MAINTENANCE TECHNICAL SUPPORT CENTER
HEADQUARTERS MAINTENANCE OPERATIONS
UNITED STATES POSTAL SERVICE

Maintenance Management Order

SUBJECT: Guidelines for Creating Detailed Local Building and Building Equipment Preventive Maintenance Checklists

DATE: August 5, 2025

PUB NO: MMO-028-25

TO: All Maintenance Capable Sites

FILE CODE: M

FILE ID: mm25028

REV LEVEL: ab

This Maintenance Management Order (MMO) **supersedes MMO-001-24** and provides local maintenance managers with guidelines to develop detailed Building and Building Equipment Maintenance Preventive Maintenance (PM) checklists. This bulletin applies to Acronym ADMIN, Class Code AA.

Attachment 1 provides a table listing equipment and corresponding PM guidelines. Attachment 2 provides the PM guides. Attachment 3 provides sample USPS building equipment annual staffing workhour requirement forms.

The PM requirements and tasks in Attachment 2 provide the minimum required PM and frequencies that should be modified as necessary based on manufacturer's requirements, local conditions, usage, or local ordinances. Manufacturer recommendations may be considered with justification as they relate to Occupational Safety and Health Administration (OSHA), federal, state, and local regulations. Ensure all required OSHA safety requirements including but not limited to Personal Protective Equipment (PPE), Electrical Work Program (EWP), local Energy Control Procedures (ECP), and Safety Data Sheet (SDS) are added to the locally developed PM checklists.

The development of a facility Building and Building Equipment Maintenance (BEM) Plan depends on a complete and accurate inventory. All building equipment that is to be maintained must be identified and listed in the site staffing software application. Failure to accurately inventory the facility equipment may result in inadequate support resources. The site staffing projection for building equipment maintenance is derived and calculated within the staffing software application and is based on the building equipment inventory, maintenance standards, and frequencies. Each inventory item in the staffing software application earns an annual work hour allowance, which should not be exceeded without proper documentation and justification.

Station/Branch and Associate Office building equipment entered into the staffing software application does not count toward building equipment maintenance staffing hours because those facilities are maintained by Field Maintenance and associated staffing hours are calculated in a separate section of the staffing software application.

Other equipment or building systems supported by contract or other means, must be listed, but designated as “maintained by contract”.

Route scheduling within eMARS should be coordinated to allow inspection of numerous smaller simplistic components at the same time to minimize travel within the facility. For example: Perform the inspections of steam traps, chilled water valves, other miscellaneous Heating, Ventilation, and Air Conditioning (HVAC) valves and air handler units at the same time when feasible.

For questions or comments concerning this bulletin contact the MTSC HelpDesk, either online at **MTSC>HELPDESK>Create/Update Tickets** or call (800) 366-4123.

Frederick L. Jackson III
Director
Maintenance Technical Support Center

Attachments:
1. Equipment Inventory Reference Table
2. Building and Building Equipment Preventive Maintenance Guides
3. USPS Building Equipment Annual Staffing Workhour Requirement Forms

Table of Contents

ATTACHMENT 1

EQUIPMENT INVENTORY REFERENCE TABLE

1.0 EQUIPMENT INVENTORY TABLE

Table 1-1. Equipment Inventory Reference Table

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
1	Acid Neutralization Pit	Acid Neutralization	PLUMB	AN	MMO*
2	AGV	AGV Seegrid Pallet Jack	AGV	SP	MMO*
3	AGV	AGV Seegrid Tow Motor	AGV	ST	MMO*
4	AGV	AGV Seegrid Server System	AGV	SZ	MMO*
5	AGV	AGV Daifuku Pallet Jack	AGV	UP	MMO*
6	AGV	AGV Daifuku Tow Motor	AGV	UT	MMO*
7	AGV	AGV Daifuku Server System	AGV	UZ	NONE**
8	AGV	Automated Guided Vehicles Mission Assignment Sys	AGVM	AA	NONE**
9	Air Curtain	Air Curtain	FAN	AC	NONE**
10	Air Compressors	Compressed Air HVAC	AIR	BA	MISC-1
11	Air Compressors	Compressed Air Mechanization/Automation	AIR	AA	MISC-1
12	Air Compressors	Compressed Air Other	AIR	ZZ	MISC-1
13	Air-Conditioning Machine Package Unit <10 Tons	Rooftop Or Package Cooling Only	HVACPKG	AA	HVAC-1, HVAC-15
14	Air-Conditioning Machine Package Unit ≥10 Tons and ≤ 30 Tons	Rooftop Or Package Cooling Only	HVACPKG	AA	HVAC-1, HVAC-15
15	Air-Conditioning, Window Units	AC Window Units	HVACPKG	BB	HVAC-2, HVAC-15
16	Air Dryer	Compressed Air Dryer	AIR	CA	NONE**
17	Air Handling Unit-Other ≤10HP	Air Handling Unit-Other ≤10HP	AHU	EA	HVAC-4, HVAC-13, HVAC-15

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
18	Air Handling Unit-Other >10HP	Air Handling Unit-Other >10HP	AHU	EB	HVAC-4, HVAC-13, HVAC-15
19	Baler, Vertical all except 72” and 84”	Baler, Vertical all except 72” and 84”	BALER	AA	MISC-4
20	Baler, Vertical 72”x48”x48”	Baler, Vertical 72”x48”x48”	BALER	BA	MISC-4
21	Baler, Vertical 84”x48”x48”	Baler, Vertical 84”x48”x48”	BALER	CA	MISC-4
22	Baler, Horizontal (All)	Baler, Horizontal (All)	BALER	DA	MISC-4
23	Ball Transfer Decking	Ball Transfer Decking	BALLDECK	AA	MISC-24
24	Ball Decking/Ram Lift	Ball Decking/Ram Lift	BALLDECK	AA	MISC-25
25	Battery Flooded (Lead Acid)	Battery	BATTERY	AA	MISC-19
26	Batteries, Sealed (Battery-AA)	Battery	BATTERY	AA	NONE**
27	Battery Thin Plate Pure Lead (TPPL)	Battery Thin Plate Pure Lead (TPPL) Batteries	BATTERY	BA	NONE**
28	Boilers, Cast Iron and Steel	Boiler Low Press, Hot Water, Gas Fired	BOILER	AA	HVAC-6,
29	Boilers, Cast Iron and Steel	Boiler Low Press, Hot Water, Oil Fired	BOILER	BA	HVAC-5, HVAC-6,
30	Boilers, Cast Iron and Steel	Boiler Low Press, Hot Water, Elect Fire	BOILER	CA	HVAC-6,
31	Boilers, Cast Iron and Steel	Boiler High Press, Hot Water, Gas Fired	BOILER	DA	HVAC-6,
32	Boilers, Cast Iron and Steel	Boiler High Press, Hot Water, Oil Fired	BOILER	EA	HVAC-5, HVAC-6,
33	Boilers, Cast Iron and Steel	Boiler High Press, Hot Water, Elect	BOILER	FA	HVAC-6,
34	Boilers, Cast Iron and Steel	Boiler Low Press, Steam, Gas Fired	BOILER	GA	HVAC-6,
35	Boilers, Cast Iron and Steel	Boiler Low Press, Steam, Oil Fired	BOILER	HA	HVAC-5, HVAC-6,
36	Boilers, Cast Iron and Steel	Boiler Low Press, Steam, Elect Fired	BOILER	IA	HVAC-6,
37	Boilers, Cast Iron and Steel	Boiler High Press, Steam, Gas Fired	BOILER	JA	HVAC-6,

