

FH REG 420-9

FACILITIES ENGINEERING

# ENERGY CONSERVATION PROGRAM



HEADQUARTERS  
III CORPS AND FORT HOOD

11 May 1992

Facilities Engineering  
ENERGY CONSERVATION PROGRAM

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**SUMMARY.** This regulation establishes the policy and procedures for the III Corps and Fort Hood Energy Conservation Program.

**APPLICABILITY.** This regulation applies to all units and activities assigned, attached, conducting training, or residing on Fort Hood as tenants; contractor activities on Fort Hood and all organizations with leases using Fort Hood utilities; persons using Fort Hood utilities; and off-post facilities and other areas where III Corps and Fort Hood operates.

**INTERIM CHANGES.** Interim changes to this regulation are not official unless they are authenticated by the Directorate of Information Management. Users will destroy interim changes on their expiration date unless sooner superseded or rescinded.

**SUPPLEMENTATION.** Supplementation of this regulation is prohibited without prior approval of the Directorate of Engineering and Housing (DEH).

**SUGGESTED IMPROVEMENTS.** The proponent of this regulation is DEH. Users are invited to send comments and suggested improvements to the Commander, III Corps and Fort Hood, ATTN: AFZF-DE-ENV.

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\*This regulation supersedes FH Regulation 420-9, 9 August 1985.

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OVERVIEW

1

Purpose

This regulation prescribes policies, assigns responsibilities, and establishes procedures for the III Corps and Fort Hood Energy Conservation Program.

1a

References

Required and related references cited in this regulation are listed in appendix A. Referenced forms are also listed in appendix A.

1b

Explanation of Abbreviations and Terms

Abbreviations and terms used in this regulation are explained in the glossary.

1c

Guidelines

Effective energy management is a culmination of

- common sense,
- imagination, and
- innovative programs.

Ongoing energy awareness programs are required to achieve significant energy savings.

1d

RESPONSIBILITIES

2

Commanders, Directors, and Activity Chiefs

Commanders, directors, and activity chiefs will

- include energy management as a special topic during staff and command inspection team visits per AR 1-201.
- personally and actively promote command and community energy awareness.
- develop and maintain active command or unit energy programs.
- appoint an energy conservation officer (ECO) in writing at each level of command down to battalion and separate company levels.
  - directorates will appoint an ECO down to division level.

NOTE: ECOs may be commissioned officers, warrant officers, noncommissioned officers, sergeant first class or above, or civilians in the case of nonmilitary activities. In cases where ECOs are responsible for multiple facilities, the appointment of an assistant building energy monitor (BEM) to the ECO is highly recommended.

- ensure that the installation ECO roster, maintained by the installation energy coordinator, is updated annually (January through February is the recommended time period for such update.)

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Commanders,  
Directors, and  
Activity Chiefs  
(cont)

- 
- instruct subordinates to use the least amount of utilities and mobility energy required for the mission.
  - develop and publicize policies to achieve economical use of electrical appliances.
  - ensure exterior lights are turned on and off at a reasonable time, optimizing use of daylight.
  - identify DEH controlled, high voltage equipment whose operation can be limited during peak electrical demand periods.
  - use the incentive awards program to promote and recognize energy conservation.

2a

DEH

DEH will

- appoint the Fort Hood Energy Coordinator (FHEC).
- in order to implement this regulation, provide
  - training,
  - guidance,
  - goals, and
  - information.
- giving adequate consideration to economics and benefit factors, incorporate the latest
  - technology,
  - energy conservation techniques,
  - procedures, and
  - materials in the design of new facilities and renovation projects.
- conduct scheduled surveys of energy conservation practices at
  - units,
  - directorates, and
  - activities.
- conduct unannounced inquiries in the event circumstances warrant immediate correction, such as
  - exterior lights being left on during daylight hours,
  - windows being left open while facilities are being heated or air-conditioned, or
  - water being unduly wasted at washracks.

2b

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 ECOs and  
BEMs

ECOs and their appointed assistants (BEMs) will

- administer a productive energy conservation program for their organization.
- advise their commander on matters related to this regulation.
- maintain reference publications that provide a source of technical information pertinent to energy conservation to include the Department of the Army (DA) BEM Handbook (these reference publications can be obtained from the DEH Energy Conservation Branch).
- maintain standing operating procedures (SOP) by
  - prescribing specific responsibilities for energy conservation in the organization.
  - outlining policies which may be unique to the facilities and equipment used or controlled by the organization.
  - prescribing the local plan for managing their energy conservation program, without duplicating the information given by this regulation.
- conduct facility inspections under their organizational control using FH Form 1073 as a guide.
- identify user-controlled, high voltage (greater than 120 volts) electrical equipment in their facilities using FH Form 1073 as a guide (see paragraph 11e).
- publicize energy conservation requirements, including displaying DA and FH posters on bulletin boards and light switches.

