using in-house resources, agreement with federal, DOD, or Air Force Service agencies, or contracting directly with local contractors. Contracting may have direct responsibility for procuring a wide variety of environmental services, commodities, studies, and construction contracts to meet these requirements. Contracting may be tasked to support other organizations that have primary environmental responsibilities for completion.

SUMMARY

An excellent environmental document developed by HQ USAF/CEV, "US Air Force Commander's Guide To Environmental Quality" sums up the responsibilities of organizations and personnel in support of environmental quality on the installation.

"Each Commander is responsible for implementing his environmental program to the Air Force Environmental Program to meet the Air Force Environmental Goals. Although the Air Force mission is and will always remain the top priority, it is not mutually exclusive from achieving and maintaining a commitment to environmental quality." This applies not only to commanders but to all personnel responsible for supporting the mission on the installation.

CHAPTER 4

THE ENVIRONMENTAL PROTOCOLS

INTRODUCTION

The environmental protocols are the major environmental categories addressed in the Environmental Compliance Assessment & Management Program. ECAMP is the primary program for evaluating installation environmental compliance. The protocols identified in this chapter are: (1) air emissions, (2) hazardous materials, (3) hazardous waste, (4) natural and cultural resources, (5) noise management, , (6) pesticides, (7) petroleum, oils, & lubricants (POL), (8) solid waste, (9) water quality, (10) pollution prevention, and (11) special programs. Two protocols that address numerous environmental issues, Special Programs and Pollution Prevention, will be briefly summarized. More information on these two protocols will be presented in Chapters 5, 6, and 7.

This chapter summarizes the importance of each protocol and its impact on the installation. The applicable federal legislation regulating the protocol is briefly summarized. A very general summery of state regulatory requirements are discussed to give you an idea of state's environmental responsibilities. Key compliance requirements are provided to show their impact on the protocol. Next we will look at base organizations that are impacted by the protocol. Finally, contracting responsibilities are briefly summarized.

1. AIR EMISSIONS MANAGEMENT

Control of air pollutant emissions is a major national and Air Force concern, and is given high priority in the base environmental program. The major sources of air pollution at Air Force installations are:

- Particulates, dust, and soot, from fuel burning generation of steam and hot water from generation plants and boilers
- Incinerators
- Operational facilities, vapors from the storage and transfer of petroleum fuels, the use of solvents, degreasers, and other processes in industrial and maintenance operations
- The operation of vehicles and aerospace ground equipment

Many of these air emission sources are regulated and may require permits for construction and/or operation. In addition, emissions from installation operations are of special concern in areas which do not meet regional air quality standards and must be considered in determining growth, and associated construction in areas which currently meet standards. This is especially true in states with stringent air quality standards like California.

AIR EMISSIONS FEDERAL LEGISLATION

Chapter 1 provided you with an overview of federal environmental laws and executive orders. We will now describe how these laws can be combined to ensure compliance within the Air Force protocol categories.

Clean Air Act: The Clean Air Act (CAA) and Amendments of 1990 were established to protect and enhance the quality of the nation's air resources so as to promote public health and welfare and the productive capacity of its population. CAA is intended to prevent, control, and abate air pollution by controlling emissions from stationary (power plants and other industrial activities) and mobile (vehicle) sources. As amended, the CAA is the basic federal legislation which addresses the control of air pollution and a prevalent regulatory system.

The CAA assigns the primary responsibility for control of air pollutant emissions to the states. The federal regulations provide a framework within which the states design specific regulatory strategies to deal with air pollution problems within their boundaries.

AIR EMISSIONS STATE REQUIREMENTS

The Air Quality Control Region (AQCR) is a major regulator of air quality emissions. AQCR regulations will normally follow the EPA guidelines for state programs and have many similar features; however, individual regulations will vary depending on the degree and severity of air pollution problems within the state or region. State regulations generally establish emission limitations for various types of stationary sources and require permits for the construction, modification, and operation of sources of air pollutant emissions that Air Force installations require. Performance testing and periodic or continuous emission monitoring may be required to assure compliance.

AIR EMISSIONS KEY COMPLIANCE REQUIREMENTS

National Ambient Air Quality Standards (NAAQs): NAAQs cover several types of air pollutants and establish adequate standards of safety to protect public health. NAAQs must be attained as quickly as possible, with limits not exceeding five years after EPA determines that an area does meet the standards. EPA sets the NAAQs: and the states are responsible for establishing procedures to attain and maintain the NAAQs. These procedures are developed in the State Implementation Plans. Areas failing to meet NAAQs are classified as “nonattainment“ areas. There are different classification areas; each has different degrees of requirements to meet NAAQs requirements.

New Source Performance Standards (NSPS): Federally established air pollutant emission standards, contained in a permit, that are administered by the states. These are applicable to new, stationary air emission sources modified or built after the NSPS went into effect. Activities most likely to be subject to NSPS found on Air Force installations include the construction of steam/heat plants, incinerators, petroleum storage facilities, and stationary gas turbines.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs): Apply to sources which emit pollutants which have demonstrated adverse health effects, but for which establishment of NAAQS is not considered to be necessary. NESHAPs are based on health effects with strong reliance on technological capabilities. They apply both to existing and new stationary sources. The NESHAP program can be delegated to any qualifying state. Some of the substances which are currently limited under NESHAP regulations include: asbestos, benzene, beryllium, mercury, radio nuclides, and vinyl colloride. Of these materials, regulations pertaining to asbestos are most likely to affect Air Force installations, particularly those which are involved in demolition or renovation

of buildings containing asbestos materials. Projects involving asbestos are discussed in the section on Special Pollutants and Chapter 7.

Prevention of Significant Deterioration (PSD): PSD reflects the principle that areas where the air quality is better than required by NAAQs should be protected from significant new air pollution even if NAAQs would not be violated. The CAA divides clean air areas into three classes and specifies amounts of specific types of pollutants. Classes range from national park areas (class I) to areas designated by the States for new development but does not exceed NAAQs requirements (class III). Polluting sources in the PSD must install best available control technology (BAT) required by New Source Performance Standards.

Vehicular Emission Inspections: Many states require owners of fleet vehicles to have annual inspections of exhaust gases to determine emissions of carbon monoxide (CO) and hydrocarbons. Air Force installations typically have large numbers of vehicles and are required to comply with these regulations, or applicable Air Force regulations, whichever are more stringent.

Volatile Organic Compounds (VOC) Emissions: Most states regulate the emissions of VOCs into the atmosphere. Typical VOC emission sources at Air Force installations include jet fuel (JP4) and gasoline (MOGAS) storage tanks, solvent cleaners and degreasers, plating operations, gasoline dispensing facilities, and dry cleaning facilities. Emission limitations vary from state to state and are usually expressed in pounds of VOC per unit volume of substance used.

Particulate Emissions: Particulates emitted from fuel burning equipment and incinerators on Air Force installations are typically regulated at the state level through individual permits. Many states vary particulate emission limitations depending on the regional air quality conditions within the state.

Permits: Air Force installations must obtain permits to operate sources of air pollutant emissions from the appropriate regulatory agency. Permit requirements will vary among facilities and may require the installation of monitoring devices. The Air Force is normally required to maintain certain records, reports, and information as stipulated in the individual permits.

BASE ORGANIZATION AIR EMISSIONS RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for the operation and maintenance of all fuel burning systems (steam boilers, furnaces, etc.) as well as the maintenance of incinerators, and fuel handling and storage equipment.

Environmental Flight: CEV is responsible for preparation of all air pollution emission source permit applications, and for the identification and programming of air quality program requirements.

Bioenvironmental Engineering: The Bioenvironmental Engineering Office is responsible for monitoring of ambient air quality and preparation of the installation air emission inventory.

Hospital: The Medical Commander is responsible for the operation of pathological incinerators.

Base Supply: The Fuels Management Flight is responsible for the operation of all fuel handling, transportation (tanks and/or pipelines), and storage facilities on the installation.

They are also responsible for ensuring that all fuels satisfy specifications including state mandated sulfur content. The Fuels Management Flight is also responsible for the operation of the Military Service Station which dispenses fuels.

Base Transportation: The Vehicle Maintenance Flight is responsible for the emission testing and vehicle maintenance required by state and Air Force regulations.

Maintenance Activities: Operational and maintenance squadrons and other maintenance functions are responsible for the operation of degreasers and other industrial processes which are regulated and may require operating permits.

Base Exchange: The Base Exchange normally operates one or more service stations which dispense fuels that are subject to federal, state and local requirements. The service stations are normally operated by a contractor, but the Government must assure compliance.

AIR EMISSIONS MANAGEMENT REVIEW PRODUCTS

These are the key management products that explain the base air emission program.

1. Installation air emissions inventory
2. All installation air related permits, costs, expiration dates, and point of contacts
3. A listing of steam generating units, boilers, and incinerators and their size, fuel used, and locations

CONTRACTING AIR EMISSION ISSUES

The Clean Air Act prescribes responsibilities for government contractors. Failure to do so can result in debarment. CAA section 306 states that "no federal agency may enter into any contract with any person who is convicted of any offense under Section 113 (c) (1) of the act for the procurement of goods, materials, and services to perform such contract at any facility at which the violation which gave rise to such conviction occurred if such facility is owned, leased, or supervised by such person." "This debarment" will continue until the EPA certifies that the condition which caused the conviction is corrected. A provision in Section 306 (a) allows the EPA to extend the debarment to other facilities owned or operated by the convicted person even if these facilities were not subject to the violation.

The Federal Acquisition Regulation (FAR) Part 23.1 covers the required clauses to be used to enforce the CAA. The FAR mandates that for contracts expected to exceed $100,000 and are not under FAR 23.104, federal agencies will require contractors and their subcontractors, to certify that any facility they wish to utilize in the performance of a contract is not listed on the EPA's List of Violating Facilities. The FAR also requires that contractors and their subcontractors agree to comply with the appropriate sections of CAA. Also FAR requires that if a contractor's facility is being considered for inclusion on the List of Violating Facilities, then upon request from the EPA, the contracting officer shall delay award for the period of time requested by the EPA but no more than 15 working days.

Ozone Depleting Chemical (ODC): Air Force FAR Supplement 5310 establishes procedures for the purchase of ODCs. These procedures are explained in Chapter 5.

Procurement of construction, services, and commodities with potential air emission compliance requirements. All Statements of Work (SOWs) and Specifications and

drawings should be reviewed and verified for all required permits and other regulatory requirements outlined by EPA or state agencies.

2. HAZARDOUS MATERIALS MANAGEMENT

Most Air Force installations use a variety of chemicals that are considered to be hazardous. These materials present numerous problems. When storing and handling hazardous materials they present the potential for hazards to persons as well as the potential for contamination of soils and both ground and surface water resources. Installations are required to develop and implement procedures to minimize the potential for releases, respond to releases which may occur, and provide information to local emergency planning agencies concerning hazardous material storage and utilization.

HAZARDOUS MATERIAL FEDERAL LEGISLATION

The Federal Water Pollution Control Act (CWA): Also known as the Clean Water Act, governs the control of water pollution in the nation. CWA requires elimination of the discharge of pollutants, increase water quality, water treatment planning to control sources of pollutants, and control of nonpoint sources of pollution.

Emergency Planning and Community Right-To-Know Act (EPCRA): Promotes emergency planning and preparedness at both the state and local levels. It provides citizens and local governments with information regarding the potential hazards in their community. EPCRA requires the use of emergency planning and designates state and local governments as recipients for information regarding chemicals and toxins used in the community. Air Force policy is to adhered with substantive requirements.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also referred to as Superfund): regulates the prevention, control, and compensation relating to environmental pollution. The EPA is to be notified whenever there is a release of a reportable quantity of any hazardous substance.

Hazardous Materials Transportation Act of 1975, amended 1990: The U.S. Department of Transportation regulates and administers the Hazardous Materials Transportation Act. The act regulates the shipping, marking, labeling, placarding, and record keeping requirements for hazardous materials listed in 49 CFR 172.101. Air Force activities must comply with the requirements of applicable federal regulations.

The Occupational Safety and Health Act (OSHA) of 1970, amended 1990: Governs the issues related to occupational safety and health. The act provides for enforcement programs, including prohibition of giving advance notice of any inspection and also specifies specific reporting procedures with respect to occupational safety and health objectives.

The Resource Conservation and Recovery Act (RCRA): Establishes standards for the regulation of underground storage tanks used to contain petroleum and other hazardous materials. RCRA requires EPA to issue standards on leak detection, record maintenance, release reporting, corrective actions, tank upgrades, and replacements.

Toxic Substances Control Act (TSCA): EPA is authorized to screen and test new and existing chemicals and also regulate some special hazardous materials. Examples of hazardous materials regulated under TSCA include PCBs and asbestos.

Executive Order 12088 Federal Compliance with Pollution Standards and Executive Order 12856 Federal Compliance With Right-to-Know Laws and Pollution Prevention Requirements cover executive agency requirements for hazardous materials.

HAZARDOUS MATERIALS STATE REQUIREMENTS

Only rarely do state regulations address hazardous materials. Local agencies (primarily county or city fire departments) normally require flammable or combustible materials storage facilities to meet certain requirements. State and local agencies maintain emergency planning procedures in accordance with EPCRA regulations.

KEY HAZARDOUS MATERIALS COMPLIANCE REQUIREMENTS

Hazardous Substance Release Reporting: Air Force installations are required to notify EPA (National Response Center) and appropriate state and local agencies when a release of a reportable quantity of a hazardous substance occurs. The release includes any discharge, spill or leak to the air, water, or land.

Hazardous Materials Transportation: Air Force installations which ship hazardous materials off-base must comply with regulations regarding packaging, labeling, and spill response. Depending on the type of hazardous materials transportation activity at the base, certain sections of 49 CFR 171-173 will apply.

Storage and Handling of Hazardous Materials: Air Force installations which store or handle hazardous materials, such as flammable/combustible materials, acids, caustics, compressed gases, oxidizers, etc., are required to comply with facility storage and labeling requirements and operational procedures.

Community Right-to Know: Air Force installations which use or manufacture hazardous or toxic chemicals are required by OSHA and Air Force policy to have MSDSs for hazardous chemicals and to have them submitted to state or local emergency commissions and fire departments with jurisdiction over the base.

BASE HAZARDOUS MATERIALS RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for the proper storage and handling of all hazardous materials used by the civil engineering shops. The BCE is also responsible for reporting releases of reportable quantities of hazardous substances to EPA and appropriate state authorities.

Bioenvironmental Engineering (BEE): The BEE responsible for reviewing the issue exception codes for hazardous materials assigned by base supply and for approving or disapproving the recommendations. The BEE also maintains MSDSs on the base.

Base Supply: Base Supply has primary responsibility to receive, store and issue all hazardous commodities. Base Supply reviews all items that have a potential health hazard and determines if an issue exception code should be assigned to the item before being placed in storage. The receipt of hazardous materials (with the proper documentation and shipping papers) and the proper maintenance and operation of flammable/combustible materials storage facilities, acid storage facilities and compressed gas storage facilities are also responsibilities of Base Supply. Operations of this type may be centrally located in a Hazardous Material Pharmacy, see Chapter 5.

Base Fire Department: The Base Fire Department provides support in cases of emergency response, spill events, exercises, and fire protection activities. In addition, the fire department is responsible for making periodic fire safety inspections of flammable/combustible storage and handling areas on the installation.

Safety Manager: The Safety Manager is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials. The Safety Manager provides the appropriate manager with a report of findings and recommended corrective actions. The Safety Manager is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

HAZARDOUS MATERIALS MANAGEMENT REVIEW PRODUCTS

1. The list of installation hazardous material storage use areas
2. The installation waste minimization plan
3. MSDSs
4. Institutions that provide personnel training
5. Documentation on contaminated sites

CONTRACTING RESPONSIBILITIES

Specifications, item descriptions, or statements of work that specify hazardous materials should meet state and federal regulations and have been reviewed, coordinated, and if required obtain permits. Approval for hazardous material purchases must come from an authorized source like the hazardous material pharmacy, Bioenvironmental, CEV or other approved authorizing organization. Affirmative procurement responsibilities should be given to the use of alternative procurement of these materials. Waivers are required when purchasing non-commercial products with ozone-depleting-chemicals. Waivers are not required if they are in a commercial product. See Chapter 5 for more information.

3. HAZARDOUS WASTES MANAGEMENT

Hazardous wastes are certain solid and liquid wastes that appear in EPA's listed wastes in 40 CFR 261, or are wastes which demonstrate one or more of the following characteristics: ignitabiliy, corrosive, reactivity, or toxicity. Air Force installations typically generate waste solvents, oils, paints, and paint sludges which may be regulated as hazardous waste. See Chapter 5 for additional information on hazardous waste generators. Federal regulations establish 100 kilograms (220 pounds) per month as the minimum quantity of hazardous wastes which is subject to regulation. Since this quantity is quite small (approximately six 55 gallon drums per year), almost all Air Force installations are affected by some of the regulations applicable to the generation, storage, transportation, treatment and disposal of hazardous wastes. In fact, the Air Force experiences more regulatory violations in this area than any other.

FEDERAL HAZARDOUS WASTE LEGISLATION

The Resource Conservation and Recovery Act: Established the Federal Hazardous Waste Management Program regulating the handling, storage, transportation, treatment,

and disposal of solid and hazardous waste. Although the act primarily deals with current and future waste management activities, EPA is also authorized to require corrective actions for contamination resulting from past releases of hazardous waste at facilities which have current activities subject to regulation under RCRA. RCRA requires facilities generating specific amounts of hazardous waste per month to certify that a program is in place to minimize the generation of hazardous wastes and to specify the steps taken to implement this program. RCRA also prohibits the land disposal of noncontainerized hazardous waste or free liquids containing hazardous waste into a landfill.

The Federal Facilities Compliance Act (FFCA) of 1992: Waives the sovereign immunity with respect to federal, state, and local procedural and substantive requirements specified by RCRA solid and hazardous wastes laws and regulations.

STATE HAZARDOUS WASTE REQUIREMENTS

Many states have met EPA requirements (40 CFR 271) and have been authorized to manage their own state programs. Called Cooperative Agreements, RCRA encourages and provides financial assistance to states to develop their own hazardous waste statutes and to operate regulatory programs in lieu of the Federal EPA managed program. Many of the states have adopted the EPA regulations by reference or have promulgated regulations which are identical to the EPA regulations. Several other states have developed hazardous waste regulatory programs which are significantly more stringent than the EPA program.

KEY HAZARDOUS WASTE COMPLIANCE REQUIREMENTS

Generator Requirements: Generators are required to conduct analysis of the wastes, manage the wastes on-site, and properly dispose of waste off-site-in accordance with the installation developed and maintained Hazardous Waste Management Plan. A generator of hazardous wastes needs to have an EPA ID number, but does not need a permit if waste is stored on the installation for less than 90 days.

Transport Requirements: Hazardous wastes shipped off-base must be properly labeled and must be accompanied by manifests. Waste shipments are subject to DOT hazardous materials transportation regulations.

Accumulation Point Management: An accumulation point is an area in or near the workplace where hazardous waste is accumulated prior to disposal. Storage must not exceed 90 days from the time the first waste begins to accumulate. Permits are not required for accumulation points, but spill containment, inspections and training are required.

Satellite Accumulation Point Management: This accumulation point is where no more than 55 gallons of a hazardous waste or one quart of acute hazardous waste is accumulated. Accumulation points are located near or at the generation point, e.g. maintenance facilities. When the 55 gallon limit is reached the operator has 3 days to move the waste to a 90 day storage facility or permitted treatment, storage, and disposal facility.

Permitted Treatment, Storage, and Disposal (PTSD) Facilities Requirements: The operation of a PTSD system is subject to regulation and permitting under federal or state

regulations. These regulations are both administrative and technical and are applied through a RCRA permit. Installations which store hazardous wastes for more than 90 days require RCRA permits.

The administrative standards require emergency plans, proper identification of wastes, record keeping, and training of operating personnel. These standards also require regularly scheduled inspections and reports of both routine and contingency operations. The administrative standards also require that a plan for ceasing operations and closing the facility be developed, kept on-hand, and updated frequently.

The technical standards fall into two classes: general standards which apply to all PTSD facilities and specific standards which apply to various types of facilities, i.e., container storage areas; tanks; surface impoundments; waste piles; land treatment facilities; incinerators; landfills; thermal treatment facilities; chemical, physical, and biological treatment facilities; and miscellaneous units, such as those that conduct open burning or open detonation of propellants and explosives outside of the training environment.

The Hazardous Materials Pharmacy, where applicable, may have satellite disposal responsibilities including turn-in, documentation, container labeling, segregation, and storage.

BASE HAZARDOUS WASTE RESPONSIBILITIES

Installation Commander: The installation commander is responsible for establishing and maintaining an active program of surveillance of the users of hazardous materials; generators, transporters, and storers of hazardous wastes; waste minimization program; and disposal activities. The commander signs all permit applications and reports submitted to EPA or state agencies.

The Installation Environmental Protection Committee (EPC): The EPC is responsible for reviewing the summary data on waste generation, personnel training, and disposal practices.

Base Civil Engineer: The BCE or CEV develops installation-specific policy for all aspects of hazardous waste management for all activities on the installation including tenants. The CEV staff is responsible for the Hazardous Waste Program that includes the development and implementation of the Hazardous Waste Management Plan to include management and day-to-day monitoring of the hazardous waste program; identification and programming of funding requirements; and preparation of permit applications and reports. The CEV staff also reviews all hazardous waste storage, treatment, and disposal facilities and ensures their compatibility with hazardous waste regulations and approves their siting and design.

The Bioenvironmental Engineer: The BEE reviews workplace processes and practices to ensure all hazardous materials/wastes are identified; arranges for industrial hygiene monitoring and interprets monitoring results for health risks. The BEE reviews plans to build or modify hazardous waste facilities; reviews requests for issues of materials in stock classes listed in Federal Standard 313; and maintains a master file of Material Safety Data Sheets (MSDS). The Environmental Health Officer (EHO) conducts Hazard Communications Training required by the Occupational Safe and Health Administration for supervisors of all employees who handle hazardous materials.

Environmental Health Officer (EHO): The EHO conducts Hazardous Communization training for all supervisors who have personnel who handle hazardous materials.

Base Fire Department: The Base Fire Department provides support in fire protection, spill response, and emergency response and performs periodic fire safety inspections of waste storage areas and accumulation points.

Base Supply Officer: The Supply Officer processes paperwork transactions and maintains the computer transaction records for all hazardous waste disposal action. When applicable Base Supply will be responsible for operation of the hazardous material pharmacy.

The Ground Safety Officer performs workplace safety inspections, monitors hazardous conditions, and performs occupational safety training.

Transportation: The Transportation Squadron coordinates with shipping activities to ensure hazardous wastes are properly labeled, packaged, manifested, and transported. Transportation may qualify as a hazardous waste generator and operate an accumulation point or larger.

Maintenance: The Logistics and Operational Group Commanders ensure that nonhazardous/nontoxic materials are used where possible; maintain a list of hazardous materials used by shops and tasks; ensures personnel are trained in managing hazardous materials and wastes; and that waste is properly labeled and managed. They develop and process waivers through command channels for the use of ODCs. They Qualify as a hazardous waste generator and operate an accumulation point or larger.

Hazardous Waste Generators: Managers of activities which generate hazardous wastes manage hazardous waste in their custody through the use of proper storage, inspection, sampling and analysis, record keeping, labeling of containers, and transfer for disposal.

Treatment, Storage and Disposal Facility Operator: The operators of Treatment, Storage and Disposal Facilities are responsible for ensuring compliance with all hazardous waste regulations applicable to the facility including maintaining operational and training records. The primary TSD facility on most bases is operated by DRMO.

Defense Reutilization and Marketing Office (DRMO): DRMO is the local agency office designated by DOD to provide hazardous waste contract disposal service and is responsible for compliance with all applicable regulations at its storage/disposal facility.

HAZARDOUS WASTE MANAGEMENT REVIEW PRODUCTS

1. The Hazardous Waste Management Plan
2. A list of hazardous wastes generated on the installation
3. EPA Identification Number
4. Manifests
5. Permits
6. Training requirements
7. Documentation on contaminated sites

CONTRACTING HAZARDOUS WASTE RESPONSIBILITIES

Contracting, based on the requirements submitted by CE or CEV, may contract for hazardous waste disposal services in accordance with all federal and state regulatory

requirements. This requirement may be in addition to services available through DRMO. Contractors selected to perform these contracts must have the mandated licensees, certification, technology and experience to perform the wide range of requirements for hazardous wastes. Contracting may be required to contract for testing and analysis to identify hazardous wastes. Based on the scope of the requirement this could result in the use of both contract and or small purchase procedures. Contracting must insure that testing is conducted by only EPA certified laboratories. Base organizations will submit requirements for various types and sizes of storage facilities. These requirements must meet EPA and state requirements. Review specifications and insure that all regulatory requirements are met before purchasing. Contracts of this type should undergo an extensive legal review if the disposal or testing of hazardous waste is required.

Contractors on Air Force installations must comply with all hazardous waste regulations. These regulations need to be addressed to new contractors working on base. It should also be included as a topic in preperformance conferences and similar meetings.

4. NATURAL/CULTURAL RESOURCE MANAGEMENT

The Air Force has over nine million acres of land, including over 700,000 acres of managed forests, 1100 miles of rivers and streams, and habitats for numerous threatened and endangered species, The Air Force is a major steward of public lands. Air Force installations also include a variety of cultural, wildlife, and historic resources. All of these resources must be managed to assure protection and enhancement while permitting multiple use.

FEDERAL NATURAL/CULTURAL RESOURCES LEGISLATION

The National Environmental Policy Act of 1969, as amended: Requires the Federal Government to use practicable means and resources to the end that the nation may preserve important historic, cultural and natural aspects of our national heritage. NEPA also requires federal agencies to use a systematic interdisciplinary approach in planning and decision making which may have an impact on the environment.

The Endangered Species Act, as amended: Requires all federal agencies to carry out programs to protect and conserve federally listed endangered and threatened plants and wildlife in consultation with assistance from the Departments of the Interior and Commerce. Air Force actions must not jeopardize the continued existence of endangered or threatened plants and wildlife, nor result in the destruction or adverse modification of critical habitat. Any Air Force action that may affect federally listed species or their critical habitats requires consultation with the U.S. Fish and Wildlife Service (USFWS).

The Sikes Act, as amended: Requires installations to execute cooperative fish and wildlife plans with the Department of Interior and state fish and wildlife agencies The plan requires that natural resources on the installation are properly managed. Installations should provide multi-purpose uses and that the public access that is necessary or appropriate be authorized based on the military mission.

The Fish and Wildlife Conservation Act of 1980: Provides authority for federal agencies to conserve and promote conservation of nongame fish and wildlife and their habitats. It also provides technical and financial assistance to states for development of the above wildlife.