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
38	Boilers, Cast Iron and Steel	Boiler High Press, Steam, Oil Fired	BOILER	KA	HVAC-5, HVAC-6,
39	Boilers, Cast Iron and Steel	Boiler High Press, Steam, Elect Fired	BOILER	LA	HVAC-6,
40	Burner, Gas	Burner Boiler (Gas)	BURNER	AG	HVAC-7
41	Burner, Oil	Burner Boiler (Oil)	BURNER	AO	HVAC-8
42	Coils, Preheat, Reheat, Etc. (At Remote Locations)	Coils Preheat Reheat Etc. (Remote Locations)	HVACO	CA	HVAC-9
43	Compactor PTR	Compactor PTR	COMPACT	BA	MMO*
44	Condensers, Air Cooled ≤10 Tons	Air Cooled Condensers	COOL	HA	HVAC-3, ELEC-1
45	Condensers, Air Cooled >10 Tons and ≤30 Tons	Air Cooled Condensers	COOL	HB	HVAC-3, ELEC-1
46	Condensers, Air Cooled >30 Tons	Air Cooled Condensers	COOL	HC	HVAC-3, ELEC-1
47	Condensers, Evaporative	Condenser, Evaporative	COOL	GA	PLUM-7, ELEC-1
48	Cooling Towers	Cooling Equipment Cooling Towers	COOL	FA	HVAC-11.1, HVAC-11.2, HVAC-12, ELEC-1
49	Docks - All Related Equipment	Docks - All Related Equipment	DOCKS	AA	NONE**
50	Dock Levelers, Manual	Dock Loading Ramp Adjustable (Manual)	DOCKS	AB	MISC-16
51	Dock Levelers, Powered	Dock Levelers - Loading Ramps (Powered)	DOCKS	AC	MISC-8
52	Dock (Powered Lift)	Dock (Powered Lift)	DOCKS	AD	NONE**
53	Dock Boards Fixed	Dock Boards Fixed	DOCKS	AE	NONE**
54	Dock Lights (Trailer)	Dock Lights (Trailer)	DOCKS	AF	NONE**
55	Dock Scissor Lift	Dock Scissor Lift	DOCKS	AI	NONE**
56	Doors, Pedestrian, Main Entrance and Dock Entrance (Non-Powered)	Doors, Pedestrian, Main Entrance and Dock Entrance (Non-Powered)	DOOR	AM	MISC-7

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
57	Doors, Pedestrian, Main Entrance and Dock Entrance, (Power Operated)	Doors, Pedestrian, Main Entrance and Dock Entrance, (Power Operated)	DOOR	AP	MISC-6
58	Doors, Pedestrian, Main Entrance and Dock Entrance, (Power Operated)	Turnstile Power Operated	DOOR	AT	MISC-6
59	Dock Door (Powered Trailer Loading and Unloading)	Dock Door (Trailer Loading and Unloading)	DOCKS	AP	MISC-5.1
60	Dock Door (Manual Trailer Loading and Unloading)	Dock Door (Trailer Loading and Unloading)	DOCKS	AM	MISC-5.2
61	Door High Speed	Door High Speed	DOOR	HS	NONE**
62	Dock Seal	Docks - All Related Equipment	DOCKS	AA	NONE**
63	Drinking Water Coolers	Drinking Water Coolers	PLUMB	DW	PLUM-13
64	Dust Collection System	Dust Collection System	DUST	AA	NONE**
65	Elevator Electric, Automatic	Elevator Electric, Automatic	EL	AA	NONE**
66	Elevator Electric, Manual	Elevator Electric, Manual	EL	BA	NONE**
67	Elevator Hydraulic, Automatic	Elevator Hydraulic, Automatic	EL	CA	NONE**
68	Elevator Hydraulic, Manual	Elevator Hydraulic, Manual	EL	DA	NONE**
69	Elevator Escalator	Elevator Escalator	EL	EA	NONE**
70	Electrical Power Supply 15KV and Above	Electrical Power Supply 15 KV and Above	ELEC	PA	NONE**
71	Electrical Power Supply Below 7 KV	Electrical Power Supply Below 7 KV	ELEC	PB	NONE**
72	Electrical Panel Control	Electrical Panel Control	ELEC	PC	NONE**
73	Electrical Panel Distribution	Electrical Panel Distribution	ELEC	PD	ELEC-5

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
74	Electrical Power Supply 7 - 14 KV	Electrical Power Supply 7 - 14 KV	ELEC	PS	NONE**
75	Emergency Systems Emergency Lighting	Emergency Systems Emergency Lighting	EMSYS	EL	NONE**
76	Emergency Shower	Emergency Showers	EMSYS	ES	EMSYS MMO, PLUM-15
77	Eyewash, Plumbed	Emergency Systems Eyewash	EMSYS	PW	EMSYS MMO, PLUM-14
78	Eyewash, Self-Contained	Emergency Systems Eyewash	EMSYS	SW	EMSYS MMO, PS FORM 4894
79	Emergency Exit Signs	Emergency Exit Signs	EMSYS	EX	EMSYS MMO, PS FORM 4894
80	Emergency Systems Fire Alarm	Emergency Systems Fire Alarm	EMSYS	FA	EMSYS MMO
81	Fans, Centrifugal (Exhaust or Return Air)	Fan Centrifugal	FAN	FC	HVAC-12
82	Fans, Propeller, Pedestal or Wall-Mounted	Fan Propeller	FAN	FP	HVAC-16
83	Fans Propeller ≥24 Inches	Fans Propeller ≥24 Inches	FAN	FQ	HVAC-16
84	Filters, Roll Type, Disposable Media	Filters Roll Type Disposable Media	FILTER	FR	HVAC-13
85	Controls and Mechanisms for Roll-Type Filters	Controls and Mechanisms for Roll-Type Filters	HVACINS	CA	HVAC-14
86	Filters, Throw Away	Filters Throw Away	FILTER	FT	HVAC-15
87	Fire Dampers (In Duct)	Fire Damper All	EMSYS	FD	HVAC-24
88	Fire Doors - Sliding Type	Fire Doors - Sliding Type	DOOR	FD	MISC-10
89	Fire Doors - Swinging Type, Stairwells and Exit Ways	Fire Door Stairwells and Exitways (Swinging)	DOOR	FS	MISC-9

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
90	Fire Extinguisher	Emergency Systems Fire Extinguishing	EMSYS	FE	EMSYS MMO, PLUM-1
91	Fire Pumps, Electric Motor Drive	Fire Pump, Electric Motor Drive	PLUMB	FE	PLUM-11, EMS-8
92	Fire Pumps, Internal Combustion Engine Drive	Fire Pump, Internal Combustion Engine Drive	PLUMB	FG	PLUM-12, EMS-8
93	Furnace Forced Air Gas Fired	Furnace Forced Air Gas Fired	FURNACE	AA	NONE**
94	Furnace Forced Air Oil Fired	Furnace Forced Air Oil Fired	FURNACE	BA	NONE**
95	Furnace Forced Air Elect Fired	Furnace Forced Air Elect Fired	FURNACE	CA	NONE**
96	Furnace Forced Air Gas Split System	Furnace Forced Air Gas Split System	FURNACE	DA	NONE**
97	Furnace Forced Air Oil Split System	Furnace Forced Air Oil Split System	FURNACE	EA	NONE**
98	Furnace Forced Air Elect Split System	Furnace Forced Air Elect Split System	FURNACE	FA	NONE**
99	Fusible Link Smoke Vents (Roof)	Fusible Link Smoke Vents (Roof)	BLDG	SV	NONE**
100	Generators, Emergency, Gasoline or Natural Gas Engines	Fixed Mount Permanent Generator	GEN	BA	ELEC-2, EMS-5
101	Generators, Emergency, Fixed Diesel	Generator Diesel (Fixed)	GEN	BB	ELEC-3, EMS-5
102	Generators, Contingency	Portable Generator Less Than and Including 15KW	GEN	AA	MMO*
103	Generators, Contingency	Portable Generator Greater Than 15KW	GEN	AB	MMO*
104	Generators, Contingency	Generator Other (Portable)	GEN	AC	MMO*
105	Grease Traps	Grease Traps	PLUMB	GT	MMO*
106	Ground Fault Circuit Interrupter (GFCI)	Ground Fault Circuit Interrupter (GFCI) Electrical Receptacle	ELEC	GF	EMSYS MMO, PS FORM 4894

