

## I. Introduction

## II. Letter from Superintendent

## III. District Operating Procedures

1. Requests for Building Modifications Pertaining to Energy-Related Matters
2. Standardized Temperature Settings for Water Heaters
3. Standardized Settings of all Thermostats
4. Authorized Adjustment of Thermostats
5. Optimum Startup Procedure for Air Conditioning and Heating Equipment
6. Optimum Shutdown Procedure for Air Conditioning and Heating Equipment
7. Operation of Specific-Use Areas
8. Obstruction of Supply Air Vents
9. Elimination or Proper Use of Portable Electric Heaters
10. Operation of Equipment During Non-Instructional Periods
11. Schedule and Operation of After-Hour Events
12. Proper Operation of Exterior Doors and Windows
13. Proper use of Window Shading Devices
14. Proper Operation of Interior Doors
15. Operation of Interior Lights
16. Area Lighting Controlled by Multiple Switching
17. Lighting Procedures for Limited-Use Areas
18. Ornamentation Lighting
19. Exterior Lighting
20. LED Light Bulbs
21. Lighting Used for Vending Machines
22. Demand Response (Reduce or modify electricity use in response to ERCOT alert)
23. Demand Limiting (Peak shaving)
24. Personal Appliance Permits
25. Approved Air Fresheners
26. Assignments

## IV. Energy Saving Tips for the Classroom

## V. Operation Procedures for Plant Services Personnel

1. Cleaning and Continual Upkeep of all Mechanical Rooms
2. Light Fixture Inspection and Cleaning Program
3. Supply and Return Air Vent Cleaning Program

## VI. Daily Guidelines and Recommendations for Custodians.

## VII. Operating Procedures for Child Nutrition Personnel

## VIII. Energy Saving Tips for the Kitchen/Cafeteria

### Introduction

Awareness of conservation techniques is an important aspect of an energy conservation program. Establishing district guidelines is critical to the overall program because we will be able to judge the buildings based on near identical operating procedures. Only then will we be able to determine the efficiency of the various buildings and therefore, be able to formulate a true general comparison of energy consumption levels at all buildings.

Energy conservation is first a people's concern, and then a technical concern. Administrators should take a serious look at their building's operation in terms of normal daily routines and activities. By designating thermostat settings, reducing equipment run time and lighting operations, all building administrators will be able to contribute to the district Energy Management program.

An energy conscious attitude among all district personnel should prove to generate substantial savings, and will cost essentially nothing to implement. The Superintendent and District Policy Committee have approved the guidelines and procedures set forth. These are general guidelines, meaning that some of them will not directly pertain to every building because of varying unique characteristics associated with each building. However, all Administrators should implement these guidelines to the maximum possible level.

Dear DeSoto ISD Staff:

An Energy Management Plan has been developed to reduce the district's energy costs. As stated in the introduction of this plan, "Energy conservation is first a people's concern, and then a technical concern. An energy-conscious attitude among all district personnel should prove to generate substantial savings."

The Energy Department and myself are expecting your full support in implementing the plan as set forth in the guidelines.

Sincerely,

Dr. Usamah Rodgers - DeSoto ISD Superintendent

### III. DISTRICT OPERATION PROCEDURES

#### 1). REQUESTS FOR BUILDING MODIFICATIONS PERTAINING TO ENERGY-RELATED MATTERS

The administrator in charge of any building shall be responsible for requesting any modifications or adjustments in lighting application or operation of mechanical equipment.

At no time should any employee make a request for modifications or adjustments to custodians or maintenance personnel. All requests will be directed to the person responsible for that building.

#### 2). STANDARDIZED TEMPERATURE SETTINGS FOR WATER HEATERS

All thermostats for water heaters shall be set at 105 degrees except for kitchens and areas where 140-degreewater is needed for sterilization. Cold water should be used in machines for washing athletic clothing.

#### 3). STANDARDIZED SETTING OF ALL THERMOSTATS

Standardized thermostat settings for specific areas are listed below. The federal and state guidelines permit the temperature settings to be flexible in order to compensate for humidity and building factors. Where thermostats are available, the 4-degree range will be programmed for occupant use.

Keep in mind that these are thermostat settings, not temperature settings, most thermostats will maintain a temperature of +/-2 degrees in relationship to the thermostat setting.

