

Energy Management/Education

Resource Conservation Management

In support of North Kitsap School District Policy No. 6810, the following guidelines are set forth to establish standard practices to optimize the learning and working environment as well as to avoid unnecessary utility expenditures. The district's Facility Operations and Maintenance Department is committed to continuing to improve the efficiency and operations of all installed systems.

It is important that these energy guidelines be observed for the operation of the lighting and cooling/heating equipment. The building principal/department manager is responsible for the total energy usage of his/her site. All staff is responsible for implementing the guidelines over which he/she has control. The principals and department managers will be provided information reflecting the energy consumption for his/her building on a quarterly basis. Energy reports are to be shared with staff.

Specific items for emphasis include:

1. Every student and employee will be expected to contribute to energy efficiency in the district. Every person is expected to be an "energy saver" as well as an "energy consumer".
2. Lighting in unoccupied areas will be turned off. Safety lighting will be held to the minimum level necessary for safe passage. All lights will be turned off when students and teachers leave school for all areas assigned. Custodians will turn on lights only in the immediate area in which they are working. Once work is complete, they will turn lights off. At no time will lighting be turned on for an area not being worked on or occupied. Planning of work/cleaning cycles should be limited to thirty (30) minutes of lighted areas whenever possible.
3. Summer time air conditioning will be used only in occupied office areas or in schools where the extended year calendar (summer school) is in session.
4. The principal and/or their designated staff personnel, in coordination with the Facilities Operations and Maintenance Department will be responsible for a complete shutdown of the facility when closed on weekends and vacation periods.
5. For all schools, offices, or portable buildings that have air conditioning, it is extremely important that all windows and doors remain closed so the system can work as designed. Most are set up in a "Zone" configuration and opening the Zone to outside input defeats the design features of the A/C. Additionally, it should be obvious that opening exterior windows and doors when the A/C is on just adds to the cost of utilities unnecessarily. If the system is not operating correctly, put in a work order.
6. A school closure of four or more days will be considered as an "energy conservation opportunity", and various levels of utility "shut-downs" will subsequently be implemented. Staff should schedule and/or curtail activities accordingly.

Guidelines for Operation of Heating, Ventilating and Air Conditioning (HVAC) Systems

General Guidelines

1. HVAC systems will be operated in the most economical way possible and only for the minimum of times required to provide climate for a specific activity.

2. Facilities staff should monitor the weather and make adjustments to the HVAC control system start/stop times to compensate for changes in seasons; i.e., boilers and fans should start later when weather is warmer and earlier when weather is cold and windy. Building custodians must periodically check the automatic controls; to make sure the equipment is working correctly and not in manual. Any deviations should be immediately reported to the maintenance department via work order.
3. Every opportunity to decrease HVAC system operating times should be considered by the custodian and/or principal and their staffs. These may include early release, learning improvement days, inservice days, holidays, and cancelled games or activities.

School Days

1. On regular school days, the HVAC system times are set to provide the following temperatures from the time of teaching staff occupancy to the time of last class dismissal in the majority of classrooms in the building. Temperatures are measured five feet above the floor level in the general vicinity of the center of the room. It should be noted that exterior walls and windows could experience temperatures of 5 to 6 degrees cooler/warmer than the center of the room due to radiant heat/cooling of the outside. Therefore, it is important to ensure proper placement of workstations for personnel that take this problem into account.
2. Conversely, rooms with perimeter heating units will experience the exact opposite effect and must be compensated for by proper placement of workstations and personnel.
3. General guidelines for temperature control throughout the district are:
 - o Heating: 68 degrees, plus or minus 2 degrees
 - o Cooling: 74 degrees, plus or minus 2 degrees

However, specifically, the following heating guidelines will be utilized:

<u>Site</u>	<u>Not to Exceed</u>
Classrooms	68
Portables	70
Libraries	70
Offices	70
Gymnasiums & Locker Rooms	65
School Shops	68
Halls	62
Kitchens and Cafeterias	65
Facilities & Operations Shops & Normally Unoccupied Warehouses	62

4. When officially sponsored school activities occur on school days, the space(s) occupied by the activity may be provided with heat and/or ventilation for the duration of the activity to the standards above. (Actual implementation of this requirement will depend upon the flexibility and capabilities of the HVAC control system installed).
5. After class or activity hours, all areas should be set back to a low limit normally set at 55 degrees, but not to exceed 60 degrees at any time.

School Vacation Days, Holidays, and Weekends

1. On workdays, when school is not in session, the entire building shall be operated on a target night low limit not to exceed 60 degrees.
2. Normal heat and ventilation may be provided for scheduled activities and athletic events, but not for informal or “pick up” practices. If possible, only the area of the activity should be heated and ventilated and temperature maximums shall be the same as listed above.
3. On holidays and weekends the entire building shall be operated on a target low limit not-to-exceed 60 degrees.
4. The Director of Facilities Maintenance and Operations must approve all other energy uses.

