

Correctional Facilities – Temperature and Heating/Cooling

SCDC Policy ADM-13.04. Energy Consumption, Management, and Conservation

Included in the Department of Corrections' (SCDC) August 22, 2019 letter to the House Legislative Oversight Committee (LOC). This information was provided in response to the following question in LOC's July 29, 2019 letter to the Department of Corrections: "32. In regards to temperature ranges in SCDC facilities that house inmates, please answer the following: (a) Does the Department of Health and Environmental Control, other entities, or SCDC internally, have requirements or standards; (b) If requirements or standards exist, how does SCDC ensure compliance; and (c) In the past year, has the temperature gone above or below those requirements or standards in any unit for more than 24 hours?"

In addition to providing the information in this document, SCDC provided the following response:

- The only standard SCDC has is SCDC policy ADM-13.04 "ENERGY CONSUMPTION, MANAGEMENT, AND CONSERVATION", which states: "**5.2** Employees working in areas with thermostats for simple HVAC systems (cannot heat and cool at the same time) will set the thermostat so that the room air temperature is 78°F when cooling and 68°F when heating. In areas with more complex systems (heat and cool at the same time), exact thermostat settings will be determined and set forth by the *Assistant Director, Division of Facilities Management* or designee, Division of *Facilities Management*, due to the unique features of these systems and to minimize energy use while maintaining comfort. (4-ACRS-4B-03, 4-4153)".
- These systems are monitored by energy management systems and software or simple room thermostats.
- There is no written record, but yes, we have experienced issues with the heating and cooling that would have allowed them to be down for more than 24 hours. Many of our air handling units are old and we experience usual problems with older equipment. We repair/maintain this equipment as quickly and as efficiently as possible, so the residents of the institutions do not have to go without climate control for long periods. SCDC has 25 different institutional units in critical need of replacement.

SCDC Policy ADM-13.04-Energy Consumption and Conservation

Included in the Department of Corrections' (SCDC) December 18, 2019 letter to the House Legislative Oversight Committee (LOC). This information was provided in response to the following question in LOC's December 2, 2019, letter to the Department of Corrections: "39. In SCDC facilities without HVAC, if any, what does SCDC consider a reasonable temperature range and how does SCDC ensure the temperature remains within that range? Is the temperature within those facilities maintained within the same range as facilities with HVAC systems, which SCDC referenced in its August 22, 2019, letter, question number 32?"

In addition to providing the information in this document, SCDC provided the following response:

- Please see attached ADM-13.04-Energy Consumption, and Conservation.
- Every Dorm at SCDC has heat so the temperature range for heating is the same for every building at SCDC. For the Dorms that do not have air-conditioning, those buildings were designed without air conditioning and use large ventilation fans, high ceilings and several other design features to keep the building cooler than the outside temperature. For institutions that do not have air conditioning, there is not a range as it varies based on the outside temperature.



SCDC POLICY/PROCEDURE

Change 1 to ADM-13.04: [5.1](#)

NUMBER: ADM-13.04

TITLE: ENERGY CONSUMPTION, MANAGEMENT, AND CONSERVATION

ISSUE DATE: June 5, 2015

RESPONSIBLE AUTHORITY: DIVISION OF *FACILITIES MANAGEMENT*

OPERATIONS MANUAL: ADMINISTRATION

SUPERSEDES: ADM-13.04 (April 1, 2003); (October 1, 2001)

RELEVANT SCDC FORMS/SUPPLIES: NONE

ACA/CAC STANDARDS: 4-ACRS-1A-07, 4-ACRS-1A-12, 4-ACRS-4B-03, *4-4138, 4-4139, 4-4139-1, 4-4145, 4-4146, 4-4153*

STATE/FEDERAL STATUTES: South Carolina Code of Laws, 1976, as amended, §48-52-10 through §48-52-680.

Discussion: Responsible energy consumption and energy conservation must be a cooperative effort between all SCDC employees and inmates. Maintenance personnel will be responsible for the installation of energy efficient equipment and for making needed repairs; however, energy conservation is every employee and inmate's responsibility. Energy Awareness Coordinators and Energy Management Teams will serve as leaders for this effort. Maintenance personnel cannot be expected to discover all energy conservation/consumption problems within SCDC institutions and buildings. All employees and inmates should make every effort to assist maintenance personnel by looking for potential problems and providing possible solutions. The Agency can only conserve energy through a cooperative effort by everyone.

PURPOSE: To establish guidelines that encourage more efficient use of energy resources and to develop plans to manage the energy budget and eliminate energy waste within the South Carolina Department of Corrections.

