

US EPA ARCHIVE DOCUMENT



ACQUISITION AND
TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

20 DEC 1996

Mr. Craig Hooks
Acting Director, Federal Facilities Enforcement Office
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Dear Mr. Hooks:

Enclosed is the revised ENVVEST proposals Elmendorf Air Force Base, AK. Elmendorf AFB has worked with Alaska Department of Environmental Conservation and EPA Region X in the development of this proposal. As these proposals go through the XL process, if any questions or concerns arise, please contact us and we will obtain the necessary information from the Air Force.

If you have any questions, my points of contact are Ms. Maureen Sullivan, (703) 604-0519.

Sincerely,

for Peter Walsh
Assistant Deputy Under Secretary of Defense
(Environmental Quality)

Enclosure:

cc:
SAF/MIQ



DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC

DEC 04 1996

Office of the Assistant Secretary

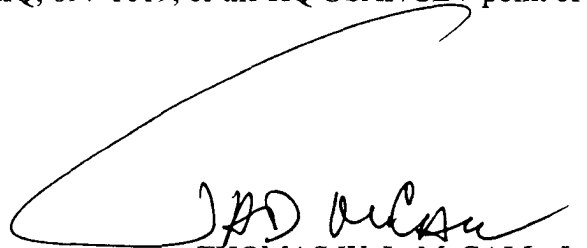
MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE
(ENVIRONMENTAL SECURITY)

FROM: SAF/MIQ

SUBJECT: Elmendorf AFB ENVVEST Proposal

Attached is the revised Elmendorf AFB ENVVEST air quality proposal for review and forwarding to United States Environmental Protection Agency (EPA). Based on your 16 Jul 96 transmittal letter to EPA forwarding the initial proposal, the Air Force has addressed your staff's comments. We spent considerable time to revise the proposal to communicate environmental benefit, required regulatory relief, stakeholder support, and execution commitment. We believe the proposal also provides local stakeholders with the necessary flexibility to partner towards specific responsibilities.

We look forward to our continued strong involvement in the ENVVEST program as we work to expand the prototype envelope. If the members of your staff have any questions, please contact Lt Col John Garland, SAF/MIQ, 697-1019, or the HQ USAF/CEV point of contact, Maj Bryan Bodner, 697-3360.



THOMAS W. L. McCALL, Jr.
Deputy Assistant Secretary
of the Air Force
(Environmental, Safety and
Occupational Health)

Attachment:
HQ PACAF/CE Memorandum w/Atchs, 14 Nov 96

cc:
SAF/GCN
HQ USAF/CEV
HQ AFLSA/JACE
HQ PACAF/CE



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES



14 NOV 1996

MEMORANDUM FOR HQ USAF/CEV

FROM: HQ PACAF/CE
25 E St Ste D306
Hickam AFB HI 96853-5412

SUBJECT: Elmendorf AFB ENVVEST Initiative Resubmittal

1. Forwarded for your information and continuing action is Elmendorf AFB's revised proposal for their ENVVEST Title V initiative.
2. The attached proposal includes technical and grammatical changes, but their original intent to use Title V regulatory relief cost savings to reduce emissions from the Central Heating and Power Plant remains unchanged. All modifications made by Elmendorf AFB were to better meet EPA's Project XL criteria.
3. Elmendorf briefed their ENVVEST Title V proposal, in concept, to EPA Region 10's XL point of contact and to the Restoration Advisory Board (RAB). The briefings were positively received by the RAB and they are awaiting additional informal technical information. Elmendorf will start informal technical discussions with the stakeholders once the proposal is forwarded to the Assistant Deputy Under Secretary of Defense for Environmental Quality (ADUSD(EQ)) in the mid-Dec 96 timeframe.
4. If there are any questions, please contact Mr Robert Leong at 449-6536.


