

COLUMBUS STATE UNIVERSITY



EMERGENCY

Building Maintenance Department
Standard Operating Procedures
1.001-1.005

Standard Operating Procedure – BM 1.001

Subject: Emergency Procedures

Purpose and Scope: To formalize Plant Operations guidelines for emergency situations.

Policy: Report all problems immediately to the attention of the Plant Operations personnel and CSU Public Safety. All pertinent numbers which may be required are listed below. Steve Norris should be notified regarding all alarms and call outs at (706) 507-8222 (Daytime) or (706) 587-6392 *cell*.

Procedure: Emergency situations occurring during normal business hours (Monday thru Friday, 8:00am to 5:00pm ET) should be brought to the immediate attention of the Plant Operations office at (706) 507-8222.

In the event of an emergency that arises at Main Campus after normal business hours, refer to the list below for the appropriate person to call.

CSU Public Safety: (706) 568-2022

The responding officer should assess the situation and notify the appropriate personnel to implement a plan of action to resolve the situation. In case of fire or damage, all personnel on the list below should be contacted in addition to the Director of Maintenance & Construction Facilities.

Plant Operations Office: (706) 507-8222 (Daytime)
Steve Norris (706) 587-6392 *cell*

Housing issues dealing with students, notify:
Sarah Secoy (706) 507-8714 *office*
(706) 573-3336 *cell*

All other situations, notify:
Kelly Wilson, Director of Maintenance & Construction (404) 394-0535 *cell*

Standard Operating Procedure – BM 1.002

Subject: Emergency Call-In Procedure

Purpose and Scope: To formalize Plant Operations guidelines in calling in emergency building maintenance problems.

Policy: During normal business hours (Monday thru Friday, 8:00am to 5:00pm ET) report emergency maintenance requests to Plant Operations at (706) 507-8222. Any other issues should be submitted through the eQuest System.

After Hours (nights and weekends):

In the event of *Life Safety* issues, (*i.e.*, fire, storm, collapse, crowd behavior, etc.) refer to the Columbus State University Emergency Action Plan. In the event of an emergency issue related to building maintenance, (*i.e.*, utility outage, water leaks, no hot water, interior electrical problems, heating/air issues, elevators, locks, etc.) the requesting authority should follow the procedure outlined below:

1. Call Steve Norris at (706) 587-6392 *cell*.
2. If no answer, wait ten (10) minutes, then call the On-Call number: (706) 505-5633.
3. If no answer, wait ten (10) minutes, then call Kelly Wilson at (404) 394-0535 *cell*.

4. Should there still be no response, wait ten (10) minutes, then call Mike Medlock at (706) 681-5600 *cell* or (706) 323-0540 *home*.

Standard Operating Procedure – BM 1.003

Subject: Emergency Shutdown of Buildings other than Housing in Non-Fire Emergency Situations

Purpose and Scope: To establish procedures for emergency shutdown of buildings other than Housing in the event of a non-fire emergency.

Examples of non-fire emergency situations include:

1. Loss of electricity, heat, AC, water, or other essential utilities.
2. Failure of mechanical equipment such as HVAC systems and emergency generators.
3. Flooding, tornadoes, earthquakes, or other natural disasters.
4. Terrorist actions or civil unrest.

Procedure: The following list is by no means complete, but it gives general steps to ensure a safe shutdown of Main Campus facilities in the event of a non-fire related emergency situation.

1. Alert Manager of Plant Operations at (706) 507-8222.
2. The Manager of Plant Operations will contact the effected department administration and University Police (*if applicable*) of the shutdown. Notification from management reduces questions, saves time, and lessens confusion or panic.
3. Plant Operations will instruct regarding action required, to wit: Service, Out of Order, Evacuate Building, Seek Shelter.
4. Whenever possible, provide an estimated time services will be restored.

Standard Operating Procedure – BM 1.004

Subject: Severe Weather Emergencies

Purpose and Scope: To formalize the procedure that Plant Operations Management implements to prepare for impending severe weather and coordinate the post-storm activities. This procedure will save valuable time in making decisions and preparations for an impending disaster and in the repair/cleanup process afterward. All employees will be able to react in a positive manner by knowing beforehand their individual responsibilities and the total process involved in the recovery effort.

Procedure: The following sequence of events is to take place in anticipation of and preparation for an approaching hurricane and post-storm recovery activities.

Beginning of Hurricane and Tornado Season

1. Review and update Severe Weather Plan.
2. Review and update all contact lists, including employees, contractors, and consultants.
3. Assign Damage Assessment Teams List with building/area assignments.
4. Implement inventory procedure to keep diesel, gasoline, and fuel oil tanks at least $\frac{3}{4}$ full.
5. Confirm shelter locations with Environmental Health and Safety Coordinator.
6. Check condition of all equipment (generators, mud pumps, backpack blowers, chainsaws, chippers, extractors, dry/wet vacuums, etc.) and stock extra parts. Perform equipment repairs where needed.

7. Perform visual inspection of overhead lines and any potential limb or tree problems.
8. Inventory the emergency equipment, including rain gear, flashlights, clipboards, handheld radios, and flagging tape.
9. Check all roof drains for debris.

I. Initial Recovery Stage

1. No individual work orders will be kept. Once it is possible, work orders will be created.
2. The exact location of the work performed is critical to any future cost recovery.
3. The work should fall into one of the three broad FEMA categories:
 - Category A – Debris Clearance
 - Category B – Emergency Protective Measures
 - Category E – Damaged Building and Equipment
4. It is the responsibility of the Damage Assessment Team Leaders to organize the assessment teams.
5. A Damage Assessment Team is assigned to each facility to perform the damage assessment.
6. The teams will collect damage information at each location. This is done immediately after it is safe to return to the facility.
7. The Damage Assessment Team is responsible for inspection the entire facility.
8. While on site, all damaged trees and other hazards will be marked with barricade tape, and damaged exhaust fans, vents, etc., should be marked with bright colored spray paint, with the exact location of damage noted.
9. Once the assessment is complete, the Team Leaders will submit it to the Manager of Plant Operations. Work orders will be created and assigned to Plant Operations employees and arrangements made with contractors, as needed.

The Environmental Health and Safety Coordinator will serve as the University liaison to Federal Emergency Management (FEMA). All damage information and documents will be forwarded to Environmental Health and Safety Coordinator.

Standard Operating Procedure – BM 1.005

Subject: On-Call Policy

Purpose and Scope: To provide after hour and weekend coverage for emergencies related to, but not limited to, building maintenance through a rotating basis among the department's employees.

Policy: The following guidelines are designed to provide staffing for on-call coverage.

On-call assignments will be on a rotational basis among Plant Operations employees whose normal workdays are Monday thru Friday.

1. An employee will not be on-call for more than fourteen (14) consecutive days; however, the employee may be on call for twenty-four (24) hours on each of those days. Calls during normal working hours will be processed through the eQuest System.
2. The on-call week is from 5:00pm on Friday through 8:00am the following Friday. A cell phone and/or radio will be carried at all times.
3. Only one person will be on call; however, that person can call another, if it is needed.

Methods of Compensation:

1. On-call employees will received \$15.00 per day for each day they are on-call.
2. On-call employees will receive a minimum of three (3) hours for each call responded to. Further, the employee will be compensated for the actual time the call took at time and one half.
3. If another employee, other than the on-call person, is called in, then Step 1, above, applies.
4. Should an emergency arise that extends past the regular work day, the employee will be compensated at time and one half, unless the employee works less than forty (40) hours for the week. The minimum of three (3) hours is waived because the employee is already on site.
5. Only calls logged by University Police will be compensated, unless otherwise directly logged by the Plant Operations Manager/Designee. The Secretary will verify the calls.

Employee Responsibilities:

1. On-call employees must enter each call on the on-call log and inform the Secretary for time keeping purposes.
2. Employees may exchange scheduled on-call weeks with other employees; however, it must be approved by the Plant Operations Manager.
3. On-call employees must be accessible at all times and must notify the Manager if they are not able to be. An employee who is assigned to on-call must report within an hour of being contacted or face disciplinary action, up to and including termination.
4. Employees called in may be expected to do whatever work is necessary even though it is not part of their regular duties, providing they have the necessary knowledge to perform the work safely and without risk to themselves, equipment, or operation.
5. On-call employees that need further guidance during their response to a call should not hesitate to call the Plant Operations Manager/Designee for assistance. Remember: **SAFETY FIRST**.

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

Building Maintenance Standard Operating Procedures

COLUMBUS STATE UNIVERSITY



EMPLOYEE ISSUES

Building Maintenance Department
Standard Operating Procedures
2.001-2.008

Standard Operating Procedure – BM 2.001

Subject: Key Control

Purpose and Scope: To manage daily key issuance and establish responsibility for all Plant Operations employees.

Policy: Keys will be kept secure in a locked key box in Plant Operations or physically in the possession of the assigned employee at all times during the day. Keys should never be placed on carts, desks, or any place other than in the key box or the employee's physical possession. Keys shall not be removed from the ring or loaned to another person. Persons who lose keys must report such a loss to the Manager of Plant Operations immediately. Employees who lose keys may receive disciplinary action, up to and including termination.

Procedure:

1. Keys are located in a key lock box in Plant Operations during non-work times.
2. Keys shall be kept in the physical possession of the assigned employee at all times during the workday.
3. The assigned employee returns keys to the lock box at the end of the workday.
4. Keys that are lost or not returned at the end of the day will be immediately reported as missing to the Manger of Plant Operations.

Standard Operating Procedure – BM 2.002

Subject: Overtime

Purpose and Scope: To define the standard process for overtime for staff personnel.

Policy: The standard work week is forty (40) hours. Overtime is paid when work is authorized to exceed forty (40) hours in any given work week. Every attempt will be made to minimize the use of overtime, but on occasion, it will be required. Those employees required to work hours in addition to the regularly scheduled workday, or on a day which is not normally a scheduled work day, may be paid overtime or may be granted time off. If they take the time off in the same pay week, with the approval of their Supervisor, they receive hour for hour. Employees may not work more than forty (40) hours in a work week unless authorization is given.

Standard Operating Procedure – BM 2.003

Subject: Attire

Purpose and Scope: Outline the dress requirements for Plant Operations personnel.

Policy: All full time personnel at Plant Operations, up to and including the level of Manager, excluding office staff, will wear, at all times while working, a full uniform. This is to provide appropriate identification of workers who may be accessing a wide variety of locations on campus in which they may not be known. Furthermore, it improves campus security. It also identifies them as University employees versus a contract employee in case of an issue. Plant Operations will provide all of its full time employees with eleven (11) sets of uniforms, to include one jacket, all with either the Columbus State University or FP Services logo and the individual's real name or a shorter version, *i.e.*, "Bill" for William or "Bob" for Robert. Nicknames, like Stretch, Slim, etc., will not be acceptable. A "soiled" bag will also be issued to each employee to return dirty uniforms for cleaning. Uniform shirts and pants are to be turned in on a weekly basis for laundering. Columbus State University pays for the laundering of shirts and pants as well as replacing uniforms damaged or badly soiled in the line of duty. Laundering of jackets if the responsibility of the employee. Uniforms will be ordered as soon as a full time employee is hired. Cotton uniforms are available to employees with allergies to other materials; however, they must provide a doctor's statement of such. When an individual leaves the employ of Columbus State University, all uniforms must be turned in. Each employee is expected to be in proper uniform while at work. An employee that shows up for work without the proper uniform will be counseled. Progressive

corrective action will be recommended for excessive abuse. Failure to conform to an established uniform dress policy in extreme cases may lead to termination.

Standard Operating Procedure – BM 2.004

Subject: Smoking Policy

Purpose and Scope: To provide a smoke free environment, Columbus State University, has been designated as a non-smoking campus. This policy is applicable to all employees, clients, contractors, customers, vendors, and visitors to Columbus State University facilities and grounds.

Policy: Columbus State University prohibits smoking on all Columbus State University Property. For the purpose of this policy, “smoking” is defined as the carrying by a person of a lighted cigar, cigarette, pipe or other tobacco products; to include any type of Vapor products. Employees, clients, customers, contractors, vendors, and personnel who violate this policy will be reminded of the smoke-free policy. Employees are required to comply with the provisions of this policy. Supervisors are responsible for ensuring that employees do not smoke while on campus. Appropriate disciplinary action will occur if an employee violates this policy.

Standard Operating Procedure – BM 2.005

Subject: Staff Computer Use

Purpose and Scope: To create opportunities for personal computer use by employee to check the new or email. This will also allow for employees to go online to search the web for any hard-to-find job related items that may be required to perform a task.

Policy: This policy will allow employees to attend University sponsored computer workshops to enhance their computer skills. Employees will be allowed to use a designated computer terminal in his or her work area before their shift begins, after it ends, and before the building is secured, during the morning break or during their lunch period for personal computer use. These times depend on the department’s break and lunchtime schedule; employees should check with their immediate supervisor for appropriate time. At no time shall any pornographic or otherwise distasteful material be observed. At all times operational needs shall take precedence over personal needs and the area supervisor will have the final jurisdiction on these matters.

Standard Operating Procedure – BM 2.006

Subject: Travel

Purpose and Scope: The purpose of this procedure is to provide travel arrangements enabling employees to enhance skills and knowledge in their assigned duties. All employees are required to fill out a Travel Application form for insurance purposes and University procedures.

Procedure:

Preparing Travel Arrangements

The Travel Application form is to be filed out by the traveler and submitted to Business Services. This form is available in CougarNet under the link to CSU Administrative Forms. Approval from the Department Head or other designated official is required prior to departure. If you are staying in a Georgia hotel, you must provide the hotel with a tax exempt form. These forms are available in the Business Services office in Richards Hall.

For airline travel reservation, contact Travels by Donna at (706) 322-2323. The employees traveling must make the airline reservations. Upon receipt of the Travel Application form, Business Services will contact Columbus Travel with approval to issue the ticket. The E-Ticket will be emailed to the individual traveling. A copy of the E-Ticket will be forwarded to Business Services.

A Standing Authorization form must be completed by employees who travel on a frequent basis. Registration (over \$50.00) for meetings may be prepaid by using your Columbus State University Visa card or by Purchase Order if Visa is not accepted.

Reimbursement Facts

1. Employees may be reimbursed for use of their personal vehicles at \$0.575 per mile.
2. The cost of meals rate will be reimbursed at the rates listed below, per day, including tax and tips.
3. Charges for three meals in excess of \$28.00 per day will be permitted if they involve a meal as part of a scheduled meeting, but an explanation must be offered on the travel expense statement, marking a "P" in the space provided.

Reimbursement of claims for fewer than three meals per day will be subject to these limits:

Within Georgia (general rule)

- | | |
|--------------|---------|
| 5. Breakfast | \$ 6.00 |
| 6. Lunch | \$ 7.00 |
| 7. Dinner | \$15.00 |
| 8. Total | \$28.00 |

Note: Per Accounting Office: 75% of the total is removed for the first and last day of travel

Within Georgia (high-cost areas such as Atlanta, Savannah, etc.)

- | | |
|--------------|---------|
| 9. Breakfast | \$ 7.00 |
| 10. Lunch | \$ 9.00 |
| 11. Dinner | \$20.00 |
| 12. Total | \$36.00 |

Note: Per Accounting Office: 75% of the total is removed for the first and last day of travel

Other states, USA (Check Federal per Diem Rate)

Check website - <http://www.gsa.gov/portal/content/110007>

The \$5.00 Incidental is not refundable, per the Board of Regents

A high-cost area is defined as an area where meal expenses may be reimbursed at a higher amount than limits that otherwise apply to travel within Georgia (general rule). Employees are considered traveling in high-cost areas when their official responsibilities must be performed at a location in the high-cost area. Employees who are not working and spend the night in lodging in a designated high-cost area are subject to the general meal limits.

