May, 1, 2002

Environmental Programs

Audit Coverage of DoD Energy Management
(D-2002-085)

Department of Defense
Office of the Inspector General

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Report Documentation Page

Report Date	Report Type	Dates Covered (from... to)
01 May 2002	N/A	-

Title and Subtitle Environmental Programs: Audit Coverage of DoD Energy Management	**Contract Number**
	Grant Number
	Program Element Number
Author(s)	**Project Number**
	Task Number
	Work Unit Number
Performing Organization Name(s) and Address(es) OAIG-AUD (ATTN: AFTS Audit Suggestions) Inspector General Department of Defense 400 Army Navy Drive (Room 801) Arlington, VA 22202-2884	**Performing Organization Report Number** D-2002-085
Sponsoring/Monitoring Agency Name(s) and Address(es)	**Sponsor/Monitor's Acronym(s)**
	Sponsor/Monitor's Report Number(s)

Distribution/Availability Statement
Approved for public release, distribution unlimited

Supplementary Notes

Abstract
The purpose of this report is to summarize issues identified in audit reports on DoD energy management of buildings and facilities. Energy efficiency and conservation is an area requiring effective management and emphasis because of rising energy prices and potential supply problems in the United States. DoD leads the Federal Government with approximately 2.2 billion square feet of facilities. In FY 2000, the energy bill for military installations exceeded $2.4 billion. Executive Order 13123, Greening the Government Through Efficient Energy Management, June 3, 1999, and the National Defense Authorization Act for FY 2002 require DoD to significantly improve its energy management and to report annually progress made toward achieving goals for reductions in energy consumption.

Subject Terms

Report Classification unclassified	**Classification of this page** unclassified
Classification of Abstract unclassified	**Limitation of Abstract** UU

Number of Pages
46

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Acronyms

BCE	Base Civil Engineer
DLA/DFSC	Defense Logistics Agency/Defense Fuels Supply Center
DUERS	Defense Utility Energy Reporting System
ESPC	Energy Savings Performance Contract
FEMP	Federal Energy Management Program
GAO	General Accounting Office

INSPECTOR GENERAL
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May 1, 2002

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE
(INSTALLATIONS AND ENVIRONMENT)

SUBJECT: Audit Coverage of DoD Energy Management (Report No. D-2002-085)

We are providing this report for your information and use. This report is a summary of the DoD energy management issues identified in reports issued by the General Accounting Office and DoD audit organizations. This report contains no recommendations; therefore, written comments are not required.

For additional information on this report, please contact Mr. William C. Gallagher at (703) 604-9270 (DSN 664-9270) (wgallagher@dodig.osd.mil) or Ms. Deborah L. Carros at (703) 604-9217 (DSN 664-9217) (dlcarros@dodig.osd.mil). See Appendix E for the report distribution. The team members are listed inside the back cover.

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Report No. D-2002-085 **May 1, 2002**
(Project No. D2002-D000CG-0047)

Audit Coverage of DoD Energy Management

Executive Summary

Introduction. The purpose of this report is to summarize issues identified in audit reports on DoD energy management of buildings and facilities. Energy efficiency and conservation is an area requiring effective management and emphasis because of rising energy prices and potential supply problems in the United States.

DoD leads the Federal Government with approximately 2.2 billion square feet of facilities. In FY 2000, the energy bill for military installations exceeded $2.4 billion.

Executive Order 13123, "Greening the Government Through Efficient Energy Management," June 3, 1999, and the National Defense Authorization Act for FY 2002 require DoD to significantly improve its energy management and to report annually progress made toward achieving goals for reductions in energy consumption.

Results. During the past 10 years, the General Accounting Office and DoD audit organizations issued 79 reports on DoD energy management. The General Accounting Office issued 2 reports; the Inspector General of the Department of Defense issued 3 reports; the Army Audit Agency issued 28 reports; the Naval Audit Service issued 1 report; and the Air Force Audit Agency issued 45 reports.

The reports discussed the following key energy management issue areas:

- Modernization Projects (14 reports)
- Energy Savings Performance Contracts (13 reports)
- Reimbursable Activities (43 reports)
- Utilities Management (27 reports)
- Conservation Program (25 reports)
- Energy Reporting (10 reports)

Oversight of the energy program is necessary to ensure that the Department meets the objectives and achieves the long-term goals mandated by the National Defense Authorization Act for FY 2002.

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Background

The "Annual Report to Congress on Federal Government Energy Management and Conservation Programs – Fiscal Year 1999" states that Federal agencies spent almost $8 billion for energy in that fiscal year. Since then, the Nation has experienced significant price increases across the entire spectrum of energy sources and throughout all regions of the country. DoD leads the Federal Government with approximately 2.2 billion square feet of facilities. The annual energy bill for military installations exceeded $2.4 billion in FY 2000.

Federal Energy Management Requirements. The National Energy Conservation Policy Act of 1978, as amended by the Federal Energy Management Improvement Act of 1988, requires Federal agencies to establish in-house programs to reduce energy consumption by 10 percent by 1995, using FY 1985 as the base year. Executive Order 12759, "Federal Energy Management," April 17, 1991, mandated that energy consumption be reduced by an additional 10 percent by the year 2000 (a total of 20 percent from base year 1985). Executive Order 13123 superseded Executive Order 12759 and establishes a 30 percent total reduction by 2005, and a 35 percent reduction by 2010.

Executive Order 13123. Executive Order 13123 sets ambitious yet achievable energy management goals for the Federal Government. The goals target the following areas:

- Greenhouse gases reduction,
- Energy efficiency improvement,
- Energy reduction goals for industrial and laboratory facilities,
- Renewable energy use,
- Petroleum use,
- Source energy reduction, and
- Water conservation.

Executive Order 13123 charges the Federal Government, as the Nation's largest energy consumer, with significantly improving its energy management and requires agencies to promote federal leadership in energy management and meet the goals of the executive order by implementing the following strategies:

- Life-cycle cost analysis,
- Facility energy audits,
- Financing mechanisms,
- Energy star and other energy-efficient products,
- Energy star buildings certification,
- Industrial facility efficiency improvements,

- Water conservation, and
- Cost-effective renewable energy use.

Executive Order 13123 also requires that each agency measure and annually report to the President its progress in meeting the goals and requirements of the order.

National Defense Authorization Act for FY 2002. Section 317 of the National Defense Authorization Act for FY 2002 mandates the goals established in Executive Order 13123 for achieving reductions in energy consumption by DoD facilities. The Act also identifies strategies for improving energy efficiency and achieving the energy reduction goals. Some of these strategies include using energy savings performance contracts to achieve energy conservation, conducting energy-efficiency audits for approximately 10 percent of all DoD facilities each year, and retiring inefficient equipment on an accelerated basis when replacement results in lower life-cycle costs.

Section 317 of the Act also requires that the Secretary of Defense report annually to the congressional defense committees on progress made toward achieving the goals.

DoD Energy Management. DoD had not yet submitted its FY 2001 Energy Management Report to the Department of Energy when this report was issued. The FY 2000 Annual DoD Energy Management Report disclosed that the Department is on track to meet the energy reduction goals established by Executive Order 13123. DoD reported a 23 percent reduction from the FY 1985 baseline for energy consumption by facilities; the goal is a 30 percent reduction by FY 2005. DoD reported a 22.65 percent reduction from the FY 1990 baseline for energy consumption for industrial and laboratory facilities and has met the FY 2005 goal of Executive Order 13123. DoD is on track to meet the FY 2010 goal of a 25 percent reduction for industrial and laboratory facilities. For FY 2000, the DoD reported:

- investing $44.5 million in direct appropriations to accomplish projects related to the goals of the executive order;
- issuing 58 energy savings performance contracts, valued at $414.6 million, with an estimated life-cycle cost savings to the Government of $56.4 million[1]; and
- issuing 41 utility energy services contracts, valued at $148.7 million, with an estimated life-cycle cost savings to the Government of $134.7 million[2]. (See Appendix B for FY 2000 reported energy savings.)

[1] The Scorecard (see Appendix B) has been updated since its submission to OMB in December 2000. The dollar amounts reflect the most current adjustments.

[2] The Scorecard has been updated since its submission to OMB in December 2000. Both the number of utility energy service contracts and the dollar amounts reflect the most current adjustments.

Energy Funding Sources. According to personnel from the Office of the Under Secretary of Defense (Comptroller), Congress appropriates military construction funds to DoD through the energy conservation investment program. For FY 2001, DoD requested $33.56 million and received $15 million dollars; for FY 2002, DoD requested $35.6 million and received $27.1 million.[3] The Defense Components provide funding for energy-related projects through operation and maintenance accounts and are encouraged to maximize private-sector funding through the use of energy savings performance contracts.

Energy Management Administration. The Principal Deputy Under Secretary of Defense (Acquisition, Technology, and Logistics) is the DoD senior agency official responsible for meeting the goals of Executive Order 13123. The Principal Deputy designated the DoD Installations Policy Board, chaired by the Deputy Under Secretary of Defense (Installations and Environment), as the DoD energy team. The team is responsible for expediting and encouraging the DoD use of appropriations, energy savings performance contracts, and other alternative financing mechanisms necessary to meet the goals and requirements of the executive order.

The DoD facilities energy program is decentralized with Defense Component headquarters providing funding, and each military installation managing site-specific energy and water conservation programs. Installations are responsible for maintaining awareness, developing and implementing projects, and ensuring that new construction meets sustainable design criteria.

Objectives

The objective of the report was to summarize issues identified in audit reports on DoD energy management of buildings and facilities. Audit coverage of weapon systems-related energy issues is not included in this summary report. See Appendix A for the discussion of scope and methodology.

[3] The FY 2002 appropriation included $6 million earmarked to conduct an assessment of energy renewable alternatives.