Guidelines for Operating Lighting Equipment

School Days

1. Where possible, we are all encouraged to take full advantage of natural light. When adequate illumination is available from sunlight, consider leaving artificial lights OFF.
2. Where installed, segmented lighting (lights where individual switches control part of the lights in a room) should be turned on only as much as needed to provide adequate lighting.
3. Teachers should make certain that lights are turned off whenever classrooms are left unoccupied. (See note below)
4. Lights in all gymnasiums should not be left on unless the gym is being continually utilized.
5. All outside lights should be off during daylight hours.
6. Night custodians should turn lights on only in the specific area in which they are working. They should be turned off as soon as possible after work is complete. Custodians should Zone work to eliminate the single task work that requires entire wings or buildings to be on as they accomplish their work. For example, empty trash, vacuum, dust, clean one classroom at a time, then turn off the lights. Emptying the trash in an entire wing, for example and then returning to vacuum, then returning again to dust/clean windows greatly extends the time lighting must be on and wastes energy.
7. Timers for security and parking lot lights are to be reset to correlate with daylight hours. Also, all parking lot lights and building perimeter lighting shall be turned off at 11:00 p.m. during the week and all weekend. The exception to this would be if a scheduled event takes place on the weekend, which must be coordinated with the Facilities Scheduler on the Facilities Request Form.
8. Principals and site staff personnel shall be responsible for ensuring that all building systems are operating in the most energy efficient method possible. Any deviation should be reported to the maintenance staff via a work request.

NOTE: The constant turning on and off of lights actually wastes more energy than it saves. The general guideline should be if you are leaving for more than 10 minutes, turn off the lights. If not, leave them on. A standard light bulb will run from 9 to 12 minutes on the energy it takes to start it.

GUIDELINES FOR ELECTRICAL EQUIPMENT USE

1. All electrical equipment such as computers, copy machines, laser printers, fax machines, scanners, monitors, television sets, and VCR's will be turned off or on hibernate mode at the end of each workday.

2. When not in use, all computer monitors and computers will be on “sleep” or “hibernate” mode. At the end of the workday, they must be turned off.
3. Vending machines shall be turned off during vacation times, especially during winter and spring break and summer vacation. If a product would spoil during this time period, then it should be removed and placed in a normally refrigerated space during the shutdown period.
4. Food Services will control the shutdown of all kitchen refrigerators, chill boxes, and freezers. If needed, coordination with the maintenance department to assist should be requested.
5. Personal appliances in individual work spaces, including, but not limited to, space or portables heaters, portable fans, microwave ovens, coffee pots, refrigerators, and hot plates are prohibited and shall be removed.

Guidelines for Operation of Domestic Hot Water Heaters

School Days

1. Thermostats for hot water heaters will be set not to exceed 110 degrees.
2. Thermostats for hot water heaters serving kitchens will be set not to exceed 120 degrees.
3. Thermostats for rinse cycle hot water boosters will be set at not to exceed 180 degrees.
4. Dishwasher hot water boosters shall be operated only when the dishwasher is in service.

Weekends, Holidays, and Vacation Days

Circulating pumps shall be turned off to domestic hot water heaters.

Guidelines for Water and Irrigation

1. The district will employ the use of water-saving faucets, toilets, and flush valves in all sites whenever possible.
2. All district employees shall promptly report discovery of leaking plumbing fixtures to the head custodian or fill out a work request to get it fixed.
3. Water supply lines feeding irrigated fields will be metered separately from domestic water supply lines.
4. All irrigation systems will be connected to a weather-controlled watering system wherever possible.

Guidelines for General Operation of District Vehicles

(Except those operated by the Transportation Department)

1. District vehicles shall be operated in the most energy-efficient mode possible.
 - a. It is not necessary to “warm up” a vehicle. Get in, start the vehicle, and as soon as you establish oil pressure and gauge activity, start your journey.
 - b. Never exceed speed limits.
 - c. Provide for limited use of brakes, use the natural slowdown of the engine, downshift if practical to coast to a stop.
 - d. Use light foot method of acceleration.
 - e. Use cruise control whenever possible to maintain a constant speed.
 - f. Never let a vehicle idle for more than 30 seconds, turn it off.
 - g. Do not use air-conditioning whenever practical. Open windows to cool occupants.

2. Plan your trips to ensure the least miles driven. Plan your work so you don't have to retrace your route and ensure that you have all tools and equipment and materials to do your work when you leave the shop.
3. Take breaks and lunch periods in the field. There is no reason to return to the shop or office and that practice wastes energy and time.
4. Ensure that your vehicle is well maintained. This includes proper tire inflation, regular oil and air filter changes.
5. Use only the minimum octane that is required to ensure proper operation of your vehicle.

Major Equipment Replacement, Capital Projects and Renovation of Buildings

1. Whenever possible, all major equipment replacements shall be upgraded to the most energy efficient unit/system that is compatible with existing equipment.
2. All newly acquired equipment shall be the most cost-effective and energy efficient models available that are compatible with existing equipment or building systems.
3. Coordination between the Facilities Maintenance and Operations Department and the project managers shall ensure review and acceptance of all equipment being installed in the district.

Energy Conservation

In light of the increasing cost and dwindling supply of conventional energy sources, a life cycle cost analysis will be required of each major construction project. A life cycle cost analysis will include a description of:

- A. Insulation and heat retention factors;
- B. Variable occupancy and operating conditions to be incurred by the facility;
- C. Overall supply and demand of the facility's energy system and actual or potential utilization of outside energy sources, such as climate;
- D. Initial cost of energy plant; and
- E. An energy consumption analysis comparing alternative energy systems.

As part of its commitment to energy conservation, the district will consider the use of at least one renewable energy system such as solar energy, wind or wood or wood waste, geothermal, or other nonconventional fuels in any construction or renovation project.