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Energy Conservation and Building Management Guidelines

July 31, 2013

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educate

connect

inspire

succeed

dream

I MISSION

The mission of the ECISD Energy Management Program is to save money and energy through the conservation and efficient use of gas, water, and electricity, while maintaining a safe and comfortable learning environment.

II GOALS

- Change the way staff thinks about energy and its usage to reflect an attitude of conservation.
- Maintain the comfort and safety of the learning environment.
- Use our utility resources wisely.
- Achieve at least a 25% reduction in our energy bills.

III ENERGY SPECIALIST RESPONSIBILITIES

- Perform routine audits of all facilities and communicate the audit results to the appropriate personnel.
- The Energy Specialist is responsible for either directly or indirectly making adjustments to the Energy Management System (EMS), including temperature settings and run times for Heating, Ventilation and Air Conditioning (HVAC) and other controlled equipment.
- Provide monthly energy savings reports to facility administrators detailing performance results.
- Provide regular program update reports to the Board.
- Enter gas, water, and electric bills into the Energy CAP Online system for analysis and calculation of savings.
- Monitor utility usage in all District buildings.
- Attend all National Training Conferences scheduled by Cenergistic.
- Program thermostats to Energy Management Guidelines specifications.
- Ensure all buildings are shutdown appropriately during District holidays.
- Utilization of data loggers will be initiated and maintained to monitor relative humidity, temperature, and light levels throughout the organization's facilities to ensure compliance with Energy Management Guidelines.

IV CENERGISTIC RESPONSIBILITIES

A. Who Is Cenergistic?

ECISD has contracted with Cenergistic to assist in the implementation and monitoring of the Energy Management program. Cenergistic delivers a customized, comprehensive people-driven energy conservation program that focuses on changing human behavior to help the District reduce energy consumption without equipment upgrades. Implementation of the program is guided by Cenergistic's team of energy consultants – together representing several hundred years of public school energy conservation experience.

B. What Do They Do?

Cenergistic provides on-site and ongoing assessments of the District's facilities through regular consultant visits to the District. Consultants work with the energy specialists in conducting building audits, entering utility bills and analyzing them for savings opportunities, monitoring the overall effectiveness of the program, and strategies for improving the program over time.

C. What Specifics Do They Provide?

Cenergistic builds a customized energy program that is focused on organizational and behavioral change and is designed with the following goals:

- Save dollars that the District can reinvest in the people it serves;
- Preserve a quality learning environment for the District's children;
- Conserve energy for a positive impact on the environment; and,
- Increase awareness to empower users to be energy savers.

V COMMUNICATION

- Distribute Audit Forms to appropriate personnel after building audits.
- Create and maintain an Energy newsletter and website.
- Provide District staff with energy savings tips, ideas, and methods.
- Distribute shutdown requirements for all District holidays.
- Update all staff on the progress of the Energy Management Program.
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VI DISTRICT STAFF RESPONSIBILITIES

- Every person is expected to become an “energy saver” as well as an “energy consumer.”
- It is the responsibility of all staff to implement these guidelines while he/she is present in the classroom, office, or area of responsibility.
- The custodian is responsible for control of common areas, i.e. halls, cafeteria, etc.
- Since the custodian is typically the last person to leave a facility in the evening, he/she is responsible for verification of the nighttime shutdown.

- The facility administrator is responsible for the total energy usage of his/her facility.
- **Building administrators with computer controlled HVAC systems (EMS) will turn in a weekly schedule of after-hours activities for their site to the appropriate Energy Specialist by Thursday of the week before the events. The schedule should include all after-hours activities taking place on the campus that require EMS controlled air, the start & end times of the event, and the area(s) needed. This allows adequate time for programming the activities into the HVAC schedule.**
- Administration will regularly communicate the importance and impact of the energy conservation program to its internal and external constituents.
- To complement the ECISD's behavioral-based energy conservation program, the District shall develop and implement a preventive maintenance and monitoring plan for its facilities and systems, including HVAC, building envelope, and moisture management. This plan will be published as a part of the maintenance department's operating guideline.

