

Raymore-Peculiar Schools



Energy Management Program Guidelines 2011-2012

Raymore-Peculiar Schools Energy Management Program

Purpose

While schools cannot operate without lights, heating and cooling, they can reduce energy bills to increase the funds available for instruction. The Raymore-Peculiar School District has adopted an Energy Management Program. Recognizing the potential for savings, the Energy Management Program will find and share new ways to equip district buildings with the tools necessary to reduce the cost of operating facilities. These strategies for controlling energy costs, when implemented through a comprehensive program of energy management, can help direct more education dollars to the classroom. The goal of energy management is to keep operating costs down by reducing energy waste while providing a safe, comfortable environment for learning. Reaching this goal will be achieved through the implementation of a comprehensive energy management plan. The success of the program will only occur through a team effort where all employees take an active role in its implementation.

Focus of Program

The program will primarily focus on the following areas:

- Identify, implement and monitor guidelines for reduction of energy waste.
- Identify, implement and monitor guidelines for efficient temperature and usage settings.
- Communicate and encourage behavior promoting energy conservation.
- Utilize internal energy audits and checklists to evaluate energy efficiency.
- Maintain an awareness of energy efficiency best practices.
- Identify and take advantage of consortiums or programs leading to utility savings.
- Identify yearly goals and benchmarks for energy usage efficiency.

Energy Management Goals

The following goals have been established for the energy management program:

- Communicate and encourage energy management best practices to staff.
- Maintain a high level of awareness on energy efficiency.
- Conduct energy audits to identify areas of efficiency.
- Reduce energy and natural gas usage by 20%.
- Reduce water usage by 10%.
- Monitor and analyze utility bills to identify and address energy usage trends.

Disclaimer

The district has adopted these Energy Management guidelines. Staff members are expected to observe and implement these guidelines as provided. However, these guidelines are not intended to be all-inclusive, and may be modified for local conditions. These guidelines supersede all previous instructions related to energy conservation or building management.

Energy Management District Plan

District Energy Manager

1. Van McLain, Energy

District Energy Smart Team

1. Arla Emerick, Director of Technology
2. Joe Coon, HVAC Supervisor
3. Larry Dial, Custodial Supervisor
4. Steve Meyers, Director of Support Services & Facilities

Duties and Responsibilities of District Energy Smart Team

1. Communicate guidelines and procedures related to energy management.
2. Receive reports on progress of energy conservation throughout the district.
3. Hear and attempt to resolve problems and complaints about the energy management program.
4. Meet on a quarterly basis, or as needed.
5. Solicit suggestions for better efficiency.
6. Develop and present an annual Energy Management Program.

Energy Management Building Plan

Building Energy Coordinator

1. Building Administrator

Building Energy Smart Team

1. Classroom Teachers (2)
2. Custodial Staff Member
3. Office Staff Member

Duties and Responsibilities of Building Energy Smart Team

1. Review guidelines and procedures related to energy management, and make recommendations to District Team.
2. Receive reports on progress of energy conservation in the building.
3. Hear and attempt to resolve problems and complaints about the energy management program within the building.
4. Meet on a quarterly basis.
5. Solicit suggestions for better efficiency.
6. Provide District Team with input to develop and present an annual Energy Management Program.

Exceptions to any of the guidelines included in this document must be pre-approved, on an individual basis, by the District Energy Management Team.

General Guidelines

- Classroom doors shall remain closed when HVAC is operating. Ensure doors between conditioned space and non-conditioned space remain closed at all times (i.e. between hallways and gym).
- Proper and thorough utilization of data loggers will be initiated and maintained to monitor relative humidity, temperature and light levels throughout district buildings to ensure compliance with district guidelines.
- All capable PCs 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.
- All machines and equipment should be turned off when not needed. This includes computers and monitors.
- Kitchen equipment must be turned on for usage time only (pre-heat should be 30 minutes).
- Review the use of facilities by outside agencies to develop facility space which optimizes energy efficiency. (Small groups should use smaller spaces.)
- Identify additional items of equipment that can be turned off during extended school closures.
- Establish guidance for energy management strategies for new school designs.
- Maximize common gathering areas, department offices, work areas and lounges for personal appliances such as refrigerators, microwaves, coffeepots, etc. The more we consolidate personal appliances while using energy efficient equipment, the more efficiency we realize. The district energy management team recommends consolidation but recognizes the necessity for buildings to make their own determination related to the appropriate use of personal appliances. Each building should consider the potential for consolidation, and work collaboratively with staff to maximize said potential.
- Conduct an energy-training program for maintenance, grounds and custodial staff that provides specific steps, tailored to each school on how to reduce energy waste (to be done in conjunction with the detailed energy checklists).

General Responsibilities

- Every person is expected to be an “energy saver” as well as an “energy consumer.”
- The Energy Manager performs routine audits of all facilities and communicates the audit results to appropriate personnel.
- The Energy Manager provides regular reports to Principals indicating performance with regard to energy savings.
- The district is committed to and responsible for maintenance of the learning environment.
- To complement the district’s energy management program, the district will develop and implement a preventive maintenance and monitoring plan for its facilities and systems, including HVAC, building envelope, and moisture management.

