COLLEGE of CENTRAL FLORIDA

FACILITIES
PREVENTIVE MAINTENANCE PROGRAM

April 2020

PREVENTIVE MAINTENANCE

The focus of College of Central Florida's maintenance program shall be on preventive maintenance. Every part of the facility shall be inspected according to the following schedules. Mechanical equipment shall be serviced according to the instructions from the manufacturer. Filters shall be changed and equipment shall be adjusted and lubricated according to the appropriate operations and maintenance instructions.

Servicing and adjustments shall be done during inspections unless parts need to be ordered. In the event parts are to be ordered, the person conducting the preventive maintenance inspection shall complete and submit a work order for parts and any necessary work that was not completed at the time of the inspection.

Every six months, the Plant Operations supervisor or manager shall review the work order log for the previous 24 months to identify trends and to identify equipment that fails, or requires adjustment more frequently than the manufacturer's recommended maintenance schedule, or more frequently than other equipment of the same type. Special attention will be given to equipment under warranty.

Equipment identified as requiring an unexpected level of attention will be considered for replacement at the earliest opportunity. If appropriate, technical assistance shall be requested from the manufacturer.

Preventive Maintenance Checks and Service (PMCS) shall be conducted at the minimum frequency listed below. Generally, each item should be given a 360 degree visual inspection for any deficiency, visual inspection of overall appearance, surface condition, cleanliness, alignment and operation and performance followed by operator maintenance according to CF & manufacture's guidelines. Operator maintenance such as lubrication, belt changing, filter changing, adjustment and upkeep is performed in accordance with this PMCS schedule. When deficiencies are determined, the inspector will take immediate, appropriate corrective action, and/or complete work order to have corrective action taken. Because of the vast number of systems and various building techniques and materials, this PMCS schedule is intended to be a guide generic in nature, with the exception of frequency, which must be followed. Technicians shall utilize this schedule to initiate complete diagnostics of each system. Life safety deficiencies shall be given highest priority.

Changes and updates to this document shall be indicated by the date in the lower left corner of each page. Changes within the current date shall be in bold underlined text and deletions shall be indicated by strike through.

Figure 1 - Preventative Maintenance Schedule

Title	Qty	Unit	Frequency of PMCS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Automatic Doors / ADA	15	days	.5 month	■	■	■	■	■	■	■	■	■	■	■	■
Alarm System Fire	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Alarm System Intruder	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Gas Connections	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Facilities (restrooms)	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Facilities (classrooms)	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Facilities (office space)	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Facilities (kitchen and dining area)	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Landscape / Irrigation	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Fert. / Pesticide	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Asphalt parking areas	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Chill and hot water	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Chill water treatment & cleaning	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Main Plant Cleaning and Treatment	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Hot water treatment and cleaning	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Main Plant Cleaning and Treatment	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Emergency Generators	1	months	1 month	■		■	■	■	■	■	■	■	■	■	■
Exit/Emergency Light PM Inspection	45	days	1.5 months		■		■		■		■	■		■	■
Exterior Lighting Inspection	45	days	1.5 months		■		■		■		■	■		■	■
Windows and doors	45	days	1.5 months		■		■		■		■	■		■	■
Security Systems	45	days	1.5 months		■		■		■		■	■		■	■
Emergency Call Box - PM	2	months	2 months	■			■	■		■		■		■	
Application of Magnesium	3	months	3 month	■				■		■			■		
Signage	3	months	3 month	■				■		■			■		
Gates, locks, Emergency key box	3	months	3 month	■				■		■			■		
Egress Inspection	3	months	3 month	■				■		■			■		
Exterior Stairs, Decks, and Lighting	3	months	3 month	■				■		■			■		
Fountain Filters	3	months	3 month	■				■		■			■		
HVAC P/M Air Handlers x (multiple)	3	months	3 month	■	■	■	■	■	■	■	■	■	■	■	■
Blow Down Fire Hydrants	6	months	.5 year	■						■					
Tree Safety Inspection	6	months	.5 year	■						■					
Asbestos	6	months	.5 year	■						■					
Alarm System Smoke	6	months	.5 year	■						■					
Hurricane Equipment Checklist	6	months	.5 year				■						■		
Structural members	6	months	.5 year				■						■		
Fencees & perimiter indicators	6	months	.5 year				■						■		
College Wide Door Hardware PM	6	months	.5 year	■						■					
Clean Cooling Towers	1	years	1 year			■									
Emergency Generators	1	years	1 year			■									
Fire Extinguisher Inspection	1	years	1 year			■									
Backflow Devices										■					
Electrical Systems	1	years	1 year					■							
Hot Water Heaters (all)	1	years	1 year					■							
Roofing systems	1	years	1 year		■										
Sewer Drains	1	years	1 year		■										
Storm Drains	1	years	1 year		■										
PM HVAC Closed Loop Systems	1	years	1 year			■									