Reimbursement for breakfast is allowed if departure time is before 6:30am and for dinner if return is after 7:30pm. The noon meal is not reimbursable unless:

1. Overnight lodging is required.
2. The meals are an integral part of a scheduled meeting. The meal is *not* part of the registration fee.
3. Or the employee is away from home on a work assignment for more than thirteen (13) hours.

Receipts are not required when requesting reimbursement for meals within the state limits.

Student Travel

Student travel applications are processed by Accounting Services and should be submitted to Accounting Services.

Returning From Trip

Employees who have traveled must submit a Travel Expense Statement to Accounting Services within five working days after a trip in order to be reimbursed. A copy of the approved travel application must be attached to the travel expense report along with paid receipts for registration, lodging, or commercial transportation to support the claimed expenditures.

Standard Operating Procedure – BM 2.007

Subject: Handheld Radio Use

Purpose and Scope: To provide Plant Operations employees a means of communication and quicker response to customer service.

Procedure: All radios should remain on the Command Channel. Each department at Main Campus has a specific identification number assigned them. Employees may contact each other by radio by using identification numbers or first names. A list of identification numbers and names is provided below.

Base	Ramona Vessell	308	Jonathan Tew
301	David Lindsey Courson	311	James Smith
303	Timothy DeWard	316	David Threats
306	Steve Norris	317	James Moore
307	James Stewart	318	Joseph Gaultney

Employees should collect their thoughts about what needs to be said via radio. Many people have the tendency to talk and/or repeat too much. Say what is needed without unnecessary repeats. Proper day-to-day radio use will make sending messages easier and reduces confusion.

When working during an emergency situation, all radios should be on Operations, the Police Department’s dispatch channel, for monitoring the event.

*Profanity or inappropriate language is not to be used on the radio. The Federal Communications Commission (FCC) could suspend the University’s license that would result in severe disciplinary action to the person or persons involved.

Standard Operating Procedure – BM 2.008

Subject: Repeater Phones

Purpose and Scope: To provide Plant Operations employees a means of communicating with employees using handheld radios.

Procedure: It is important to understand that the radio user and phone user cannot talk at the same time. The following guidelines have been established to aid in use of repeater phones.

1. Answering a call on a radio: When you hear a phone ringing, press your transmit button briefly. *Note: all radios tuned to the Command Channel will hear the conversation.*
2. Placing a call from a phone capable radio: Press either the phone operation key or the DTMF tone (*) and the number 1. You will then hear a dial tone. Select the phone number from the preprogrammed numbers or if you have a full keypad, press the numbers one at a time. Long distance, 800, and 900 dialing has been blocked.

Building Maintenance Standard Operating Procedures

BM 2.008, cont'd

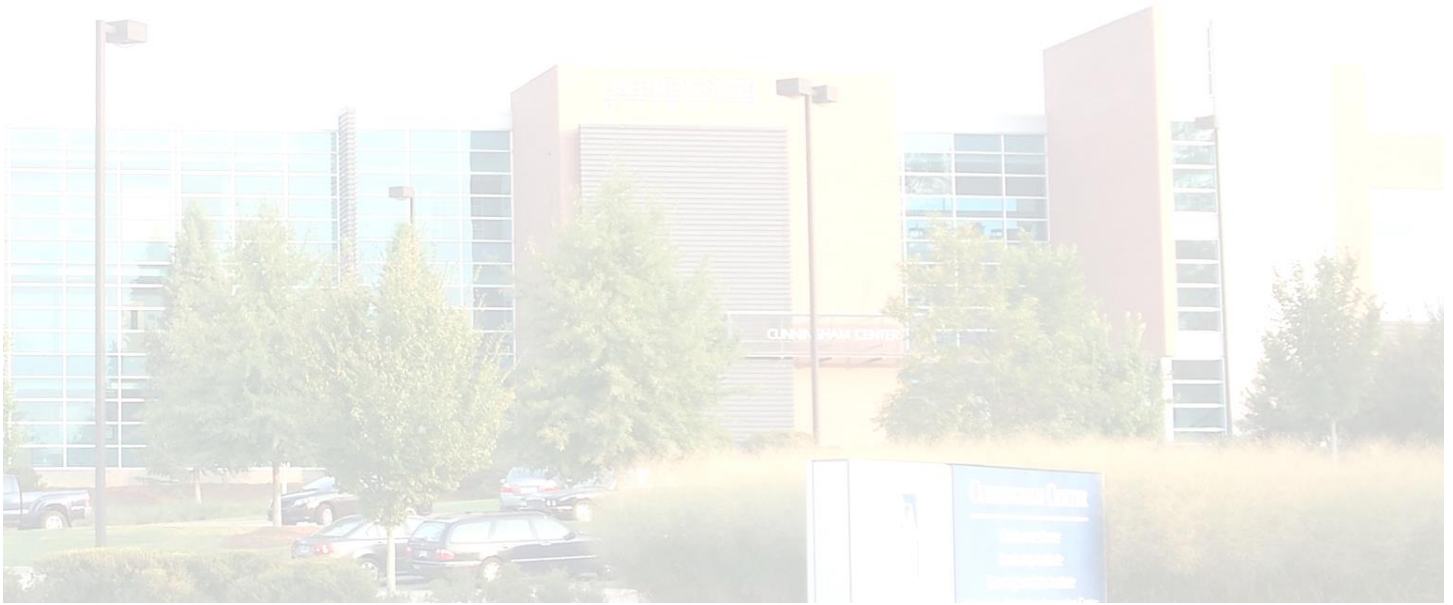
3. During the call: The call time limits calls to five (5) minutes, at which time calls will be disconnected. You will hear a beep warning you as you approach the end of five (5) minutes. To extend the call, press the (*) key. If you are in a call and do not transmit within thirty (30) seconds, you will hear a warning beep. If you have not transmitted within an additional twelve (12) second, you will be disconnected.
4. To call into the radio system: Call the "Command Channel" via regular phone. When the repeater picks up, you will hear another dial tone. Dial 51 and the radios will begin to ring.
5. To end phone call: It is extremely important to send a terminate call command to the repeater at the end of every call. Press the phone key or press the sequence (#) and the number 1. You cannot do this from a non-phone capable radio. If the terminate call command is not sent, the repeater will remain stuck until one of the two timer features mentioned above are met.

*Profanity or inappropriate language is not to be used on the radio. The Federal Communications Commission (FCC) could suspend the University's license that would result in severe disciplinary action to the person or persons involved.

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

COLUMBUS STATE UNIVERSITY



GENERAL PROCEDURES

Building Maintenance Department
Standard Operating Procedures
3.001-3.010

Standard Operating Procedure – BM 3.001

Subject: Hiring of Employee Guidelines

Purpose and Scope: To document the hiring selection process.

Procedure: Please follow the steps listed below regarding hiring guidelines.

1. Applications must be received by Columbus State University Human Resources. At this point in the hiring process, applicants are subjected to background checks. Eligible applicants are submitted to the hiring authority. Human Resources will not rank the candidates and they do not make the selection.
2. The Manager of Plant Operations will screen applicant qualifications against the job description and identify strengths and weaknesses.
3. The Manager of Plant Operations will separately interview candidates and make their recommendations to Mike Medlock, Assistant Vice President for Facilities.

Standard Operating Procedure – BM 3.002

Subject: New Employee Preparation

Purpose and Scope: Facilities has one opportunity to make an excellent first impression of someone feeling “welcomed”.

Procedure: The Manager of the department in which the new employee will be employed is responsible for the following activities to enable new employees a smooth transition into employment.

Prior to the first day of work: Process new employee essential documents

1. Keys – Identify keys needed and prepare Key Request form for employee.
2. Office Door Signage (*where applicable*) – Place the new employee’s name at the entry door to the office/work station.
3. Office or Workstation – Request the room or work area be cleaned.
4. Computer Access (*where applicable*) – Contact Computer Information and Networking Services (CINS) to assure access.

During the first day of work:

1. Introductions – Accompany the new employee through the building to introduce them to all staff members in the building.
2. Computer Login – Assist the new employee with logging onto the Network.
3. Campus Map – Provide the new employee a Campus map.
4. ID Badge – Arrange for new employee to have their photo taken for their ID badge.

Standard Operating Procedure – BM 3.003

Subject: Purchasing Procedure

Purpose and Scope: To formalize purchasing procedures for Plant Operations by outlining the use of purchase orders and bids.

Policy/Procedure:

1. Purchases under \$10,000.00 – use purchase request form. Obtain one written quote for auditing purposes. Comparison of prices strongly recommended.
2. Purchases between \$10,000.00 and \$24,999.99 (unless on statewide contract) – require written quotes from at least three vendors.

3. Purchases over \$25,000.00 (unless on statewide contract) – require competitive bidding and must be posted on the Georgia Procurement Registry. Contact Purchasing Services at (706) 507-8270 for assistance.

Standard Operating Procedure – BM 3.004

Subject: Building Occupant Notification

Purpose and Scope: Proper procedure to follow when building occupants need to be notified due to building closure or building maintenance that will cause a major impact on occupants.

Policy: Advance notice should be given to building occupants when possible, unless an unforeseen emergency has occurred.

Procedure: Please follow the following steps in notifying building occupants.

1. Any Plant Operations Director, Manager, Supervisor, or Assistant/Secretary shall communicate any interruption in normal building conditions to the building occupants through the building occupation notification procedure in the Plant Operations office.
2. Notifier shall send an email to Plant Operations office with the message and the building to be notified.
3. Give plenty of time for notices to go out to occupants (a minimum of two weeks would be preferable). Notice will be sent out upon receipt and again two (2) days prior to the date of closure, shut down, etc.
4. Building occupants and Plant Operations Director, Manager, Supervisor, Assistant/Secretary, Director and Assistant Director of AES, Director of EH&S, Vice President of Business and Finance, and the Dean/Chair/Secretary of the Department/Building will be notified of any building closures, or significant utility outages due to planned preventative maintenance, maintenance, or problems.
5. All notifications shall be through email groups, which are kept current by the Plant Operations office for this purpose.

Standard Operating Procedure – BM 3.005

Subject: Protocol for Entering Student Housing

Purpose and Scope: To provide procedures for Plant Operations employees to properly announce their presence prior to entering dorm rooms for the purpose of performing work requested.

Policy: The procedures below have been developed to avoid uncomfortable situations.

Procedure:

1. Knock loudly twice. Wait ninety (90) second before knocking again.
2. If no answer, unlock the door and open slightly.
3. Announce your presence.
4. Turn lights on and enter room.
5. Place a maintenance tag on the door knob to show that someone is working in the room.

In the event of an uncomfortable situation, the employee will politely exit the room and return at another time, escorted. The maintenance tag will be left on the door knob updating the student if the work remains in progress or has been completed.

If maintenance is required after hours: The on-call employee must provide CSU identification (if not in uniform) and be accompanied by either a Resident Assistant or University Police for safety and liability issues.

Standard Operating Procedure – BM 3.006

Subject: Unlocking Buildings and Classrooms (**Performed by University Police**)

Purpose and Scope: To formalize, define, and communicate the process of unlocking buildings and classrooms on Main Campus.

Policy: Buildings and classrooms will be unlocked each workday morning before 8:00am unless instructed otherwise by supervisor.

Procedure: CSU Campus Police will unlock buildings and classrooms each workday morning before 8:00am. In the event that a building or classroom remains locked fifteen (15) minutes prior to a scheduled class, a CSU employee, including faculty, may unlock the facility.

Standard Operating Procedure – BM 3.007

Subject: Delivery and Receipt of Packages (**Performed by Campus Services - Warehouse**)

Purpose and Scope: To standardize and formalize the method of receiving and delivering packages to the Main Campus community.

Policy: Package deliveries are to be shipped to Columbus State University 4225 University Avenue, Columbus, Georgia 31907. The package label must contain the name of the department, purchase order number (if applicable), and preferably the name of the recipient.

Procedure: Packages will be accepted by Central Receiving Monday thru Friday between 8:00am and 5:00pm ET. A delivery receipt will be created and attached to the package(s) prior to being sent to Main Campus. The Main Campus courier will distribute packages to the appropriate department on the next scheduled mail route. The delivery receipt must be signed by the department secretary or another employee of the department. Student Assistants are not considered a department employee. The white copy of the delivery receipt will be returned to Central Receiving for recordkeeping purposes. The yellow copy remains with the department.

Standard Operating Procedure – BM 3.008

Subject: Mail (**Performed by Mail Services**)

Purpose and Scope: To standardize and formalize the method of delivering and receiving mail throughout the Main Campus community.

Policy: Campus mail must be addressed to the intended recipient and their department. If the item is being sent to another location within the Main Campus, indicate Main Campus on a Post-it-Note for easy recognition. Outgoing mail must include the full name and address of the recipient, and the department sending the mail must be listed in the return address. Personal mail may not be received through Columbus State University; however, it may be sent out if it is already stamped.

Procedure: Each department will have a designated area for mail delivery. The Main Campus courier will visit each department according to the schedule below. Scheduled times are approximate and are subject to change because of mail volume. Once the courier has visited your area, they will not return until the next scheduled time. Mail is exchanged between Main Campus and RiverPark Campus twice per day.

Standard Operating Procedure – BM 3.009

Subject: Injuries and Accidents

Purpose and Scope: To investigate to determine case to ensure safe work environment and if corrective action should be taken.

Policy: Employee to notify the Supervisor and Safety Officer immediately and then the Supervisor or the Employee to notify Human Resources. An Incident Report should be filled out within twenty-four (24) hours of

any accident. It should be submitted to the Human Resources Office. If the injured employee is not available for their input, the form can be completed by Supervisor or Human Resources Representative.

Assess Treatment Needs:

No medical treatment required

1. Incident report sent to Human Resources to be kept on file there
2. If employee decides later to seek treatment, refer them to Human Resources

Medical treatment required (Non-life-threatening injury)

1. Injured employee to work with Human Resources and Amerisys to select authorized treating physician
2. After Physician visit, employee is required to report to both Human Resources and Supervisor to provide release from physician to return to work

Medical treatment required (Life-threatening injury)

1. Call 911
2. Employee transported by ambulance. Follow up with Human Resources next business hours if after hours

General Supervisor Information:

1. Employee is paid on date of injury as regular work when treatment is required. If employee is not released to return to work immediately – Sick/Vacation time may be used for first seven (7) days of lost work. After seven (7) days, employee may choose to use Sick/Vacation or Workers' Compensation Lost Wages (66.33%) (see Workers' Compensation).
2. Lost wage option forms are completed in Human Resources by employee and processed through the Department of Administrative Services (DOAS).
3. If employee is released with restrictions, Human Resources will work with employee and Supervisor to ensure work restrictions are properly applied.
4. Human Resources will work with employee for continued treatment, if necessary.
5. Please indicate on injured worker's timesheet/leave sheet all time taken/lost due to Workers' Compensation claims.

Workers' Compensation:

The Georgia Workers' Compensation Act covers all employees of Columbus State University. This Act provides protection for the employee in the event of injury or death while performing services for CSU. If an accident occurs, whether or not medical treatment is required, an employee must report the accident immediately to their Supervisor. If medical treatment is required for non-emergencies case, please contact Human Resources. If injury is life-threatening OR if an injury occurred after normal office hours, medical care may be received at the nearest Emergency Room. There is a seven (7) day waiting period before Workers' Compensation will pay for lost time benefits. Any available sick or vacation time may be used during this time. If the injured worker is out for twenty-one (21) consecutive days following the injury, Workers' Compensation will reimburse for the first seven (7) days missed at the rate of 66.33% of the employee's average earnings up to a maximum benefit.

