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UNITED STATES GENERAL ACCOUNTING OFFICE
REGIONAL OFFICE
9226 FEDERAL BUILDING, SIXTH AND ARCH STREETS
PHILADELPHIA, PENNSYLVANIA 19106

June 13, 1975

Mr. Robert L. Faith, Director
National Aviation Facilities p. 4313
Experimental Center
Atlantic City, New Jersey 08405

Dear Mr. Faith:

The U.S. General Accounting Office is conducting a nationwide review of energy conservation programs at selected Government field activities. Our purpose is to evaluate the conservation efforts made to date and to identify opportunities to improve energy conservation practices. In this connection, we have completed a review of the energy conservation efforts undertaken at your installation. The purpose of this letter is to advise you of the results of this review and to suggest possible ways to improve your program.

Energy Conservation Measures

A number of energy conservation measures have been implemented at the National Aviation Facilities Experimental Center (NAFEC) within the past 2 years with respect to (1) buildings and grounds, (2) aircraft maintenance facilities, (3) aircraft flight activity and operations, and (4) motor vehicle operations. Some of these measures included:

--installing time clocks on thermostats to reduce heating during off-duty hours,

--resetting thermostats to 68 degrees and securing them to prevent subsequent changes by building occupants,

--inspecting, cleaning, and adjusting all boilers for maximum efficiency and lowering steam pressures in central boiler plants,

--caulking and sealing all windows and sealing window air conditioners to prevent air leakage,

--reducing interior and exterior lighting including aircraft runway lighting,

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--controlling operations and temperature settings of air conditioners,

--reusing noncontaminated jet fuel and contaiminated aviation gasoline taken from aircraft,

--reducing aircraft engine run-up time and aircraft taxiing,

--eliminating nonessential flights and deferring or combining low priority flights, and

--converting to compact vehicles for security force and reducing vehicle speeds and usage.

Energy Consumption

Energy conservation goals have been established for Federal agencies. Specifically, the President directed all Federal agencies to reduce their energy consumption by 7 percent in fiscal year 1974. A reduction of 15 percent below the energy consumed in fiscal year 1973 is the goal for fiscal year 1975.

The tabulation on the next page summarizes results of NAFEC's efforts in relation to the fiscal year 1973 baseline.

Energy source	Unit of measurement	Percent of change over comparable period in fiscal year 1973 (decrease) Fiscal year 1974	Fiscal year 1975
Electricity (note d)	Kilowatt hours	(7.3)	[a](11.4)
Fuel oil (note d)	Gallons	(3.4)	[a](13.4)
Diesel fuel (note d)	Gallons	(31.4)	[a](19.5)
Gasoline - special purpose vehicles (note d)	Gallons	(2.9)	[a](5.2)
Aviation fuel:			
FAA - aviation gas (note c)	Gallons	10.0	[b](30.4)
New Jersey Air National Guard - aviation gas (note c)	Gallons	65.5	[b]121.3
FAA - jet fuel (note c)	Gallons	(40.4)	[b]6.0
Air National Guard - jet fuel (note c)	Gallons	215.5	[b]296.5
Gasoline - general purpose vehicles (note c)	Mileage	(19.6)	[a](11.7)

[a]Includes 3 quarters of fiscal year.

[b]Includes aviation fuel issues through May 15, 1975.

[c]Computed by GAO based on data furnished by NAFEC personnel.

[d]Data obtained from reports submitted to Federal Aviation Administration (FAA) headquarters.

As can be seen, NAFEC has not met established goals for some areas of energy consumption. While we realize that varying mission requirements of NAFEC and the New Jersey Air National Guard, a tenant agency, may have precluded NAFEC from reaching established goals in some instances, we believe additional steps can be taken to improve the monitoring of energy conservation activities and reduce overall energy consumption. These are discussed below.

Need to Strengthen NAFEC's Energy Conservation Program

NAFEC needs to strengthen its energy conservation program by (1) reemphasizing the need for formal communication among energy conservation officials at NAFEC and (2) increasing the monitoring of the existing program.