NOTE: Posting of such publications should be sparingly so as not to exhibit a cluttered atmosphere.

- conduct training in support of the policies prescribed by this regulation.

2c

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## PAOs

Public affairs officers (PAO) will

- provide and maintain a single point of contact (POC) to expedite staff actions on energy matters.
- provide FHEC with the POC
  - name,
  - location, and
  - telephone number.
- Publish information concerning energy-related topics through the Fort Hood media network.

2d

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Family  
Housing  
Occupants

Family housing occupants will

- comply with the pertinent policies and procedures discussed in this regulation.
- practice energy conservation as is reasonably expected of a prudent homeowner, one who is responsible for paying the utility bills.

2e

POLICY

3

Energy  
Conservation

The energy conservation program will not impair

- command combat readiness,
- training,
- health, and
- safety.

This program will be considered when planning and executing

- military operations and
- quality-of-life functions.

Energy resources will be intensively managed.

Decisions are based on sound economic analysis and common sense in order to manage resources in the most cost effective and practical manner.

Energy efficiency and availability is a factor in the decisionmaking process and is stressed in the

- design,
- development,
- procurement, and
- operation of
  - equipment,
  - weapons systems, and
  - facilities.

The Surgeon General (TSG) develops criteria for the Army Medical Departments energy policies governing

- lighting,
- humidity,
- heating, and
- cooling.

(continued on next page)

Energy Conservation (cont)

NOTE: Medical facilities will adhere to all portions of this regulation which do not impose a health concern.

Energy awareness will be continuously promoted at all levels to eliminate energy waste.

3a

Electrical Demand Reduction

Because of the installation's rapid growth, a greater demand is placed on utility systems and on the resources to pay for them.

Electrical use should be limited, when possible, during the peak electrical demand (PED) period.

Some practical ways to achieve demand reduction are

- in family housing, use clothes dryers and washers before 1300 or after 1600.
- in the work place, perform electricity-intensive operations outside PED whenever possible.
- adhere to time restriction for watering lawns as described by the yearly approved command watering policy.

3b

Exceptions to Policy

Activities or units may request an exception to policy where special equipment or unusual circumstances demand a specific temperature or procedure conflicting with this regulation.

Activities or units requesting an exception to policy will include the

- organization,
- address,
- POC with phone number,
- facility location, and
- justification for request.

NOTE: Send a memorandum requesting an exception to policy to DEH, ATTN: Environmental Management Office (appendix B contains a sample).

Upon receipt of request, the DEH Energy Conservation Branch will conduct a field survey to determine disposition of request.

For air-conditioning, the exception will be categorized as climatic control.

Once approved, facilities are permanently placed on file pending annual review by DEH.

NOTE: If a change in mission is noted, DEH notifies the user of pending removal from the file list. The user will have 14 working days to reply with justification. Once removed, a facility must resubmit a request for exception to policy.

3c

Facilities and Building Management

Energy consumption in facilities should be reduced through low to no cost, common sense management actions such as

- establish an organizational energy SOP.
- control heating and cooling systems by some form of a Utility Control System (UCS) such as
  - frequency modulation (FM) controls,
  - timers,
  - other programmable devices, or
  - a base-wide UCS.
- adhere to proper adjustment of thermostat and other controls as shown in table 3-1.
- adhere to proper adjustment of domestic hot water temperature as shown in table 3-1.
- remove lamps from fixtures in the event of excess lighting.
- closing doors and windows to prevent loss of energy required for heating and cooling.
- ensure the appointment and training of ECOs and BEMs.
- install utility metering equipment (metering will foster energy awareness and good energy management).

3d

AAFES

The Army and Air Force Exchange Service (AAFES) follows the policies and procedures prescribed by ESM 36-1.

3e

Energy Conservation Surveys

Organizations may request energy surveys or studies of their facilities.

Typical surveys are for

- lighting,
- air-conditioning, and
- heating.

However, any energy related survey may be requested.

NOTE: Requester should submit a memorandum for specific survey to DEH, ATTN: Environmental Management Office.

3f

Energy Hot Line

Everyone is encouraged to use the Energy Hot Line (287-SAVE) to suggest

- energy saving ideas,
- report energy waste, or
- comment on any topic related to the DEH Energy Conservation Program.

The Hot Line is monitored from 0730 to 1600 Monday through Friday, excluding holidays.