JAMES W. KAHLER, Colonel, USAF
Deputy Civil Engineer

Attachment:
3 WG/CV Memo, 7 Nov 96 w/Atch

cc:
3 WG/CC
3 CES/CEV



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

NOV 7 1996

MEMORANDUM FOR HQ PACAF/CE

FROM: 3 WG/CV
11530 Q St Ste 200
Elmendorf AFB AK 99506-2850

SUBJECT: Elmendorf AFB ENVVEST Proposal

1. In response to the HQ USAF/CEVQ suspense of 15 Nov 96, Elmendorf AFB has revised the ENVVEST proposal concerning air pollutant emissions from the Central Heating and Power Plant (CH&PP). The attached proposal includes grammatical changes, but its intent remains unchanged. All modifications were made to better meet EPA Project XL criteria.
2. Please direct any questions or comments to the Environmental Flight Chief, Mr. William R. Hanson, 3 SPTG/CEV, DSN (317) 552-1741.

A handwritten signature in black ink, appearing to read "Randy E. Honnet", is positioned above the typed name.

RANDY E. HONNET, Colonel, USAF
Vice Commander

Attachment:
ENVVEST Proposal

ENVVEST INITIATIVE FOR TITLE V OF THE CLEAN AIR ACT ELMENDORF AIR FORCE BASE, ALASKA

I. ENVVEST PROPOSAL

Elmendorf Air Force Base (hereinafter referred to as 'Elmendorf', or 'the base') is required to conform to Title V of the 1990 Clean Air Act Amendments (CAAA). The implementing regulations require a very complex and detailed analysis of all air pollutant emission sources at the base. With the granting of regulatory relief, Elmendorf proposes, through ENVVEST, to develop a strategy which will result in significant air pollutant emission reductions from Elmendorf's primary emission source, the Central Heating and Power Plant (CH&PP).

The ultimate goal of this proposal is to reduce air pollutant emissions from the CH&PP through pollution prevention efforts. Rather than investing in the monitoring and analysis of inconsequential emission sources¹, funding will be directed toward reducing air pollutant emissions from our primary emission source. Gaining regulatory relief from certain Title V requirements will allow Elmendorf to improve ambient air quality by investing administrative cost savings into pollution prevention technology at the CH&PP.

The reinvestment of compliance funding into pollution prevention projects at the CH&PP will result in actual reductions to carbon monoxide (CO) and oxides of nitrogen (NOx). These reductions in pollutant levels, described further in the Program Scenario section, will help improve the overall air quality in the Anchorage area. Although the base itself is not in a non-attainment area, the southern boundary of Elmendorf borders the Municipality of Anchorage (MOA) non-attainment area for CO. Reductions to CO and NOx pollution levels on Elmendorf, through ENVVEST, will positively impact the surrounding areas.

II. BACKGROUND

Title V of the 1990 Clean Air Act Amendments changed the basic approach to source-specific regulation under the act by requiring each state develop and implement an operating permits program for all sources of air pollution. One of the purposes of this new program was to consolidate, in a single document, all of the federal and state regulations applicable to a source, to simplify compliance and enforcement.

¹ Inconsequential emission sources are those sources referred to as "insignificant" and/or those not meeting the requirements for classification as a "major" source, pursuant to 40 CFR Part 70.

The Alaska Department of Environmental Conservation (ADEC) is the local air quality permitting authority. Alaska's Title V operating permits program received interim approval from the Environmental Protection Agency (EPA) in December 1996. Under Title V, Elmendorf must submit a complete permit application to ADEC by December 1997. The application must include a compliance plan describing how the base plans to comply with all of the applicable regulatory requirements. The compliance plan summarizes the requirements and provides a schedule of compliance actions for each emission source or source category. These requirements include, but are not limited to, training, monitoring, calibration, quality control, record keeping, and reporting. Given the large number of sources at Elmendorf, preparation and monitoring of this plan could prove to be an arduous task with very little demonstration of economic and environmental effectiveness.