Audit Coverage of DoD Energy Management

During the past 10 years, the General Accounting Office (GAO) and DoD audit organizations issued 79 reports on DoD energy management. The GAO issued 2 reports; the Inspector General of the Department of Defense issued 3 reports; the Army Audit Agency issued 28 reports; the Naval Audit Service issued 1 report; and the Air Force Audit Agency issued 45 reports. The reports (see Appendix C) discuss the following key energy management issue areas:

- Modernization Projects (14 reports)
- Energy Savings Performance Contracts (13 reports)
- Reimbursable Activities (43 reports)
- Utilities Management (27 reports)
- Conservation Program (25 reports)
- Energy Reporting (10 reports)

Key Issues

Key issues are those that were reported in five or more reports. Appendix C lists all the reports reviewed, and Appendix D contains a matrix of the issues addressed in each report.

Modernization Projects. This issue, which is the process of updating or replacing existing equipment or systems with new equipment or systems in an effort to increase energy efficiency and lower costs, is discussed in 14 reports. Examples of reported problems were:

- Investment costs to modernize the heating plant at an Army installation were understated, and the resulting recurring savings were overstated. Modernization of the central heating plant was estimated to cost approximately $18.7 million, approximately $3.7 million more than the $15 million programmed. Anticipated recurring savings from this investment were $12 million during FYs 2000 through 2003. Actual recurring savings totaled approximately $1.13 million (see Appendix C, report 15). Estimated investment costs for a heating plant modernization project at another Army installation and the resulting recurring savings were overstated. Modernization or replacement of the 13 central heating plants would cost $11.24 million, approximately $1.76 million less than planned. The anticipated recurring savings from this investment were $10.4 million during FYs 2000 through 2003. Actual recurring savings totaled $3.2 million (see Appendix C, report 17).

- An Army command did not fund the modernization of heating plants at two installations because operation and maintenance funds were needed to support day-to-day operations. As a result, none of the anticipated $8 million in savings were achieved (see Appendix C, report 23).

Energy Savings Performance Contracts. In FY 2000, DoD awarded 58 energy savings performance contracts (ESPCs) for $396.3 million. Thirteen reports describe problems with ESPCs. An ESPC is a contract between an installation and an energy service company whereby the energy service company assumes the capital costs of installing energy and water conservation equipment and renewable energy systems. Energy service companies guarantee a fixed amount of energy savings throughout the contract life and are paid directly from those energy savings. The installation retains the remainder of the energy cost savings and assumes full ownership of the equipment and the savings after the contract expires. Examples of reported problems were:

- At one Army installation, the baseline savings, representing approximately $141,000 in contractor payments over the life of the energy savings performance contract, were not supported (see Appendix C, report 9).

- At an Army base, incorrect energy statistics were used as a result of malfunctioning electrical and gas meters. The contractor was overpaid at least $1,238,000 from January 1994 through June 2000 for energy savings (see Appendix C, report 10).

- At one Air Force base, civil engineering personnel did not evaluate ESPCs as a viable alternative for energy conservation (see Appendix C, report 49).

Reimbursable Activities. Problems with reimbursable activities are discussed in 43 reports. Host installations provide utility services to tenant organizations on a reimbursable basis. Tenant organizations reimburse the host installations on a monthly or quarterly basis for their portion of utilities consumed. Examples of reported problems include:

- Many reimbursable customers at one Air Force base were not properly billed for their portion of utility consumption due to formula errors, such as incorrect meter reading. As a result, reimbursable customer accounts were underbilled $280,000 from March 1999 through June 2000 (see Appendix C, report 35).

- Civil Engineering personnel at another Air Force base did not properly bill 3 activities occupying a total of 19 facilities for an estimated $400,355 in utility services. Also, civil engineering personnel did not install electric meters for two reimbursable customers with an estimated $238,000 in annual electric consumption (see Appendix C, report 62).

Utilities Management. Twenty-seven reports discuss utilities management issues. Effective management of base utility costs should provide opportunities to obtain utilities at more favorable rates. Examples of reported problems were:

- An Air Force installation contracted directly with the local distribution company for firm natural gas supply when they were required to contract through Defense Logistics Agency/Defense Fuels Supply Center (DLA/DFSC). Use of Defense Fuels Supply Center contracted firm gas could result in a cost reduction of $1,686,708 over the 6-year defense plan (see Appendix C, report 38).

- At another Air Force installation, the contracting office did not negotiate most favorable electricity rates. A comparison of actual costs paid with rates from another local electric company indicated that the base overpaid $395,967 for electrical power over a 6-month period (see Appendix C, report 57).

Conservation Programs. Twenty-five reports discuss conservation programs. The Federal Energy Management Improvement Act of 1988 requires Federal agencies to establish in-house programs to reduce energy consumption. Conservation programs describe methods and management tools used to achieve energy reduction goals. Examples of reported problems include:

- Some Army installations were not following regulatory requirements for establishing and sustaining effective energy programs and had not implemented or enforced low- and no-cost energy conservation measures to reduce energy consumption. As a result, installations did not fully realize energy conservation savings, and some did not meet their annual energy reduction goals (see Appendix C, report 32).

- An Army installation did not have an effective energy conservation program. Specifically, the Directorate of Engineering and Housing did not implement energy conservation measures to reduce energy consumption. As a result, the installation did not meet its FY 1991 energy goal (see Appendix C, report 33).

Energy Reporting. Ten reports discuss energy reporting issues. Military installations are required to report all energy consumption through the Defense Utility Energy Reporting System (DUERS). The Office of the Secretary of Defense uses the DUERS data for reports to Congress, the Department of Energy, and other Federal agencies. Examples of identified problems were:

- Civil engineering personnel at one Air Force base did not accurately report DUERS energy consumption data. Natural gas purchased from one vendor was not reported, and other utility consumption was either excluded or double counted from the DUERS report (see Appendix C, report 72).

- Energy managers at another Air Force installation used inaccurate consumption data and building square footage and made improper calculations in the DUERS reports (see Appendix C, report 73).

Conclusion

The 79 reports issued during the past 10 years by GAO and DoD audit organizations identify numerous opportunities for improving energy management, efficiency, and conservation. Energy efficiency and conservation is an area requiring effective management and emphasis because of rising energy prices and potential supply problems in the United States. Oversight of the energy program is necessary to ensure that the Department meets the objectives and achieves the long-term goals mandated by the National Defense Authorization Act for FY 2002.

Appendix A. Summary Process

Scope and Methodology. This report summarizes DoD energy-related audit coverage from January 1993 to August 2001. We identified 79 reports issued by the GAO; Inspector General of the Department of Defense; the Army Audit Agency; the Naval Audit Service; and the Air Force Audit Agency. We did not attempt to independently validate the information in the reports. The reports were reviewed, summarized, and analyzed to identify key energy management issue areas.

Limitations to Scope. We limited the scope of our review by excluding all energy reports related to weapons systems and vehicles.

Use of Computer-Processed Data. We did not use computer-processed data in our review.

Contacts. We visited or contacted individuals and organizations within DoD. Further details are available upon request.

Appendix B. FY 2000 DoD Energy Scorecard

Executive Order 13123 FY 2000 Energy Scorecard

Department/Agency Name	Contact Name and Phone
Department of Defense	CDR Kelly Snook (703) 697-6195
Name of Senior Energy Official	**Signature of Senior Energy Official**
David R. Oliver	Dan Oliver DEC 11 2001

Did your agency . . .	Yes	No	Anticipated Submittal Date
Submit its FY 2000 energy report to DOE for its Report to Congress (Sec. 303)?	X		1 January 2001
Submit an Implementation Plan with its Annual Report (Sec. 302)?	X		1 January 2001
Did your agency . . .	**Yes**	**No**	**Comments**
Perform energy audits of 10% of its facility space during the fiscal year (Sec. 402)?	X		What percentage of facility space was audited during the fiscal year? 12.4 % * How much facility space has been audited since 1992? 55.2 % *
Specifically request funding necessary to achieve the goals of the Order in its FY 2002 budget request to OMB (Sec. 301)?	X		If yes, how much: $ 45 M *
Invest direct appropriations to accomplish projects contributing to the goals of the Order (Sec. 301)?	X		If yes, how much: $ 44.5 M *
Issue to private-sector energy service companies (ESCOs) any energy savings performance contracting (ESPC) task orders or contracts (Sec. 403(a))?	X		How many? 58 Total value: $ 396.3 M Est. life-cycle cost savings: ESCO share $ 485.6 M Govt share $ 55.6 M
Issue any utility energy services contracts (Sec. 403(a))?	X		How many? 40 Total value: $ 100.8 M Est. life-cycle cost savings: Utility share $ 117.9 M Govt share $ 123.5 M
Implement renewable energy projects in FY 2000 (Sec. 204)?	X		If yes, how many? Solar 22 Wind 1 Geothermal 3 Biomass 0 Other RE 0

Participate in any new purchase of electricity generated from renewable energy in FY 2000 (Sec. 204)?	X		If yes, how much: 321 MWH
Adopt and apply the sustainable design principles set forth in the Whole Building Design Guide (www.wbdg.org) (Sec. 403(d))?	X		
Incorporate energy efficiency criteria into all specifications, product descriptions, and standards (Sec. 403(b)(3))?	X		
Provide training to its employees on energy management (Sec. 406(d))?	X		How many employees trained? 2,361
Implement any additional management tools (Sec. 406)?	X		Check all that apply: Awards X Performance Evaluations X Showcase Facilities X

NOTE: Provide additional information if a no reply is used for any of the questions above.

* Numbers are subject to verification and may change.