On June 14, 1973, NAFEC established an Energy Conservation Committee comprised of various representatives from NAFEC and tenant activities. The committee was charged with the responsibility for (1) determining areas in which energy can be conserved and (2) developing recommendations to reduce energy usage. NAFEC's deputy director was designated as committee chairman. The committee has not formally met for about 7 months. During the final 3 of these months, the deputy director's position was vacant. On May 15, 1975, a new Energy Conservation Committee chairman was formally appointed. However, at the completion of our work at NAFEC on May 28, 1975, he had not yet called a committee meeting.

An energy conservation coordinator has also been appointed at NAFEC. We were advised that, because of his other duties as a branch chief in the Supporting Services Division, he spends less than 10 percent of his time on energy conservation matters. Consequently, he does not have the time to totally monitor program operations or ascertain that energy conservation efforts are continuing at an optimum level throughout NAFEC's 5,000 acres and 186 buildings. The energy conservation coordinator does not receive data on all energy consumed at NAFEC. Aviation fuel usage and general purpose vehicle mileage, for example, are reported directly to FAA headquarters by separate NAFEC activities.

We believe greater attention should be given to energy conservation at NAFEC. This can be accomplished through more frequent periodic meetings of the Energy Conservation Committee and intensified efforts on the part of the energy conservation coordinator. In this regard, the energy conservation coordinator should

--be provided with the time to adequately monitor program efforts, including those of the tenant activities and

--receive data on aviation fuel consumption and general purpose vehicle mileage to provide him with a basis for evaluating energy consumption in these areas.

Through the efforts of the Energy Conservation Committee and the energy conservation coordinator, further reductions in energy consumption should be achieved.

Need for an Engineering Survey

Lighting levels and thermostat settings at NAFEC indicate the need for an engineering survey of the entire plant facility, including tenant activities.

During our review at NAFEC, we accompanied a Supporting Services Division representative while he took light meter readings in 12 randomly selected buildings. The following chart shows the results of our study.

Summary of Light Meter Readings

Work Stations:	
Number tested	16
Number of readings taken	29
Number above GSA standards	26
Work Areas:	
Number tested	13
Number of readings taken	38
Number above GSA standards	31
Nonwork Areas:	
Number tested	11
Number of readings taken	25
Number above GSA standards	25

Light meter readings were taken in offices, laboratories, storage areas, and other work and nonwork areas. We found that readings exceeded 200 foot candles in some instances; however, we made no allowances for the natural lighting which we found to be prevalent in some of the buildings. In total, lighting levels exceeded GSA standards (i.e., work stations - 50 foot candles; work areas - 30 foot candles; nonwork areas - 10 foot candles) for over 89 percent of the readings taken.

Because the heating of buildings had ceased by May 22, we did not attempt to verify NAFEC's conformance to GSA standards. We did observe thermostat settings in the seven buildings we visited which had operational central air conditioning. In six of these seven buildings, thermostat settings were lower than the GSA standard of 78 to 80 degrees--averaging 65 degrees in one building and ranging from 72 to 76 degrees in the other five buildings.

An engineering survey, giving due consideration to (1) mission requirements in individual areas, (2) building layout, and (3) any other technical aspects deemed necessary, should identify areas of excessive energy consumption and provide the opportunity for further reductions. We recommend that such a survey be made.

Opportunity to Reduce Energy Consumption through Improvements to NAFEC Buildings

Improvements to NAFEC buildings could result in significant energy savings. Because of the age of many of the structures at NAFEC (i.e., World War II vintage), energy is being wasted through (1) inefficient heating, cooling, and lighting and (2) inadequate insulation. Although NAFEC is aware of specific improvements which are needed, we were advised that uncertainty as to the future status of NAFEC has prevented any serious consideration toward requesting the approximately $1.4 million required to make the improvements in existing buildings that would reduce energy consumption.

However, since we completed our work at NAFEC, a decision has been made by the Secretary of Transportation that NAFEC will remain open. It seems appropriate, therefore, that consideration again be given to requesting the funding necessary to make the energy saving improvements. In this connection, a study may be necessary to classify the necessary improvements in terms of cost versus energy saving.

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We appreciate the cooperation and assistance given us by your staff during our visit to your activity. Your comments on the matters discussed in this letter would be appreciated.

Sincerely yours,

Stanley E. Dyar

for Allen R. Voss
Regional Manager