CHAPTER 7
UTILITIES SERVICES

The Facilities and Services operates and maintains all University utilities plants and distribution systems with the exception of telephone services, which are provided by Accounts Payable. In general, building central heating and cooling systems and services are provided by Facilities and Services, except for those within Residential Life facilities, most farm facilities, and other non-state funded facilities and programs.

CONNECTIONS TO UTILITIES SYSTEMS

Because of the safety hazards that may result from incorrectly performed work and the need to maintain the integrity of utilities systems, alterations or connections to any University utilities systems (both distribution systems and internal building systems) must be made only by Facilities and Services employees or by contractors working under Facilities and Services direction.

This policy is applicable to steam, hot water, chilled water, distilled water, reverse osmosis water (RO), air conditioning, electrical, water, sewer, gas, compressed air, vacuum, and central laboratory gas systems.

UTILITIES PROVIDED

Steam Heating and Steam Services

Steam produced at the Central Heating Plant is provided to most core campus buildings where it is used directly or converted to hot water for space heating. Steam is also utilized for autoclaves, humidification systems, and process loads. Steam is provided to most facilities through an underground distribution system from the Central Heating Plant. Some buildings, including Briggs Library, Animal Science Arena, Scobey Hall, Performing Arts Center, Wintrode Student Center, Dykhouse Student Athlete Center, and the Alumni Center are heated with electric or gas boilers, independent of the Central Heating Plant. Please note that a campus-wide steam outage lasting 7 to 10 days is scheduled annually, usually in May shortly after commencement or final exams or in late July. This outage is necessary to perform maintenance and upgrades in order to maintain the reliability of our system and to avoid unplanned outages.

Chilled Water

Chilled water is generated at the Central Chiller Plant by three electric-powered centrifugal water chillers and evaporative cooling towers with capacity of about 525 tons of refrigeration per chiller. Chilled water is available year-round. The chilled water is distributed through an underground distribution system and currently serves the following buildings with chilled water used for comfort cooling:

- Avera Health and Science Center
- Berg Agricultural Hall Basement and 3rd floor.
- Alfred Dairy Microbiology
South Dakota Art Museum
- Abbott Hall
- Spencer Hall
- Thorne Hall

Costs to operate and maintain the chiller plant equipment are used to calculate a production cost for the chilled water energy. Chilled water energy usage is metered at all facilities using BTU meters and recharged based on actual usage to the appropriate self-funded building users. At this time the following are charged for their actual chilled water BTU consumption:
- Abbott Hall
- Spencer Hall
- Thorne Hall

The Central Chiller Plant has room to expand to a total of six chillers at a nominal 525 tons each as demand for chilled water on campus is expected to grow in the near future.

**Space Heaters**

Space heaters will be placed only with the approval of the Facilities and Services Assistant Vice President or his designee. The decision to place these heaters will be only if the existing heating system has serious problems that cannot be fixed quickly (i.e. parts on order that will take 4-5 weeks during sub-zero temps). The department, location, and specific circumstances also will factor in. Issuing space heaters will be the exception rather than the rule. The heaters will be provided by the Electric shop (NOT purchased by the department) and will be collected when the heating problem is resolved.

Our customers need to be aware that when and if space heater use is approved, they will be told specifically where to plug them in. If our instructions are ignored, or the heaters are moved causing overloaded circuits, we will not be responsible for damaged equipment (such as computers), data lost, or extra labor for reset time.

**Temperature Standards**

In an effort to conserve energy, classrooms and offices are to be maintained approximately 68 degrees F during working hours and approximately 55 degrees F during non-working hours in the winter. Heat will be turned off when outdoor temperatures or other load factors indicate that heat is no longer needed.

When air conditioning is available, offices and classrooms shall be maintained at approximately 78 degrees F during working hours. Air conditioning, wherever reasonably possible, should or will be turned off during unoccupied hours, or setpoints will be automatically adjusted during unoccupied hours where feasible.
Electricity

Electric power is purchased from Western Area Power Authority (base load) and Heartland Electric (peaking) and distributed throughout the University via a University-owned underground distribution system. A few University buildings are served directly by local utilities.

Water and Sewer Services

Water and sewer services are purchased from the City of Brookings, and with the exception of some buildings that have service directly from the city systems, service is provided through University owned water distribution and sewage collection systems.

Central Control and Energy Management

Campus Central Control has been in operation since August, 1976. It is part of the Heating, Ventilation, and Air Conditioning or HVAC shop. Over thirty five thousand different points, including HVAC, security and fire alarms in sixty three campus buildings, are being monitored and controlled by Campus Central Control, or otherwise known as Building Automation System. These points relate mostly to heating, ventilating, air conditioning, and fire alarm systems. (There are also miscellaneous points such as sump pumps, domestic hot water temperatures, humidity, etc.). These points are monitored by the system simultaneously and continuously, every hour of every day.