Please enter data from annual energy report pertinent to performance toward the goals of Executive Order 13123	Base Year	Previous Year (1999)	Current Year (2000)	% Change (Current vs. Base)
Site Energy Efficiency Improvement Goals (Sec. 202). 1985 Base Year	136,744 BBtu/KFt^2	108,664 BBtu/KFt^2	105,459 BBtu/KFt^2	22.9 %
Source Energy Use (Sec. 206). 1985 Base Year	504,177 BBtu	426,193 BBtu	420,065 BBtu	16.7 %
Industrial/Energy Intensive Facilities Goals (Sec. 203). 1990 Base Year	213,349 BBtu/Kft^2	171,411 BBtu/Kft^2	162,005 BBtu/Kft^2	24.1 %
Greenhouse Gas Reduction Goal (Sec. 201). 1990 Base Year	16,324,059 MTCE*	12,391,167 MTCE*	11,792,303 MTCE*	28.2 %
Water Conservation Goal (Sec. 207). 2000 Base Year	207,586 MGal	N/A	207,586 MGal	0%
Renewable Energy (Sec. 204). Energy used from self-generation and RE power purchases	N/A	8,286.6 BBtu	8,513 BBtu	N/A

* Agencies may ask DOE to calculate this value and insert it for them

Abbreviation Key:
Btu/Ft^2 = British thermal units per gross square foot
Btu/unit = British thermal units per unit of productivity (or gross square foot when such a unit is inappropriate or unavailable)
MTCE = Metric tons of carbon equivalent
MGal = Million gallons
BBtu = Billion British Thermal Units
RE = Renewable energy
N/A = Not applicable

Appendix C. Reports on Energy Management Issues

General Accounting Office

These reports are available on the GAO Home Page at http://www.gao.gov.

1. GAO Report No. RCED-94-96, "Energy Conservation: Contractors' Efforts at Federally Owned Sites," April 29, 1994. The report was issued in response to a Congressional request to evaluate the energy use and conservation measures employed at locations where contractors perform work for the Federal Government in government-owned buildings. Among the five Components reviewed were the Departments of the Air Force, Army, and Navy. The report stated that the contractors' energy-reduction efforts were having positive results. Contractors were making only limited use of the three main energy-reduction incentives available to contractors: rebates from utilities, federal funding designated for energy conservation measures, and contracts between the Government and a company to share in dollars saved through energy conservation efforts (or ESPCs).

2. GAO Report No. RCED-94-70, "Energy Conservation: Federal Agencies' Funding Sources and Reporting Procedures," March 30, 1994. The report was issued in response to a Congressional request to provide the latest information available (through FY 1992) on the energy conservation activities at the six largest energy-consuming agencies, including the DoD. The report stated that the DoD had reduced its energy consumption by 6.6 percent and spent $470.7 million (in FY 1992 dollars) in energy conservation measures for FYs 1985 through 1992. The report also stated that the DoD was using funding sources such as general and direct appropriations, energy savings performance contracts, and retained energy savings to support the energy conservation initiatives.

Inspector General of the Department of Defense (IG DoD)

These reports are available on the Inspector General of the Department of Defense, Home Page at http://www.dodig.osd.mil.

3. IG DoD Audit Report No. 97-158, "Use of Energy Conservation Measures in the Design of New Military Facilities," June 11, 1997. Military Departments used inconsistent baselines for measuring progress in conserving energy in new buildings and did not aggressively reduce targets for energy use in new designs, even though these targets did not keep pace with overall energy reductions mandated by Executive Orders, and the DoD had increased its emphasis on infrastructure cost reduction. As a result, new facilities were not

designed to ensure maximum energy conservation and minimum utility costs. The Army and the Air Force did not provide sufficient data to reach conclusions about future monetary benefits. The Army and Air Force monetary benefits would likely be greater than those of the Navy because current Army and Air Force target reductions have lagged behind the Navy. The report recommended that the Deputy Under Secretary of Defense (Industrial Affairs and Installations) revise energy conservation guidance to incorporate a 25 percent reduction in energy design targets from the FY 1987 level for mandatory use by all Military Departments. Management concurred with the finding and recommendation.

4. IG DoD Audit Report No. 97-070, "Use of Energy Conservation Funds," January 15, 1997. Military Departments used energy funds for energy conservation purposes; however, the commitment of the DoD to conserve energy needed improvement. The DoD has no assurance that funds were used as effectively as possible to achieve program objectives and goals. Of the 41 projects reviewed, 38 did not have adequate supporting documentation for the estimated cost and/or energy reductions cited. Further, eight projects had computation errors resulting in no energy reductions when the computations were done correctly. There was no firm basis on which to believe that Federal energy goals would be attained or that opportunities to reduce DoD infrastructure costs through reduced facilities energy use were fully exploited. We recommended that the Under Secretary of Defense for Acquisition and Technology establish an integrated process team to evaluate DoD resources in relation to management's commitment to meeting mandated energy reduction goals. The report recommended that the Deputy Under Secretary of Defense (Industrial Affairs and Installations) issue instructions to the Military Departments to strengthen management and oversight of the energy program. Management concurred with the finding and recommendations.

5. IG DoD Audit Report No. 93-055, "Implementation of the Energy Policy Act of 1992," February 18, 1993. DoD reported energy consumption decreased by 27.3 percent from FYs 1975 to 1985. This approximated a $700 million energy savings in terms of current facility energy use. The Army, the Navy, and the Air Force reduced energy consumption by 17.3 percent, 11 percent, and 11.6 percent, respectively, from FYs 1985 through 1991. The report concluded that, as a whole, DoD implemented an in-house energy conservation program and put in place accounting mechanisms to assess the accuracy and reliability of energy consumption and energy cost figures. However, because of the short time frame allowed for the audit, the report did not test the accuracy of the reported energy costs. The report recommended that the Military Departments update energy management plans annually, and the Marine Corps establish an energy management plan. The report also recommended that the Military Departments and the Defense Logistics Agency establish procedures to verify that field installations maintain awareness of and implement energy management plans. Management agreed with the recommendations.

Army Audit Agency

These reports are available on the Army Audit Agency Home Page at http://www.aaa.army.mil.

6. Consulting Report No. AA 01-822, "Review of Energy Savings Performance Contract, U.S. Army Intelligence Center and Fort Huachuca," August 1, 2001. Problems with the terms and provisions of task orders resulted in overstated savings amounts and projected overpayments to the contractor. Methodology and math errors in computing energy savings resulted in projected overpayments to the contractor totaling approximately $597,000. The report suggested that the garrison commander negotiate with the energy savings performance contractor to reduce payments corresponding to a decrease in operating days, amend task orders to eliminate duplication of workload requirements, and negotiate appropriate adjustments to the buyout of the task orders. Management agreed that the potential monetary benefits were reasonable.

7. Audit Report No. AA 01-183, "Review of Energy Savings Performance Contract SP0600-99-D-8003, Energy Conservation Measure 11," July 17, 2001. The proposed baseline and savings associated with the energy conservation measure for water were significantly overstated. The report recommended that the Military District of Washington assist the contracting officer in adjusting the baseline and savings for the energy conservation measure and determine whether an additional adjustment for operation and maintenance costs is necessary.

8. Consulting Report No. AA 01-718, "Audit of Energy Savings Performance Contracts," January 25, 2001. Analysis showed that replacing existing incandescent light bulbs with new compact fluorescent light bulbs would result in monetary benefits totaling approximately $16.2 million, and energy savings of approximately 640 million kilowatt hours over the life cycle of the investment. The report recommended the use of fluorescent lighting. The Principal Deputy Assistant Secretary of the Army (Installations and Environment) and the Office of the Assistant Chief of Staff for Installation Management, Facilities and Housing, agreed with the policy to replace incandescent bulbs with compact fluorescent bulbs and with the projected energy and monetary savings.

9. Audit Report No. AA 01-135, "Review of Energy Savings Performance Contract DACA87-97-D-0069," January 9, 2001. Baseline savings of approximately $141,000 in contractor payments over the life of the energy savings performance contract were not supported. The total amount included $54,000 for interior lights that were not installed, $29,000 for light fixtures not included in the contract, and $58,000 for excessive hours of operation and use of an apparently flawed simulation. The baseline also included an additional $18,000 in savings that may not be achieved because of an overlapping contract. The report recommended that the Commander, Joint Readiness Training Center

and Fort Polk, conduct a 100 percent inspection and reconciliation of installed light fixtures and other equipment and review and validate baseline and energy savings data.

10. Audit Report No. AA 01-74, "Review of Energy Savings Performance Contract DACA87-94-C-0008," November 22, 2000. The baseline included inaccuracies in the amount of electricity and gas used each month during the baseline period. The baseline energy statistics were inaccurate primarily because of malfunctioning electrical and gas meters and incorrect meter readings. The report concluded that Fort Polk overpaid the contractor at least $1,238,000 from January 1994 through June 2000 for energy savings. The report recommended that the Commander, Joint Readiness Training Center, and Fort Polk recoup the overstated payments.

11. Audit Report No. AA 01-73, "Review of Energy Savings Performance Contract DADA10-96-D-0017," November 9, 2000. Various contract discrepancies resulted in Walter Reed Army Medical Center overpaying the contractor for energy savings generated from the energy conservation measures installed in various buildings on the main campus. The report recommended that the Commander, U.S. Army Medical Command, establish and incorporate the revised baseline, calculate an adjustment in the energy savings payment to correct previous payments to the contractor, revise future energy savings payments to incorporate the revised baseline and energy savings, and modify the existing task order to incorporate the required changes.

12. Audit Report No. AA 01-72, "Review of Energy Savings Performance Contract DADA10-96-D-0018," November 9, 2000. Various contract discrepancies resulted in Walter Reed Army Medical Center overpaying the contractor for energy savings that were not generated in various buildings at the Forest Glen Location. The Medical Center did not realize the $5,300 in annual savings generated by the installation of high-efficiency window air-conditioning units. Also, the Medical Center did not realize the $5,400 in annual savings generated by the installation and repair of pipe insulation. The report recommended that the Commander, U.S. Army Medical Command, use inspection, reconciliation, and validation data from Walter Reed Army Medical Center to establish and incorporate a revised baseline, calculate an energy adjustment in the saving payment to correct previous payments, revise future energy saving payments to incorporate the validated baseline and energy savings, and modify the existing task order to incorporate the required changes.