All injuries/accidents reported to the Supervisor are forwarded to the Workers' Compensation representative in the Human Resources office within twenty-four (24) hours.

Standard Operating Procedure – BM 3.010

Subject: Recycling

Purpose and Scope: As part of the Main Campus “Sustainability” mentality, we provide recycling bins for paper in each building.

Procedure: Main Campus will follow the guidelines listed below as part of the “Sustainability” mentality. Paper – recycling bins designated for paper are located in each building.

1. Aluminum Cans – a container for “clean” aluminum cans will be provided at the request of each department.
2. Scrap Metals – whenever possible, scrap metals are to be separated and taken to the scrap metal yard.
3. Printer and Toner – cartridges are transported to Main Campus for recycling.
4. Florescent Lights – accumulated bulbs are transported to Main Campus for disposal in the bulb crusher for recycling.

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

COLUMBUS STATE **UNIVERSITY**



WORK ORDER PROCEDURES

Building Maintenance Department
Standard Operating Procedures
4.001-4.006

Standard Operating Procedure – BM 4.001

Subject: Work Order (eQuests) Procedure

Purpose and Scope: To formalize Plant Operations guidelines in accepting work orders in a timely and orderly fashion. Guidelines are to be used to assist in maintaining quality and timely customer service.

Policy: All work orders should be submitted by eQuest System and processed in a timely manner.

Procedure:

1. Work order is submitted via eQuest System by an employee or staff.
2. Plant Operations assigns work order to department/employee and prints work order.
3. Department/employee starts work and annotates labor and material
4. Work stoppage or status change
 - a. Employee completes task to the fullest extent possible.
 - b. Employee notates if additional work is necessary due to requiring additional parts, labor, or unforeseen circumstances.
 - c. Employee notates all of the required information on the work request including labor and signature.
5. Employee closes out work order by inputting time in eQuest system and then giving paper copy of work order to Secretary for closure.
6. Plant Operations staff opens specific work order and marks the status as “closed” and indicates who the work order was completed by.

Standard Operating Procedure – BM 4.002

Subject: Completed Work Orders

Purpose and Scope: To review closed out work orders and identify their status.

Policy: All work orders should be completed and closed out, with all required information and signed off by the employee assigned to the task, within thirty (30) days of receipt.

Procedure:

1. Once requested work is complete, the employee assigned to perform the work will enter all of the required information on the work order and sign as completed. A work order which is unable to be completed within thirty (30) days should indicate in the Agent Work Log why the task is not complete. Work orders going past thirty (30) days should contain detailed information, such as parts needed, and status of the work order should be changed from Work in Progress to Pending Part, Pending Date, etc.
2. If parts are required for a specific task, parts will be ordered immediately. Once the parts have been received, the employee assigned the work order will place the work order in Work In Progress status and perform the task, thereby completing the work order.

Standard Operating Procedure – BM 4.003

Subject: How to Close Work Orders

Purpose and Scope: To establish consistency and quality for closing work orders.

Policy: Follow the established steps below in order to provide excellent customer service with minimal errors and maximum quality/productivity.

Procedure: Please follow the following steps in processing completed work orders from all departments.

1. Work orders will be completed to the fullest extent possible.

2. Once requested work is completed, the employee assigned to perform the work will enter all required information on the work order and sign.
3. The work order will then be sorted into the “Complete” bin.
4. Work orders that are unable to be completed are to have a status change of “Pending...”. These work orders must contain information, such as parts needed, regarding why the task remains incomplete.
5. Parts lists must be given to the Manager for purchase. Once parts arrive, the employee assigned the task must complete the work order in a timely manner.

Standard Operating Procedure – BM 4.004

Subject: Work Order Workflow

Purpose and Scope: To establish consistency and quality in work order workflow.

Procedure: Follow the established steps below in order to provide excellent customer service with a minimum of errors and maximum quality/productivity.

1. Plant Operations receive work orders by eQuest System.
2. Plant Operations will assign the work order to the appropriate employee(s) and print the work order.
3. The employee(s) complete the assignment in a timely manner.
4. The employee enters required information, *i.e.*, status, labor, workers, and additional items needed.
5. Work orders are closed out by employees by entering time and placing completed work orders in the “Complete” bin.

Standard Operating Procedure – BM 4.005

Subject: Work Order Prioritization

Purpose and Scope: To establish consistency of assigning priorities from submitted work requests.

Policy: To follow the priorities listed below in order to provide excellent customer service.

Procedure: Please assign the following priorities when processing work requests:

1. Safety – floods, utility interruption, toilet constant flush, all lights go out, exterior lights, security issues, leaks, lockout, hot/cold calls.
2. Any Greater Than 30 Days Old – food service equipment, preventative maintenance, individual light out.
3. Signage – fire extinguisher inspections, legal mandate inspections.
4. Routine Painting – renovations, construction

Standard Operating Procedure – BM 4.006

Subject: Room Renovation

Purpose and Scope: To formalize a University policy that provides direction in room renovation ensuring all required personnel are properly informed.

Policy: When a renovation of an area is being requested, and prior to initialization of a work order, through the eQuest system, for a room renovation, a Project Request Form must be completed and returned to the Director of Plant Operations.

Building Maintenance Standard Operating Procedures

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

COLUMBUS STATE **UNIVERSITY**



VEHICLE MAINTENANCE AND USE

Building Maintenance Department
Standard Operating Procedures
5.001-5.009

Standard Operating Procedure – BM 5.001

Subject: Driver's License Verification

Purpose and Scope: To ensure that all Columbus State University employees have a valid driver's license to operate University or Private Motor Vehicles on Campus.

Policy: On the employee's birthday of each year, all employees must show their driver's license to their Supervisor to verify the validity of the license. The Supervisor will make a photocopy to be filed, under lock and key. Employees, in positions requiring a valid driver's license, found without a valid driver's license will be subject to disciplinary action, up to and including termination.

Standard Operating Procedure – BM 5.002

Subject: Vehicle Safety

Purpose and Scope: To ensure safety of passengers in Plant Operations vehicles.

Policy: Vehicle is defined as all motorized equipment including, but not limited to, pickup trucks, vans, dump trucks, golf carts, and back hoes. No one shall ride in any vehicle other than in the passenger compartment. Where equipped, factory installed seatbelts must be worn at all times while a vehicle is in motion. At no time should an employee's arms, legs, or other body parts extend from the vehicle.

Standard Operating Procedure – BM 5.003

Subject: Driving Off Campus with University Vehicle

Purpose and Scope: To establish requirements for driving a Plant Operations vehicle to an off-campus destination.

Policy: All employees using a Plant Operations vehicle must possess a valid driver's license. It is against Columbus State University policy to use CSU vehicles for personal errands.

Procedure: Whenever an individual drives a University vehicle to an off-campus destination, they must contact the Plant Operations office before leaving and when returning to Campus. This contact may be via radio, phone, or in person. Employees using a CSU vehicle are to take the most direct route thereby utilizing the least amount of gasoline and time.

*Employees found in violation are subject to disciplinary action, up to and including termination.

Standard Operating Procedure – BM 5.004

Subject: Accident Investigation Process

Purpose and Scope: To investigate accidents to determine probable cause and corrective action to be taken.

Procedure: Plant Operations employees involved in a vehicle accident must report the accident to the Manager of Plant Operations immediately upon release from the scene unless the employee sustains injuries requiring medical attention. Employees must provide the information listed below when reporting an accident to the Manager of Plant Operations. The Manager of Plant Operations will report the accident to the Columbus State University Director of Transportation.

1. Name of employee.
2. Date of accident.
3. Time of accident.
4. Location of accident.
5. CSU vehicle involved.
6. Employee statement.

7. Name of other parties involved.
8. Other parties' insurance information.
9. Any injuries sustained.

Standard Operating Procedure – BM 5.005

Subject: Vehicle Repairs

Purpose and Scope: To formalize the procedures for arranging vehicle repairs.

Procedure: All vehicle repairs are the primary responsibility of the Vehicle Maintenance Department at Columbus State University Main Campus. No vehicles will be taken off campus for repairs without authorized from Vehicle Maintenance. When a vehicle requires maintenance of any form, report it immediately to the Manager or Supervisor of Plant Operations. They will schedule the vehicle repair and, if necessary, remove the vehicle from service.

Standard Operating Procedure – BM 5.006

Subject: Service and Inspection

Purpose and Scope: To define the standard process for scheduling motor vehicle repairs and billing of same.

Policy: Every vehicle owned by Columbus State University shall have a semi-annual preventative maintenance service performed and a 49-point safety check. The scheduling of this service/inspection will be done by the Manager or Supervisor of Plant Operations using the eQuest System. The assigned vehicle operator shall be notified by Plant Operations two (2) weeks in advance of the scheduled appointment for service/inspection. As part of the semi-annual preventative maintenance/safety inspection, mileage will be recorded.

Standard Operating Procedure – BM 5.007

Subject: State Tags, Decals, and Logos

Purpose and Scope: To ensure that all vehicles and equipment display appropriate state tags, decals, and logos.

Policy: All Columbus State University Plant Operations vehicles and equipment will be checked weekly by the operator for display of the appropriate state tags, decals, and logos. Vehicles without proper tags are not permitted for use on public roads.

Standard Operating Procedure – BM 5.008

Subject: Small Engine Repair

Purpose and Scope: To define standard processes and rate structure for repair charges on equipment.

Policy: No service over \$100.00 will be provided without written estimate and authorization, excluding safety or warranty items. Routine services will be performed by CSU Plant Operations employees.

Procedure:

Safety Issues – Equipment will be removed from use and submitted for repair.

Warranty Issues – Equipment requiring repairs covered by warranty will be sent to the manufacturer for service.

Routine Services – Work orders will be generated regarding the service and repair of equipment.

Standard Operating Procedure – BM 5.009

Subject: Driving University Vehicles on Sidewalks and Grounds

Purpose and Scope: To formalize driving areas for Plant Operations vehicles.

Policy: Plant Operations vehicles are prohibited from being driven on sidewalks and grounds.

Procedure: Plant Operations vehicles will, at all times, use service drives and established parking areas. The loading and unloading of heavy equipment is the *only* exception to this policy. Employees found in violation are subject to disciplinary action, up to and including termination.

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

COLUMBUS STATE **UNIVERSITY**



BUILDING MAINTENANCE SERVICES

Building Maintenance Department
Standard Operating Procedures
6.001-6.067

Standard Operating Procedure – BM 6.001

Subject: Lifting

Purpose and Scope: To prevent injury to Plant Operations personnel through proper lifting techniques.

Policy: Plant Operations personnel shall use the techniques (Workforce Safety) listed below to avoid injury.

Using these lifting techniques will help employees reduce the risks of back injury.

1. Always check the weight of the load before lifting.
2. If the load seems too heavy, get help. *Do not lift anything that is too heavy!*
3. Position yourself as close to the load as possible. The further the load from the body, the heavier it will be on the spine.
4. Assume a wide base of support, with legs shoulder width apart and one foot slightly ahead of the other. A wide base of support will ensure a better balance and keep your knees from getting in the way.
5. Keep the normal curve in your spines. Keep your head up!
6. Keep stomach muscles firm. This will prevent you from overarching your back while lifting.
7. Use stomach controlled movements; do not twist, move feet first. Rapid or jerking motions can place increase demand on the back.

Standard Operating Procedure – BM 6.002

Subject: Plant Operations Normal Work Day

Purpose and Scope: To formalize and define the normal work day for the Plant Operations Department.

Procedure: The normal workday for the Maintenance is Monday thru Friday from 8:00am to 5:00pm ET. Employees should be in their shops and ready for work at 8:00am ET. There are times that employees will be required to temporarily work different hours and/or different workdays so that University functions will not be interrupted. This will be done in accordance with Columbus State University policy regarding this change of hours and must be approved by the Manger of Plant Operations.

Standard Operating Procedure – BM 6.003

Subject: Plant Operations Break Time

Purpose and Scope: To formalize and define the employee break time for Plant Operations.

Policy: Employee morning break time will be from 10:00am to 10:15am ET. Lunchtime break will be from 12:00pm to 1:00pm ET. Afternoon break time will be from 3:00pm to 3:15pm ET.

Procedure: Each employee shall receive two uninterrupted (except in case of emergency work) breaks each day. Each break shall be fifteen (15) minutes in duration. The Manager of the affected employee(s) shall reschedule breaks that are interrupted by emergencies. Individual circumstances may be considered by the Supervisor to allow a variance from the established schedule on a case-by-case basis. Employees caught violating this policy will be subject to disciplinary action, up to and including termination.

Standard Operating Procedure – BM 6.004

Subject: Plant Operations Storage

Purpose and Scope: To define the operation of Plant Operations storage facilities.

Policy: The Groundskeeper storage facilities will be kept secure and managed by employees of Plant Operations.

Procedure: The Plant Operations storage facilities will be accessed only by people assigned to the Plant Operations. It is the responsibility of the assigned individuals to keep these areas clean and stocked. In the event of an emergency, or access after business hours, a University Police Office will escort the individual to the storage facility.

Standard Operating Procedure – BM 6.005

Subject: Identifying Underground Utilities for Construction Projects

Purpose and Scope: To define a procedure to be used before any construction that disturbs the ground on the CSU Campus to locate underground utilities [Reference Chapter 9 Title 25 of the Official Code of Georgia, annotated, “Georgia Utility Facility Protection Act”].

Policy: On the CSU Campus, there are several types of underground utilities including potable water, irrigation lines, sanitary sewers, electric cables at various voltages, internal communication lines, telephone company lines, cable television, chilled water, and heating water.

To minimize the risk of an accidental cutting of a utility line, the following items must be done. All terms used in this procedure are defined the way they are defined in the Georgia Statutes. All design firms are to have all underground utilities marked on the construction drawings.

Before any digging is done, the excavator shall notify the Free Access Notification System to identify all underground utilities that they are marked. Notification must be between two and five (2-5) working days from when excavation is to begin and the area to be excavated needs to be marked on the ground with white paint or a drawing provided showing the area to be marked. Also, before any digging is done, the excavator shall notify the CSU Plant Operations office at (706) 507-8222 who will arrange to mark CSU-owned utilities. Notification must be between two and five (2-5) working days from when excavation is to begin and the area to be excavated needs to be marked on the ground with white paint or a drawing provided showing the area to be marked.

CSU Plant Operations office will issue work orders to Plant Operations and Campus Planning to provide the marking of underground utilities noting the forty-eight (48) hour deadline. CSU Plant Operations will also issue a work order to Information Technology.

Services/Telecommunications to provide for marking of underground utilities, noting the forty-eight (48) hour deadline. All such work orders shall be tied to a project called Utility Stakeouts to allow total costs to be identified for this procedure. CSU Plant Operations will mark CSU utilities. This internal procedure needs to be referenced on all construction contracts, but it does not preclude the contractors’ responsibilities to follow the building design and construction standards. Each stakeout work order issued by Plant Operations will have an electronic stakeout form attached.

Standard Operating Procedure – BM 6.006

Subject: Contractor Access to Secured Areas

Purpose and Scope: To establish consistency and quality customer service when contractors require access to a secured area.

Procedure: Please follow the following steps when contractors request access to secured areas.

1. Contractor calls requesting access to a locked mechanical room, roof, or other secured areas.
2. Transfer the call to the Manager of Plant Operations, and request they give access to the secure area.

Standard Operating Procedure – BM 6.007

Subject: Trouble Call Sheet

Purpose and Scope: To identify what type of request and/or trouble calls are received after normal business hours.