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
107	Building Automation System (BAS)	GMS Building Automation System	GMS	BA	NONE**
108	Heaters, Baseboard, Electric	Heater Electric Baseboard	HVACO	EA	HVAC-21
109	Heaters, In Duct, Electric	Heater Electric In Duct	HVACO	DA	HVAC-20
110	Heaters, Unit, Gas-Fired	Heater	HVACO	AA	HVAC-23
111	Heaters, Unit, Steam or Hot Water	Heater	HVACO	AA	HVAC-22
112	Heating Only, Package Unit	Rooftop Heating Only, Gas Fired	HVACPKG	BA	NONE**
113	Heating Only, Package Unit	Rooftop Heating Only, Oil Fired	HVACPKG	CA	NONE**
114	Heating Only, Package Unit	Rooftop Heating Only, Elect Fired	HVACPKG	DA	NONE**
115	Heating/Cooling Units, Package Unit	Rooftop Or Package Heating Cooling, Gas Fired	HVACPKG	EA	HVAC-17
116	Heating/Cooling Units, Package Unit	Rooftop Or Package Heating Cooling, Oil Fired	HVACPKG	FA	HVAC-17
117	Heating/Cooling Units, Package Unit	Rooftop Or Package Heating Cooling, Elect Fired	HVACPKG	GA	HVAC-17
118	Heat Pump Air Source - No Backup	Heat Pump Air Source - No Backup	HTPUMP	AA	NONE**
119	Heat Pump Air Source - Gas Backup	Heat Pump Air Source - Gas Backup	HTPUMP	AB	NONE**
120	Heat Pump Air Source - Oil Backup	Heat Pump Air Source - Oil Backup	HTPUMP	AC	NONE**
121	Heat Pump Air Source - Elec Backup	Heat Pump Air Source - Elec Backup	HTPUMP	AD	NONE**
122	Heat Pump Ground Source Closed Loop No Backup	Heat Pump Gnd Source Closed Loop No Bkup	HTPUMP	BA	NONE**
123	Heat Pump Ground Source Closed Loop No Backup	Heat Pump Gnd Source Closed Loop Gas Bkup	HTPUMP	BB	NONE**

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
124	Heat Pump Ground Source Closed Loop Oil Backup	Heat Pump Gnd Source Closed Loop Oil Bkup	HTPUMP	BC	NONE**
125	Heat Pump Ground Source Closed Loop Electric Backup	Heat Pump Gnd So. Closed Loop Elec Bkup	HTPUMP	BD	NONE**
126	Heat Pump Ground Source Aquifer No Backup	Heat Pump Gnd Source Aquifer No Bkup	HTPUMP	CA	NONE**
127	Heat Pump Ground Source Aquifer Gas Backup	Heat Pump Gnd Source Aquifer Gas Bkup	HTPUMP	CB	NONE**
128	Heat Pump Ground Source Aquifer Oil Backup	Heat Pump Gnd Source Aquifer Oil Bkup	HTPUMP	CC	NONE**
129	Heat Pump Ground Source Aquifer Electric Backup	Heat Pump Gnd Source Aquifer Elec Bkup	HTPUMP	CD	NONE**
130	Hoist	Trolley Mounted Hoist	HOIST	AA	MMO*
131	Hoist	Mobile Boom Style Hoist	HOIST	BA	MMO*
132	Hoist	Other Manual Hoist	HOIST	DA	MMO*
133	Hot Water Heaters, Converters (Industrial)	Plumbing - All Related Equipment	PLUMB	AA	PLUM-9, ELEC-1, PLUM-7
134	Hot Water Heaters Commercial Type	Hot Water Heaters Commercial Type	PLUMB	WC	PLUM-10, ELEC-1, PLUM-7
135	Hot Water Heaters, Domestic Type	Hot Water Heater (Domestic) - Electric	PLUMB	WE	PLUM-10, ELEC-1, PLUM-7
136	Hot Water Heaters, Domestic Type (Gas or Oil Fired)	Hot Water Heater (Domestic) - Oil Gas	PLUMB	WG	PLUM-10, ELEC-1, PLUM-7
137	Humidifier	Humidification System	HUMID	AA	NONE**
138	Dehumidifier	Dehumidifier	HUMID	BA	NONE**
139	Personnel Lift, Powered (MEWP)	Personnel Lift, Powered (MEWP)	LIFT	AA	MISC-14
140	Lawnmowers and Edgers (Gasoline Powered)	Bldg., Outside Equipment	BLDG	BA	MISC-2

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
141	Magnetic Locking System	Magnetic Locking System	DOOR	ML	NONE**
142	Mobile Op Eq Forklift, Ride or Walk, Motorized	Mobile Op Eq, Forklift, Ride or Walk, Motorized	MOPE	AA	MISC-26
143	Toyota Forklift Model 5	Toyota Forklift Model 5	MOPE	AB	MISC-26
144	Toyota Forklift Model 6	Toyota Forklift Model 6	MOPE	AC	MISC-26
145	Toyota Forklift Model 7	Toyota Forklift Model 7	MOPE	AD	MISC-26
146	Toyota Forklift Model 8	Toyota Forklift Model 8	MOPE	AE	MISC-26
147	Clark Forklift (All Models)	Clark Forklift (All Models)	MOPE	AL	MISC-26
148	Crown Forklift (All Models)	Crown Forklift (All Models)	MOPE	AM	MISC-26
149	Hyster Forklift (All Models)	Hyster Forklift (All Models)	MOPE	AN	MISC-26
150	Yale Forklift (All Models)	Yale Forklift (All Models)	MOPE	AO	MISC-26
151	Mobile Op Eq Tow Tractor Tugger Power Ox	Mobile Op Eq Tow Tractor Tugger Power Ox	MOPE	BA	MISC-26
152	Toyota Tow Tractor (All DC Models)	Toyota Tow Tractor (All DC Models)	MOPE	BB	MISC-26
153	Toyota Tow Tractor (All AC Models)	Toyota Tow Tractor (All AC Models)	MOPE	BC	MISC-26
154	Taylor Dunn Tow Tractor (All Models)	Taylor Dunn Tow Tractor (All Models)	MOPE	BD	MISC-26
155	Pallet Truck, Non-Motorized	Mobile Op Eq Pallet Truck Non-Motorized	MOPE	CA	MISC-26
156	Toyota Riding Pallet Truck (All Models)	Toyota Riding Pallet Truck (All Models)	MOPE	CB	MISC-26
157	Toyota Walking Pallet Truck (All Models)	Toyota Walking Pallet Truck (All Models)	MOPE	CC	MISC-26
158	Crown Pallet Truck (All Models	Crown Pallet Truck (All Models)	MOPE	CD	MISC-26
159	MOPE Pallet Truck, Motorized	Pallet Truck, Motorized (All Models)	MOPE	CD	MISC-26
160	Mobile Op Eq - Other	Mobile Op Eq-Other	MOPE	DA	MISC-26
161	Mobile Op Eq - Mini Lift (FSS Only)	Mobile Op Eq-Mini Lift FSS Only	MOPE	EA	MISC-14

