

USI O&M Energy Survey Summary Examples

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HVAC

Modify Thermostat Settings (cooling): The thermostat settings to control cooling are lower than necessary and cause excessive energy consumption. Temperature settings were found to be 70 degrees F or lower in many areas. When cooling equipment is in operation, it is recommended that the thermostat set points be raised to at least 74 degrees F. The State Energy Office recommends 76 degrees F as the cooling set point.

Modify Thermostat Settings (heating): The thermostat settings to control heating are higher than necessary and cause excessive energy consumption. Temperature settings were found to be above 70 degrees F in many areas. When heating equipment is in operation, it is recommended that the thermostat set points be lowered to a maximum of 70 degrees F.

Repair Thermostats: Many thermostats were found to be out of calibration, causing difficulty in controlling space temperatures. Several thermostats have been installed in unusual locations that do not provide typical temperature readings for that zone. Please calibrate all thermostats, and move some thermostats to more strategic locations that better represent the temperatures of the zone.

Shut Off Air Handling Units During Unoccupied Periods: Air handling units were found to be operating continuously, even during some unoccupied periods such as nights and weekends. For buildings that have a regular schedule of unoccupied hours, it is recommended that the air handling units shut off immediately when the building is vacated, and start back up two or three hours prior to occupation. During times of extreme outdoor temperatures, winter or summer, it may be necessary to keep the air handlers operating. For this case, it is recommended that the thermostats be set back to provide less conditioning during unoccupied hours, and that the outdoor air dampers be closed. If existing controls are not available to program the air handlers to shut off, it is recommended that programmable thermostats or timers be installed, with the eventual goal of controlling the equipment through an energy management system.

Modify Operation of Energy Management System: For the HV AC energy management system, please continue efforts to conserve energy. Set back of cooling supply air temperature from 55 degrees F up to 65 degrees F should be aggressively pursued during cool weather partial load conditions. If only one or two zones require 55 degree supply air, consider raising the supply air temperature and allow these zones to reach 76 degrees before bringing the supply air temperature back down.

Expand the use of Outside Air Economizing: When the outdoor air is 55 degrees, this air should be used to cool the building rather than operating the chiller. In some buildings, the chillers were running with the outdoor temperature below 55 degrees.

Where the ductwork and dampers are present, please set the controls to ensure that economizing is used to full potential.

Control Radiators to Prevent Overheating: Steam radiators respond slowly to changes in the heating load, often resulting in overheating. Radiator valves have been manually opened to an excessive level, with windows opened to compensate for the overheating. Please encourage occupants to keep radiator valves at a reasonable setting and avoid the energy waste from open windows.

Deduct Sewer Costs for Cooling Tower Make-up Water: Please coordinate with the water public utility so that sewer charges will not apply to cooling tower make-up water.

Improve Boiler Efficiency: At the *Boiler Plant*, the boiler burner controls are outdated and inefficient, without proper control of excess air. Please contact the State Energy Office to request a boiler efficiency survey, or consult with another boiler specialist to ensure that the boilers are operated at peak efficiency.

Improve Boiler Efficiency: For many of the boilers on campus, the equipment is operating well, but there is potential to improve the efficiency of the boilers by using portable instrumentation such as an oxygen analyzer. It is recommended that the staff initiate an effort to improve boiler efficiency, either by purchasing the instruments and using in-house labor or contracting with a boiler controls specialist.

Identify and Replace Defective Steam Traps: With such a large number of steam traps on campus, the probability is high that many traps are defective. Failed steam traps result in an enormous waste of energy, water and chemicals. Please contact the State Energy Office to request a steam trap survey, or implement a maintenance program to regularly inspect traps.

LIGHTING

Turn Off Lights in Unoccupied Rooms: Lights were left on in many unoccupied rooms throughout the complex. It is recommended that management promote the policy for employees to shut off lights whenever leaving a room, even for short periods of a few minutes. As funds become available, it is recommended that occupancy sensors be installed to automatically control the lighting.

Convert Incandescent Lighting to Compact Fluorescent: Incandescent light bulbs are in use throughout the complex, especially in areas such as lobbies and corridors. It is recommended that the maintenance staff stock compact fluorescent bulbs to replace incandescent bulbs, either at failure or preferably in a group relamping program.

Turn Off Outdoor Lighting in Daytime: The lighting outside the front entrance of some buildings was on during daylight hours. Please encourage occupants to turn off outdoor lighting when not needed.

Avoid Mixing T8 and T12 Lamps: In some areas, T12 lamps were installed to replace T8 lamps. The T8 lamps with electronic ballasts are more efficient, and putting T12 lamps in these fixtures wastes energy and could damage the equipment. Please coordinate with the staff to ensure that T8 lamps are stocked and used properly.

Reduce Lighting Levels in Corridors: Several corridors in buildings on campus appear to be over-lighted. Please consider removing lighting fixtures or delamping fixtures in hallways to maintain only the minimum recommended power allowance of 0.7 watts per square foot listed in the Energy Code.

OTHER EQUIPMENT

Activate Software to Shut Off Computer Monitors: Many computer monitors were on throughout the campus, without an operator nearby. It is recommended that the settings be adjusted to shut off power to the monitor if the operator does not use the computer within several minutes. If settings are not available to shut off monitors, software can be obtained through the USI Liaison.

Remove Light Bulbs from Vending Machines: Please coordinate with the soft drink vendor to remove lights from the drink machines. If the vendor objects, please do not request bulb replacement at failure. As the budget allows, devices could be installed to shut off machines during off-hours.

Adjust Water Usage in Toilet Fixtures: Many toilet fixtures on campus use more water than necessary. Please reduce flows for minimum water usage, by adjusting flush valves for water closets and urinals, and installing aerators on lavatory faucets.