Policy: This log will assist supervision in informing other departments as to the nature of the problems that have occurred and what action was taken to correct the situation, if it was possible.

Procedure: A Trouble Call Sheet will be completed for calls/work orders received after the scheduled business hours of Monday thru Friday, 8:00am to 5:00pm ET. Descriptions should be as thorough as possible. These sheets are given to the Manager of Plant Operations for review.

Standard Operating Procedure – BM 6.008

Subject: Combustion Calibration

Purpose and Scope: To provide guidelines for Plant Operations personnel to calibrate combustion on Aerco boilers.

Policy: Calibration is required before and after heating season.

Procedure: The steps listed below are recommended to properly tune up Aerco boilers.

Tools and Instruments Required

1. Manometer.
2. Differential tool.
3. Analyzer (Bacharach).
4. Flat blade screwdriver.

Preparation

1. Supply pressure manometer installation.
2. Air-fuel valve differential manometer installation.
3. Analyze probe hole location.
4. Regulator adjustment.

KC1000 Calibration Procedure

1. At 100% - Set 8.5" W.C. gas pressure.
2. At 30% - Set O₂ using differential regulator.
3. At 16% - Check readings.
4. At 100% - Set O₂ using air shutter.

Benchmark Calibration Procedure

1. Start at 40% firing rate.
2. Set gas pressure between 8.0" W.C. and 8.5" W.C.
3. Set oxygen as per specification, using the differential regulator.
4. Lower firing rate to 20%, then check readings.
5. Raise firing rate to 100%, set final gas pressure between 7.0" W.C. and 7.3" W.C.
6. Set oxygen to specification using air shutters.

Calibration Tips

1. Two (2) minute warm up.
2. Have charts available for particular model.

Graphs in Aerco Manuals (Located in the Plant Operations Office)

1. Look at O₂ levels at various firing rates.
2. Look at O₂ and CO₂ relationships.
3. Look at 16% high O₂ readings.

Standard Operating Procedure – BM 6.009

Subject: Boiler Maintenance

Purpose and Scope: To provide procedures for Plant Operations employees for changing spark igniters and flame detectors on Aerco Boilers. These procedures must be performed on an annual basis. The boilers are listed in SOP Appendix A.

Procedure:

Replacing Igniter

1. Secure the power.
2. Remove boiler panels.
3. Disconnect igniter cable and unscrew igniter contactor from the burner shell.
4. Insert removal tool and unscrew igniter.
5. Ensure new igniter has 1/8" gap.
6. Prior to installing new igniter, an anti-seize compound must be applied to the igniter threads.

Replacing Flame Detector

1. Secure the power.
2. Remove boiler panel.
3. Disconnect the flame detector lead wire.
4. Unscrew the flame detector.
5. Install the new flame detector.
6. Reconnect the flame detector lead wire.

Standard Operating Procedure – BM 6.010

Subject: Rebuild Boiler Feed Pumps

Purpose and Scope: To establish general sequence of required steps to tear down and rebuild the boiler feed pump.

Procedure:

Disassembly

After visually checking that the pump has been valved off, cooled down and tagged, upper pump casing removed, with packing glands, and old packing removed.

1. Unbolt bearing caps.
2. Lift out rotor assembly. Unbolt bearing caps end plates using a soft mallet to tap off the bearing end caps.
3. Pull old bearings from shaft using a puller. Do not use a hammer and chisel. Do not use heat.
4. Clean up bearing caps. Inspect for burrs, cracks, and rust.
5. Look at the shaft sleeves condition. If slightly scored or crooked they can be cleaned up by taking a slight cut of .010 or .015 to clean and true up.
6. Inspect condition of lock nuts on the shaft. They are made of brass. If not burred up or threads damaged, and if the allen screws are okay, they can be reused.
7. Take care not to drop this assembly. The impellers are bronze casting and are easily damaged/cracked.
8. Inspect the impellers and casing wear rings for damage, checking to see if bent or cracked or excessive wear on one side. A sign of imbalance and shaft bent in the center.
9. Remove shaft sleeves. Then use a soft mallet to remove impellers and wear rings.
10. Inspect the shaft after cleaning. Check for run out, keyway damage, threads, and the end that the bearings fit on.

11. Most wear will be on the shaft sleeves, inner stage diaphragm, or throat bushings.
12. New running clearances on wear rings are .012 to .018. Same for the inner stage diaphragm ring. Max clearance is .035 for all the rings.
13. To assemble, place a new key in the keyway, slide on one impeller and inner stage impeller rings, put a small amount of sealing compound on end of impeller, then slide another.
14. Make sure the keyways line up and do not slide or move.
15. Put sealing compound on shaft threads. Then screw on lock nuts. Hand tight only for now.
16. Put wear rings on and throat bushing in place.
17. Slide on shaft slinger, then bearing end plates.
18. Install bearing using a drier that fits close on the shaft and thrust washer. Do not use excessive force. Make sure the bearings are clean and packed with grease for high temperature.
19. Tap on the bearing end caps. Then bolt down.
20. Clean both casing gasket surfaces and coat with a thin film of anti-seize to take hold gasket material.
21. Let gasket lay flat to relax, if it has been folded or rolled.
22. Install the rotor assembly by making sure the locating pins in the pump casing line with the wear rings. The unit should spin very free after bolting the bearing caps to the lower casing.
23. Connect the coupling, making sure it is in good condition and is centered. Tighten the allen screws very tight.
24. Lower the upper half of pump casing on with locating pins. Finger-tighten some of the bolts. Turn the rotor assembly to make sure it is free to spin. Then slowly tighten the bolts in a sequence for even torque. Check to spin the rotor again.
25. Install packing. Four rings each end leave loose, then glands leave loose. Line up, pressurize, and vent. Then test run. Then adjust the glands for proper leak off.

Reassembly

Feed pump rebuild (reinstallation) checklist.

1. Clean and inspect all parts. Check shaft for trueness.
2. Insert impeller key on shaft.
3. Slide 1st stage impeller on key.
4. Install shaft sleeve gasket against 1st stage impeller.
5. Slide shaft sleeve on 1st stage side of shaft and lock groove into key.
6. Slide stuffing box bushing on shaft sleeve.
7. Install shaft sleeve nut and partially tighten.
8. From other side of shaft, slide on inter-stage diaphragm.
9. Slide 2nd stage impeller on key.
10. Install shaft sleeve gasket against 2nd stage impeller.
11. Slide shaft sleeve on 2nd stage side of shaft and lock groove into key.
12. Slide stuffing box bushing on shaft sleeve.
13. Install shaft sleeve nut and partially tighten.
14. Align and center impellers on shaft and continue tightening both shaft sleeve nuts.
15. Slide on wear rings for 1st and 2nd stage impellers.
16. Slide on slingers (water shields) on each side of shaft.
17. Slide on outer bearing cap plate.
18. Install thrust washer on shaft for outer bearing. Pack bearings with good hi-temp grease.
19. Install bearing on shaft.
20. Install retaining snap ring.
21. Install bearing cap for outer bearing.
22. Slide on inner end bearing plate for inner bearing.

23. Slide on inner bearing on shaft.
24. Install inner end bearing cap.
25. Tighten up cap bolts.

Standard Operating Procedure – BM 6.011

Subject: Pump Maintenance

Purpose and Scope: To provide a check list for in-house personnel to perform preventive maintenance on chill and hot water circulating pumps located throughout the CSU campus. Visual inspections should be performed weekly, as well as, pump sequencing. All other tasks should be performed monthly or as needed.

Procedure:

1. Pump sequencing; turn pump off/on to check deficiencies and to keep moving parts lubricated.
2. Perform visual inspection.
3. Check lubrication, if applicable.
4. Check mechanical seals and replace, if needed.
5. Check motor alignment.
6. Check mountings and tighten bolts, if needed.
7. Check pump motor for vibration/temperature.
8. Check coupling.
9. Check gauge and replace, if needed.

Standard Operating Procedure – BM 6.012

Subject: Boiler Start Up on Fuel Oil Routine

Purpose and Scope: To formalize a procedure to put boilers in service using fuel oil when other campus heating systems are not in use.

Procedure:

1. Check to confirm that no other heating systems are in service.
2. Confirm that the secondary hot water loop is filled with water and the makeup water supply regulator maintains 35psig.
3. Establish a water flow through the secondary hot water loop by starting one or more hot water VFD pumps, and adjust the pump speed to maintain 15psig differential pressure.
4. Start the primary circulating pump to establish a water flow through the boiler.
5. Open all valves on the fuel oil supply and return line.
6. Start one of the fuel oil supply pumps using the selector switch on the control panel.
7. Verify that the fuel oil pressure holds steady at 80psig.
8. Place the fuel selector switch on the boiler control panel in the "OIL" position.
9. Place the manual/auto damper control switch in the "AUTO" position.
10. Open the boiler control panel and place the internal auto/manual proportional control switch in the "MANUAL" position and turn the potentiometer clockwise to its limit.
11. Place the on/off switch in the "ON" position.
12. Monitor the boiler start up sequence and turn the on/off switch to the "OFF" position if proper ignition of the burner does not occur.
13. When the burner flame air

14. has stabilized, adjust the proportional control potentiometer to increase the burner firing rate to a level that will slowly bring the secondary hot water circulating loop temperature within normal operation range.
15. Place the internal auto/manual proportional control switch in the “AUTO” position and turn the proportional control potentiometer counterclockwise to the maximum setting.
16. Close and lock the boiler control panel.
17. Place the external auto/manual control switch in the “AUTO” position to activate the Siemens automated control system.

Standard Operating Procedure – BM 6.013

Subject: Portable Fuel Oil Tank Operation

Purpose and Scope: To provide the user with a guideline for the proper usage of the 250 gallon fuel oil tank and pump. This system is utilized to fuel the Columbus State University Main Campus’s emergency generators during and after use. This allows the department to maintain the generators during and after severe weather, by providing fuel in order to supply an uninterrupted emergency power source.

Procedure: The fuel pump is operated by a 12 volt battery. To operate the pump, follow the steps below.

1. Hook the clamps to the vehicle batter (red is positive, black is negative). When the pump nozzle is removed from its holder, the pump will turn on.
2. Push the reset button on the fuel register and visually check that it starts on zero. Insert the nozzle into the fuel tank neck and squeeze the handle. The pump will provide fifteen (15) gallons of fuel per minute.
3. When the tank level is satisfactory, let go of the handle, and the fuel flow will stop.
4. Return the nozzle to its holder on the pump, and the pump will turn off
5. Remove the clamps from the batter to complete the service.

NOTE: Log the amount of fuel placed in each generator along with the time, date, and operator’s initial. This will allow the tracking of the fuel consumption used by each piece of equipment.

Standard Operating Procedure – BM 6.014

Subject: Overhead Utility Pole Numbering

Purpose and Scope: To provide a number to each utility pole so that problems can be identified by individuals checking the overhead electrical system.

Procedure: Each pole owned by Columbus State University Main Campus has a number attached to it for the purpose of identification. The numbers are attached approximately six (6) feet up the pole. Refer to the pole numbers when reporting any trouble found.

Standard Operating Procedure – BM 6.015

Subject: Scissor Lift Operation

Purpose and Scope: To formalize a procedure for proper use and operation of a scissor lift.

Policy: Employees of Plant Operations may use scissor lifts to transport and handle materials. Their use is guided by established departmental policies and procedures and Occupational Health and Safety Act and Regulations. When operated by trained, competent, and professional drivers, scissor lifts can be safely utilized without injury, property damage, or other incidents. This policy and procedure is in place to provide guidelines as to the safe and efficient operation of scissor lifts.

Procedure: The following procedures must be followed when using the scissor lifts.

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1. Only authorized personnel may operate scissor lifts owned or rented by Plant Operations.
2. Operators must use scissor lifts in accordance with their training and the Occupational Health and Safety Act and Regulations.
3. Check each load before lifting to ensure that it is within the lifting capacity and stability of the truck. Secure and properly position the load on the scissor and side shifter.
4. Inspect the scissor lift before use against the posted checklist. Under no circumstances is the truck to be used if there are noticeable defects. Report all problems immediately to Supervisor.
5. The scissor lift can be used for both indoor and outdoor use only if the surfaces are hard and dry.
6. Regardless of being loaded or unloaded, the mast must be tilted back with the scissors no higher than ten (10) inches above the bare floor level while traveling.
7. Under no circumstances must the scissor lift be used to elevate a person.
8. If the scissor lift tips over, do not jump off, hold firmly to the steering wheel, brace your feet, and lean forward and away from the point of impact.

Standard Operating Procedure – BM 6.016

Subject: Personal Protective Equipment

Purpose and Scope: To formalize the use of personal protective equipment for Plant Operations employees.

Policy: It is the policy of Plant Operations that the employees utilize the appropriate personal protective equipment when performing tasks that are potentially injurious to their safety.

Eye Protection shall be worn when performing or observing tasks that reasonably could be injurious to the eye. These tasks include, but are not limited to, welding or brazing, using or working on any furnaces, kilns or ovens, working with corrosive or toxic materials, using compressed gas including air, working with chemicals either in a liquid or solid state, working with infectious or potentially infectious materials, milling, sawing, drilling, or any type of machining of any material, or repair of mechanical equipment. Safety glasses must be ANSI Z87.1 approved. Chemical goggles must be worn when there is a liquid splash, spray, or mist hazard.

Hearing Protection shall be worn in areas deemed to have noise levels above limits establish by OSHA for the expected exposure frequency. Operations of this type include, but are not limited to, using saws, grinders, and work in the chiller and boiler rooms.

Hand Protection shall be worn where applicable. Gloves shall fit to allow proper dexterity for the job being performed. Gloves contaminated with oils, chemicals, and grease should be discarded. Worn gloves (tears, etc.) should be replaced. Employees must wear appropriate rubber gloves when handling chemicals. Insulated gloves must be worn when working around heat.

Respiratory Protection shall be worn to prevent the breathing of air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors when the issue cannot be eliminated by engineering control measures. Respiratory equipment must be approved by the Columbus State University Environmental Health and Safety (EH&S) representative. The EH&S representative shall determine the proper type of respiratory protection as well as any other constraints such as medical testing, fit programs, training, etc. Certain respirators require a good fact seal and require there be no facial hair to interfere with the fit.

Standard Operating Procedure – BM 6.017

Subject: Orange Safety Vest Use

Purpose and Scope: To aid employee visibility and safety while performing work from a road or service drive.

Policy: Orange safety vests are to be worn by Plant Operations employees at all times when performing work on a road surface (including the curb) and service drives. Vests are not required while operating ride-on equipment, such as riding lawn mowers, tractors, etc. However, safety vests are required once an employee dismounts riding equipment to perform work on the surface of the road, as indicated above.

Standard Operating Procedure – BM 6.018

Subject: Tool Accountability

Purpose and Scope: To provide accountability for tools provided by Columbus State University for each employee in Plant Operations.

Policy: Listed below are procedures used for tool control in Plant Operations.

Initial issue: Employees that were issued tools before this policy was in effect, must provide a list of tools with their signature, acknowledging their receipt. All new employees will be provided with tools to perform their craft. They must sign for receipt of these tools. Lists of tools for each employee will be kept on file in the Plant Operations Office.

Purchasing Additional Tools: Additional tools may be purchased if tasks cannot be completed without them. These tools will be added to the employee's tool list and a signature will be required. Employees may purchase tools to replace damaged or unusable items; however, it must be reported so that their tool list can be adjusted accurately. Tools that cost more than \$20.00 must be approved by the Supervisor and/or Manager. Employees instructed to purchase tools for shop use will not be held accountable for these items.