1. Following items require bi-monthly (every two weeks) PMCS

Repair immediately or complete work order for future repairs.

a. Automatic Doors

These include automatic vehicular gates, doors with ADA controls, and overhead doors in delivery areas and shops. Routine maintenance is the best method to ensure operational integrity.

- Nut, bolt, and fastener conditions
- Operating devices (motors), pneumatic powering
- Cleanliness
- Lubrication
- Stability
- Structural integrity
- Shaft conditions
- Bearing conditions
- Overload and other relay conditions
- Circuit breaker conditions
- Overall appearance for damage or vandalism
- Overall operation
- Weatherproofing/caulking condition
- Lubrication of guides, hinges, and locks
- Roller alignment
- Glazing integrity
- Hinge conditions
- Lock conditions and security
- Alignment
- Plumb
- Building settlement
- Straightness of guides
- Overall condition for deficiencies such as water intrusion and corrosion

2. Following items require monthly PMCS

Repair immediately or complete work order for future repairs.

a. Alarm Systems

The following checklist covers automated smoke and burglar alarm systems throughout the buildings. Preventive maintenance consists of validating that all equipment is present and functional on a monthly basis. Only certified professionals shall make repairs or adjustments to alarm systems. Maintenance staff will accompany professionals during statutory inspections.

1) Fire:

Operation

Procedure: Use UL-approved smoke alarm tester in aerosol can. One spray will activate both photo electric and ionization detectors.

Battery efficiency
Hard wire connections
Housing condition
Overall condition

2) Intruder alarm system:

Note: Many systems are self-tested on a daily basis. Manufacturer's instructions should be followed at all times.

b. Gas Connections

The following check shall be performed monthly for all gas connections and main valves throughout the facility. The gas company should be contacted if:

- There is an odor of gas anywhere at any time, or
- Valves cannot be turned off or appear to be rusted or damaged, or
- For minor repairs if maintenance personnel do not have adequate training or tools.

When gas is detected by odor, building occupants should immediately evacuate, and the gas company and fire department should be contacted.

Possible undetected leakage: Visually check – <u>Do not open and close valves</u>

Operation

Procedure: Perform a bubble test with soap and water, or use a handheld combustible gas detector (of professional quality).

c. Restrooms

The following checklist shall be applied monthly to all restrooms within the Agency

Facility.

1) Fire safety
   - Electrical outlet load
   - Positioning of paper/flammable materials away from heat sources
   - Accessible route
   - Visible exit

2) ADA accessibility
   - Accessible toilet stalls with wheelchair turning radius
   - Accessible sinks
   - Accessible mirror
   - Hand rail stability and condition
   - Special features function such as “help” mechanisms and automated systems
   - Overall condition

3) Plumbing
   - Inspect all component conditions for deficiencies such as leakage, corrosion, and failure potential

4) Sinks and hardware
   - Faucet function and hardware conditions
   - Drain function
   - Water flow/pressure
   - Overall condition

5) Urinals
   - Water flow/pressure
   - Cap and part conditions
   - Overall condition

6) Toilets
   - Water flow/pressure
   - Cap and part conditions
   - Seat support conditions
   - Overall condition

7) Dispenser operation and conditions (soap, paper towels, etc.)