The Fish and Wildlife Coordination Act of 1946: Requires federal agencies to consult with USFWS, Department of Interior, and state agencies whenever plans are made that impact the flow, depth, or channel of bodies of water.

The Migratory Bird Treaty Act of 1918: Enforces international conventions for the protection of migratory birds and game animals.

Executive Order 11990 The Protection of Wetlands: Requires federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands. Section 404 of the Clean Water Act requires the Corp of Engineers' permits before performing any work in wetlands. The USFWS and EPA coordinate on these permits.

Executive Order 11988, Floodplains Management: Requires federal agencies to take steps to reduce the risk of flood loss and destruction of floodplains and wetlands.

The Coastal Zone Management Act of 1972: Requires federal agencies to preserve, protect, and manage coastal waters and associated resources.

The Clean Water Act Amendments of 1987: Requires federal agencies to ensure consistency with state regulations for the control of non-point sources of water pollution. The objective is land management which conserves soil and water resources. The Clean Water Act also establishes river basin improvement programs that affect the Air Force.

The National Historic Preservation Act of 1966, as amended: Establishes historic preservation as a national policy. This includes protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, or engineering. Section 106 of the Act provides direction for federal agencies for undertakings that affect properties listed, or eligible for listing, on the national Register of Historic Places. Section 110 requires federal agencies to locate, inventory, and nominate all properties that may qualify for the National Register.

The Environmental Quality Improvement Act: Established the Office of Environmental Quality in the executive branch of the Federal Government.

Antiquities Act of 1906: Authorized the President to declare historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Federal Government to be natural monuments.

Executive Order 11593, Protection and Enhancement of the Cultural Environment: Directs federal agencies to provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the Nation; to ensure the preservation of cultural resources; to locate, inventory, and nominate to the National Register all properties under their control that meet the criteria for nomination; and to ensure that cultural resources are not inadvertently damaged, destroyed, or transferred before the completion of inventories and evaluation for the National Register.

Archaeological and Historic Preservation Act of 1974: Requires federal agencies to contact the Department of the Interior when they find that a federal construction project may have caused irreparable loss or destruction of significant scientific, prehistoric, historical or archaeological sites.

American Indian Religious Freedom Act of 1978: States that it is the policy of the United States to protect and preserve for American Indians their inherent rights of freedom to believe, express, and exercise traditional religions. It also provides for consultation with tribal leadership before human burial sites which appear to be related to the tribe's ancestors are disturbed by agency activities.

Archaeological Resources Protection Act: Requires the Secretaries of the Interior, Agriculture, and Defense to develop plans and schedules for surveying the lands under their control to determine the nature and extent of archaeological resources. It protects all archaeological resources on federal land from disturbance.

Native American Graves Protection and Repatriation Act of 1990: Outlines responsibilities of federal agencies for the excavation of Native American cultural items. It also requires museums to inventory and identify geographical and cultural affiliation of Native American human remains, sacred objects, and funerary objects.

STATE NATURAL/CULTURAL RESOURCES REQUIREMENTS

Some states have their own wetlands definitions and permitting procedures which must be followed. States develop regulations and good management practices (GMPs) for the protection of surface waters and prevention of non-point source pollution. These GMPs primarily apply to agricultural and agricultural (forestry) activities, but are also to be followed whenever any activity may affect surface waters or contribute to non-point source pollution. Air Force management plans address these GMPs.

State regulations governing hunting and fishing activities must be followed on Air Force installations. Special regulations for those activities on installations may be developed in cooperation with the state wildlife management agency.

The State Historic Preservation Officer (SHPO) is responsible for implementation of the National Historic Preservation Act and the implementation of state programs. The SHPO advises and assists federal agencies and must be consulted during all cultural resource planning.

KEY NATURAL/CULTURAL RESOURCES COMPLIANCE REQUIREMENTS

Management Plans: Air Force installations which have land and water areas that possess, or are capable of producing, natural resources must develop a program for restoring, improving, developing, and conserving natural resources, including, where applicable, plans for land management, grazing and croplands, forestry, fish and wildlife, and outdoor recreation.

Cooperative Agreements: Installations must maintain liaison with other federal, state, and local agencies and develop cooperative agreements to assist in implementing well coordinated, multiple-use natural resources programs.

Endangered Species: Installations must inventory endangered animals and plants that exist on the installation, provide for their protection and enhancement, and consult with the USFWS on any actions that might affect them.

Natural Resources: Air Force installations are required by the Sikes Act to prepare an annual Conservation report (AF Form 47) on their natural resources activities which includes report information on outdoor recreation, forestry, fish and wildlife conservation, and other natural resources activities.

Historic Preservation: Air Force Installations are required to locate, inventory, and nominate all properties that qualify for listing on the National Register of Historic Places. They must consider effects of their actions on eligible properties and consult with the SHPO and Advisory Council. They must ensure that no eligible property is inadvertently sold, demolished, substantially altered, or allowed to deteriorate significantly. Installations with historic properties must develop a historic preservation plan that ensures compliance with these responsibilities.

Wetlands and Floodplains: Air Force installations must identify all floodplains and wetlands in the installation land management plan and ensure that the plan provides for protecting and managing these areas. Public notice must be given before undertaking actions in wetlands or floodplains. Section 404 of the Clean Water Act requires that permits be granted prior to altering wetlands or floodplains.

Soil and Water Conservation: Air Force installations must ensure that all major development projects provide for the conservation of soil and water resources in accordance with state non-point source regulations and specified management practices.

BASE NATURAL/CULTURAL RESOURCES RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for supervising, controlling, supporting, and managing installation natural resources and historic preservation programs.

Natural Resources Manager: The Natural Resources Manager is responsible for preparing resources, inventories, management plans and cooperative agreements, budgets, and annual natural resources reports. The Natural Resources Manager implements and controls all activities necessary to achieve natural resources management goals. Where installations do not have a full time Natural Resource Manager, these duties are normally assigned to the installation environmental coordinator or community planner. The Natural Resource Manager reviews all work requests and job orders that affect natural resources to ensure that they are compatible with the installation natural resources management requirements.

Base Historic Preservation Officer (BHPO): The BHPO is responsible for implementing the historic preservation program, and locates, inventories, and evaluates installation cultural resources.

Historic Preservation Committee: The committee ensures that historic preservation objectives are met, that proposed projects and activities are consistent with historic preservation requirements, and resolves conflicts. This committee may be incorporated into the EPC.

NATURAL AND CULTURAL RESOURCES MANAGEMENT REVIEW PRODUCTS

1. The Installation Endangered Species Survey
2. The Natural Resources Management Plan
3. Installation land management plans
4. Any cultural or archeological resource surveys
5. Management plans for cultural and archeological resources
6. A list of properties identified or nominated for the National Historic Register

CONTRACTING NATURAL/CULTURAL ISSUES

Contracting will be required to contract for services to meet natural and cultural resource requirements. When contracting with a federal agency ensure that all requirements of the Economy Act are fulfilled. Any construction project with even the remotest possibility of disturbing one of the above mentioned regulated sites requires a through review by the BHPO or Resource Manager. This in-turn should be coordinated with federal and state regulatory authorities. Renovation of buildings that may be categorized under a historical designation require coordination with the SHPO. Many cultural and natural resource projects are accomplished using universities and similar type institutions. Review FAR requirements for these type of contracts.

Many cultural/natural resources projects are budgeted using a special fund called Legacy. This funding is used to enhance the natural and cultural resources on the base.

5. ENVIRONMENTAL NOISE MANAGEMENT

Development in areas surrounding Air Force installations and underlying military training routes (MTRs) and military operating areas (MOAs) results in exposure of the public to noise associated with military aircraft operations. If incompatible development, particularly residential development, occurs in areas with high noise levels, the Air Force may be pressured to curtail or modify flying activities.

FEDERAL NOISE LEGISLATION

The Noise Control Act of 1972: Established that federal agencies, when engaged in an activity resulting in the emission of noise, should comply with federal, state, interstate, and local requirements respecting the control and abatement of noise to the same extent as private entities. The Noise Control Act exempts military weapons and combat equipment from environmental noise requirements.

The Aviation Safety and Noise Abatement Act of 1979: Applies to airport operations and its noise impact on surrounding areas. Airport operators submit noise exposure maps to the Secretary of Transportation. This shows noncompatible uses in each area of the map and project aircraft operations. Operators may also submit to the Secretary of Transportation a noise compatibility program showing the steps taken to reduce the number of noncompatiable zones caused by aircraft operations.

STATE NOISE REQUIREMENTS

State, regional and local governmental agencies may develop zoning, and planning ordinances which have the potential to affect Air Force installations and their operations, especially when they do not provide controls in areas affected by noise from Air Force activities. As a general rule, states tend to treat environmental noise as a source specific pollutant whose emissions will be controlled by the locally affected community.
The following activities may be subject to state and local regulation and may require studies to determine the impact of noise on the surrounding communities:

- Airfields
- Weapon, rocket, missile firing ranges
- Test tracks for vehicles
- Outdoor power generating equipment
- Demolition and explosive disposal sites.
- Rocket or jet engine testing

KEY NOISE COMPLIANCE REQUIREMENTS

The Air Installation Compatible Use Zone Program (AICUZ): AICUZ is a Department of Defense environmental planning program designed to promote compatible land uses in areas around military airfields. The purposes of the program are to minimize the effects of flying operations on areas adjacent to installations; prevent incompatible development in high noise exposure and accident potential areas; and maintain operational capability through compatible land use planning and control.

As part of the AICUZ process, installations with a flying mission publish reports which describe the noise and accident potential associated with current air operations at the installation, evaluate the compatibility of current and projected land uses in areas surrounding the installation, and provide recommendations for use by local communities in implementing land use controls to protect the civilian population and preserve the operational integrity of the installation. The objectives of the AICUZ program are achieved primarily through voluntary actions of local government officials and the policies of federal agencies such as the Department of Housing and Urban Development.
AICUZ Noise Maps: Noise zone contour maps must be included in AICUZ studies or amendments. HQ USAF/LEE approval is required before maps are publicly released.
Range Plan: Each installation operating an air-to-ground test and/or training range develops a range plan which comprehensively addresses all factors influencing the Air Force's operation of a range.

BASE NOISE RESPONSIBILITIES

Base Civil Engineer: The Environmental Planning Function of Base Civil Engineering is responsible for carrying out the AICUZ program.

Operations Airspace Manager: The Airspace Manager is responsible for managing special use airspace and Military Training Routes (MTRs).

Public Affairs: The Public Affairs Office is responsible for making all public releases of information about Air Force activities.

Range Management Agency: The Range Management Agency is responsible for activities at an air-to ground range, including planning for the range.

CONTRACTING NOISE ISSUES

The Noise Control Act of 1972 creates a preference for low-noise emission products. Low noise products meet noise levels specified in the noise emission standards under 42 U.S.C. 4914 (a) (3). EPA and GSA have developed suitable substitutes and determination of reasonable costs for the products. Major construction projects which may require some form of noise management control require coordination and planning to maintain compliance.

6. PESTICIDES

Both federal and state regulations control the storage and application of insecticides, herbicides, and other pesticides. Air Force installations are required to comply with these regulations, including requirements for applicator certification.

FEDERAL PESTICIDES LEGISLATION

A specific number of certified pesticide/herbicide applicators must be present at each base according to the pest control needs of the installation. Certification must be obtained for specific base pest management activities and contractors used for pest management must have current state certification for the types of applications to be performed.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): Congress originally passed FIFRA in 1947, and amended the Act in 1972 to shift the emphasis of the legislation from safeguarding the consumer against fraudulent pesticide/herbicide products to the protection of public health and the environment. FIFRA was further amended in 1975, 1978, and 1980 for reauthorization purposes. FIFRA regulations apply to persons who manufacture, market, formulate, distribute, use or dispose of pesticides and herbicides. Under FIFRA, the EPA is responsible for the registration of new pesticides and herbicides and for the registration of all existing pesticides and herbicides to ensure that, when used in accordance with label directions, they will not present any unreasonable risks to human health or the environment. EPA may classify a product for restricted use if its toxicity warrants special handling. Restricted use pesticides may be used only by or under the supervision of certified applicators.

The Food, Drug and Cosmetic Act (FFDCA) of 1993: FFDCA provides for the establishment of limitations on pesticide residue levels in food or feed crops. Under FFDCA, EPA has established limitations to prevent incidents of pesticide poisoning in residential as well as agricultural setting.

STATE PESTICIDES REQUIREMENTS

State pesticide and herbicide regulatory program requirements must be at least as stringent as FIFRA requirements. State and local programs typically contain regulations which are tailored to an industry or activity which is prevalent or particularly sensitive in a state. State and local pesticide and herbicide regulations in many cases provide more stringent standards or specifically identify a requirement which may be qualitatively regulated under the federal program. State and local pesticide and herbicide programs generally include regulations which address the following topics:

- Restrictions or requirements for the sale, distribution, or use of selected pesticides and herbicides;
- Disposal requirements for excess pesticides and herbicides and pesticide/herbicide wastes such as containers;
- Restrictions on the control of specific animal or insect species;
- Specifications for bulk pesticide and herbicide storage tanks and storage facilities;
- Operational requirements for selected application methods;
- Record keeping and applicator certification requirements.

KEY PESTICIDES COMPLIANCE REQUIREMENTS

Certification: A specific number of certified pesticide/herbicide applicators must be present at each base according to the pest control needs of the installation. Certification must be obtained for specific base pest management activities and contractors used for pest management must have current state certification for the types of applications to be performed.

Record Keeping and Reporting: The certification status of applicators must be indicated in a list showing certification expiration dates. Daily records of pesticide/herbicide use (DD Form 1532-1) must be maintained by the installation pest management function. The Pest Control Summary Report (AF Form 646) summarizing annual pesticide/herbicide application activities must also be completed.

Health Monitoring: Base Medical Services provides physical examinations for all persons involved in pesticide/herbicide storage or applications. Base Medical Services also monitors pesticide/herbicide procurement, applications in food and feed areas, and any fumigation activities.

Storage, Mixing, and Personnel Facilities: Pest management chemicals must be stored in an area separate from other operations and feed areas. Separate areas for mixing, equipment storage, decontamination, and personnel amenities as well as systems for spill containment, ventilation, personnel safety, entry control, and run-off retention are also required.

BASE PESTICIDES RESPONSIBILITIES

Base Civil Engineer: The BCE assures that pest management facilities comply with all applicable USAF, EPA, and OSHA regulations and standards; submits annual reports; assumes responsibility for the completion of daily records, inspections, requests for additional support, biennial physical examinations, notifications to Base Medical Services, and the protection of the health and safety of pest management personnel. The

Pest Management shop within Civil Engineering is normally the principal department charged with proper pesticide/herbicide management at Air Force installations.

Base Medical Services (BMS): BMS identifies and characterizes pests; recommends measures for personal protection and pest control; monitors pests of medical importance; provides industrial hygiene and environmental sanitation assistance; and assures that pest management personnel are physically qualified to work with pesticides/herbicides.

PESTICIDES MANAGEMENT REVIEW PRODUCTS

1. The Installation Pesticide Management Plan
2. A list of pesticide storage sites
3. Application records
4. MSDS sheets for pesticides
5. Personnel training and certifications for applicators
6. Contracts and specifications for pesticides applications

CONTRACTING PESTICIDES ISSUES

Contracts with pesticide applications must meet approved EPA and state regulatory standards for applicators, storage, and pesticide type. Obtain MSDSs when procuring pesticides. Ensure proper coordination is obtained by CE pesticide personnel before procuring any pesticides. Consideration should be given to alternative types of pesticides that meet customer requirements.

7. PETROLEUM, OILS, AND LUBRICANTS (POL)

The large quantities of fuel and other petroleum products stored at Air Force installations present the potential for contamination of surface and ground waters as a result of accidental spills. To minimize this potential installations must develop and implement plans and procedures to minimize the probability of releases and for responding in the event that a release occurs.

FEDERAL POL LEGISLATION

Clean Water Act: The Federal Water Pollution Control Act of 1972 (subsequently amended to become the Clean Water Act) and the Water Quality Improvement Act of 1974 are the primary federal laws regulating the management of petroleum products. Federal regulations prohibit the discharge of "harmful quantities" of oil into the navigable waters of the United States. “Oil" is defined in 40 CFR 122.2 as oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil: 40 CFR 110 "Protection of Environment - Discharge of Oil" defines "harmful" quantities as those discharges which will cause a sheen or discoloration of the surface of the water or a sludge or emulsion to be deposited beneath the surface of the water.

40 CFR 112, "Oil Pollution Prevention Non-Transportation Related Onshore and Offshore Facilities,” requires that operators of facilities which have discharged, or due to their location, could reasonably be expected to discharge oil into or on the navigable waters of the United States to prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan. This SPCC Plan must address the use of pollution prevention equipment,

spill response training of operating personnel, the use of secondary containment, and an oil spill contingency plan.

Resource Conservation and Recovery Act: Regulations issued pursuant to RCRA specify requirements for training of personnel working on or in proximity to, oil and hazardous substance spill sites and require the establishment and maintenance of a National Oils and Hazardous Substances Pollution Contingency (OHSPC) Plan. Most Air Force installations combine the OHSPC and SPCC Plans into one single document, usually called the Spill Prevention and Response (SPR) Plan. The 1984 amendments to RCRA also included provisions for regulation of underground storage tanks (USTs) which are discussed in the section on underground tanks.

STATE POL REQUIREMENTS

Many states and some major metropolitan and regional planning agencies have developed legislation and implemented regulations which closely parallel the federal statutes. Most of these state and local requirements are similar or nearly identical to the federal requirements. Some, however, may differ in important ways, particularly the definition of reportable quantities and the specific procedures for reporting spills.

KEY POL COMPLIANCE REQUIREMENTS

Environmental Release Reporting: Air Force installations are required to notify EPA and appropriate state agencies when a reportable quantity of POL material enters navigable water.

Spill Prevention and Response Plan: Air Force installations which operate POL facilities are required to prepare a SPCC Plan. This plan must be prepared in accordance with the guidelines set forth in 40 CFR 112.7, and the plan must be reviewed every three years and modified within six months of significant changes in POL facilities, or if new, field proven technology has been developed which will significantly reduce the likelihood of a spill. The SPCC Plan may be combined with the required OHSPC Plan (40 CFR 300) into a comprehensive Spill Prevention and Response (SPR) Plan.

Spill Response Training: Active duty Air Force personnel involved with the management and handling of oil and hazardous substances must take part in periodic spill prevention and response training programs.

Facility Design and Inspection Procedures: 40 CFR 112.7 sets forth minimum design criteria and inspection procedures for POL facilities and operations which must be addressed in the SPCC Plan.

BASE POL RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for the maintenance of all installed petroleum storage and dispensing systems. This responsibility often is discharged by the Liquid Fuels Maintenance (LAM) shop. Often, the EPC delegates the specific preparation of the SPR Plan to the Base Civil Engineer for implementation by CEV.

Environmental Flight: CEV monitors all POL activities which may affect the environment and usually is responsible for the coordination of the EPC review and updates of the SPR Plan. CEV often coordinates the reportable spills notification to appropriate federal and state agencies on behalf of the Base On-Scene Commander.

Bioenvironmental Engineering. The BEE takes samples to determine the chemical nature, pollutant concentration and extent of each reportable quantity spill as required for response actions and documentation.

Spill Response Team (SRT): The SRT is tasked to respond to spills when requested by an On-Scene Commander (OSC) and to perform spill containment, recovery, clean-up, disposal and restoration activities as directed by the OSC. The SRT is a multi-disciplinary team often including the following persons: Base Civil Engineer, Base Environmental Coordinator, Bioenvironmental Engineer, Fire Chief, Security Police Chief, Public Affairs Officer, Base Fuels Officer, Safety Chief, and Staff Judge Advocate. Contracting may have procurement responsibilities outline in the spill plans in the event of a spill.

Base Fire Department: The Base Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department is responsible for periodic fire safety inspections of flammable/combustible storage and handling areas, hazardous waste storage areas, and accumulation points on the installation.

Base Safety : The Safety Manager is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials and waste. The Safety Manager provides the appropriate manager with a report of findings and recommended corrective actions. The Safety Manager is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

Base Fuels: The Base Fuels Management Officer (BFMO) is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections.

POL MANAGEMENT REVIEW PRODUCTS

1. The Spill Control Plan
2. A list of installation POL storage areas
3. Upgrading and closure plans for sites and underground storage tanks (UST)
4. A list of all USTs, detection equipment, and locations
5. Release detection documentation
6. UST integrity test results
7. Site contamination reports after tank removal

CONTRACTING POL ISSUES

Contractors must comply with all federal and state POL regulations. Vendors that deliver fuel using local or DLA contracts need to be in the BCAS vendor file in the case of emergency response to spills. Vendors should be knowledgeable about base spill plans and emergency points of contact on the base and in the community in the event of a spill. Spill response teams should have telephone numbers of the base's POL vendors. Contracting may be required to support these spill response teams; consideration should be given to review these plans for currency and specific responsibilities.

8. SOLID WASTES

Solid waste includes all non-hazardous trash, rubbish, garbage, bulky wastes, liquids or sludges. Solid wastes generated by Air Force operations are subject to the same regulations as those generated by commercial and private sources. Medical and pathological wastes generated by hospitals and clinics are also subject to regulation as solid wastes. Department of Defense and Air Force directives also require participation in regional solid waste management programs where practicable, to include recycling and resource recovery programs. A relatively new solid waste management program initiative that some states are promoting is the collection of household hazardous waste, i.e., lawn pesticides, workshop solvents, etc. Air Force installations will be expected to participate in such programs.

FEDERAL SOLID WASTE LEGISLATION

Subtitle D of the Resource Conservation and Recovery Act: RCRA establishes federal standards for the management of non-hazardous solid wastes. The primary goals of this subtitle are to encourage (1) environmentally sound solid waste management practices; (2) recycling of waste materials, and (3) resource conservation. RCRA had a substantial effect on the handling of solid wastes. Many materials previously disposed of at solid waste facilities were defined as hazardous wastes subject to strict controls on storage, transportation and disposal as discussed in the following section on Hazardous Wastes.

Hazardous and Solid Waste Amendments of 1984: This legislation is the most recent addition to the federal legislation regulating the management of solid and hazardous wastes. The Amendments added a number of materials to the listing of hazardous wastes and imposed strict limitations or prohibitions on the land disposal of certain types of wastes.

The Clean Air Act of 1970: Section 112 of the Clean Air Act gives EPA the authority to establish emission standards for hazardous air pollutants. In 1973, standards for control of asbestos fibers were issued. These regulations include specific requirements for the handling, packaging, transportation and disposal of asbestos wastes and are discussed in the section on Special Pollutants.

STATE SOLID WASTE REQUIREMENTS

The primary focus of solid waste management regulation is at the state and local level. Most states and municipalities have developed their own code of regulations governing the permitting, licensing, and operation of landfills, incinerators, and source separation and recycling programs. Many of these state and local requirements are more stringent than the minimum requirements established by federal regulations.

KEY SOLID WASTE COMPLIANCE REQUIREMENTS

Permits: Air Force installations must obtain applicable state or local permits and licenses for the site location and operation of on-base landfills. The Solid Waste Disposal Act of 1965 is the governing federal legislation.

Hazardous Materials Substances listed as hazardous by state or local regulations may not be disposed of as solid waste. RCRA and the Hazardous and Solid Waste

Amendments of 1984 will apply. In addition, many localities sponsor household hazardous waste programs which base personnel should participate in.

Waste Separation and Recycling: Air Force installations are required to comply with state and local regulations and requirements governing the separation of wastes into residual value and the recycling of those materials.

Use of Off-Base Landfills: Air Force installations have the responsibility for the proper disposal of solid waste generated by Air Force operations. This responsibility includes assurance that off-base landfills which receive Air Force solid wastes are licensed and are operated in compliance with the conditions of those permits.

Wastes from Outside the United States: Air Force installations located in the United States and territories and possessions are required to comply with certain United States Department of Agriculture (USDA) inspection and disposal requirements if they receive wastes from vessels and aircraft arriving from outside the US. These regulations are designed to prevent the spread of plant pests and animal diseases.

BASE SOLID WASTE RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for site location, licensing, construction, and operation of on-base landfills, and for the collection and transportation of solid wastes to either on-base or off-base disposal activities.

Bioenvironmental Engineering: The BEE is responsible for reviewing and coordinating asbestos disposal plans and operations.

SOLID WASTE MANAGEMENT REVIEW PRODUCTS

1. Installation refuse contracts and specifications with waste haulers
2. Installation recycling programs, contracts, specifications in refuse contracts
3. Landfill contracts, BPAs, and documentation
4. Records on groundwater sampling resulting from monitoring of wells

CONTRACTING SOLID WASTE ISSUES

Solid waste issues can have an immediate impact on base refuse contracts. As the number of landfills are reduced or modified to meet RCRA requirements the associated costs will greatly increase. In addition, solid waste streams (plastics, glass, yard materials, etc.) are being identified for recycling. Landfills are striving to reduce the amount of waste and regulatory authorities may impose more stringent requirements to maintain operations. Ensure contracts for landfill use are current with solid waste regulations. Associated costs for disposal have increased over the last few years.

9. WATER QUALITY MANAGEMENT

A public water system is defined as "any collection, treatment, storage or distribution facility for the provision of piped water for human consumption" provided that the system for which it exists has at least 15 service connections or regularly serves at least 25 individuals daily for a total of at least 60 days per year. Air Force installations that meet all of the criteria listed below are not required to comply with the requirements of the Safe Drinking Water Act (SDWA) since, by definition, they are not "public water systems if:

- Systems consist only of distribution and storage facilities and do not have any collection and treatment facilities.
- The installation gets all of its water from a public water system that is owned and operated by another party (non-Air Force).
- The installation does not sell water to any party.

Even though the above criteria may apply to an Air Force installation, as a practical matter, Air Force Regulation 161-44 requires compliance with drinking water standards and monitoring requirements.

Wastewater discharge can include sanitary or industrial wastewater discharged directly to a receiving stream, or through an on site treatment facility, storm water runoff from industrialized areas of the installation to a receiving stream or water body, or industrial or storm wastewater drained to an industrial reservoir. Most Air Force installations have some type of wastewater discharge regulated by the EPA and by state regulatory agencies.

FEDERAL WATER QUALITY LEGISLATION

The Safe Drinking Water Act: The SDWA regulates the safety of drinking water in the country and requires establishment of primary and secondary drinking water regulations which apply to public water systems in each state. The National Primary Drinking Water Regulations (NPDWRs) specify the maximum permissible levels of contamination that may be present in drinking water. These levels are based on consideration of health effects and economic feasibility. Primary drinking water standards have been established for bacteriological, microbiological and radiological quality; and for specific organic and inorganic chemical contaminants.