Audits: The Administrative Assistant will monitor all purchase orders and credit card receipts for tool acquisitions and report these findings to the Plant Operations Manager so that tool accountability will not be compromised. Each employee should arrange their tools so that they can visually inventory them regularly. Tools must be secure either in a toolbox or truck. Any stolen item/tools should be reported to their Supervisor and the CSU Campus Police. This will release them from any liability. Each employee's tools will be audited by the Supervisors twice a year (May and December) to ensure tool accountability.

Termination of Employment: Each employee must turn in all tools issued to them. Each employee must reimburse Columbus State University for tools unaccounted for, unless documentation (*i.e.*, Stolen Property Report/Lost Tools Report) provides justification for missing tools.

Standard Operating Procedures – BM 6.019

Subject: Equipment Loans

Purpose and Scope: To formalize Plant Operations procedures for loaning equipment. This equipment is owned by the Columbus State University and is to be available at all times for its use.

Procedure: It shall be the policy of Plant Operations to not loan equipment or supplies to individuals. Loans to other Columbus State University departments and governmental agencies such as school districts for official business will continue. This type of loan shall be approved and recorded in writing by the Manager of Plant Operations, including a return schedule. Equipment refers to hand tools, power tools, vehicles, and similar items. Supplies are items such as tables, chairs, barriers, trash containers, and any other item purchase by Columbus State University.

Standard Operating Procedure – BM 6.020

Subject: Equipment Pre-Operation Inspection

Purpose and Scope: To establish a policy for inspecting equipment before its use.

Policy: The following steps and descriptions are required to prevent damage to the equipment and operator.

Procedure: Operators should check the following items as described before the operation of any equipment. Due to the heat and dust this equipment is operated in, wear out is very quick. This inspection would prolong life of the equipment.

Before equipment startup, check these items:

1. Engine oil level
2. Grass deflector in down position and clear of debris (if applicable)
3. Brake operation
4. Cooling system fluid level
5. Dust cap and pre-filter (air)
6. Radiator and screen for debris
7. Hydraulic hoses for leaks or damage
8. Fluid leaks or puddles
9. Tire pressure

After equipment startup, check these items:

1. Safety interlock system
2. Brake operation
3. Unusual engine noises
4. Hydraulic hoses for leaks or damage
5. Fluid leaks or puddles
6. Instrument operation
7. Unusual power take off unit noises

Report any areas of concern to your Supervisor so that Vehicle Maintenance can be notified by way of work order.

Standard Operating Procedure – BM 6.021

Subject: Power Outage

Purpose and Scope: To formalize guidelines to be followed when an unplanned power outage occurs.

Policy: Follow the guidelines provided and keep customers informed with the most accurate up-to-date information possible. Continue to provide the most prompt and courteous customer service possible.

Procedures:

1. Power outage has occurred. Call Plant Operations at (706) 507-8222, regarding the area affected by the outage, campus-wide, or confined to one to two buildings, and which ones are affected.
2. Upon determining whether it is a Plant Operations problem or an incoming Georgia Power issue, inquire as to how long the estimated time is for the outage. Only estimates provided by Plant Operations or Georgia Power for clearing the outage will be communicated.
3. If this is a problem due to a Georgia Power incoming outage, Plant Operations will contact Georgia Power at the Distribution Center at (800) 253-1329, and inquire as to the problem and the estimated time of reconnection.

4. During this time, one person in Plant Operations should be helping to answer the phone, informing customers of what is factually known.
5. Plant Operations is to inform the Director of Maintenance & Construction of all information received from Georgia Power immediately.
6. Director of Maintenance & Construction is to keep upper management informed of significant information during the outage.
7. If it will be a prolonged outage, the Director of Maintenance & Construction would request University Relations personnel to put out a campus-wide message regarding the outage.
8. Debriefing to follow the outage at the Director of Maintenance & Construction's discretion.

Standard Operating Procedure – BM 6.022

Subject: Energy Savings

Purpose and Scope: To reduce electrical consumption by using lighting only as needed to perform duties in unoccupied spaces.

Policy: Area lighting will be turned on in offices, meeting/conference rooms, and classrooms by Campus Police when the building is unlocked. Except for classrooms and hallways, lights are to be turned off upon leaving, if the space is no longer occupied. Lights will be extinguished by Campus Police at the end of the day when locking the facility.

Standard Operating Procedure – BM 6.023

Subject: Medium Voltage Electrical System

Purpose and Scope: To identify the specific wiring configuration of the medium voltage switch and current switching procedure.

Policy: Operation of switching to an alternate configuration will be supervised by the Manager or Supervisor of Plant Operations.

Procedure:

1. Switch S1 (Campus Feeder #1) is the normal underground campus electrical feeder that feeds switch. This switch is normally in the closed position (energized).
2. Switch S2 and S3 (Campus Feeder #2) are switched normally open (de-energized).
3. S3 (Campus Feeder #2) can also feed the switch in lieu of feeder #1.
4. S2 is used only when the alternate feed (secondary power connection to Georgia Power) is utilized to power the switch or to backfeed all or a portion of the campus underground service.

Standard Operating Procedure – BM 6.024

Subject: Emergency Generator Inspection

Purpose and Scope: To ensure the reliability of the emergency generators. These generators will, in the event of a power failure, start and switch to emergency power and provide safety lighting.

Procedure: On a weekly basis, each generator has all fluids checked to ensure proper levels and are adjusted as needed. These fluids include oil, water/coolant, batter water/charge, and fuel level. Additionally, each generator is run for approximately fifteen (15) minutes. During this time, the alternator pumps, coolant temperature, and visual check for leaks is performed.

Standard Operating Procedure – BM 6.025

Subject: Generator Hook Up and Operation

Purpose and Scope: To provide stand by power in the event of an emergency.

Procedure: The following steps and descriptions are required to safely connect, start, and disconnect the generator.

1. Connect wiring to transfer switch.
2. Start generator.
 - a. Check voltage and rotation (rotation should be clockwise)
 - b. Send notification that the generator will be load tested the following day
3. Bring generator online.
 - a. Turn off all circuit breakers.
 - b. Turn off main for normal power – remove key.
 - c. Start generator and engage disconnect.
 - d. Place key in circuit breaker for generator turn off.
 - e. Turn circuit breaker back on.
 - f. Check voltage at switch gear.
4. Return to normal power.
 - a. Turn off all circuit breakers.
 - b. Turn off circuit breaker for generator – remove key.
 - c. Turn off generator disconnect.
 - d. Place key in normal power breaker and turn on.
 - e. Turn all circuit breakers back on.
 - f. Turn off generator.
5. Remove cables and store them.
6. Fill generator with diesel fuel for next emergency.

Standard Operating Procedure – BM 6.026

Subject: Emergency Generator Fuel Records

Purpose and Scope: This procedure is for maintaining proper records for the fueling of emergency generators.

Procedure: When fueling of our emergency generators, it will be necessary for each generator being fueled to have the fuel metered for each drop. Have the driver of the fuel truck record on his drop invoice the location and metered amount of fuel for each generator. For example: Corn Center gallons = 650. Make sure that each invoice is signed and dated by the driver and the Plant Operations representative. The purpose of this procedure will allow Plant Operations to pinpoint the exact usage and cost by each machine.

Standard Operating Procedure – BM 6.027

Subject: Emergency Power

Purpose and Scope: To formalize procedures to switch buildings to emergency power during an extended power outage.

Policy: In the event of a Main Campus power outage lasting longer than fifteen (15) minutes is expected, the emergency power must be manually engaged by switching the manual transfer switch disconnect.

Procedure: The manual transfer switch has to be switch to the emergency power position in order to feed emergency power. If the power outage is expected to last longer than fifteen (15) minutes, the emergency power

feed can be energized by following the steps below. This procedure shall be performed by the Plant Operations employee assigned to the specific building.

1. Manually turn the well hand/off/auto (HOA) control switch to the off position.
2. Manually switch the manual transfer switch to the emergency power position.
3. Turn the well control HOA switch on and verify pump and well operation.
4. After normal power is restore, turn the well control HOA switch to the off position.
5. Switch the manual transfer switch to the normal power position.

Standard Operating Procedure – BM 6.028

Subject: Extended Power Outage

Purpose and Scope: To formalize Plant Operations guidelines to be followed when an extended power outage occurs.

Policy: Follow the guidelines provided below and keep customers informed with the most accurate up-to-date information possible. Continue to provide the most prompt and courteous customer service possible.

Procedure: In the event of a power outage, follow the steps below to keep everyone informed until power is restored.

1. Call Plant Operations at (706) 507-8222 to inform them of the building's situation.
2. Once it is determined whether it is a Plant Operations problem or an incoming Georgia Power issue, an estimated amount of time for the loss of power should be provided to all effected departments. Only estimates provided by Plant Operations or Georgia Power will be communicated.
3. If this is a problem due to a Georgia Power incoming outage, Plant Operations will contact Georgia Power at the Distribution Center.
4. During this time, refer all questions regarding the outage to Plant Operations.
5. University Relations personnel will put out a campus-wide message regarding the outage.
6. Director of Maintenance & Construction will keep Columbus State University upper management informed of all information received from Georgia Power.
7. Debriefing to follow the outage at the Director of Maintenance & Construction's discretion.

Standard Operating Procedure – BM 6.029

Subject: Switching Campus Power to Normal Feed from Medium Voltage

Purpose and Scope: To identify the sequence and switching procedure to transfer campus power from alternate power feed to primary normal power feed from Georgia Power. The switching procedure will be coordinated with Georgia Power representatives.

Procedure: The following steps describe the switching sequence and operations procedure to switch power serving campus from the alternate Georgia Power feed.

1. Secure (turn off) all equipment.
2. Open (de-energize) F2, F3, F4, and F5 (Feeders #2, 3, 4, & 5). F1 (Feeder #1) and the main should already be open in the alternate feed configuration.
3. Georgia Power will open (de-energize) the alternate feed gang operated switch.
4. Open (de-energize) S2. (Alternate fee connection to underground electrical system from overhead line alternate feed).
5. Open (de-energize) S3. (This was the tie location for F2 (Feeder #2) in the alternate feed switching configuration).
6. Close (energize) T2. (This is the normal connection when campus power is fed from the primary feed).

7. Remove lockout tag and lock from S1 and close (energize) switch. (F1 is Feeder #1).
8. Georgia Power will close (energize) primary power feed cutouts.
9. Close (energize) the main.
10. Close (energize) F1, F2, F3, F4, and F5 (Feeders #1, 2, 3, 4, & 5).
11. Start heating side equipment.
12. Start cooling side equipment.
13. Perform normal campus checks on equipment and buildings following a power outage.

Standard Operating Procedure – BM 6.030

Subject: High Voltage Switch Operation

Purpose and Scope: To outline the proper equipment and procedure for the operation of the Main Campus high voltage switches.

Policy: Main Campus high voltage switches and transformers are to be operated only by trained employees, following proper safety guidelines. The trained employee will not operate a switch without the following safety equipment: hot stick or shotgun stick, high voltage gloves rated at least to 20,000 volts for moving of cables or elbows, and two-way radio communication. Only the person responsible for the job task will lock or unlock the switch (es).

Procedure: The hot stick or shotgun stick will be used to energize or de-energize all switches. Any time the employee is moving cables or elbows, the switch must be de-energized and high voltage gloves will be worn. All switches will be locked in the OPEN position during any work on the switch itself or switches down the line. Only the person responsible for the job task will lock or unlock the switch (es). All elbows should be put on grounded parking stands until they are ready to be put back in service.

NOTE: Work on any switches or transformers shall only be done with notification and scheduling by Plant Operations Supervisor or Manager.

Standard Operating Procedure – BM 6.031

Subject: Siemens Building Automation System (BAS) Building Entrance Loop Control

Purpose and Scope: To provide a basic description of operation of the chill water and hot water loop system.

Policy: This explains the relationship of building entrance controls and how these building entrance controls provide piping loop inputs to control the hot water and chill water campus loop pumps. The number of pumps operating and the speed at which these pumps operate rely on these building entrance differential pressure (DP) inputs. If the chilled or hot water flow is manually shut or if there is a control valve failure that shuts off water flow, the pumping system will continue to increase in speed to 100% with all pumps operating that are able to operate.

Procedure: If work in a building with a BAS control system requires shut down of either the hot or chilled water supply or return valves to these buildings, then Plant Operations must be notified so that control inputs for this building can be disabled. The BAS control system algorithm will ignore this building when the control input is disabled. Each building entrance graphic for these buildings has a graphic link to disable control. In the event a building entrance control valve fails in the closed position, or if a DP sensor fails or has erroneous pressure readings, Plant Operations can view the building loop summary graphic to view DP set points and actual loop DP for each building to make a quick determination of values not normal or out of range. Signage is posted at each of these building entrances to notify the Plant Operations in the event of planned shutdown of the system in that building.

Standard Operating Procedure – BM 6.032

Subject: Electrical Safety

Purpose and Scope: To familiarize employees with electrical safety.

Policy: All Plant Operations employees who deal with electricity must follow the steps outlined below to ensure the safety of themselves and others working within the vicinity.

Procedure:

1. Whenever possible, complete the repair when the area is closed or at its lowest occupancy level.
2. Notify potentially effected staff, faculty, and students of power outages. Informing other will prevent mistakes or someone turning the breaker back on.
3. Turn power off at eth breaker before starting any work, regardless of voltage. Breakers must be properly labeled to maintain safety.
4. Keep track of wires. Even the most careful employee can get tripped up in loose wires.
5. Cap all exposed wires.
6. Double check your work before tuning the power back on.
7. Inform staff, faculty, and students that work is completed.

*In the event of an accident, turn off the power, if you can, but if you can do so quickly and safely, free them from the current. Use good judgment in attempting to rescue the individual using every precaution not to get caught in it too. Remember, as little as one tenth of an ampere or less will knock you out and likely kill you.

Standard Operating Procedure – BM 6.033

Subject: Interior Re-lamp

Purpose and Scope: To formalize Plant Operations with procedures for interior re-lamps.

Policy: Plant Operations is responsible for maintaining all mounted light fixtures. Desk lamps and flood standing light fixtures are the responsibility of the department.

Procedure: The replacement of bulbs should be assigned to maintenance personnel if the fixture is at an elevation of ten (10) feet or more.

1. Turn the switch off that controls power to the light.
2. Replace the bulb while wearing safety glasses and gloves.
3. Turn switch to “on” position.
4. If the new bulb does not light, unplug the fixture and submit a work order, through the eQuest system, to Plant Operations for the removal and repair of the fixture.
5. If Plant Operations determines the bulb is not working, secure switch (lockout/tag out), disassemble fixture to ballast, and examine ballast. If ballast is burned out, remove and replace ballast.
6. Dispose of spent bulbs and ballasts in proper recycling bins.

Standard Operating Procedure – BM 6.034

Subject: Exterior Re-lamp

Purpose and Scope: To formalize Plant Operations with procedures for exterior re-lamps.

Policy: Plant Operations is responsible for maintaining all exterior building mounted and parking lot/street lighting.

Procedure: All work shall be performed in accordance with established safety guidelines.

1. Verify electrical power and proper voltage is present.

2. Verify photocell/time clock working properly.
3. Secure power source (lockout/tag out), examine bulb, and, if it appears bad, remove and replace. Clean reflector lens. Turn power source on.
4. If bulb is not working, secure power source (lockout/tag out), disassemble fixture to ballast, examine ballast, and, if it is obviously burned out, remove and replace.
5. If ballast appears to be in good condition, turn on power source and take voltage reading at fixture. If proper voltage is present at fixture, secure power, and remove and replace ballast.
6. Dispose of spent bulbs and ballasts in proper recycling bins.