Campus Central Control does not, of course, monitor every such location on campus, but rather the most important ones and those paid for by departments. For a fee, Facilities and Services can connect most critical department equipment to our system that can be monitored 24 hours per day. Examples include high alarms on ultra-cold freezers, computer room air conditioning alarms, building security alarms, fume hood alarms etc. Please contact Facilities and Services if you have an application to discuss.

A primary objective is an energy management program which includes long-range energy use goals, temperature and lighting standards, and a facilities improvement program to modify buildings and utilities systems to improve energy efficiency.

Building occupants are encouraged to participate in the program by turning off lights when rooms are unoccupied or when outside window light is adequate, and by maintaining the building temperature of 68 degrees F or cooler when heating systems are on and 78 degrees F or higher when air conditioning systems are in place and operating. When temperatures cannot be maintained within these limits, Facilities and Services should be notified (688-4136). Please do not assume that Facilities and Services knows that your room is too hot or too cold.

The system needs the cooperation of everyone to maintain proper control. At many control boxes, there is a notation indicating that the equipment is under remote control. If that equipment is switched on or off manually, an alarm may be generated at Central Control. Facilities and Services will handle this alarm as a legitimate problem, notifying and/or dispatching personnel to that area. To avoid this situation, please keep in mind that most heating, ventilating and air conditioning are automated and are operated in accordance with normal working hours in each area, classroom schedules (as scheduled through the

(REVISED 7/12) CHAPTER 7 - 3 UTILITIES SERVICES
Registrar's office) and special events (as scheduled through Central Scheduling in the Student Union).

PLEASE SCHEDULE PLANNED EVENTS THROUGH CENTRAL SCHEDULING (USU 117, 688-6127) at least one week in advance to ensure proper scheduling of applicable heating, ventilation, and air conditioning equipment. DO NOT SCHEDULE HVAC ADJUSTMENTS FOR EVENTS THROUGH THE FACILITIES AND SERVICES OFFICE. Failure to properly schedule room usage may result in lack of heating, cooling, or ventilation during your event.

Scobey Hall, Tompkins Alumni Center, and Lincoln Music Hall have two-pipe space heating and cooling systems that are operated in either a heating or cooling mode, but cannot be operated simultaneously. In the spring, heating systems are turned off and cooling systems are turned on only once. In the fall, the cooling systems are turned off and heating systems are activated only once. The dates for changing systems will depend on current outside temperatures and weather forecasts.

Space cooling systems are complex and efficient systems that may require multiple days to start and stop to avoid damaging components. Therefore, it is impossible to start all major chillers at the same time. The Facilities and Services strives to stagger chiller start-ups per each individual building’s needs. However, a sudden hot spell will likely result in some buildings being warmer than desired. During seasonal changes, when systems are activated and deactivated, conditions inside buildings can become uncomfortable for limited time periods while the changeover occurs.

Demand limiting, which is the cycling "off" of selected central heating, ventilation, and air conditioning systems, is done on very hot days and very cold days to stay within SDSU's allotted portion of all state facilities power. Areas with sensitive research or similar research projects may be excluded where feasible or have limited "off" cycling during the duration of that project with special written request from the respective department head.

Mechanical Rooms

The use of mechanical rooms will be restricted to mechanical equipment only, no office related or departmentally owned items may be stored in mechanical rooms. This is to ensure that proper clearances are maintained per codes and for maintenance on equipment. It will also help prevent potential damage to materials that are not well suited for storage in hot or damp mechanical rooms.

UTILITY CHARGES

All utilities services, whether provided through the University distribution systems or directly to buildings, are managed by Facilities and Services. Malfunctions, outages, or any other problems associated with these systems and services should be reported to the appropriate service desk listed on page 2-1. Additional information about University utilities systems may be obtained from the Facilities and Services Office, 688-4136.

The costs, etc., of utilities (including consumption, wheeling, overhead) for non-state funded facilities and programs like Residential Life, Food Services, some research and farm programs, etc. are charged to the appropriate users.
Utilities not charged to departments
All maintenance and utility consumption costs of on-campus electrical, steam, water, and sewer distribution systems to academic facilities are not charged to departments.

Utilities charged to a department or activity are metered where possible.
1. All maintenance costs of on-campus electrical, steam, water and sewer distribution systems serving the individual facility will be prorated for multiple use facilities based on the proportionate usage of that sub-system or primary system.