8) Partitions
   - Stability
   - Surface conditions for deficiencies such as sharp or worn areas or vandalism
   - Part conditions
   - Security
   - Overall condition

9) Trash receptacles
   - Sanitation conditions
   - Stability
   - Overall condition

10) Mirrors
   - Cleanliness
   - Overall condition for deficiencies such as cracks, sharp edges, or vandalism

11) Overall cleanliness

12) Overall privacy

13) Overall appearance for damage and vandalism such as graffiti

14) Fire extinguishers (See also annual inspection of Fire Extinguishers)
   - Tag currency
   - Placement in correct proximity to potential hazards per code
   - Housing condition
   - Hose condition
   - Overall condition

d. Offices and Classrooms

1) Fire safety
   - Electrical outlet load
   - Positioning of paper/flammable materials away from heat sources
   - Accessible route
   - Visible exit

2) Emergency control panels
   - Operation
   - Part conditions
   - Overall condition

3) Floor condition for deficiencies such as excessive wear, tears, stains, and tripping hazards

4) Walls/ceiling condition

5) Furniture: desks, chairs, tables, and shelves
   - Stability
   - Surface conditions for deficiencies such as sharp or rough edges or protruding hardware
   - Lubrication of hardware
   - Overall condition

6) File cabinets
   - Stability
   - Lock function
   - Overall condition

7) Stationary partitions
   - Stability
   - Surface conditions for deficiencies such as sharp or worn areas and vandalism
   - Overall condition

8) PA system
   - Operation
   - Overall condition

9) Fire extinguishers (See also annual inspection of Fire Extinguishers)
   - Charge
   - Tag currency
   - Placement in correct proximity to potential hazards per code
   - Housing condition
   - Hose condition
   - Overall condition

e. Kitchen and Dining Areas

Nutrition kitchens and dining areas contain many pieces of equipment that can jeopardize life safety if preventive maintenance is neglected. The following monthly checklist includes common cooking equipment and dining furniture. Preventive maintenance for general features including Lighting, Alarm Systems, Fire Extinguishers, Doors and Windows, and HVAC Systems also applies to this area. Refer to the corresponding checklists.

1) Fire safety
   - Electrical outlet load
   - Positioning of paper/flammable materials away from heat sources
   - Accessible route
   - Emergency exit visibility

2) Equipment

   Note: When checking kitchen equipment, first consult operating or area personnel for any deficiencies. For each item, check overall condition, switches, timers, piping and valves for leaks, wiring, pilots, doors, gaskets, and belts, where applicable. Always follow manufacturers' guidelines.

   - Cooker
   - Dishwasher
   - Drink cooler

Food slicer or chopper
Freezer
Fryer
Garbage disposal
Grill
Ice machine
Mixer Oven
Refrigerator
Steamer
Toaster

3) Gas connections (See Gas Connections checklist)

4) Floor condition for deficiencies such as excessive wear, stains, and tripping hazards

5) Exhaust system
   Hood function and condition
   Grease trap function and condition
   Filter condition
   Exhaust duct condition
   Fan function and condition
   Supply duct condition (if applicable)

6) Furniture: counters, tables, benches, and chairs
   Stability
   Surface condition for deficiencies such as rough areas or protruding hardware
   Overall condition

7) Fire extinguishers (See also annual inspection of Fire Extinguishers)
   Charge
   Tag currency
   Placement in correct proximity to potential hazards per code
   Housing condition
   Hose condition
   Overall condition

f. Landscape and irrigation

Due to the comprehensive nature of preventive maintenance, select critical areas within the landscape domain should be inspected monthly. Note: Make sure the actual number of drains and their locations correspond with those shown on the “as built” drawings.

Drains
   Proper water flow
   Piping conditions

Cover conditions
Overall condition for obstructions

Vegetation conditions for deficiencies such as root systems near buildings and walkways, shrubs and trees near buildings and power lines, vines on buildings (except as designed), and overgrown shrubs

g. Fertilizer and Pesticides TBP

h. Asphalt parking areas

Asphalt surfaces at building facilities receive extensive wear and tear from contact with buses, cars, and pedestrians. Because such deficiencies as potholes, broken edges, and eroded areas can jeopardize life safety, it is essential for maintenance personnel to take monthly measures to promptly address and anticipate failing elements. The Americans with Disabilities Act also requires accessible parking spaces and pathways, slip-resistant surfaces, and curb cuts.