Amendments to the CWA in 1986: These amendments require the establishment of Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) for 83 contaminants. The majority of MCLs for volatile organic compounds (VOCs) and bacteriological quality have already been issued. MCLGs are nonenforceable health goals. The amendments also required protection of drinking water sources by establishing an Underground Injection Control (UIC) program. Underground injection of wastewater is prohibited without an approved permit.

Water System Operator Certification: Air Force water system operators must meet the operator certification requirements of the state in which the system is located. job descriptions for new or vacant Air Force water system operator positions must require a state certification or license as a condition of employment at all facilities where state certification requirements are applicable.

Clean Water Act: controls water pollution in the nation. Its goal is to restore and maintain the integrity of the nation's waterways. This is obtained by eliminating the discharge of pollutants into navigable waters, the development of water quality standards that protect fish and wildlife, the development of waste treatment planning to control sources of pollution and financial assistance to develop waste treatment plants.

STATE WATER QUALITY REQUIREMENTS

States have primary responsibility to enforce compliance with national primary drinking water standards and sampling, monitoring, and notice requirements in

conformance with 40 CFR 141. EPA executes enforcement responsibility until individual state programs are approved.

States that have primacy may establish drinking water regulations, monitoring schedules, and reporting requirements more stringent than, or in addition to, those in the federal regulations. Air Force public water systems in these states are required to comply with these additional requirements. Generally speaking, most states who have primacy adopt drinking water regulations which closely reflect the federal requirements. Almost all states have achieved authorization from EPA to administer drinking water compliance.

Many states have been delegated wastewater authority from the EPA and developed wastewater discharge legislation and regulations that require permitting similar to the NPDES program. States regulate the operation and certification of wastewater treatment plants, this also can include licensing of operators.

KEY WATER QUALITY COMPLIANCE REQUIREMENTS

National Primary Drinking Water Standards: Contaminant limitations, monitoring requirements, and enforcement procedures are contained in the National Drinking Water Standards (40 CFR 141). Air Force activities with public water systems are required to comply with these requirements, or state requirements where the state has enforcement authority.

Sampling and Analysis: Sampling and analytical requirements for public water systems are also promulgated in 40 CFR 141 or in applicable state regulations. Initial sampling to characterize each specified contaminant (and any required subsequent sampling) must be conducted within required time frames and at the frequencies specified. Sample analyses must be performed in laboratories certified by EPA or approved by the state.

Reporting and Record Keeping: Results of tests, analyses, and measurements required for compliance must be forwarded within prescribed times to appropriate EPA regional offices or approved state agencies, as applicable. Records of bacteriological analyses must be retained for five years; chemical/physical analyses for ten years.

Non-compliance Monitoring and Reporting: Installations operating public water systems must report to EPA regional offices or the approved state agencies in instances of noncompliance with primary drinking water standards, variances, or exemptions, including failure to comply with sampling/monitoring requirements. Non-compliance conditions must also be reported to all persons served by the public water system. The timing and means for all notifications must be as prescribed in 40 CFR 141 or applicable state/local regulations.

Operating Out of Compliance: Variances (and exemptions) may be granted by EPA or approved states subject to public notice and hearing requirements to enable noncomplying public water systems to continue operating. Variances (and exemptions) must include schedules and methods for attaining compliance.

BASE WATER QUALITY RESPONSIBILITIES

Air Force Armstrong Laboratory (AL): The Air Force Armstrong Laboratory provides services to complete all required laboratory, chemical, physical and radiological analyses for drinking water. It also establishes a water supply sampling schedule for each

installation to conform to the frequency established in Air Force Regulation 161-44. AL maintains a potable water quality data repository of the last ten years of data and disseminates analytical results as required to the using activities and commands.

Bioenvironmental Engineering: The Director of Base Medical Services, through the Bioenvironmental Engineering Office is responsible for proper sample collection from drinking water systems at Air Force installations and determining compliance with drinking water standards. Coordination with AL, interpretation of results of water analyses, and notifications to state regulatory authorities when maximum contaminant levels are exceeded are also the responsibilities of the Director of Base Medical Services.

Base Civil Engineer: The BCE designs, constructs, maintains, and operates the water supply system to provide sufficient drinking water to installation personnel. The BCE is responsible for providing adequate water treatment to assure drinking water does not exceed the maximum contaminant levels established for human consumption. Training of operating personnel to meet proficiency levels consistent with the operator certification requirements that apply to their location is also the responsibility of the BCE. Base Civil Engineering maintains an up-to-date map of the complete potable water system, makes repairs, and maintains the systems. The BCE is also responsible for negotiating and maintaining the base's water supply contract where applicable.

WATER QUALITY MANAGEMENT REVIEW PRODUCTS

1. Copies of drinking water test results
2. Copies of reports to the state
3. All NPDES and SPDES permits
4. Maps of the storm, sanitary, and industrial sewers
5. A copy of pretreatment standards imposed on the installation
6. A list of maintenance shops/operations to include wash facilities
7. Location of holding ponds, sedimentation pits, and open/end-of-pipe discharge points

CONTRACTING ISSUES

Specifications, drawings, or statements of work that contain or may impact water quality should meet state and federal regulations and have been reviewed, coordinated and if required, permits.

10. POLLUTION PREVENTION

The EPA has developed a hierarchy of options designed to control, reduce and eliminate the millions of tons of hazardous waste generated in this country. The task is immense, whether it is a Fortune 500 corporation using high technology equipment or a small shop with older equipment, virtually all industrial operations use hazardous materials and generate hazardous waste. The DOD generates nearly one million tons of hazardous waste each year. The Air Force’s largest generators of hazardous waste are the Air Logistics Centers; however each base generates large amounts. Paint stripping of aircraft, cleaners and solvents, and other base industrial processes have traditionally used hazardous materials and created waste streams that in the past have resulted in the expansion of hazardous waste sites or have required huge budgets to dispose of. Today

the emphasis is on the use of alternative substances that are less hostile to the environment.

POLLUTION PREVENTION OBJECTIVES

The highest priority of the environmental hierarchy is to reduce hazardous material usage at the source (your customer). Source reduction for contracting means if you do not buy it, or you buy an environmentally friendly alternative, it does not become part of the base hazardous waste stream that the base has to dispose of. In addition, to reducing it at the source other methods include: reduction, reuse, recycling, treatment, and, if all else fails, disposal.

The Air Force policy is to reduce or eliminate as feasible, hazardous substance use and waste releases into the environment. This policy has many benefits these include: reducing operating cost through less waste management, disposal, energy, and facility clean up; reducing the liability risk, enhanced public and community image, better working relations with regulatory organizations, and a safer cleaner environment and public health. Chapter 5 covers Pollution Prevention in greater detail.

11. SPECIAL PROGRAMS

There are specific federal, state, and local regulatory programs that are applicable to activities which involve the use of polychlorinated biphenyls (PCBs), asbestos, and radon. These special pollutants have affected the health and safety of countless Americans and have resulted in large programs to control, contain, remove, and dispose of these substances in accordance with federal regulatory requirements. Additional information on PCBs, asbestos, and radon are covered in Chapter 8. The Installation Restoration Program (IRP) is the Air Force program for clean up of installation's past contaminated sites; further information on this subject is covered in Chapter 7.

SUMMARY

This chapter gave you an overview of the major environmental operational areas that a base is responsible for. These protocols can have a drastic affect on the operation of the base and the successful completion of its mission. Senior leadership will be ultimately responsible for complying with these regulatory requirements. The day-to-day responsibilities are accomplished by CEV, Bioenvironmental, and other base organizations. Contracting responsibilities for these protocols will vary with each base. These protocals give contracting personnel a better understanding of what issues are being worked by the environmental team to meet federal and state environmental laws.

CHAPTER 5

POLLUTION PREVENTION ISSUES

INTRODUCTION

Preventing pollution is one of the Federal Government's top environmental priorities. Environmental hazardous waste poses a tremendous threat to human health and society. Executive Order 12856 "Federal Compliance with Right-to-Know laws and Pollution Prevention Requirements" Emphasized President Clinton's initiative to make federal agencies leaders in pollution prevention.

> "...Federal facilities will set the example for the rest of the country and become the leader in applying pollution prevention to the daily operations, purchasing decisions, and policies. In the process, federal facilities will reduce toxic emissions, which helps avoid cleanup costs and promotes clean technologies.

The Air Force policy on pollution prevention centers on strong leadership with the goal of preventing future pollution. This is accomplished by reducing the use of hazardous materials and the release of pollutants into the environment to as near zero as possible.

Air Force Instruction 3070 outlines the following pollution goals:

- The Air Force will prevent at the source, and to the greatest extent possible, environmentally harmful discharges to the air, land surface water and groundwater. Wastes that can not be prevented will be recycled.
- The Air Force will use alternatives to hazardous substances and processes where possible.
- The Air Force will reduce municipal solid waste through source reduction and recycling.
- The Air Force will use, when available, products containing recycled materials. Exceptions will be granted only if the product does not meet the minimum quality standard for its intended use.
- The Air Force will reduce air emission and will reduce and control pollutants present in stormwater runoff from industrial, maintenance and airfield areas.

This policy instruction applies directly to contracting personnel. It identifies personnel who are involved with the **acquisition**, use, and disposal of environmental harmful substances and products on Air Force installations.

POLLUTION PREVENTION DEFINED

As you have seen from the above goals, Contracting has an active role in the successful accomplishment of the pollution prevention program. The big question is "What is pollution prevention?". Pollution prevention is the preventing of environmentally harmful releases to air, land, surface water and ground water. It encompasses many areas in the acquisition process from design to disposal. Pollution prevention starts with:

- Designing and acquiring new systems, equipment, and products that don't require hazardous materials or create pollution
- Improving industrial and base maintenance and clean up processes
- Reducing the generation of municipal solid waste and recycling what is produced
- Managing hazardous material procurement, supply, and distribution (see hazardous material pharmacy)
- The procurement, development, and use of efficient energy sources (utility contracts)
- Conserving and recycling our natural resources

LAWS AND EXECUTIVE ORDERS

The Pollution Prevention Program is driven by a number of federal laws, executive orders, and international protocols. for pollution prevention these include:

- The Pollution Prevention Act of 1990
- The Montreal Protocol
- The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986
- National Defense Authorization Act of 1993
- Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements
- Executive Order 12873, Federal Acquisition, Recycling, and Waste prevention

THE AIR FORCE POLLUTION PREVENTION PROGRAM (PPP)

The PPP is the Air Force Program designed to implement federal requirements mandated in the Pollution Prevention Act of 1990. The PPP centers on efforts to reduce hazardous materials and wastes by means of source reduction and sound recycling programs. The goals of the PPP span the entire Air Force Procurement system. Air Force goals include:

- Reduce use of hazardous materials in all phases of new weapon system development. This includes finding alternative materials and processes and measuring life cycle costs.
- Reducing the use of hazardous materials in existing weapons.
- Reducing hazardous materials use and waste generation at installations.
- Acquire world class pollution prevention technologies
- Apply new technologies to pollution prevention.
- Establish an investment strategy to fund pollution prevention projects.

The implementation of these goals is accomplished in the following ways:

- Through the reduction of hazardous waste use and generation of pollutants, medical waste, air emissions, water discharges and sludges, and reducing the amount of municipal solid waste and pesticides use through source reduction.
- Recycle unavoidable wastes and treat or dispose wastes that can not be recycled.
- Conserve energy and use clean energy sources.
- Control nonpoint source selection.
- Proactive procurement of products made with recovered and recycled materials.
- Provide environmental education and training for all personnel.

REDUCING HAZARDOUS WASTES AT THE INSTALLATION

Reducing hazardous waste involves the development of cost-effective, personnel supportable strategies. The EPA developed a definition of pollution prevention that covered four strategy areas. These are: prevention, recycling, treatment, and disposal. It can also be looked at as a set of hierarchies with the goal of reducing waste before it has to be treated or disposed of.

Environmental Management Hierarchy Options

Effective pollution prevention programs involve the entire base from senior management to the airman basic. Contracting support provides for meeting the most important hierarchy: the prevention or reduction of hazardous materials before it becomes a hazardous waste on to the base. Each project and or purchase requires planning and analysis to determine the best option available. Actions taken within each scenario will depend on the requirements and applicable federal and state laws. These options include:

Pollution Prevention (Source Reduction) This option is designed to avoid the generation of hazardous wastes on the base. If you do not purchase hazardous materials, buy environmentally friendly alternatives, and reduce the quantities of hazardous materials purchased, it eliminates or reduces the amount and associated problems with handling and disposal of these wastes. For contracting this includes:

- Purchase of environmental friendly technology
- Material substitution using recyclable or alternative products
- Product changes
  - -- Substitution of nonhazardous products
  - -- Conservation by purchasing minimum amounts or smaller unit of issues
  - -- Changes in product composition so that hazardous waste is not produced

Recycling

Recycling uses and reuses waste materials to an original process or to another process. See the section dealing with recycling in this chapter.

Reclamation/Treatment/Release

Reclamation is the recovery of usable and valuable materials from hazardous waste treatment. This can be implemented by using a variety of industrial or manufacturing processes that include:

- Stabilization
- Neutralization
- Incineration
- Evaporation
- Precipitation
- Scrubbing

Good examples are reclaiming freon and CFCs from air conditioning equipment and scrubbing anti-freeze for reuse.

Disposal

The last step in the hierarchy that is costly and least effective is the disposal of hazardous waste at a permitted disposal facility. The key players in the disposal of hazardous waste and materials are the base hazardous waste accumulation program and the Defense Reutilization Management Office (DRMO).

BASE POLLUTION PREVENTION PROCESSES

Eliminating or reducing disposal requirements for installations involves contracting and early planning in the procurement process. Steps in meeting this requirement are based on the Affirmative Procurement requirements outlined in Executive Order 12456, DOD, and Air Force development of policy for the purchase of hazardous materials in support of base programs, reduction through the use of the hazardous material pharmacy, and the creation of environmental awareness when developing requirements for all supplies, services, and construction requisitions.

A typical Air Force installation uses numerous types of hazardous materials and generates many and varied types of waste streams. The following section provides you with an overview of the different processes on base and the types of hazardous materials used. It then lists the different types of reduction methods available. This is not an all encompassing list: it provides you with an idea of the many processes and products being used that will increase the installation's hazardous waste streams.

INDUSTRIAL OPERATION OR PROCESS	HAZARDOUS MATERIALS	HAZARDOUS WASTE REDUCTION METHODS
Metal working heat treating	Coolants, quenching oils, salt baths	Filtration, centrifuge for reuse, fuel supplements, neutralization
Painting	Thinners, heavy metals, polyurethane waste epoxy; paint strippers	Process change, airless sprays, powders, water base primers; recycle, segregation, replace water curtains with dry filters in spray booth, incineration

Vehicle maintenance	Oils, lubricants, coolants; petroleum, alcohol, solvents asbestos (brake linings) fuel supplements, heavy metals, CFCs in air conditioning	Fuel supplements, waste segregation, recycle, alternatives products
Cleaning, degreasing	Solvents, detergents; Ketone, freon	Solvent substitution, recycle, recovery, process changes
Electrical/electronic maintenance (Avionics)	Heavy metals, PCBs solvents, CFCs, Halons	Material control, solvent substitution, process changes
Paint Stripping	Solvents, caustics	Process change, dry media blasting, laser stripping, water jet
Metal plating/finishing	Acids, bases, metal rinses, pickling	Industrial waste treatment
Battery shop operations	liquor, acids	neutralization, ion exchange electrolytic precipitation, non-cyanide baths
Battery shop industrial operation	Acids, bases, cyanides, heavy metals	Neutralization; domestic waste treatment
Fuel storage	Tank bottoms, contaminated or excess POL, cleaning tank sludges	Biological treatment; fuel supplement; reblend; recycle
Machine shops	Cutting oils; toxic metals	Filtration centrifuge for reuse
Golf course recycle	Pesticides, waste POL products	Material control, composting
Pest control shop substitution	Unrinsed pesticide containers, pesticide wastes	Recycle, waste segregation,

Industrial waste treatment	Sludges, spent carbon ion exchangers, filters	Dewatering, delisting, incineration, biological treatment
Hospitals, laboratories	Ignitable/chlorinated solvents, chemicalsetiologic, contaminated wastes	Incineration, neutralization, material control
Firefighting training	Foam, waste fuels, Halons	Material control, alternative products
Wash racks and motor pools	Used oil, waste solvents, heavy metal contaminated sludges	Filtration, delisting, incineration, biological treatment
Lagoons	Acids; bases; sludges containing organics, PCBs	Dewatering, delisting; incineration, biological treatment
Arts and crafts shops	Solvents, photographic lab wastes, used oils, sludges	Recycle, filtration, material control, recovery
Munitions demilitarization containment	OB/OD residues, contaminated or excess POL, cleaning tank sludges	Burning pads, facilities delisting; downgrade reuse, incineration
Cooling towers	Bleedoff wastes and feedwater chemicals	Dewatering, filtering
Disaster Preparedness	radiation, solvents, cleaners	Material control, recycle, neutralization
Graphics print center	Printing ink, data processing fluid toner cartridges, chemicals	waste segregation, incineration, recycle
Photographic laboratories	Acids, bases, cyanides, silver, other heavy metals	Material control, waste treatment, recovery
Food Service	Solvents, grease, solid wastes	Material control, process changes, recovery

AFFIRMATIVE PROCUREMENT

Reducing hazardous waste, conserving energy and materials, and developing the incentives to recycle starts with the procurement of recyclable and reusable products and

services. RCRA requires that federal agencies give preference in their procurement programs to products and services that conserve and protect both natural resources and the environment. RCRA also requires the EPA to develop guidelines to assist federal agencies with procuring products containing recovered or recycled materials. EPA has developed a Comprehensive Procurement Guideline that identifies items made from recovered/recycled materials.

Executive Orders 11912, 12759, 12780, 12873, and 12902 has established guidance for Pollution Prevention/Affirmative Procurement for all federal agencies. In addition, DOD has issued memorandums and the Air Force issued AFI 32-3080 implementing Affirmative Procurement. EPA developed a coordinated effort with federal contracting agencies to purchase recycled products and services. This will result in the accomplishment of:

- Increased market demand for recycled products
- Increased public and industry awareness to recycle
- The use of federal legislation with the goal of stimulating economic incentive for recycling.

Federal Affirmative Procurement is the purchase of supplies, services, and construction methods and materials using consumer recycled products and minimizing the amount of waste generating supplies. All levels of Air Force procurement are involved. Affirmative Procurement is accomplished at three levels within the Air Force.

Base level, all supplies, services, and construction MAJCOM, responsibility for support systems Weapon systems at the service level.

Affirmative Procurement is an important part of the installation Pollution Prevention Program. Contracting can provide affirmative procurement support by working with the base environmental team that has identified waste streams of installation organizations. Contracting can also help by understanding what the customer needs are and identifying markets and products that can fulfill them.

Fulfilling these requirements starts with the development of sound planning and coordination between base environmental organizations and Contracting. Identifying waste streams and processes that generate them are a starting point. Review the general list of processes, wastes, and corrective actions provided in the previous section. This will give you a better idea of individual base waste streams and possible changes that will reduce them. Next, review the Installation Hazardous Waste Management Plan. This plan will identify sources of hazardous waste generated at the installation and alert personnel to potential hazardous material purchases. While this is not an all encompassing list it will help identify base sources of waste and alternative actions.

Current DOD policy requires a hazardous waste minimization plan to be in effect at each installation. As mentioned above pollution prevention hierarchy methods can include: hazardous material management, source reduction, material substitution, process changes, recycle/reuse/resell, treatment, destruction, and disposition. Remember that individual states may regulate more wastes as hazardous waste than does federal laws like RCRA.

Pollution Prevention relates to many purchases made at the installation. Some examples include:

- The purchase of products and materials which are made or consist of recycled materials. The General Services Administration has been active in procuring products with recycled materials; this includes the development of environmental products catalog.
- The reduction of VOC content in paints, (paints with high solid or heavy metal content)
- Reduction of coatings containing toxic materials.
- Reduction in use of CFCs for refrigeration and air conditioning. Check with the manufacturer on equipment environmental alternatives.
- Purchase of low sulfur fuels, natural gas, propane etc.
- The establishment of contracts or simplified procedures for the recycling of solvents and lubricants.
- Purchases of high efficiency equipment that reduces pollutants like special oil burners, tanks, nozzles, etc.

Energy conservation is a major area that can result in the reduction of pollution. Energy conservation addresses and impacts many procurement areas.

- Building specifications that include insulation, windows, siding, hot water heaters, etc.
- Efficiency specifications for boilers, furnaces and electrical systems.
- Conversation of coal and oil heat plants to natural gas.
- Control systems for the control of heating and cooling of buildings. (Environmental Management Control Systems)
- The development of demand management programs or use of utility company programs.
- Retrofit of electrical systems for greater efficiency and cost savings.
- High efficiency incinerators.
- High efficiency lighting and electrical products.

EPA'S GREEN LIGHTS PROGRAM

If the United States were to install energy-efficient lighting everywhere profitable, the results, in the reduction of carbon dioxide emissions would be equivalent to removing 43 million cars from the road. The use of energy efficient lighting nationwide could reduce electricity demand and resulting pollution generated by coal fired electrical generation plants, one of the dirtiest and largest generators of pollutants in the world.

Green Light is a voluntary program. EPA asks federal agencies to sign a memorandum of understanding (MOU). In the MOU the agency agrees to install energy efficient lighting in 90 percent of its facilities by September 30, 2000. Federal agencies are also required to reduce its energy consumption for lighting by 50 percent as long as lighting quality is not reduced.

EPA supports federal agencies by providing a wide variety of products and services to support the Green Light Program. EPA provides state-of-the-art software that allows participants to survey lighting systems in their facilities, assess options and select the best energy-efficient lighting upgrade. EPA also provides workshops and technical support. The EPA operates a Green Light Hotline if you require more information. The number is (202) 775-6650.

The Defense General Supply Center (DGSC) is designated as the federal executive agent for energy-efficient lighting by the Defense Logistics Agency. For a catalog of available energy-efficient lamps, ballast and fixtures, call DGSC's hotline at DSN 695-4734, or 1 800 DLA BULB. The Air Force Civil Engineering Support Agency (AFCESA/ENE) is the point of contact for Air Force Green Light questions. Their number is DSN: 523-6481.

ENERGY STAR COMPUTERS

Executive Order 12845 requires federal agencies to purchase energy-efficient computer equipment. Purchases of Automated Data Processing equipment require that they meet EPA's Energy Star program requirements. The Energy Star Program is a partnership between EPA and leading computer manufacturers to design and build energy efficient computer equipment. Energy Star computer equipment can "sleep or power-down" when not in use. These features can cut a computer's electricity use by 50-75 percent. They also use less heat when powered down reducing the cost to cool an operating facility. EPA provides a catalog of manufacturers participating in the program. To obtain this information call 1 202 775-6671.

The following is list of potential stock classes that may have opportunities for alternative items or recyclable capable product. At this point in time there is no Air Force policy in place to meet Affirmative Procurement requirements. The starting point is to do that little extra research identifying alternatives that do not use virgin materials or are incorporated in the production of the item. Incorporate environmental questions in your purchasing procedures. Are there recycled components in this product, is there a product made of recycled materials? Affirmative Procurement is coming start thinking about today.

FEDERAL SUPPLY GROUP AND CLASSES RECOMMENDED FOR TRACKING

Federal Supply Group	Federal Supply Class	
13 Ammunition E Explosives	All	
42 Fire Fighting, Rescue & Equipment	4220	Marine Life Saving and Diving Equipment
Safety Equipment	4230	Decontaminating and Impregnating Equipment
59 Electric & Electronic	5910	Capacitors
Equipment Components	5950	Cells and Transformers
61 Electric Wire & Power	6116	Fuel Cell Power Units,
Component/Accessory & Distribution equipment	6120	Transformers, Distribution & Power Station
	6135	Batteries, Non chargeable

	6140	Batteries, Rechargeable
62 Lighting Fixtures/Lamps	6260	Non electrical Lighting Fixtures
65 Medical, Dental & Reagents	6505	Drugs, Biologicals and Official
Veterinary Equipment	6508	Medicated Cosmetics and Toiletries
& Supplies	6525	X-ray Equipment Including Film
Developers		
67 Photographic Equipment	6545	Medical Sets, Kits, and Outfits
68 Chemicals and Chemical	6810	Chemicals
Products	6820	Dyes
	6830	Gases, compressed and Liquefied
	6840	Pest Control Agents and
Disinsectants		
	6850	Miscellaneous Chemical Specialties
79 Cleaning equipment and Preparations	7930	Cleaning/Polishing Compounds & supplies
80 Brushes, Paints, Sealers Products	8010	Paints, Dopes, Varnishes, & Related
	8030	Preservation and Sealing
Compounds		
	8040	Adhesives
81 Containers, Packaging, & Packaging Supplies	All	
85 Toiletries	8510	Perfumes, Toilet Preparations, & Powders
	8520	Toilet Soaps, Shaving Prep., & Denitrifies
87 Agricultural Supplies	8720	Fertilizers
91 Fuels, Lubricants,	9110	Fuels Solid
Oils & Waxes	9130	Liquid Propellants & Fuels, Petroleum Base
	9135	Liq. Propellant Fuels/Oxidizers, Chemical Base
	9140	Fuel Oils
	9150	Oils/Greases, Cutting, Lube & Hydraulic

	9160	Miscellaneous Waxes, Oils, and Fats
93 Nonmetallic Fabricated Materials	9350	Refractories & Fire Surfacing
	9390	Miscellaneous (Asbestos)

A second area in the affirmative procurement policy arena is the development of energy conservation programs. Energy conservation involves the analysis of the current utility and energy systems on the base for better efficiency and savings. The utility that supports the installation normally has franchise and connection rights. The political and economic climate at the local and state levels may impact the types of programs available to assist in meeting program requirements. Many utilities provide incentives for contracts for demand management opportunities and retrofit of existing systems to reduce energy consumption. Energy upgrades also involve the purchase of new equipment. These involve review of the current system and the installation's future mission requirements.

Most procurement and energy conservation actions are identified by the use of pollution prevention audits. Based on these audits base waste streams are identified for possible minimization and elimination by the development of specifications or changes in procurement practices. An energy audit will accomplish the same objectives in terms of energy conservation.

GSA has published information that meets requirements outlined in RCRA, EPA guidelines, and Executive orders for meeting Affirmative Procurement requirements. The "GSA Recycled Products Guide" may be ordered from:

GSA Controlled Mailing List Service
Ft Worth, TX 76115
DSN: 739-7369
Commercial: (817) 334-5215

INSTALLATION OZONE DEPLETING CHEMICALS AND EPA-17

One of the major goals of the installation Pollution Prevention Program is the reduction or elimination of the use of Ozone Depleting Substances (ODSs) or Chemicals (ODCs) and EPA-17 chemicals. Bases are tasked to develop baselines for consumption and reduction of these hazardous materials and wastes. In addition, the continued use of ODSs requires an approved ODS waiver.

