



THE UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE
POLICIES AND PROCEDURES MANUAL

No. 57
Date April 15, 1996
Approved APF

SUBJECT: Comprehensive Energy Efficiency Policy

Purpose:

The purpose of this policy is to reduce energy consumption, and improve energy efficiency on the UNCA campus consistent with the needs for a safe, secure, inviting campus community. This is to be accomplished by developing an aggressive and progressive approach for efficient energy use.

Goals:

Short Term: Manage energy and other utility consumption to keep costs within utility budget allotments.

Long Term: Support change to state utility budgeting and public utility commission policy that fosters monetary incentives to make energy efficiency efforts economically attractive; streamline program justification requirements so that projects can be executed within a timely interval, and savings quickly realized.

Scope:

All campus buildings and utilities will be part of this program. Water consumption, although not specifically addressed here, will be governed by the same principles of efficiency. The intent of this program is to demonstrate major reductions in utility consumption without significant impact on occupancy comfort. Thus, we are focusing on energy efficiency, not energy conservation. Initial set-points were based upon ASHRAE comfort chart for 50% relative humidity, and people at light work. Obviously, occupants coming into a building after working up a sweat, or occupants within the building performing more demanding physical work will not be comfortable at these levels.

General:

Enforcement: To minimize compliance problems and policy interpretation, we recommend that the Energy Committee be tasked with the responsibility of defining

and enforcing the energy policy, as approved by the Chancellor's Council.

Committee Membership: Membership should include faculty, staff and student representatives. It is recommended that this committee be comprised of three faculty, two student, one Facilities Management employee (to serve as technical experts), and report to the Facilities Management Director, who also serves as an ex officio member.

HEATING AND AIR CONDITIONING POLICY

Temperature Set-points:

Offices and Classrooms: 74ø-76øF for cooling; 68ø-70øF for heating; critical operations at whatever temperatures (and humidity) necessary according to ASHRAE standards.

Computer Center (Operations only): 72ø-74øF for cooling, 50-60% relative humidity.

Library (stacks area only): 72ø-74øF for cooling; 68ø-70øF for heating; 50-55% relative humidity.

Music Rooms (rooms with instruments only): 76ø-78øF for cooling; 68ø-70øF for heating; 50-55% relative humidity.

Seasonal Changes:

The following buildings or areas warrant special heating/cooling consideration:

Belk Theater: Cooling as needed year round, but only for rehearsals and performances.

Lipinsky Auditorium: Cooling as needed year round for performances only.

Karpen Hall: Cooling as needed year round for interior rooms only, due to internal heat gains which make cooling necessary. However, cooling will come only from water side economizer.

Ramsey Library: Cooling/heating as needed 24 hours every day, but only for stacks and special book collection areas.

Robinson Hall Computer Center: VAX/operations rooms only, cooling 24 hours every day.

Robinson Hall MNR: Cooling provided 24 hours every day.

Robinson Hall MCNC: Cooling as needed for special events - currently no means of cooling available during the winter.

Owen Conference Center: Cooling as needed for special events - currently no means of cooling available during the winter.

Other Spaces will be considered on a case-by-case basis by the Energy Committee.

Cooling Season:

Air conditioning will normally start no earlier than May 1, or sooner if there are three or more consecutive days higher than 75 F.

Heating Season:

Heating will normally start no earlier than October 20, or sooner if there are three or more consecutive days where the temperature falls below 50 F during the day.

Free Cooling:

During the periods of April 1 through May 1, and September 20 through October 20, an "open window" policy will be in effect. It is anticipated that most temperature control will occur through natural ventilation by opening/closing windows as desired by occupants. It is very important that the last occupants in each room close the windows at night.

Open windows are not allowed, however, during heating and cooling periods. This is because open windows throw the system off balance, and make it impossible to provide uniform heating or cooling in large buildings. Campus occupants will be notified by VAX, the Student Newspaper, Monday Morning, etc., of approved times for open windows.

Auxiliary Heating and Cooling Sources:

Window air conditioner units are not allowed unless specifically approved by the Chancellor. All existing units will be evaluated in accordance with the specifications of this policy as directed by the Energy Committee.

Portable space heaters are not allowed because of their excessive energy consumption. If a room(s) is/are not within the heating set-point range, Facilities Management should be notified so that the problem can be addressed. Exemptions allowing space heaters shall be granted by Facilities Management only in emergency or other unusual conditions.

Winter Holiday Season

The heating temperatures will be set to 60 F for all buildings during the winter holiday season. Exceptions will be given only to those minimal administrative functions that must remain operational during this period, such as the Business Office and Admissions.

Office hours should be from 7:30 a.m. to 5:30 p.m. for classroom buildings, and 7:30 a.m. to 4:30 p.m. for administration buildings. This means at 7:30 a.m., and until the schedule ends, the temperature will be within the set-points defined above under TEMPERATURE SET-POINTS. Should a building have complete digital control, and individual zone or office temperature control, occupants may be able to override the schedule to provide heating/cooling for their office at any time.