This checklist can be applied to all of the following areas.

- Walkways
- Parking lots
- Driveways

1) Parking bumper conditions and position

2) Speed bump conditions

3) Striping and pavement signage conditions

4) ADA accessibility

5) Signage (See also Signage checklist)
   Compliance with codes and standards
   Message currency
   Visibility
   Overall condition

6) Edge conditions

7) Surface conditions for deficiencies such as buildup from salt, ice melting materials, motor oil, or gasoline

8) Overall appearance

9) Overall condition for deficiencies such as potholes, softening, erosion, weed and root encroachment, chalking, cracking, and tripping hazards

i. HVAC Systems

Regular preventive maintenance of HVAC (heating, ventilation, and air-conditioning) systems is crucial to the quality of air and comfort level within agency facilities. HVAC systems should always sufficiently control temperature and humidity, distribute outside air uniformly, and isolate and remove odors and pollutants. Improper function and maintenance can cause indoor air pollution by allowing stale or contaminated air to remain in the building. As there are many areas within CF property that house activities with unique ventilation requirements, it is essential that the HVAC system has fully functional and regularly inspected pressure control, filtration, and exhaust equipment.

When performing any maintenance procedures, always refer to manufacturers' recommendations.

For all types of HVAC systems, change filters twice a year.

1) General conditions
   - Overall cleanliness
   - Mount stability System
   - calibration
   - Condensation drain condition
   - Electrical connection conditions
   - Filter conditions
   - Motor Lubrication
     - Housing stability
     - Connection conditions
   - Oil cup conditions
   - Unit operation and noise level
   - Coil conditions
   - Window seal and gasket conditions

2) Central/ground or roof mounted
   - Air filter conditions
   - Burner assembly conditions
   - Circulation
   - Combustion chamber/smoke pipe conditions
   - Condensate drain conditions (A/C only)
   - Condenser/compressor function
   - Cooling coil conditions
   - Electrical disconnect function
   - Electrical heating unit function
   - General wiring and electrical control conditions
   - Guard, casing, hanger, support, platform, and mounting bolt conditions
   - Piping conditions
   - Liquid receiver conditions

Lubrication
Motor, driver, and assembly conditions
Platform stability
Pump unit function
Refrigerant dryer, strainer, valve, oil trap, and accessories conditions
Refrigeration lines/coil conditions for deficiencies such as frosting or icing
Registers and ducts for proper air distribution
Temperature and humidity control function
Thermal insulation and vapor barrier conditions
Water spray, weir, and similar device conditions
Overall cleanliness
Overall condition for deficiencies such as rust, corrosion, and mineral deposits

Heat pumps

Check all items listed above under "central/ground/roof mounted," plus:

Temperature setting
Noise and vibration levels

Heating systems (See also annual checklist for Hot Water Heaters)

Amp draw per manufacturer's specs
Equipment cleanliness Flow
Switch operation Mechanical
Equipment function
Pull header conditions (on units more than 5 years in age)
Pumps
    Function
    Oil condition
    Overall condition
Safety limit switch operation
Water temperature (in and out)
Overall condition for deficiencies such as corrosion, scale, and entrapped air

Boilers

(Note: Shall be performed by a licensed professional inspector/maintenance contractor to ensure compliance with state and federal regulations.)

Air heater function
Auxiliary equipment function
Back feed pumps function
Blow off and blowdown lines function
Boiler room log condition
Burner and control conditions
Deaerator function
Energy efficiency
Electric power function
Feed water supply conditions
Feed water treatment/control
Firing rate control conditions

- Fuel supply line conditions
- Fuel system/control conditions
- Heat recovery equipment conditions
- Limit device conditions
- Pressure gauge and relief valve function
- Overall cleanliness
- Overall condition