Elmendorf spent \$86,000, in 1993, to evaluate pollutant emissions from all stationary air emission sources on base. In fiscal year 1995, Elmendorf initiated a \$323,000 contract for the preparation and submittal of a Title V application and update of the base emissions inventory. Elmendorf elected to initiate preparation of the Title V application in advance of EPA approval of the state program to allow sufficient time for preparation, submittal, determination of application completeness, and final permit negotiations and approval. A working draft of the application was received by Elmendorf in September 1996. Elmendorf's initiative demonstrates a proactive approach to compliance with the Title V permitting requirements.

III. REGULATORY RELIEF

Within the fence-line of Elmendorf lies 13,000 acres, which include a variety of air pollutant sources. These include an operational airfield, residential housing, office buildings, gas stations, utilities, military police and fire departments, public schools, chapels, a hospital, dental clinics, retail stores, and recreational facilities, amongst others. The base is, in essence, a city within a city.

Within the framework of the Title V regulations, military installations were uniformly determined to be a single major source², with accountability for all emission sources at the installation. This determination required the installation not only permit the few large pollutant sources, but also a significant number of inconsequential sources. Inclusion of the inconsequential emission sources in the Title V permit creates a costly administrative burden.

² Per 40 CFR 70, a major source is defined as those facilities that have the potential to emit: 1) 100 TPY of a criteria pollutant; 2) 10 TPY of any single hazardous air pollutant (HAP) or 25 TPY of HAPs in the aggregate.

A recent EPA policy/guidance document, issued August 2, 1996, addresses the issue of major source determinations for military installations³. The guidance encourages state and local regulators to treat installations as a group of stationary sources, all, some, or none of which may be a major stationary source. In support of this proposal, Elmendorf, in cooperation with the EPA Region X and ADEC, requests that ADEC adopt the policy/guidance and use discretion in applying the state regulatory definition of Facility⁴, as it applies to military installations.

In addition, Elmendorf requests further regulatory discretion be applied to Title V requirements, and allow for regulatory relief from the monitoring and record keeping requirements associated with inconsequential sources, permitting only the CH&PP. Gaining this regulatory relief will allow for investment of realized cost savings into emissions reduction equipment at the CH&PP, which will reap environmental benefit through pollution prevention.

IV. PROGRAM SCENARIOS

The following three scenarios are proposed for evaluation. Each scenario represents different platforms for Title V permitting, allowances for specific reinvestment opportunity, and emissions reduction potential.

STATUS QUO

Permitting under this scenario recognizes Elmendorf as a single stationary source, with a single permit that will regulate all air pollutant emission sources from fence-line to fence-line. The 1996 draft emissions inventory accounts for Elmendorf currently having 104 sources at 42 separate locations. This includes 27 emission sources at seven facilities, which fall under the definition of a major source, and 77 emission sources at 35 facilities, not meeting the major source determination, but exceeding the definition of an insignificant source. In addition to these major and significant sources, there are hundreds of insignificant emission sources to be accounted for in the Title V permit. Elmendorf is not included in the non-attainment area for CO, therefore Title V requirements will not require any reductions in pollutant levels. The status quo scenario will not allow for any cost savings and any subsequent reinvestment opportunity for the installation of pollution prevention equipment. The potential for emissions reduction will not be realized.

³ EPA Memorandum, dated August 2, 1996, "Major Source Determinations for Military Installations under the Air Toxics, New Source Review, and Title V Operating Permit Programs of the Clean Air Act"

⁴ Alaska Statute 46.14.990 defines a Facility as

- (A) one or more structures, buildings, installations, or properties that are contiguous or adjacent and are owned or operated by the same person or by persons under common control; and
 - (i) upon which a source or sources are located; or
 - (ii) that is a source of emissions associated with tank vessel loading and unloading.