OZONE DEPLETING SUBSTANCES

What is ozone? Why is it so important? Ozone is a compound that contains three atoms of oxygen bonded together that is present in the earth's upper atmosphere. Ozone is concentrated in a layer and acts as a barrier and protects the earth's surface from damaging ultraviolet light from the Sun. Scientific data show that the use of various types of chemicals which include chlorofluorocarbons (CFC) and Halons is destroying the earth’s ozone layer.

In December 1992 at the Montreal Protocol Renegotiations, the United Nations agreed to stop halon production by 1994 and CFC production by the end of 1995. A series of regulations followed implementing the Montreal Protocols.

Executive Order 12843 requires federal agencies to phase out the use of CFCs and chemicals that destroy the ozone layer. The EO requires federal agencies to minimize the purchase of products containing or manufactured with ODCs, maximize the use of safe alternatives, amend existing contracts to phaseout ODC use, limit the use of ODCs due to reduced availability, and purchase products that do not require ODCs and recycle to reduce emissions.

AIR FORCE POLICY ON OZONE DEPLETING SUBSTANCES

The Air Force policy calls for the reduction of the following ODCs: CFCs-11, -12, -13, -111, -112, -113, -114, -115, -211, -212, -213, -214, -215, -216. and -217; Halon 1011, 1202, 1211, 1301, 2402; blends R-500, R-501, R-502, R-503, and Carbon Tetrachloride, Methyl Chloroform, and Methyl Bromide. The chemicals are used in solvents, refrigerants and fire fighting agents. Class I Ozone Depleting Chemicals are found in the following types of products and applications. The following are examples of ODC uses:

CLASS I ODCs	AIR FORCE USES
CFC-11, CFC-12	Cooling Aircraft and missile crew compartments, offices, residential areas, and electrical component areas
Halon 1211, 1301	Fire protection on board all aircraft and in electrical component areas
CFC-11, 12 ,114, 115, 500, 502	Process or special applications refrigerations, including aircraft ECM targeting avionics, and other specialty pods and equipment
CFC-11, 12, 114	Rigid and flexible foams used as insulation in facilities, crew compartments, weapon systems, and for packaging
CFC-113, Methyl chloroform	Solvent cleaning of optical surfaces, hydraulics
Carbon tetrachloride	control systems, navigation and guidance systems, circuit boards, and liquid oxygen equipment
CFC-12	Hospital equipment sterilization
Halon 2402	Rocket motor thrust control devices

ODS WAIVERS

The Air Force has established a comprehensive waiver policy designed to minimize the use of ODSs. All uses of ODSs as well contract actions shall have complete waiver documentation. The waiver policy accomplishes the following:

- Waivers provide the Hazardous Material Pharmacy with a document to establish an approved allocation against which they can track ODS issues
- The waiver provides contracting organizations with approval authority to procure ODS for use.
- ODS waivers provides DLA with authority to procure ODS for the Air Force
- Waivers authorize withdrawals from the Air Force account at the DLA Defense Reserve.
- Waivers provide the incentive for users and program managers to work to reduce ODS use.

Ozone Depleting Substances will not be purchased without an approved waiver. Waiver initiation procedures are divided into categories. Category I is waiver for use. This is initiated by organizations or individuals who requisition and use the ODS. The completed waiver application is coordinated through the hazardous material pharmacy to the MAJCOM Appropriate Technical Representative (ATR) to the appropriate Waiver Approval Authority at HQ USAF/AQ, HQ USAF/LG, or HQ USAF/CE. Category II is waivers submitted for Government Contracts or Foreign Military Sales. In this category, the single manager or product group manager submits waivers for each contract process containing ODSs. The completed waiver is submitted through the MAJCOM to SAF/AQXM for processing.

CONTRACTING ODS POLICY

The Air Force contracting policy on the elimination of Class I Ozone Depleting Substances is prescribed in Air Force Federal Acquisition Regulation Supplement 5310. The Air Force policy is to maintain mission readiness while minimizing dependency on Class I ODSs and their release into the environment and to protect the ozone layer. Air Force policy impacts all contracts, purchase orders, leases, delivery orders and local decentralized purchasing authorities such as IMPAC and SF 44s. It also applies to Air Force requirements procured by federal agencies under the Economy Act, DOD, and Air Force organizations and service centers. Air Force contracts awarded on or after 1 June 1993 and certain contracts awarded prior to 1 June 1993 but modified on or after 1 June 1993 may not include any specification, standard, drawing, or other document that requires the use of a Class I ODS in the design, manufacture, test, operation, or maintenance of any system, subsystem, item, component or process. Modifications will state that the contract does not require an ODS or obtain a waiver approving the ODS requirements. Contracts requiring the use of ODS shall list the approved ODS, with approved applications and quantities pursuant to FAR clause requirements.

Air Force requirements for commercial products as defined in FAR 11.001 and DFARs 211.7001(a) respectively, may be purchased without approved waivers and include statements that the government does not require ODS. This applies to purchases using commercial part numbers or manufacturer's part numbers where the government does not control configuration, specifications, standards, drawings, or other documents.

When the government does have some control over specifications, drawing and other documents that include the use of ODSs the requiring activity must obtain an approved waiver to purchase the items.

There are some exceptions to the above rules. If an Class I ODS is purchased in any type or quantity of bulk, the purchase requires an approved waiver. Purchases of facility air conditioning systems, aerospace ground equipment, commercial vehicles, and other refrigeration and support equipment that use ODS as a refrigerant/coolant is prohibited.

The military still has mission critical application requirements for the use of ODSs. The Defense Logistics Agency, Richmond General Supply Center, is developing reserve stocks of ODSs to meet these critical applications. Mission critical applications are defined as existing airborne cooling systems and halon use to meet flight safety and survivability. The Air Force has also developed policy for the use of existing systems which require ODS use. Equipment will continue to be used to maximize its economic life. New systems will be designed not to include ODSs.

AIR CONDITIONING & REFRIGERATION EQUIPMENT TRAINING

Under the Clean Air Act technicians that are required to work on air-conditioning and refrigeration equipment must be certified according to EPA requirements. Technicians must pass an EPA developed test. EPA has developed a list of certification institutions and companies that can provide this training. Technicians are divided into categories based on the repair requirements. These are:

- Type I technicians that repair small appliances
- Type II technicians that repair high pressure appliances
- Type III technicians that repair low pressure appliances
- Universal technicians cover the above requirements plus motor vehicle appliance.

EPA 17

EPA has identified the following hazardous materials for restriction and phase out. Identified as the "EPA 17", these consist of the following chemicals:

EPA 17	EPA 17 Products
1. Benzene	Fuels
2. Cadmium & Compounds	Plating for corrosion control
3. Carbon Tetrachloride	Bearing cleaning, PMEL
4. Chloroform	Bearing shop
5. Chromium & Compounds	Plating and paints
6. Cyanides	Plating solutions
7. Dichloromethane	Cold wipedown cleaner
8. Lead & Compounds	Batteries, paint, and solder
9. Mercury & Compounds	Laboratories
10. Methyl Ethyl Ketone	Degreaser/cleaner, aircraft
11. Methyl ISO butyl Ketone	Paints
12. Nickel & Compounds	Plating for corrosion control
13. Perchloroethylene	Degreaser
14. Toluene	Paints

15. Trichloroethylene	Parts cleaning, propellants
16. Trichloroethylene	Degreaser, parts cleaning
17. Xylene	Paints

Air Force installations are required to develop baselines for the above ODSs and EPA 17 chemicals. At this time there is limited guidance on these substances.

THE HAZARDOUS MATERIAL PHARMACY

You may hear it called the Hazardous Material Cell, HAZMART, or other similar names. Their missions are all very similar: minimize and track: ordering, storing, distributing, using, reducing costs, and disposing of hazardous materials and ozone depleting substances on installations. Bases have identified many serious problems related to hazardous materials/wastes. Large amounts of unopened and partially used hazardous products were being disposed of due to expired shelf life. Hazardous material costs have skyrocketed. Benchstocks of these substances have exceeded 200 percent of requirements. Lack of acquisition tracking has resulted in large of amounts of the same materials being purchased by different organizations on base. Base organizations frequently buying amounts in excess of requirements, there is a requirement for a quart but they buy it by the gallon. The high cost of training base personnel on properly using the product, OSHA and NIOSH requirements for specialists to be trained in spill prevention, storage, and disposal. Finally there is the cost of protective equipment and hazardous material technology. The result is that bases were spending huge sums of money and inefficiently using resources to manage hazardous materials.

To reduce these problems the Hazardous Material Pharmacy concept was developed. The pharmacy is the single point of control for the use of hazardous materials on the base. It is designed to achieve reductions in hazardous material usage and hazardous waste generation through:

- Tracking of hazardous materials on the installation
- Single point for approval and requisition of hazardous materials
- Distribution and dispensing of required amounts
- Collection of residual amounts
- Central point for reporting and analysis of hazardous material data.

Bases that have established the Hazardous Material Pharmacy have reported excellent benefits from its use. These benefits include:

- Material and equipment cost savings
- Elimination of duplicate hazardous material orders and items
- Drastically reduces unauthorized use
- Establishes a core group of trained environmental material personnel
- Provides opportunities for material shelf-life extensions
- Minimizes federal, state, and ECAMP writes ups and NOVs
- Provides research capabilities for product substitution
- Provides a centralized point for EPCRA requirements

Air Force policy provides bases with the ability to design and operate their pharmacy based on mission requirements. Many bases are in the process of centralizing all their hazardous materials in one facility. This not only includes distribution and storage but also an accumulation point for disposal. Other bases have decentralized their materials to

base organizations. The pharmacy authorizes use, establishes quantity levels, and tracks amounts.

The structure of the Pharmacy centers around a cross-functional team concept. Each member provides specific expertise and responsibilities to the success of the program. The pharmacy team can be composed of members from Base Supply, Contracting, Civil Engineering, Bioenvironmental, Transportation, and Logistics. Traditional responsibilities of each team member are:

CONTRACTING

- Develop procurement procedures using BPAs, SF 44s, POs, and IMPAC
- Enact policy and training for the use of decentralized purchasing procedures
- Establish an Affirmative Procurement Program
- Develop Life-cycle analysis procedures for environmental materials purchases
- Administer and monitor all pharmacy local purchases
- Enforce contract clauses and provisions
- Ensure vendors provide Material Safety Data Sheets prior to award
- Establish hazardous material sampling and testing contracts

BASE SUPPLY

- Manage hazardous materials research, ordering, storage, and issue processing
- Perform hazardous materials stock control functions
- Break down some bulk items into smaller units
- Load Issue Exception Codes as prescribed by Bioenvironmental
- Research protective equipment and technology requirements

CIVIL ENGINEERING

- Review environmental regulations to ensure environmental compliance
- Disperse environmental information to functional team members
- Research and identify environmentally friendly alternatives
- Develop Pollution Prevention Plans
- Prepare regulatory reports
- Program Pollution Prevention Funds
- Develop emergency response plans and submit all reports required under EPCRA

BIOENVIRONMENTAL ENGINEERING

- Determine which chemicals present either a health or environmental hazard
- Identify environmental alternatives and substitutes
- Conduct the base Hazardous Communications Program
- Approve all new chemical use requests before an order is placed
- Determine who is authorized to use which hazardous materials
- Establish workplace-specific maximum allowable storage quantities
- Ensure established quantities are not exceeded
- Ensure all requirements for protective equipment and training are accomplished
- Review workplace waste disposal procedures
- Perform waste characterization, sampling, and analysis

Other players that may have responsibilities under the pharmacy concept are the Logistics Group, Safety, and Legal.

RECYCLING

Recycling is an active and growing part of the installation Pollution Prevention Program. Recycling is the recovery of a waste from one process and reuse in the same process or in another process in an environmentally safe manner. Recycling is one of the four reduction strategies established by the Pollution Prevention Act of 1990. Source reduction is the primary strategy in the pollution program, i.e. reduce it before it gets on base. Recycling is a secondary priority when a waste stream is established. Recycling involves the use, reuse, and reclamation of materials, whereas, source reduction consists of products, material and technology changes that reduce or eliminate waste streams.

There are many benefits to a strong recycling program. The program reduces the risk to human health and the environment. It provides many benefits to the Air Force as a hazardous waste generator. These benefits include: the reduction of hazardous waste streams, reduction of land fill costs, and may be an income generating program. The benefits to the country are substantial; recycling results in waste reduction, reduced energy consumption, reuses resources, reduces the use of virgin materials, and creates jobs. If the benefits are not enough, it is a regulatory requirement required under the Pollution Prevention Act and Executive Order 12873-Federal Acquisition, Recycling, and Waste Prevention. These regulations require all federal agencies to implement recycling programs.

Recycling is a positive course of action. Air Force installations are encountering major problems with the disposal of solid waste. The cost to dispose of solid waste is increasing rapidly. With new and technologically complex standards to maintain landfills (RCRA), many are closing, charging more, or regulating the type of solid waste entering the landfill site. Conserving our available landfill space is another goal of the recycling program. The recycling of solid and hazardous waste is important when trying to divert waste out of the waste stream.

The installation is required to establish some type of recycling program. This starts with the analysis of the types of wastes, markets, and the market value for each constituent part of the waste stream. This analysis may have been conducted in house or contracted out. The options available to the base may be limited by the recycling market in the local area. A small rural market limits the amounts of recyclable materials which reduces its cost effectiveness. Contractors are unwilling to enter these markets if there is a limited ability to make a profit. This does not reduce the requirement to recycle. Federal and state regulations may require the development of recycling programs based on criteria other than immediate cost savings. Non-market areas for recycled materials limit competition for quality recycling businesses. The installation may be the largest generator in the local area, but it may not generate enough to be cost effective. In this case, recycling program expenses may exceed revenues requiring the installation to program Operation and Maintenance funds to operate the program. The funding is normally programmed through the Base Civil Operation and Maintenance Engineer.

Recyclable materials can be collected through one of several types of recycling programs. One of the most common and effective ways to recycle is to separate materials from other wastes prior to disposal. Source separation ensures that materials such as

paper, glass, and aluminum will be of the purest and highest quality possible to increase their value for re manufacture into new products. The separated materials can then be picked by a contractor or taken to either drop off or buy-back locations. An advantage of the buy back center is that they offer cash payments for materials brought by residents or businesses. Many buy-back centers are operated by local wastepaper, scrap, or multiple-materials recycling businesses. Aluminum companies also operate buy-back programs for aluminum cans.

Installations with large quantities of recyclable materials may find companies that provide technical assistance in setting up recycling programs, containers, other equipment, and pick up services. Some recycling businesses have regular routes to collect glass bottles and aluminum cans from food service businesses or corrugated cardboard from retail, office and manufacturing businesses. Others can help offices set up paper recycling programs for employees and will make regular pickups of the accumulated paper.

At this time EPA has identified six types of recyclable materials for the program. These include paper, glass, aluminum, oil, tires, and compost items. Each category of recyclable materials will be covered as follows.

Paper

Paper, in the form of newspaper, corrugated, and high grade office paper, computer paper, magazines, and mix paper represents the bulk of waste from households and businesses, and is a steady component of installation waste streams, For example over 50 percent of Mountain Home AFB's solid waste characterization was composed of waste paper. Much of it can easily be recovered through source separation.

Newspaper is the easiest paper to recycle and normally one of the largest portions of recyclable materials in base households. Most old newspaper can be collected and sold to de-inking newsprint mills and an made into newspaper. Newsprint can also be made into products such as packing materials, insulation, and roofing materials. An increasing percentage of recycled newsprint is exported for remanufacture into newspaper or other products.

Corrugated cardboard boxes also account for a major portion of recycled paper, (18 percent at Mountain Home AFB). Cardboard is gathered and baled and shipped to mills where it is made into new corrugated boxes or paperboard for cardboard boxes.

High grade office paper may be one of several grades or types. To be recycled at a high grade, it must be free from contaminants such as tape, metal objects, gummed labels, plastic, string, and carbon paper. Computer paper, tab cards, stationary bond, and miscellaneous plain paper are among the types of recyclable high grade paper, This group represented three percent of Mountain Home's solid waste stream. Magazines and slick advertising from newspapers are difficult to recycle and market demand is low because of the high clay content which gives them their shiny appearance.

A common practice on Air Force installations, is for offices to have individual collection points within the buildings. This may include individual desks. The paper is consolidated at a central point in the building. It is then taken to a storage facility or in some cases a contractor may pick up. At the central facility the paper is picked up by a

waste paper dealer or contractor based on the amount accumulated and ready to be shipped.

Prices paid by recycling companies vary with the demand for products and market conditions for recycled paper. Additional factors that will influence price include: the type or grade of paper and the contamination of the paper.

Glass

Glass represents a smaller proportion of solid waste streams on installations. Nationally about 2.5 billion pounds of glass containers are collected annually. This represents about nine percent of the national waste stream. Recycled glass consists mainly of clear (flint), brown (amber), and green glass containers. The glass is crushed into cullet and purchased by glass container manufacturers who make it into new bottles and jars. Every pound of cullet used saves approximately the same amount of raw materials used to make new glass. Cullet prices are generally highest for clear glass but it depends on demand for the type of glass and purity.

Aluminum

Aluminum is the most profitable of recyclable materials because of the demand and high prices obtained. Aluminum is easily remelted and remolded into new products. It requires 95 percent less energy to process aluminum scrap than to produce it from mining of bauxite or through the reduction process. Cans are the largest source of aluminum scarp used by the aluminum industry. Other aluminum items in the installation waste stream include food storage containers, siding, storm doors, windows and lawn furniture. Aluminum represent approximately 6-8 percent of the solid waste stream.

Metal Cans and Scrap Metal

Cans made of tin-coated steel (food cans) and bi-metal cans (which are tin-coated steel with an aluminum end, usually a beverage can) are recyclable. These cans can used as scrap in steel manufacturing furnaces. The material must be baled and delivered in truckload quantities.. Only a small percentage of bi-metal cans can be used in steel furnaces because of the aluminum content of the cans.

Metal items other than cans, that are made of cast iron and steel sheet metal and made of nickel, bronze, copper bronze, copper, brass and lead can be recycled. Most ferrous and nonferrous metal is collected by scrap metal dealers from industrial manufacturers. There is a market from smaller metal sources. The prices paid by scrap dealers depends on the market and the priority for the metal.

Care should be taken on recycling strategic metals that DRMO is required to administer. These metals bring a handsome return when recycled, however it may be an illegal transaction. Check with DRMO before contracting for recycled metals, especially any recycling contract for strategic metals.

Plastics

The term “plastics: includes a wide variety of resins or polymers with different characteristics and product uses. In 1988 the U.S. produced over 60 billion pounds of plastics. Five resins account for nearly 60 percent of all plastics used by consumers.

These are low-density polyethylene (LDPE), used in garbage bags; polyvinyl chloride, used in milk jugs; polypropylene, used in car battery cases, and polystyrene used in disposable food containers. The resin polyethylene teephthalate is produced in much smaller quantities, but is familiar to consumers as the plastic used in soft drink bottles. One-third of all plastics is used in packaging. Because packaging has a short lifetime, it makes up a large part of the plastic waste stream.

Plastics are generally collected and sold in bale form. Plastics can also be chopped into small flakes or granules, or palletized. The primary consumers of old plastic beverage containers are plastic fiber manufacturers. Recycled plastics are being used successfully in a variety of applications that include: fiber fill for clothing and sleeping bags; interlinear in upholstery, as fiber in carpet construction, and as filler media. Additional end use include the manufacture of industrial strapping, wall tile, flooring, and tail light lenses. High density polyethylene can be used for to make lumber boards for boat piers and garden furniture, trash cans, plastic containers for sorting recyclable materials.

Used Oil

Recycling and reusing used oil has been popular throughout industry. Recycling of used oil from the crankcases of cars, motorcycles, boats and lawnmowers keeps the oil out of waterways and saves energy over the use of virgin oil. Oil can be turned in at Auto hobby, and base service stations, as well as Transportation and CE. Most collected used oil is cleaned and recycled into industrial fuel oil.

Waste oil is not considered a hazardous waste under federal regulations if it is recycled. Waste oil contaminated by other hazardous wastes can not be recycled, and disposing of such oil is very expensive. Some states treat oil as a hazardous waste. Air Force installations located in these states are required to comply with the state regulatory guidelines concerning the management of hazardous waste.

Household Yard Wastes

Household yard wastes can exceed 20 percent of municipal solid waste in many urban areas, especially during the autumn leaf season. Leaves and grass clippings can be recycled by composting. Compost provides excellent soil conditioner and mulch. and adds nutrients to the soil. Compost can be sold to landscape contractors and nurseries as a soil conditioner. Talk to CE about composting specifications in ground maintenance contracts.

Tires

Tires can be recycled in numerous ways. Tires may be refurbished with new treads for extended life. Other applications include; shredded as a bunker fuel, ground into fine crumb rubber for remanufacture into new tires, construction materials and manufacturing materials.

Other solid wastes that can be recycled include white products (household appliances}, furniture, clothing, wood products, pallets. Many companies are buying used ODC solvents fuels and other chemicals and processing or filtering them. Care

should be taken before initiating a recycling contract for these chemicals. ODCs should be recycled and placed in the Air Force reserve for reuse in the future.

A final point to remember: many state, county, and local governments are developing their own recycling programs. Developing a team-oriented recycling program results in larger programs with better returns. There are also governmental agencies working with the EPA to develop recycling and affirmative procurement programs. Research this area as part of your market analysis if you are called to develop a recycling contract.

LIFE-CYCLE ASSESSMENTS

Life-cycle assessments should be considered in a requirement when purchasing products that reduce or prevent pollution or impact the environment. Life-cycle assessment evaluates the environmental effects with a product or process from the gathering of raw materials until final disposal and close-out. This is often referred to as "cradle to grave" assessments. Life-cycle assessments are mandatory for information processing equipment, weapon systems, and energy consuming products. Any product that impacts the environment should include some form of life-cycle assessment.

Life cycle costs should consider training, storage, safety, emission control, protective equipment, regulatory record-keeping and overhead, permits, containers, testing, treatment, packaging, and disposal. Products that are labeled as hazardous may incur higher costs to maintain and dispose of then higher priced alternatives. It is a good idea to have some form of life-cycle documentation in any project that impacts the environment.

HSC/EM has developed a Hazardous Life Cycle Cost Estimator computer program. This tool is intended to determine cost trade-offs to reduce the kinds and amounts of hazardous materials used in systems and their associated manufacturing and maintenance processes. This tool may not be within the scope of normal purchase at an operational contracting squadron, however it may be useful for larger projects. The point of contact for the HAZMAT tool is:

HSC/YAQ
8213 14th Street
Brooks AFB TX 78235-5246
DSN: 240-5121

SUMMARY

Pollution prevention will continue to be a hot issue for installations. As more and more hazardous materials are identified and eliminated from use, contracting will need to procure alternative substances to meet mission requirements. In the future contracting will be responsible or will provide major support in purchasing alternative products or recyclable products. Recycling will a major emphasis with the base population, our contractors, and the surrounding communities. Recycling can be as simple as incorporating requirements into our refuse contracts or developing for profit recycling contracts.

CHAPTER 6

ENVIRONMENTAL CLEAN UP

INTRODUCTION

Environmental clean up is a huge undertaking. In 1990 EPA identified over 33,000 potential national Priority List sites, Department of Defense and Department of Energy represented approximately five percent of this total. Sites vary from metal plating shops, dump sites, manufacturing, to a 250 square mile mining complex.

In 1993 DOD identified cleanup activities at over 1000 military installations. Ninety-four active and closed DOD sites are on the National Priorities List. There over 18,000 identified sites with only 416 actually closed. The Air Force, as of September 1993 had 4589 identified sites. DOD has spent over $6.5 billion on cleanup projects since 1984. This program is large, complex, and continually changing due to legislative, technological and philosophical requirements, and because new sites are continually being found.

The type of waste found in these sites are numerous. They include: heavy metals, solvents, organics, pesticides, and radioactive waste. The types of sites found on Air Force Bases include: underground storage tanks, landfills, spill sites, POL pits, fire training areas, surface drains, painting, stripping, and degreasing areas, maintenance areas, and waste and disposal pits. These sites currently identified pose a threat to the environment and are aggressively being worked to contain or clean up.

The Installation Restoration Program IRP is the Air Force program designed to identify, investigate and clean up past hazardous sites. As the lead federal agency in remediation process the Air Force has extensive experience in this critical area. This chapter discusses federal legislation regulating the IRP process. We will look at the different contracting vehicles available to the installation to clean up a site. Finally, a brief section on issues impacting operational contracting's ability to procure environmental clean up contracts will be discussed. We will identify other sources of information that will assist you in planning and IRP project.

FEDERAL LEGISLATION

The Installation Restoration Program is influenced by many environmental laws. If remediation of the site impacts air, water, hazardous materials, and natural/cultural resources, you can be sure that these laws will require some form of regulatory action. The following are the primary laws and regulations that control site remediation.

CERCLA/SARA: The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments of Reauthorization Act (SARA) of 1986 established a process to clean up hazardous waste disposal and spill sites. The base Installation Restoration Program must be consistent with the guidelines, rules, regulations, and criteria established by the EPA for CERCLA.

The National Contingency Plan (NCP): Was developed by EPA and addresses the responsibilities, organization, preparedness, and response to releases of oil and hazardous substances. IRP sites are generally subject to the requirements of the NCP.

The Defense Environmental Restoration Program (DERP): Was enacted by Congress as part CERCLA, SARA Section 211, NCP, and Executive Order 12580 Superfund Implementation. The Installation Restoration Program (IRP) is a subcomponent of DERP.

RELATED REGULATIONS AND PROGRAMS THAT MAY AFFECT IRP

The Installation Restoration Program may be influenced by other acts that are relevant and appropriate requirements to the program these include:

National Environmental Policy Act 1969: Establishes the requirement to include environmental planning in all projects.

Resource Conservation and Recovery Act of 1976: May apply to past improper hazardous waste disposal practices that are threat to the environment and human health.

Toxic Substances Control Act of 1976: Identifies toxic substances.

National Historical Preservation Act: Requires consideration of remedial actions on historical or National Register of Historic Places.

The Archaeological and Historic Preservation Act: Requires preservation of significant scientific and archaeological data that may be lost during construction projects.

The Endangered Species Act: A federally funded project may not jeopardize an endangered species or their habitats.

The Wild and Scenic Rives Act: May impact DERA projects effects on wild, scenic, or recreational rivers.

The Fish and Wildlife Coordination Act: Requires consideration on the effect of DERA water-related projects on fish and wild life.