Overall safety

- Anchor stability
- Deck areas for deficiencies such as moisture, grease, mold, and tripping hazards
- Doors
  - Hinge conditions
  - Lock and knob function
  - Guard stability per code
  - Overall condition
- Handrail stability
- Harness
  - Fastener conditions
  - Strap conditions
  - Tie conditions
  - Overall condition
- Ladders
  - Step conditions
  - Rail stability
  - Overall condition
- Vibration limit switch function
- Work area conditions
- Top surface/fan deck conditions
- Water distribution system
  - Distribution pipe condition
  - Eliminator conditions
  - Hot water distribution basin support member conditions
  - Internal strainer conditions (if applicable)
  - Lubrication of flow control valves
  - Spill flash bar conditions
  - Structural integrity
  - Bolted joint conditions
  - Nozzle conditions
  - Overall condition for deficiencies such as leads between joints, leaks, corrosion, buildup, breaks, and obstructions.
- Overall condition for deficiencies such as leaks, cracks, deterioration, end panel separation, corrosion, pitting, wood casing for signs of rot, brittleness or cracking of fiberglass
- Safety limit and interlock function
- Shutdown operation
- Walkway/platform stability and condition

Overall condition

j. Emergency Generators (see annual requirements) monthly inspections

3. Following items require Every 45 days / 1.5 months PMCS

All lighting systems will be inspected. Extreme care must be taken to identify and correct deficiencies.

a. Lighting: Emergency and Exterior and Interior

This checklist will be applied to the following lighting systems:

- Building exterior
- Pedestrian
- Parking area
- Field and sports areas
- Building interior (classrooms, common areas, offices, hallways, exits, etc.)
- Emergency

Various fixture and lamp types are used according to area needs, including fluorescent, incandescent, high intensity discharge (HID), mercury vapor, metal halide and arcs, or high pressure sodium (HPS). It is important to fully wash, rather than dry-wipe, exterior surfaces to reclaim light and prevent further deterioration. Illumination will be maintained according to the Illuminating Engineering Society's recommended levels.

Cleanliness
Voltage consistency
Glassware conditions
Diffusing louver conditions
Counter reflector conditions
Fixture support conditions
Stanchion conditions
Luminary conditions
Wire conditions
Ballast conditions
Timers/sensors function (make seasonal adjustments)
Junction box and cover conditions
Switch conditions
Outlet and cord conditions (if applicable)
Protective caging conditions (if applicable)
Overall condition for deficiencies such as arcing, wire exposure, unauthorized connections, and moisture problems

All lighting systems will be inspected. Extreme care must be taken to identify and correct deficiencies.

b. Security Systems / Emergency Call box

- Preventive maintenance of security systems is critical for occupant safety.

Charge
Battery efficiency
Function
Possession by authorized users
Battery Chargers
Overall condition
Spare Batteries

c. Surveillance cameras and monitors

Function
Fixture integrity
Mounting condition/stability
Location accuracy
General console condition
Power source continuity
Overall condition
Function

4. Following items require QUARTERLY PMCS

a. Signage

Signage is not only important for directing building occupants and visitors, but it is also a reflection of the facility's character. Dirty, damaged, or inaccurate signage can send the wrong message to the community by making the agency as a whole appear neglected. It can also jeopardize the safety of users. Signage must comply with codes and standards, such as the ADA, and is important for alerting area users of potential hazards, recent changes, or other important messages. A critical eye is needed in the maintenance process to address and anticipate sign inadequacy. The following monthly checklist applies to wall-mounted and pole-mounted exterior signage, as well as interior signage.

Compliance with codes and standards

Cleanliness
Accuracy of message
Accuracy of lettering and numbering
Adherence to surface or stabilizer
Hardware conditions
Illumination (if applicable)
Location and visibility
Paint condition
Overall appearance

Overall condition for deficiencies such as excessive wear, missing or broken parts, obstruction from view, or message inaccuracy

b. Egress inspections for obstacles and function, Exterior Stairs, Decks, and Landings

The following is a PM checklist for exterior stairways, decks, and landings. Maintenance personnel should carefully check the building materials, particularly concrete, on a monthly basis. (The Exterior Lighting checklist is also applicable to these areas.)