Areas	DeSoto ISD		State Recommended	
	Cooling Season	Heating Season	Cooling Season	Heating Season
	Temp Range	Temp Range	Temp Range	Temp Range
Classrooms	72-76	68-74	74-78	68-72
Offices				
Admin				
Vocational shops	74-78	67-70	76-80	66-70
Gymnasiums				
Weight Rooms				
Locker Rooms				
Dressing Rooms				

Hallways				
Restrooms				

NOTE: Cooling season is defined as the period in which air-conditioning is mostly utilized. Heating season is the period in which heating is mostly utilized.

**4) AUTHORIZED ADJUSTMENT OF THERMOSTATS**

District personnel can adjust between their allowed thermostat settings. Students are not to adjust thermostats.

If all the thermostats are calibrated to maintain temperatures within the standard limits, the need for adjustment should be eliminated. If a particular room is not within this range and all windows and doors are closed, the Energy Department should be contacted so that trained personnel can resolve the problem.

**5) OPTIMUM STARTUP PROCEDURE FOR AIR-CONDITIONING AND HEATING EQUIPMENT**

At the earliest, all air-conditioning and heating equipment will be adjusted to normal standardized settings one hour or less prior to the start of scheduled classes. In most schools, the units will be able to meet the desired temperature level within 1 hour from the time the unit is turned on.

If procedure results in levels of discomfort by the time classes begin, the Energy Management Department will adjust the startup time accordingly.

If it is felt that particular air-conditioning units must be left on for extended periods of time to accommodate the needs of the building on the following day, contact the Energy Department to discuss an alternative means of providing comfort to the building without operating the units on a continual basis.

**6) OPTIMUM SHUTDOWN PROCEDURE FOR AIR-CONDITIONING AND HEATING EQUIPMENT**

All air-conditioning units and individual heating units (where applicable) will be shut off or turned down approximately 15-30 minutes before class dismissal. Administrative areas will be adjusted to shut off at 5:00 pm daily.

The Administrative staff is urged to make an energy-conscious effort to minimize the daily operation of heating and cooling units for their particular area.

**7) OPERATION OF SPECIFIC-USE AREAS**

Areas of specific use are defined as auditorium, teacher lounges and workrooms, gymnasiums and locker rooms, kitchens and cafeterias. These areas of occasional use or heavy use during specific periods of the day shall use lighting and maintain standard temperature settings only during periods used.

Heating and cooling for kitchens is needed only when the food service employees are present. When they are finished at the end of a normal day, the heating and cooling units should be turned to unoccupied set points.

Heating and cooling for the cafeteria is usually needed during specific periods of each day. If there are no special events occurring between and /or after these activities, then the heating or cooling units can be turned off or adjusted for unoccupied set points.

Lights should be off, during periods of the day, when there is no class being held in gymnasiums. Elementary school, gym lighting should be minimized by all users due to energy consumption of the lighting fixtures.

Special events should be scheduled in advance to insure that specific use areas are conditioned.

Thermostats should be permanently setback in areas or rooms that are not in use.

### **8) OBSTRUCTION OF SUPPLY AIR VENTS.**

At no time should any personnel provide complete or partial obstruction of vents that supply air to a room. When the discharge air vent has been purposely obstructed, excessive heating or cooling is usually being provided to the area resulting in the need for air balancing. This type of application can have a damaging, long-term effect on the mechanical systems. If this type of situation exists, contact the HVAC Department.

### **9) ELIMINATION OR PROPER USE OF PORTABLE ELECTRIC HEATERS**

Use of portable electric heaters will be discouraged except in cases when the heating units are inadequately heating the area. The Administrator in charge of the building must approve all electrical heaters with shutoff timer. Great care should be taken to ensure that an electrical heater is not placed near a thermostat, which will affect the operation of the building heating system. Caution should also be taken to minimize the risk of a fire hazard. Keep heaters away from combustible materials. Bear in mind that these heaters are heavy energy users and can cause an overload on the electrical circuits. Use of portable electric heaters will be permitted only to the extent necessary to maintain these standards.

### **10) OPERATION OF EQUIPMENT DURING NON-INSTRUCTIONAL PERIODS**

Minimum air-conditioning and/or heat will be provided for district employees during regular school holidays, summer break, and during non-instructional time periods.