Standard Operating Procedure – BM 6.035

Subject: Used Bulb and Ballast Storage

Purpose and Scope: To formalize Plant Operations with the proper procedures for storage of used bulbs and ballasts.

Procedure: When storing used bulbs and ballasts, all boxes and tubes must have spent mercury labels affixed to each container. Label containers with date and piece count. Store ballasts in 55 gallon drums. PCB and non-PCB ballasts must be separated into separate 55 gallon drums. If ballast read “Non-PCB”, then consider it Non-PCB. If no information, then consider it PCB. Keep all bulbs of the same type in containers placed together. Broken bulbs shall be stored in container provided. Clean up any mess made during bulb storage, keeping dust to a minimum. Bulbs will be stored until a large quantity has gathered for transport to Columbus State University Main Campus for disposal.

Standard Operating Procedure – BM 6.036

Subject: Heating Ventilating and Air-Conditioning Operating Parameters

Purpose and Scope: To formalize the heating ventilating and air-conditioning operation temperature parameters at the Columbus State University Main Campus. The HVAC operation is a significant portion of the cost of utilities and to minimize the cost of operation while maintaining comfortable indoor conditions.

Policy: It shall be the policy of the Columbus State University Main Campus to use 74-76 degrees Fahrenheit as the targeted temperature for air conditioning and 72-74 degrees Fahrenheit as the targeted temperature for heating.

Procedure: Effort will be made to maintain these targeted conditions Monday thru Friday 8:00am to 10:00pm ET for most buildings. Building which have extensive weekend and nighttime use such as the library, commons, residence halls, computing center, or field house, will have targeted conditions met at all times. Exceptions will also be made for some laboratory buildings that use extensive amounts of outside air. Additionally, some building with less zone control HVAC systems may have slightly different set points at the discretion of Plant Operations. If occupants have a need to utilize the buildings during hours that HVAC conditions are not being met, they may call Plant Operations at (706) 507-8222. The Energy Management System will be programmed one day prior to allow for the specific use and duration.

Standard Operating Procedure – BM 6.037

Subject: Electrical and HVAC Equipment Inspection and Repair

Purpose and Scope: To formalize a departmental policy to restore electrical and HVAC services immediately following an electrical outage.

Policy: Network servers require air-conditioning to prevent equipment or data damage. There is a direct supply air connection to the branch duct trunk-line to servers. The air handler should be set on manual to run continuously for this area of the building. The servers can be damaged if the electrical building system enables

the server to function without conditioned air. Other air handlers in this building may or may not be on according to the start/stop schedule. Visual inspections should be performed weekly, as well as, sequencing motor. All other tasks should be performed quarterly or as needed.

Procedure:

Inspections

1. AHU sequencing; turn off/on to check operation
2. Perform visual inspection.
3. Check belts for tension/alignment and wear and replace, if needed.
4. Inspect pulleys.
5. Inspect dampers to confirm proper and complete closure.
6. Observe actuator/linkage control.
7. Check fan blades and clean, if needed.
8. Check air quality; inspect for moisture – growth on walls and ductwork.
9. Check wiring to fan motor/controls.
10. Check filters and replace, if needed.
11. Inspect ductwork and repair loose connections, etc.
12. Check coils and clean, if needed.
13. Check insulation and repair/replace damaged areas, if needed.

Power Outages

1. Planned electrical outages. Please notify the Manager of Plant Operations at least twenty-four (24) hours in advance of the shutdown to allow time to back up data.
2. Unplanned electrical outages. Outages occurring after normal working hours or during the weekend. Follow *SOP BM 1.001 Emergency Procedures*.
3. Plant Operations is responsible to verify that electric service has been restored to the building. If it is determined the power source serving the building remains off, Plant Operations will follow *SOP BM 6.028 Extended Power Outage*.
4. Plant Operations will start up the air-conditioning system and/or air handler system that provides conditioned air to the server room.

*It is critical to assure the air conditioning system is restored to avoid computer equipment damage.

Standard Operating Procedure – BM 6.038

Subject: Cooling Tower Maintenance

Purpose and Scope: To provide general guidelines for Plant Operations personnel to perform maintenance on cooling towers located on the CSU campus. These methods should be performed annually/as needed basis by in-house or contractor personnel. A list of chillers and towers located on campus can be found in SOP App B.

Procedure:

1. Check for deficiencies.
2. Check for vibration, leaks, noise.
3. Remove access panels.
4. Clean hot deck and check orifices.
5. Check electrical connections on motor.
6. Grease motor and fan.
7. Check blades for balance and clearance of shroud.
8. Check belt for wear/tension and adjust, if needed.
9. Drain sump and clean basin.

10. Check float.
11. Refill tower.
12. Replace access panel.
13. Remove conductivity probes and clean chemical system.
14. Check starter, flow switches, temperature sensors, head pressure control and VFDs.
15. Inspect and clean around towers.
16. Document all maintenance.

Standard Operating Procedure – BM 6.039

Subject: Annual Chiller Maintenance

Purpose and Scope: To provide general guidelines for Plant Operations personnel to perform yearly preventive maintenance on large tonnage chillers located on the CSU campus. These guidelines are general; however, they provide guidance for in-house personnel to perform annual maintenance on chillers. Detailed specs are kept on file for outsourcing. A list of the chillers located on campus is provided in SOP Appendix B.

Procedure:

Centrifugal Chiller Maintenance

1. Check unit for proper operation.
2. Check oil level and temperature
3. Check purge unit.
4. Perform oil analysis and change oil, if needed.
5. Check oil filters and change, if needed.
6. Check all safety limit switches (*i.e.*, oil pressure, water flow, temperature).
7. Check unit for refrigerant leaks and add, if needed.
8. Inspect piping.
9. Clean evaporator/condenser tubes.
10. Check for corrosion, perform eddy current test, if needed.
11. Meg motor, run insulation test on compressor.
12. Check starter and all electrical connections.
13. Change coolant on motor starter, if applicable.
14. Clean area round equipment.
15. Document all maintenance, etc.

Screw Chiller Maintenance

1. Check unit for operation.
2. Check oil level and temperature and add oil, if needed.
3. Perform oil analysis and change oil, if needed.
4. Replace oil filters, if needed.
5. Check all safety limit switches (*i.e.*, oil pressure, water flow, temperature).
6. Inspect piping for leaks.
7. Check refrigerant level/pressure and add refrigerant, if needed.
8. Clean evaporator/condenser tubes.
9. Check motor connections, starter.
10. Grease motor.
11. Change coolant on motor starter.
12. Check for corrosion and perform eddy current test, if needed.
13. Clean area around equipment.
14. Document all maintenance, etc.

Standard Operating Procedure – BM 6.040

Subject: Chiller Start-Up

Purpose and Scope: To formalize the operating procedure to start chillers.

Procedure:

Starting Sequence

1. Turn on in manual, the corresponding condenser pump for the chiller to be started. Verify flow visually by the pressure gauge at the pump and the water movement in the tower. At this time, also open the makeup water float valve, if not open. The pumping capacity is 3600 gpm, through the condenser that is controlled by two flow control valves in the condenser piping.
2. Turn on in auto, the cooling tower fan. The fan operates on a temperature setting of low speed on at 83 degrees. High speed comes on at 86 degrees and stays on in high until the entering condenser water temperature to the chiller reaches 78 degrees. At this point, the fan stops and the sequence is repeated.
3. Verify that the secondary VFD pump(s) are in operation and pumping no less than 1600 gallons per minute. If not, adjust the speed to this minimum. Check the flow by typing in on the keypad “f l o w”, and push the enter button. The (+) button increases the hertz to speed the pump motor up and the (-) button decreases the hertz to slow it down. (+) pumps more water, (-) pumps less water.
4. Manually turn on the corresponding chiller pump. Check the seals on the pump to ensure no leakage and also verify flow at the pressure gauge on top of the pump. The pumping capacity is 1600 gpm to the evaporator. The chiller pump is constant volume.
5. At the chiller control panel, push the AUTO button. At this time, the chiller computer runs a series of diagnostic checks on the machine, verifies that the condenser pressure differential switch is made, the evaporator pressure differential switch is made. The computer also automatically starts the chiller oil pump, which runs in a pre-lube state for approximately thirty (30) seconds to lubricate the motor bearings. If all conditions are acceptable, the machine will start and the cooling cycle will begin.
6. While at the chiller control panel, press the “Custom Report” button. This report has been set up to allow the operators on duty to monitor important operating information. Use this during startup to confirm proper operation and during hourly equipment checks to make sure that the machine is operating within its proper range. This information will let the operator know if more/less cooling is needed.

Shutdown Procedure

1. To shut down a machine is basically the reverse of the startup with the exception of the “Stop” button. When you push the “Stop” button, only push it ONE time. If you push it two times, it will put it into a panic stop mode, which will stop it at once. This is not good for the machine, due to it stopping under a loaded condition. Not only does it stop the machine at once, it also stops the oil pump at this time and this does not allow the bearings to be cooled down by the oil as in a post-lube normal shutdown. Only push the “Stop” button one time for normal shutdown. This will allow the machine to unload before turning off. It also allows the oil pump to continue to run for approximately one (1) minute in a post-lube mode to further cool the motor bearings off. This adds a great deal of life to the bearings and the machine.

Standard Operating Procedure – BM 6.041

Subject: Air Compressor Inspection

Purpose and Scope: To formalize the tasks and frequency for routine operational checks and inspections on air compressors located throughout the CSU campus.

Policy: The air compressor operations check and inspection will be performed on Monday of each week. These operational checks include minor preventative maintenance that can be performed at the time of inspection. Any additional required maintenance will be forwarded to the Manager of Plant Operations.

Procedure: Follow the steps below.

1. Sequence compressors; turn off/on to check for deficiencies.
2. Perform visual inspection on air compressor.
3. Drain tank condensate.
4. Check automatic drain to check operation.
5. Test pressure relief valve and replace, if needed.
6. Check belt tension and tighten, if necessary. Make sure compressor motor is secured off during this operation.
7. Check motor bearings and grease, if needed.
8. Check intake filter and change, if needed.
9. Check oil level and refill, if required.
10. Check air line filters and replace, if needed.
11. Check air dryer for proper operation. Vacuum condenser coil, if necessary.
12. Check compressor and motor mounts for tightness.
13. Check electrical connections for tightness.
14. Make other minor repairs and adjustments, as needed, during this inspection.
15. Clean up area around compressor.
16. Make note of repairs or deficiencies that will require additional assistance or expertise.

Standard Operating Procedure – BM 6.042

Subject: Electric Motor Inspection

Purpose and Scope: To formalize the tasks and frequency for routine operational checks and inspections on motors for pumps, AHU fans, exhaust fans, and air compressors located on the CSU campus.

Policy: The electric motor operations check and inspection will be performed on Monday of each week. These operational checks include minor preventative maintenance that can be performed at the time of inspection. Any additional required maintenance will be forwarded to the Manager of Plant Operations.

Procedure:

1. Motor sequencing; turn motor on/off to check operation
2. Visual inspection
3. Check lubrication if applicable
4. Check motor alignment
5. Check mountings; tighten bolts as needed
6. Check electrical wiring for tightness
7. Clean motor (*i.e.*, dust, dirt)
8. Check motor condition; vibration/temperature
9. If 3-phase, check for balance 3-phase power
10. Check for over-voltage or under voltage

Standard Operating Procedure – BM 6.043

Subject: HVAC Too Hot or Cold

Purpose and Scope: To familiarize Plant Operations employees who to contact when HVAC trouble calls occur.

Policy: When an HVAC unit is reported as being too hot or cold, a Plant Operations employee will inspect the unit for problems before regulating temperature.

Procedure: The Plant Operations employee will inspect the unit before regulating temperature. If a problem is discovered, they will evaluate the most expedient manner and time for completing repairs and report the situation to the Manager of Plant Operations.

Standard Operating Procedure – BM 6.044

Purpose and Scope: To provide Plant Operations employees with a schedule for the proper procedures for repairing or replacing slip system air conditioners.

Policy: When performing repair or air conditioning replacement, the Plant Operations employee assigned to the task shall follow the steps listed below.

Procedure: The responding Plant Operations employee will evaluate air conditioner to determine if the unit can be repaired or needs to be replaced.

For Repairs

1. Notify occupants in building of AC repair or replacement, and give estimate of AC shutdown time.
2. For all repairs of Freon holding equipment, including compressors, evaporators, condensers, reversing valves, and copper tubing, the Freon must be recovered using an approved recovery unit and proper recovery tank.
3. The Plant Operations employee must wear hand and eye protection through entire process.
4. After repair is made, evacuate and recharge system using Freon in recovery tank, if Freon is still usable.
5. Verify system charge and operating pressures to assure a complete charge.
6. Take temperature readings of return air and supply air to assure proper operation.
7. Verify thermostat operation in both heating and cooling.
8. Notify occupants in building of repair completion.

For Installing New Equipment

1. The AC Freon must be recovered using an approved recovery unit and proper recovery tank.
2. The tradesman must wear hand and eye protection.
3. The compressor must be removed from unit and all oil must be recovered.
4. A load calculation may need to be done if building has had major renovations to assure proper sizing of unit and copper tubing inside.
5. Set units in place and route copper tubing, thermostat wire, and main drain from indoor to outdoor units.
6. If secondary drain is used, run it in a conspicuous place to allow Plant Operations employees to watch for a drain blockage.
7. Braze all copper tubing, and hook up all low voltage connections.
8. Place p-traps on main drain unless it is a blow through coil, such as a gas furnace.
9. Connect high voltage using proper size wire and breakers.
10. Verify operation of unit using return air and supply air temperatures and operating pressures.
11. Verify thermostat operation in both heating and cooling.
12. Notify occupants in building on thermostat operation and completed work.

Standard Operating Procedure – BM 6.045**Subject:** Chill Water System Isolation**Purpose and Scope:** To identify the general procedure to isolate hot chill water piping so existing systems can contain and maintain, to the extent possible, water in the chill water piping system.**Procedure:** The following procedure identifies tasks to isolate the existing chill water system. Use this procedure as a guide, as applicable, for either partial or full isolation of the existing system.

1. Secure (turn off) chillers, primary pumps, and secondary pumps that are operating.
2. Secure (close) makeup water feed for chill water distribution system.
3. Secure (turn off) building HVAC pumps.
4. Secure (close) main isolation valves for return and supply main piping. Tag out and label valves that are closed (shut).
5. Tags should be placed on all valves that are closed so they can easily be identified when valves are opened at the conclusion of the shutdown.
6. Close building entrance valves.

*If valves do not shut off, or if you are unsure what valves are serving, close the building entrance valves for chill water serving respective buildings. Tag out all valves and note where valves have been closed, so that when system is ready to be put back online, no valves are missed.

Standard Operating Procedure – BM 6.046**Subject:** Closing Entrance Valves**Purpose and Scope:** To formalize Plant Operations employees on procedures for closing entrance valves for portable water or HVAC services.**Policy:** The closing of entrance valves will be scheduled forty-eight (48) hours in advance unless the situation becomes an emergency. All lockout/tag out procedures shall be followed in securing entrance valves.**Standard Operating Procedure – BM 6.047****Subject:** Changing Bag Filters on Hot Water Circulating System**Purpose and Scope:** To formalize the tasks for changing bag filters on hot water circulating systems.**Policy:** This is a standard procedure for safely changing bag filters contained in the hot water system filter housing. Special consideration must be given to the safety hazard of servicing a pressurized vessel containing hot water.**Procedure:**

1. Close the filter housing inlet and outlet valves and allow the filter housing to cool for at least one (1) hour.
2. Open the drain valves on the side of the filter housing.
3. Open the vent valves at the top of the filter housing cover.
4. Drain the filter housing until water no longer flows from the drain valve on the side of the filter housing.
5. Loosen wing nuts on the filter housing cover.
6. Check to see that there is no residual pressure in the filter housing by moving the filter housing cover slightly.
7. If no residual pressure is evident, open the filter housing cover.
8. Remove the coil spring from the filter housing.