Overall appearance

Concrete
- Expansion joint conditions
- Metal spacer conditions
- Overall condition for deficiencies such as alkali-aggregate expansion, cavitations (honeycombing, spalling around projections), chips, cracks, crazing, dusting, efflorescence, charred and spalled surfaces,
stains, lifted areas, pock marks/pop-outs, scaling, tripping hazards, unevenness, or voids

Railings
- Stability
- Hardware conditions
- Overall condition

Wood material (if applicable)
- Stability
- Overall condition for deficiencies such as dry rot, termites, instability, worn edges, cracks, holes, and splintering

Coverings
- Surface condition
- Overall integrity
- Overall condition

Grade appearance

Footings/foundation
- Stability
- Overall condition for deficiencies such as cracks and broken or missing components

c. Gates, Power & Mechanical

The operational integrity of gates on Agency grounds is crucial to ensure that the elements of safety and controlled access are not compromised. Whereas automated gates should be inspected biweekly, non-power gates shall be examined monthly.

Chains
- Linkage conditions
- Lubrication
- Overall condition for deficiencies such as cracks and excess tension

Emergency key boxes
- Hinge conditions and operation
- Lock conditions and operation
- Key placement
- Overall condition

Hinge conditions and lubrication

Weld joint conditions

Bolt and screw conditions

Locks
- Overall operation
- Lubrication
- Security
- Overall condition

Painted surfaces
- Overall condition for deficiencies such as rust, peeling, and abrasion

Structural condition
- Stability
- Joint conditions
- Overall condition for deficiencies such as weak spots, rust, or missing parts

Tracks
- Alignment Lubrication
- Adherence to surface
- Overall condition for deficiencies such as dents and rust

d. Fountain Filters TBP

e. Sweeping parking lots TBP

5. Following items require SEMIANNUAL PMCS

a. Fences

Fences on CF property are usually made of aluminum, steel, concrete block, or wood. Metal fences, such as chain link, require regular inspection of paint condition, rust and other corrosion, and vegetation and trash buildup. Wood fences are additionally susceptible to rot and loose components, such as pickets, planks, and braces. Perimeter and boundary fences shall be checked semiannually.

Alignment

Structural stability
- Post integrity and alignment
- Foundation integrity
- Overall condition

b. Smoke Alarms

The following is a preventive maintenance checklist for individually installed smoke alarms that are not part of the larger automated alarm system. This check shall be performed semiannually. These smoke alarms may be battery-operated or hard-wired, and may be found in various areas of the facility, including out buildings.

Battery efficiency (if not hard wired)
Connection conditions for proper wiring and deficiencies such as arcing or exposed wires
Housing condition
Mounting security
Overall operation
Overall condition

Inspect all doors and windows for general condition and operability. Adjust and repair as necessary.

c. Doors and Windows

1) Windows
   - Pane conditions
   - Screen conditions
   - Storm window conditions
   - Lock operation
   - Frame alignment and conditions
   - Security
   - Weather sealing condition
   - Paint or surface conditions
   - Blind function and conditions
   - Hardware conditions and lubrication
   - Overall condition

2) Doors and hardware

Automatic closure operation (Must open with no more than 5 pounds of force pulling or pushing)
Lock operation
Hardware conditions and lubrication
Weather sealing condition
Paint or surface conditions
Frame alignment and conditions
Door stop placement and stability
Alarm system operation
Overall condition

d. Structural Members

Preventive maintenance entails a comprehensive visual inspection of each building material twice a year. Particular emphasis during this inspection process should be on load-bearing support areas that can be observed externally during a walking tour. The greatest cause of building demise is the penetration of water. Particular attention should be given at this time to evaluate the potential for access by water into building materials.

Beam integrity for deficiencies such as rot, termites, bowing, splitting, slippage, or fungus
Foundation condition for deficiencies such as cracking, slippage, or water encroachment
Joist conditions for deficiencies such as rot, termites, bowing, splitting, or fungus
Overall building integrity for signs of structural failure
Sill conditions for deficiencies such as rot, termites, or fungus
Stud conditions for deficiencies such as rot, termites, bowing, splitting, or fungus
Wall conditions
    Masonry for deficiencies such as cracks, scaling, mortar, crumbling, or efflorescence
    Wood for deficiencies such as termites, peeling paint, dry rot, popping, or fungus
Overall condition

Tree Safety inspection TBP

Fire Hydrant (blow down) TBP

Hurricane Equipment preparedness (prior to season and following) TBP

6. Following items require ANNUAL PMCS

a. Emergency Generators

The emergency generator in a building should be maintained annually. However, during the calendar year, the fuel level, battery charge, cleanliness, and wiring shall be checked monthly. PM shall also be performed after each use of the generators.