3g

Table 3-1. Prescribed temperatures (Fahrenheit)

Area	Heating Temp Range (1)	Cooling Temp Range (1)	Hot Water Temp (2) *
Family Quarters	65 - 70	75 - 80	95
Troop Living	65 - 70	75 - 80	95
Administrative Areas	65 - 70	75 - 80	NA (3)
Dining Facility	65 - 70	75 - 80	General use 140 Prewash 160 Final rinse 180
Recreation	65 - 70	75 - 80	96
Motor Pools	50 - 65	NA	NA
Dental Clinics	70 - 75	70 - 75	140
Medical Clinics	70 - 75	70 - 75	140
Child Care	70 - 75	70 - 75	95
Operating-Delivery	70 - 75	65 - 70	140
Intensive Care	75 - 80	70 - 75	140
Paint Shop	75 - 80	NA	NA
Warehouse	55 - 60	NA	NA
Automated Facility	PMS	PMS	NA

- (1) space temperature
- (2) temperature at the destination
- (3) 95° for administrative shower facilities only
- PMS per manufacturer's specification (with DEH exception)
- NA not applicable
- \* not to exceed without DEH exception

AIR-CONDITIONING AND HEATING PROCEDURES

4

Air Vents,  
Ducts, and  
Returns

Obstructions (such as furniture or drapes) will not block

- vents,
- air returns, and
- air ducts.

Blockage prevents efficient operation of the air circulation system which increases energy consumption.

4a

Windows  
and Doors

Keep windows closed and open exterior doors as little as possible when the air-conditioning or heating system is in use.

4b

Correcting  
Deficiencies

Correct energy wasting deficiencies such as

- defective weather stripping,
- broken windows,
- inoperative door closers, and
- defective thermostats.

If the unit self-help team cannot correct deficiencies, request assistance from DEH, 287-2113.

Family housing occupants request repairs through the maintenance contractor, 532-3133.

4c

Filters

Inspect filters a minimum of once a month, and replace disposable filters at least every 90 days.

Clean permanent (nondisposable) filters according to instructions on the equipment.

- This task should be performed by the unit self-help team according to FH Regulation 420-27, paragraph 3d.
- The maintenance contractor, 532-3133, performs this task in family housing quarters.

4d

Thermostats

Thermostats settings must comply with the temperature requirements prescribed in table 3-1 (also see figure 4-1).

At the end of each working day in work areas where the thermostat is readily accessible, the occupant turns off the air-conditioning or sets the heating thermostat to 55 degrees Fahrenheit or lower.

The same policy applies when any facility is expected to be unoccupied for more than 8 hours, unless damage to the facility or its contents would result.

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**Thermostats  
(cont)**

Turn off air-conditioning equipment which is not controlled by a thermostat when the outside temperature is lower than 78 degrees Fahrenheit.

Turn off heating equipment when the outside temperature is greater than 65 degrees Fahrenheit.

Do not locate heat generating appliances near thermostats.

- Operation of the heating or air-conditioning equipment may be adversely affected by heat generated by the use of
  - television sets,
  - refrigerators, and
  - other appliances.

---

4e

**Temperature  
Compliance**

Energy consumed for heating and cooling space will be carefully controlled and monitored.

Table 3-1 illustrates the prescribed temperature ranges for various types of facilities.

All reasonable effort should be made to maintain temperatures that result in the least consumption of energy.

Figure 4-1 illustrates the savings due to energy conservation.

If several occupied rooms are serviced by the same air duct system, and temperature is controlled by a single thermostat, the lowest room space temperature determines compliance for heating, and the highest room space temperature determines compliance for cooling.

---

4f

**Thermal and  
Solar Gain**

Keep draperies and blinds closed on the sunny side of the building during the cooling season and open on sunny days during the heating season.

Turn off unwarranted lights to lessen the load to air-conditioner systems.

---

4g

**Supplemental  
Equipment**

Portable space heaters are prohibited.

Electric space heaters may be permitted only when an exception to policy (paragraph 3b) is granted in writing by DEH.

The criteria in AR 420-54, chapters 1 through 5, govern requests for supplemental or new air-conditioning equipment.

Space temperature in buildings where thermostats are not accessible to occupants is checked by the DEH Energy Conservation Branch during surveys.

Discrepancies are reported to the DEH Work Services Branch per FH Reg 420-27, appendix A.

