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UNITED STATES GENERAL ACCOUNTING OFFICE
REGIONAL OFFICE
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DENVER, COLORADO 80211

76-0144

SEP 5 1975

Mr. Lee B. Jett, Warden
Federal Youth Center
Bureau of Prisons
9595 W. Quincy Avenue
Englewood, Colorado 80110

Dear Mr. Jett:

We have completed our review of the effectiveness of the Government's energy reduction program at the Federal Youth Center. Our review at the Center was part of a nationwide study conducted at selected departments and agencies to determine how effectively the Government's energy reduction program is being implemented.

We reviewed regulations, analyzed data used to measure the Center's success, and interviewed personnel. We reviewed controls to reduce fuel consumption by vehicles and in buildings, and determined the possible impact of energy conservation on mission and training operations.

In our opinion the Center has met the President's energy conservation goals in its use of heating and vehicular fuels during fiscal year 1974 and the first half of fiscal year 1975. Although the Center has taken steps to reduce the consumption of electrical energy, the reduction has not consistently met the President's goals.

ENERGY CONSERVATION GOALS

In June 1973, the President directed all Federal agencies to reduce their energy consumption by 7 percent in fiscal year 1974 and subsequently directed that additional actions be taken to reduce energy consumption still further. In October 1974, the President directed the agencies to reduce their energy consumption in fiscal year 1975 by 15 percent under that consumed in fiscal year 1973. The actual energy consumption for fiscal year 1973, adjusted to reflect changes in programs, personnel levels, occupied space, etc., is used as the baseline against which to measure agencies' performance in saving energy.

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ENERGY CONSERVATION STATISTICS

Prior to our contact with the Center, Energy Conservation Performance Reports had been prepared for the second, third, and fourth quarters of fiscal year 1974, and for the first and second quarters of fiscal year 1975. Although no report had been prepared for the first quarter of fiscal year 1974, the Center's system of collecting energy consumption data appears to be effective. We computed the figures for the first quarter of fiscal year 1974 from source documents.

Errors observed in the Center's reported figures included

--unsupported adjustment of fiscal year 1973 electricity consumption by refrigeration units,

--exclusion of natural gas consumption by the kitchen,

--inclusion of energy consumption in employees' housing, which is not controllable by the institution,

--use of fiscal year 1974 data as baseline data for fiscal year 1975 reports, and

--failure to adjust baseline data when a new gymnasium was added to the facility.

A problem observed in the reports was the separate reporting of natural gas and fuel oil consumption. Both energy sources are used for the same purposes--heating of the facility, kitchen use, and laundry use. Changes from one fuel to the other resulted in misleading reported percentage reductions of one or the other fuels.

Prior to our leaving the Center the energy conservation coordinator prepared corrected Energy Conservation Performance Reports.

The following summary compares the Center's energy consumption by quarter for fiscal years 1973, 1974, and 1975.

Fiscal quarter	Type of energy (note a)	Actual use FY 1973	Adjusted base FY 1973	Actual use FY 1974	Percent reduction/ increase	Adjusted base FY 1973	Actual use FY 1975	Percent reduction/ increase
1st	Tot. equiv. nat. gas	6,196,800	6,196,800	6,104,100	- 1	6,401,294	6,668,400	+ 4
	Electricity	373,100	382,640	451,500	+18	394,952	401,100	+ 2
2nd	Tot. equiv. nat. gas	26,229,779	26,229,779	20,671,993	-21	27,095,407	18,301,514	-32
	Electricity	413,000	417,770	401,800	- 4	431,399	368,200	-15
3rd	Tot. equiv. nat. gas	30,890,507	31,909,909	27,723,921	-13	- -	- -	- -
	Electricity	415,800	429,521	388,500	-10	- -	- -	- -
4th	Tot. equiv. nat. gas	19,082,693	19,712,364	15,188,600	-23	- -	- -	- -
	Electricity	410,200	423,737	353,500	-17	- -	- -	- -
Totals	Equivalent nat. gas		84,048,852	69,688,614	-17	33,496,701	24,969,914	-25
	Electricity		1,653,668	1,595,300	- 4	826,351	769,300	- 7

[a]Total equivalent natural gas is shown in standard cubic feet (SCF). The total is derived by adding the actual SCF of gas used to the SCF gas equivalent of fuel oil used. Electricity used is shown in kilowatt hours.

MANAGEMENT OF CONSERVATION PROGRAM

The Center has an energy conservation coordinator with authority to establish and coordinate an energy conservation program fully responsive to current directives issued by the Federal Energy Administration, the General Services Administration (GSA) and other regulatory offices. The Bureau of Prisons (BOP), in a Policy Statement on its Energy Conservation Program (31300.5A dated April 24, 1974), authorized this position; however, a coordinator was not appointed until January 6, 1975. Five energy conservation monitors were also appointed. At the time of our review a formal conservation program was being developed.