2. Activities to be Charged
   a. Self-liquidating projects
      1. Residential Life - Housing
      2. Residential Life - Food Service
      3. University Student Union
   b. Foundation Seed Processing Plant
   c. Other research and farm department projects as directed by the Administration and the Board of Regents.

3. The University will provide utility distribution systems to a building, but recharge departments are responsible for all utility systems within the building.

NEW EQUIPMENT AND CAPITAL ASSET PURCHASING

Departments wishing to purchase new equipment requiring electrical power greater than 15 amps at 120 volts or any equipment requiring 208, 220, 230, 240, 277, 440, 460, 480, and higher voltage (1 and/or 3 phase), and/or connections to building water, sewer, exhaust, compressed air, ventilation/exhaust systems, and/or natural gas must consult with the Facilities and Services Mechanical Engineer prior to purchasing. This will assure that adequate utilities are available and that the piece of equipment with the correct connection requirements is purchased. The cost estimate for installation can also be done at this time.

Replacement equipment requiring the SAME connections as the old piece of equipment need not get this approval. However, the user department may wish to, and is encouraged to, consult with the Facilities and Services Mechanical Engineer to help assure a smooth change out and to assure that the new installation complies with current codes and standards.

The purchasing agent in the Purchasing Department will try to flag items falling under this criteria. However, the ultimate responsibility for costs and time delays associated with any errors, or the purchasing of a wrong piece of equipment that cannot be connected to the existing building utilities, will be that of the user department.

PROCEDURE FOR NOTIFICATION OF UTILITY OUTAGES

Maintenance and repairs of all utility systems require outages and service interruptions. South Dakota State University Facilities and Services will do what is possible to minimize any inconvenience to campus users. Departments are encouraged to protect all critical equipment and computers with back-up systems. SDSU Facilities and Services is not responsible for damage or losses due to unplanned emergency outages or interruptions due to unforeseen circumstances, such as weather. Departments should take the responsibility
to distribute outage notices to all necessary personnel and notify Facilities and Services as soon as possible if there are problems or scheduling conflicts. The following is the detailed procedure to be followed and insure proper notification to the University community affected by various utility outages.

South Dakota State University Facilities and Services strives to provide the most reliable utility system possible. However, South Dakota weather conditions, aging systems, or unscheduled equipment failure can cause unavoidable disruptions. We understand that utility outages and power failure in particular can affect instruction, research and other work happening on campus. We encourage departments to take the following precautions:

1. Evaluate your needs and provide backup systems for critical equipment and functions.
2. Practice good backup procedures, minimizing data loss.
3. Ensure that all activities are scheduled academically or on Central Scheduling to facilitate notification.
4. Communicate information regarding utility outages to all employees immediately so appropriate precautions can be made.

Facilities and Services is not responsible for departmental losses occurring after unavoidable, emergency outages.

A. SCHEDULED OUTAGES

The following guidelines are to be followed when notifying departments of upcoming scheduled outages:

1. Project Manager is responsible for identifying where, when, and why outage will be held. (Note: Project managers should use the internal outage checklist.) The Project manager will contact critical departments and Central Scheduling prior to outage announcement. The Project Manager will work with the Building Maintenance Coordinator and electric shop to identify how to handle the outage. This should be done 72 hours in advance of the scheduled outage. All planned outages require prior approval of the Facilities and Services Assistant Vice President or Assistant Director.

2. The Building Maintenance Coordinator will notify secretary/receptionist at the Facilities and Services front desk. At this time, an email notice to Deans, Directors and Department Heads in affected buildings will be sent, using standard format, approved by the Project Manager, and signed by the Assistant Vice President. All outages will be confirmed in writing. All verbal communications will be followed by written memo, e-mail, or fax. The Assistant Vice President or Assistant Director will determine whether e-mail broadcast or campus-wide DDD mail list will be utilized. In most cases, outages that will affect large areas of campus will be sent out on e-mail, as well as in letter format.

3. After approval, the email notice will be sent to departments that will be affected. Additional notices will be sent to the following (as listed as cc's on standard format memo):

Vice President Nichols
4. All events held on campus should be reported through Central Scheduling, since utility outage scheduling will be done using Central Scheduling data. Temporary power arrangements will be provided if deemed necessary with generators. Central service providers, such as computing services are notified through the appropriate department head.

B. EMERGENCY OUTAGES

The following guidelines should be followed when an emergency utility outage is necessary or unavoidable:

1. The appropriate Facilities and Services shops will immediately respond and investigate the incident.

2. Building Maintenance Coordinator, Assistant Vice President, staff and Project Manager (if outside contractor is involved), UPD and HVAC will develop an action plan.

