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JUN 5 1976

Captain Henry L. Cassani, USN
Commanding Officer
Naval Air Station
South Weymouth, Massachusetts 02190 DLG 01021

Dear Captain Cassani:

We have completed a review of energy use at the Naval Air Station (NAS), South Weymouth, Massachusetts. The purpose of this review was to find out how effectively Government field installations were implementing the energy reduction program. The review included the:

--results of the energy conservation program,
--methods used to gather and report data on energy use,
--management of the energy conservation program,
--measures taken to reduce energy use in buildings,
--measures taken to reduce energy use by vehicles, and
--impact of energy conservation on mission and training operations.

RESULTS OF THE ENERGY CONSERVATION PROGRAM

NAS South Weymouth is responsible for maintaining and operating facilities and providing services and materials to support the air training of Marine and Naval Reservists.

Electricity, natural gas and various types of heating oil are the main types of energy used by NAS South Weymouth. Electricity is used for lighting and to power equipment. Natural gas and various types of oil are used for heating. Vehicles are powered by gasoline and diesel fuel and aircraft are powered by aviation gasoline and jet fuel.

In June 1973, the President directed all Federal agencies to use 7 percent less energy in fiscal year 1974 than in fiscal year 1973. In October 1974, the President directed the agencies to use 15 percent less energy in fiscal year 1975 than in fiscal year 1973.

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Our review showed that during fiscal year 1974, NAS South Weymouth, used less energy than in fiscal year 1973 except for gasoline, diesel fuel, aviation gasoline and jet fuel. During the first two quarters of fiscal year 1975, NAS South Weymouth used less energy than in the corresponding period in fiscal year 1973 except for electricity, gasoline,and jet fuel.

Type of Energy	Fiscal Year 1973	Fiscal Year 1974	Decrease (Increase) Amount	Decrease (Increase) Percent
Electricity (000 of kilowatt hours)	7,972	7,835	137	2
Natural Gas (000 of cubic feet)	17,269	15,400	1,869	11
Number 6 Fuel (000 of gallons)	806	736	70	9
Number 2 Fuel (000 of gallons)	127	113	14	11
Gasoline (000 of gallons)	73	77	(4)	(5)
Diesel Fuel (000 of gallons)	13	16	(3)	(23)
Aviation Gasoline (000 of gallons)	987	1,007	(20)	(2)
Jet Fuel (000 of gallons)	1,149	1,601	(452)	(39)

Type of Energy	2 Qtrs. of Fiscal Year 1973	2 Qtrs. of Fiscal Year 1974	Decrease (Increase) Amount	Decrease (Increase) Percent
Electricity (000 of kilowatt hours)	3,863	3,945	(82)	(2)
Natural Gas (000 of cubic feet)	7,671	4,133	3,538	46
Number 6 Fuel (000 of gallons)	309	292	17	6
Number 2 Fuel (000 of gallons)	54	47	7	13
Gasoline (000 of gallons)	37	46	(9)	(24)
Diesel Fuel (000 of gallons)	8	7	1	13
Aviation Gasoline (000 of gallons)	515	433	82	16
Jet Fuel (000 of gallons)	622	884	(262)	(42)

METHODS USED TO GATHER AND REPORT ENERGY USE DATA

The system used by NAS South Weymouth to gather and report data on energy use needs to be improved. As required by the Defense Energy Information System (DEIS), NAS submits monthly DEIS II reports to the Defense Supply Agency showing the fuel oil, electricity and natural gas used during the month.

NAS also submits quarterly energy use reports to the Northern Division, U.S. Naval Facilities Engineering Command, Philadelphia, Pennsylvania showing the amount of energy used during the current quarter except for aviation gas and jet fuel. Data for these reports is obtained from utility bills for electricity and gas and from meter

readings for fuel oil, motor gas and diesel fuel. An official of the Public Works Department told us that NAS does not report the use of aviation gas or jet fuel.

Our review showed that the energy use statistics submitted monthly in the DEIS II reports did not agree with those reported quarterly. Moreover, the reported energy use statistics generally did not agree with the periodic bills for the various forms of energy used. A Public Works Department official told us that the various reports are not compared and differences are not reconciled primarily because of a lack of time.

NAS gathers data on the electricity, natural gas, and number 2 fuel oil used by an off-station family housing area but does not report it. In February 1975, NAS asked the Chief of Naval Operations to waive DEIS reporting requirements for this housing area because it is scheduled to be closed by the summer of 1976.

We believe that NAS should revise the method used to gather data on energy use to ensure that complete and accurate usage data is reported.

MANAGEMENT OF THE CONSERVATION PROGRAM

NAS is responsible for the energy used in the NAS buildings and facilities, 165 on-post family housing units, and 221 off-post family units.