Operation
Fuel level
Oil and engine air filter conditions
Battery charger condition
Battery conditions for proper charge and connection
Gauge conditions
Circuit breaker conditions
Activation device conditions (starter, pull cord, switches, etc.)
Spark plug conditions
Terminal conditions
Belt conditions for deficiencies such as wear and stress
Wiring conditions
Cleanliness
Overall condition

b. Backflow Devices

Backflow devices prevent the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source other than intended. All backflow devices shall be tested annually by a certified contractor. Maintenance personnel shall monitor the contractor's performance and obtain written certification upon completion of work.

Backflow devices (shall be tested only by a certified contractor)

c. Electrical Systems

Electrical systems and closets shall be inspected annually. Maintenance personnel will be familiar with the locations of all electrical equipment, including circuit breakers, fuses, main feeders, subfeeders, panel boards, and substations. All wiring shall be in compliance with the National Electric Code. The safety of workers is paramount; staff shall ensure that power is shut off and/or lines are de-energized where work is performed and that the LOCK-OUT TAG-OUT system is used. Electrical equipment will be serviced by outside contractors unless there is a licensed journeyman electrician among the in-house staff. .

Equipment cleanliness
Distribution system
- Wire and cable conditions for deficiencies such as corrosion, dirt, moisture, and fire hazards
- Connection conditions

Overall condition

Circuit breakers
- Oil level and potential leakage
- Hardware conditions
- Porcelain condition
- Cotter pin conditions
- Air supplier operation
- Overall condition for deficiencies such as corrosion, noise, and excessive temperatures

Fuses
- Insulator conditions for deficiencies such as burns or cracks
- Misalignment
- Fuse holder conditions
- Hardware condition
- Overall condition

Lock security and lubrication
Utility room cleanliness and safety
Overall integrity
Overall condition for deficiencies such as loose wires, debris, corrosion, potential power failure, and water encroachment

d. Fire Extinguishers

The following annual PM checklist is for fire extinguishers throughout the building facility. This inspection and certification must be conducted by a licensed specialty contractor and should be scheduled in advance to ensure that the date on extinguishers will not expire. Monthly inspections of fire extinguishers' general condition, housing, and location per code shall be conducted as part of preventive maintenance procedures in areas of the Agency including Business Offices, Kitchen and Dining Areas, Boardrooms, and Restrooms. (See corresponding checklists.)

Certification
Charge
Housing condition
Hose condition
Proper location per code
Overall condition

e. Hot Water Heaters

Preventive maintenance of hot water heaters shall be performed annually. (See also HVAC Systems for other heating components.)

Circulation pump connections
Gas flame color (gas pilot should be blue with yellow at tip)

Burner conditions for deficiencies such as corrosion, inordinate flame pattern, and cinders
Pilot function

Tank plate and jacket conditions for deficiencies such as corrosion or rust
Door and lock function
Drain valve lubrication and function
Earthquake strap and bolt conditions
Gas shut-off valve lubrication and function
Piping supply lines for leaks
(Note: Use soap and water and/or hand-held gas detector)
Pressure relief valve function
Temperature setting
(Note: Use commercial grade thermometer)
Draft diverter conditions
Flue and chimney conditions
Vent condition
Utility room for deficiencies such as dirt, debris, and storage of materials
Overall condition for deficiencies such as rust in water, water and fuel leaks, and unusual sounds or odors

f. Roofing

The roof is the most costly and abused area of the facility, subject to a variety of weather conditions and temperature fluctuations. The early discovery and preventive maintenance of minor deficiencies extends its life and reduces the chance of premature failure and costly repairs.