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
162	Motors, Over 5 HP	Motor Electric Over 5 HP	ELEC	MT	ELEC-1
163	Powered Industrial Vehicle Management System	PIVMS	PIVMS	AA	MMO*
164	Pump, Centrifugal	Pumps, Centrifugal (Not Integral with Motor)	PLUMB	PC	PLUM-7
165	Pump Chiller Water	Pump Chiller Water	PLUMB	PC	NONE**, PLUM-7, ELEC-1
166	Pump Condenser Water	Pump Condenser Water	PLUMB	PC	NONE**, PLUM-7, ELEC-1
167	Pump Hot Water	Pump Hot Water	PLUMB	PC	NONE**, PLUM-7, ELEC-1
168	Pumps, Sump (Life)	Pump, Sump (Sewage or Life)	PLUMB	PS	PLUM-2
169	Pumps, Condensate or Vacuum	Pump, Condensate or Vacuum	PLUMB	PV	HVAC-10
170	Pump Sewer Ejector	Pump Sewer Ejector	PLUMB	PS	NONE**
171	Unfired Pressure Vessel All Types Models	Unfired Pres Vessel All Types - Models	UPV	AA	NONE**
172	Refrigeration Machines (Absorption Type)	Absorption Unit Cooling Only	HVACABS	AA	HVAC-18, ELEC-1, PLUM-7
173	Refrigeration Machine (Centrifugal and Reciprocating)	Water In Evap-Water Cool Condenser	COOL	AA	HVAC-19, ELEC-1, PLUM-7
174	Roof, Inspection: Roof work should only include periodic visual inspection. Any required roof repairs must be considered under and coordinated through the national roof contract. (Note: All roof types included.)	Roofing Built-Up Roof Drains Etc.	ROOF	AA	PLUM-8

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
175	Floor Scrubbers, Automatic, Vacuum, Battery Operated	Floor Scrubber	MOPE	FS	MISC-18
176	Scissor Lift (Dock)	Dock Scissor Lift	DOCKS	AI	NONE**
177	Snow Blower - Walking Type	Snow Blower - Walking	MOPE	SB	MISC-15
178	Split System (Condenser)	Split System Condenser Unit	COOL	SA	HVAC-3
179	Split System (Evaporator)	Split System Evaporator Unit	COOL	SB	HVAC-25, HVAC-26
180	Split System (Evaporator)	Split System Evaporator Unit with Electric Heat	COOL	SE	HVAC-25, HVAC-26
181	Split System (Evaporator)	Split System Evaporator Unit with Gas Heat	COOL	SG	HVAC-25, HVAC-26
182	Split System (Evaporator)	Split System Evaporator Unit with Oil Heat	COOL	SO	HVAC-25, HVAC-26
183	Split System (Evaporator and Condenser)	Split System Evaporator Unit with Other Heat	COOL	SZ	HVAC-25, HVAC-26
184	Sprinkler Head (Sprinkled Areas)	Fire Suppression System	EMSYS	FS	EMSYS MMO
185	Stationary Packers	Compactor	COMPACT	AA	MISC-11, MISC-12, MISC-13
186	Sweepers Electric (Battery)	Sweeper Electric	MOPE	SE	MISC-17
187	Sweepers (Gasoline Powered)	Sweeper Gas	MOPE	SG	MISC-3
188	Tank, Compressed Air	Unfired Pres Vessel All Types - Models	UPV	AA	NONE**
189	Tanks	Aboveground Storage Tank Unleaded Gasoline	TANKS	BA	MISC-22, MISC-23
190	Tanks	Aboveground Storage Tank Diesel Fuel	TANKS	CA	MISC-22, MISC-23
191	Tanks	Aboveground Storage Tank Waste Fuel	TANKS	DA	MISC-22, MISC-23
192	Tanks	Aboveground Storage Tank Oil Grade # 2	TANKS	EA	MISC-22, MISC-23

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
193	Tanks	Aboveground Storage Propane	TANKS	IA	NONE**
194	Tanks	Aboveground Storage Tank Engine Oil	TANKS	JA	MISC-22, MISC-23
195	Tanks	Aboveground Storage Tank Waste Solvent	TANKS	KA	MISC-22, MISC-23
196	Tanks	Aboveground Storage Tank Waste Oil	TANKS	LA	MISC-22, MISC-23
197	Tanks	Aboveground Storage Tank Wastewater	TANKS	MA	MISC-22, MISC-23
198	Tanks	Aboveground Storage Tank Other	TANKS	NA	NONE**
199	Tanks	Underground Storage Tank Unleaded Gasoline	TANKS	BU	NONE**
200	Tanks	Underground Storage Tank Diesel Fuel	TANKS	CU	NONE**
201	Tanks	Underground Storage Tank Waste Fuel	TANKS	DU	NONE**
202	Tanks	Underground Storage Tank Oil Grad #2	TANKS	EU	NONE**
203	Tanks	Underground Storage Tank Engine Oil	TANKS	JU	NONE**
204	Tanks	Underground Storage Tank Waste Solvent	TANKS	KU	NONE**
205	Tanks	Underground Storage Tank Waste Oil	TANKS	LU	NONE**
206	Tanks	Underground Storage Tank Wastewater	TANKS	MU	NONE**
207	Tanks	Underground Storage Tank Other	TANKS	NU	NONE**
208	Trailer Restraints	Trailer Restraint	DOCKS	AH	MISC-20, MISC-21
209	Transformer	Transformer	ELEC	TR	NONE**
210	Transformer Switch	Transformer Switch	ELEC	TS	NONE**
211	Transformer Vault	Transformer Vault	ELEC	TV	NONE**
212	Traps, Steam (All Types)	Steam Trap, All Types	BOILER	ST	PLUM-6

Line	Item	eMARS Equip. Description	eMARS Acronym	Class Code	PM Guide No(s)
213	Valves, Manually Operated (Mainline or Critical - Over 2-in.)	Valve, Manually Operated Mainline or Critical Over 2 in.	PLUMB	VC	PLUM-4
214	Valve, Fire Control	Fire Suppression System	EMSYS	FS	EMSYS MMO
215	Valves, Motor Operated	Valve, Motor Operated	PLUMB	VM	PLUM-5
216	Valves, Regulating (Steam)	Valve, Regulating (Steam)	PLUMB	VR	PLUM-3
217	VFD	Variable Frequency Drive	ELEC	VF	NONE**
218	VAV	Variable Air Volume Unit	HVACVAV	AA	NONE**

*MMO: refer to appropriate MMO for task.

**NONE: no guides apply.

Use acronym for equipment or system on which this item is installed.

When creating an Equipment Record in the eMARS Equipment Module, the Site will generate one record for each piece or type of equipment depending on the specific equipment.

THIS PAGE BLANK

ATTACHMENT 2

BUILDING AND BUILDING EQUIPMENT

PREVENTIVE MAINTENANCE GUIDES

1.0 GUIDE SET HVAC

1.1 GUIDE NUMBER HVAC-1: AIR-CONDITIONING MACHINE PACKAGE UNITS

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current MMO providing lockout/restore procedures. Failure to comply may cause injury or death.

1. Remove panels. Clean entire unit.
2. Clean drip pans and drains. Check for corrosion.
3. Replace worn belts and adjust proper tension.
4. Lubricate motor(s) and fan(s) bearings.
5. Check motor alignment and verify hardware is tight.
6. Change filters with USPS approved products.
7. Operate unit and check for proper cooling.
8. Check thermostat.
9. Check fan and motor. Clean fan blades, motor, and lubricate bearings.
10. Run machine and check operation, water supply and control valves, suction and discharge pressures, refrigerant level, recheck for leaks, functioning of controls, temperature of discharge, air, etc.
11. Restore panels and clean up area and machine.
12. Identify and report any deficiencies.