INTERMEDIATE SCENARIO

Permitting under this scenario involves ADEC adopting the EPA policy/guidance, as previously discussed, and use discretion in applying the state regulatory definition of Facility as it applies to military installations. This would allow for the exclusion of inconsequential emission sources. The number of permitted sources at Elmendorf may be reduced to 27 emissions sources at seven facilities, which fall under the definition of a major source. Each of the seven facilities are major sources under the definition in 40 CFR 70. The intermediate permit scenario will streamline the application, implementation, management, and renewal process of Title V permitting. Although, this scenario will result in a cost savings, the total annual savings generated are insufficient to allow for plant alterations and reduced emissions.

PREFERRED SCENARIO

Permitting under this scenario requires ADEC exercise regulatory discretion and only permit the CH&PP, which will result in Elmendorf having only one major permitted source. The CH&PP currently emits the majority of all criteria pollutants and is the most significant source on the base. This scenario will streamline the application, implementation, management, and renewal processes of Title V permitting, through reduced monitoring and record keeping. The realized cost savings will be invested into power plant modifications for reduced pollutant emissions. Application of the preferred scenario will allow for considerable reinvestment opportunity and produce the greatest benefit to the environment through reduced emissions.

V. ENVIRONMENTAL RESULTS

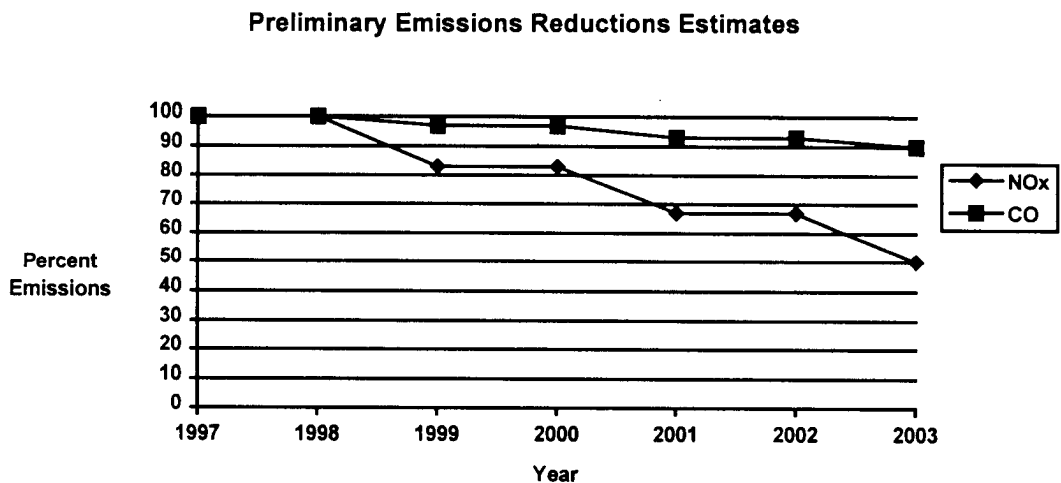
The CH&PP is configured with six natural gas-fired boilers, with each boiler containing four conventional burners. Current CO emissions from the CH&PP average 60 tons per year (TPY). Although the base and the MOA are currently in attainment for NO_x, the CH&PP does emit an average of 840 TPY of NO_x to the ambient air. The potential to emit (PTE)⁵ of these, and other, pollutants from all of the inconsequential emission sources at Elmendorf is very small when compared to the PTE from the CH&PP.

Carbon monoxide and NO_x are the pollutants which will be targeted for reduction through this ENVVEST proposal. Applying regulatory discretion to the Title V requirements, particularly those regarding inconsequential emission sources, will

⁵ Per 40 CFR 70, potential to emit means the maximum quantity of a release of any air contaminant, considering a facility's physical or operational design, based on continual operation of all sources within the facility for 24 hours a day, 365 days a year, reduced by the effect of pollution control equipment and approved state or federal limitations on the capacity of the facility's sources or the facility to emit an air contaminant.

enable Elmendorf to make more cost-effective use of limited resources. Increased emphasis will be placed on reducing emissions at the CH&PP, where efforts will result in the most effective application of pollution prevention technology.