Principal Responsibilities

- The Principal is responsible for the total energy usage of his/her building.
- Schedule the use of classrooms and other spaces wisely to reduce energy consumption.
- Keep a focus of energy management among staff throughout the year and utilize data to evaluate progress.
- Communicate with RP Energy Manager on issues or questions related to Energy Management Program. Hear and attempt to resolve problems and complaints about the program within the building. Solicit suggestions for better efficiency.
- When repainting buildings, specify light, reflective colors.
Plan evacuation drills during non-peak HVAC hours if possible.

Teacher/Secretary Responsibilities

- The Teacher is responsible for implementing the guidelines during the time that he/she is present in the classroom.
- Blinds or drapes on windows that receive direct sunlight should be closed when air conditioning systems are on and at night during the winter.
- Do not block classroom/office area air supply and return grills with furniture or displays.
- Do not cover or block temperature sensors. Contact your custodian about temperature adjustments.
- Close all windows and doors when leaving the classroom or office at the end of the day, and turn off all lights and machinery (computers, monitors, copy machines, laminating equipment, etc.)
- Turn off lights when leaving the room.
Report faulty temperature sensors and other equipment that may be malfunctioning.
- Dress for the weather (warmer clothes during winter and cooler clothes during summer) and encourage students to do the same.

Custodian Responsibilities:

- The custodian is responsible for control of common areas, halls, cafeteria, etc.
- Since the custodian is typically the last person to leave a building in the evening, he/she is responsible for proper shutdown and lockdown.
- Check for proper room temperature and report if in question.
- Turn off lights in unused spaces.
- Turn off all exhaust fans every night or during unoccupied hours unless necessary for indoor air quality.
- Follow procedures for shutdowns during weekends and vacations.
- Replace ceiling tiles when dislodged, broken or missing.
- When feasible, schedule wet deep cleaning of carpets during drier times of the year.
- Shut classroom and foyer doors for proper heating and cooling of rooms and hallways during unoccupied hours.
- Blinds shut and down in unoccupied times.

Maintenance Responsibilities:

- Check all building insulation, caulking and weather-stripping. Repair caulking and weather-stripping as necessary.
- Inspect heating and air conditioning equipment periodically.
- Replace worn seals, fittings, traps, etc. and check ducts for leakage.
- Keep refrigerator compressors and condensers clean.
- Inspect drinking fountains for proper operation and leaks.
- Check all plumbing for leaks.
- Reduce hot water temperatures to 120°F except in food preparation areas.
- Secure all attic and roof hatches.
- Keep doors in good working condition.
- Repair damaged windows and doors as soon as possible.
- Adjust times to coincide with changes in daylight savings time.
- Inspect and clean water coolers.

Thermostat Set Points

Cooling Season Occupied Set Points¹:	74°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”

Air Conditioning Equipment:

- Occupied temperature settings shall not be set below 74°F.
- During unoccupied times, the air conditioning equipment shall be set in the setback temperature mode. The unoccupied period begins when the students leave an area at the end of the school.
- Air conditioning start times may be adjusted, depending on weather, to ensure classroom comfort when school begins.
- Ensure outside air dampers are closed during unoccupied times.
- Ceiling fans should be operated in all areas that have them.
- For any 24-hour period, relative humidity levels shall not average greater than 60%.
- Air conditioning should not be utilized in classrooms during the summer months unless the rooms are being used for summer school or year-round school. Air conditioning may be used by exception in isolated areas during summer cleaning.
- In all areas which have evaporative coolers such as shops, kitchens and gymnasiums, the doors leading to halls which have air conditioned classrooms 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 manage temperature with windows and doors. Cross-ventilation is defined as having windows and/or doors to the outside on each side of a room.
- Thermostats must not be tampered with to alter HVAC pre-set temperature ranges. Any variance to temperature settings must be approved by the Energy Manager and HVAC Supervisor.
- Return airflows must be unrestricted.
Keep doors and windows closed in areas using HVAC while in operation.

Heating Equipment:

- Occupied temperature settings shall not be above 72°F. The unoccupied temperature setting shall be 55°F (setback). This may be adjusted to a 60°F setting during extreme weather.
- The unoccupied time shall begin when the students leave an area.
- During 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.

Lighting:

- All unnecessary lighting in unoccupied areas will be turned off. Teachers should make certain that lights are turned off when leaving the classroom 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 teachers leave school. Custodians will turn on lights only in the areas in which they are working.
- Refrain from turning lights on unless definitely needed. Lights not only consume electricity, but also emit heat that places an additional load on air conditioning equipment and increases the electricity necessary to cool the room.
- All lights (inside and outside) must be turned off each day after the buildings are locked for the night except security lighting. Timers must be adjusted for such hours.
- The amount of athletic lighting used should be appropriate for the activity and used only when necessary. Use appropriate partial lighting for after-hours activities (i.e. partial banks of lights for practice or group meeting).

Water:

- Ensure all plumbing and/or roof leaks are reported and repaired immediately.
- All watering should be done between 5:00 AM and 10:00 AM.
- When spray irrigating, ensure the water does not directly hit the building.

- Water cooler thermostats are to be set at the highest setting.