9. Remove the filter bag from the filter housing by grasping it at the top edges and lifting slowly to allow the water to drain from the bag.
10. Remove the filter bag and clean the inside of the filter housing, paying close attention to the lid gasket and bag seal area.
11. Install a new filter bag, making sure that the top of the bag fits properly against the seal shoulder.
12. Install the coil spring on top of the bag seal.
13. Reinstall the filter housing lid gasket.
14. Close the filter housing lid.
15. Thread the wing nuts on evenly until they are all hand tight.
16. Tighten the wing nuts slightly with a wrench. **DO NOT OVERTIGHTEN.**
17. Close hot drain valves on the side of the filter housing and the vent valves at the top of the filter housing cover.
18. Slowly open the filter housing inlet valve and check for leaks.
19. Vent air from the filter housing by opening the vent valves at the top of the filter housing cover.
20. When all air has been vented from the filter housing, close the vent valve and open the water outlet valve to put the filter in service.

Standard Operating Procedure – BM 6.048

Subject: Changing Bag Filters on Cold Water Circulating System

Purpose and Scope: To formalize the tasks for changing bag filters on cold water circulating systems.

Policy: This is a standard procedure for safely changing bag filters contained in the cold water system filter housing.

Procedure:

1. Close the filter housing inlet and outlet valves.
2. Open the drain valves on the side of the filter housing.
3. Open the vent valves at the top of the filter housing cover.
4. Drain the filter housing until water no longer flows from the drain valve on the side of the filter housing.
5. Loosen wing nuts on the filter housing cover.
6. Check to see that there is no residual pressure in the filter housing by moving the filter housing cover slightly.
7. If no residual pressure is evident, open the filter housing cover.
8. Remove the coil spring from the filter housing.
9. Remove the filter bag from the filter housing by grasping it at the top edges and lifting slowly to allow the water to drain from the bag.
10. Remove the filter bag and clean the inside of the filter housing, paying close attention to the lid gasket and bag seal area.
11. Install a new filter bag, making sure that the top of the bag fits properly against the seal shoulder.
12. Install the coil spring on top of the bag seal.
13. Reinstall the filter housing lid gasket.
14. Close the filter housing lid.
15. Thread the wing nuts on evenly until they are all hand tight.
16. Tighten the wing nuts slightly with a wrench. **DO NOT OVERTIGHTEN.**
17. Close hot drain valves on the side of the filter housing and vent valves at the top of the filter housing cover.
18. Slowly open the filter housing inlet valve and check for leaks.
19. Vent air from the filter housing by opening the vent valves at the top of the filter housing cover.
20. When all air has been vented from the filter housing, close the vent valve and open the water outlet valve to put the filter in service.

Standard Operating Procedure – BM 6.049

Subject: Portable Pump Use

Purpose and Scope: To establish a standard procedure for using the gasoline powered pump.

Procedure: Follow the steps below to ensure safe use of the gasoline powered pump.

1. Determine that the water to be pumped is not contaminated with combustibles or corrosives that may damage the pump, cause injury to the operator, or contaminate the surrounding area.
2. Check to see that noise created by operating the pump will not interfere with classes or activities in the area.
3. Place barricades or other warning devices around the work area.
4. Place pump on a level area at least three (3) feet from the edge of the storm drain.
5. Lower the “male” end of the suction hose into the area to be drained and connect the “female” end of the hose to the inlet side of the pump.
6. Connect the discharge hose to the outlet side of the pump and route it to storm drain.
7. Remove the oil fill plug from the engine, check the oil level, fill as necessary, and replace the oil fill plug.
8. Fill the fuel tank with clean gasoline from an approved container using proper refueling techniques.
9. Turn the engine switch to the “RUN” position.
10. Advance the throttle lever to the “FAST” position.
11. Pull the starter cord to start the engine.
12. When the engine has warmed up and flow has been established through the pump, adjust the throttle lever to achieve the desired flow rate.
13. NEVER refuel the pump while the engine is running or hot.
14. When drainage is completed, turn the engine switch to the “STOP” position.
15. Disconnect the suction and discharge hoses and return the pump and hoses to the proper storage area.

Standard Operating Procedure – BM 6.050

Subject: Campus Sewer Problems (Emergency)

Purpose and Scope: To identify the steps necessary to tend to Main Campus sewer systems when backups occur.

Procedure: When problems with the Main Campus sewers are received by Plant Operation, the Custodial Services and the Plant Operations departments will work jointly to resolve the problem by following the steps below.

1. A Custodial Services employee will respond to the matter with a plunger.
2. If they are unsuccessful in resolving the matter, they will contact Plant Operations who will use the sewer machine.
3. If the problem remains, the sewer camera is brought to the site to see where the problem is located. Lines blocks due to collapse or root intrusion will be replaced.
4. Plant Operations will again attempt to clear the blockage.
5. After the line is unstopped or repaired, Custodial Services will clean the area and apply chemicals to the area to control odors and disinfect. Barricades will be erected to deter pedestrians from the affected area.

Standard Operating Procedure – BM 6.051

Subject: Sewer Camera Operation

Purpose and Scope: To familiarize Plant Operations employees on the proper use of the Sewer Camera Radio Detection Receiver and TV for storm drains, sewer lines, and conduit inspection/documentation.

Policy: Only trained individuals will operate the sewer camera to limit the possibility of damage. After each camera use, the operator should clean the camera and fiber cable with disinfectant to kill bacteria. Wipe the TV and Radio Detection Receiver down with a clean cloth. Ensure the case is closed to protect the equipment until the next use.

*NOTE: The sewer camera is a fragile and expensive piece of equipment.

Standard Operating Procedure – BM 6.052

Subject: Flush-O-Meter Troubleshooting

Purpose and Scope: To formalize the procedures for troubleshooting Main Campus flush-o-meters.

Policy: Plant Operations is responsible for servicing all flush-o-meters.

Procedure:

1. Flush-o-meter does not function – The control stop or main valve is closed. Check if the handle assembly or relief valve requires replacement.
2. Insufficient volume of water to create siphon (flush) – Adjust the control stop for desired delivery or water.
3. Length of siphon is too short – Diaphragm assembly and guide are loose. Check if the by-pass assembly, including handle, require replacement.
4. Length of siphon is too long – Diaphragm assembly and guide not working properly. Ensure assembly and guide are hand tight.
5. Chattering noise in flush-o-meter – Diaphragm is upside down or valve is clogged. Replace the diaphragm and clean valve.

Standard Operating Procedure – BM 6.053

Subject: Sewer Machine Operating Instructions

Purpose and Scope: To formalize Plant Operations operating procedures for the Sewer Machine.

Procedure: Follow the steps listed below for proper setup and operation of the sewer machine.

1. Set up sewer machine within three (3) feet of sewer cleanout and run extension cord with ground fault interrupter.
2. Always add spring guide extension, if required, for operator's protection.
3. Never wear gloves.
4. Install proper cutting head to cabling and guide into sewer line using manual feed till resistance is met.
5. Activate power to machine with foot control.
6. Place both hands on cable and feed into blockage. In the event that the machine loads up or cable is met with heavy resistance, release foot control switch and apply hand break. When drum has stopped, reverse the machine and reattempt to power through the blockage. In the event that all cabling is used, caution should be taken to ensure that the drum leader and cable coupling are not extended or pulled out of the drum while the unit is in operation.
7. If cutter head becomes lodged in line, STOP and use reverse to free cutter head.
8. When blockage has been removed, reverse sewer machine and retrieve cabling at a controlled speed.

9. Once cutter head can be seen, power should be turned off and unit stopped before cutter is removed from cleanout entrance. Use caution around cutter head upon retrieval.
10. Clean area and wash down equipment.
11. Report any accidents or damaged equipment to supervisor immediately.

Standard Operating Procedure – BM 6.054

Subject: Ladder Use

Purpose and Scope: To establish a safe work practice when working on extension ladders and stepladders set by OSHA 29 C.F.R 1910.26.

Policy: This policy will improve safety when employees are working on extension ladders or stepladders and cut down or eliminate work related injuries in the workplace.

Procedure:

1. It is the responsibility of each department to inspect their extension ladders and stepladders for any kind of damage that could occur for transporting, rough handling, or worn out from everyday use.
2. Any fiberglass ladder found to be unsafe shall be removed from the work area and turned in to Environmental Health and Safety for proper disposal.
3. There will be NO wooden ladders allowed to work on any electrical circuit at CSU.
4. All fiberglass ladders shall be free from sharp edges, wear compression failures, or other irregularities.
5. All portable ladders shall have uniform step spacing of no more than twelve (12) inches. Steps shall be parallel and level when the ladder is in position for use.
6. A single ladder shall not be any longer than thirty (30) feet.
7. Two section ladders shall not be longer than sixty (60) feet. All ladders of this type shall consist of two sections, one to fit within the side rails of the other and arranged in such a manner that the upper section can be raised and lowered.
8. Extension ladder safety. Ladder must extend thirty-six (36) inches over the roof landing and the distance from the wall to the base of the ladder must be approximately one quarter of the vertical distance from the bottom of the wall to the top support.
9. Stepladders should not be any longer than twenty (20) feet. Stepladders should have a metal spreader or locking device of sufficient size and strength to securely hold the front and back section in the open position.
10. Face the ladder to climb using both hands. Never carry tools or equipment in hand while climbing or descending a ladder.
11. If tools or equipment are needed, a hand line in pocket or over shoulder should be used pulling the tools and equipment up after reaching the work area.
12. In certain situations, when a ladder cannot be tied off, two people are needed to make sure the person on the ladder can ascend and descend safely.
13. Never lean out from the ladder.
14. Always have at least one person at the base of the ladder.

Standard Operating Procedure – BM 6.055

Subject: Ladder Inspection

Purpose and Scope: To ensure that personnel have the knowledge to properly inspect ladders and when to remove them from service.

Policy: This policy will improve safety when employees are working on extension ladders or stepladders and cut down or eliminate work related injuries in the workplace.

Procedure:

1. Observe general condition of the ladder. It should be clean, dry, and free from oil, mud, etc.
2. Visually inspect the ladder for cracks.
3. Check for missing, bent, or loose rungs.
4. Ladders should never be painted. Paint often hides dangerous defects.
5. Ensure footpads are securely fastened. All ladders not permanently attached must have slip resistant rubber or plastic feet.
6. If a ladder is damaged, notify supervisor for replacement and immediately remove it from service.

Standard Operating Procedure – BM 6.056

Subject: Roof Maintenance

Purpose and Scope: To formalize Plant Operations with proper procedures to leak test a roof/roof drain.

Policy: When performing roof maintenance or making minor replacement to a roof system, the following steps shall be followed by the tradesman assigned to the task to examine for leaks.

Procedure:

1. Maintain records (*i.e.*, installation, inspection records, repairs, original drawings, specs)
2. Inspect after severe weather
3. Repair correctly, using approved roofing contractors
4. Keep roof clean, debris-free
5. Keep metal, such as flashing, in good condition
6. Keep masonry in good condition; examine walls and coping, repair as needed
7. Maintain rooftop equipment (*i.e.*, skylights, equipment stands, antennas, etc.)
8. Eliminate any spillage of coolants, grease, etc.
9. Maintain roof coating; recoat any cracked, flaked, blistered or work areas
10. Minimize roof traffic
11. After repairs are complete to a roof, roof drain, or metal flashing, test the area thoroughly with a water hose to make absolutely sure the leak has been repaired. Replace ceiling tile if damaged and clean up any mess that occurred during repairs. Contact the Manager for Plant Operations if carpet has been wet for more than one time.

Standard Operating Procedure – BM 6.057

Subject: Variable Frequency Drives

Purpose and Scope: To provide guidance for in-house personnel to perform preventive maintenance on VFD located throughout the CSU campus.

Policy: This routine preventive maintenance should be performed annually on equipment that has variable frequency drives. Performing this process will spot potential problems and allow for corrective action to avoid unscheduled downtime.

Procedure:

1. Clean drive; dust and other foreign materials can create corrosion, arcing, and cooling problems
2. Check motor resistance/connections
3. Verify all power connections; loose connection cause breaker to trip, fuses to blow
4. Verify power supplies for tolerances; power drifts cause shutdowns
5. Observe relevant wave forms for best operation

6. Verify signal wiring, shielding properly terminated and tight connections; improper shielding causes erratic operation

Standard Operating Procedure – BM 6.058

Subject: Fire Extinguisher Inspections

Purpose and Scope: To detail the Plant Operations process for mandated monthly fire extinguisher inspections.

Policy: Every month Plant Operations shall visually inspect all portable fire extinguishers. If the extinguisher fails to meet any of these criteria, it must immediately be replaced.

Procedure: The inspection shall include the following items.

1. Is the fire extinguisher in place?
2. Is there any visible physical damage?
3. Is the tamper proof seal in place?
4. Does the gauge point to the green area of the dial?

Standard Operating Procedure – BM 6.059

Subject: Fire Alarm Battery Testing

Purpose and Scope: To ensure that fire alarm panel batteries will hold a charge under load for at least two (2) hours.

Procedure: Plant Operations will locate batteries in the building and disconnect batteries from charging unit. Using fire and security load tester and volt meter, place meter on battery to test for starting voltage. If voltage is equal to voltage on batteries, then proceed with test. Connect red lead from load tester to positive battery terminal. Next, connect black lead from load tester to negative side of battery terminal. Ensure that switch for load tester is set to 12 or 24 volts depending on battery voltage. Watch voltage meter. If battery voltage drops below total voltage listed on batteries, remove voltage meter and test individual batteries while load tester is still connected. Batteries with voltage below listed voltage on battery are bad. Remove and replace with new battery. Disconnect meter and load tester and store properly. Dispose of removed batteries properly.

Standard Operating Procedure – BM 6.060

Subject: Disabling Points on the 4100 Simplex Fire Panel (See Appendix C)

Purpose and Scope: To provide a procedure for Plant Operations employees to disable devices on the alarm system if the alarm will not reset after cleaning/repairing it.

Policy/Procedure: If a fire panel is experiencing false alarms, after the building has been checked by proper authorities, do not reset the panel, but perform the following

1. Press “Menu”
2. Press the “down” arrow until you reach the “log in/log out” label, then press “Enter” twice
3. Press the “down” arrow key until you see the number “3”, then press the “left” arrow key and then “Enter”
4. Press “Exit” until you are back to the main screen
5. Press “Alarm Acknowledge” to bring up the point in alarm, and then press the “Disable/Enable” key
6. Press the “down” arrow until the work “Disable” appears, like the following example (Disable)
7. Press “Enter” twice
8. At this point, the panel will have a “trouble”. Just acknowledge the “trouble” and then reset the fire panel. The alarm should be clear.

9. Advise the Columbus State University Campus Police of the disabled device so that the particular area can be monitored until the alarm is repaired.

Standard Operating Procedure – BM 6.061

Subject: Fire Alarm Systems

Purpose and Scope: To formalize Plant Operations, Housing, and University Police on their department's level of responsibility.

