



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

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May 28, 1975

Captain Grover Yowell, Commander  
Naval Air Development Center  
Warminster, Pennsylvania 18974

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Dear Captain Yowell:

We have completed a review of the energy conservation efforts undertaken at the Naval Air Development Center (Center), Warminster, Pennsylvania. This review is a part of a nation-wide review which the U.S. General Accounting Office is conducting at selected field activities. Specifically, our objectives were to (1) determine what energy conservation measures have been implemented, (2) ascertain the effectiveness of the energy conservation program, and (3) identify potential areas for further energy reduction.

Energy Conservation Program

The President has directed all Federal agencies to reduce their energy consumption by 7 percent in fiscal year 1974 and by 15 percent in fiscal year 1975 under that consumed in fiscal year 1973. In June 1974, the Chief of Naval Operations directed that all Navy shore installations should meet the energy conservation goal for fiscal year 1975. The directive also specified that energy consumption for space heating be reduced by 25 percent relative to fiscal year 1973, except for Government quarters, which have a reduction goal of 15 percent.

Our review disclosed that the Center has actively attempted to reduce the consumption of energy in its physical facilities, but had not established a program for the reduction of vehicular and aircraft fuels, and vehicle mileage. We did find, however, that the Center has encouraged the use of car pools by employees to conserve gasoline.

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The Center has established and implemented criteria to conserve energy in the operation of buildings and other facilities. These criteria include:

- Lighting levels shall be 50-foot candles at work stations, 30-foot candles in work areas, and 10-foot candles in nonwork areas.
- Heating season temperatures shall be no more than 68 degrees during working hours and reduced to 55-60 degrees during nonwork hours, if possible.
- Air conditioning temperatures shall be not lower than 78 degrees for human comfort.

Additional energy reduction measures implemented were the elimination of hot water in all washrooms and the utilization of smaller steam lines in the operation of the main heating plant.

#### Energy Consumption

We found that the Center has achieved energy reductions in the operation of the physical plant, particularly in the area of heating oil usage. In fiscal year 1974 and the first three quarters of fiscal year 1975, heating oil consumption decreased by about 22 percent compared to fiscal year 1973. Electricity savings have not been as significant due to increased demand associated with mission changes. In March 1975, the Naval Material Command authorized a 370,000 kilowatt hour per month adjustment to the fiscal year 1973 baseline to offset the increased mission requirements. Without the adjustment, electricity usage increased by over 6 percent during the first three quarters of fiscal year 1975, but decreased by about 10 percent after considering the adjustment.

We conducted a test of the lighting and temperature levels in several of the Center's buildings. We found that lighting levels, for the most part, did not exceed the established criteria, but there were several areas in which lighting levels appeared to be excessive. A Center official agreed with our observations and said that he would request a survey by an electrician. Temperature readings were inconclusive due to climatic conditions, a warm spring day, and nonoperating air conditioning equipment.

### Need for a Vehicle and Aircraft Conservation Program

Although efforts have been taken to conserve energy in the operation of the Center's physical facilities, it appears that little effort has been directed toward conservation of vehicle and aircraft fuel, and the reduction of motor vehicle mileage. We were unable to obtain any instructions or directives which specifically established a local energy conservation program for vehicles and aircraft.

Review of consumption data for fiscal year 1974 and the first three quarters of fiscal year 1975 showed that actual usage of these energy sources had generally increased. For example, automotive gasoline usage had increased about 8 percent during fiscal year 1974; automobile mileage also increased about 7 percent.

Regarding aircraft fuel, we were informed that the aircraft are an integral part of the research and development mission and are used for flight testing projects. Approximately one-half of the flights are for testing purposes with the remaining flights being made for pilot training. The executive officer of the Naval Air Facility advised that consumption of aviation fuel has been curtailed by having aircrew personnel obtain the maximum possible training on test flights provided the primary mission is not adversely affected.

However, our review showed that the formation of car pools by the Center employees was encouraged and appears to be successful. As of May 1975, 446 car pools had been organized with 1,081 employees participating. This number of car pools represents a 49-percent increase over those in operation in February 1974. A Center official advised that Center personnel on official travel have been instructed to form car pools if traveling to the same location.

### Future Energy Saving Actions

During our review, we noted the following actions which are being considered to further reduce consumption of energy.

- Installation of pre-set thermostats and storm sash in military housing.
- Perform janitorial services during working hours to the maximum extent possible.

The Naval Facilities Engineering Command conducted an energy survey of the Center during March 1975. The report is expected to contain recommendations for further reduction of energy consumption. A Center official advised that these recommendations will be implemented, if possible.

Conclusions and Recommendations

We believe the Center has devoted most of its efforts to conserving energy in the operation of the buildings and other facilities, but little action was taken to reduce consumption of vehicular and aircraft fuel and vehicle mileage. In the latter instance, car pooling has been, for the most part, the main area of concentration.

Accordingly, we recommend that the Center develop and implement an energy conservation program in the areas of vehicular and aircraft fuel, and vehicle mileage. Such a program should consider the Center's primary mission and not adversely impact on mission effectiveness.

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We appreciate the cooperation and assistance extended to us by members of your staff. Your comments on the matters discussed in this letter would be appreciated.

Sincerely yours,



Allen R. Voss  
Regional Manager