POLICY STATEMENT: The Agency is committed to conserving energy and promoting responsible energy consumption practices. To this end, the SCDC will designate an Energy Manager and Energy Awareness Coordinators who will be responsible for creating Energy Management Teams to generate energy consumption awareness. The Agency recognizes that a cooperative effort is required to reduce the amount of wasted energy within the SCDC and will encourage all employees and inmates to assist in this endeavor. The SCDC will ensure that the energy management program is in keeping with all applicable Agency policies/procedures, American Correctional Association Standards, and state and federal statutes.

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SPECIFIC PROCEDURES:

1. RESPONSIBILITIES:

1.1 Energy Manager: The *Assistant Director, Division of Facilities Management* (within the Division of *Facilities Management*) will be designated as the Agency's Energy Manager. The Energy Manager will be responsible for reviewing energy conservation suggestions submitted by employees through the Employee Innovation System. Inmates may submit energy conservation suggestions through the

Wastewatchers Program. (**NOTE:** Staff and inmates making significant contributions to the energy management program will be recognized for their input.) The Energy Manager will be responsible for ensuring that the Agency complies with state statutes governing energy conservation and management for state agencies. The Energy Manager and the Division Director of Finance will submit reports to the State Energy Office as required by state statute and as requested by the State Energy Office.

1.2 Energy Awareness Coordinators: The Agency Director, each Warden, and the highest ranking official in each SCDC building (e.g., Headquarters building, Support Services building, Training Academy, etc.) will appoint an Energy Awareness Coordinator to establish and monitor energy conservation measures and goals within his/her institution or building. The Energy Awareness Coordinator will form an Energy Management Team. The Energy Awareness Coordinator will also be responsible for assisting the Inmate Representative Committee with energy conservation ideas.

1.3 Energy Management Teams: Each Energy Awareness Coordinator will form an Energy Management Team (EMT) that will include representatives from each of the main components of the institution or building. (In an institution, the members would come from education, food service, maintenance, budgeting, and security. For the Headquarters building, the members would come from each office and division.) An existing committee (e.g., safety committee, staff meeting members, etc.) may serve as the EMT. Each EMT will establish and monitor energy conservation measures and goals within the institution or building. EMTs will be responsible for the enforcement of SCDC Policy/Procedure ADM-13.04 in their respective areas. Each EMT will meet at least quarterly, and each Energy Awareness Coordinator will be responsible for disseminating minutes to the EMT. Copies of the minutes should also be forwarded to the **Assistant Director**, Division of **Facilities Management**.

1.4 Inmate Representative Committees: In addition to the EMT, the Inmate Representative Committees may suggest energy conservation ideas and ways to decrease waste to EMTs.

2. TRANSPORTATION CONSERVATION: Employees utilizing Agency vehicles must observe all state and local speed laws and, when feasible, travel via the most efficient route possible. Whenever possible, vehicle trips will be planned and coordinated in advance to prevent more than one (1) vehicle from going to the same destination at the same time. Vehicle maintenance will be performed in accordance with manufacturer's recommendations pursuant to SCDC Policy/Procedure OP-20.02, "Transportation Management."

3. LIGHTING CONSERVATION:

3.1 The last employee to leave an area that will not be occupied for several hours will be responsible for turning off all lights, unless to do so would jeopardize the security and/or safety of the area.

3.2 Maintenance personnel will ensure that lighting is maintained at the following recommended standard illumination levels unless such would jeopardize the security and/or safety of the area:

AREA	RECOMMENDED FOOT CANDLES
Cells (at desk level)	20
Cafeterias	30-40
Personal Grooming Areas	20
Washrooms	20
Break/Briefing Rooms	20-30
Conference Rooms	30-40
Corridors/Stairways	10-10
Mail Rooms	70-80
Office/Clerical Areas	50-70
Artist/Drafting Rooms	90-100
Storage Areas	5-10
Machine Operating Rooms	90-100

(**NOTE:** Light readings will be taken at desk level for offices and at eye level for grooming areas and public spaces. For institutions or areas without light meters, assistance can be requested from the Division of *Occupational Safety and Workers' Compensation* or from the Division of *Facilities Management*.) (**4-ACRS-1A-07, 4-4145, 4-4146**)

3.3 Maintenance personnel will be responsible for removing any unnecessary fixtures, lamps, and ballasts. Unit supervisors/office managers will be responsible for ensuring that all lamps, fixtures, lenses, globes, and reflecting surfaces of lamps are kept clean and free of dust, grease, and other dirt accumulations. High pressure sodium lights will be used for outside lighting where possible.