13. Consulting Report No. AA 00-795, "Review of Energy Policy Development," September 22, 2000. Energy savings performance contracts, as a stand-alone investment strategy, would not provide sufficient capital to resource the Army projected requirement of $800 million. The report recommended investment alternatives, such as new investments, contract buy-outs, and performance contracts using a portfolio management approach rather than as mutually exclusive options. Also, the evaluation criteria should be revised to focus on cash flows and incorporate time periods and reinvestment.

14. Memorandum Report No. AA 00-17, "Utility Rate Computation, Audit of Interservice Support Costs and Reimbursements," October 12, 1999. Guidance for developing utility sales rates was not followed in five areas. Real property costs used in utility rate computations by U.S. Army, Alaska, did not match the real property records resulting in understated rates. There was no audit trail to validate operation and maintenance costs. High dollar value nonrecurring maintenance costs incurred during the year were spread over 20 years instead of 5 years, as prescribed by guidance, which could result in abnormal variations in the sales rates. The report recommended that the U.S. Army, Alaska, document real property costs for government-owned utility facilities; maintain an adequate audit trail of operation and maintenance costs shown in the Army Management Structure codes; and document all abnormal maintenance costs that occurred in the past 5 years. Also, the U.S. Army, Alaska, needed to determine what methodology will be used to develop water sales rates for Elmendorf AFB and determine the proper method for computing capital costs for the Ship Creek Dam.

15. Audit Report No. AA 99-399, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Campbell, Kentucky," September 2, 1999. Investment costs to modernize the Fort Campbell heating plant were understated, and the resulting recurring savings were overstated. Modernization of the central heating plant was estimated to cost approximately $18.7 million, $3.7 million more than the $15 million programmed. Anticipated recurring savings from this investment were approximately $12 million during FYs 2000 through 2003. Actual recurring savings totaled approximately $1.13 million (overstated by $10.87 million). The report recommended that the Assistant Chief of Staff for Installation Management reduce the estimated recurring savings from the program objective memorandum for Fort Campbell's central heating plant projects by approximately $10.87 million if the project continues; and update program objective memorandum efficiency charts to show a cost avoidance of almost $4.76 million if the project continues. Management concurred with the findings and recommendations.

16. Audit Report No. AA 99-363, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Benning, Georgia," August 12, 1999. The estimated investment costs of phase II of a Fort Benning utilities modernization project were overstated by approximately $3.8 million, and recurring savings during the program years were overstated by approximately $3.6 million. The report recommended that the Assistant Chief of Staff for Installation Management reprogram approximately $3.8 million of Fort Benning's funding to meet valid approved central heating plant modernization projects. Although management concurred, this recommendation could not be implemented because the funds had already been distributed and obligated. The report also recommended that estimated program objective memorandum savings for phase II of Fort Benning's central heating plant project be reduced by approximately $3.6 million, the Assistant Chief of Staff update program objective memorandum efficiency charts to show the cost avoidance for Fort Benning of approximately $5.1 million and reclassify the

Army central heating plant modernization program objective memorandum efficiency. Management concurred with the findings and recommendations.

17. Audit Report No. AA 99-362, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Eustis, Virginia," August 12, 1999. Investment costs to modernize Fort Eustis heating plants and the resulting recurring savings were overstated. Modernization or replacement of the 13 central heating plants would cost approximately $11.24 million, $1.76 million less than planned. The anticipated recurring savings from this investment were $10.4 million during FYs 2000 through 2003. Actual recurring savings totaled approximately $3.2 million. The report recommended that the Assistant Chief of Staff for Installation Management reduce estimated recurring savings for the project by $7.24 million and update the program objective memorandum efficiency charts to show a cost avoidance of $10.74 million. Management concurred with the findings and recommendations.

18. Consulting Report No. AA 99-765, "Consulting Review of Funding for Utility Privatization," June 23, 1999. The report estimated a $146 million funding shortfall in program objective memorandum 01-05 for the J account, $3 million less than the Headquarters, Forces Command estimate of $149 million. According to the report, the shortfall can be reduced to approximately $82 million by reprogramming K account funding to the J account to satisfy maintenance and repair requirements that will be paid from the J account after systems are privatized. The report recommended that the Office of the Deputy Chief of Staff for Personnel and Installation Management continue to monitor and update the funding shortfall at Forces Command installations as bids are received and contracts are awarded for utility privatization. Management concurred with the results of the review and recommendation.

19. Audit Report No. AA 99-232, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Jackson, South Carolina," May 7, 1999. The report stated that the investment costs of $11 million for phase I in the program objective memorandum efficiency were generally accurate and supported. At the time of review, phase II investment costs had not been adequately defined. The anticipated recurring savings of $20.6 million for both phases were overstated by approximately $19.8 million. The Fort Jackson system was in such poor condition that, by doing the modernization, the installation would avoid costs totaling approximately $11.9 million during FYs 1999 through 2003 to repair the existing plants. The report recommended that the Assistant Chief of Staff for Installation Management reduce estimated program objective memorandum savings for the Fort Jackson central heating plant project by $19.8 million and update the program objective memorandum efficiency charts to show cost avoidance of $11.9 million. Management concurred with the findings and recommendations.

20. Audit Report No. AA 99-225, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plant, Fort Riley, Kansas," May 7, 1999. The report stated that the investment costs of $4 million for the program objective memorandum efficiency were accurate and supported. The anticipated recurring savings of $3.2 million during the program years were overstated by approximately $2.4 million. The Fort Riley heating plant distribution system needed major repair, and the heating plant boilers were close to the end of their expected useful life. By replacing the existing central heating plant boilers with individual heating systems in each building and the central plant chillers with electric chillers, the installation would avoid costs totaling approximately $3.3 million during the program years. The report recommended that the Assistant Chief of Staff for Installation Management reduce the estimated program objective memorandum savings for the Fort Riley central heating plant project by $2.38 million and update program objective memorandum efficiency charts used to brief Army leaders to show $3.3 million in cost avoidance for Fort Riley. Management concurred with the findings and recommendations.

21. Audit Report No. AA 99-224, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Leonard Wood, Missouri," April 19, 1999. The anticipated recurring savings of $6 million during the program years were overstated by approximately $3.1 million, and the existing central heating plant's steam distribution system was approximately 37 years old and needed major repairs. By replacing the centralized heating system with individual heating systems, Fort Leonard Wood would avoid repair costs to the distribution system totaling approximately $6 million during the program years. The report recommended to reduce estimated program objective memorandum savings for the Fort Leonard Wood central heating plant project by $3.1 million and update program objective memorandum efficiency charts used to brief Army leaders to show cost avoidance for Fort Leonard Wood of $6 million. Management concurred with both findings and recommendations.

22. Audit Report No. AA 99-183, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, U.S. Army Aberdeen Proving Ground, Maryland," April 8, 1999. The anticipated recurring savings of $10 million during the program years were overstated by approximately $8.74 million. The report recommended reducing estimated savings for the utilities modernization efficiency by $8.7 million for Aberdeen Proving Ground. Management concurred with the finding and recommendation.

23. Audit Report No. AA 99-184, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plants, Fort Belvoir, Virginia, and Fort Meade, Maryland," April 2, 1999. The Military District of Washington did not provide Fort Meade and Fort Belvoir with sufficient funding to implement the cost to renovate the heating plants. Although the Assistant Chief of Staff for Installation Management funded these two modernization projects, the U.S. Army Military District of Washington withheld the $4 million designated for Fort Meade and withheld $1.1 million of Fort Belvoir's funds. The Military District of Washington reclaimed the funds when

Fort Belvoir could not modernize its heating plant with the reduced funding. The Military District, in a memorandum to the Director of Program Analysis and Evaluation, stated that it did not fund these projects because operation and maintenance funds were needed to support day-to-day operations. As a result, none of the anticipated $8 million in savings will be achieved. The report recommended reducing estimated savings for the utility modernization efficiency by $8 million for Fort Belvoir and Fort Meade, funding design costs subsequent to the Assistant Chief of Staff for Installation Management's approval of the economic analysis, and funding modernization costs subsequent to design completion. Management concurred with the finding and recommendations.

24. Audit Report No. AA 99-189, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plant, Fort Benning, Georgia," March 31, 1999. The anticipated recurring savings of $10 million during the program years were overstated by approximately $8.6 million. However, the Fort Benning heating plant was in such poor condition that, by replacing the existing heating plant with individual heating systems in each building, the installation would avoid costs totaling approximately $16.6 million during FY 1999 to repair the existing plant. In addition, the renovated heating plant would have resulted in recurring savings during the program years totaling approximately $1.4 million. The report recommended reducing estimated program objective memorandum savings for the Fort Benning central heating plant project by $8.6 million and updating program objective memorandum efficiency charts to show cost avoidance for Fort Benning of $16.6 million. The report also recommended installations scheduled for heating plant modernization to submit an economic analysis for review the year prior to funding. Management concurred with the findings and recommendations.

25. Audit Report No. AA 99-188, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plant, Fort Lewis, Washington," March 31, 1999. The estimated investment costs of $11 million for the program objective memorandum efficiency were overstated by approximately $4.2 million. The anticipated recurring savings of $11 million during the program years were overstated by approximately $10.1 million. The existing heating system at Fort Lewis was in poor condition and by modernizing the current system in FY 1998, the installation avoided costs to maintain and repair the existing heating plant and distribution system totaling approximately $15.7 million in FY 1999. The report recommended reducing estimated program objective memorandum savings for the Fort Lewis central heating plant project by $10.1 million, updating program objective memorandum efficiency charts to show cost avoidance for Fort Lewis of $15.7 million, requiring installations scheduled for heating plant modernization to submit an economic analysis for review the year prior to funding, and funding future design costs subsequent to the Assistant Chief of Staff's approval of the economic analysis. Management concurred with all findings and recommendations.