Each building roof will be inspected annually by a college maintenance employee to look for any apparent roofing defects. Every 5 years, the department will secure the services of a roofing professional to conduct a thorough condition assessment of each roof. These assessments of both membrane and building components shall be conducted for all roofs, including newly installed ones. Adequate time will be allotted to properly perform the many tasks involved in inspection. A roof will be surveyed completely, either by carefully walking it in its entirety where accessible (wearing soft shoes), or by visual inspection with binoculars where inaccessible. Visual inspection from the attic side is also important.

Attention should be paid to southern and northern exposures, weather-generated problems, horizontal lines, peak areas, and areas of sagging. Ventilation areas should also be examined for obstructions. (For preventive maintenance of Gutters/Roof Drains, see corresponding annual checklist.)

Supporting structural integrity for deficiencies such as cracks, moisture stains, and potential failure
Flashing conditions for deficiencies such as water penetration, displacement, oxidation, excessive stretching, delamination, and tearing

Surface conditions for deficiencies such as contaminants such as exhaust or vegetation buildup
Subsurface conditions (including insulation) for signs of moisture penetration
Membrane conditions
Chimney conditions
Parapet integrity

Plumbing stack vent and roof connection conditions
Roof ventilation conditions
Skylight conditions for deficiencies such as broken glass or frames and flashing corrosion or rust
Structural conditions for deficiencies such as settling of the deck, membrane splits, or cracks in walls
Roof edging conditions for deficiencies such as deterioration and loose fasteners
Expansion joint conditions for punctures, splits, and insecure fasteners
Shingle conditions
Asphalt roof conditions for deficiencies such as brittle or missing shingles, cracking, curled edges, erosion, or exposed wood
Flat roof conditions for evenness across the horizontal plane and deficiencies such as bare areas, blisters, cove areas abutting parapets, cracks, curling, exposed nail heads, or ponding
Overall condition

g. Gutters/Roof Drains

Drainage devices are important in protecting buildings from water intrusion and damage. The following is an annual preventive maintenance checklist for gutters, downspouts, scuppers, and roof drains. Maintenance personnel shall ensure that these areas are free of debris such as leaves and branches, and that large debris has also been removed from the roof.

Mounting stability
Bolt, screw, and strap conditions
Discharge area function for proper drainage away from building
Joint conditions and stability
Roof atrium drains
- Cleanliness
- Caulking condition
- Mounting stability
- Overall condition for deficiencies such as blockages and cracks

Splash block location
Seam and elbow conditions
Caulking condition
Gutter positioning toward downspouts

Overall condition for deficiencies such as corrosion, rust, blockage, obstructions, and disconnection

h. Sewer

All drain lines in the physical building facility connect to the main drain, which is referred to as the “sewer” beyond the foundation. All sewer lines outside of the foundation have clean-out points at various locations. Reaming from these points requires the use of a high-power hose, hydro-jet, or power equipment. Sewer laterals should be annually reamed from clean-out points by in-house personnel.
Caulking condition adjacent to building exit point
Plug conditions
Pipe integrity
Plaster condition adjacent to building exit point
Overall condition for deficiencies such as soil erosion (if line exits ground)

i. Storm Drains

Storm drains or sewers are underground systems used to collect and dispose of surface water. They shall be cleaned and flushed annually to ensure blockages are removed and piping is functional.
Grate conditions
Cover conditions
Adjacent concrete or asphalt conditions
Drainage
General safety conditions
Overall condition for deficiencies such as dirt buildup around drain that might preclude proper directional flow

j. Cooling tower cleaning and closed loop system (TBP)

7. Following items require Five Years PMCS.

Fire System Certification

Comprehensive servicing and certification of the entire fire suppression system should be done every five years in accordance with current local, state, and federal requirements, including NFPA-defined guidelines. A licensed state contractor must be used, and this work shall be validated by local fire authorities.

The following items should be inspected by the contractor during this process.

- Signal initiation
- Manual alarm operation

- Water flow system components including valves, piping, pressure regulators, gauges, sprinkler heads, and shut-off operation
- Smoke detection systems
- Voice systems
- Automatic extinguishing systems
- Signage, visual notifications
- Supervisory signals
- Maintenance testing and protocol
- Central station monitoring
- Code compliance

Fire system certification (should be tested only by a certified contractor)