1.2 GUIDE NUMBER HVAC-2: AIR-CONDITIONING, WINDOW UNITS

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Review manufacturer instructions.

1. Remove necessary covers.
2. Clean condenser, cooling coil fins, and fans where accessible.
3. Remove dirt or dust from accessible interior parts.
4. Replace or clean filter.
5. Replace covers that were removed, if necessary.
6. Clean area.
7. Start unit and observe operation.

1.3 GUIDE NUMBER HVAC-3: AIR-COOLED CONDENSERS

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

8. Vacuum dirt on coils and fins.
9. Inspect and service unit following manufacturer recommendations.
10. Restore covers that were removed, if necessary.
11. Identify and report any deficiencies.

1.4 GUIDE NUMBER HVAC-4: AIR HANDLERS

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

1.4.1 Fans

1. Clean and inspect fan blades.
2. Clean and inspect fan housing.
3. Restore cover, if necessary.

1.4.2 Bearings

Lubricate bearings following manufacturer recommendations. Do not overlubricate bearings.

1.4.3 Drives (Belt and Direct)

1. Inspect for excessive belt wear indicating misalignment, overloading, or improper belt tension.
2. If belts are worn, they should be replaced to prevent untimely breakdown. Multi-belt drives should be replaced in matched sets. Adjust belt tension, as necessary.
3. Check couplings for alignment on direct drives and for tightness of assembly.
4. Restore covers that were removed, if necessary.

1.4.4 Coils

1. Examine coils for leakage and debris.
2. Clean coil exterior using manufacturer’s recommendations.
3. Restore cover/panel, if necessary.

1.4.5 Freeze Protection

1. Check pitch of coil to drainage point.
2. Inspect test controls and devices used for freeze protection.
3. Clean face and lubricate following manufacturer recommendation.

1.4.6 Controls

1. Inspect and clean dampers, control linkage, and control motors following manufacturer recommendation.
2. Lubricate as necessary following manufacturer recommendation.
3. Restore covers/panels, if necessary.

1.5 GUIDE NUMBER HVAC-5: BOILERS, OIL FIRED

(Cleaning Fireside only)

Frequency: Annual (Schedule simultaneously with the Oil Burner)

Application: This is to provide for fireside cleaning to remove soot and maintain high efficiency.

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, allow boiler to cool, lock out power to oil pumps and blowers, and close and lock out valves. Power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

1. Clean soot from chamber, tubes, and all heat transfer surfaces.
2. Look for signs of overheating, leakage, wear, abrasion, corrosion of pressure parts, or erosion of metal.
3. Clean or replace burner nozzle, as necessary.
4. Restore cover/panel.
5. When unit is returned to service, check, and adjust burner for optimum combustion efficiency.
6. Identify and report any deficiencies.

1.6 GUIDE NUMBER HVAC-6: BOILERS, CAST-IRON AND STEEL

Frequency: Annual (Schedule for the appropriate burner (gas or oil))

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, allow boiler to cool, lock out power to oil pumps and blowers, and close and lock out valves. Power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

1.6.1 General

1. Remove boiler from service. Take proper safety precautions before working inside boiler, including tagging of valves and controls, and letting boiler cool down.
2. Remove fly ash and soot from flue passages.
3. Restore cover/panel.
4. Check firesides, valves, and trim, and report any leaks.

1.6.2 Watersides

1. Clean gauge glass and siphon loops to limit controls.
2. See that petcocks and try cocks open freely.
3. If internal inspection is required:
   a. Remove hand-hole and manhole plates.
   b. Clean interior of boiler, wash down shell and drums to remove mud, loose scale, and deposits.
   c. Turbine tubes: check tube ends for leakage and corrosion.
   d. Restore covers/panels.
   e. Identify and report any deficiencies.

1.6.3 Exterior and Firesides

1. Examine and clean water column and feed water regulators, high and low side alarms, drains, gauge glasses, siphon loops, petcocks, and try cocks.
2. Look for signs of overheating, leakage, wear, abrasion, corrosion of pressure parts, or erosion of metal.
3. Check tubes for evidence of blisters and pock marks.

4. Check condition of all refractories for cracks, erosion, and caulk. Also, check expansion joints, baffles, dampers and actuating mechanisms, stay-bolts, etc.
5. Test all non-return and stop valves. Clean and replace, as necessary.
6. Check fusible plugs, if used. Replace yearly.
7. Check and clean bonnets, flues, and uptakes for defective metal. Replace if necessary.
8. Check exterior structure for strains and tension.
9. Clean and lubricate forced-draft fan.
10. Check condition of door gaskets.
11. Carefully account for all tools before closing up boiler.
12. Restore covers/panels.
13. Identify and report any deficiencies.

1.7 GUIDE NUMBER HVAC-7: BURNER, GAS

Frequency: Annual

WARNING

Activities in this guide require work to be performed with the equipment powered on and covers/panels open. Energized equipment may expose personnel to potential hazards. Follow all manufacturer recommendations. Failure to comply may result in injury or death.

1. Check boiler room for adequate ventilation in accordance with AGA burner requirements.
2. Check operation of all gas controls and valves.
3. Check flue connections for tight joints and minimum resistance to airflow. Ensure combustion chamber, flues, breeching, and chimney are clear before firing.
4. Ensure draft regulators give slightly negative pressure in the combustion chamber at maximum input.
5. On forced-draft burners, gas manifold pressure requirements should correspond with modulating (butterfly) valve in full-open position and stable at all other firing rates.
6. Take CO^2 flue gas temperature readings to determine efficiency of the unit. CO^2 for atmospheric gas burners should be 8 to 9.5%; for forced draft burners 9 to 10%. Determine combustion efficiency according to instructions with flue gas test apparatus. Combustion efficiency should be at least 80%. If efficiency is low, check baffling.
7. Check burner for flashback and tight shutoff of fuel.
8. Restore covers/panels.
9. Check operation of controls. Clean and adjust if necessary.
10. Ensure unit operates properly when adjustments are set per manufacturer instructions.
11. Identify and report any deficiencies.

1.8 GUIDE NUMBER HVAC-8: BURNER, OIL

Frequency: Annual

WARNING

Activities in this guide require work to be performed with the equipment powered on and covers/panels open. Energized equipment may expose personnel to potential hazards. Follow all manufacturer recommendations. Failure to comply may result in injury or death.

1. Test and inspect burner (with or without firing) at rated pressure for leaks.
2. Timed trial for ignition for pilots and burners should be in accordance with manufacturer instructions.
3. Check operation of automatic safety controls and combustion flame safeguards for abnormal discharge of oil on ignition failure, and sensors for presence of flame.
4. Check pre-ignition purging capability of burner, combustion chamber, boiler passes, and breeching. Stack dampers should be fully open during purge and light-off period.
5. Check delivery of fuel in relation to its response to the ignition system. Examine electrodes for carbon buildup, dislocation, distortion, and burning of parts.
6. Ensure ignition transformer provides dependable arc. Adjust and regulate as required for clearance and air gap.
7. Clean and adjust draft regulator and air shutter on a natural draft burner to ensure excess air quantities are minimal for complete combustion. Test with gas analyzer.
8. On mechanical draft burners, clean and check power-driven fan blower.

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current MMO providing lockout/restore procedures. Failure to comply may cause injury or death.