26. Audit Report No. AA 99-181, "Program Objective Memorandum 98-03 Efficiencies, Utilities Modernization - Central Heating Plant, Fort Campbell, Kentucky," March 30, 1999. The cost to upgrade Fort Campbell's heating plant was greater than costs estimated in the program objective memorandum efficiency, and savings were less than estimated. The report recommended not funding Fort Campbell's central heating plant renovation project for FY 1999 and centralizing funding for future heating plant modernization projects remaining in the program objective memorandum efficiency. Management concurred with the finding and both recommendations.

27. Information Memorandum No. AA 98-732, "Review of Heating Alternatives at Fort Drum," May 11, 1998. The natural gas conversion project was more cost-effective than the shallow trench modernization project. The memorandum recommended approving the natural gas conversion project proposed by Fort Drum.

28. Audit Report No. AA 98-45, "Army's Utility Privatization Program," December 18, 1997. Implementation of the Army Utility Privatization Program needed improvement to ensure that the Army meets its goal for privatizing utility services. Progress toward privatized utility services was slow during the program's early years because Army policy and guidance was not always effective or followed. The report recommended that the Assistant Chief of Staff for Installation Management develop an implementation plan for utility privatization, use proposals in privatization studies, and streamline privatization studies for gas distribution systems. Management concurred with the finding and recommendations.

29. Audit Report No. AA 97-157, "Planned Construction of a Wastewater Treatment Plant at Fort Carson, Colorado," March 14, 1997. A privatization study estimated that Fort Carson would save at least $4.5 million over 25 years by privatizing wastewater treatment services. The report recommended terminating the contract to construct a wastewater treatment plant at Fort Carson for convenience, determining and paying termination costs on the contract, privatizing wastewater treatment services at Fort Carson, and reprogramming funds remaining from termination of the treatment plant contract and apply them, if possible, towards paying privatization costs identified by the City of Colorado Springs. Management agreed with the recommendations.

30. Audit Report No. AA 96-205, "Utility Services, Fort Riley, Kansas," May 20, 1996. Fort Riley spent too much for its natural gas service during FY 1995 to help ensure that gas service would not be interrupted if the provider could not fill all demands. Although rare, interrupted service could occur because of insufficient pipeline capacity or reduced natural gas supplies. Even though it paid the higher rate, Fort Riley was not guaranteed uninterrupted service because gas service could be interrupted for other reasons, such as pipeline damage. The installation's policy was to pay the higher rate for uninterrupted natural gas service to protect both the health of post personnel and to carry out the installation's mission. However, Fort Riley could have obtained a lower rate by installing an emergency backup storage system. Installation Public Works personnel had discussed the need to install a backup system, but

did not make a formal proposal. A storage system would also protect against other types of service interruptions. The benefits from getting a lower transmission rate are significant. Fort Riley could save an estimated $941,000 annually. The report recommended that the base commander perform an assessment to identify the installation's minimum requirements for a natural gas backup system and determine the cost of a backup fuel system. Management concurred with the finding and recommendations.

31. Audit Report No. CR 95-10, "Electrical Utility Billings U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky," May 30, 1995. Fort Knox procedures for managing contracts for electrical utilities were adequate. Electric bills were accurate and supported. However, there was a minor problem with the timeliness of payments. No management control problems were found. No recommendations were made.

32. Audit Report No. WR 93-A1, "Facility Energy Conservation," August 3, 1993. Some installations needed to improve their management of facility energy conservation programs. Specifically, the installations did not follow regulatory requirements for establishing and sustaining effective energy programs. In addition, some installations did not implement or enforce low- and no-cost conservation measures to reduce energy consumption. As a result, installations did not fully realize energy conservation savings, and some installations did not meet their annual energy reduction goals. The report recommended the installation commander implement the energy conservation program required by Army Regulation 11-27, "Army Energy Program," February 3, 1997, and conservation measures determined to be economically feasible. Management agreed with the recommendations.

33. Audit Report No. WR 93-4, "Energy Conservation U.S. Army Intelligence Center and Fort Huachuca, Fort Huachuca, Arizona," January 22, 1993. Fort Huachuca did not have an effective energy conservation program. Specifically, the Directorate of Engineering and Housing did not implement energy conservation measures to reduce energy consumption. Because Fort Huachuca did not have an effective energy conservation program, the installation did not meet its FY 1991 energy goal. The report recommended that the Army implement an energy conservation program as required by Army Regulation 11-27, "Army Energy Program," February 3, 1997, and Training and Doctrine Command Regulation 420-11. Management agreed with both the recommendation and the potential monetary benefits.

Naval Audit Service

This report is available on the Naval Audit Service Home Page at http://www.hq.navy.mil/NavalAudit.

34. Naval Audit Service Report No. N2000-0003, "Energy Conservation at the Naval Air Station, Patuxent River, MD," October 19, 1999. The report stated that Naval Air Station, Patuxent River, reported inaccurate energy usage data to DUERS for energy used at the naval air station. There was a lack of adequate internal controls over the data entry and calculation of data by the public works energy engineer, and errors were in the calculations on the spreadsheet for electricity usage data. The report recommended that Naval Air Station, Patuxent River, establish procedures to improve internal controls over the accuracy of information entered into DUERS, and direct the public works energy engineer to correct calculation errors for electricity usage data. Management concurred with the findings and recommendations.

Air Force Audit Agency

These reports are available on the Air Force Audit Agency Home Page at http://www.afaa.hq.af.mil.

35. Audit Report No. DR001013, "Utilities Management, Warner Robbins Air Logistics Center, Robins AFB, GA," April 11, 2001. Overall, management needed to improve the effectiveness of the procedures and internal controls used to manage the utilities program. Many reimbursable customers were not properly billed for their portion of utility consumption due to formula errors, such as incorrect meter reading. As a result, reimbursable customer accounts were underbilled $280,000 from March 1999 through June 2000. The report recommended that the Civil Engineer Group Commander assign appropriate personnel to perform reviews of all Interim Work Information Management System formulas used for customer billing and direct the Chief of Operations to review and coordinate on the Interim Work Information Management System monthly billing reports to provide adequate oversight for customer account charges. Management concurred with the audit results and recommendations.

36. Audit Report No. EA099054, "Utility Cost Management, 11th Wing, Bolling AFB, DC," June 23, 1999. The report stated that the 11th Civil Engineering Squadron did not effectively manage utility costs. Specifically, the base public utility specialist did not validate the accuracy of rates charged and payment-processing periods. In addition, base civil engineering (BCE) personnel did not implement energy saving recommendations cited in two energy survey reports issued in 1993 and 1998, did not have adequate assurance that electric and natural gas usage was accurately metered, did not request a legal opinion on the requirement to pay an annual gross receipts tax for natural

gas service totaling $255,246 over 6 years, and did not perform required annual utility contract reviews. The report recommended that the 11th Civil Engineering Squadron Commander direct BCE personnel to obtain and maintain a current copy of all utility contract specifications; develop and implement procedures to compare billed rates and stated processing periods to current contract specifications; limit future billing certifications of rendered services to utility bills, based on current contract-specified rates and processing periods; and implement the recommendations contained in two energy survey reports. The report also recommended that the 11th Civil Engineering Squadron Commander direct the base utility engineer to request meter tests from the local utility companies, request a legal opinion on the requirement to pay the gross receipts tax, and ensure that annual reviews of all utility contracts are performed, signed, and maintained and the public utility specialist be informed of all significant contract changes identified during the reviews. Management concurred with the audit results and recommendations.

37. Audit Report No. EO099003, "Utility Cost Management, 55th Wing, Offutt AFB, NE," October 1, 1998. The report stated that civil engineering personnel often processed reimbursements inaccurately or incompletely. Maintenance engineering personnel were not always notified when reimbursable customers initially occupied space on base. In addition, some reimbursable customers received electricity directly from the local supplier and were billed at the lower base rate instead of the supplier's monthly rate. Correct billing could have resulted in additional reimbursements of $7,910 annually. The report recommended that the Chief, Operations Flight, direct resource management personnel to bill agencies not previously identified to reimburse for utilities. Management concurred with the audit results and recommendation.

38. Audit Report No. EO099001, "Utility Cost Management, 509th Bomb Wing, Whiteman AFB, MO," October 1, 1998. The report stated that the management of utility costs could be improved. Alternate utility sources were not always investigated to obtain the lowest possible rates pertaining to natural gas contracts, and internal controls relating to utility reimbursements were not always effectively implemented. Specifically, the base contracted directly with the local distribution company for firm natural gas supply when they were required to contract through Defense Logistics Agency/Defense Fuels Supply Center (DLA/DFSC). Use of Defense Fuels Supply Center contracted firm gas could result in a cost reduction of $1,686,708 over the 6-year defense plan. The report recommended that the BCE direct the utility engineer to report firm gas requirements to DLA/DFSC for appropriate contract action, develop utility sales agreements for identified activities, and update sales agreements and adjust bills accordingly. The wing commander nonconcurred with the audit finding, potential monetary benefit, and recommendation that natural gas requirements be reported to DLA/DFSC. Management was concerned that DLA/DFSC-supplied firm gas could be cut off in times of great demand on the pipelines. They felt that while a DLA/DFSC firm gas contractor who failed to supply gas to the local distribution company would pay for all damages to the base, this was no comfort to base military families who would have no heat. Management concurred with the other audit finding and recommendations.

39. Audit Report No. DD098010, "Reimbursable Utility Costs, 163d Air Refueling Wing, March Air Reserve Base, CA," September 17, 1998. Management of reimbursable utility costs could be improved. The BCE certified utility costs for water and wastewater without a utility sales agreement or sufficient supporting documentation. As a result, the 163d Air Refueling Wing overpaid as much as $18,525 for water and wastewater from May 1996 through July 1997. The report recommended that the 163d Air Refueling Wing Commander direct the BCE to certify utility vouchers for water and wastewater only when sufficient supporting documentation is provided, request that the 452d Air Mobility Wing determine correct amount of previous water and wastewater costs and refund or credit the amount overcharged, and establish a written sales agreement to formally establish applicable utility rates. Management concurred with the finding and recommendations.