The chief of utilities was appointed as coordinator and the energy conservation monitors appointed by the coordinator on February 19, 1975, are

--the food service administrator,

--an education coordinator,

--the president of the staffs' union,

--the garage foreman, and

--the upper east wing unit manager.

The function of the monitors was to ensure that environmental conditions were maintained within prescribed guidelines. Their duties included monitoring heat, light, and water usage in their respective areas and reporting abuses to the coordinator.

Audit by an independent group

No audit or other independent review of the energy conservation program had been performed at the time of our review.

Innovated conservation programs

The Center was installing a deaerating feedwater heater which will save in two ways:

--The heater will remove oxygen, carbon dioxide, and carbonic acid from the water thereby prolonging the life of the pipes.

--Prior to the water being converted to steam, the heater will preheat the water as much as 16° more than the old system.

Fuel savings from the additional preheating was expected to be about 5 percent. During the months from June through September, the Center shuts off its powerplant from 9:00 p.m. until 4:00 a.m. each day.

In its fiscal year 1976 budget the Center requested that boiler combustion controls be calibrated and balanced, resulting in automatic adjustment of fuel consumption by the boiler burners. This process was expected to result in a 2 to 4 percent fuel saving.

CONTROLS TO REDUCE ENERGY CONSUMPTION BY VEHICLES

Since April 1974, the Center has decreased its vehicle inventory from 20 to 11 vehicles. Vehicles were dispatched through a central office to assure combining trips where possible.

The Center's garage foreman said he has been told by GSA that when the sedans have sufficient mileage, they will be replaced with compact vehicles.

For vehicles at the Center, fuel consumption (rather than mileage) is reported. Fuel consumption by vehicles has been significantly reduced.

The following summary compares vehicle fuel consumption in gallons for fiscal years 1973, 1974, and 1975. Gasoline and diesel fuel were combined since use of diesel fuel was minor.

Fiscal quarter	Gallons FY 1973	Gallons FY 1974	Percent reduction	Gallons FY 1975	Percent reduction
1st	6,221	5,814	- 7	4,840	-22
2nd	5,272	4,685	-11	4,258	-19
3rd	5,361	4,039	-25		
4th	6,198	4,598	-26		
Totals	23,052	19,136	-17		
First 2 quarters	11,493			9,098	-21

The energy conservation coordinator said that parking space assignments to encourage carpooling had not been made. The lot was close enough so that only a short walk was necessary from any space to the facility. This closeness did not make parking space assignments practical.

The use of vans to transport residents to and from work release stations was a matter of policy--not energy conservation. However, as an energy conservation measure, residents were transported only to public transportation where practical, rather than to their ultimate destination.

Driving techniques for fuel conservation were not publicized at the Center. Maintenance was performed on assigned vehicles in accordance with GSA maintenance schedules. The schedules were monitored by GSA to assure that the maintenance was performed.

The garage foreman said gasoline for vehicles was controlled by the driver recording in a log book the gallons pumped into each vehicle. The log book data is transferred to individual vehicle records on a daily basis. The gallons recorded were checked against pump meter readings. The individual vehicle records were transferred to monthly reports, which were used as source documents for the Energy Conservation Performance Reports.

CONTROLS TO REDUCE ENERGY CONSUMED IN BUILDINGS AND OTHER FACILITIES

The changes made by the energy conservation coordinator in the operation of buildings to conserve energy were:

--Thermostats were generally set at 80° during the cooling season, and at 68° during the heating season.

--Thermostats were encased, and locked.

--Lighting levels were reduced to comply with BOP's Policy Statement 31300.5A.

The buildings had monitors to assure conservation of energy. We determined that lighting, heating, and cooling standards were being met. All the facilities at the Center were being utilized.

Control of utilities at the Center

The Center was heated by steam controlled from the powerhouse. Heat was normally regulated by thermostats, except in the dormitories. The dormitories had no thermostats because it was believed the residents would destroy them; instead they had "weather stats." These are instruments which adjust the inside temperature based on the outside temperature.

There were perimeter lights which were turned on and off by a "sensing device." These lights could not be eliminated because of the nature of the institution.

IMPACT OF ENERGY CONSERVATION ON MISSION AND TRAINING OPERATIONS

Travel expenses for training were reduced substantially at the Center. Introductory training was retained, but advanced and specialized training were changed or cut back. Some advanced training was still accomplished at the Center, but some employees were denied specialized training.

The warden and the training coordinator said that gasoline restrictions caused increased commercial travel and cost. Training was reduced in order to reduce commercial travel cost. They said that eventually this would affect the staff's ability to relate to the residents and would adversely affect the Center's mission.

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We appreciate the cooperation received from your staff. We will be glad to discuss the results of our work with you or your staff if you desire.

Sincerely yours,

Irwin M. D'Addario
Regional Manager