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4h

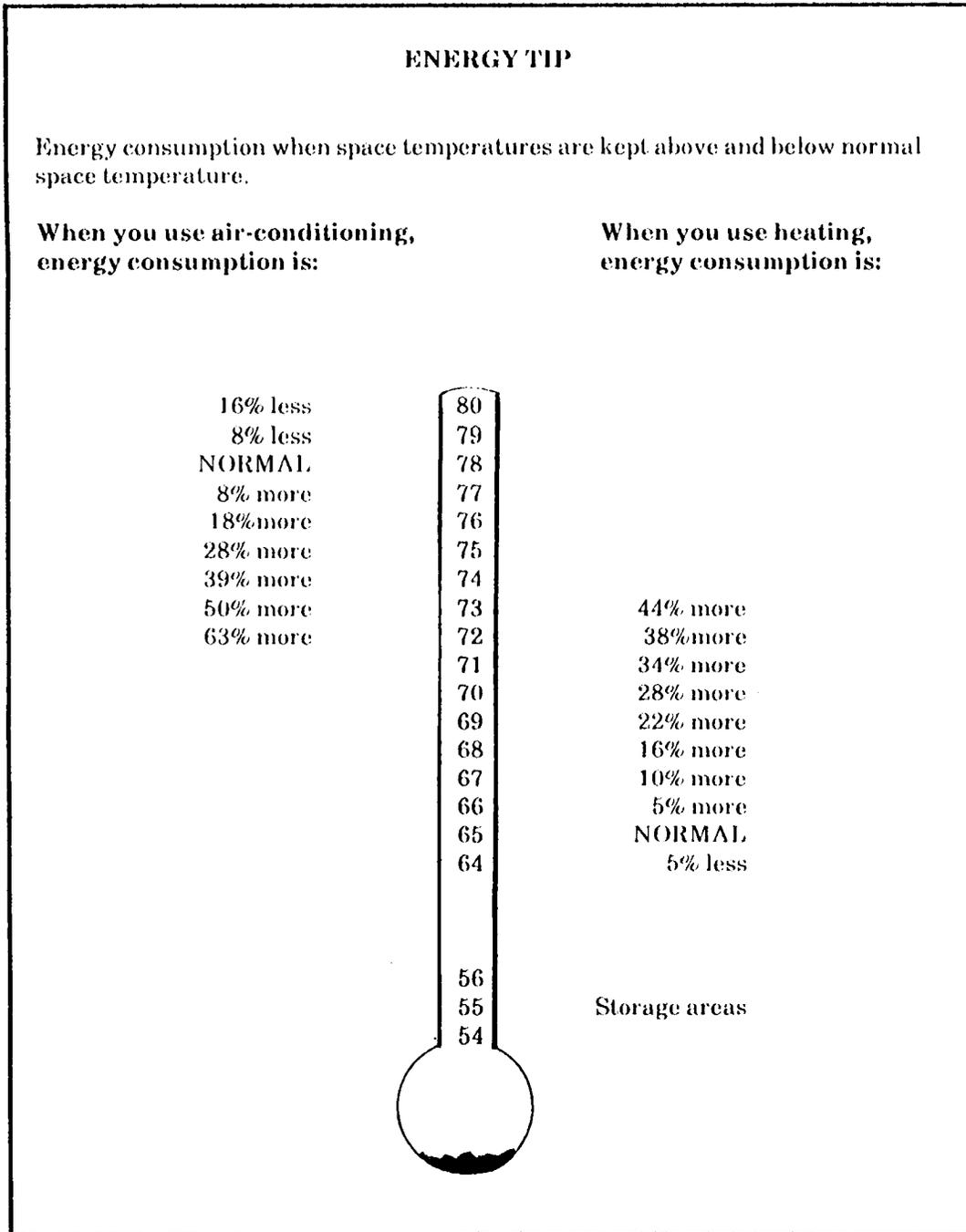


Figure 4-1. Relation of space temperature to energy consumption (Fahrenheit)

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WATER PROCEDURES

5

**Routine Use** Maintain faucets, valves, and bathroom fixtures in good repair.

After each use, all faucets or valves must be closed.

Water leaks from any source must be stopped promptly.

Pavement washing should be avoided (shovel or sweep away debris).

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5a

**Hot Water** Use hot water only when the task requires it.

Water temperature will be regulated as prescribed in table 3-1.

Without written exception from DEH, hot water is not authorized in

- administrative areas,
- motor pools,
- paint shops, and
- warehouses .

NOTE: Administrative buildings with shower facilities are authorized hot water for those facilities.

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5b

**Vehicle Washes** Track vehicles returning from training missions are prewashed at the nearest operational tactical vehicle wash facilities (birdbath).

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5c

**Lawn Sprinklers** Lawn watering should be kept to a minimum.

Consider the demand reduction policy prior to watering lawns.

Lawn sprinklers should not be

- left operating unsupervised or
- in one spot as to cause excessive saturation or wasteful runoff.

Exceptions must be submitted to DEH per paragraph 3b.

A yearly command approved water conservation policy is distributed by the DEH Energy Conservation Branch concerning water usage during the summer.

---

5d

LIGHTING PROCEDURES

6

Conservation

Turn off lights in unoccupied areas and use only the lighting essential to a particular endeavor.

Exterior lighting must be "off" during daylight hours and must be reduced to the minimum essential for safety and security purposes as required by FM 19-30, chapter 6.

Army requirements for exterior security or fire lights over building doors are nonexistent.