40. Audit Report No. EL098054, "Utility Cost Management, 1st Fighter Wing, Langley AFB, VA," September 10, 1998. Although the 1st Fighter Wing energy projects are minimizing use and are estimated to save $1.08 million annually, additional improvements to the utility cost program could be achieved. Base personnel did not evaluate opportunities to obtain the lowest available rates, process utility payments promptly, use correct utility rates when determining reimbursement amounts, and review support agreements that supplied free utilities to two reimbursable activities. The report recommended that the Commander, 1st Civil Engineering Squadron, direct the utility engineer to perform the required annual contract review as soon as possible for utility services, establish procedures to perform the required annual review each year or any time a contract is modified, and establish and implement procedures to perform utility sales agreement and rate reviews by December 1 of each year. Management concurred with the findings and recommendations.

41. Audit Report No. EA098032, "Utility Cost Management, 89th Airlift Wing, Andrews AFB, MD," September 9, 1998. Installation tenants were not accurately identified and billed for utilities and although sufficient conservation projects were implemented, the estimated savings were not always validated. The report recommended that the Commander, 89th Civil Engineering Squadron require the BCE Funds Manager to strengthen procedures for identifying and billing customers for utilities, bill and collect past and future charges from identified offices, and require the Chief, BCE Mechanical Engineering to validate plant project savings and report results to the command and, in the future, validate project savings within time requirements. Management concurred with the findings and recommendations.

42. Audit Report No. DD098008, "Utility Cost Management, 452d Air Mobility Wing, March Air Reserve Base, CA," September 3, 1998. The 452d Air Mobility Wing utility program was not effectively managed. Specifically, utility cost management coordination between the base and its joint responsible party, the Air Force Base Conversion Agency, was not adequately documented, and written utility sales agreements between the base and tenants had not been established. The report recommended that the 452d Air Mobility Wing Commander document utility responsibilities between the base and Air

Force Base Conversion Agency and direct the BCE to establish written utility sales agreements with base tenants. Management concurred with the finding and recommendations.

43. Audit Report No. DE098024, "Utility Cost Management, 16th SOW, Hurlburt Field, FL," September 3, 1998. Base civil engineering personnel did not establish a utility management brochure for family housing and had not performed annual utility rate reviews. The report recommended that the BCE establish a cost-efficient utility contract with the supplier of water and sewage service to the family housing area and prepare a utility management brochure and utility rate review plan as required by Air Force Instruction 32-1061, "Providing Utilities to U.S. Air Force Installations," December 1, 1997. Management concurred with the finding and recommendations.

44. Audit Report No. DD098006, "Utility Cost Management, AF Flight Test Center, Edwards AFB, CA," August 10, 1998. The Air Force Flight Test Center did not always effectively manage the utilities program. Specifically, the utility engineer did not always validate utility rates or consumption quantities on billing invoices. The report recommended that the BCE direct the appointment of a primary and alternate energy/utility engineer to validate rates and consumption quantities, require all utility billing invoices to be validated, and periodically review and document the validations. Management concurred with the finding and recommendations.

45. Audit Report No. DL098009, "Utility Cost Management, Space and Missile Systems Center, Los Angeles AFB, El Segundo, CA," July 28, 1998. The report stated civil engineering personnel did not timely process utility payments. For example, 40 of 57 utility bills processed by civil engineering personnel were paid after the due date, resulting in $16,372 in late charges. The report recommended that the BCE should direct the utility manager to establish procedures for processing utility bills upon receipt. Management concurred with the finding and recommendation.

46. Audit Report No. WN098019, "Utility Costs, 56th Fighter Wing, Luke AFB, AZ," July 24, 1998. The BCE effectively managed the utility program. The base obtained utilities at the lowest available rates. However, utility payments were made after the due dates. For example, Defense Finance and Accounting Service made utility payments after the due date for 11 of 57 utility payment vouchers, resulting in $5,982 in late charges during FY 1997. The report recommended that the utility clerk establish a suspense system to identify utility payment due dates for utility invoices submitted to Defense Finance and Accounting Service and follow up with Defense Finance and Accounting Service to verify payments are made before the due dates. Management concurred with the finding and recommendations.

47. Audit Report No. WM098024, "Utility Cost Management, 92d Air Refueling Wing, Fairchild AFB, WA," July 21, 1998. The 92d Air Refueling Wing did not always establish effective internal controls over base utility costs. Specifically, the Civil Engineering Squadron utility manager did not document the basis for utility sales rates provided to reimbursable customers, did not

follow procedures to make sure utilities were acquired at the lowest available rates, and did not use meter readings to verify utility invoices. The report recommended that the Civil Engineering Squadron utility manager generate necessary data to verify the accuracy of FY 1997 utility sales rates, re-compute utility sales rates for FY 1998, complete a thorough analysis of current rate schedule options for all utilities, and initiate rate schedule changes through utility companies if analyses identify opportunities for more favorable rate options. The report also recommended that the Civil Engineering Squadron utility manager periodically read utility meters and provide the results to Civil Engineering Squadron funds managers for verification of utility charges. Management concurred with the findings and recommendations.

48. Audit Report No. WP098026, "Utility Cost Management, 60th Air Mobility Wing, Travis AFB, CA," July 15, 1998. The report identified certain administrative and procedural weaknesses associated with utility reimbursements. Specifically, the utility engineer did not properly complete and process all utility sales contracts and/or agreements, and the associated sales rate exhibits for 14 of 22 base tenants. The utility engineer also did not always perform periodic facility inspections to ensure that reimbursement amounts were appropriate. The report recommended that the utility engineer complete necessary sales contracts and/or agreements, rate exhibits for the tenants identified as soon as possible, establish procedures to ensure that, by December 1 each year, sales rate and agreement forms for all relevant tenants are completed, and copies provided to the real property management office and the applicable tenant. The report also recommended requesting the utility engineer to assign a higher priority to performing tenant facility inspections on a periodic basis. Management concurred with the findings and recommendations.

49. Audit Report No. WS098029, "Utility Costs, 97th Air Mobility Wing, Altus AFB, OK," July 2, 1998. The utility program was generally managed effectively. Especially noteworthy was that management implemented some utility conservation actions that included monitoring and managing peak demands for electricity. However, civil engineering personnel did not evaluate ESPCs as an alternative to conserve utility consumption. The report recommended that the Deputy Chief of Operations request energy services contractors to perform energy analyses and submit proposals for cost savings benefits on ESPC projects approved by Headquarters, Air Education and Training Command. Management concurred with the finding and recommendation.

50. Audit Report No. DK098008, "Utility Cost Management, 70th Civil Engineering Squadron, 70th Air Base Group, Human Systems Center, Brooks AFB, TX," June 15, 1998. Civil Engineering Squadron personnel effectively managed the utility program. However, Civil Engineering Squadron engineers did not complete the annual utility sales review to identify all reimbursable activities and to determine whether utility sales agreements were current. The report recommended that the utility engineer complete Air Force Form 3557, "Utility Sales Annual Review," for all reimbursable customers, Air Force Form 3553, "Utility Sales Agreement for Non-Federal Organizations," to cover relevant base tenants, and initiate billing action for

utility services used by a tenant that had not been previously billed. Management concurred with the finding and recommendations.

51. Audit Report No. DK098007, "Utility Cost Management, 76th Civil Engineer Group, San Antonio Air Logistics Center, Kelly AFB, TX," June 8, 1998. Civil Engineering Group personnel effectively managed the utility program. Of particular note, utility conservation measures were employed, and a water reuse program to the golf course was the recipient of a 1997 Federal Energy and Water Management Award. However, Civil Engineering Group utility engineers did not perform a utility sales annual review to identify all reimbursable activities and to determine whether utility sales agreements were current. The report recommended that the 76th Civil Engineering Group require the utility manager to complete Air Force Form 3557, "Utility Sales Annual Review," for all reimbursable customers and complete utility sales agreements for non-federal organizations (Air Force Form 3553). Management concurred with the finding and recommendations.

52. Audit Report No. ER098020, "Base Utilities Program, 48th Fighter Wing, RAF Lakenheath, United Kingdom," May 20, 1998. Wing personnel did not maintain current utility sales agreements for reimbursable customers. In addition, base civil engineering personnel did not install and use utility meters as required. The report recommended that personnel be directed to review and update utility agreements every 3 years. Management concurred with the finding and recommendation.

53. Audit Report No. WS098003, "Review of Utility Cost Management, 71st Flying Training Wing, Vance Air Force Base, OK," April 1, 1998. The utility program was effectively managed. Management had implemented excellent utility conservation actions to minimize utility use. For example, management achieved a 25 percent reduction in energy consumption for FY 1997 as compared to the 1985 baseline when the Air Education and Training Command goal was 16 percent. This reduction was the result of hourly monitoring of power usage and the implementation of a load shedding program that prevented power usage from exceeding a limit that was associated with higher costs.

54. Audit Report No. 23398019, "Management of the Organizational Utility Cost Sharing Program, 18th Wing, Kadena AB, Japan," February 27, 1998. Management controls over the organizational utility cost-sharing program required strengthening. The report recommended that the Civil Engineering Group Commander require the base utility manager to requisition equipment to convert to propane gas and reimbursable fuel. The report also recommended that the Civil Engineering Group Commander elevate to U.S. Forces, Japan, the issue of negotiating with the Government of Japan to consolidate the payment, billing, and reimbursement of utilities to reduce or eliminate costs not reimbursable under agreement, and the issue of providing a methodology for properly apportioning the Government of Japan utility refund received by one Service on behalf of another. Management generally concurred with the audit findings and recommendations.

55. Audit Report No. 51198005, "Management of the Base Utilities Program, 423d Air Base Squadron, RAF, Alconbury," January 21, 1998. The base energy manager did not establish and implement an effective energy management program plan. The report recommended that the BCE complete and implement a formal energy management program plan and periodically review and upgrade the program. Management concurred with the audit findings and recommendations.