The full extent to which CO and NOx emissions from the CH&PP will be reduced is dependent upon the costs associated with emission reduction alternatives. The reality of the situation here at Elmendorf is that we may be able to cut CO emissions by ten to fifteen percent and NOx emissions by up to fifty percent under the preferred scenario. Both CO and NOx reductions will contribute to the overall air quality in the Anchorage area. The following graph shows estimated emissions reductions over the life of the project. Current emissions are indicated at the 100% level.



VI. COST SAVINGS AND PAPERWORK REDUCTION

Cost estimates reflected in the three scenarios begin with fiscal year 1998 and project out through fiscal year 2003, a six-year period. Central Heating and Power Plant modifications will be phased in over the entire six-year period. The modifications will proceed in three two-year phases, which will allow for maximum monetary benefit, due to two years of cost savings being applied to each of the three phases.

STATUS QUO

Cost estimates determined under this scenario reflect the permitting of Elmendorf as a single stationary source, from fence-line to fence-line, with a single permit. Initial fiscal year 1998 funding requirements are currently programmed at \$600K. \$385K of this total reflects air emissions process and monitoring equipment to document compliance. The remaining \$215K addresses permit administration and emission fees, ambient air monitoring, employee training, program administration, and equipment maintenance. Total funding programmed through fiscal year 2003 is currently at \$1,945K.

INTERMEDIATE SCENARIO

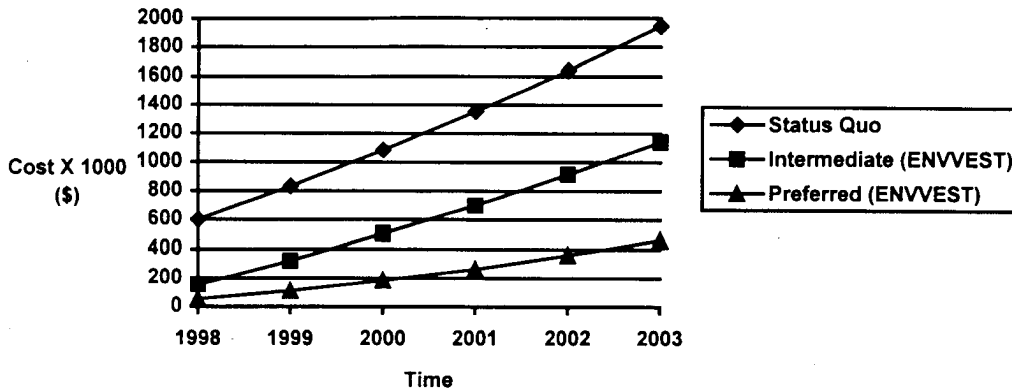
Cost estimates determined under this scenario reflect permitting under the EPA policy/guidance. Initial fiscal year 1998 funding requirements will be reduced to \$155K. Air emissions process and monitoring equipment is not required under this scenario. Ambient monitoring costs could increase under this scenario due to the separation of sources into seven facilities. The increase is reflected in the need to prove compliance with ambient air quality standards from each facility, rather than at the fence-line of the single stationary source (status quo). Other funding requirements decrease due to the reduced number of sources requiring management. Total funding required through fiscal year 2003 is \$1,140K.

PREFERRED SCENARIO

Cost estimates determined under this scenario reflect permitting only the Elmendorf CH&PP. Initial fiscal year 1998 funding requirements will be reduced to \$53K. Air process and monitoring equipment is already in place at the CH&PP. Total monitoring, record keeping, and reporting, and overall management is estimated to decrease by approximately 80 percent under this scenario. Total funding required through fiscal year 2003 is \$463K.