3.4 If lighting is controlled automatically, maintenance personnel will be responsible for periodically checking the timer for proper operation and accuracy. If outside lighting is activated by photocells, maintenance personnel will periodically verify proper operation of the same.

3.5 If incandescent lamps are being used for periods over four (4) hours per day, maintenance personnel will replace the lamps with compact fluorescent lamps where feasible and economical.

3.6 Because the lumen output of fluorescent lamps decreases as they age, yet consume the same amount of energy, timely replacement (such as group relamping) will be implemented by maintenance personnel.

3.7 The most efficient fixtures (e.g., electronic ballasts and T8 lamps) will be used where possible.

3.8 In recessed down lights, reflector lamps of lower wattage will be used where feasible.

3.9 Inside warehouses or industry buildings (or where precise color rendition is not important), high pressure sodium lights will be used.

4. ENCLOSED AREAS CONSERVATION:

4.1 In working areas, except where security considerations dictate otherwise, employees will be responsible for ensuring that curtains and shades are left open on cold days to benefit from solar heat gain, closed on hot days to reduce solar heat gain, and closed at night during the winter to reduce heat loss through the window.

4.2 Weather-stripping and/or caulking will be installed around all windows and doors, where needed, to reduce the flow of outside air. Window air conditioning units will be covered by maintenance personnel in cold weather. Broken and/or cracked glass and missing window panes will be replaced. Doors that will not close properly will be fixed. Storm windows and doors will be installed where appropriate and economically feasible.

5. HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) CONSERVATION:

5.1 The use of *state issued* portable electric heaters or heat lamps ~~is prohibited~~ *are permitted* in SCDC owned or leased buildings. *NOTE: Use of portable electric heaters must be approved on SCDC Form 8-19, "Request for Use of Portable Electric Heater." In extenuating circumstances, a portable electric heater can be approved via a telephone call to Division Director Occupational Safety & Worker's Compensation or Division Director of Facilities Management, with a follow-up official request on SCDC Form 8-19. (Changes in BLUE, amended by Change 1, dated August 7, 2017.)*

5.2 Employees working in areas with thermostats for simple HVAC systems (cannot heat and cool at the same time) will set the thermostat so that the room air temperature is 78°F when cooling and 68°F when heating. In areas with more complex systems (heat and cool at the same time), exact thermostat settings will be determined and set forth by the *Assistant Director, Division of Facilities Management* or designee, Division of *Facilities Management*, due to the unique features of these systems and to minimize energy use while maintaining comfort. **(4-ACRS-4B-03, 4-4153)**

5.3 Heating and cooling will be reduced or shut off in unoccupied lobbies, corridors, vestibules, and storage areas by maintenance personnel. Heat-producing equipment should be consolidated into one (1) area to better control heating and cooling (copiers, fax machines, vending machines, etc.).

5.4 Employees may use ventilating fans or ventilating systems (including free-standing fans) in their working areas. During the cooling season, if cool at night and humidity levels permit, doors, windows, and ventilating equipment should be used to cool the building contingent upon safety and security requirements. If practical, maintenance personnel will wire restroom exhaust fans with the light circuit so that they do not run unnecessarily.

5.5 HVAC systems should be turned OFF when a building is to be unoccupied for eight (8) hours or more, unless damage would occur to the building or its contents or when the outside temperature is expected to be lower than 50°F. When possible, automatic set-back thermostats will be installed by maintenance personnel to automatically set back temperatures for these extended periods (usually these thermostats will be set to shut off 30 minutes before the building is expected to be unoccupied and be set to turn on 30 minutes before the building is to be occupied). **(NOTE:** The only exception to this will be made where heat pumps [without a step-up thermostat] are used and where potential savings can be lost when the thermostat is turned up/down in the winter.)

6. ENERGY MANAGEMENT SYSTEM CONSERVATION:

6.1 Where energy management systems are installed, they will be used to the fullest extent possible by institutional maintenance personnel to monitor and control lighting and HVAC equipment for optimum energy efficiency and comfort.

6.2 Institutional maintenance personnel will continuously monitor the energy management system and will ensure that the settings and program instructions are adjusted appropriately for operational changes. **(4-ACRS-4B-03, 4-4153)**

7. WATER HEATING/PLUMBING CONSERVATION:

7.1 Institutional maintenance personnel will set temperature control devices for domestic hot water (water used for personal hygiene or general cleaning) at 105°F or the lowest setting on the control device, whichever is higher. Higher settings may be used in those facilities that have insufficient hot water. If practical and economically feasible, a mixing valve set at 105°F will be installed between the hot water tank and the nearest tap by institutional maintenance personnel. (4-ACRS-1A-12, 4-4138, 4-4139, 4-4139-1)

7.2 Hot water required for food preparation or other health reasons will be set as required by pertinent laws and codes (such as DHEC regulations requiring dishwasher water to be set at 180°F).