56. Audit Report No. 23398017, "Management of the Non-appropriated Fund Utility Cost-Sharing Program, 18th Wing, Kadena AB, Japan," January 20, 1998. Management controls over the non-appropriated fund utility cost-sharing program needed strengthening. Management did not submit vendor invoices and related payment vouchers totaling over $67,700 for propane gas used over an 8-month period. The report recommended that the base fund financial management officer obtain a copy of the necessary guidance concerning Government of Japan reimbursements and direct responsible personnel to periodically submit copies of invoices and payment vouchers to U.S. Forces, Japan, for reimbursement. Management concurred with the audit finding and recommendations.

57. Audit Report No. 51597025, "Management of Base Reimbursements - Civil Engineering, 314th Airlift Wing, Little Rock AFB, AR," September 8, 1997. The report stated that opportunities exist to increase the effectiveness of utility management. Contracting personnel have an opportunity to reduce the cost of electric usage. Actual cost data was compiled from the current electric corporation billings for November 1996 through April 1997 and compared with the results of another local electric Cooperative's corporation rates. The results of the cost comparison indicated that the base was charged approximately $395,967 more for electrical power for the 6-month period. This occurred because the base contracting officer understood that only one electric company could provide service, and therefore did not negotiate the rate currently charged. Also, BCE personnel did not perform a review of the contract when it was recently modified to ensure that acquired utilities were at the most favorable rate available. The report recommended that the base contracting officer negotiate with the current electricity provider to ensure that the lowest rates are obtained and ensure that the utility contracts are reviewed each year and when modified. Management concurred with the audit finding and recommendations.

58. Audit Report No. 24097018, "Management Oversight of Utility and Ground Fuel Taxes, 62d Airlift Wing, McChord AFB, WA," July 18, 1997. Wing personnel did not effectively manage tax payments for utilities and ground fuel. Although controls were adequate to ensure management paid only appropriate taxes on utilities and heating oil, they were not always adequate to ensure that management collected necessary data to file for refunds from Washington State motor vehicle fuel tax. The report recommended that the accounting liaison officer collect relevant data, forward it to the appropriate Defense Finance Accounting Service Operating Location, and request a motor vehicle fuel tax refund from the Washington State motor vehicle tax administration office and do so for future quarterly periods. The report also

recommended that the contracting officer collect necessary documents and forward them to the accounting liaison officer and that the base fuels management officer provide gasoline inventory data to the accounting liaison officer monthly. Management concurred with the audit findings and recommendations.

59. Audit Report No. 23397026, "Management of the Offbase Utility Cost Sharing Program, 18th Wing, Kadena AB, Japan," June 18, 1997. Management controls over the off base utilities program required strengthening. Specifically, 10,024 utility receipts totaling $369,886 were not submitted to the Japanese in FY 1996 for reimbursement. In addition, off base utility reimbursements were not properly allocated. The report recommended that the 18th Wing Commander require all unit commanders to enforce program requirements to ensure all utility receipts are turned in for reimbursement, ensure that penalties for non-compliance be effectively communicated, and require the fund manager to calculate the proper allocation of off base utility refunds and credit each account appropriately. Management concurred with the findings and recommendations.

60. Audit Report No. 50697022, "Base Utility Management, 436th Airlift Wing, Dover AFB, DE," May 13, 1997. The BCE management of utility costs could be improved. Specifically, civil engineering personnel did not have an effective energy awareness program to actively pursue low-cost energy reductions. The DUERS cumulative percentage reduction report showed no energy reductions from the 1985 baseline for Dover Air Force Base. Reports used overstated square footage of buildings by 111,401 square feet in DUERS calculations. The report recommended that the civil engineering squadron commander realign the energy manager duties to allow for proactive management of the energy program; establish an Energy Management Steering Group in accordance with Air Force directives; conduct periodic energy awareness meetings with representatives from activities on base; publish periodic energy awareness articles in the base newspaper, the local area network, or other sources; and update the energy conservation action plan to address the 30 percent reduction goal by the year 2005. The report also recommended that the commander have the energy manager determine which buildings to exclude from the base's square footage, enter the appropriate code for each building in the real property records, use the capabilities in the new version of DUERS to calculate the square footage of buildings to include in the cumulative reduction report. Management concurred with the findings and recommendations.

61. Audit Report No. 20997014, "Management of Tax Exemptions, 355th Wing, Davis-Monthan AFB, AZ," April 28, 1997. Management did not claim an exemption for sales taxes on medical facility electrical purchases. Internal controls governing the payment and certification of monthly electric bills could be strengthened. The Air Force could recoup an estimated $80,959 for sales taxes paid during calendar years 1993 through 1996, if a state sales tax exemption was claimed. The report recommended that the base civil engineer request that Tucson Power stop charging hospital sales tax, ensure that

sales taxes paid for calendar years 1993 through 1996 are recouped, and maintain a copy of the hospital exemption from sales tax letter. Management concurred with the finding and recommendations.

62. Audit Report No. 50496015, "Review of Utility Cost Reimbursements, 437th Airlift Wing (AW), Charleston AFB, SC," May 6, 1996. Internal controls did not always provide reasonable assurance that utility costs were properly billed to reimbursable customers. Specifically, 3 activities occupying a total of 19 facilities were not billed for an estimated $400,355 in utility services. Also, civil engineering personnel did not install electric meters for two reimbursable customers with an estimated $238,000 in annual electric consumption. The report recommended that the BCE initiate action to compute utility reimbursement for the 19 identified facilities and bill users accordingly and provide utility reimbursement training to the utility engineer. Further, the report recommended that the BCE budget for approved meter installation, install meters, and bill customers. Management concurred with the findings and recommendations.

63. Audit Report No. 92296031, "Management of Energy Costs, 8th Fighter Wing, Kunsan AB, Korea," April 1, 1996. The BCE did not identify, prioritize, and approve energy investment projects nor implement an effective energy conservation program. Specifically, the BCE did not perform the required economic analyses, savings investment ratios, project payback periods, and energy savings validations for eight energy projects and had not initiated an energy awareness program to achieve energy reduction goals. The report recommended that the BCE identify and complete cost savings analyses for energy reduction projects, prioritize energy reduction projects, submit projects to Headquarters, Pacific Air Forces, for proper FEMP or Energy Conservation Investment Program funding, and perform the required savings validations after energy reduction projects are completed. The report also recommended that the BCE train building managers on energy conservation practices and develop a method of validation of energy saving as a result of the energy conservation program. Management concurred with the findings and recommendations.

64. Audit Report No. 50296024, "Management of Energy Costs, 89th Airlift Wing, Andrews AFB, MD," March 12, 1996. The management of energy costs needed improvement. BCE personnel did not properly identify energy reimbursable customers. In addition, BCE personnel did not require non-Federal activities to install meters to accurately measure actual electrical consumption. Further, the base energy manager input inaccurate energy consumption data into the DUERS. The report recommended that the wing commander direct all wing elements to send all existing memorandums of understanding with non-Federal organizations to the BCE for a determination of whether utility reimbursement is required, establish a system for sending future memorandums of understanding for a determination of whether utilities reimbursement is required, direct the BCE to coordinate with the base comptroller, take appropriate action to collect the amounts due from identified non-Federal organizations, and require non-Federal activities occupying separate

buildings to install meters at their own expense. The report also recommended that the base energy manager develop a procedure to verify data input into the DUERS. Management concurred with the findings and recommendations.

65. Audit Report No. 50296023, "Management of Energy Costs, 11th Wing, Bolling AFB, DC," February 28, 1996. The 11th Wing's management of energy costs was generally adequate. However, selected improvement was needed. One reimbursable customer was not billed for utility costs. Quarterly DUERS reports were not prepared or submitted. Utility sales agreements were not accomplished for reimbursable customers. The report recommended that the BCE direct the utilities systems engineer to bill the thrift shop for all reimbursable utilities, periodically review the DUERS reports to ensure that they have been prepared and submitted quarterly as required, and direct the utilities systems engineer accomplish and properly distribute utility sales agreements for all reimbursable customers.

66. Audit Report No. 41296009, "Management of Energy Costs, Space and Missile Systems Center, Los Angeles AFB, CA," February 20, 1996. The energy conservation program could be improved. Specifically, in calculations to prioritize nine energy reduction projects, the savings to investment ratio was improperly calculated, causing an average savings error of $36,413. In addition, outdated engineering estimates for utility consumption were used for non-metered base facilities. The report recommended that the BCE use the actual kilowatt for savings to investment ratio calculations, direct the financial manager to train the budget specialist on how to perform a detailed engineering estimate in accordance with Air Force Instruction 32-1061, "Providing Utilities to U.S. Air Force Installations," June 14, 1994, and require an annual detailed engineering estimate to be accomplished by December 1. Management concurred with the findings and recommendations.

67. Audit Report No. 91696010, "Management of Energy Costs, 366th Wing, Mountain Home AFB, ID," February 9, 1996. The base did not have a local procedure to systematically identify and prioritize energy reduction projects, relying on major command assistance to identify projects. The DUERS report was not accurate. Further, a formal energy awareness program did not exist at the base. The report recommended that the energy manager establish procedures to systematically accomplish prioritization surveys for each facility, develop and comply with an energy audit plan for comprehensive energy audits of each facility, periodically review DUERS reports and data entries for accuracy, and coordinate with the energy manager to establish a procedure to always include current square footage in DUERS. The report also recommended that the base civil engineer obtain a copy of the major command energy conservation program and develop a local program to comply with its requirements, require the energy manager to develop an energy awareness program that encompasses all wing units, and require a base energy steering group to periodically meet to identify and/or resolve energy issues. Management generally concurred with the findings and recommendations.