- This type of lighting should be used when no other security lighting source exist, for example
  - high mast lighting and
  - parking lot lighting.

Reduce the wattage of lighting whenever possible, particularly in seldom used areas such as storage areas and utility rooms.

Lighting should be reduced by disconnecting nonessential

- lamps,
- ballasts, or
- fixtures.

The replacement of low-efficiency lamps with high-efficiency lamps should be implemented.

Replace fluorescent tubes which are blackened on the ends (blackened tubes emit half the light of a new tube).

Only DEH disassembles unneeded lighting fixtures or ballasts.

Assistance may be requested from DEH by calling 287-2113.

6a

Lighting Athletic Facilities

Manage the lighting systems at indoor or outdoor athletic facilities to prevent waste of electricity.

Turn off unnecessary lighting during periods when these facilities are unoccupied and when daylight is adequate.

Lighting at outdoor athletic facilities should not be used for normal security or crime prevention purposes.

6b

Illumination Intensities

The general illumination intensity requirements are prescribed in table 6-1.

DEH will assist in determining the required intensities to provide a safe and productive environment.

6c

Ornamental Lighting

Reasonable use of inside and outside electrical ornamental lighting is authorized during the Christmas season.

Lighting is only authorized in family housing areas and public assembly areas designated by the Garrison Commander to exhibit the spirit of the season.

Lighting arrangements should be kept to a reasonable minimum.

All ornamental lighting must be turned off after 2300 and during daylight hours.

To avoid the possibility of fire, lighting should be carefully

- inspected,
- controlled, and
- monitored .

The Christmas season is defined as the period between 1 December through 1 January, New Year's Day.

6d

Table 6-1. Light intensities for a safe and productive environment

Area*	Footcandles (1)
Family quarters	10-50
Work station (desk, table, drafting, etc.)	50
Conference room	30
Class room	30-50
Warehouse	30
Nonworking areas (halls, corridors, etc.)	10
Troop living	30

(1) Not to exceed without DEH exception

\* Lamp wattages will not exceed equipment manufacturer's specified rating

UTILITY METERING

7

Individual Buildings

Individual building metering is the best method to

- evaluate building modifications,
- monitor energy consumption, and
- identify peak energy characteristics.

This information allows the DEH Energy Conservation Branch to establish normal energy use patterns (baselines) for a particular building type.

These baselines are used to validate studies by comparing actual energy savings (resulting from conservation retrofit measures) with predicted energy savings.

7a

Metering Data

Metering data is disseminated among DEH maintenance shops to help identify equipment deficiencies.

Metering data can also be used to instill competition within organizations and among units.

This will help increase the facility users awareness of the energy they consume which will further assist efforts to reduce energy consumption and cost.

7b

Construction Projects

Utility meters should be incorporated into all major new construction and retrofit projects.

7c

General Metering Criteria

Activities which reimburse Fort Hood for utilities will install meters in new facilities and when existing service lines are upgraded.

For facilities serving activities which do not reimburse Fort Hood for utilities, metering devices will be installed in certain instances.

All the facilities listed in appendix C will be considered for metering devices.

Criteria in paragraphs 7e, 7f, and 7g shall be used to determine which meters are required.

Other facilities (not listed in appendix C) meeting the criteria should also be considered.

If an electrical meter is deemed appropriate, a gas meter should be given stronger consideration.

7d

Electric Metering Criteria

Electric metering is required when

- total electrical demand is greater than or equal to 48 kilowatts and
- estimated peak demand is greater than or equal to 25 kilowatts.

7e

Natural Gas Metering Criteria

Natural gas metering is required when

- total design flow rate is greater than 1000 cubic feet per hour and
- design heating load is greater than 25 british thermal unit/square foot (BTU/SF).

7f

Water Metering Criteria

Water metering is required when design load is greater than or equal to 3 million gallons a year.

7g

Remote Metering

Single point or multiple system telemetry (remote) metering should be considered for installation in lieu of standard metering devices.

Remote metering provides rapid and accurate meter reading with little or no additional manpower required to

- locate,
- record, and
- log utility readings.

Remote metering allows hourly meter readings which can be used to establish a facility's daily operation energy profile.

This profile can be used to determine low or no cost energy consumption reduction opportunities for potential energy savings.

7h

ELECTRICAL APPLIANCES

8

Safety

All electrical appliances are subject to applicable safety regulations and FH Regulation 420-1, paragraph 2-22.

Cooking appliances are prohibited in sleeping areas per change 1 to FH Reg 420-1, paragraph 2-22(5)g without written exception from DEH.

In unoccupied rooms, turn off

- radios,
- stereos, and
- television sets .

(continued on next page)

Safety  
(cont)

Limit the use of electrical appliances for ornamental purposes such as

- aquariums,
- electric mobiles,
- disco lights.