No cost savings will be realized under the status quo scenario and investment opportunity for pollution prevention will be nonexistent. Under the intermediate scenario, total reinvestment opportunity for pollution prevention projects will amount to \$805K, which would be insufficient for CH&PP modifications. In the preferred scenario, total reinvestment opportunity at the CH&PP will amount to \$1,482K, allowing for the execution of pollution prevention measures. The figures for reinvestment were derived by subtracting the intermediate and preferred costs from the status quo costs, respectively, over the six-year implementation phase of the proposed project. The following graph portrays the cumulative costs of the three scenarios:

Cumulative Cost Analysis of ENVVEST Scenarios



The CH&PP currently burns approximately 2.2 billion cubic feet of natural gas per year, at a cost of \$6 million annually. Preliminary investigations have determined that through the installation of pollution prevention control technology, along with changes to operational and maintenance procedures, natural gas usage could decrease by a small percentage at the CH&PP. The combination of money saved on decreased fuel costs and the conservation of a non-renewable natural resource further supports the implementation of this project.

VII. STAKEHOLDER SUPPORT

The EPA Region X and ADEC were initially informed of the ENVVEST concept and were supportive of Elmendorf submitting a proposal. Formal discussions with EPA Region X and ADEC, concerning the specifics of this proposal, will begin upon submittal of this proposal to Headquarters EPA. A plan for public outreach and stakeholder involvement will be in place prior to negotiation of the final project agreement. The plan will outline the procedure for stakeholder involvement and public outreach during the implementation phase of the proposal and will further outline the steps to be taken for informing the stakeholders of the development, implementation, and monitoring of this project.

Elmendorf has an excellent record of environmental community relations. The base has an extremely strong relationship with the Alaska Department of Environmental Conservation and local civilian communities. Potential stakeholders for this initiative include ADEC, EPA Region X, the Municipality of Anchorage, environmental interest groups, local community representatives, the Restoration Advisory Board (RAB), and the Department of Defense /Statement of Cooperation Committee (DOD/SOCC), as described below.

An important avenue for stakeholder support is the Department of Defense/Statement of Cooperation Committee. This committee was developed in June 1994 with the purpose of establishing a common agenda for working together on environmental protection objectives and goals. The DOD/SOCC is comprised of senior leadership from the State of Alaska, the U.S. Coast Guard, Alaska Department of Defense (DOD) agencies, EPA Region X and ADEC. The DOD/SOCC members include: the Governor, State of Alaska; Regional Administrator, EPA Region X; Commissioner, ADEC; Commander, Eleventh Air Force; Commander, 6th Infantry Division (Light); Commander, 17th Coast Guard District; Adjutant General, Alaska National Guard; Commander, Naval Base Seattle; Commander, Maintenance and Logistics Command Pacific; District Engineer, Alaska District Corps of Engineers; and Commander, Defense Fuels Office Alaska.

Introducing the proposal to this committee will provide the impetus for a "jump start" on interagency cooperation, providing "top-down" support for this important endeavor. The DOD/SOCC has taken on other important initiatives since its inception. They have been responsible for directing the development of an operating instruction for energy recovery units for all Alaskan DOD agencies, as well as the development of pollution prevention initiatives within Alaskan DOD solid waste disposal programs. The DOD/SOCC will be an effective venue for providing interagency support of this initiative.

Since 1991, Elmendorf has undertaken a strong community relations program targeted towards community involvement in the restoration program. In December 1994, Elmendorf created the Restoration Advisory Board. The goal of the RAB is to provide a forum to enhance communication and coordination among the Air Force, EPA, ADEC, and affected communities in response to actions undertaken in the Environmental Restoration Program at Elmendorf. In addition to providing their own comments, RAB community representatives are responsible for gathering and communicating to the board any specific concerns from their communities about proposals under consideration.

In 1995, Elmendorf representatives began briefing the RAB on environmental issues outside the Environmental Restoration Program. Programs which have been integrated into quarterly RAB meetings include Environmental Compliance, Pollution Prevention, and Cultural and Natural Resources programs. Initial briefings to the RAB have created a positive precedent for using the RAB as a gateway to stakeholders for the ENVVEST initiative.