68. Audit Report No. 90496016, "Management of Energy Costs, 3d Wing, Elmendorf AFB, AK," February 7, 1996. BCE personnel did not achieve projected savings on two energy projects. These projects called for replacing 400-watt lights with 250-watt, high-pressure sodium lights in two hangars. Instead, the 400-watt lights were incorrectly replaced with 400-watt, high-pressure sodium lights. Civil engineering personnel made an error in two contracts' scope of work, which told the contractor to use 400-watt, high-pressure sodium lights. In addition, there was no requirement for energy management personnel to review the contract's scope of work to verify that the design would achieve the desired energy savings. As a result, approximately $103,000 in FEMP dollars was spent with no resulting savings to justify the expenditure. The report recommended that the base commander review the two hangar lighting projects and compute the new construction costs with energy projected savings, prioritize with future energy projects based on projected savings, and require that energy office personnel review the scopes of work for all future energy projects to verify that the design will achieve the desired energy savings. Management concurred with the finding and recommendations.

69. Audit Report No. 23296012, "Management of Energy Costs, 81st Training Wing, Keesler AFB, MS," January 31, 1996. The BCE did not bill one tenant for reimbursable utility costs. The report recommended that the BCE develop written procedures to bill the identified tenant for utility services at local prevailing utility sales rates and bill the identified tenant for future reimbursable utility services at local rates. Management concurred with the finding and recommendations.

70. Audit Report No. 52596014, "Management of Energy Costs, 4th Fighter Wing, Seymour Johnson AFB, NC," January 19, 1996. Civil Engineer personnel did not properly complete some utility reimbursement agreements. Specifically, some activities did not have reimbursement agreements, and some agreements did not have a utilities reimbursement rate schedule. In addition, the BCE energy manager did not have an approved, base-level energy management improvement plan. A plan was submitted, but the former wing management did not process the plan for approval. The report recommended that the BCE require the base energy manager to provide complete utility reimbursement agreements to all activities that are billed for utilities used, and that civil engineer management should verify that the base energy manager provides complete utility reimbursement agreements to all activities that are billed for utilities used. In addition, the report recommended that the BCE resubmit an energy management program plan for the wing commander's approval. Management concurred with the findings and recommendations.

71. Audit Report No. 22896009, "Management of Energy Costs, 319 Air Refueling Wing, Grand Forks AFB, ND," January 3, 1996. The report identified an energy investment project that was not properly developed and submitted for funding consideration. The report recommended that the BCE direct the energy manager to coordinate with appropriate personnel to submit a

package requesting energy program funds for the design and construction of the identified energy investment project. Management concurred with the finding and recommendation.

72. Audit Report No. 93296009, "Management of Energy Costs, 30th Space Wing, Vandenberg AFB, CA," December 29, 1995. Internal controls and operating procedures used to manage energy costs could be improved. Civil engineer personnel did not accurately report base energy consumption in the DUERS. For example, consumption for natural gas purchased from one vendor was not reported, and utility consumption was either excluded or double counted. The report recommended that the base energy manager review information in the DUERS system at least quarterly. Management concurred with the finding and recommendation.

73. Audit Report No. 91296005, "Management of Energy Costs, 56th Fighter Wing, Luke AFB, AZ," December 21, 1995. BCE personnel did not accurately report energy consumption in DUERS. Specifically, gas consumption was understated by 344 therms (a quarterly understatement of 1.9 percent) because the maintenance engineer used spreadsheets instead of utility bills as sources for gas consumption. In addition, electric consumption during May was overstated by 1,659 kilowatts (a quarterly overstatement of 7.6 percent). This occurred because the maintenance engineer did not verify the accuracy of electric consumption in May for hospital and military family housing by comparing utility bills to DUERS. Further, the number of buildings and square footage for the base was understated by 65 buildings and 103,000 square feet (an understatement of 3.3 percent of facility square footage used in DUERS) because the maintenance engineer did not obtain the correct data from real property records. The report recommended the Chief of Maintenance Engineering use monthly electric and gas utility billings as sources for quarterly DUERS input, compare source documents to DUERS for input accuracy, and obtain correct real property data for input to DUERS. Management concurred with the findings and recommendations.

74. Audit Report No. 51296017, "Management of Energy Costs, 65th Air Base Wing, Lajes Field, The Azores, Portugal," December 20, 1995. BCE personnel used outdated utility rates to bill reimbursable customers, causing undercharges of $229,289. In addition, BCE personnel also did not install utility meters as required. Further, utility sales agreements were not completed for four customers. The report recommended the squadron commander use current period rates to bill base organizations for reimbursable utilities received, establish procedures to ensure that utility rates are computed and implemented by December 1 of each year, purchase and install electricity meters to measure consumption at the organizations meeting criteria for meter installation, and require the base utility engineer to complete utility sales agreements for all organizations supplied with reimbursable utilities. Management concurred with the findings and recommendations.

75. Audit Report No. 44096010, "Management of Energy Costs, Oklahoma City Air Logistic Center, Tinker AFB, OK," December 20, 1995. BCE personnel incorrectly entered the quantity and cost of natural gas consumed for FY 1995 in the DUERS, by using gross amount of natural gas delivered instead of adjusted metered amount of natural gas received and using the cost for natural gas used for automobiles already included in energy used for heating and cooling operations. The report recommended that the 72nd Civil Engineer Commander instruct the utility engineer to develop a local checklist or other internal control procedure detailing the transfer of energy quantities purchased and their cost from the monthly utility bills into the DUERS. Management concurred with the finding and recommendation.

76. Audit Report No. 270960003, "Management of Energy Costs, 82d Training Wing, Sheppard AFB, TX," November 13, 1995. The base did not validate savings after completing energy investment projects, did not collect all reimbursable utility costs, and did not have a formal energy reduction plan. The report recommended that the 82nd Civil Engineering Squadron energy manager validate savings on the completed energy investment projects, place management emphasis on following established procedures to include validation of savings on future energy reductions projects, direct responsible personnel to review property records, identify all reimbursable customers, and develop an energy plan for FY 1996 through FY 2000 at least. Management concurred with the findings and recommendations.

77. Audit Report No. 93096011, "Management of Energy Costs, 9th Reconnaissance Wing, Beale AFB, CA," October 30, 1995. Although the base had neither a formal energy conservation program nor tailored energy reduction projects, the base had been successful in meeting its energy reduction goals with its approach of replacing and upgrading older buildings. However, BCE personnel did not properly identify and bill base organizations for utilities. The report recommended that the BCE change the current method of allocating electrical consumption to reflect the current consumption patterns of the base, review the utility allocation model to ensure that it accurately reflects actual consumption, investigate any questionable meter readings, replace the meters if necessary, revise all utility estimates for facilities without meters by December 1 of each year, and estimate the utility usage for base tenants identified and bill them if their usage is high enough to justify doing so. Management concurred with the findings and recommendations.

78. Audit Report No. 51696002, "Management of Energy Costs, Columbus AFB, MS," October 23, 1995. Columbus Air Force Base effectively managed energy costs during FY 1994 and FY 1995. Columbus Air Force Base properly approved and prioritized the energy investment projects, had an effective energy conservation program, and properly identified and billed reimbursable customers for utility costs.

79. Audit Report No. 24696004, "Management of Energy Costs, 71st Flying Training Wing, Vance AFB, OK," October 23, 1995. Management of energy costs was effective. Specifically, management properly approved and prioritized energy investment projects, had an effective energy conservation program, and also properly identified and billed reimbursable customers for utility costs. Base energy consumption was reduced by 23.07 percent from the 1985 baseline, well beyond the 11.5 percent reduction for FY 1995.

Appendix D. Matrix of Key Issues

Report Number	Conservation Programs	Energy Reporting	Utilities Management	Modernization Projects	ESPCs	Reimbursable Activities
General Accounting Office						
RCED-94-96			X		X	
RCED-94-140					X	
Inspector General, Department of Defense						
97-158	X			X		
97-070		X			X	
93-065	X		X			
Army Audit Agency						
FY 2001						
AA 01-822					X	
AA 01-183					X	
AA 01-718					X	
AA 01-135					X	
AA 01-74					X	
AA 01-73					X	
AA 01-72					X	
FY 2000						
AA 00-795					X	
AA 00-17					X	
FY 1999						
AA 99-399				X		
AA 99-363				X		
AA 99-367				X		
AA 99-765						
AA 99-233						
AA 99-225				X		
AA 99-221				X		
AA 99-183				X		

Report Number	Conservation Programs	Energy Reporting	Utilities Management	Modernization Projects	ESPCs	Reimbursable Activities
AA 99-184						
AA 99-189				X		
AA 99-188						
AA 99-181				X		
FY 1998						
AA 98-732				X		
AA 98-48						
FY 1997						
AA 97-157						
FY 1996						
AA 96-205						
FY 1995						
GR 95-10			X			
FY 1993						
WR 93-A		X				
WR 93-4	X					
Navy Audit Reports						
N2000-0003	X	X				
Air Force Audit Reports						
FY 2001						
DR001013			X			X
FY 1999						
EA099054						
EO099003			X	X		X
EO099001			X			X
FY 1998						
DD098010						
EL098054			X			X
EA098032			X			X

Report Number	Conservation Programs	Energy Reporting	Utilities Management	Modernization Projects	ESPCs	Reimbursable Activities
DD098008			X			X
DE098024			X			X
DD098006			X			X
DL098009			X			X
WN098019			X			X
WM098024			X			X
WP098026			X			X
WS098029			X		X	X
DK098008			X			X
DK098007	X		X			X
ER098020			X			X
WS098003			X			X
23398019						X
51198005	X		X			X
23398017						X
FY 1997						
51597025	X		X			X
24097018						
23397026						X
50697022	X	X	X			X
20997014						
FY 1996						
50496015						X
92296031	X					X
50296024	X	X	X			X
50296023	X	X				X
41296009	X					X
91696010	X	X				X
90496016	X				X	X
23296012	X					X
52596014	X					X

Report Number	Conservation Programs	Energy Reporting	Utilities Management	Modernization Projects	ESPCs	Reimbursable Activities
93296009	X	X				X
51296017	X		X			X
27096003	X					X
51696002	X					X
Totals	**25**	**10**	**27**	**14**	**13**	**43**

Appendix E. Report Distribution

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