Use of specific ornamental appliances in areas of public assembly (clubs, day rooms, libraries) may be authorized by

- commanders,
- directors, and
- activity chiefs.

8a

Washers and  
Dryers

Users are encouraged to use cold or warm water instead of hot water for all laundry except white garments and heavily soiled fabrics.

Washers and dryers will not be overloaded or underloaded.

Clear lint traps before drying each load.

Electric washers and dryers will not be operated during the PED period.

8b

Refrigeration

Do not keep refrigerator or freezer doors open longer than necessary.

Worn or damaged gaskets must be replaced.

Defrost refrigerator freezers regularly (frost over 1/4-inch thick acts as an insulator causing the refrigerator to work harder).

Adjust the refrigerator thermostat to the minimum setting necessary, a mid-dial setting is usually adequate.

Disconnect unnecessary or unused refrigeration equipment.

8c

FAMILY HOUSING

9

Occupants

The use of kitchen ranges to supplement the heating system is prohibited.

Occupants departing their residence on vacations or other periods of absence longer than 8 hours will set thermostats to 55 degrees for heating or 88 degrees for air-conditioning.

If no damage to the quarters or its contents will occur, further measures can be taken such as turning off

- the heating and air-conditioning systems,
- all electrical appliances,
- refrigeration equipment whenever prudent, and
- all interior lighting.

9a

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TRAINING

10

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Energy Training

Energy training is provided by DEH.

Training consists of

- establishing energy conservation programs,
- identifying energy conservation opportunities, and
- discussing energy consumption and trends.

Requests for training should be submitted

- telephonically by calling the Energy Hot Line (287-SAVE) or
- by a memorandum to DEH, ATTN: Environmental Management Office.

10a

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ECOs and BEMs

These personnel should be familiar with specific methods and training available to identify and implement good energy conservation practices.

10b

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Unit R&U

Unit repair and utility (R&U) personnel should be trained in the application of specific energy conservation measures such as

- caulking and weather stripping,
- monitoring interior temperature of facilities, and
- correcting deficiencies.

10c

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Training R&U

Training for R&U personnel is provided by DEH Self-Help Issue Point (SHIP).

Scheduled times may be obtained by telephoning the SHIP office, 287-7843.

10d

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AREAS OF SPECIAL EMPHASIS

11

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Publicity

Use frequent pep talks to specific groups of personnel (this is one of the best methods of publicity).

Bulletin boards, posters, and signs maybe used; however, they must be used in such a manner so as not to promote a cluttered or repulsive environment.

- Requisition DA and FH posters through normal publication channels.
- Encourage users to design tasteful publicity material.

11a

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Temperature Measurement Techniques

Space temperature compliance is determined by the average of thermometer readings taken at the center of a room, 2 feet from each wall, 4 to 5 feet above the floor.

Hot water temperature compliance is determined by a single thermometer reading taken during normal hot water use from a tap at an average distance from the hot water tank.

Additional savings may be achieved by

- meeting the standards in table 3-1,
- lowering hot water temperature wherever possible, and
- adjusting space temperature as suggested in figure 4-1.

11b

General Public and Common Use Areas

Extraordinary management of utilities is required at

- athletic fields and courts,
- chapels,
- dining facilities,
- physical fitness centers,
- showering areas,
- laundry rooms,
- motor pools, and
- swimming pools.

11c

Heating to Air-Conditioning Transition

Since the heating and air-conditioning transition periods require DEH to employ special crews for several weeks, the establishment of seasonal transition dates is necessary to efficiently manage resources.

- Heating is turned off beginning the third Monday of March.
- Air-conditioning is turned on beginning the first Monday of May.
- Air-conditioning is turned off beginning the second Monday of October.
- Heating is turned on beginning the first Monday of November.

Occupants may experience some temporary discomfort resulting from abnormal weather during the transition periods.

11d

Minimizing PED

PED is the maximum amount of power required (demanded) at each of the three electrical substations located on Fort Hood.

PED occurs once during the year usually around 1530 on a hot summer day when most air-conditioners are running.

Fort Hood is billed each month (not just the month PED occurs) based on the PED.

NOTE: Reduction of PED is one of the most profitable conservation measures because it affects Fort Hood utility costs the entire year.

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 Minimizing  
 PED (cont)

The PED period occurs from 1 May through 30 September between 1300 to 1700.

The operation of high voltage (greater than 120 volts) electrical equipment which can be routinely avoided during all or some of the PED period is prescribed on FH Form 1073 by the ECOs.

Mission readiness and training will not be compromised.

It is extremely important to intensify efforts to eliminate energy waste and conserve electricity during PED.