In November 1973 NAS South Weymouth established energy conservation teams consisting of military and civilian representatives from every department and tenant on station to manage the conservation program. The Station Commander, Executive Officer and Department heads meet weekly to plan future energy conservation efforts and review and evaluate present energy consumption reduction efforts. In November 1973, NAS issued a three phase energy conservation plan progressively reducing its operational functions to mission essential only. As of February 1975, phases 1 and 2 had been implemented.

NAS officials told us that increased responsibilities and the addition of new facilities have reduced the opportunity for further energy reductions.

The NAS energy conservation program director is a Lieutenant Commander who is assisted on a part-time basis by a Public Works Department official.

Some specific actions taken by NAS to make employees aware of the need for energy conservation include:

--issuing directives for equipment operation to reduce energy,

--placing energy conservation posters, announcements, and bulletins throughout the buildings,

--using a suggestion program to spur energy saving ideas, and

--printing articles on energy conservation in the official plan of the day.

NAS energy reduction program was reviewed by the Northern Division of the Naval Facilities Engineering Command in June 1974.

MEASURES TAKEN TO REDUCE ENERGY USED IN BUILDINGS

Electricity, natural gas and heating fuels are the main types of energy used in NAS buildings. As previously stated, NAS has generally reduced its use of these energy forms by various actions including:

--installing automatic heat controls on radiators in bachelor officers' quarters and hangar number 1,

--installing storm doors on Navy family housing units,

--shutting off runway taxi lights except when needed,

--removing outside flood lights,

--reducing temperatures in office spaces to 65 to 68 degrees,

--replacing wooden windows with thermopane ones in hangar number 1 office areas, and

--prohibiting the use of portable electric heaters.

A new Armed Forces Courier Service building and a new enlisted man's club which use electric heat have recently been constructed at NAS. Thus, additional measures will be needed to reduce the use of electricity or at least, to keep increases to a minimum.

MEASURES TAKEN TO REDUCE ENERGY USED BY VEHICLES

NAS has taken measures to reduce vehicle use such as combining vehicle trips where possible and discontinuing night security patrols. NAS has also taken steps to establish a car pool program to encourage employees to reduce their use of motor vehicles.

In January 1974, the Federal Energy Administration and the General Services Administration directed an overall 15-percent reduction in motor vehicle mileage from that driven in fiscal year 1973. The reduction applies to agency owned vehicles, commercially leased vehicles, and privately owned authorized for official travel. NAS vehicles traveled about 357,000 miles in fiscal year 1973 and about 385,000 miles in fiscal year 1974 an increase of 28,000 miles or 8 percent. NAS officials attributed the increase to added responsibilities.

A NAS official told us they were considering a plan to allocate 85 percent of 1973 gallonage to each department to reduce the use of gasoline. We believe this has some merit. We also believe NAS should analyze its vehicle use to see if further reductions could be made.

IMPACE OF ENERGY CONSERVATION ON MISSION AND TRAINING OPERATIONS

NAS officials told us that the current conservation goal has had no impact on the installations' training operations or ability to carry out its assigned mission.

As previously shown, aviation gasoline use increased 20,000 gallons in fiscal year 1974. Jet fuel use increased 452,000 gallons in fiscal year 1974, and 262,000 gallons through two quarters of fiscal year 1975. The Executive Officer attributed the increase to additional aircraft assigned to NAS, increased training requirements, and increased landings of government planes (transient aircraft). He also said that NAS has no control over the hours aircraft are to be flown for training--this is determined by the Commander, Naval Reserve, New Orleans, Louisiana--or the number of landings by transient aircraft. We believe NAS should analyze the use of aviation gasoline and jet fuel to see if reductions could be made.

CONCLUSIONS

Implementation of the Federal energy reduction program by NAS has generally been effective. Through various measures, and despite increased responsibilities, NAS has been able to reduce the use of some forms of energy without adversely affecting its operations.

The system used by NAS to gather data on energy use needs to be improved. For reporting purposes, NAS should insure that complete and accurate usage data is reported.

NAS does not report the energy used at an off-station family housing area, nor the use of aviation gas or jet fuel. NAS has not met the 1974 or 1975 Federal goals for energy reduction in gasoline, diesel fuel, jet fuel, and electricity and vehicle mileage has increased.

RECOMMENDATIONS

We recommend that NAS:

--revise the method used to gather and report energy use information to ensure that complete and accurate information is reported,

--analyze vehicle use to see if mileage can be reduced, and

--analyze the use of aviation gas and jet fuel and take steps to reduce consumption.

We would like to receive your comments on these matters within 30 days. I would like to express my appreciation for the cooperation given my staff by NAS personnel during our review.

Sincerely yours,

JOSEPH EDER

Joseph Eder
Regional Manager