VII GENERAL INFORMATION For Energy Conservation

- Classroom doors shall remain closed when HVAC is operating. Ensure doors between conditioned space and non-conditioned space remain closed at all times.
- All exhaust fans should be turned off daily.
- All office machines (copy machines, laminating equipment, etc.) shall be switched off each night and during unoccupied times. Fax machines should remain on.
- It is the responsibility of the instructor or office staff to turn off all classroom or related computers each night. This includes the monitor, local printer, and speakers. Network equipment is excluded.
- All capable PC's should be programmed for the "energy saver" mode using the power management feature. If network constraints restrict this for the PC, ensure the monitor "sleeps" after 10-minutes of inactivity.

VIII SET POINTS

Cooling Season Occupied Set Points¹: 72°F - 78°F
Unoccupied Set Point: 85°F
Heating Season Occupied Set Points¹: 68°F - 72°F
Unoccupied Set Point: 55°F

¹ Set points are in accordance with ASHRAE 55 "Thermal Conditions for Human Occupancy"

A. AIR CONDITIONING EQUIPMENT

- Occupied temperature settings shall NOT be set below **72°F**.
- During unoccupied times, the air conditioning equipment shall be off. The unoccupied period begins when the students leave the area at the end of day, unless teaching staff is directed to stay beyond “comfort period”. It is anticipated that the temperature of the classroom will be maintained long enough to afford comfort for the period the staff remains in the classroom after the students have left.
- Air conditioning start times may be adjusted (depending on weather) to ensure classroom comfort when instruction begins.
- Ensure outside air dampers are closed during unoccupied times.
- Ceiling fans should be operated in all areas that have them.
- Relative humidity levels shall not exceed 60% for any 24 hour period.
- Air conditioning should not be utilized in facilities during the summer months unless the facilities are being used for summer school or year-round school. Air conditioning may be used by exception only or in those facilities that are involved in specific cleaning effort.
- **Use of A/C during off contract summer hours will not be permitted.**
- In all areas which have evaporative coolers such as shops, kitchens and gymnasiums, the doors leading to halls which have air conditioned instruction rooms or dining areas should be kept closed as much as possible.
- Where cross-ventilation is available during periods of mild weather, shut down HVAC equipment and adjust temperature with windows and doors. Cross-ventilation is defined as having windows and/or doors to the outside on each side of a room.
- Ensure dry food storage areas are maintained within code requirements. Typically, this is 55F-75F temperature and 35%-60% Relative Humidity. Utilize loggers to verify.

B. HEATING EQUIPMENT

- Occupied temperature settings shall NOT be above 72°F.
- The unoccupied temperature setting shall be 55°F (i.e. setback). This may be adjusted to a 60°F setting during extreme weather.
- The unoccupied time shall begin when the students leave an area, unless teaching staff is directed to stay beyond HVAC “comfort period”.
- During the spring and fall when there is no threat of freezing, all steam and forced air heating systems should be switched off during unoccupied times. Hot water heating systems should be switched off using the appropriate loop pumps.

- Ensure all domestic hot water systems are set no higher than 120°F or 140°F for cafeteria service (with dishwasher booster).
- Ensure all domestic hot water re-circulating pumps are switched off during unoccupied times.
- For heat pumps, ensure a 6 °F dead-band between heating and cooling modes.

C. THERMOSTATS

- Teachers will be instructed in the appropriate operation of the override features. All other controls will be locked.
- Only authorized staff may change the programming of thermostats.
- Custodians will set thermostats to continuous unoccupied for all holidays, and will set back to run program when school resumes.
- All occupied overrides will be set to one (1) hour.

- Time Settings Start End Office

Elementary

7:45-3:00 7:00 3:00 5:00

7:45-4:00 7:00 4:00 5:00

7:45-5:00 7:00 5:00 5:00

Secondary

Classrooms 8:00 4:15

Office 7:30 5:15

Cafeteria & Auditoriums will be adjusted according to usage.