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 11e

## STORING AND DISPENSING PROCEDURES FOR POL CONTAINERS

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 12

 Mobility  
 Energy

Mobility energy use includes all fuels used for

- transportation,
- research and development,
- training, and
- operational readiness on
  - land,
  - sea, and
  - air.

Effective energy conservation practices should be incorporated into all phases of training which use mobility fuels.

The management plans herein are designed to reduce energy consumption of mobility fuels while maintaining readiness.

If conservation programs should impact training readiness, the conflict is resolved outside this regulation.

Training plans should consider energy conservation at all levels of the organization.

---

 12a

## Storage

Store packaged petroleum products according to FM 10-69, chapter 16.

Close partially full petroleum, oil, and lubricants (POL) product containers tightly at all openings to avoid contamination and spillage.

Grease containers should be tightly closed immediately after each dispensing to prevent contamination.

---

 (continued on next page)

Storage  
(cont)

Generally, POL cans of 1 gallon or less

- cannot be tightly closed because of the need to puncture in order to dispense the product.
- should be avoided, if there are other alternatives.

Puncturing (creating air holes) POL containers which are provided with caps, bung plugs, and so forth, is prohibited because it causes undue waste by allowing product contamination and complicates the required turn-in of empty containers for recycle.

Prevent fuel contamination regardless of use or storage method.

Dispose of or use all contaminated fuels as determined by the Directorate of Logistics Supply and Services Division POL lab.

12b

Dispensing

Basic loads are rotated by exchanging older products with fresher ones from the operational stock.

Using the oldest product first prevents loss due to shelf life expiration or container deterioration.

Take care to prevent back surges and overflows when dispensing or transferring fuel.

12c

MAINTENANCE

13

Equipment  
Maintenance

Intercept fuel by using funnels or drip catchers whenever equipment maintenance procedures generate

- waste,
- excess, or
- contaminated fuel.

NOTE: Store such fuel in suitable containers until proper disposition can be made.

Prevent fuel leaks through proper maintenance and careful operation of equipment.

When leaks do occur, take prompt corrective action (turn off pumps and valves until leaking stops).

13a

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**Vehicle  
Maintenance**

To ensure efficient fuel consumption, perform all scheduled maintenance including

- replacing all filters (air, fuel, and oil) and
- tuning vehicles according to their technical manuals (TMs).

To confirm fuel economy, check vehicle logbook when refueling and calculate fuel consumption per mile or hour.

When fuel consumption increases per mile or hour, schedule the vehicle for a maintenance check.

---

13b

**TRANSPORTATION**


---

14

**Efficient  
Use of Vehicles**

Schedule or arrange transportation to and from administrative functions to minimize vehicle usage.

Promote car pools within your unit or activity.

Select vehicles according to the load they will carry (for example, a heavy truck should not be used when a sedan could do the job).

Do not leave the engine idling while a vehicle is being

- loaded,
- unloaded, or
- waiting.

Use military vehicles for official purposes only.

Whenever possible, eliminate trips if results can be achieved by telephone.

Conduct meetings using the conference features of the telephone system.

---

14a

**Driving**

When driving

- observe speed limits.
- accelerate smoothly and moderately.
- maintain a steady speed as much as possible.
- try to avoid stop-and-go traffic.
- plan routes and adjust speed to avoid unnecessary accelerations and decelerations.

---

14b

**Tactical and  
Nontactical  
Vehicles**

Use nontactical vehicles to the maximum extent possible for essential administrative missions.

Limit use of tactical vehicles only for essential tasks.

---

14c

ENERGY CONSERVATION IN TRAINING

15

Fuel Conservation Actions

During ground training

- limit operational training involving aircraft and other fuel consuming equipment without affecting operational readiness.
- limit weapons and equipment demonstration to the absolute minimum required for training.
- modify training plans to eliminate use of nonessential motorized equipment.
- limit field training exercises and increase command post exercises consistent with readiness requirements.
- maximize foot movement to training and administrative areas.
- use nearby training areas in accordance with the Natural Resource Management Plan.
- leave unit equipment on-site during field training rather than returning equipment to post each day.
- extend the length of required field training exercises to maximize use of equipment once in place.
- increase the use of classroom instructional training aids in lieu of hands-on training with motorized equipment.
- ensure that equipment operators are aware of energy conservation practices during operation and maintenance of their equipment.
- optimize the use of simulators and miniranges by incorporating their uses into the unit's training program.
- keep energy intensive exercises to the minimum required to maintain combat readiness.

15a

Aviation Training

Achieve tactical aircrew training manual (TATM) requirements using minimal fuel.

Accomplish TATM requirements of operational aviators in conjunction with administrative and operational missions to the maximum extent possible.

Reduce aviator transition training to the minimum required to meet operational requirements.

Minimize turnaround times during airmobile training by using the most direct route and nearest training areas.