The Wilderness Act: Appropriate for projects affecting wilderness areas.

The Coastal Zone Management Act: Requires the lead agency (state or federal) to determine if the project will affect any coastal zone.

The Clean Water Act(CWA): CWA defines spill requirements and permits with which the NCP must comply. Also the CWA addresses wetland issues.

The Safe Drinking Water Act: Impacts drinking water contaminant levels and their associated clean up levels for DERA water projects.

STATE LEGISLATION

Working with state and federal regulatory authorities is a key requirement for successful site remediation. Failure to do so results in regulatory actions, delays, and excess cost. Close coordination with state agencies and EPA regional offices will reduce the potential for regulatory action. Many states follow the intent of federal environmental legislation. The states have enacted legislation similar and in cases stronger and have received the full delegation of authority from the EPA for hazardous waste remedition. State requirements should be incorporated into the Installation Restoration Program (IRP) process while maintaining consistency with the requirements of CERCLA and the NCP.

The EPA is responsible for approval of remediation actions selected by the Air Force for sites on the National Priorities List (NPL). The Air Force has final decision authority for non NPL sites. EPA and many state agencies enter into a Federal Facility Agreement (FFA) at NPL bases that establishes a participatory and cooperative framework among the

agencies. The FFA defines roles and responsibilities and develops a process to resolve any disputes that may arise during the investigative and execution stages of the IRP.

Interagency Agreements are developed for non-NPL bases between the states and the Air Force. FFAs can also be referred to as Interagency Agreements.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM (DERP)

DERP is the centralized program for the cleanup of DOD hazardous waste sites consistent with the provisions of CERCLA, SARA, NCP, and Executive Order 12580, Superfund Implementation. The DERP also provides for other hazardous wastes activities which will reduce the amount of hazardous waste generated and disposed, and for building demolition and debris removal. The goals of DERP are:

1. The identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants and contaminants.
2. Correction of other environmental damage (such as detection and of disposal of unexploded ordnance) which creates an imminent and substantial endangerment to the public health or welfare or to the environment.
3. Demolition and removal of unsafe buildings and structures, including building and structures of the DOD at sites formerly used by or under the jurisdiction of the Secretary.

DERP consists of three program elements that are established to support the above goals. Installation Restoration, identifies, investigates, and cleans up contamination on at active and formerly owned installations and sites. Other Hazardous Waste Operations provides funding for hazardous waste reduction equipment, process changes, and other hazardous waste minimization initiatives. This does not include normal operation and maintenance functions provided by base operational support. The Building Demolition and Debris Removal Program provides funds for removal of structures on DOD installations. Due to lack of funds the Air Force is not funding this element.

THE DEFENSE ENVIRONMENTAL RESTORATION ACCOUNT

DERP is funded by a special transfer account, the Defense Environmental Restoration Account (DERA), established as part of SARA. The Deputy Assistant Secretary of Defense for Environment centrally manages the account including budget requirements and allocating funds between the services based on identified requirements and priorities.

At DOD level, DERA appropriation is “no-year” money but once transferred into the service appropriation accounts, the funds take on the same characteristics as other funds residing in that appropriation.

DOD allocates DERA funds based on several factors. The most important factor is the priority of programmed requirements. DOD policy is to provide funds to support those activities which contribute the most to protecting public health and/or the environment. Other factors considered are site cleanup procedural complexities and success/failure history in obligating and disbursing previous funds. Headquarters U.S. Air Force Environmental Restoration Division (HQ USAF/CEVR) determines the distribution of DERA funds to MAJCOMs based on the relative priority of the total requirements. DERA allocation decisions are the ability of the organization to both obligate and

expense the funds in a timely manner. DERA funds are allocated for specific IRP and support requirements. Activities eligible for DERA funds include:

- Investigations to identify, confirm and determine the risk to human health and the environment; feasibility studies; remedial action plans and designs; and removal actions
- Research, development, and technology demonstrations necessary to conduct clean ups
- Expenses associated with cooperative multi-party clean-up plans and activities, including litigation expenses
- Remedial actions to protect or restore natural resources damaged by contamination from past hazardous waste disposal activities
- Cleanup of low-level radioactive waste sites which have been identified as IRP site
- Manpower and management support associated with the IRP
- Operation and maintenance costs for the first 10 years of operation of remedial systems and monitoring systems
- Immediate actions necessary to address health and safety concerns, such as providing alternate drinking water supplies or treatment of contaminated drinking water, when the hazard results from a release from DOD property
- Response to releases form in-service tanks discovered during initial integrity leak detection monitoring where testing is conducted prior to December 1993.
- CERCLA response actions necessary prior to excess of real property, assets, excluding requirements with Base Realignment and Closure I or II installations
- CERCLA response actions and eligible RCRA corrective actions identified in Federal Facility Agreement/Interagency Agreements
- Corrective actions at solid waste management units required by RCRA
- Other actions taken pursuant to RCRA, (e.g., closures or correction actions at regulated treatment, storage, or disposal units)
- Studies and support for research, design and development of innovative and cost effective technologies for cleanup of hazardous waste sites, for DOD unique wastes or other techniques widely applicable to DOD
- Support services provided by another Federal agency in accordance with 10 U.S.C. 2701(d)
- Range support areas, limited to unexploded ordinance areas: Unexploded ordinance disposal areas are not eligible under DERA.
- Under and aboveground storage tanks must be identified and programmed within the DERP submittal prior to December 1993 to be eligible for DERA funds.

THE INSTALLATION RESTORATION PROGRAM (IRP) PROCESS

The Installation Restoration Program was developed by DOD in 1980. The program is designed to identify, investigate, and clean up DOD's past environmental contaminated sites and control the migration of hazardous substances that may impact of the health of surrounding locations. Like DERP, IRP is a congressionally authorized DOD program which began in 19984.

The IRP is similar to EPA's Superfund program. It fulfills the requirements of the CERCLA and SARA. The IRP addresses past disposal practices on military installations and identifies the locations of and release from past disposal sites. IRP works to minimize site hazards to public health and the environment.

The Air Force is responsible for the implementation and management of their own IRP at its own installations. Each installation is responsible and are subject to state and federal laws in the same manner and to the same extent as nongovermental entities.

The Installation Restoration Program Manager has a variety of paths to choose from. This is based on the characteristics of and information available on the site. Standard IRP process steps include: "Planning & Investigation," "Decision," “Execution," and "Closeout" stages. The Planning and & Investigation stage culminates in a Decision Document or Record of Decision (DD or ROD). The Execution stage proceeds after the DD/ROD.

The Planning and Investigation stage is the gathering of necessary historical, analytical, geological, and other necessary information about the site to meet regulatory requirements specified in the development of the DD, ROD, and other cases the Federal Facilities Agreement (FFA). The DD or ROD contains the official statement of remedial action required for the site. The FFA is a legal agreement governing the CERCLA and or RCRA administrative process for clean up.

An important point in respect to the IRP process, with the exception of interim treatment or removal actions, is that cleanup activities can not begin until the site has obtained an ROD or DD. An ROD is required at National Priority List (NPL) sites or installations with interagency agreements. Decision Documents are needed for non-NPL sites. FFAs are not normally required at non-NPL sites

The following process steps may be grouped into four general functional areas:

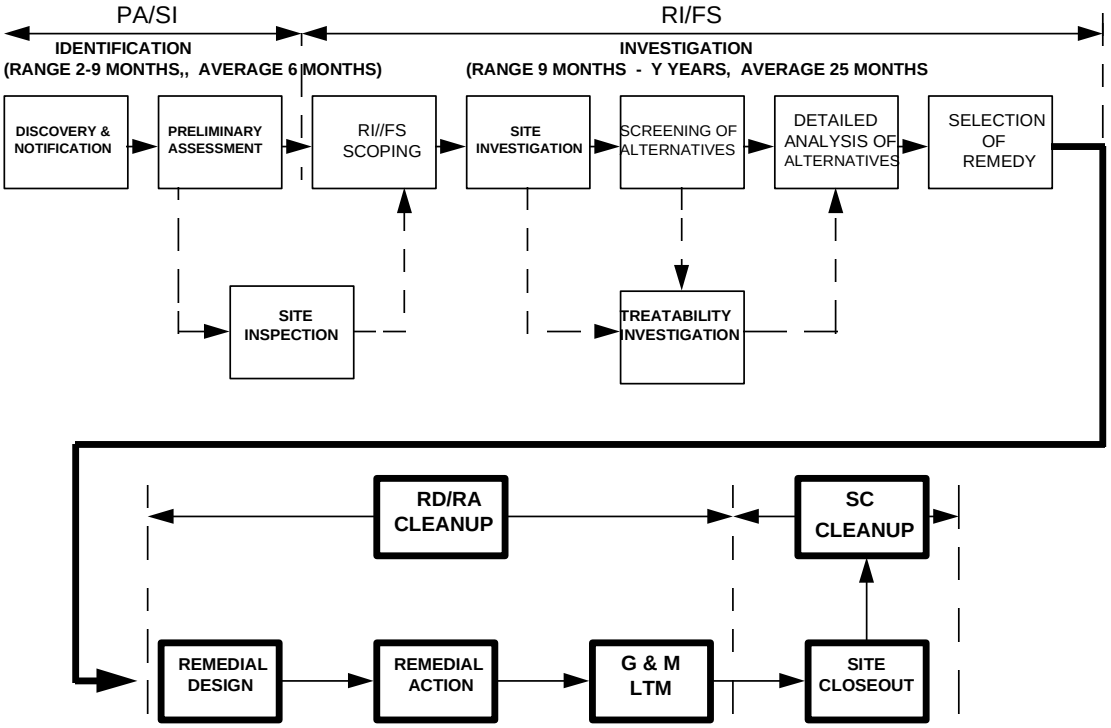
Preliminary Assessment/Site Inspection (PA/SI) The PA is the initial evaluation of existing information. It includes collecting and reviewing available information (records, reports surveys, interviews) The SI consists of a physical inspection of the identified site, and in some cases sample collection. The site is identified and reviewed to evaluate if 1) the site requires further study in the IRP, and 2) whether the site merits placement on the NPL by EPA. Based on the data presented a decision is made on the next step to take.

Remedial Investigation/Feasibility Study (RIFS) This stage is used to evaluate the site and identify appropriate remedial actions. It can be conducted concurrently with the PA/SI stage. This stage consists of determining the nature and extent of the contamination and its effect on human health. The RI consists of sampling and field studies which will be used in determining the nature, extent, and migration of the contamination at the site. The FS is used to develop and analyze various remedial alternatives and recommend appropriate actions. When a course of action is determined the DD or ROD is written to document the decision.

The Remedial Design/Remedial Action (RD/RA) This stage begins after the optimum remedial design alternative has been selected and documented in the DD or ROD. In the RD stage, technical drawings and specifications are developed for subsequent remedial action at the site. RA is the implementation of the cleanup design. For NPL sites the Air Force selects the remedial action subject to the approval of EPA.

Site Closeout (SC) SC refers to the point in the IRP process when the regulating authority no longer considers a site to be a threat to human health or the environment. The appropriate documentation is prepared and submitted to the appropriate regulatory authority requesting the site be closed.

REMEDIAL ACTION PROCESS FLOWCHART



THE INSTALLATION PROGRAM

The wing commander has overall responsibility for the IRP program. CE has program responsibility and the Installation Restoration Program Flight has planning and administration responsibilities. Additional support is provided by Bioenvironmental Engineering, Public Affairs, Legal, and the Contracting office. IRP has many responsibilities that go with the clean up of identified sites. These include:

- Community Involvement: a constant and interactive requirement that uses information exchange, Community Relations Plans and committees, the Technical Review Committee, public notices, open houses, forums, comment periods, and public meetings
- Technical Review Committee: a federal requirement under CERCLA designed to enhance cooperation between all parties that include, DOD, EPA, state agencies, Local authorities, and community representation.
- Management Action Plan: the roadmap for the environmental program.
- Site/Contaminant Characterization Data Plan: a uniform format for collected site/contaminant characterization data.
- Federal Facility Agreements, Interagency Agreement, and Memorandum of Agreement Negotiations: the agreements between the Air Force and regulatory agency coordinating installation IRP activities.

TREATMENT TECHNOLOGIES

This section will not make you an expert on treatment technologies. It is designed to give an idea what might be happening on your base if remediation is taking place. These treatment technologies are processes that are used to treat hazardous waste or

contaminated materials such as soil , sludge, sediments and waste debris. These processes are designed to control or alter permanently the condition or site by using chemical, biological or physical means. Some of these treatment technologies are well established while others can be considered innovative in concept.

Bioremediation: uses microorganisms, such as bacteria to break down organic contaminants into harmless substances.

Solvent Extraction: separates hazardous organic contaminants from oily-type wastes, soils, sludges, and sediments, reducing the volume of hazardous waste that must be treated.

In Situ Soil Flushing: an in place process that floods contaminated soils in the subsurface with a washing solution to flush out the contaminants.

In Situ Vitrification: places large electrodes around the site and super heats the site to a furnace.

Thermal Desorption: heats solids at relatively low temperatures to vaporize contaminants with low boiling points. Vaporized contaminants are then captured and can be removed for further treatment or destruction.

Facility Vitrification: uses a glass production facility to mix hazardous waste with molten glass, sealing the contaminants permanently.

Air Sparging: injects air into the saturated zone, that part of the subsurface that is soaked with ground water, to remove hazardous contaminants.

Bioventing: is an in place process of injecting air contaminated soil at rates low enough to increase soil oxygen concentrations and stimulate native micro organisms.

Air Stripping: contaminants in groundwater are treated by allowing the water to trickle over a flow of air. Vapors are created by this process are treated by catalytic conversion, carbon adsorption, or in rare cases released into the air.

Pump and Treat: is a system that pumps contamination to above ground systems designed to remove the contamination from the aquifer.

Steam Stripping: is applied to mobilize volatile subsurface contamination for collection in vacuum wells as vapors or phase-separated liquids.

Carbon Adsorption: is used to filter contaminants from groundwater.

Incineration: contaminated materials are exposed to heat, resulting in combustion of organic contaminants.

CONTRACTING APPROACHES

Environmental personnel must evaluate what approach effectively meets installation, community, and regulatory requirements for the cleanup of the site. Remediation can fall into three general categories. In the first category, the installation can plan, clean up and administer the site using in-house resources. For contracting, this would mean contracting with commercial firms for the various remedial services needed for the project. We will briefly look at general responsibilities and provide references for this course of action.

The second involves entering into an agreement with one of several Air Force and DOD service agencies. The service agency may assume full responsibility for implementing and administering the design and cleanup of the site. An example is the Army Corps of Engineers. Other service agencies, such as Air Force Center for

Environmental Excellence, assigns responsibilities to the local installation, as well as the Defense Contract Administration Command. Examples of service agencies that provide various types of contractual support includes:

Air Force Center for Environmental Excellence: AFCEE was established in 1990 to manage and support Air Force environmental programs. The Human Systems Center is the contracting office that supports AFCEE. AFCEE has a portfolio of contracts dealing with all aspects of environmental programs.

AFCEE currently has Remedial Investigation Contracts (Preliminary Assessment/ Field Study). These are indefinite quantity and time and materials contracts with a five year performance period and an order value of $50 million on each. AFCEE also has nationwide Remedial Design Contracts (RD). These are Indefinite Delivery/Quantity and Firm Fixed Price contracts. These contracts have $25 million ceilings each and have five performance periods.

Existing contracts consist of nationwide Remedial Action Contracts that have ceilings of $25 million each, with three year ordering period and include indefinite delivery/quantity and cost plus fixed fee contracts. The contracts are technology specific that includes pump and treat, soil/tank removal, soil venting, fire training areas and landfill capping.

Other contracts awarded or in the process of award include: Acquisition Support, Technology Demonstration, Community Relations, Environmental Services - Pollution Prevention and Caretaker contracts for closure bases. Future contracts include new remedial action, regional soil and tank removal, and replacement study contracts.

The Memorandum of Agreement with each Major Command, with the exception of Air Combat Command, establishes responsibilities for HSC/PKV, DCMC, and the local installation.

- HSC/PKV will:
    1. Negotiate and award contracts and delivery orders
    2. Delegate contract administration to the cognizant DCMC office in accordance with FAR Part 42
    3. Issue contract and delivery order modifications
    4. Track contract cost and delivery order ceilings
    5. Resolve daily problems
    6. Review and approve final payment vouchers and track DD250s
    7. Perform property management duties as required by FAR Part 46
    8. Make periodic visits to RA sites
- MAJCOM and their bases will:
    1. Identify local points of contacts for contracting, fire, safety, environmental management, security, bioenvirionmental, and legal offices
    2. Perform Davis-Bacon wage checks as prescribed by FAR to include comparing field surveys to payrolls
    3. Provide escorts for contractor employees when required
    4. Ensure that contractor obtains required permits
    5. Attend the local site visits and post-award conference
    6. Perform labor responsibilities as required under AFR 79-1

7. Assist HSC/PKV/Base CE property administrator in inventorying and monitoring Air Force property
8. provide specific on-site contractor oversight as agreed to by all parties
9. Perform emergency change orders based on agreed to delegations as identified at the post-award conference

- Defense Contract Management Command will:
  1. Process invoice/payment vouchers
  2. Government property administration
  3. Approve subcontractors
  4. Cost accounting system and audit checks
  5. Field pricing support

Naval Facilities Engineering Command (NAVFAC): NAVFAC is responsible for the Navy's IRP program. Navy IRP is controlled through its six geographic Engineering Field divisions. NAVFAC uses a variety of contracting types to remediate their sites, but the contract that has met environmental requirements is the Comprehensive Long-Term Environmental Action Navy (CLEAN) contract. This is a multi-year cost-plus-award-fee contract designed to span the entire IRP process. The cost plus approach benefits the project because it handles problems with the site expanding in scope. The award fee provides incentive to the contractor to ensure quality, cost effectiveness, and delivery.

US Army Corps of Engineers (Corp): The Corp provides a wide range of engineering, construction and environmental services to federal and Air Force installations. The Corp's mission is to provide in a timely manner, customer supportive, competitive, and cost effective tools to Federal Hazardous, Toxic, and Radiological Waste (HTRW) programs.

- Estimated Total Cost Method (ETCM) Is a fixed price construction contract where the contractor determines the optimum time for completion.
- Preplaced Remedial Action Contracts Are cost-reimbursable indefinite delivery contracts for environmental site clean up. The maximum value of the contract is $50 million. Each contract has the flexibility to accept either fixed-price or cost reimbursement delivery orders. Contract length is one year with four options.
- Rapid/Immediate Response Contracts These contracts are designed for immediate response for leaks or spills that occur on installations that require EPA actions within 72 hours for immediate and 45 days for rapid responses. These are cost-reimbursable indefinite delivery contracts.
- Total Environmental Restoration Contracts (TERC) The TERC is a cradle to grave contract(PA/SI through RA, see Chapter 7 for remediation process). These are $100-200 million cost reimbursable, fixed price, indefinite delivery forms of contracts. The length of the contract is one year with nine one year options.. The contract contains both construction and services clauses.

In addition to the above service agencies, two Air Force Major Commands (Air Mobility Command and Air Combat Command) have contracts in place to perform environmental design, investigations, CERCLA and other A-E services. The contracts

are firm-fixed price or cost plus indefinite delivery, indefinite quantity for environmental Architect Engineering services. CE is encouraged to use these contracts.

The third category are federal service agencies. These agencies are accessible to the installation under the authority provided by the Economy Act of 1932 through an Interagency Agreement or Memorandum of Understanding between the Air Force and the Agency. Contracting will have specific responsibilities to accomplish under the Economy Act before any agreement will be established. Economy Act responsibilities will be discussed later in this chapter.

Department of Energy (DOE): The primary tool for environmental cleanup in DOE is the Hazardous Waste Remedial Actions Program (HAZWRAP). This program is designed for emergency response work and is primarily investigative in nature.

Environmental Protection Agency (EPA): EPA has a range of technical and management services for remediation sites. The Alternative Remedial Contract Strategy (ARCS) provides for site management, remedial investigations, remedial designs, contract administration, and technical and management assistance to IRP project managers. The contract is a cost plus award fee.

US Bureau of Reclamation (BOR): The Bureau of Reclamation has developed task order contracts similar in concept to HAZWRAP and the Corp of Engineers.

BASE CONTRACTING

There are many bases that have awarded and administered their own IRP contracts for environmental assessment, investigation, design, and clean up activities. The command taking the lead in environmental remediation is Air Force Material Command. Each Air Logistic Centers has established environmental divisions that focus on the base environmental programs. The reason for this is that environmental remediation have many issues that are unique from traditional installation contracting. These issues not only apply to the Air Logistics Centers but to operational contracting squadrons that are contemplating awarding these types of contracts as well. If these issues are not addressed in the planning stages the results can be disastrous. Issues that need to be considered include:

- The political ramifications of the project: The political forces involved with the rapid clean up of a site are many. There are many players in the political arena. Federal, state, and local governments, regulatory authorities EPA, state, and local environmental departments, community groups, and environmental groups all exert considerable political pressure on plans and completion of projects.
- Regulatory Involvement: EPA and in many cases state agencies have approval authority over remediation projects. Failure to meet these requirements can result in unilateral changes that can cause delays and additional costs.
- Pressure to accelerate the Remediation Process: Clean up sites that pose a hazard to human health naturally assume priority status with community and regulatory authorities. This forces actions that may result in action being taken and contracts issued before

proper requirements have been developed. This can result in contracts that don't meet Air Force requirements and become an administrative nightmare.

- Lack of understanding about the IRP process by outsiders.
- Uncertainty of the scope of the site: One of the major factors that will drive how the acquisition will be accomplished is the uncertainty of the location, quantity and toxicity of the site. Lacking this data will increase the risk on certain contract types like firm-fixed price, and make other types like cost plus more feasible. This factor makes good acquisition planning even more important.
- Lack of experience: Environmental clean up is an evolving field that requires broad and indepth knowledge of the process. Lack of experience and knowledge of the remediation process can put contract performance at risk. Consideration should be given to using one of the service centers if there is a question dealing with experience.
- Poor requirements/specifications: Lack of understanding of the scope and complexity of the project can directly lead to the development of poor specifications and drawings or statements of work.
- Inconsistent scopes with government estimates.
- Indemnification

ACQUISITION PLANNING

Formal acquisition planning will be the key to success of any environmental remediation contract. Formal written acquisition plans are required for Research and Development contracts with an estimated acquisition cost of $5 million or more and supply or service contracts with an estimated cost of $30 million or more for all program years or $15 million or more for any one fiscal year. Reference DFARS 207. 103(c) (i). While many installation level projects may not exceed formal requirements it still is a very good idea to develop a comprehensive plan that addresses the important issues when planning an environmental project We will briefly address the important environmental issues associated with an IRP acquisition. We will also provide reference materials for more specifically addressing these issues.

1. Ensure requirements are met, or are required for environmental assessments, environmental impact statements, and permits.
2. The proposed resolution of environmental issues;
3. Any environmental-related provisions to be included in the solicitations and contracts in accordance to FAR 7.105 (b) (15)
4. Under DFARS interim rule 207. 105 (b) (15) the formal acquisition plan must discuss actions to eliminate the use of ozone depleting substances or to obtain authorization for their use.
5. Understand what the customer wants to buy. If you don't understand get clarification and training. If you still don't understand contact someone who does.
6. Understand scope of the proposed project. Is it well defined as to the size of the project, types of contaminants, impact on the health and safety of base and community populations.
7. Based on the scope of the project determine the best contract type to meet the requirement. This can be firm-fixed price for well defined and scoped contracts. Cost contracts are used for projects with a great amount of uncertainty. Indefinite quantity

contracts provide flexibility when there are multiple sites. Architect and Engineering contracts are used for investigations and studies. Time and material contracts are benefital for studies and investigations.
8. Develop and use a solid Business Strategy Panel. Identify and get all the players involved early.
9. Based on the requirements of the contract i.e., is it studies and investigations contract or a construction contract for actual cleanup, does it qualify under the Service Contract Act or Davis Bacon Act?
10. Provide the information on what questions to ask.
11. What does the CO need to do?
12. Develop a. strong solicitation package
13. Use Pre-Award Surveys to evaluate a prospective contractor's capability to perform the proposed environmental contract. FAR 9.101 requires pre-award surveys when there is insufficient information available for the contracting officer to make a determination of contractor responsibility. Environmental remediation requires contractors with extensive environmental experience.
14. Review case law and GAO reports, and understand the types of protests associated with these types of contracts.
15. Understand the imdemnication responsibilities of all parties involved. Contractor liability and Air Force indemnification for work on federal environmental cleanup projects is a major issue in the development of a successful contract. There are great risks involved with environmental clean up contracts and contractors feel that they are vulnerable to long-term liability. If contractors can not find a means to reduce this risk they will not submit proposals or bids. This will limit competition and ultimately cost the Air Force excess costs.
16 If this is an A&E review responsibilities under the Brooks Act and Miller Act.
17. Keep legal involved in all phases of the contract, especially presoliciation. Legal will be the source for the determination of what environmental laws and regulations will apply to the contract.
18. Ensure the contract quality assurance evaluator (QAE) or inspector has the experience and training to administer a contract of type.
19. Review site surveillance plans, schedules, and checklists for on site inspections by the QAE.

The success of IRP contracts will center on the development of a cohesive team comprised of contracting: contracting officer and buyer, the IRP flight: engineer and inspectors, legal, and other organizations. This team will be responsible for the development of the specifications, contract, and administration requirements. Key areas for these contracts include:

- The accuracy of the specifications and drawings
- Completeness of contracting and environmental regulations
- The environmental climate of the region
- The environmental market area and supply base.

There are a variety of excellent publications available that provide information on preparing and administering Remediation contract.

IRP Contract Requirements

The IRP program is designed to accomplish requirements as stated in DERP and SARA Section 211. This covers the identification, investigation, research and development cleanup, and close-out of sites contaminated from hazardous substances pollutants and contaminants. IRP contract requirements may include one or all of the identified types.