During the summer months, all building thermostats will be set to 85 degrees. Box fans are available to provide additional ventilation for occupancy comfort during shampooing of carpets. Air conditioning will be used to maintain humidity control.

### **11) SCHEDULE AND OPERATION OF AFTER-HOUR EVENTS**

Events should be scheduled in School Dude -FS Direct 24 hours in advance

Scheduled, after-hour activities will necessitate the use of heating and air-conditioning, subject to approval of the Administrator in charge. The campus administrator or person responsible for the use of the building after hours will submit a HVAC Request with School Dude-FS Direct application and ensure a shutdown procedure will be followed upon completion of the activity.

When determining the areas within a building available for after-hour events, first consideration should be given to the size of the area to adequately accommodate the function. If several areas comply, then an energy-conscious effort should be made to utilize the area that will consume the least amount of energy for heating or cooling and lighting. Many activities may be held at a place that is already heated or cooled. This would minimize the need for these services in other areas of the building.

### **12) PROPER OPERATION OF EXTERIOR DOORS AND WINDOWS**

All exterior doors and windows in all building areas shall be kept closed.

Once the central air-conditioning system has been activated, it will be the direct responsibility of the Administrator in charge, or the person he or she has designated, to ensure that all doors and windows to all conditioned spaces are operated according to this guideline.

If the classrooms do not reach a comfortable temperature when heating or cooling is being provided, please contact the Plant Services Department so that trained personnel can examine the components of the mechanical equipment to resolve the problem. At no time during HVAC operation should any door or window be opened to "adjust" the environment to a comfortable level.

### **13) PROPER USE OF WINDOW SHADING DEVICES**

All window shading or covering devices (curtains, mini-blinds, shutter, etc.) shall be lowered and closed at the end of the day and during unoccupied periods. This will aid in reducing heat loss in the winter and solar heat gain in the summer. All windows should have some type of covering or shading device. If possible, purchase or budget shading devices for buildings currently without them and adhere to the recommended guidelines.

If the sun provides direct sunlight to particular areas, then utilize natural light and radiation heat from windows by leaving shades open on sunny days in winter. Conversely, leave the window shading devices closed during the cooling months.

### **14) PROPER OPERATION OF INTERIOR DOORS**

All interior doors to all classrooms which open to interior hallways or other non-conditioned areas should be kept closed during periods of the day in which the air-conditioning and/or heating systems are in operation. Air-conditioning and heating equipment for classrooms has been sized to provide comfort for that particular room. Leaving the doors opened to the hallway could cause an uncomfortable environment within the classroom. This would only be applicable during the periods in which air-conditioning or heat is being utilized in the classroom.

### **15). OPERATION OF INTERIOR LIGHTS**

When classrooms or other areas are unoccupied, all lights will be turned off. Just as everyone has been conditioned to turn on lights when entering a darkened area, the same type of conditioning must be applied when leaving a space. Devise a means to incorporate this conditioning into the educational process, such as: having the last student leaving the area be responsible for turning off the lights. Lighting for areas of occasional use or heavy use during specific periods of the day (such as kitchens and cafeterias) should only operate during these periods. If there are no special activities occurring between or after routine activities, then all lights should remain off.

### **16) AREA LIGHTING CONTROLLED BY MULTIPLE SWITCHING**

In areas where multiple light switching is available, try utilizing natural light from windows in place of overhead lighting.

If particular classrooms have multiple switches for lighting, try to conserve energy during instruction by turning off one row of lights. In some instances, one light switch controls two of the four lamps in each classroom fixture. During periods of the day in which the students are not reading (lectures, or physical activities), consider using this technique.

### **17) LIGHTING PROCEDURES FOR LIMITED-USE AREAS**

Every effort should be made to reduce lighting use in areas such as hallways, storage areas, and restrooms, if possible, turn off hallway lights during class periods. Hallway lights can be turned off during low-traffic intervals because the 24-hour lighting will remain on. This will provide enough light during this time period. This may also aid in keeping hallways clear of unwanted traffic.

Lighting use in vestibule or entry areas should remain off during the daylight hours. It serves no useful purpose, and in most situations, enough natural light is provided through windows.