3. Front desk receptionist will be notified and departments affected will be notified as quickly as possible, using one or more methods: Phone calls, hand-delivered notices, fax transmissions and E-Mail messages to Deans, Assistant Vice Presidents, and Department Heads. All emergency outages will be posted on Inside State. In addition to the affected Departments, the list of personnel in Chapter 8, #3, above will also be notified.
AIR CONDITIONING POLICY

Window or Package Air Conditioning and Refrigeration Equipment

1. Because of the problems involved with campus power load shedding, power supply, installation, maintenance, and general appearance, the use of window or package units will be kept to a minimum. If you wish to have a window air conditioner installed on campus, please complete the Window Air Conditioning Request Form located at the end of this chapter, and return it (signed by the department head) to Facilities and Services for review. Facilities and Services must receive the signed Request Form before a work order will be placed.

2. Before requisitions are placed for any air conditioning and refrigeration equipment, regardless of the source of funds, a description of the desired installation including location shall be submitted in writing through the appropriate department head or dean to Facilities and Services, who will then assist in determining feasibility and in the selection of the equipment and power source best suited for the proposed installation. Facilities and Services will also provide a preliminary cost estimate. Departments will be billed for this service in most cases.

3. Because of Facilities and Services' normal heavy workload in the summer and to ensure completion of the installation of all air conditioners prior to the cooling season, Facilities and Services requires all window air conditioning installation requests to be submitted in writing to Facilities and Services Engineering (for approval as outlined in item #5) no later than April 1st. Requests submitted after this will be prioritized with all general work requests. Central air conditioning requests may take much longer.

4. Final written approval, via letter or e-mail, of central, window, or package units must be obtained from the respective department head plus the Assistant Vice President of Facilities and Services and/or Facilities and Services Engineering, and the Vice President for Administration in some cases, before equipment can be purchased and/or installed.

5. As a general rule, the department requesting the installation of central, window or package units will be expected to finance the entire cost of the equipment and installation including all electrical wiring, carpentry, painting, plumbing, etc. and all maintenance and service costs. In some cases, the using department may also be charged for power and water required for operation of the equipment.

6. The department is responsible for all warranty paperwork, maintenance, filter and coil cleaning, service and repairs to their window or package air conditioning unit (similar to other department equipment). Also, with the increasing number of central and window type air conditioning units on campus, Facilities and Services does not provide service for department window type air conditioners; therefore, departments may choose to, or be required to, obtain service for these units from an off-campus refrigeration company.

7. All types of window, package, or central air conditioners are subject to load shedding techniques employed by the Facilities and Services to prevent
exceeding peak electrical demand in an effort to keep our utility costs at a minimum. Load shedding could result in loss of power to the air conditioning serving your area for short periods during peak demand.

8. There is a $20 disposal fee for the removal of old air conditioner units.
Please save and email this form to SDSU.facilitiesandservicesfrontdesk@sdstate.edu. A representative from F&S Building Maintenance will be contacting you for more information. Your request, along with with sizing and use information will be reviewed by F&S Assistant Vice President. If approved, a work order to estimate the cost of installing the air conditioner will be created and the results of the estimate will be returned for Department Head approval before installation proceeds. Please refer to Chapter 7 of the F&S Service Guide for a complete guide to SDSU A/C policy.

To be completed by requesting department:

<table>
<thead>
<tr>
<th>Department</th>
<th>Building</th>
<th>Box #</th>
<th>Room #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person</td>
<td>Charge Account Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td>Fax Number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. What type of room is this (office, lab, classroom)?
2. Has the room use changed in a way that necessitates different temperature requirements? Yes □ No □
   How?
   If so, is this a permanent change? Yes □ No □
3. Will there be temperature sensitive or heat generating equipment, or animals in this room? Yes □ No □
   If so, please list:
4. Is there an existing air conditioner in this room that you are requesting replacement for? Yes □ No □
   Reason for change:
5. Is the person(s) using this room: full time employee □ part-time employee □
   12 month appointment □ 9 month appointment □
6. Will this unit be removed in the fall and reinstalled in the spring? Yes □ No □
7. Any old A/C units to be disposed of will be billed to the Department that they are from. Department Head Date

To be completed by Facilities and Services:

Is there sufficient power? Yes □ No □ If not, what is needed to provide A/C?________
Estimated cost:________ Recommended unit size:________
Comments:________________________________________________________________________
_________________________________________________________________________________
____________________________________                _______________________________________
Electric Shop                             Date                                  Building Maintenance Coordinator                 Date

To be completed by Facilities and Services:

Approved □      Not Approved □
__________________________
Director of Facilities and Services Date

Conditions of Approval (if any): __________________________