- Preliminary Assessment: A contractor gathers the initial data on potential sites. The preliminary assessment is used to determine further responses and priority of such responses.
- Site Inspection: This requirement calls for contractors to provide site inspections to confirm or deny the presence of contamination on site(s). The description of the site including the presence or absence of the contamination on the site. Additional requirements include site inspection workplans, sampling and analysis plans, field sampling plans, quality assurance plans, health and safety requirements, and additional site inspection documentation.
- Remedial Investigation: requires the contractor to acquire additional information to define the extent of the environmental contamination at a site(s) and to prepare a risk assessment that addresses the protection of human health and the environment.
- Feasibility Study: selects and describes, based on the information provided from the previous studies, the remedial action that addresses the Applicable or Relevant and Appropriate Requirements (ARARS) for cleaning up the confirmed contamination on the site. As with the previous studies the RI/FS includes information reviews, workplans, investigations, studies, and draft decision documents.
- Special or Emergency Case Investigations: include feasibility studies and treatability studies used in a situation when significant risk reduction can be achieved through the quick remediation of a site.
- CERCLA Title I Design Services requires a contractor to develop workplans designs, and specifications for systems to meet remediation objectives specified in a CERCLA Record of Decision, interagency agreement, RCRA decision document or similar document.
- Remediation of the Site

Air Force Publications

U.S. Air Force Environmental Restoration Contracting Strategies Analysis, January 1992

This document is an overview-level document to aid Air Force remedial project managers and contract personnel involved in contracting environmental restoration and remediation work. This document provides guidance for the decision process used in selecting the appropriate type of contract and in evaluating associated considerations for performing environmental studies, design, monitoring, and clean up activities under CERCLA and SARA.

Issues Affecting Acquisition Strategies For Remedial Action Projects At Installation Restoration Program Sites, Thesis, Captains Keoshian, John E. and Kolakowski, William

The document looks at issues surrounding the remedial action projects at IRP sites. This should help contracting and engineering personnel make decisions regarding the acquisition strategy for a particular environmental restoration.

Air Force Courses

AFIT

Installation Restoration Program Course (ENV 021). This course provides both the theory and an explanation of the management philosophy behind the various aspects of the IRP to provide integrated education to familiarize Air Force personnel with the requirements, procedures, and responsibilities of the program.

Environmental Restoration Project Management (ENV 418). This course is for the project manager for the environmental restoration process from problem identification through completion of the remediation action.

Environmental Contracting (ENV 418). This course is designed for contracting engineers and contract management personnel to prepare, manage, and administer environmental management.

Federal Publications

The EPA publishes the Superfund and Enforcement Program Publications Update. This source covers information on more than 33,000 hazardous wastes sites and associated information. The publications and computerized data listed come from many program offices. To receive information on this service call the National Technical Information Service 703-487-4650.

Commercial Publications

Environmental Remediation Contracting, Erickson, Randall L., Wiley Law Publications, New York, Phone 1 800 225 5945

Commercial Courses

CERCLA Education Center is located at North Carolina State University (NCSU) in Raleigh, NC. NCSU provides a wide variety of courses in all aspects of CERCLA For information on these courses call (703) 308-8802.

Environmental Remediation Contracting, Federal Publication Inc Provides information on the clean up of contaminated property. Topics include: applicable regulations, permit procedures, health and safety issues, contract terms and conditions, liabilities and indemnification matters, project management techniques and other topics. Key guidance is provided on identifying, bidding, and negotiating environmental remediation contracts. For more information call 1 800 922 4330.

George Washington University has seminars addressing environmental issues. For information contact the Environmental Law and Policy Program at 1 202 223-1111.

There are other companies and institutions that address different aspects of environmental clean up. For further information contact the Air Force Institute of Technology Environmental Education Center at DSN: 785-0381.

CHAPTER 7

ENVIRONMENTAL ISSUES IN CONSTRUCTION CONTRACTING

INTRODUCTION

The impact of environmental regulations has a dramatic effect on the planning and completion of construction projects. Failure to adequately plan, taking into account potential problems can result in regulatory action, increased costs, delays, and legal action. The environmental topics presented are types most commonly encountered on the base. Understanding their impact will reduce potential problems when the actual project starts.

POLYCHLORINATED BIPHENYLS (PCBS)

PCBs are highly toxic organic compounds that are hazardous to human health and safety. PCBs were used in many electronic components but are most common in transformers, heat transfer systems, hydraulic systems, switches, voltage regulators, circuit breakers, and capacitors. They have also been found in underground storage tanks. They were especially useful due to their stable, ability to resist breakdown, low vapor pressure and low flammability, and their low electrical conductivity. PCB use in this equipment was banned starting in 1985.

FEDERAL LEGISLATION

Toxic Substances Control Act: PCBs are regulated under TSCA. Section 6 of TSCA address the regulation of PCBs. Federal regulations for PCBs are found in 40 CFR 761. The CFR covers use and control of PCBs

Occupational, Safety, and Health Act.

Hazardous Materials Transportation Act.

STATE AND LOCAL REQUIREMENTS

A number of states have agreements with EPA to administer federal regulations on PCBs. As with other types of environmental regulations, states may have more stringent requirements then their federal counterparts. States may include additional requirements beyond those called for by the federal regulations. Many states require special permits to dispose of PCBs. Bases are subject to fees and charges assessed in connection with state hazardous waste programs. The Federal Facilities Compliance Act subjects bases to all state sanctions, including civil or administrative fines and penalties.

COMPLIANCE REQUIREMENTS

Federal and state regulations authorize continued use of PCB equipment to remain in continual service. This equipment has special inspection, markings, record keeping, and restrictive requirements. Transformer servicing requires special procedures for repair, filling and retrofilling. Replacement of PCB equipment must be stored in specially

designed storage areas. Storage of PCBs on site is limited to one year. They also require a waste manifest system to track the movement of PCB waste from point of generation to the point of disposal. PCB fluids are disposed by incineration in specially licensed incinerators and PCB equipment must be disposed in specially licensed landfills. Clean up of PCB contaminated sites require special handling and disposal of contaminated substances. The Air Force goal was to be free of PCBs by 1991; most bases are close to achieving this goal.

BASE RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible, through the Exterior Electrical Shop, or CEV for identifying, inspecting, marking (labeling), and properly servicing PCB electrical equipment (transformers and capacitors).

CEV: Is responsible for ensuring those out of service items are located in a technically adequate PCB storage facility. Normally, such facilities are located at a DRMO and the DRMO is responsible for storage, disposal, transportation, and contracting for disposal.

Legal: All contracts for PCB work shall be reviewed by legal.

CONTRACTING RESPONSIBILITIES

Contracting responsibilities should focus on meeting all federal, state, and local requirements and reduce the potential for liability. Consideration should be given to the following:

- Contract with responsible, qualified, financially viable PCB removal companies. Negotiation or source selection should be used with contractor's past performance, compliance record, technical competence, and environmental management being the primary evaluation areas. A pre-award survey may be beneficial to establish the contractor's capability to perform the contract.
- Contact the appropriate regulatory agencies to determine offeror's compliance history.
- Requires the offeror to have all applicable federal, state, and local identification numbers, licenses, and permits related to transportation, storage, or disposal of PCBs.
- Requires the offeror to comply with all federal, state, and local regulatory requirements.
- Requires the contractor to deliver PCBs only to designated facilities listed on the manifest. If this can not be accomplished the contractor shall contact a government representative.
- The contractor will provide the contracting officer with a copy of the waste manifest or regulatory report signed by the designated storage or disposal facility.
- Requires the contractor to cleanup any spills of PCBs in accordance with the EPA PCB Spill Cleanup Policy, 40 CFR Part 761, Subpart G and any applicable state and local PCB cleanup standard. Contractors will contact the contracting officer in the event of a spill.
- Requires contractor to reimburse the Air Force for any fines or penalties assessed against the Air Force, due to the improper handling or disposal of PCBs caused by the contractors fault or failure to comply with the contract.
- Identify clear standards for determining satisfactory performance.
- Retain final payment until proof that PCBs were properly delivered to designated storage or disposal facility.

LEAD BASED PAINT

Lead has become a major source of environmental concern with most construction projects. Lead has a long history of being a health hazard. Studies have shown it damages blood-forming organs, kidneys, and the central nervous system. Children are at a greater risk because of their developing nervous systems, lower body weight, and tendency to ingest lead paint chips and dust. The studies have shown that lead diminishes a child's mental abilities. There is a relationship between the amount of lead in a child's system and IQ deficiencies and learning disabilities. Lead products are found throughout the base. This includes: all industrial facilities, steel structures (water tanks, pipelines, etc.), many non-industrial facilities constructed prior to 1980, and military family housing.

FEDERAL LEGISLATION

Residential Lead Based Paint Hazard Reduction Act of 1992 (Title X): Title X provides for lead based paint (LBP) hazard reduction, worker protection, reports, and research and development. Title X. Subtitle A requires:

- Inspection and abatement of LBP hazards in all federally owned target housing constructed before 1960, including military family housing.
- Inspection for the presence of lead based paint in all federally owned target housing constructed between 1960-1978.
- Periodic lead based paint risk assessments and interim controls for federally owned target housing constructed between 1960-1978.
- Inspection for the presence of lead based paint in target housing prior to federally funded renovation or rehabilitation is likely to disturb painted surfaces.
- Reduction and abatement of lead based paint hazards in the course of federally funded target housing rehabilitation projects.
- When risk assessments, inspections, or reductions of lead based paints are conducted at federally owned target housing the occupants must be notified of the nature and scope of such activities and the findings of the actual risk assessment or inspection reports must be made available to them.

The above requirements can be waived if a risk assessment performed by a certified contractor has determined that lead based paint hazards are present.

COMPLIANCE REQUIREMENTS

Significant liability issues exist for removal of lead based paints. Certified personnel are required when working on projects that contain lead.

The Air Force policy on lead based paint is to comply with the requirements of Title X, Subtitle A: Identify, evaluate, control, and eliminate existing lead based paint hazards. Base priority will be given to facilities or portions of facilities which are used by children under age 7 and areas in those facilities which contain painted surfaces in deteriorated condition. Consideration is first given to the reduction of the risk of hazardous exposure to acceptable levels. Abatement will be performed when in-place management will not

control the hazard effectively or when it is cost-effective during normal facility renovation and upgrade programs.

Protect facility occupants, especially children, and workers from existing lead based paint. Ensure occupants are removed from a hazard area and determine blood lead levels when children under the age of seven are exposed to lead based paint. Perform investigations when children with elevated blood lead levels are identified and determine the source of lead and remedial actions.

Prevent lead based paint hazards from developing. Take precautions when disturbing lead based paint and when maintenance, repair, and modification and renovation activities disturb painted surfaces in priority facilities and other facilities likely to contain lead based paint.

Restrict use of lead based paint. Paints or coatings containing lead above the regulated amount specified for non-industrial facilities will not be specified, purchased, used or approved for use on Air Force installations.

Subtitle B defines specific responsibilities that include identifying, evaluating and remediating past lead based paint hazards. Presence of lead based paint on facilities and the potential for lead based paint debris to have accumulated in the area surrounding facilities will be determined.

Personnel and contractors who work lead based paint projects require training and certification.

All risk assessments, inspections, and abatement activities in the identified target housing must be performed by certified contractors.

Comply with environmental protection regulations that include: evaluate lead based paint in accordance with RCRA, comply with CERCLA if reportable hazards are released, and comply with the TSCA requirement for lead based paint activities.

BASE RESPONSIBILITY

Base Civil Engineer: The BCE is responsible for the development and implementation of the installation lead plan. BCEs inspect facilities on a prioritized basis for deterioration of paint surfaces. BCE performs lead abatement and management. The BCE complies with all state and federal laws. They develop and use a management abatement program for lead-based paint. They are responsible for meeting certification and training requirements for in-house and contract personnel.

Bioenvironmental: The BEE samples and tests paint samples and makes hazardous determinations. They also provide pediatric blood tests and conduct lead exposure education.

Legal: All contracts for lead removal shall be reviewed by base legal.

CONTRACTING RESPONSIBILITIES

Contracting responsibilities should focus on meeting all lead-based paint federal, state, and local requirements and reduce the potential for associated liability. Consideration should be given to the following:

- Contract with responsible, qualified, financially viable companies. Negotiation or source selection should be used to determine a contractor's lead-based paint technical competence past performance, compliance record, qualification and training of the

contractor's workforce, and environmental management being the primary evaluation areas.

- Contact the appropriate regulatory agencies to determine offeror's compliance history.
- Requires the offeror to have all applicable federal, state, and local licenses, and permits related to removal, transportation, storage, or disposal of lead-based paint.
- Requires the offeror to comply with all federal, state, and local regulatory requirements.
- Identify clear standards for determining satisfactory performance.

ASBESTOS

Asbestos is a highly toxic material that has had widespread usage in buildings constructed between the 1940s and 70s. Asbestos is found in insulation of structural steel, heating ducts and water pipes. It has been used in surfacing materials on acoustical ceilings and walls. It was also the primary insulation material in furnaces and air conditioners. Finally it has been found in building materials such as floor tile, and tile adhesives, wall boards, well insulation, and roofing materials. Its greatest use is being able to withstand high temperatures, thus being an excellent insulator.

Asbestos in a friable state (decaying, small crumbleable airborne particles) causes asbestosis and mesothelima. Asbestosis is caused by the irritation of the lungs by asbestos fibers while mesothelima is a form of cancer. These diseases came to light in the shipbuilding industry where workers were exposed to large amounts of asbestos in the construction of engine and boiler units on ships.

FEDERAL LEGISLATION

Clean Air Act: Asbestos is a hazardous air pollutant under the National Emission Standards for Hazardous Air Pollutants (NESHAPS). These standards define emission limits, monitoring requirements, worker practice standards, restrictions on material use and reporting requirements for hazardous air pollutants. The EPA applies these standards to a broad category of activities involving asbestos materials which include: demolition and renovation of buildings, waste disposal, installing or removing insulating materials and spraying or fabrication.

Toxic Substances Control Act: TSCA was modified by the Asbestos Hazardous Emergency Response Act (AHERA) which added regulations that require local education agencies to inspect their school buildings for materials containing asbestos, develop asbestos management plans, and implement response actions in a timely fashion.

Hazardous Material Transportation Act regulates the transportation of asbestos materials. The act sets for standards for loading, handling, and unloading in a manner that will minimize occupational exposure to airborne asbestos.

Occupational Safety and Health Act sets standards for monitoring work areas and sets permissible limits for exposure. OSHA establishes requirements for safety clothes and equipment and requirements for containment areas.

The Asbestos Hazard Emergency Response Act (AHERA): AHERA amended TSCA in 1986 to include regulations that require local education agencies to inspect their school buildings for materials containing asbestos, develop asbestos management plans, and implement response actions in a timely fashion.

Asbestos standards are addressed in RCRA and CERCLA. CERCLA standards apply in meeting remediation requirements and RCRA applies to siting and operational requirements for solid waste disposal.

STATE REQUIREMENTS

States have enacted a wide range of standards that apply to asbestos materials. Many are more stringent than the federal requirements. State requirements, may include performance standards and disposal requirements, certification of specialists working asbestos projects and registration and accreditation of approved training programs. States may require permits for renovation of sites involving asbestos materials and also may have more stringent state OSHA standards.

COMPLIANCE REQUIREMENTS

Air Force bases that have demolition or renovation of buildings that contain asbestos will most likely be affected by federal and state regulations. Notification of appropriate agencies is a necessity. Asbestos considerations must be built into the planning process for all construction projects affecting older buildings. Building renovation projects should contain an asbestos survey identifying locations and types of asbestos.

Asbestos clean up methods are relatively simple yet extremely expensive and time consuming to accomplish. This is due to many factors that include: the location, types of surfaces, filtration and respirator requirements amount of asbestos in the building, and many unknown factors addressed at each specific site. Common abatement methods include: removal, encapsulation, enclosure, and maintenance with monitoring. Special work procedures must be used to control exposure and emissions from the removal of friable asbestos. Procedures include isolation partitions, covering uncontaminated areas with plastic sheeting, sealing all air passages, and high energy high efficiency air filtration and vacuum systems. Removal of friable asbestos must be wet when it is removed. Asbestos must be stored and sealed in non-puncture-proof bags and labeled in accordance with RCRA and OSHA regulations. All surfaces that may have been contaminated by asbestos materials are required to be wiped or vacuumed with vacuum cleaners with special filters. Sites may require special decontamination and air monitoring equipment for worker safety. Finally asbestos must be disposed of in approved land fills.

CONTRACTING RESPONSIBILITIES

Contracting responsibilities should focus on meeting all asbestos federal, state, and local requirements and reduce the potential for liability. Consideration should be given to the following:

- Contract with responsible, qualified, and financially sound asbestos removal companies. Negotiation or source selection should be used with contractor's past performance, compliance record, technical competence, permits and licenses, and environmental management being the primary evaluation areas. A pre-award survey may be beneficial to establish the contractor's capability to perform the contract.
- Contact the appropriate regulatory agencies to determine offeror's compliance history.
- The Statement of Work (SOW) clearly indicates that contract performance will involve Asbestos Containing Material (ACM)

- SOW contains and estimated amount of ACM.
- SOW requires the offeror to have all applicable federal, state, and local asbestos licenses and permits.
- SOW requires the offeror to comply with all applicable asbestos requirements, including, but not limited to:

    29 CFR 1926.58 Construction Standard
    40 CFR Part 61, Subpart M Asbestos NESHAP
    49 CFR Parts 171-173, and 177 Transportation

- SOW requires the contractor to properly provide written notice to regulatory agencies in advance of when demolition or removal is to begin, and to provide a copy to the contracting officer Any changes to the schedule require notification to the regulatory agencies and the contracting officer.
- SOW requires contractors to keep track of the amount of asbestos removed, and update any regulatory notices as necessary, based on additional amounts removed as identified.
- SOW requires a foreman level or management level trained person to be on-site when ACM is handled or disturbed.
- SOW requires contractor to provide the Contracting Officer with evidence of the required asbestos NESHAP training for the on-site foreman or management level person.
- SOW requires the contractor to provide the Contracting Officer with copies of required daily temperature records for any period when wetting operations are suspended due to freezing temperatures (Records must be retained for 2 years).
- SOW requires the contractor to dispose all asbestos containing material at an EPA (and state) approved site.
- SOW requires contractor to provide a copy of the waste shipment record to the Contracting Officer for all ACM transported off the facility site.
- SOW requires the contractor to provide the Contracting Officer with a copy of the waste shipment record, signed by the designated disposal site, or a copy of the required written report to regulatory agencies that the waste shipment was not received by the designated site
- SOW contains clear standards for determining asbestos removal was satisfactorily performed by contractor, e.g. work site is clean, free of dust, and able to pass a test for airborne concentration of asbestos, i.e. 29 CFR 1910.1001
- Contract requires the contractor to reimburse or indemnify the Air Force for any fines or penalties assessed against the Air Force for non-compliance with applicable standards during performance of the asbestos related work
- Contract requires the contractor to carry appropriate levels of insurance for asbestos related injuries or disease, arising out of performance of the contract

BASE RESPONSIBILITIES

Base Civil Engineer: The BCE appoints an Asbestos Program Officer to prepare the Asbestos Management Plan and an Asbestos Operations Officer to prepare the Asbestos Operating Plan. He also ensures a sufficient number of in-house technicians and supervisors are trained and equipped to remove, repair, and control asbestos-containing materials (ACM).

Bioenvironmental Engineer: The BEE evaluates asbestos containing materials (ACM) for potential hazards and assigns an appropriate Risk Assessment Code (RAC) so the situation can be treated as a hazard according to AFR 127-12.

Asbestos Program Officer: The Asbestos Program Officer prepares the Asbestos Management Plan which contains documentation on all asbestos management efforts and the mechanism for oversight of the program.

Asbestos Operations Officer. The Asbestos Operations Officer prepares and implements the Asbestos Operating Plan.

Legal: All asbestos contracts shall be reviewed by base legal.

RADON

Radon is a radioactive gas that comes from the natural decay of uranium and is found in nearly all soils. It moves through the ground and gets into facilities through cracks and holes in the foundation and is trapped and accumulates. Radon causes lung cancer and can be deadly if allowed to accumulate inside facilities and houses.

Currently there are no legal standards for radon in residential housing. EPA does have recommended action to reduce or eliminate radon concentrations. States have enacted legislation addressing the radon issues and have developed technical sources to address potential problems.

The Air Force has addressed the radon problem by the enactment of the Radon Assessment and Mitigation Program (RAMP). RAMP applies to all major Air Force installations. It is designed to assess radon levels through testing in family housing, administrative buildings, dormitories, child care facility areas, and temporary lodging facilities. Initial screening results identified potential radon problems. Following mitigation, post mitigation assessments are conducted to ensure the effectiveness of the mitigation actions. Mitigation actions are prioritized as follows: for radon levels greater than 200 pCi/l, mitigate within several weeks; for levels greater than 20 pCi/l but less than 200 pCi/l, mitigate within 6 months; and for levels less than 20 pCi/l but greater than 4 pCi/l, mitigate within 5 years.

Federal Requirements

Toxic Substance Control Act: The goal of the United States is to be free of radon levels in buildings as ambient air outside buildings. Federal agencies must conduct studies for the purpose of determining the extent of radon contamination in such buildings including water supplies not obtained from public sources (wells).

State Requirements

Many states and local governments have enacted standards more stringent than the federal requirements. If the installation is engaging in asbestos removal or disposal, the appropriate state and local agencies should be contacted.

BASE RESPONSIBILITIES

Base Civil Engineer: The BCE is responsible for review of radon assessment results and appropriate mitigation actions.

Bioenvironmental Engineering: The BEE is responsible for sampling radon gas levels at installation offices, housing, day care facilities, etc. The BEE provides these sample results to the Base Civil Engineer.

UNDERGROUND STORAGE TANKS

Almost 50 percent of America's drinking water comes from groundwater sources. Old neglected underground tanks represent a threat to the continued purity of our groundwater supplies. Leaks from underground storage tanks can contaminate groundwater resources and present hazards to persons using those resources. Federal regulations establish standards for new tank installations and require upgrading of existing tanks. The definition of a regulated underground storage tank is any tank with at least ten percent of its volume and the volume of its associated piping located below the ground surface. There are exemptions which relate to farming, tanks on premises storing heating oil, septic tanks, follow through process tanks, and tanks in underground areas but above ground and visible.

Leaks in USTs and associated piping and pumping sources can be caused by corrosion, from ruptures due to overloading, external pressure or puncture, and faulty construction. Additional contamination can also occur in surface and ground water through overfilling practices and accidental spills.

The most common cause of UST leaks is corrosion of the tank itself or its piping. Many of the Air Force's leaking tanks are steel tanks which were installed 25 to 50 years ago without any corrosion protection. Tanks of this type normally have a 15 year service life before leaking and contaminating surrounding groundwater.

New non-metallic tanks and piping are designed to be corrosion-resistant, but such materials have lower structural strength than steel and require greater care during installation. Piping systems also contribute to a sizable percentage of leaks and contamination. This is because the majority of piping systems utilize threaded joints which are susceptible to corrosion and may also fail because of improper sealing during installation or loosening, due to vibrations from aircraft, temperature range extremes, and soil settlement.

FEDERAL LEGISLATION

The Resource Conservation and Recovery Act: established a comprehensive regulatory program for underground storage tanks (USTs) that store petroleum, petroleum by-products, or substances defined as hazardous under CERCLA. EPA published its UST regulations in 1988 and established a nationwide "cradle to grave" management program for USTs. There are several elements in the implementing regulations, beginning with standards for the installation of new UST systems and UST installation certification. Owners and operators of UST systems are required to certify all repairs done to existing and new systems. The filling practices must be monitored to prevent overfills and spills.

STATE UST REQUIREMENTS

Many state and local governments have active UST programs. CE should review UST regulations at the state and local level to ensure that all requirements are met for their

installation. These regulatory requirements need to be identified in the contract specifications. Federal facilities are required to comply with these regulations and with state UST regulations that may be more stringent than the federal regulations.

KEY UST COMPLIANCE REQUIREMENTS

New Petroleum Underground Storage Tanks: Tanks installed after December 1988 must be certified as properly installed. Tanks and piping systems must be provided with devices, such as catchment bases, automatic shut-off, and overfill alarms to prevent spills and overfill Tanks and piping must be protected from corrosion, such as cahthodic protection, fiberglass and fiberglass covered steel. Finally, both the tanks and piping must be equipped with leak detection systems which consists of tank gauging, vapor monitoring, inventory control, and ground water monitoring.

Record Keeping and Reporting: State and local regulatory agencies must be provided notification of installation, suspected releases, corrective action and closure.

New Chemical USTs: Tanks installed after 1988 which contain hazardous materials must meet the same installation corrosion protection, spoil and overfill prevention, correction action and closure requirements as new petroleum tanks and must have secondary containment and interstitial monitoring for leak detection.

Existing Chemical USTs: Tanks installed before 1988 must have leak detection installed. Corrosion protection and overfill and spill protection must be completed by December 1998.

UST RESPONSIBILITIES

The Air Force has developed a long-term management program for achieving compliance with these federal and state regulations. The Air Force strategy uses a systematic approach that identified and inventoried all Air Force USTs, determined if USTs are to be used or removed, established methods of leak detection and testing, and aggressively upgraded or replaced USTs. All USTs are to be upgraded by 1998. New USTs will include secondary containment, leak detection devises, and corrosion and leak protection. All USTs installed prior to 1988 will also be outfitted with corrosion protection and leak detection devises.

Base Civil Engineer: The BCE is responsible for the maintenance of all installed petroleum dispensing systems.

CEV: CEV is responsible for monitoring all POL activities which may effect the environment and usually coordinates the EPC review and updates of the Spill Prevention and Response (SPR) plan. The CEV also often coordinates the reportable spills notification of appropriate federal and state agencies on behalf of the Base On-Scene Commander.

Bioenvironmental Engineer: The BEE takes samples to determine the chemical nature, pollutant concentration and extent of each reportable quantity spill as required for response actions and documentation.

The Base Fuels Management Officer (BFMO): The BFMO is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections.

Legal: All UST contracts will be reviewed by base legal.

These substances have resulted in sizable delays and cost overruns on many Air Force construction projects. Initial planning on the renovation of older building requires that all analysis and surveys be completed before a contract is awarded.

CHAPTER 8

ENVIRONMENTAL CONTRACTING ISSUES

INTRODUCTION

From the previous chapters you can readily see that environmental compliance can be a large, complex, and many times a risky task. There are many environmental laws, regulations, permits, and other programs that require a coordinated team effort from base organizations to ensure compliance. These laws are constantly changing, as the Congress, EPA, and the states enact new legislation or modify existing ones. These changes can have an immediate impact on how environmental organizations and contracting support the base mission.

ENVIRONMENTAL CONTRACTING OVERVIEW

CEV has many options available to comply with environmental laws and regulations. They may perform environmental projects using in-house resources. Examples include asbestos removal and spill control and prevention. At many bases CEV may lack the technical expertise, personnel, or other resources to accomplish the many environmental taskings. They may decide to use one of the federal or DOD Service agencies or centers to accomplish the work. CEV must be aware that there are Economy Act responsibilities before any agreement is signed with one of these agencies. In addition, the base needs to determine if the Air Force is using the most cost-effective contracting techniques to acquire these services, perform adequate surveillance and administration, and use personnel, and equipment effectively.

CEV may want to accomplish environmental requirements using local contracts. The benefits may include: better local control with contractors on the status of projects, faster and more complete status of contract performance, and in many cases lower costs to the base.