Ensure that all lighting is turned off in areas that are not in use, such as storage rooms, closets, and restrooms. Consider developing a plan to install motion detectors in restrooms and some hallways.

### **18) ORNAMENTAL LIGHTING**

Lighting for ornamentation (display areas) should only be used for special occasions. Accent or decorative lighting that is used for trophy cases, bulletin boards, pictures, etc., should only be used at times of extreme importance, such as PTA meetings, open house, etc. They should not be a part of routine lighting operations.

### **19) EXTERIOR LIGHTING**

Exterior lighting should only be on during non - daylight hours. The best application for controlling exterior lighting is through the use of a photocell and/or time clock. Please contact the Plant Services Department if you have no way of controlling exterior lighting during the daylight hours. Security lighting should be kept as minimal as necessary for adequate protection.

### **20) LED LIGHT BULBS**

The most efficient type of lighting is LED and this is what is approved for use within the district. Incandescent and CFL light bulbs will require a personal appliance permit to be used within the district.

### **21) LIGHTING USED FOR VENDING MACHINES**

The lighting and ballast must be disconnected from all vending machines. Please contact your vendor and request this be done. The vendors may be reluctant, but they will adhere to this request. Please contact the Director of Plant Services, if assistance is needed.

### **22) DEMAND RESPONSE**

ERCOT (Electric Reliability Council of Texas) has developed a demand response program for customers that have the ability to reduce or modify electricity use in response to instructions or signals. The program earns revenue for the district and provides our electric meters with sub meters that have the capabilities to send demand and usage alerts during occupied and unoccupied times.

All campuses need to participate. Campus administrators will be alerted via call or text.

### **23) DEMAND LIMITING (PEAK SHAVING)**

Demand limiting is a control strategy designed to prevent the demand kW of a facility from going over a predetermined threshold by altering the operation of equipment in a facility. The easiest way to do this is by identifying the largest energy users (equipment) in a facility and modifying their operation during peak periods. This can be done by dimming lights, altering heating and cooling set points, reducing HVAC system fan speeds, etc., thus reducing the grid kW while demand limiting is active. Program earns revenue for the district and provides our electric meters with sub meters that have the capabilities to send demand and usage alerts during occupied and unoccupied times.

All campuses need to participate. Campus administrators will be alerted via call or text.

### **24) PERSONAL APPLIANCE PERMITS (Starting 2022-23 school year)**

Keep personal electrical equipment at home. Personal portable space heaters and fans of any kind are banned from use within School District facilities because they are incompatible with our energy management systems. When environmental conditions are too hot or too cold, please call the Energy department. For tips on how to improve personal comfort, please consult the energy department's website.

Refrigerators, microwaves, coffee machine and toaster ovens shall be restricted to the Teachers' lounge, unless you have a Personal Appliance Permit. Permits may be attained by contacting the Energy Department. The Energy Department, based on the district's provider kWh rate, will set personal appliance permit prices.

### **25) Approved Air Fresheners**



You can have any air freshener that doesn't require a district electrical outlet. For suggestions please consult the energy department's website.

## **26) Assignments**

### Energy Department

The Energy Department will be responsible for programming appropriate run times and set points for equipment and control systems in establishing appropriate operating settings for equipment and control systems and work with District staff to advance conservation efforts. The Energy Department will also report directly with the district's Chief Financial Officer for optimal utility budget oversight.

### Maintenance Department

The Maintenance Department will ensure that equipment is properly maintained, recommend and install energy efficient upgrades, and keep facilities in proper condition to support the Energy Department's goal of an efficient environment.

### Custodial Services Department

The Custodial Department will directly support the Energy Department's conservation efforts at the facility level, particularly during non-business hours. Upon completion of work, the custodial staff will bring buildings to an "unoccupied" mode by turning off lights and other related activities that minimize energy consumption during down time.

## **IV. ENERGY - SAVINGS TIPS FOR THE CLASSROOM**

**TURN OFF THE LIGHTS** When your classroom or adjacent rooms (such as restrooms or storage rooms) are not occupied, make sure the lights are turned off. If you are the only one in the classroom, utilize the multiple light switch options by only turning on the row of lights over your desk or use a desk lamp.

**CLOSE DOORS AND WINDOWS** If the air-conditioning or heating system is on, make sure all doors and windows are closed. This will help to provide a more comfortable environment within the classroom.