Procedure:

1. Plant Operations is responsible for all fire alarm systems. These responsibilities include, but are not limited to, programming the alarm systems, testing, and making any repairs, which includes sensing devices, smoke detectors, pull stations, strobe lights and horns, repeater boxes, and backup power supply, etc.
2. When a fire alarm is received, Plant Operations will dispatch an employee to the location. The responding individual investigates the problem and determines what action is to be taken. If no smoke or fire is detected, the employee will then request a reset.
3. If the fire alarm system will not reset, and no problem is found with the fire alarm panel or devices, a watch order is placed on the building, in order for periodic checks on the building until the system is reactivated.
4. Periodic checks will be conducted by University Police.

Standard Operating Procedure – BM 6.062

Subject: Fire Alarm Indicating Devices – Supervised

Purpose and Scope: To formalize Plant Operations procedures for ensuring fire alarm remote annunciators operate correctly in the event of a fire.

Policy: Plant Operations is responsible for maintaining all fire alarm remote annunciators are operating properly in accordance with NFPA 72 7-3.1.1. Fire alarm remote annunciators are clear visual devices which light up to help you locate troubled or alarming devices.

Procedure:

1. Locate devices throughout building.
2. Visually inspect devices to ensure they are attached properly to wall or ceiling.
3. Look around device to ensure there are no obstructions that will impair the device from operating or the ability to access the device.
4. Initiate repairs on any problems found.

Standard Operating Procedure – BM 6.063

Subject: Smoke Detector Test

Purpose and Scope: To formalize Plant Operations procedures for ensuring smoke detectors operate correctly in the event of a fire.

Policy: Plant Operations is responsible for maintaining all smoke detectors in working order.

Procedure: Follow the steps listed below to thoroughly test smoke detectors.

1. Locate smoke detector in the building.
2. Locate light/LED on unit and see that it is either flashing or not lit.

3. Using a can of fire alarm testing smoke, hold approximately eighteen (18) inches from the detector and spray directly at the detector for two (2) seconds.
4. Wait for light to change to solid red or flash red.
5. If light does not change within sixty (60) seconds, spray detector again for four (4) seconds.
6. If detector still does not go into the alarm mode, do one of the following:
 - a. Check to see if detector has power. If power is present, repeat steps 3-5. If no power is present, determine cause, reapply power, and repeat steps 3-5.
 - b. Replace the detector if power is present and detector has failed the test twice per step 6a.

Standard Operating Procedure – BM 6.064

Subject: Maintenance of Fire Suppression Equipment

Purpose and Scope: To provide guidance in maintaining fire suppression equipment. Note: All work is to be done in accordance with state regulations.

Procedure: Before taking fire equipment out of service, plan the shutdown for a time when the facility is closed or at its lowest occupancy level. Have everything needed before impairing fire protection equipment, *i.e.*, excavating, pipe plugs, repair parts, and necessary personnel. Plan to use temporary fire protection, such as extra fire extinguishers, charged fire hose lines, and temporary sprinkler protection. Setting up temporary sprinkler protection is particularly important during prolonged impairments. A 2 ½ inch hose can run from the hydrant to the two (2) inch drain. Notify Eagle Security, at (706) 322-3756, that the fire suppression in a particular building is secured for repairs and the date and time the system will return to service. Also make sure the building occupants of the planned impairment so they can prepare to handle any potential emergency if the sprinkler system is restorable, either in whole or in part, assign someone to restore the system promptly in the event of a fire. After the impairment, promptly restore fire protection equipment to automatic service. If sprinkler protection was impaired, conduct a two (2) inch drain test at the sprinkler riser. Lock sprinkler valves in the open position. Reset the alarm system and notify Eagle Security, at (706) 322-3756, that the system is fully restored and operational. Notify building occupants that the fire protection system is fully operational.

Standard Operating Procedure – BM 6.065

Subject: Elevator Rescue

Purpose and Scope: To formalize procedures to safely rescue anyone stuck in an elevator.

Policy: To make a safe elevator rescues, use the following procedure.

Procedure:

Hydraulic Elevator Rescue

1. Communicate with the person stuck in the elevator that you are going to get them out; however, you must first lower them to the first floor.
2. Go to the elevator control room. Locate the hydraulic pump power switch and turn off power.
3. Locate the “hydraulic by-pass valve” and open slowly until you hear hydraulic fluid running through the lines. When you no longer hear the fluid running, the elevator will be on the first floor.
4. Return to the first floor and use the special elevator door key to unlatch and open the elevator door and complete the rescue.
5. Attach an “Out of Order” sign to the elevator to ensure it is not used until repaired.
6. Return to the elevator control room and close the “hydraulic by-pass valve” and leave the power secured.
7. Contact Plant Operations at (706) 507-8222. Plant Operations will contact the company maintaining the elevators and have them check out the problem.

Cable Operated Rescue

1. Communicate with the person stuck in the elevator that you are going to get them out.
2. Go to the elevator control room. Locate eth power switch and turn off power.
3. Return to the elevator and use the door key to unlatch and open the elevator door and complete the rescue.
4. Attach an “Out of Order” sign to the elevator to ensure it is not used until repaired.
5. Contact Plant Operations at (706) 507-8222. Plant Operations will contact the company maintaining the elevators and have them check out the problem.

Standard Operating Procedure – BM 6.066

Subject: Locating Utilities

Purpose and Scope: To provide steps for Plant Operations employees to follow to protect lives, underground utilities, as well as to protect employees and Columbus State University from legal and civil liabilities.

Policy: Listed below are steps that the Utilities Protection Center requires based on Georgia Dig Law (O.C.G.A. § 25-9-1 through § 25-9-13).

Procedure:

1. Call the UPC’s toll-free number at (800) 282-7411, and notify them of CSU’s planned digging activities.
2. Wait the required amount of time (forty-eight (48) hours, excluding weekends and holidays) before commencing work.
3. Respect the marks. Dig safely.

When an employee calls to request a “locate”, he/she must be prepared to provide the following information to the UPC operator:

- a. Your name.
- b. Company name (CSU) and address (4225 University Avenue, Columbus, Georgia 31907).
- c. The type of work (installing/repairing) and who you are working for (CSU).
- d. A field contact name and phone number.
- e. The date and start time the work is scheduled to begin as well as the duration of the work.
- f. The municipality (city, town, country, etc.) where you will be working.
- g. The street address of the dig site and the driving direction to the location.
- h. The nearest intersecting street.
- i. Locate instructions and where on the property you will be doing the work.

The operator will assign a number and the amount of days the permit will be in effect. This number will be logged in the Plant Operations office for record. These precautions will minimize damage to all underground utilities and keep from exposing employees to the hazards of a cut gas main, water/sewer line, or electrical cable.

Standard Operating Procedure – BM 6.067

Subject: Generator Test Plant – Center for Commerce & Technology Building

Purpose and Scope: To provide procedure to test emergency generator at the Center for Commerce & Technology Building. Under load conditions which includes a notification process to the building occupants.

Policy:

Generator test – tentative schedule of events

1. 0830 Hrs – Technicians will arrive on site and hook up power pack
2. 0955 Hrs – Hook up complete

3. 1000 Hrs – Start testing generator; this will not affect power in building
4. 1400 Hrs – Complete testing; hook up transfer switches
5. 1500 Hrs – Test generator under emergency power; this will affect building power
6. 1530 Hrs – Complete testing; resume normal operation

Powered by the generator

1. Emergency lighting
2. Data center, including the AC unit
3. Data closet

Expected process

1. Power will go out
2. Data Center/Data Closet UPS will immediately go on battery. We have approximately sixteen (16) minutes of uptime
3. Generator power will kick in within three (3) seconds
4. Data Center/Data Closet UPS will come off of battery and go on generator power
5. Power will be restored and generator will be shut down

Expected outage

1. All PCs in building (expect those in Data Center)
2. All printers in buildings
3. Lights, other electrical devices

Expected to stay up

1. Everything in Data Center should continue to function normally. Users in other buildings will not be affected

Notification

1. Four (4) days prior – Send out email announcement to faculty and staff
2. One (1) day prior – Send out email reminder to faculty and staff
3. Test day – Send out email reminder to faculty and staff; Place analog phones in Help Desk; Have Plant Operations on alert in case we need large floor fans in Data Center
 - a. Fifteen (15) minutes prior – Send out broadcast message (Novell)
 - b. Five (5) minutes prior – Send out broadcast message
 - c. During – Monitor UPS status; verify that services are uninterrupted
 - d. After – Send out broadcast message; make sure AC unit is on

Worst case scenario

1. UPS does not kick in *or* generator does not kick in and UPS runs out of battery power. We have approximately sixteen (16) minutes of run time.
 - a. Monitor UPS for time remaining
 - b. After five (5) minutes – Send broadcast telling users to shut down
 - c. After ten (10) minutes – Begin downing servers in least critical order (reverse of below)

Recovery steps

1. Power up in the following order
 - d. Air conditioner
 - e. Router and switches in Data Center (these should come on by themselves, but verify)
 - f. Mars/earth (DNS/DHCP)
 - g. Nwcert
 - h. Wireless appliances
 - i. Firewall appliances
 - j. freeRadius servers
 - k. Mail gateways
 - l. Luminis servers: LSO, LSLC, LSM, LSCM

- m. Banner servers: Apollo, Zeus
 - n. Csuweb pdc
 - o. Rest of servers
2. Verify
 - a. NDS time synchronization
 - b. Website access
 - c. Banner/ISIS
 - d. Mail delivery
 - e. Remedy
 - f. Network printing
 - g. Portal access
 - h. Remedy
 - i. AceWare
 3. Notify Campus

The test will be conducted every six (6) months; each year during Spring Break in March and Fall Break in October.

Standard Operating Procedure – BM 6.068

Subject: Fire Pump – Center for Commerce & Technology Building

Purpose and Scope: To provide guidance to in-house personnel or approved contractor to test the emergency fire pump located in the CCT Building.

Procedure:

Motor

1. Check electrical connections, motor starter and tighten, as needed.
2. Grease motor.

Valves

1. Open and close valves.
2. Check packing and tighten, as needed.
3. Lubricate, as needed.

Pumps

1. Run pump for ten (10) minutes to check operation.
2. Check seals for leaks and repair, as needed.
3. Check for vibration noise.
4. Check for alignment.
5. Lubricate pump.
6. Check coupling.
7. Clean strainer after each test.
8. Record suction and discharge pressure.

Clean the equipment and area around the pump. Fill out maintenance check list and turn in to the Plant Operations Office. Pump should be checked annually, or as needed, according to NFPA 25, Table 5-1.1.

Building Maintenance Standard Operating Procedures

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction

COLUMBUS STATE **UNIVERSITY**



CERTIFICATION/TRAINING

Building Maintenance Department
Standard Operating Procedures
7.001-7.004

Standard Operating Procedure – BM 7.001

Subject: Refrigerant Certification

Purpose and Scope: To ensure that Plant Operations personnel possess EPA approved certification when handling refrigerant in the process of installing/repairing ACR equipment

Policy: A/C mechanics must possess one or more of the following types of certification.

Type I Certification

1. System hermetically sealed, no service valve and holding 5 lbs of refrigerant or less (small appliances)
2. Required at Courtyard I & II and Main Campus

Type II Certification

1. Systems of high pressure
2. Required at Courtyard I & II and Main Campus

Type III Certification

1. System of low pressure (*i.e.*, Centrifugal Chillers)
2. Required on Main Campus

Universal Certification

1. Unlimited; includes all three levels of certifications
2. Required for Plant Operations foreman
3. Contractors/vendors that provide services in which refrigerant systems are opened must be certified for those particular types of systems.

Exceptions

1. An uncertified individual may possess refrigerant only while in the process of making a delivery.
2. Someone cleaning a system or changing filters does not need to be certified.

Compliance

1. For verification, A/C mechanics in Plant Operations must provide a copy of their certification to the Administrative Assistant. This copy is kept on file.
2. Although there is no expiration or renewal required, each A/C mechanic should keep up with new standards listed in Section 608 of the Code of Federal Regulations.
3. Failure to hold certification or the proper certification could result in a fine up to \$27,500.00 and up to five (5) years in prison.

Standard Operating Procedure – BM 7.002

Subject: Boiler Certification

Purpose and Scope: To ensure that Columbus State University possesses a Certificate of Authority to install, maintain, and service boilers.

Policy: A designated employee must meet the requirements that are based on Chapter 300-6-1-16, Georgia Boiler & Pressure Vessel Rules.

1. As an educational facility, CSU must have someone within Plant Operations qualified and have a Certificate of Authority to perform installation, maintenance, or service on the boilers on campus. Plant Operations Manager will be responsible for keeping the certification current.
2. The CSU organization or an individual employee that performs any work on campus boilers must show their competence through examination given by the Georgia Safety Engineering Section or by other approved methods, such as
 - a. Five (5) years of boiler experience
 - b. Certificate of Training from schools

- c. License from a known source such as the National Association of Power Engineers
3. The fee for the Certificate of Authority is \$50.00 for the original issue and each renewal. It must be renewed every two (2) years.

Standard Operating Procedure – BM 7.003

Subject: Operator Qualification Program, Natural Gas

Purpose and Scope: This program identifies the procedures that Columbus State University will use to comply with minimum pipeline safety regulations.

Policy: This Operator Qualification Program applies to all individuals (MEP Shop) given authority by Columbus State University to perform covered tasks as defined herein, whether they are employed by Columbus State University, Contractors, Sub-Contractors, or any other entity performing covered tasks on behalf of CSU. The covered tasks include:

Potential Ignition Sources

1. Ability to identify and remove any potential source of ignition
2. Ability to locate the course of a natural gas leak and migration of combustible gases
3. Ability to instruct/direct or assist in public excavations

Recognizing Emergency Conditions

1. Knowledge/ability to locate the operator's written emergency plan
2. Provide/receive the necessary communication with operator personnel and public authorities
3. Establish safety priorities at the scene of an emergency
4. Ability to locate/shutdown hazardous sources of natural gas
5. Ability to "make safe" any actual or potential hazardous area by evacuating people from the area
6. Ability to safely restore service after an emergency
7. Ability to select and place emergency equipment, such as fire extinguishers, around a jobsite when required
8. Ability to investigate and identify causes of an emergency

Locate/Repair Leaks

1. Ability to use acceptable techniques

Procedure: Please follow the following steps in processing completed work orders from all departments.

1. Work orders will be completed to the fullest extent possible.
2. Once requested work is completed, the employee assigned to perform the work will enter all required information on the work order (paper copy and electronically) and sign.
3. The work order will then be sorted into the "Complete" bin.
4. Work orders that are unable to be completed are to have a status change of "Pending...". Work orders in these categories must contain specific information, such as parts needed, regarding why the task remains incomplete.
5. Parts lists must be given to the Manager for purchase. Once parts arrive, the employee assigned the task must complete the work order in a timely manner.

Standard Operating Procedure – BM 7.004

Subject: Backflow Certification

Purpose and Scope: To ensure that Plant Operations personnel, who test backflow devices on campus, possess a valid certification through the Georgia Association of Water Professionals.

Policy: Columbus State University employees that test backflow devices on building cross-connected with the Columbus Water Works distribution must have the following:

1. Completed a thirty-two (32) hour course of instruction taught from the University of Southern California manual (Columbus Technical Institute).
2. Passed a written exam.
3. Passed a hands-on exam

Employees with valid certification must recertify every three (3) years by the following methods:

1. Obtain six (6) hours of Continuing Education Units related to backflow prevention; or
2. Candidate may take recertification exam.

A copy of each employee's certification is kept on file in the Plant Operations Office in the event of an audit from the Columbus Water Works.

Approved by:

Kelly A. Wilson, Director of Maintenance & Construction