9. Check forced-draft fan, clean fan, and fan housing, check bearing, pulleys, and belts for wear and lubricate, as necessary.
10. Check and clean filters, water separators, and primary and secondary strainers.
11. Clean, check operation, and adjust controls and safeties.

12. Burners designed to change firing rates automatically should be checked for adequate proportioning changes in fuel and air rates.
13. Check constant level device to see that burner maintains proper oil level (within 1/3”) at rated output.
14. Ensure energy cannot feedback and energize ignition devices or feed valves after a control shuts off burner.
15. Replace nozzles and check for tight shutoff of fuel.
16. Check stacks for smoke or haze and adjust burner accordingly.
17. Take CO_2, O_2, and smoke readings. Compare CO_2 and flue gas temperature for determination of boiler burner efficiency. CO_2 should be 9 to 12%. Combustion efficiency should be at least 80%. Determine combustion efficiency according to instructions with flue gas test apparatus.
18. Restore covers/panels.
19. Identify and report any deficiencies.

1.9 GUIDE NUMBER HVAC-9: COILS, PREHEAT, REHEAT, ETC. (REMOTE FROM AIR HANDLER)

Frequency: Annual

Application: This guide applies to coils that are not part of an air-washer or air-handling unit.

1. Vacuum the fins, coils, etc.
2. Remove obstructions to airflow.
3. Check coils. Repair or report any leaks.
4. Test and inspect controls that protect against freezing.
5. Restore covers/panels.
6. Identify and report any deficiencies.

1.10 GUIDE NUMBER HVAC-10: CONDENSATE OR VACUUM PUMPS (ON STEAM RETURN SYSTEM)

Frequency: Annual

1. Operate unit to check for steam binding.
2. Check condensate temperature. Temperature should be approximately 30 degrees F. below steam temperature if traps are not leaking.
3. Examine flanges for steam leaks.
4. Pump receiver down.
5. Turn condensate to sewer.
6. Shut down unit.
7. Clean receiver.
8. Clean and adjust motor float switch and float operation on high-low water level. Inspect pressure switches.
9. Clean and examine receiver, vent pipe, inlet, and discharge openings for excessive corrosion. Report condition.
10. Check alignment of coupling with straight edge.
11. Lubricate pump and motor.
12. Adjust packing glands and change packing when necessary.
13. Examine vacuum breaker operation.
14. Inspect ball floats, rods, and other linkage. Adjust, as necessary.
15. Restore covers/panels.
16. Identify and report any deficiencies.

1.11 GUIDE NUMBER HVAC-11.1: COOLING TOWERS STARTUP (SPRING)

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Perform annual maintenance before cooling season.

1. Remove trash, dirt, and algae from pans, casings, fill, and screens.
2. Check structural members of tower for deterioration.
3. Clean and check operation of the water treatment equipment.
4. Fill tower. Adjust bleed float level. Charge with water treatment chemicals.
5. Examine water nozzles for obstructions and proper water distribution.
6. Check alignment of motor to gear to fan.
7. Inspect motor, motor starter, belts, etc., for proper operation.
8. Restore all covers/panels.
9. Identify and report any deficiencies.

1.12 GUIDE NUMBER HVAC-11.2: COOLING TOWERS SHUTDOWN (FALL)

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Perform annual maintenance before cooling season.

1. Drain and flush down tower. Remove trash, dirt, and algae from pans, casings, fill, and screens.
2. Drain and replace lubricant in gearbox.
3. Restore covers/panels.
4. Identify and report any deficiencies.

1.13 GUIDE NUMBER HVAC-12: FANS, CENTRIFUGAL

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Obtain and review manufacturer instructions.

1. Check over unit thoroughly. Look for signs of rust, corrosion, or deterioration. Inspect interior of housing if there are openings to do so.
2. Check insulation repair if needed.
3. Check bearings, shaft, pulley, and alignment with motor. If vibration is excessive, check balance of rotor.
4. Perform required lubrication.
5. Check belts; adjust tension or replace as required.
6. Vacuum windings, if necessary.
7. Clean complete unit, including fan rotor.
8. Restore covers/panels.
9. Identify and report any deficiencies.

1.14 GUIDE NUMBER HVAC-13: FILTERS, ROLL-TYPE DISPOSABLE MEDIA

Frequency: 4 times annually (quarterly)

Application: To inspect roll filter media.

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Obtain and review manufacturer instructions.

1. Check filter media roll.
2. Replace filter media roll as needed utilizing the work order process.
3. Restore covers/panels.

1.15 GUIDE NUMBER HVAC-14: CONTROLS AND MECHANISMS ROLL TYPE FILTERS

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Obtain and review manufacturer instructions.

1. Inspect framework and structure. Look for loose or missing bolts, air leaks, condition of flashing or caulking, etc.
2. Inspect all moving parts for proper alignment, freedom of motion, excessive clearance or play, etc. Clean, adjust, or tighten, as necessary.
3. Inspect powered roll and take up roll for correct tracking of media. On manual operation check wheel or hand crank.
4. On motor drives, check pressure sensing device(s) and/or pressure switches. Test settings for starting and stopping motor.
5. Inspect motor, starter, controls, and selector switch for auto warning or indicator lights.
6. Check oil in gear case. Change or replenish as required. Perform required lubrication.
7. Restore covers/panels.
8. Identify and report any deficiencies.

1.16 GUIDE NUMBER HVAC-15: FILTERS, THROW-AWAY

(Includes package units)

Frequency: 4 times annually (quarterly)

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

NOTE

Change filters when the static pressure approaches the design maximum for the unit.

1. Remove and discard old filters.
2. Clean frame with vacuum.
3. Inspect frame, doors, etc.
4. Install new media.
5. Restore covers/panels.

1.17 GUIDE NUMBER HVAC-16: FANS, PROPELLER

Frequency: Annual

This guide is for the large fans used in the workroom or other areas to provide air circulation. Observe current local ECP and ensure all safety requirements are followed.

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Visually inspect portable ladders prior to each use. These visual inspections are intended to help ensure that each ladder will be safe during operation. Failure to comply may result in injury. Refer to Handbook EL-803 Maintenance Employee's Guide to Safety, Section VIII for more information and the current MMO for Inspection and Usage of Portable Ladders.

WARNING

These procedures may require using a ladder. Using a ladder presents a falling hazard. Never overreach or lean away from the ladder. Precautions must be taken to prevent falls from heights that may cause personal injury. Follow local safety procedures for fall prevention. Failure to comply may cause injury or death and/or equipment damage.

1. Disconnect from electric power and clean entire unit including the blade and motor.
2. Examine line cord for frayed insulation or evidence of deterioration if applicable.
3. Wrench test blade setscrew, motor mount bolts, and blade guard mounting bolts to verify tightness.
4. Lubricate unit and clean up excess lubricant.
5. Restore covers/panels.
6. Operate unit and check for excess vibration and unusual noise.

1.18 GUIDE NUMBER HVAC-17: HEAT/COOLING UNIT, ROOF TOP

Frequency: Semiannual

This applies to roof top heating/cooling units, which are gas-fired heating, and have an air-cooled condenser. Ensure all safety requirements are followed.

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Verify with your supervisor that roof access is permitted before attempting to gain access to the roof.

Employees who access a walking-working surface with unprotected sides or edges that are 4 feet or more above a lower level must have one of the following to protect the employee: guardrail systems; safety net systems; or personal fall protection systems, such as personal fall arrest, travel restraint, or positioning systems.[1] Employee must contact a supervisor if this Personal Protective Equipment (PPE) is not available.