There are many potential problems with contracting directly for environmental services. This type of contracting requires a well-trained staff from CEV and Contracting. Personnel assigned to these projects must understand both the technical and regulatory requirements to properly manage the contracts. If this technical capability is not available on base then the job is better completed by a service center or agency. Managing these types of contracts can be a complex job that requires:

- understanding of the process or site conditions,
- scope of the requirement,
- potential legal, technical, environmental, and regulatory risks,
- preparation of a detailed statement of work that meets all federal and state regulatory and technical requirements,
- contract administration responsibilities
- the work actually performed,
- contractor's documentation such as reports, applications, permits, models, recommendations, investigations, and studies.

In addition, there are numerous risks associated with these contracts these include:

- development of specifications that adequately define the requirements,
- choosing the right contract strategy and contract type to protect the government,
- development of independent costs estimates or cost analyses for projects,
- technical expertise to adequately provide contract surveillance and monitoring,
- development and tracking of project costs.

There is very limited Federal Acquisition Regulation guidance for many environmental issues. These issues will use existing FAR clauses and provisions that can become quite a legal nightmare. Finally, environmental contracts may have extensive liability risks that may reduce competition and shift the risk back to the government. What this means is, environmental contracting requires thorough planning, through a multi-functional team that can define the type and scope of work, identify the issues, and clearly state the requirements.

Environmental contracting will cover contracts and small purchase procedures for analysis, investigation, and studies in support of compliance, pollution prevention, conservation, recycling, and remediation to comply with all federal, state, and local environmental laws and regulations. It can be an extremely complex undertaking, in the case of remediation where, scope, technical requirement, impact on health and the environment, timelines and regulatory oversight are hard to define and even more difficult to accomplish.

ENVIRONMENTAL CONTRACTING REQUIREMENTS

CEV has responsibility to perform various types of environmental design, investigation, remedial action, oversight/compliance, hazardous material/pollution prevention studies, and support taskings. The following list is a brief summary of the different types of environmental projects that CEV may request contracting support for. Many of these services are also available through the service agencies and service centers.

Environmental Impact Analysis Processes (EIAP) are technical investigations and analyses of potential environmental impacts resulting from proposed Air Force actions such as construction, mission changes, base realignment, new unit beddowns, and other new requirements. EIAP is required in accordance with NEPA and Air Force regulations.

Environmental Baseline Studies (EBS) are conducted to determine contamination and possible liability issues relating to a site before the execution of a real estate action such as purchase, sale, lease, easements, and other uses. EBS consists of surveys of records and titles, regulatory action, and may also include site samples and investigation.

Natural and cultural resource studies are Air Force requirements to manage programs for the protection of the installation's natural resources such as soil, water, plants, wildlife, wetlands, forests, and cultural resources. Additional requirements may include historical and prehistoric properties. These are specific responsibilities identified in numerous federal natural and cultural resource acts.

Natural Resource Studies cover the location, habitat, types and numbers of plants, and animals. It can also include the biological impact on these resources by the installation mission.

Environmental Compliance Assessment and Management Plan (ECAMP) is an environmental audit of the ten protocals identified in Chapter 4. A contractor may be required to prepare and conduct an ECAMP or audit to determine compliance with all

federal, state, local, and Air Force environmental laws and regulations. This can include working with installation personnel and the submission of administrative reports of the findings.

Polychlorinated Biphenyls (PCBs), Lead, Radon, Asbestos, Copper testing, studies, surveys, and abatement plans are provided by a contractor to determine location, types, quantities and replacement of the above substances. Results can include surveys, management plans, inventories, data bases, and assessments.

Permits and Environmental Agreements: CEV may require contractors to prepare and procure a wide variety of permits and environmental access agreements for installation projects. These requirements can include permits for air, water, hazardous waste, asbestos, and other environmental permit requirements. Other responsibilities can include: completion of the application, working with permitting regulatory authorities, and submitting appropriate supporting documentation and inventories.

Waste Water, and Treatment Analysis: A contractor provides support data on waste water treatment by the use of surveys. This also requires the preparation of a National Pollutant Discharge Elimination system (NPDES) permit and other waste water permit applications. Studies may be required to evaluate influent and effluent water waste streams.

Pollution Prevention Opportunity Assessments, Baselines, and Surveys are requirements specified by federal laws and regulations. This would include the identification and tracking of the installation's hazardous waste streams, recommend procedures to reduce or eliminate them, and prepare guidance and training to installation personnel on pollution prevention.

Hazardous material investigations and management consist of the development of technical reports, hazardous waste inventories, hazardous substance spill plans, regulatory response, and waste reduction and stream identification.

Hazardous waste, soil, air, waste water, water, industrial sampling and analysis, and laboratory tests require a contractor to test and analyze hazardous materials and contaminated materials using certified EPA laboratories and procedures.

Solid Waste Management: Contractors conduct solid waste reduction studies and identification of solid waste streams from generation to disposal in landfills. Contractors will develop collection systems, and locate disposal sites.

Other areas in the pollution prevention area that may require contract support include: hazardous waste/material minimization technology analysis, industrial hazardous waste/material management, toxic and hazardous contamination/waste studies.

UST survey/management can include leak testing, leak detection procedures, equipment, siting and materials for the base UST program.

The IRP program is designed to accomplish requirements as stated in DERP and SARA Section 211. This covers the identification, investigation, research and development, cleanup, and close-out of sites contaminated from hazardous substances and contaminants. IRP contract requirements may include one or all of the identified types:

- preliminary assessment,
- site inspection,
- remedial investigation,

- feasibility study,
- special or emergency case investigations,
- CERCLA Title I design services,
- remediation of the site,
- facilities construction.

More information on IRP contracts is presented in Chapter 6.

Other types of environmental services that may be required by CEV are listed as follows:

- base environmental comprehensive planning, mapping and studies,
- geological, geophysical, and geotechnical investigations,
- Hydrogeological studies,
- field evaluation of environmental equipment,
- air emission surveys,
- landfill leachate monitoring,
- landfill siting investigations,
- RCRA B permit application,
- stormwater survey,
- development of environmental community plans,
- site surveys and aerial photography,
- drilling monitoring wells,
- environmental risk assessments,
- spill prevention and response plans,
- pesticide management planning,
- POL management,
- hazardous waste training,
- base realignment and closure studies,
- hospital pathological waste management.

There may be other environmental service requirements that require contracting support. With the changes constantly taking place within the environmental arena, additional CEV projects can keep Contracting busy.

CONTRACTING TO INCLUDE ENVIRONMENTALLY SOUND PRODUCTS

RCRA and Executive Order 12873 Federal Acquisition, Recycling, and Waste Prevention specify that federal agencies develop policy for the procurement of environmental sound and energy-efficient products and services. Current FAR rules are being developed addressing these issues. They will be published in the immediate future. This section provides information for the procurement of environmentally sound products and services.

The procurement of environmentally sound products and services starts with acquisition planning and market surveys. Air Force planners must develop plans, statements of work, specifications and drawings, and product descriptions that promotes the use of environmentally preferable energy-efficient products, recovered materials, and eliminate the use of ODSs. These areas are to be considered in the evaluation and award of contracts.

The contents of the acquisition plan should address environmental and energy conservation objectives associated with the procurement. Review the applicability of environmental assessments, Environmental Impact Statements, surveys, and any environmental issue and requirement in the solicitation and contract. Other issues can include OSHA and DOT regulations.

The Air Force shall specify products, including packaging, that contain the highest practicable percentage of recovered, environmentally preferable, surplus or other than new, and applicable post consumer materials. These materials must be consistent with stated performance requirements, availability, price reasonableness, safety, and total cost to the Air Force.

Future source selections shall include environmental and energy efficiency objectives when appropriate. Considerations may be addressed in terms such as resource or energy conservation, pollution prevention, waste management, recovered materials content, and life cycle content.

CONTRACTING STRATEGIES

Environmental support will center on a variety of short and long lead time projects. This requires the contracting office to plan and develop long range strategies for remediation or investigation of sites, programs, or compliance issues. It can require contracting support for immediate action to control potential contamination caused by a spill or other accident.

The selection of contract delivery arrangements is determined by the type of requirements identified, scope, types of service or construction needed, quantity of supplies and services needed, required delivery time, complexity of regulatory involvement, and the level of performance. The following section will briefly cover categories, strategies, types, and issues effecting contracts for environmental support.

CONTRACTING CATEGORIES

A major decision in the development of environmental contracts is the category of contract to use. The two contract categories are fixed price and cost-reimbursement. Review FAR Part 16 on the different contract types available for use by the contracting office. Special consideration should be given to the category used and based on the following issues.

- The definition and scope of the environmental site or process: If a site can not be adequately scoped and the specifications or statement-of-work is vague a cost reimbursement type contract should be considered.
- Undefined or unknown factors that can impact contract completion... If the contractor will encounter conditions that can not be readily identified in the specifications or SOW, the use of a cost reimbursement contract may be the answer.
- The impact on the health and well-being of the local population may require immediate response to a potential emergency health situation that may have regulatory repercussions. This type of situation may limit the use of a fixed type contract unless it is already in place and specifications defined.
- The degree of regulatory involvement and its impact on contract performance must bed considered when determining the category of the contract to be used. Regulatory

involvement may result in unilateral changes in methodology, equipment, schedules, etc. This can result in contracts being modified to death.

- Performance or delivery requirements: Many environmental requirements call for fast accomplishment by installation as specified by the regulatory agencies. Contracts need to have the flexibility to meet these requirements.
- Degree of risk to the Air Force and the contractor: Environmental compliance and response can have a drastic impact on the financial strength of a contractor. The question of liability can limit the number of contractors willing to submit bids or proposals. Many smaller companies may not be able to supply bonds or insurance.
- The number of qualified contractors used to establish competition in the local or regional market requires consideration.
- Consideration should be given to the status of pending legislation and regulatory changes.

Contracting strategies used by the service agencies, centers, and individual bases have been developed to support immediate and long term requirements and expedite the contracting process. Many of these contracts have multiple taskings built into the statement of work. This gives CEV greater flexibility to address issues and problems in a timely manner. Use of the following types of delivery arrangement provides better contracting support:

- Definite Delivery: This is a good method to use when there are multiple requirements that have been identified and the scope and quantity, delivery time, and performance levels are well defined.
- Indefinite Delivery: When requirements have not identified delivery times, performance levels, or estimated quantities are vague, the use of an indefinite quantity or requirements contract can better support these requirements. Review FAR Part 16 for further information.

Architect/Engineer (A/E) is widely used in the development of studies and investigations for pollution prevention, compliance, remediation, and conservation projects. Many A/Es have broadly defined statements of services required using this type of contract.

Basic ordering agreement or task ordering agreements (BOA, TOA): These agreements often specify dollars amounts, ordering information, and other data beyond which orders can be issued. These agreements are used when there is only a very general understanding of the supplies or services, performance periods, and types and amounts of taskings. TOAs may include cost and fixed priced portions, clauses, and other general information to meet in most cases a broad range of taskings. Thus, interpretation of requirements can be a major risk with using TOAs. Check with your MAJCOM before planning to use these types of agreements.

ENVIRONMENTAL CONTRACTING TYPES

Consideration has to be given to using the right contract type to complete the requirements, provide contractor incentive, minimize contract risk, and address project uncertainties due to the lack of complete information on the scope. Firm-fixed price type contracts can be used if the scope of the contract is well defined and with definite degree of certainty in terms of contractor responsibilities. If there is doubt as to the scope of the

project or the contract can not define within a reasonable degree of accuracy the responsibilities of the contractor, then a cost reimbursement type contract should be pursued. Additional consideration should be given to using award fee, incentive fee, or fixed fee to increase contractor incentives to perform.

CONTRACT CLAUSES

At the time of this publication there has been very limited FAR enactment of clauses and provisions that specifically address environmental issues. Contracting organizations are using the standard FAR clauses to address complex issues associated with IRP. This can include A&E guidance and clauses for concept, studies, investigation, record of decision to the use of construction guidance, FAR Part 36, for actually "turning dirt." Many remediation contracts may take years and include many contracts for A&E, services, and construction. We will briefly cover the legislation that impacts environmental remediation projects.

Brooks Act

Many environmental sites and processes require some type of design or study work be accomplished. Architect-Engineer services for response action contractors are required to be procured under the Brooks Act procedures found in FAR 36.6. Many of these response action contractors and subcontractors for program management, construction management, A&E, surveying and mapping, and related services are selected using Brooks Act A&E criteria.

Under the Brooks Act, the Federal Government must publicly announce all requirements for A&E services expected to exceed $100,000, and negotiate contracts for A&E service on the basis of demonstrated competence and qualification at fair and reasonable prices. Each A&E contractor is evaluated based on professional qualifications, specialized experience in the environmental type of work required, capacity to perform on time, past performance, location in the area of the project provided this criterion leaves an appropriate number of qualified firms and acceptability under other appropriate evaluation criteria. See FAR 36.602-1 for further information.

Many IDIQ type contracts have been developed for environmental A&E services. These types of contracts are authorized for use. If the A&E is required in the performance of environmental projects involving prevention, compliance, and restoration the MAJCOM Head of the Contracting Activity (HCA) may set higher limits than normally stated in FAR 36.6. Determination of the size of this type of A&E is jointly determined by MAJCOM contracting and civil engineering for HCA approval. There are no delivery order size restrictions, but the total of the A&E award fees shall not exceed $200 million on any contract including the basic and option periods. The term of this type of contract may not exceed five years. These types of contracts have been developed by AFCEE and the MAJCOMs.

Davis-Bacon Act

The Davis-Bacon Act specifies that all government contracts in excess of $2,000 for the construction, alteration or repair of government facilities performed in the United States have appropriate wage determinations. Davis Bacon responsibilities are defined in

FAR Part 36. Davis-Bacon applies specifically to construction contracts. It applies to construction, alteration, and repair of governmental facilities but has not been applied to demolition and clearance contracts. It has been applied where demolition was part of a construction project. Contracts involving both construction and the furnishing of supplies or services are applicable only where the construction aspects of the contract are considered "substantial and not merely "incidental."

The Davis-Bacon Act does not apply to environmental work for paper studies or field work. It applies to construction of permanent structures such as treatment facilities, oil water separators, pump and treat facilities, and monitoring wells.

Services Contract Act

The Services Contract Act requires that contracts contain provisions for minimum monetary wages to be paid to federal contractor or subcontractor employees, the fringe benefits to be furnished, sanitary working environment, employee notification requirements for compensation, and determination that rates being paid by the Federal Government to its own employees for similar work are applicable.

The Service Contract Act does not apply to paper studies in the area of contracts for environmental work. Also, determinations are made for all contracts under which more than five service employees are employed. The Act may or may not apply to related field work, depending on who is performing the work and the method used. For example, soil samples being taken by geologists are considered a professional, not a manual laborer; the effort, therefore is considered incidental. However, if soil samples are being taken by an equipment operator, the effort is recognized as being a part of a trade or mechanical craft and, therefore, the Service Contract Act applies.

The Economy Act

The Air Force has contracted out a sizable portion of its environmental clean up and compliance projects to federal agencies. Many of these agreements did not meet documentation requirements defined by the Economy Act. The result was excessive costs, inadequate contract administration, and poor documentation and audit trails. DOD and the Air Force addressed this problem by amending the DOD FAR Supplement and Air Force FAR Supplement to ensure proper authority is reviewing and approving interagency orders and that DOD and the Air Force are receiving the best environmental support possible.

Base environmental organizations have the option to use federal agencies to complete environmental compliance and clean up work. The Air Force may place such orders when it is in accordance to the Economy Act. Economy Act responsibilities are defined in DFARS Subpart 217.5 and AFFARS par 5317.5.

The DFARS has changed approval authority from Contracting Officers (CO) to a level no lower than an SES/Flag/General Officer at the requesting activity. For an operational base this would equate to the Wing Commander. The role of the CO would be a business advisor, **if** requested by the SES/Flag/General Officer. The CO would use good business judgment in the review of the Determination and Findings (D&F).

The AFFARS has expanded the DFARS to increase the importance of the CO. The CO will remain a business advisor for all Economy Act orders by reviewing all D&Fs and

providing written comments and advise to the SES or General Officer. The AFFARS contains policy, procedures, and a model D&F for use by requesting activities in preparing D&Fs and for use by COs in reviewing D&Fs.

As mentioned, above FAR, DFARS, and AFFARS require that interagency acquisition under the Economy Act contain an approved D&F prior to funds being transferred to another federal agency. The D&F formally documents all considerations by the requesting activities in its decision to send money to another agency to purchase supplies or services on its behalf. Required information in a D&F includes:

- Legal authority for the acquisition.
- This action does not conflict with other agency authority or responsibility.
- Services can not be performed as conveniently and more economically by private contractors under Air Force contracts.
- Work appears to be in scope of servicing agency's contract
- Costs, including administrative fees appear reasonable
- Servicing agency's contract administration procedures related to the contract are adequate for Air Force requirements.
- All approvals and authorizations required for the acquisition have been received.
- The requirements are bona-fided needs of the Air Force.

CEV must coordinate with Contracting, when identifying current and future requirements that are planned to be contracted out to federal agencies outside DOD. Orders with these federal agencies may not be placed unless required documentation, including a D&F, is prepared. The activity that requires the Economy Act order will be responsible for the preparation and development of the documentation. AFFARS 5317.503-90 describes how to prepare the D&F. Meeting Economy Act criteria should be one of Contracting's main objectives. Early planning and identification of projects will ensure that the Economy Act is complied with. Do not take this responsibility lightly. DOD and Air Force have made this a requirement of extreme importance.

Standard Industrial Code (SIC) 8744

SIC Code 8744, Subcategory - Environmental Remediation Services (ERS) was published as a final rule on 15 Sept 1994 in the Federal Register. The SIC is effective for solicitations issued on or before 17 Oct. 1994.

The size standards/industry for Environmental Remediation Services is 500 employees. The purpose is to restore contaminated sites to include: furnishing a full range of remediation services such as preliminary assessments, site inspections, remedial investigation, remedial design, containment, and storage of contaminated materials.

FRAUD IN ENVIRONMENTAL CONTRACTING

The risk and complexity associated with environmental issues in contracting increases the vulnerability of the Air Force to contract fraud and liability for violations of federal and state environmental laws. Threats from fraudulent schemes include defective pricing, product substitution, and false statements and certifications. When contractors violate federal or state environment laws when performing Air Force contracts, the Air Force is potentially liable for the damage caused by their misconduct.

Statistics from the Air Force Office of Special Investigations disclose a trend that contracting needs to be aware: more than 50 percent of the environmental crime allegations investigated by the organization were related to Air Force contractors, and more than 70 percent of the allegations occurred on base. The vast majority of investigations focus on RCRA violations. These include illegal treatment, storage, and disposal of hazardous wastes. Additionally, Clean Water Act and Clean Air Act violations were a significant portion of OSI's case load. In some cases Air Force contractors were caught releasing pollutants from Air Force job sites illegally into waterways and sewer systems. Several investigations involved construction contractors violating Clean Air Act asbestos laws.

The following list contains fraud indicators. It is important to remember that these activities often appear on the surface as administrative or managerial irregularities. If this happens elevate it to the proper authority or contact OSI. The following is a summary of key indicators.

Requirements Determination

Environmental remediation is a growing and constantly changing industry. It is extremely complex and requires a high degree of technical knowledge to maintain compliance. Base personnel may not have the expertise required to develop independent and generic specifications. This can result in reliance on contractors to meet these requirements.

- Purchasing services in response to aggressive marketing efforts (and possibly favors, bribes, or gratuities) by contractors rather in response to valid requirements.
- Contractors developing specifications that limit competition and lock themselves into the requirement.
- Defining needs improperly in ways that can be met only by one or a very limited number of contractors.
- Failing to develop "second sources" for services and continual purchase of such service from a sole source
- Inaccurate or inadequate assessment of needs, or continuous change of mind by agency about what it wants. This permits contractors to recoup losses that are falsely characterized as increased costs from government mandated changes or defective specifications.
- Identification by the government of a need to purchase proprietary, trade secret or other technical information without making reasonable attempts to determine if the Government already owns the information.

Contract Modifications

Inadequate assessments, poorly defined scope of work, and inadequate specifications can result in costly and unnecessary modifications. It all increases the possibility of fraud.

- Formally executed contract modifications are nonexistent, lack proper coordination, or is dated on or about the time of work completion.
- Changes in work requirements or specifications are unrelated to or substantially different from those originally described and justified in the approved statement of work.

- The scope of work is changed without any apparent advantage or benefit to the government.
- Contract price is increased without a corresponding expansion in scope of work, upgrading of specifications, or in the case of cost reimbursement contracts, evidence that material costs have risen.
- A modification is generated very close to the end of the fiscal year, and appears to have been made simply to spend available funds before the year ends.
- Several modifications are made to a single contract or to all contracts with a particular firm or individual.
- Specifications relating to the changes are vague, insufficient, or inconsistent with the general requirements of the contract.

Quality Assurance/Performance Surveillance

Performance monitoring should be well defined in the statement of work or specifications. Contract administration documents specify contract surveillance.

- Contractors are not required, or do not, file progress reports describing work status, expenditures, reasons for and plans to remedy any delays.
- QAEs do not ensure required reports are timely or do not review them to identify problems in contract progress and regulatory requirements (potential cost overruns, time slippage, unauthorized deviation from statement of work, etc.).
- Inspections, surveillance, or other performance evaluations are not documented adequately.
- Deficiencies disclosed during performance surveillance are not reported to both the contractor and contracting officer.
- Noted deficiencies are not resolved in a timely manner or satisfactorily.
- On-site inspections are not made or are made so infrequently as to be ineffective surveillance tools.
- Inspectors/QAEs do not routinely use a required surveillance/sampling procedures or other review guideline for visits or inspections.
- Inspection assignments are not rotated periodically among personnel to minimize the possibility of favoritism, kickbacks, bribes, etc.
- A contractor continually repairs or replaces the same item.
- Responsibility for inspection is vested in a third party without adequate spot-checking by the organization with primary surveillance responsibilities.

Management, Advisory, and Technical Services Contracts

- QAEs are not qualified to meet technical surveillance requirements of the contract, is not given formal training in procurement, file maintenance, final evaluation, reporting and various requirements for product inspection and acceptance.
- There is frequent turnover among government technical representatives (GTRs) and QAEs.
- The same individual is designated consistently as GTR or QAE in contracts with one particular firm or individual.
- Delegation of GTR responsibilities to QAE’s is not made or supervised properly.
- Falsification or change of test results.

- Failure to test.
- Professional, technical, or labor force personnel of less skill or grade than required by contract.

Processing Payments

- Progress payments which do not appear to coincide with the contractor's progress schedule and capability to perform the contract. This could indicate the contractor is claiming payment for work not yet done.
- Submission of progress payment claim for materials that have not yet been purchased. Contractor issues a check to the supplier; then holds it until the government progress payment arrives. This can be detected by checking cancellation dates on the contractor's checks.
- Requests for payments are paid without a review of contractor work progress, including assurance that required reports are timely filed.
- Invoice data is not compared to data submitted on required contractor status reports prior to approval of payment.
- Work scope appears conducive to separation into definite tasks or milestones so that payments could be tied to measurable progress, but none was established.
- Contractor incurred costs appear questionable in relation to progress, accomplishments, product delivered, etc.
- Final payment is authorized before resolution of all monitoring for audit findings.
- Vouchers are submitted and/or authorized for payment even though a suspension of payments has been declared or a work stoppage has occurred.
- Adequate records are not maintained to verify the following prior to each payment: Total contract price, previous disbursement amounts and dates, and any restrictions on the amount that may be disbursed before contract closing.
- There is no segregation of duties among employees with purchasing authority, acceptance of contractual services, and approval of contractor invoices.
- Partial payments are made for work completed prior to the award of the contract or issuance of the notice to proceed.
- Payments to closely related companies or persons (by government, by contractor).
- Using copies (carbon or Xerox) of invoices or receipts instead of original as a basis for payment (duplicate payment possibility).
- Handwritten or other unusual endorsement payable to companies or corporations
- Second or third party endorsements on checks to companies or corporations.
- Contracts to same company containing some same/similar items (permitting, especially with collusion, billing for same work on more than one contract)

Monitoring and Compliance

- Contract administration personnel do not initiate timely corrective actions such as meetings to resolve performance difficulties, withholding of payments, or contract termination, where appropriate.
- A percentage of the obligated amount, or fixed fee in the case of cost plus fixed-fee contracts, is not withheld from payment until the contract is closed, or the contract does not allow for such withholding.

- Actions are not taken to require sureties to honor fully the performance bonds.
- There are no procedures to preclude the acceptance of performance bonds of sureties that, without reason, refuse to honor their bonds.
- The contract warranty period is allowed to elapse before a warranty deficiency is reported.
- Contractors performing unacceptably are not referred for possible addition to the list of debarred, suspended and ineligible contractors and grantees, or other appropriate administrative sanctions.
- Adequate documentation of contractor performance is not maintained for consideration in future awards.
- The minimum product acceptance standards are limited or criteria do not exist.

Product/Service Substitution

- Provision of inferior quality raw materials.
- Materials have not been tested as required by the contract specifications.
- Untrained workers are provided where skilled technicians are required.
- Falsification of test documents.
- False entries on test documents.

With the amount of current and proposed compliance and remediation contracts within the Air Force, and the cost associated with these contracts, environmental contracting has become a very lucrative area. Environmental contracts have the same potential for fraud as major weapon systems contracts or large dollar operational contracts. Stay alert to such indicators as cost mischarging, defective pricing, and product substitution.

LEGAL CONCERNS IN ENVIRONMENTAL CONTRACTING

The Air Force Environmental Law and Litigation Division have identified, what they consider to be, the primary concerns facing contracting officers and in many cases the legal support staff when working environmental compliance contracts.

PRE-AWARD

Make certain that contracts that involve hazardous waste, all environmental compliance contracts, and any others that might involve environmental enforcement receive prompt legal review. The reason for this is that Air Force liability exposure is <u>not</u> proportional to contract value. It is precisely the small dollar hazardous waste disposal contract that can expose the Air Force to large dollar CERCLA or RCRA liability. Legal reviews for environmental compliance contracts will be an AFFARs requirement, regardless of dollar value.

Do not indemnify government contractors without proper authority. The simple rule is that indemnification requires specific authorities. The deeper reason is that, as environmental contractors ask for indemnification more frequently, the issue has become one of extreme high visibility. In all cases, it is recommended that the chain of command is used, starting with the MAJCOM is contacted before proceeding.

PERMITS are a good issue to discuss though out the pre-award phase. The contract should discuss who (government or contractor) has the obligation to determine what permits are necessary, what are the time requirements for approval and impact on contract

performance, who will apply for the permits, which name goes on the permit, and what happens if we don't get one. Generally, the contractor should be named as the "operator" and the Air Force as "owner" where the activity takes place on base. We frequently rely on contractors to identify permit requirements and (subject to Air Force review) file the application. Obviously, this is a fact driven issue and one the legal, civil engineering and contracting offices will want to discuss at length.