**BENEFITS FROM WINDOW SHADING DEVICES** If your classroom has some type of window shading device such as curtains, mini-blinds or shutters take advantage of the sun on cold winter days by leaving them open to utilize the natural light and heat to warm the room. Conversely, on hot days, leave them closed and allow the air-conditioning to work less.

**MONITOR THERMOSTAT SETTINGS** Make sure thermostats are set and maintained at the district-mandated settings. Settings are 68-74 degrees in the heating season and 72-76 degrees in the cooling season. (space temp will be +/- 2degrees)

**DO NOT OBSTRUCT AIRFLOW** All classrooms are provided with a return air vent. This allows for room air to circulate through the conditioning unit. If the vent is obstructed (such as a bookcase in front of it) the amount of conditioned air for the room will be decreased. The return air vent is the one that does not blow air into the room. Dirt and dust can build up around the return air vent, which will also restrict airflow and lead to an uncomfortable environment. Communicate with your lead custodian and make sure all vents are dirt and dust free.

**REPORT BURNED-OUT LIGHT BULBS** Burned-out light bulbs create poor lighting as well as maintenance problems. If a bulb is burned out, have your administrator send a work-order to the

Maintenance Department. Also, make sure the custodial staff wipe/clean the light cover. They get dirty and will restrict light output to your classroom.

**REFRAIN FROM USING PORTABLE ELECTRIC HEATERS** Portable heaters not only consume a lot of electricity, but create a fire hazard within the classroom. If you do not feel that your room is adequately heated, contact the Energy Department for approval.

**KNOW THE OPERATING SCHEDULE** All units providing heating and air-conditioning should be turned off no later than 30 minutes after the last scheduled period. Cafeteria and kitchen units can be turned off much earlier. If you notice them running, tell your principal or lead custodian to contact the Energy Department.

**CHECK FOR RUNNING WATER** The costs for a leaky faucet or running commode can add up. If you discover this problem, report it to your head custodian or principal to ensure that maintenance is notified to correct the problem.

## **V: OPERATING PROCEDURES FOR PLANT SERVICES PERSONNEL**

Plant Services Maintenance Department is an integral part of an effective energy conservation program. Depending on experience, they are perhaps the most knowledgeable personnel within a building in terms of equipment and building characteristics. The success of this program will largely be a direct result of plant services and administrative cooperation. With this in mind, it is very important that the Plant Services staff not only adheres to the following recommendations and suggestions from the Energy Department, but also are encouraged and expected to do so by the Administrator in charge. Although all of these guidelines may not apply to every facility, the Administrator in charge and Energy Department should determine the guidelines, which directly relate to their facility.

### **1) CONTINUAL UPKEEP OF ALL MECHANICAL ROOMS**

It is very important that all mechanical rooms (rooms that contain air-handling units, chillers, boilers, water heaters, electrical transformers, etc.) be kept clean at all times. Just as much effort should be given to cleaning these rooms as to any other part of the building. All items (mops, brooms, buckets, stored materials, etc.) should be kept off and away from all equipment. This will help to ensure that the equipment is free of obstruction for proper operation as well as allow the needed accessibility for Maintenance personnel to perform corrective, preventative and emergency maintenance procedures.

### **2) LIGHT FIXTURE INSPECTION**

Establish a regular inspection and cleaning schedule for the interior and exterior surface of all fixtures and lens covers. All light covers (lenses) should be cleaned with a proper cleaner each time a bulb is replaced. This allows for the removal of the yellowish, hazy

film that has accumulated on the surface. Merely wiping the lens with a damp cloth will not remove this residue. The inside of the fixture (not lens) can be cleaned with a damp cloth which will allow for maximum reflectance of the luminaries.

### **3) REPLACEMENT PROCEDURE OF LED LIGHTS**

Replace with LED bulb

### **4) SUPPLY AND RETURN AIR VENT CLEANING PROGRAM**

A regular inspection and cleaning schedule for all supply and return air grilles will be established. A regular semi-annual cleaning program should be implemented to remove dust and dirt build-up on all grilles so that complete air circulation is possible. Make sure that all vents are free from partial or complete obstruction.