7.3 Time clocks, installed by institutional maintenance personnel, will be used on water heaters to reduce the operating time, when feasible.

7.4 Maintenance personnel will install flow restrictors on all lavatories, showers, and hose bibs, etc., to reduce water flow to the minimum amount necessary. Spring operated faucet valves and water-conserving showerheads will be installed where feasible if funding allows.

7.5 Maintenance personnel will ensure that all water leaks and drips are eliminated and that insulation is installed and properly maintained on hot water storage tanks and exposed piping.

7.6 Water should not be left running unattended (mop sinks, kitchen loading docks, bathrooms, etc.).

8. KITCHEN EQUIPMENT CONSERVATION:

8.1 Kitchen personnel should utilize exhaust and hood fans only during food preparation, and should reduce the temperature or turn off cooking equipment during slower periods.

8.2 Kitchen personnel will turn on steam tables 30 minutes prior to use, keep them covered during use, and turn them off as soon as possible after use.

8.3 When possible, maintenance personnel will place condenser coils outside and will ensure that there is adequate ventilation around all condensers and compressors.

8.4 Maintenance personnel will set the controls on all refrigeration equipment as low as necessary, and kitchen personnel will ensure that the capacity of each unit is not exceeded. Kitchen personnel, under general supervision of maintenance personnel,

will clean the condensers and coils on self-contained refrigeration units. Maintenance personnel will clean the condensers and coils, and check the refrigerant regularly, on all other refrigerant equipment. Kitchen personnel should consolidate trips to the refrigerator/freezer to avoid the unnecessary opening of doors.

9. PERSONAL APPLIANCE CONSERVATION:

9.1 Personal electrical appliances of employees and inmates must be Underwriter Laboratory (UL) approved and meet the National Electrical Code. (**NOTE:** The SCDC will not be responsible for any personal property that is damaged by an electrical surge [e.g., lightning, high or low voltage, etc..].)

9.2 Automatic coffee makers should be limited. Coffee pools should be created to take advantage of one (1) coffee maker per group.

9.3 Personal electrical appliances (e.g., radio, TV, fan, etc.) may be used by inmates in keeping with the requirements of SCDC Policy/Procedure OP-22.03, "Authorized Inmate Property and Disposition of Unauthorized Property." However, no more than two (2) authorized appliances will be in use at any one time per inmate.

10. OFFICE EQUIPMENT CONSERVATION: Employees utilizing office and/or audio-visual equipment will ensure that they are turned off when not in use (including computers, CRTs, typewriters, dictating equipment, calculators, televisions, projectors, etc.). Slide projectors should not be rapid-cooled (switch in "fan" position) unless they are to be moved immediately. Power management functions should be utilized on all computer systems when possible.

11. PREVENTIVE MAINTENANCE: Preventive maintenance of all equipment such as boilers, furnaces, air conditioners, etc., will be conducted by maintenance personnel in accordance with the manufacturer's recommendations (including filter changes, adjustments, cleaning, testing, and other related maintenance). The **Assistant Director**, Division of **Facilities Management**, will be available should any technical assistance or additional information be needed. (See SCDC Policy/Procedure ADM-13.07, "Maintenance and Repairs," for more information.)

12. INSPECTIONS: Energy consumption and conservation measures will be reviewed during inspections conducted by Inspectors assigned to the Division of **Facilities Management** and during visits by the Department's Energy Manager. Written reports detailing the findings of these inspections at institutions will be forwarded to the respective Warden, a copy maintained by the Division Director of **Facilities Management** or designee, and a copy sent to the appropriate

Regional Director. Written reports detailing the findings of these inspections at sites other than institutions will be forwarded to the responsible ***Deputy*** Director, a copy maintained by the Division Director of ***Facilities Management*** or designee, and a copy sent to the responsible member of the Agency Director's Staff.

13. REPORTS: Quarterly and annual energy consumption graphs will be furnished to the Agency Director and the Agency Director's staff for review and distribution to appropriate authorities (e.g., Energy Awareness Coordinators, Energy Awareness Teams, etc.).

14. DEFINITION(S):

Energy Management System refers to an automated system which has been implemented in some institutions to control all the boilers, heating, air conditioning, lighting, etc., within the institution.

SIGNATURE ON FILE

S/_____
s/Bryan P. Stirling, Director

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