ENFORCEMENT obligations are another subject that can profitably be discussed prior to contract award. The contract might spell out the contractor's responsibilities as operator. If the facts, and desires of management warrant, it could specify different or additional roles. The important part is to define as much of the relationship before notices of violation begin to appear. At that time it is too late to discuss who was at fault, who was in charge and who should respond to the NOV!

The Community Right to Know Act imposes information duties on parties that handle hazardous materials. Recently, the requirement was imposed on federal agencies by Executive Order 125856 Air Force bases must report **all** hazardous materials, even those in the control of the contractor. It is therefore important to have a contract requirement for reporting of this information.

POST AWARD

After the contract is signed and the contractor begins to perform, it is important to see that the inspectors have the experience or are properly trained. This is especially important in the area of environmental compliance contracts. It does us no good to inspect where the inspectors are unfamiliar with the applicable laws and regulations.

Properly document environmental inadequacies. This is important for several reasons. First, it will encourage the contractor to fix the problem if he knows that the contracting officer is keeping a close watch. Second, it will help us sort out various responsibilities if there is an enforcement action, CERCLA suit or some other difficulty. Since all parties to these kinds of litigation seek only the truth, they are immeasurably aided by thorough documentation of the inspector's reports and all communications between contractor and contracting officer. In any event, this is a good area for periodic, and as required, discussions with legal counsel.

Make certain that the contracting officer is, at the very least, made aware of all communications between contractor and environmental regulators. This, again, is a fact driven situation. In cases where the regulators are working side by side with government contractors, we may only need to see written communications. In many cases, the contracting officer may choose to communicate with the regulators himself rather than allow the contractor to do so. However, as we discussed above, the issue of who is responsible, who is the "operator" may influence this decision. In other words, the contractor is very likely to point out that, as the person responsible for compliance, it must communicate directly with the regulators.

Enforcement: Make certain that you forward any notice of violation involving environmental, OSHA or other laws to the contractor if they involve contractor employees or activities. This is only fair to the contractor, who may be called upon to prepare a presentation on short notice or otherwise respond to the allegations contained therein. More importantly to the Air Force, we allow the implicit, and incorrect

assumption to go forward that the Air Force, rather than the contractor, is responsible for the alleged violation even where it is clearly a matter involving contractor employees performing work under the direction and control of the contractor itself. The simple rule here is to let the contractor know. It may be wise to reserve questions of responsibility between the Air Force and the contractor until the facts and mitigating circumstances of the alleged violation are determined and the matter is brought to rest with the regulators. This will allow us to avoid a classic "let's you and him fight" situation where the enforcement authorities are the only real winners.

Rely on your legal counsel whenever you are asked to communicate with regulators or discuss a cost allowability question related to environmental compliance. The laws change more rapidly than any contracting officer, or most staff judge advocates can ever hope to track. The base legal counsel will, however, have access to full time environmental counsel at the MAJCOM and higher headquarters to keep abreast of this type of information. They are a critical tool that the contracting community ignores at its peril.

SUMMARY

Environmental contracting is really no different then any other contracting effort. What makes environmental contracting different is the many issues that can not be controlled like our more traditional operational efforts. These issues include the regulatory environment, the degree of uncertainty, scope, technology and many other issues that need to be addressed to meet our customer and installation requirements.

CHAPTER 9

TRAINING, TECHNICAL, AND INFORMATION SERVICES

INTRODUCTION

There are many resources available to improve environmental knowledge or answer technical questions. The first step is to understand what the base environmental program is all about (this is the purpose of this guide). The second step is to get to know the people who perform environmental work on base; they should be able to answer the majority of your questions. Your customers at the Civil Engineering Environmental Flight, Bioenvironmental, Supply, and organization environmental managers are your first source for answers. If you require additional information the following sources are for you.

EPA HOTLINES AND CLEARINGHOUSES

EPA has developed information hotlines and numerous reports and booklets in support of environmental laws and executive orders. Contact the EPA External Affairs Office for information on specific environmental topics.

Asbestos Ombudsman - Provides information about asbestos in institutions and schools. **1 800-535-0202**

Center for Environmental Research Information - Is the central point of distribution for EPA studies, results, and reports: **513-569-7391.**

Emergency Planning and Community Right-To-Know Information Hotline - Provides communities and individuals with help in preparing for accidental releases of toxic chemicals. This hotline, which complements the RCRA/Superfund Hotline is maintained as a information resource not as an emergency number: **1 800-535-0202.**

National Pesticides Telecommunications Network Hotline - Provides information on pesticide-related health, toxicity, and minor cleanup concerns. The Hotline also provides impartial information on pesticide products and basic safety practices: **1 800-858-7378**

National Small Flows Wastewater Clearinghouse - Provides information on wastewater treatment technologies for small communities, this information may apply with installations with their own water system: **1 800-624-8301**

Pollution Prevention Information Clearinghouse - Provides information on reducing waste through source reduction and recycling: **1 703-821-4800**

Radon Information - Provides information about radon. Additional information can be provided by state Radon Offices. **1 202-260-9605**

Safe Drinking Water Hotline - Provides information on EPA drinking water regulations. **1 800-426-4791**

Significant New Alternatives Policy (SNAP) Program - 1 800 296-1996

Solvent Alternatives Guide (SAGE) - 1 919 541-5742

Stratosphere Ozone Hotline - Provides information on ozone protection regulations and requirements under The Clean Air Act and Amendments. **1 800-296-1996**

Toxic Substances Control Act Assistance Information Service - Provides information about toxic substances. **1 202-554-1401**

Wetlands Protection Hotline - Furnishes information on wetlands and wetland protection. **1 800-832 7828**

EPA Environmental Directory, ACCESS EPA: Provides information resources on every environmental topic. ACCESS EPA includes information on clearinghouses, databases, dockets, EPA scientific models, documents, EPA libraries, state environmental libraries and other useful information sources. You can order this document through the Government Printing Office telephone number **1 202-783 3238** or National Technical Information Service **1 703-487-4650.** Price is $24.00 and GPO stock number is 055-000-00437-4.

EPA Pollution Prevention Directory EPA 742-B-94-005, Sept 1994: The directory contains information about publicly sponsored pollution prevention sources available across the United States. The directory provides information on federal, state, and local resources. Contact EPA Pollution Prevention Division 401 M Street, SW (7409) Washington DC, 20460

EPA Journal - Is a monthly publication of the Environmental Protection Agency. The Subscription rate is $10.00 per year. The address is: New Orders, Superintendent of Documents, PO Box 371954, Pittsburgh PA, 15250-7954.

DEPARTMENT OF DEFENSE ENVIRONMENTAL RESOURCES

Air Force Institute of Technology School of Civil Engineering and Services (AFIT/CES) - These courses are primarily oriented for Civil Engineering and Environmental personnel however, many of the courses will be useful for contracting personnel. Call AFIT/CES for information on each specific course. The instructors can be helpful in answering specific question, or directing you to people who can provide further advise. Their number is DSN 785-2004. For further information on courses and registration call your MAJCOM Training Manager or AFIT/CES a **DSN 785-2156**.

Environmental Education Center, Air Force Institute of Technology - Provides a catalog on DERA and Compliance/Pollution Prevention Funded Courses. This catalog covers federal, DOD, Air Force, Institutional, and commercial courses. For more information call DSN **785-0381/2.**

U.S. Air Force School of Aerospace Medicine (USAFSAM), Brooks AFB, TX - Provides courses in the fields of hazardous waste operations, health risk assessment, and pollution prevention. For more information call **DSN 240-3831**.

U. S. Army Corp of Engineers - Provides a limited number of courses in environmental law and hazardous waste. Information on course registration can be obtained by calling **205-722-5824**.

U.S. Army - Offers a wide range of environmental courses specially applicable to civil engineers. Many courses may be useful for contracting personnel that are working an extensive number of contracts relating to that particular field. Information on courses and registration can be obtained by calling **DSN 639-2111.**

U. S. Navy - Offers a variety of environmental courses applicable to the environmental manager. For further information call **DSN 551-5655**.

Air Force Center for Environmental Excellence (AFCEE) - AFCEE has offices that deal with all areas of environmental (see Chapter 2 for further information) Their number is **DSN 240-3072.**

Professional Action (PROACT) Program - This is an AFCEE program that is available to all Air Force personnel that may have questions or a problem that needs to be resolved. You can call them with a question and they will research it for up to 40 hours at AFCEE expense. Problems exceeding 40 hours will be negotiated with AFCEE. PROACT has packages available for common questions that have already been asked. Call **DSN 240-4214/4215 or 1 800-233-4356.**

Air Force Engineering Service Agency (AFCESA) - This agency is located at Tyndall AFB, FL. There is a great deal of environmental expertise for program support.

Air Force Material Command - Has developed many sources that provide information on Ozone Depleting Substances and hazardous material alternatives.

ASC Hazardous Materials Alternatives Guide - DSN: 785-3054

Pollution Prevention Help Line - DSN: 787-2229 Ext. 117

Processes and Potential Substitutes AFMC/ENX - DSN: 787-0348

Air Force Logistics Management Agency - Develops and publishes information and research to meet Air Force logistics requirements. The Environmental Flight of the Maintenance Division (AFLMA/LGME) published the "Environmental Awareness Handbook For the Logistics Manager II. This is an excellent document for personnel working everyday environmental issues in the maintenance shop, flightline, etc. LGME has also conducted studies, analysis, and reports on many maintenance environmental issues. **DSN: 596-4581**

Management Equipment Evaluation Program (MEEP) - MEEP identifies and evaluates innovative commercial equipment for use by Transportation and CE. The MEEP Program Management Office is located at Eglin AFB with field activities located at HQ AFMC, HQ AETC, HQ ACC HQ PACAF, AFCESA, and AFCEE. MEEP operates under the "Try it Before You Buy" concept; they test new equipment under field conditions. MEEP provides listings of evaluated equipment. To obtain information on these projects call **DSN: 872-4217.**

Defense Environmental Network Information Exchange (DENIX) - DENIX is the DoD clearinghouse for environmental information. DENIX has many on-line information services including: current policy, guidance, and directive; legislative and regulatory news; environmental publications; environmental contracts directory; training directories and discussion forums. DENIX also has the capability to exchange information through the electronic mail through the Defense Data Network (DDN) and obtain current news and information. To obtain access and passwords call **1 800-642-3332.**

Defense Logistics Agency (DLA) Hazards Information Services - DLA's General Supply Center (DGSC) Richmond, Virginia operates the Hazardous Technical Information Services (HTIS). HTIS provides professional consultation technical services for hazardous materials and hazardous wastes to DOD personnel. The Helpline number is
1 800 848-4847.

Navy's Best Manufacturing Practices (BMP) Program - is an industrial database that provides information on environmental regulations, manufacturing benchmarking, technology and material alternatives, manufacturing life cycle analysis, hazardous material management, and conferences and training opportunities. **1 800 789 4267**

The Army Environmental Hotline - is another source available that provides information on environmental policy and regulations, references, points of contact and laws and regulations. **1 800 USA 3845**

Many Services, including the Air Force, sponsor environmental conferences and symposiums. AFCEE sponsors the Worldwide Pollution Prevention Conference and ACC and AMC similar conferences. Contact CEV or your MAJCOM for further information.

COMMERCIAL EDUCATION, INFORMATION AND TECHNICAL SOURCES

There are many companies and Educational Institutions that offer environmental courses. Most apply directly to the technical operations of environmental compliance, or address the legal requirements associated with environmental. Two organizations have courses that apply to environmental contracting these are: Environmental Law and Policy Program, George Washington University and Federal Publications Inc.
Read the course syllabus thoroughly before you use your budget to pay for it

Many of these courses provide valuable information to the contracting office. The Air Force Institute of Technology Office of Non-Resident Environmental Education (ONEE) can assist you in finding additional courses that may be relevant to your needs. ONEE can also fund these courses. For more information call **DSN: 785-0381/82**.

CFC and Halon Information Clearinghouse (CHIC) - CHIC was established as a single resource center within the Navy to assist with the dissemination of all pertinent information on replacement of ozone depleting compounds and processes. CHIC's data base covers both MILSPEC and commercial applications. The database also provides information on regulations affecting these substances. 1 **703-769-1883/1888/1889**

General Services Administration, Environmental Products Guide - RCPG-0001, is centralized guide for alternative environmental products currently under contract with GSA. To obtain a copy write GSA at (7CAFL) PO Box 6477, Ft Worth, TX 76115-9939

SUMMARY

This is not an all encompassing list of resources available to you. It gives you an idea what is available if you have a question concerning the environmental issues.

DEFINITIONS

The following are definitions of terms you will hear on a routine basis if you work with base environmental program members. This is not an all encompassing list.

A-106 Report: Office of Management and Budget (Executive Branch) annual report on environmental compliance projects for use in the budget. Prepared by Air Staff, reviewed by EPA, passed to OMB to justify federal environmental projects.
Accumulation Point Area: Storage area where hazardous waste is accumulated before transfer to a TSD facility. Usually one or two per base. (See Satellite Accumulation Point)
Affirmative Procurement is required by RCRA and EO 12783. Federal agencies must establish programs to encourage the purchase of products containing recycled materials. It establishes preferences for products containing recycled materials and promotes buying recycled materials.
Air Installation Compatible Use Zone Program (**AICUZ)**: AF program that defines 13 compatible use districts, based on aircraft noise and accident potential for AF and local community to use in setting up zoning requirements.
Applicable or Relevant and Appropriate Requirements (ARARs): Any federal standard requirements, criteria or limitations that are legally applicable or relevant and appropriate requirements under CERCLA. State ARARs must be met if they are more stringent then federal requirements.
Asbestos: Naturally occurring silica type mineral used in pipe insulation, ceiling and floor tiles as protection from fire and heat. Inhalation of friable (crumbled) fibers can cause lung damage and cancer. AF policy is to encapsulate/enclose asbestos whenever possible, and to remove it only when absolutely necessary (i.e. demolition of a building.).
Base Comprehensive Plan: Is the primary document that contains environmental plans that guide development of installation.
Baseline is a quantified starting point from which progress is measured.
Biological Oxygen Demand: A test for water pollution, it measures the oxygen requirements for aerobic organisms as they digest the organic materials in a sample.
Carcinogenic: Capable of causing cancer, usually as a result of damage to the DNA in the cells of the affected area. Often confused with the term mutagenic.
Chlorofluorocarbon (CFC): A class of compounds that are primary contributors to depleting upper atmosphere of protective ozone. Examples include Halon, aerosol propellants, and refrigerants.
Cleanup: Actions taken to deal with a release or threatened release of hazardous substances that could affect public health and the environment. The term “cleanup” is often used broadly to describe various response or removal actions or phases of remedial responses such as the remedial investigation/feasibility study.
Clear Zone: A 3000' x 3000' area located off both ends of a runway. Because of high accident potential in these area, AF policy is to purchase this land whenever possible, and restrict development to navigation equipment, roads, and necessary utilities.

Community-Right-To-Know: Requirement of SARA, Title III, in which industries must make local communities aware of the types and quantities of chemicals used in their industrial processes. AF is not required to comply, but DOD policy is to comply with intent of act.

Contaminant: Any substance which degrades an environmental resource or makes it unfit or unsafe for typical use.

Cost Factors are the expense and cost avoidance associated with hazardous materials that may be reduced to monetary terms. Cost factors refer to direct and indirect costs attributable to hazardous materials that are encountered in operations such as acquisition, manufacture, supply use, storage inventory control, treatment, recycling, emission control, training, work place safety, hazard assessments, engineering controls, personal protective equipment, medical monitoring, regulatory overhead, spill contingency, disposal, remedial actions, and liability.

Council on Environmental Quality (**CEQ)**: Presidential Council established under NEPA to prepare president's report to Congress on the state of the environment. CEQ regulations are an attachment to AFI 32-7061.

Cradle-to-Grave Management: A concept under RCRA and CERCLA. Once a HW is generated, a generator is responsible for that waste until it is reclaimed, recycled, or declared no longer hazardous. Landfill or deep well injection does not relieve the generator of liability; as long as it exists in any form, so does the liability.

Defense Environmental Restoration Account (**DERA)**: A special fund set up by Congress to support cleanup of DOD HW disposal sites. Predates creation of "Superfund" and (in AF) is controlled by Air Staff.

Defense Reutilization and Marketing Office (**DRMO)**: Local office of Defense Reutilization and Marketing Service (DRMS) of Defense Logistics Agency (DLA.), handles most disposal/recycling of HW.

Department of Transportation (**DOT)** regulates the types of container markings, labeling and placarding for transportation of HM and HW.

Economic Analysis is the evaluation of the costs associated with the use of hazardous materials and potential alternatives.

Environmental Compliance Assessment and Management Program (**ECAMP)** is designed to examine whether a base is meeting environmental compliance requirements, and to aid in managing potential compliance shortfalls. Program guidance issued by HQ/AF and requires annual internal and external assessments.

Environmental Impact Analysis Process (**EIAP)** is designed to meet the requirements of NEPA. EIAP ensures that environmental factors are considered in the decision-making process.

Environmental Impact Statement (EIS): Under EIAP, a report examining the environmental consequences of a proposed federal action that could significantly affect the quality of the environment.

Environmentally Preferable: Means products or services that have a lesser negative effect on human health or the environment when compared with competing products or services that serve the same purpose. This comparison should use principles recommended in guidance issued by EPA, and may consider raw materials acquisition,

production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.

Environmentally Sound: A product or service that minimizes damage to the environment and is less harmful to the environment to use, maintain and dispose in comparison to a competing product or service.

Greenhouse Effect: An effect by which CO_2 (and other gases) in the upper atmosphere blocks the radiation of heat energy back into space. Human activities (automobiles, industry, deforestation, etc.) in the last century have released massive amounts of greenhouse gases.

Groundwater: Concentrations of water trapped in or moving through fractures, cavities and pore spaces of subsurface geological units. Units that yield appreciable amounts of water to wells are termed as aquifers; intervening unit of low permeability are termed aquitards or confining units. Top of the zone of complete saturation is called the water table.

Hazardous Materials (HM)are any substances or materials that pose a threat to human health or the environment typically due to their toxic, corrosive, ignitable, explosive, or chemically reactive nature.

Hazardous Substance: Any material that poses a threat to public health and or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, or reactive.

Hazardous Waste (HW) is any waste by-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed; it possesses one or more of the five characteristics that are listed in Title 40 CFR 261.3 or applicable state regulations.

Hazardous Waste Characterization is the identification, description, and quantification of a hazardous waste stream.

HAZCOM (HAZardous COMmunication Program) is an AFOSH program to ensure that all workers understand hazards inherent in their workplace.

HAZMIN (HAZardous MINimization) is an AF program to eliminate/reduce HW through substitution, elimination or process change.

Installation Restoration Program (**IRP)** is the AF portion of DERA. IRP is designed to investigate, evaluate, and remediate environmental impact of past disposal actions on AF installations. IRP is the Air Force equivalent to Superfund cleanup.

Life Cycle Economic Analysis is the evaluation of the costs associated with the use of hazardous materials and potential alternatives over the life of the investment or hazardous material.

Long Term Monitoring is a program of water, soil or sediment analysis intended to track migration of contaminants.

Material: A raw material, parts, items, components, and end products.

Material Safety Data Sheets (**MSDS)** are forms that contain information on the manufacturer, physical properties, hazards, and chemical composition of a product. The base BEE is required to maintain copies of MSDSs for all chemicals used on base. Supply is responsible to ensure that each manufacturer supply these sheets whenever chemicals are ordered.

Media: In the environmental context, this refers to air, groundwater, surface water, or soil. It is the area being contaminated.
Multi-Media Inspection includes compliance of requirements associated with air, land, water, and groundwater.
National Ambient Air Quality Standards (**NAAQS)** are standards set under CAA for ambient air quality for six standard pollutants: ozone, carbon monoxide, lead, nitrogen oxides, sulfur oxides, and particulate matter.
National Priorities List (NPL): This is EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response using money from the Superfund/DERA trust funds. The list is based primarily on the score a site receives on the Hazardous Ranking System (HRS). EPA is required to update the NPL at least once a year.
National Contingency Plan (**NCP)** is approved by National Response Center in Washington, D.C. for specific response actions in the result of natural disasters or national emergencies, including response to the release of hazardous materials or hazardous wastes.
National Emissions Standards for Hazardous Air Pollutants (**NESHAPS)** are air pollutants against which no NAAQS have been set, but which can be reasonably expected to cause or contribute to death or illness. Current air pollutants regulated under NESHAPS are asbestos, benzene, vinyl chloride, inorganic arsenic, beryllium, mercury, and radio nuclides.
New: Is previously unused or composed of previously unused materials and may include unused residual inventory or unused former government surplus material.
Notice of Non-compliance (**NON)** are similar to NOVs, but more detailed, documenting various violations, noting enforceability claims, and compliance schedules.
Notice of Violation (**NOV)** is a formal legal notice from either a state, local or federal regulatory agency that an installation has violated applicable laws or regulations.
National Pollution Discharge Elimination System (NPDES): Under the CWA, NPDES is the oldest environmental permitting act in the country. Controls direct point discharges into the nation's surface waters for types and amounts of pollutants.
National Priorities Lists (**NPL)** (Worst sites under IRP): Past HW disposal sites that have been determined to demonstrate the most serious health impacts and warrant immediate attention for cleanup.
New Source Performance Standards (**NSPS)** are standards for new stationary sources of air pollutants. Part of the CAA, these standards are more stringent than for existing sources.
Opportunity Assessment: (EPA Pollution prevention manual) is a survey to look for opportunities to do waste stream reduction.
Other than New: Consists of recycled, recovered, remanufactured, used, and reconditioned materials.
Ozone: A oxygen compound (O_3,) which absorbs UV radiation. (UV is strongly carcinogenic.)
Ozone Depleting Substance (ODS) is a substance identified as having a detrimental effect on the Earth's ozone layer. The terms Ozone Depleting Substance, Ozone Depleting Chemical (ODC), and Ozone Layer Depleting Substance are synonymous.

Ozone Depleting Substances are Class I substances included in the Clean Air Act Amendments of 1990.

Ozone Layer Depletion is a situation in which depletion of ozone in the upper atmosphere will lead to an increase in UV reaching the surface of earth. Often confused with, but separate from, Greenhouse Effect.

Polychlorinated biphenyl (**PCB)** is used in electrical transformers and capacitors to increase heat carrying capacity. Identified as highly carcinogenic. AF policy was to have all PCB contaminated equipment replaced by 1992. PCB spill cleanup plans are included as part of the base's spill response plan.

Plume: Underground areas or paths of contamination leaking from hazardous waste sites, swept along by subsurface waterflows.

Pollution Prevention Program (PPP): Any program or practice that reduces quantity of substance, pollutants or contaminants in the waste stream.

Preliminary Assessment/Site Assessment (PA/SA): Under IRP, the determination whether potential risks warrant further action.

Prevention of Significant Deterioration (PSB): All states are required to incorporate provisions for preventing significant deterioration to existing air quality.

Radon Assessment and Mitigation Program (RAMP) is a program that began in 1988 to assess potential contamination in AF facilities by Radon.

Reconditioned means restored to an earlier normal operating condition by readjustments and replacement of parts.

Recovered Material are waste materials and by-products which have been recovered or diverted from solid waste.

Recycling is the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of products other than fuel for producing heat or power by combustion.

Recycled Material is a material that can be utilized in place of raw or virgin material in manufacturing products.

Remanufactured: Means factory rebuilt to new equipment performance specification and unused subsequent to rebuilding.

Remedial Design/Remedial Investigation (**RD/RI)** (Under IRP).

Remediation: Term used to describe the cleanup of a HW site. Can mean engineering solutions to reduce health impacts (i.e. capping, fusing) or return of site to original conditions.

Removal Action (IRP) is an interim action which removes the immediate threat of release to the environment, but not necessarily the final cleanup.

Restoration: The application of containment or decontamination technologies to eliminate existing public hazards or to render the property acceptable for conditional or unconditional use.

Record of Decision (ROD): A public document that explains which cleanup alternatives will be used. The record of decision is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Release is the accidental emission of contaminants into the environment.

RI/FS Remedial Investigation/Feasibility Study: Under IRP, the studies done to determine the extent of contamination at an IRP/NPL site.
Satellite Accumulation Point Area, in or near workplace, in which HW is accumulated before transfer to the accumulation point. (See Accumulation point.)
Solvents: Cleaning agents and degreasing compounds, sometimes also used as refrigerants and aerosols.
Suitable Substitute is an alternative to ODS use that is determined to be technically, economically, and legally feasible through elimination, process modification, or material substitution.
Treatability Studies are usually performed after the Feasibility Studies alternatives screening, to better define the physical and chemical parameters needed for technology process options being evaluated for use at the site.
Treatment, Storage and Disposal (TSD) is a facility/operator that renders harmless or indefinitely stores HW.
Underground Storage Tanks (UST): Any tank with 10% or more of its volume underground, which contains regulated substances, and is subject to the design and monitoring standards of HSWA.
Volatile Organic Compounds (VOC): Organic compounds (primarily composed of hydrogen and carbon, but can contain oxygen, nitrogen, sulfur, chlorine, and fluorine) which have a relatively low vapor pressure (evaporates easily). Many VOCs contribute to photochemical smog. Many are also carcinogenic.
Waste Prevention also known as source reduction, means any change in the design, manufacturing, purchase, or use of materials or products (including packaging) to reduce their amount of toxicity before they become municipal solid waste. Waste prevention also refers to the reuse of products or materials.
Waste Reduction means preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products.

ENVIRONMENTAL CONTRACTING REFERENCE GUIDE
User Feedback Form

This form is for your feedback. Please fill it out and send it back to us. We need to know what you liked (and, more importantly, disliked) about this handbook. Please feel free to go into more detail on additional pages, if necessary. Please return to AFLMA/LGC, 501 Ward St, MAFB, Gunter Annex AL 36114-3236 or FAX: 596-3662.

Content:

1. Did this Reference Guide meet your needs? Yes _____ No _____
2. Did you understand the Reference Guide material?

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3. Are there issues that we should add or delete?_____

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4. Are there any environmental questions that we may be able to help you with?

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5. What type of environmental contracts are you currently working:

Installation Restoration Program	Yes_____ No_____
Pollution Prevention	Yes_____ No_____
Conservation	Yes_____ No_____
Compliance	Yes_____ No_____
Other	Yes_____ No_____

NAME/GRADE

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DSN: COMMERICAL TELEPONE_____

ORGANIZATION/SYMBOL_____

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ADDRESS_____

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BASE_____ZIP_____
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