Maximize use of synthetic flight trainers and simulators.

15b

Appendix A  
REFERENCES

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REQUIRED PUBLICATIONS

A-1

ESM 36-1	Energy Conservation and Utilities Services. (Cited in para 3d.)
FH Reg 420-1	Fire Regulations. (Cited in para 8a.)
FH Reg 420-27	Care, Maintenance, and Alterations of Facilities. (Cited in para 4h.)
FM 10-69	Petroleum Supply Point Equipment and Operations. (Cited in para 12b.)

A-1a

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RELATED PUBLICATIONS

A-2

AR 1-201	Army Inspection Policy
AR 11-27	Army Energy Program
AR 30-1	The Army Food Service Program
AR 420-49	Heating, Energy Selection and Fuel Storage, Distribution, and Dispensing Systems
AR 420-54	Air Conditioning and Refrigeration
DA BEM	Department of the Army Building Energy Monitor's Handbook
FM 19-30	Physical Security
FORSCOM PAM 11-3	Energy Program Guide (DRAFT)
FORSCOM PAM 11-27	FORSCOM Energy Resources Management Plan (DRAFT)
IES	Illuminating Engineering Society Lighting Handbook

A-2a

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FORMS

A-3

FH Form 1073	Checklist for Good Conservation of Utilities
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A-3a

11 May 1992

FH REG 420-9

Appendix B  
SAMPLE MEMORANDUM

AFZF-RB-EE

Date

MEMORANDUM FOR Directorate of Engineering and Housing, ATTN: Environmental Management Office

SUBJECT: Request for Exception to Policy for Climatic Control

1. Request Climatic Control of air-conditioning in building 35001 and 35002. (95th Maintenance Company, 1st Cavalry Division.)
2. Justification is the requirement that temperature control must be maintained for calibration standards as per TB 750-25, paragraph 4-4, page 4-1 (between 68-74 degrees Fahrenheit).
3. POC: CW3 Condition/SSG Weather, 287-5677.

ERNIE G. SAVER  
MAJ, OD  
Chief, Operation Division

Appendix C  
FACILITY TYPE TABLE

Facility Type	CAT Code Description
*Dining Halls	72210 - Enlisted Personnel Dine
Barracks w/Admin and Supply	72112 - Enlisted Barracks w/Admin and Supply
Barracks w/Dining, Admin and Supply	72113 - Enlisted Barracks w/Dining, Admin and Supply
Administration and Supply	72330 - Administration and Supply
Brigade HQ	14182 - Regiment HQ Building
Barracks w/Dining	72110 - Enlisted Barracks w/Dining
Barracks w/o Dining	72111 - Enlisted Barracks w/o Dining
Physical Fitness Center	74028 - Physical Fitness Center
*Automated Data Processing	61031 - ADP Building
*Medical Facility	54010 - Dental Clinic
*Instrument Trainer	17110 - AC Trainer Building
*Flight Simulator	17112 - Flight Simulator Building
Cold Storage	43210 - Cold Storage Warehouse

\* Denotes facilities which shall always be metered

## Glossary

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**ABBREVIATIONS**

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AAFES	Army and Air Force Exchange Service
BEM	building energy monitor
BTU/SF	British thermal unit/square foot
CAT	category
DA	Department of the Army
DEH	Directorate of Engineering and Housing
ECO	energy conservation officer
FH	Fort Hood
FHEC	Fort Hood Energy Coordinator
FM	frequency modulation
NA	not applicable
PAO	public affairs officer
PED	peak electrical demand
PMS	per manufacturer's specification
POC	point of contact
POL	petroleum, oil, and lubricants
R&U	repair and utility
SHIP	Self-Help Issue Point
SOP	standing operating procedure
TATM	tactical aircrew training manual
TSG	The Surgeon General
UCS	Utility Control System

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**TERMS**

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electrical appliance	Any device that uses electricity. Exempt from this definition are battery-operated devices and light fixtures.
cooking appliance	Cooking appliance for the purpose of energy conservation, is defined as any household device which consumes energy in the form of electricity or natural gas and used in the preparation of food (for example, toasters, hot plates, and electric skillets).
mobility energy	Fuels and lubricants used for operation of vehicles, aircraft, and other motorized equipment which are not part of a facility system.
peak electrical demand (PED)	The time period in which the electrical peak demand may occur. This period is defined as 1 May through 30 September, 1300-1700 on weekdays.
space temperature	The average temperature reading in a given area measured between 4 and 5 feet above the finished floor.
utilities	Water, electricity, natural gas, and fuels consumed by the use of real property.
utility meters	Meters used to record the consumption of utilities.

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11 May 1992

FH REG 420-9

The proponent of this regulation is the Directorate of Engineering and Housing

FOR THE COMMANDER:



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DOIM

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