1. Remove panels. Clean entire unit.
2. Clean drip pans and drains.
3. Replace worn belts and adjust for proper tension.
4. Clean fans.
5. Lubricate motor(s) and fan(s) bearings.
6. Check alignment of motor and tighten.
7. Change filters.
8. Restore covers/panels.
9. Identify and report any deficiencies.

[1] OSHA 1910.28(b)(1)(i)(A-C) Unprotected sides and edges.

1.18.1 Spring

1. Clean evaporator and condenser coils.
2. Operate unit and check refrigeration.
3. Charge unit as required.
4. Restore covers/panels.
5. Check thermostat.

1.18.2 Fall

1. Clean and check heat exchanger for leaks.
2. Check gas train and safety controls for adequate and proper operation.
3. Adjust pilot or electronic ignition device.
4. Set burner for maximum combustion efficiency.
5. Restore covers/panels.

1.19 GUIDE NUMBER HVAC-18: REFRIGERATION MACHINES, ABSORPTION TYPE

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Consult operating data to determine the temperature difference across the various system components as a guide to determining the condition of the evaporator and condenser tubes.

1.19.1 Evaporator Circuit

1. Check and service evaporator pump, motor controls, starters, etc. Lubricate as prescribed.
2. Clean and flush out seal, water tank seal chamber, and associated lines.
3. Check purge valve diaphragm. Replace if necessary.
4. Inspect ball in check valve.
5. Inspect and clean evaporator spray header, nozzles, etc. Replace defective units.
6. If operating data indicated the refrigerant temperature is slowly rising, test sample for the presence of solution. If excessive, follow manufacturer instructions for distilling refrigerant.
7. Restore covers/panels.

1.19.2 Solution Circuit

1. Check and service solution pump, motor controls, starters, etc. Lubricate as prescribed.
2. Check absorber and generator sight glasses. Replace if required.
3. Check purge valve diaphragm. Replace if required.
4. Inspect and clean solution spray nozzles. Replace defective units.
5. Restore covers/panels.

1.19.3 Condenser Circuit

1. Clean condenser water tubing in the condenser and absorber. Use nylon brush or other soft material.
2. Allow condenser water tubing to dry to determine if scale exists. Have scale chemically tested if necessary. Acid clean if necessary and flush.
3. Restore covers/panels.

1.19.4 Purge System

1. If purge system indicates the system is not tight, follow manufacturer recommendations for removing solution and for leak testing.
2. Clean purge tank, and purge with water following steps prescribed by the manufacturer.
3. Change oil, in purge pump, when it becomes contaminated or emulsified.
4. Inspect discharge valve and oil distributor rubbers; renew if necessary.
5. Restore covers/panels.

1.19.5 Controls

1. Check adjustment of pressure-control, restrictor, high-level cutout, and low temperature cutout.
2. Check all control interlocks for proper operation.
3. Check capacity control valve, linkage, and stem. Lubricate according to manufacturer instructions.
4. Restore covers/panels.
5. Identify and report any deficiencies.

1.20 GUIDE NUMBER HVAC-19: REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING)

Frequency: Annual

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

1.20.1 Compressor

1. Take sample of oil and have analyzed for acid and metal content. Record the results of the analysis in the eMARS equipment record. Drain, flush, and change oil in reservoirs including filters, strainers, and traps. Do not change oil in reciprocating machines unless contaminated.
2. Clean and inspect main and auxiliary oil pumps, including packing, seals, alignment, pulleys, belts, and couplings.
3. Check speed increaser. Drain oil from gearbox. Flush and inspect gears for indication of wear, pitting, and misalignment.
4. Remove head from oil coolers; inspect and clean tubes, as necessary. Change oil filters.
5. Refill oil sump.
6. Remove access caps to compressor internals, and clean where possible.
7. Clean and adjust pilot positioner for guide vanes.
8. Examine bearing for clearances and wear.
9. Clean and lubricate coupling.
10. Check hot and cold alignment between drive and driven compressor.
11. Check all relief valve rupture discs.
12. Test entire system for refrigerant leaks.
13. Calibrate and adjust all gauges and instruments. Calibrate the chilled water inlet and outlet thermometers together by placing the sensing element in a container of melting ice and water. This provides a 32 degrees Fahrenheit temperature for calibration purposes.
14. Check safety controls for setting operation; tighten electrical connections, and clean when necessary.

15. Review manufacturer literature for further details on service required on compressor.
16. Perform maintenance on purge unit in accordance with manufacturer instructions.
17. Restore covers/panels.

1.20.2 Chiller

1. Review chiller performance records. (Inlet and outlet chilled water temperature and refrigerant temperatures).
2. If efficiency is reduced, inspect for control malfunction or sensing element failure.
3. Systems requiring minimum or no raw water make-up should be drained and inspected only in emergencies. The pH should be maintained between 7 and 8. To determine that the system is tight, disconnect automatic make-up water system and feed by hand. Frequency for cleaning on such systems should be once every five years. Note: New installations must be cleaned after one year of operation.
4. Clean tubes with nylon brush or similar material.
5. Blow tubes free of trapped water if unit is to be exposed to freezing temperatures.
6. Replace heads. Install new gaskets.
7. Treat water to control corrosion.

1.20.3 Water-Cooled Condensers

1. Review condenser performance by inlet and outlet temperatures, head pressure, and temperature of refrigerant.
2. Remove condenser heads.
3. Remove mud, debris, scale, and other sediment collected during operation.
4. Clean water boxes and tube sheets.
5. Clean tubes with nylon brush or other similar material and inspect for signs of corrosion.
6. Blow trapped water from tubes after cleaning if unit is exposed to freezing temperature.
7. Replace heads. Install new gaskets.
8. Chemically test scale, if necessary.
9. If condenser is chemically cleaned, neutralize after cleaning.

1.21 GUIDE NUMBER HVAC-20: HEATER, ELECTRIC, IN-DUCT

Frequency: Annual

1. Vacuum all dust and dirt from coils.
2. Remove airflow obstruction.
3. Visually inspect for cracked or broken insulators, distorted, or burned coils, and loose connections. Replace as needed.
4. Inspect operating contacts and replace if needed.
5. Restore covers/panels.

1.22 GUIDE NUMBER HVAC-21: HEATER, ELECTRIC, BASEBOARD

Frequency: Annual

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Remove cover, vacuum coil, fins, and cover grill.
2. Replace cover.

1.23 GUIDE NUMBER HVAC-22: UNIT HEATERS (STEAM AND HOT WATER)

Frequency: Annual

1. Clean strainer ahead of valve. Check valve head and seats for wear and cutting.
2. Replace valve(s) as necessary.
3. Steam quality should be examined for foreign matter if valves are being damaged.
4. Examine pilot lines for dirt.
5. Check steam gauges.
6. Check safety or pressure relief valve for relieving and seating.
7. Check diaphragms for failure.
8. Check binding of valve stem.
9. Clean and adjust heater deflector fins and element.

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

10. Clean fan and lubricate motor.
11. Adjust weighted lever or spring-control tension.
12. Restore covers/panels.
13. Identify and report any deficiencies.

1.24 GUIDE NUMBER HVAC-23: UNIT HEATERS (GAS FIRED)

Frequency: Annual

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

NOTE

For infrared units, obtain and follow manufacturer recommendations.

1. Clean and adjust heater deflector fins and element.
2. Clean fan and lubricate motor.
3. Clean burner, chamber, thermo-couple, and control.
4. Adjust pilot or electric ignition device.
5. Inspect vent and damper operation.
6. Restore covers/panels.
7. Remove lockout from unit.
8. Operate unit and adjust burner.
9. Check operation of safety pilot, gas shutoff valve, and other burner safety devices.
10. Identify and report any deficiencies.