Exceptions:

Karpen Hall, WCU Office: 7:30 a.m. to 9:00 p.m., Monday through Thursday.

Highsmith Student Center: 7:00 a.m. through 12:30 a.m., Monday through Sunday, when open for business.

LIGHTING POLICY

Office and Classroom lights will be turned off whenever unoccupied.

Studies have shown that it is cost effective to shut off lights if you are leaving an area for more than 10 or 15 minutes. However, human behavior dictates that one will not determine how long they will be gone before they leave. People will assume they will be out less than 15 minutes, and leave the lights on. To avoid this, and to show our resolve in using our energy wisely, we recommend that if you leave a room that you turn off the lights.

Housekeepers will turn off the lights they use early in the mornings as they complete individual rooms. Departments will assign an energy monitor who will be responsible for promoting energy awareness within the department and ensuring that lights are turned off at the end of the academic day. Facilities Management and Public Safety personnel will also check all buildings at the end of the day. An energy conservation note should be left in all offices where lights have been left on.

Area lights for Residential Halls will remain on throughout the night during fall, spring and summer semesters.

Area lights for classroom and office buildings will generally remain on until 1:00 a.m. Parking lot lights and street lights located near buildings will remain on throughout the night during fall and spring semesters. During summer semester, Christmas, summer and Spring Breaks, remote parking lots will not be lighted.

Athletic Field lights should only be operated as needed. Generally, they would not

be in operation during summer semester, Christmas, Summer and Spring Breaks. Fall and Spring semester operation will be from dusk till 10:30 p.m., Monday through Friday. Lights will generally not be operated on weekends, except for special events.

PROGRAMS

Campus Awareness:

Incentives:

Incentive programs will be developed to improve compliance and acceptance by campus faculty, staff and students. These may include building versus building contests, financial incentives, etc.

Awareness:

Awareness will be accomplished through the distribution of the Energy Policy, reminders via VAX and Monday Morning ,and public service ads in the student newspaper, as well as publishing in the telephone directory. Building Monitors, one per building floor, are also recommended to insure lights are turned off, and heating and cooling problems are resolved.

Preventive Maintenance:

Preventive Maintenance Procedures will be implemented to obtain optimal energy-efficient operation of all equipment.

Repairs:

Repairs/replacement of all equipment shall take into consideration the most cost effective solution over the life of the repair/equipment. Considerations shall include future maintainability, improved operation, improvements to energy efficiency, requirement for additional or reduced Preventive Maintenance, etc.

Energy Efficiency Retrofits:

Projects shall be prioritized based upon the availability of ICP (Institutional Conservation Program) grants, and deferred maintenance. Deferred maintenance will be prioritized based upon the condition of the equipment. Energy-efficient solutions must take into consideration the elimination of the deferred maintenance and the reduction of preventative maintenance requirements.

Renovations:

All renovations to campus facilities, whether major or minor, will strictly adhere to standards for energy-efficient equipment and design, regardless of source of funding.

New Construction:

All new construction will be required to follow energy efficient standards as set forth by the UNCA Building Design Criteria (Pending). Life-cycle cost analyses will be required, and energy efficient designs, including Passive and Active Solar systems, natural lighting, cogeneration and thermal storage, must be considered.

Equipment Selection:

The selection of all equipment procured for UNCA to include copy machines, scientific equipment, refrigerators, etc., must carefully consider the anticipated energy use and available energy saving devices. Computer equipment and printers are especially important in this regard, and must be screened carefully by the Computer Center.

University of North Carolina Budgeting System:

Energy saving projects need to continue to be strongly supported within the existing budgeting structure. It is Facilities Management's responsibility to justify proposed projects through the budgeting process, although the campus at large is encouraged to identify opportunities for these projects.

The Institutional Conservation Program (ICP) provides matching grants for energy-efficient projects. Turnaround time for these projects is approximately three years, and substantial funding must be allocated by the University to initiate approved projects.

UNCA will continue to employ this source as a portion of the overall energy policy by applying for these grant funds as the opportunity arises.

Role Model Development:

Environmental Studies Program: An innovative program integrating students, faculty and staff in the pursuit of an energy-efficient campus could be initiated with two main objectives:

- (1) To provide interested students with hands-on experience concerning the problems associated with developing and maintaining energy-efficient operation of buildings, conducting energy surveys, and providing energy-efficient solutions to building systems problems.

- (2) To provide Facilities Management assistance in accomplishing the goals set forth by this policy.

Grants should be actively pursued to help improve energy efficiency on campus, and to allow development of UNCA as a model institution.

Utility Demand Side Rate Structure Policy:

Currently, Carolina Power & Light and Duke Power follow supply side economic models; the more energy they produce, the more profit they make. Unfortunately, building new power plants increases KWH costs, and increases energy consumption and pollution. The emphasis should be placed on Demand Side policy which rewards utility companies for reducing utility usage. UNCA should encourage the Utility Commission to obtain to a more progressive policy.



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