Office buildings 7:30 5:00

IX LIGHTING

- All unnecessary lighting in unoccupied areas will be turned off. Staff should make certain that lights are turned off when leaving the classroom or office when empty.
- Utilize natural lighting where appropriate.
- All outside lighting shall be off during daylight hours.
- Gym lights should not be left on unless the gym is being utilized.
- All lights will be turned off when students and staff leave for the day. One hour after students are dismissed custodians will perform a check of all classrooms to make sure lights are off. Custodians will turn on lights only in the areas in which they are working.

- Refrain from turning lights on unless definitely needed. Remember that lights not only consume electricity, but also give off heat that places an additional load on the air conditioning equipment and thereby increases the use of electricity necessary to cool the room.
- Specific light control measures may be established through discussion with the Principal.

X WATER

- Ensure all plumbing and/or intrusion (i.e. roof) leaks are reported and repaired immediately.
- Grounds watering should only be done between 4am-10am. Do not water during the heat of the day, typically between 10am – 8pm.
- When spray irrigating, ensure the water does not directly hit the facility.

XI REPORTING COMFORT ISSUES

1. Communicate temperature comfort issues to the building administrator.
2. The building administrator should have a custodian investigate to make sure the thermostat (if applicable) is set to the correct time & day. If those need adjustment, the custodian can reset them.
3. If the adjustment of day & time does not fix the problem, contact the Energy Specialist for your building and report the issue.
4. The Energy Specialist will investigate the problem and report the solution or need for a work order to the building administrator.
5. If a work order is necessary, the building administrator is responsible for submitting the request in the District's work order system.
6. Obvious equipment problems should be directly reported through the work order system.

XII BAD WEATHER DAYS

- Custodians reporting to buildings should make sure all thermostats in unused areas are placed in unoccupied mode for the day.
- Energy Specialist will reset campuses with EMS controls to unoccupied.

XIII SHUTDOWN REQUIREMENTS – Nightly/Weekend

- All electronic equipment (*computers, copiers, printers, monitors, speakers, office equipment, radios, fans, scented candles*) must be powered off, not in sleep mode. Network and security equipment should be left on.
- All lights, except for security lighting, must be off.
- Close all blinds and doors. Bathroom doors should remain open.

SHUTDOWN REQUIREMENTS – 3-Day Weekend

- All items from Nightly shutdown, plus;
- Thermostats must be setback for the holiday period.

SHUTDOWN REQUIREMENTS – Long Holidays (Thanksgiving, Christmas, Spring Break, July 4th)

- All computer and electronic equipment UNPLUGGED. (See list from Nightly shutdown)
- All refrigerators cleaned out, defrosted, and UNPLUGGED with the door left open. This includes refrigerators in the Lounge areas. (Excludes Nurse and required Science refrigerators)
- Unplug microwaves and coffee pots.
- All lights, except for security lighting, must be off.
- Close all blinds and doors. Bathroom doors should remain open.
- Thermostats setback for the holiday period.
- Water heaters turned off.
- Water fountains unplugged.
- All exhaust fans off.

SHUTDOWN REQUIREMENTS – SUMMER

- All electrical devices UNPLUGGED. (See list from Nightly shutdown)
- All school owned refrigerators cleaned out, defrosted, and UNPLUGGED with the door left open. One refrigerator in the Lounge can be left running for custodial staff during the summer, but must be emptied and unplugged during the July 4th break.
- Take home all personal appliances – like refrigerators and microwaves.
- Unplug microwaves and coffee pots.
- All lights, except for security lighting, must be off.
- Close all blinds and doors. Bathroom doors should remain open.
- Thermostats setback for the holiday period.
- Water heaters turned off.
- Water fountains unplugged.
- All exhaust fans off.
- Leave ON all network and security equipment.
- Clearly label any equipment which must not be unplugged/powerd off and the reason why it must remain on.

XIV REFERENCES

- District Policy CL(LOCAL)
- District Operations website: <http://www.ectorcountyisd.org//Domain/22>
- Energy Management website: <http://www.ectorcountyisd.org//Domain/4434>
- Cenergistic – The Energy Conservation Company, <http://www.cenergistic.com/>