### **5) REPORT LARGE WATER LEAKS TO ENERGY DEPT.**

Provide a receipt stating repairs have been made, the date and the location of such repairs; or a receipt for the repair or parts as evidence that the high consumption actually resulted from water leak that is now repaired.

## **VI: DAILY GUIDELINES AND RECOMMENDATIONS FOR CUSTODIAL STAFF**

As custodians have routine responsibilities at the end of a class day, the following additional guidelines and recommendations should be incorporated into their normal, daily work schedule.

- 1)** All lighting and other energy-using systems will be checked and turned off at the end of every day. This includes interior and exterior lighting that may be the responsibility of other building personnel. If this situation does occur, turn off the lights and notify the Administrator in charge.
- 2)** Make sure lights have been turned off in classroom areas. Make note of areas which are having lights left on when classrooms are not occupied and report to the Administrator in charge.
- 3)** When cleaning rooms, minimize use of overhead lights. Take advantage of natural light provided by windows. If this is not possible, and multiple light switching is available, only use one row of lights.
- 4)** Maintenance and Custodial employees are instructed to light only the classroom or area that they are

cleaning. Turn off all other lights not being used.

**5)** Turn off lights in areas of moderate or specific use when the normal activities have ended. Areas such as kitchens and cafeterias can be turned off after lunch.

**6)** Make an energy-conscious effort to turn off any item of equipment that is not being used by someone. Regardless of how trivial and burdensome it may seem, this could result in significant savings to the district.

**7)** If applicable, be sure that time controls for lights, cooling and heating equipment are properly set to effect greatest energy savings possible.

**8)** Check thermostats to ensure that proper settings are within recommended standards. If not, set to within limits and notify the Energy Department.

**9)** Inspect rooms during extreme heating and cooling seasons to ensure that no drafts are present. If substantial leakage is evident around windows and doors, report this information to the Administrator in charge and the Energy Dept.

**10)** Make sure all devices (door closures) that are used to close doors are functioning properly. The device should close the doors completely and at a relatively quick rate.

**11)** If applicable, minimize use for exhaust fans, in certain instances, no difference is noticeable when exhaust fans are not running. If the fans need to run, make sure they are turned off as soon as the area is not required for use.

## **VII: STANDING OPERATING PROCEDURES FOR CHILD NUTRITION PERSONNEL**

The Food Service employees play a vital role in the Energy Conservation Program. A substantial amount of their activity requires the use of natural gas and electricity for food preparation. Listed below are some operating procedures and helpful tips that will aid in reducing energy consumption in all kitchen facilities.

- 1) Keep exterior doors and windows closed during periods of the day in which conditioned air is provided. At no time should doors/windows be opened to adjust the environment to a comfortable level.
- 2) During periods of the day in which the cafeteria is not in use, turn the heating and air-conditioning systems off. Also, keep the lights turned off in this area if no activity is taking place.

- 3) Keep doors to walk-in freezer/coolers closed at all times. The coolness of these units should never be used to adjust the environment.
- 4) Preheat only the equipment to be used and preheat it just before using it. The fryer, griddles, and range top take only a few minutes to preheat, while the oven takes longer. Preheating all equipment when not needed wastes energy.
- 5) Preheat ovens only for baked goods. When necessary, preheat for a maximum of 10 minutes. Foods that cook for over 1 hour don't require preheating.
- 6) Reduce the temperature or turn the equipment off during periods of time when the equipment is not in use. It takes only a couple of minutes to recover from 200 degrees to 300 degrees. This not only saves energy during cooking time, but it also reduces the internal load on the air conditioning.
- 7) Cook full loads on every cooking cycle when possible.
- 8) Utilize the correct size of equipment for cooking operations. In the case of equipment such as griddles, broiler, or deck ovens, only the number of sections needed should be used.
- 9) Cook with lids in place on all pots and kettles. This will help to preserve the minerals and vitamins in the food as well as save fuel and reduce heat load.
- 10) To ensure efficient heat transfer from range tops, only heavy flat-bottomed pots and pans should be used. Pans that are bent or warped waste energy and result in uneven finishing of the products.
- 11) On French plates or burners, the pot should cover the entire surface and not extend over the edge for more than one inch.
- 12) Proper loading and unloading of food is also important. A common malpractice is overloading the fryer basket so that part of the food is not submerged, usually resulting in disposal of a portion of the load.
- 13) Placing pans too close to the sides, back or front of the deck or convection oven results in poor circulation of hot air in the cavity and results in crippled runs. A warped or bent tray also will produce poor products.
- 14) Avoid slow loading and unloading of ovens and opening doors unnecessarily.
- 15) If gas equipment is being used, the flame should have a sharp blue flame for best efficiency. When cooking, adjust flames so that they do not lap up and around sides of pots and pans.
- 16) Keep ovens clean at all times. A clean oven operates at maximum efficiency. Remove spills before the residue has carbonized. When the oven is cool, wipe the bottom and linings with a damp cloth. Keep other equipment clean for the most efficient operation.
- 17) Be sure all controls and thermostats are properly calibrated.

