



TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

Operating Policy and Procedure

HSC OP: 61.10, Energy Conservation Program and Utility Review

PURPOSE: The purpose of this Health Sciences Center Operating Policy and Procedure (HSC OP) is to promote the practice of energy conservation which is consistent with support for approved academic programs and health care services and complies with legislative mandates as promulgated by designated state agencies. In addition, it establishes standard guidelines for review of utility consumption by individual facility or meter and for follow-up concerning irregularities. This HSC OP applies to all TTUHSC facilities.

REVIEW: This HSC OP will be reviewed on September 1 of each even-numbered year (ENY) by the Director of Engineering Services and the Managing Director of Institutional Support Services (MDISS), with recommendations for revisions forwarded to the Vice President for Facilities and Safety Services (VPFSS).

POLICY/PROCEDURE:

1. **Definitions.** The following definitions apply to this HSC OP:
 - a. **Director of Engineering Services.** The Director of Engineering Services reports to the Managing Director of Institutional Support Services (MDISS) and directs the energy management functions, analyze consumption patterns, develop and implement energy conservation measures, project manage related work, and establish and maintain the energy measurement, monitoring and accounting system. In addition, the Director will coordinate all energy conservation activities and methods at all TTUHSC campus facilities and complete any required reporting to agencies.
 - b. **Automated Utility Accounting.** The input of all utility bills into an automated program supervised by the Engineering Services Department for timely and comprehensive utility accounting.
 - c. **Trend & Energy Data Analysis.** The analyses of utility bills and energy consumption on a specific meter or building to identify and monitor irregularities in consumption and energy conservation measures.
 - d. **Erratic or Unusual Consumption/Usage.** Any significant increase or decrease over the previous month which exceeds the three-year average for that particular month, or other variance from normal/established engineering standards.
2. **Goal.** The primary goal of the energy conservation policy is to conserve utility energy while maintaining the institutional mission. A secondary goal is to reduce energy usage by TTUHSC to ensure that utility appropriations are not exceeded. Monitoring, with the goal of reducing energy consumption, is a Key Performance Indicator of Facilities and Safety Services. It is essential that deans, directors, department heads, faculty, staff, supervisors, and students play an active role in the reduction of utility costs and consumption.
3. **Department of Institutional Support Services.** Overall administration of the Institutional Energy Conservation Program is coordinated through the TTUHSC Department of Institutional Support Services. This department is the primary TTUHSC resource for broad technical and administrative guidance needed to support the specific aspects of program activities.

4. They shall monitor utility consumption to ensure proper operation of installed HVAC equipment, building automation, and related building systems, thereby furnishing utilities efficiently and reliably.

The Director of Engineering Services will routinely perform cost and trend analyses to evaluate utility consumption in specific portions of TTUHSC buildings. The Director of Engineering Services will review and maintain records of all utility consumption and costs charged to TTUHSC and will request the utility company's review of any erratic or unusual energy cost to verify accuracy, thereby reducing the possibility of calculation or meter reading errors or system problems. Upon agreement between the utility company and the Director of Engineering Services that charges are correct, erratic, or unusual consumption will then be addressed directly with the MDISS and respective campus administrative authority.

Erratic or unusual consumption trends, beyond the scope of the Engineering Services Department will be brought to the attention of the MDISS and the Assistant Vice-President of Facilities and Safety Services (AVPFSS). Notification will be via memorandum and in a descriptive manner such as a graph reflecting the irregular or unusual consumption of the utility.

Designated directors are responsible for investigating the atypical use of energy in the facility and informing the Director of Engineering Services of the results of such investigation.

The Director of Engineering Services will report all identified irregularities. A project list shall be developed stating the priority and corrective action required. The project list will be submitted to the MDISS and AVPFSS for implementation within budgetary constraints and resources.

4. **Responsibilities.**

a. **General.**

- (1) The primary responsibility to limit energy usage on a day-to-day basis lies with each department head.
- (2) Every employee of TTUHSC has the responsibility to actively participate in helping reduce utility costs and consumption.
- (3) Persons using TTUHSC facilities will be instructed to limit operations to a minimum and to turn off all lights and all equipment when leaving an area.
- (4) Periodic inspections of areas assigned to the various departments and infrastructure systems shall be conducted by campus maintenance departments and/or Engineering Services personnel. Wasteful conditions must be corrected or reported. Inspections will include, but not be limited to the following:
 - (a) Identifying air handlers and fans in operation when not needed and exploring options to reduce operation when space is not occupied.
 - (b) Identifying areas where lights are still burning after everyone has left the area and incorporate motion sensors where possible.
 - (c) Locating areas with excessive lighting levels.
 - (d) Identifying outside doors that do not close properly.
 - (e) Identifying areas with cracks in windows or doors that permit excessive outside air infiltration.
 - (f) Identifying areas where domestic hot water supply is too hot; (g) Noting presence of electric heaters.
 - (h) Identifying laboratory fume hood fans in operation when not needed, or possible reduction in use; and

- (i) Identifying areas with excessive solar gain through windows or other glass areas.
 - (5) Times and locations of classes and other activities shall be reviewed as often as necessary to ensure that the minimum number of air handlers are used. Energy conservation should be a consideration when class schedules are established. Activities requiring extended hours of operation should be consolidated as much as possible.
 - (6) Evening and weekend activities must be reviewed to ensure that these events are scheduled in areas of the building that appear to be most economical to heat or cool. This includes HVAC operation hours as well as other energy requirements.
 - (7) The impact on energy usage should be considered when plans are made to purchase equipment. The Director of Engineering Services should be consulted for energy consumption review when major equipment purchases that require modification to utility systems are being considered. This review includes heat generation by equipment that requires additional HVAC considerations.
 - (8) Ensure all new construction and major renovations meet state energy code and other application codes, standards, or regulations and that state-of-the-art technology is incorporated into the project to realize energy savings.
 - (9) Use building energy simulation software to establish benchmark for energy usage and validate/optimize design/process parameters.
 - (10) Conduct energy audits. Identify and recommend energy conservation projects with acceptable payback period.
 - (11) Assist/perform in project management, and other engineering/technical issues as and when necessary, by VPFSS.
 - (12) Evaluate new products, software for continuous improvement of engineering systems and processes.
- b. **Supervisors.** Supervisors are responsible for instructing personnel under their direction in proper energy conservation procedures for the job being performed. Facilities and equipment under their jurisdiction must be monitored and maintained to eliminate wasteful energy practices. An additional responsibility of supervisors is to explain to all employees under their supervision the energy conservation procedures that are relevant to their specific work duties. Instructions should include, but not be limited to, the following:
- (1) When leaving a work area, all lights, except those required for safety and security must be turned off.
 - (2) Malfunctioning equipment, such as heating devices, electrical motors, defective thermostats, slipping belts, noisy bearings or gears, defective steam traps, defective light switches, etc., must be reported and repaired.
 - (3) Air filters and filter elements that block or partially block the flow of air must be reported and replaced.
 - (4) Portable heaters or fan use should be discouraged and never left running when unattended.
- c. **Employees.** TTUHSC employees are responsible for all energy conservation procedures. They are a vital link in the overall program. Their responsibilities include:

- (1) Turning off lights, computers and office equipment when no longer needed;
- (2) Reporting when the operation of air conditioning is no longer needed;
- (3) Reporting defective and malfunctioning equipment;
- (4) Reporting leaks and smoke; and
- (5) Reporting missing or faulty insulation.