VIII. FEASIBILITY

The existence of off-the-shelf proven control technology for retrofit of the CH&PP makes it highly probable that this effort will not only be feasible, but quite successful. The specific means of obtaining the emissions reductions are being examined in a comparative analysis of emission reduction alternatives. Existing equipment in the

boilers will be evaluated as to how it affects emissions, and recommendations will be made for obtaining emissions reductions at the CH&PP. Upon selection of the preferred alternative, an emissions reduction model will be prepared which will provide an in-depth analysis of the specific emissions reduction alternative, associated equipment and construction cost estimates, and an estimate of CH&PP operating cost savings. Elmendorf expects a draft of the comparative analysis by January 1997.

It is estimated that the administrative cost savings realized through the preferred scenario will be approximately \$1.482 million dollars. These savings will be available for investment into pollution prevention at the CH&PP. If results of the comparative analysis of emission reduction alternatives determines a retrofit to the power plant would exceed this amount, other avenues of additional funding will be pursued. Should pollution prevention alternatives for the power plant prove to cost less than the realized savings, the excess will be invested in additional air pollution prevention projects around the base.

Administratively, the proposal is feasible. Mechanisms are in place to allow for permit and procedural flexibility, such as the recent EPA guidance regarding major source determinations for military installations. The specific means of obtaining regulatory relief will be determined by EPA and ADEC during informal discussions scheduled to begin in January, 1997.

IX. MONITORING, REPORTING AND EVALUATION

The ENVVEST Team will brief stakeholders as the project evolves. Opportunity for local community involvement will be through the DOD/SOCC and the RAB, as well as through a public notice and public comment process using Elmendorf's public outreach plan. Elmendorf will prepare reports, on a basis agreed to by all stakeholders, which will document progress toward the stated goals of this proposal. The reports will document equipment changes and replacements, process changes, and other relevant facts which support air pollutant emission reductions.

It is anticipated that evaluation of the project will be accomplished on several fronts. Emissions from the CH&PP could be quantitatively compared with previous measurement levels to determine the exact reduction in emitted pollutants. In addition, Elmendorf will work closely with EPA Region X, ADEC, and the MOA to determine how reductions at Elmendorf are contributing to the improvement of the overall air quality in the Anchorage area. Monitoring methods and intervals will be negotiated with ADEC and local regulatory agencies.

X. TRANSFERABILITY

This initiative is a pilot program which provides a new approach to air pollutant source permit and administrative management. The ultimate goal of this initiative is to reduce

air pollution by way of prevention at the source. The Elmendorf concept may be transferable to other DOD facilities that have multiple major sources on their installations. Two such installations in Alaska are Fort Richardson and Eielson Air Force Base. A demonstration of the environmental benefits achieved from this approach would be clear justification for the transfer of this type of initiative to virtually all similar DOD installations, or those federal facilities with multiple major sources, including a power plant.

XI. SHIFTING OF RISK BURDEN AND ENVIRONMENTAL JUSTICE

Environmental Justice, pursuant to Executive Order 12898, is not applicable to this proposal. Unjust or disproportionate environmental impacts will not be realized as a result of this project.

XII. CONCLUSION

The thrust of this proposal is to reduce air pollutant emissions from the Elmendorf CH&PP. The method used to achieve these reductions is to reinvest administrative cost savings into pollution prevention upgrades of the boilers at the CH&PP. The administrative cost savings will be realized by exercising regulatory discretion in the application of Title V requirements, as they apply to Elmendorf. Regulatory relief would result from ADEC adopting the EPA policy/guidance for major source determinations as they apply to military installations. Elmendorf also seeks regulatory discretion to permit only the CH&PP.

This project will provide real pollution prevention benefits by reducing the amount of CO and NO_x produced at the CH&PP, ultimately improving the air quality in the overall air management basin. The proposal further extends Elmendorf's commitment to overall pollution reduction. This project will also enhance the public perception of Elmendorf as a good environmental neighbor to the Municipality of Anchorage and Alaska. The true goal of ENVVEST is superior environmental performance through the use of innovative partnering with stakeholders. Everybody wins through this opportunity to achieve environmental excellence.