- 18) For efficient use of the ventilating system, use only the number of fans necessary at all times to provide adequate ventilation. Be sure to keep all filters and extractors clean.
- 19) Use the dishwasher at full loads only. This will help to conserve fuel in heating the water as well as reducing total water consumption.
- 20) If possible, reduce hot water temperature to 140 degrees, if allowed by codes.
- 21) Report all leaks and dripping faucets to the Plant Services Department. Once repaired, Plant Services will need to turn in invoice or work-order for the leak to the Energy Department for possible billing adjustment requests.

## **VIII: ENERGY SAVING TIPS FOR THE KITCHEN**

### **Cooking Equipment....**

- 1) Preheat only equipment to be used (just before using). For ovens, preheat only for baked goods, when necessary, preheat the oven a maximum of 10 minutes. Foods that cook for over 1 hour do not require a preheated oven.

- 2) Reduce temperature or turn equipment off during slack periods.
- 3) Cook full loads on every cooking cycle.... when possible.
- 4) Use the correct size equipment for all operations.
- 5) Avoid slow loading and unloading of ovens and opening doors unnecessarily.
- 6) Keep all equipment clean, particularly ovens. A clean oven operates at maximum efficiency. Remove spills before the residue has carbonized. When the oven is cool, wipe bottom and linings with a damp cloth. Follow factory-recommended cleaning and maintenance procedures as outlined for all kitchen equipment.
- 7) Cook with lids in place on all pots and kettles. This will help to preserve the minerals and vitamins in the food as well as save fuel and reduce heat load when cooking. Adjust flames so that they do not lap up and around the sides of pots and pans.

#### **Refrigeration Equipment...**

- 1) Keep doors tightly closed and avoid frequent or prolonged opening of cooler and freezer doors. The coolness from these units should never be used to compensate for the heat generated from the cooking equipment.
- 2) Place foods in the freezer/cooler immediately upon arrival from the supplier.
- 3) If frost accumulates on the evaporator coil and/or dust and dirt accumulates on the condenser coils, clean or contact the Maintenance Department.

#### **Ware-washing Equipment...**

- 1) Use dishwashers at full loads only. This will help to conserve fuel in heating the water, as well as, reduce overall water consumption. If possible, water temperature should be reduced to 140 degrees, if allowed by codes.
- 2) Flush equipment after heavy meal periods----clean thoroughly daily.

#### **Water Heating Equipment...**

- 1) Keep doors closed to rooms that contain the water heaters.
- 2) Reduce hot water temperature to 140 degrees, if possible.
- 3) Have leaking faucets repaired as soon as possible. The costs for running water can add up quickly.
- 4) Check to ensure all hot water pipes are insulated. If not, contact the Maintenance Department.

#### **Ventilating System...**

- 1) Use only the number of fans necessary to provide adequate ventilation.
- 2) Turn fans off upon completion of cooking processes.

- 3) Operate two-speed fans on the lower speed.... if possible.
- 4) Keep filters and extractors clean at all times...

**Cafeteria Operation...**

- 1) Insure that heating, air-conditioning, and lighting systems are turned off during periods of the day in which the cafeteria is not in use. That is, when breakfast has been served and there is no other activity taking place in the cafeteria, turn off the energy-using systems. This same technique should apply after lunch.
- 2) When minimal activity is occurring in this area, encourage staff and students to perform the intended function in one portion of the cafeteria, to minimize the use of lights. In some cases, the mechanical units can be turned off.