1.25 GUIDE NUMBER HVAC-24: FIRE DAMPERS (IN-DUCT)

Frequency: Annual

CAUTION

Never replace fusible link with wire. On first inspection, make sure that the damper is not installed backwards. In all cases, the air movement should tend to close damper.

1. Determine that the access door is reasonably airtight and latches properly.
2. If damper is closed, check for ruptured fusible links, broken attachment, or hinge damage, corrosion, etc.
3. Remove fusible link and check for proper rating.
4. Determine that damper is self-closing and properly latches. Adjust if necessary.
5. Lubricate friction points, and exercise damper to ensure complete freedom of movement.
6. Each year, install new fusible links of proper rating and tensile strength in areas of vibration.
7. Reinstall fusible link (locations where vibration is not a problem).
8. Close access door and check for wind noise.

1.26 GUIDE NUMBER HVAC-25: SPLIT SYSTEM EVAPORATOR UNITS

Frequency: Annual

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Remove panels. Clean entire unit.
2. Clean drip pans and drains. Check for corrosion.
3. Replace worn belts and adjust proper tension.
4. Lubricate motor(s) and fan(s) bearings.
5. Check motor alignment and verify hardware is tight.
6. Change filters with USPS approved products.
7. Check filter switch (if equipped)
8. Operate unit and check for proper cooling.
9. Check thermostat.
10. Check fan and motor. Clean fan blades, motor, and lubricate bearings.
11. Run machine and check operation, water supply and control valves, suction and discharge pressures, need for refrigerant, recheck for leaks, functioning of controls, temperature of discharge, air, etc.
12. Check glycol pump for leaks and operation.
13. Check reheat (if equipped)
14. Check unit electrical connections.
15. Restore panels and clean up area and machine.
16. Identify and report any deficiencies.

1.27 GUIDE NUMBER HVAC-26: SPLIT SYSTEM EVAPORATOR UNITS

Frequency: Monthly

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Remove panels if necessary to access filters.
2. Change filters with USPS approved products.
3. Check fan blades for free and easy movement.
4. Check for oil leaks.
5. Restore covers/panels.
6. Operate unit and check for proper cooling.
7. Identify and report any deficiencies.

2.0 GUIDE SET ELEC

2.1 GUIDE NUMBER ELEC-1: MOTORS

Frequency: Annual

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

NOTE

This guide is for squirrel-cage, wound-rotor, and synchronous motors in excess of 5-horsepower. The maintenance specified by this guide is not intended to require disassembly of the motor.

NOTE

Obtain and review manufacturer instructions.

1. Clean motor with a clean rag or vacuum.
2. Perform lubrication according to manufacturer instructions.
3. Inspect for moisture and protection from water.
4. Check motor mountings, supports, and couplings for tightness or defects.
5. Identify and report any deficiencies.

2.2 GUIDE NUMBER ELEC-2: BACK-UP GENERATOR- GAS OR NATURAL GAS ENGINES

Frequency: Annual

WARNING

This task applies to fixed generators only. Review manufacturer instructions. If local staff does not have appropriate skills for steps below, this maintenance task should be contracted out.

Have approved type fire extinguishers readily available. Do not allow open flames or smoking in area. Use safety-type fuel cans only. Failure to comply may result in personal injury or death, and/or damage to equipment/building.

1. Set distributor point dwell. Replace points, capacitor, rotor, and spark plugs after 100 hours of operation.
2. Set timing and distributor advance. Timing should be set at both idle and operating speed of generator.
3. Adjust carburetor and governor for proper operating speed.
4. Check fuel supply. Replace fuel within the manufacturer's recommendations.
5. Change engine oil and filter and perform other lubrication of engine and generator.
6. Inspect cooling system for leaks, air obstructions, V belt tension, and proper antifreeze solution. Make needed adjustments.
7. Inspect generator winding and clean if needed.
8. Clean commutator and collector rings; check brush wear and tension in accordance with manufacturer instructions.
9. Inspect generator heaters.
10. Restore covers/panels.
11. Identify and report any deficiencies.

2.3 GUIDE NUMBER ELEC-3: EMERGENCY GENERATORS - DIESEL POWER

Frequency: Annual

WARNING

This task applies to fixed generators only. Review manufacturer instructions. If local staff does not have appropriate skills for steps below, this maintenance task should be contracted out.

Have approved type fire extinguishers readily available. Do not allow open flames or smoking in area. Use safety-type fuel cans only. Failure to comply may result in personal injury or death, and/or damage to equipment/building.

1. Change fuel filters.
2. Inspect and adjust rack on unit injector or fuel distributor pump according to manufacturer instructions.
3. Check governor. Adjust for correct speed.
4. Determine fuel level, drain water from tank, and inspect for contamination. Prior arrangements should be made for local procurement of fuel in emergencies.
5. Change engine oil and filter and perform other lubrication on engine and generator.
6. Inspect cooling system for leaks, air obstructions, V belt tension, and proper antifreeze solution. Make needed adjustments.
7. Inspect generator winding, and clean if needed.
8. Clean commutator and collector rings. Check brush wear and tension in accordance with manufacturer instructions.
9. Inspect generator heaters.
10. Restore covers/panels.
11. Identify and report any deficiencies.

2.4 GUIDE NUMBER ELEC-4: NO LONGER USED

2.5 GUIDE NUMBER ELEC-5: ELECTRICAL PANEL INFRARED SCANS

Frequency: Annual

Application: This guide provides for quick cursory scans of facility electrical panels operating up to 480 volts.

WARNING

To minimize arc-flash risk, do not remove dead front cover. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Open circuit breaker access door.
2. A qualified employee should use a thermographic camera to scan and record exterior image of circuit breakers and breaker box.
3. Close circuit breaker access door.
4. Record any observed anomalies.
5. Generate work orders as needed.

3.0 GUIDE SET MISC

3.1 GUIDE NUMBER MISC-1: AIR COMPRESSORS

Frequency: Annual

NOTE

Obtain and review manufacturer instructions.

1. Test the pressure gauge(s) and cutout and cut-in pressure. Use test gauge to test accuracy of gauge on machine. Gauge should be within 10%.
2. Check safety valve.
3. Tank to be inspected and tested by qualified inspector***.
4. On two-stage compressor(s), check intermediate pressure.
5. Listen for knocks and inspect for mechanical failures.
6. Test compression; correct or repair, as necessary.
7. On water-cooled compressor(s) check for corrosion.
8. Clean moisture traps in system. Check operation of timed-moisture-release system, if so equipped.
9. Change oil in crankcase.
10. Check controls, belts, pulleys, alignment, etc.
11. Check air-cooled heat exchanger.
12. Check motor, bearings, starting switches, controller, pressure switches, etc.
13. Clean equipment.
14. Comply with lubrication schedule.
15. Restore covers/panels.
16. Identify and report any deficiencies.

*** All inspectors must hold a current certificate of competency issued by the National Board of Boiler and Pressure Vessel Inspectors (NBBI).

3.2 GUIDE NUMBER MISC-2: LAWNMOWERS AND EDGERS

Frequency: Semiannual

Application: Gasoline-powered, hand-operated, rotary mowers, and edgers.

WARNING

The mower/edger blade is very sharp. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times. Failure to comply may result in severe injury.

NOTE

Obtain and review manufacturer instructions.

NOTE

Routine daily lubrication should be performed by operator.

1. Change engine oil. Oil should be changed, and gasoline drained at end of season prior to storing the unit for winter.
2. Service air and fuel filters.
3. Sharpen or replace cutting blade.
4. Clean and gap or replace spark plug.
5. Inspect unit, clean debris from cooling air passages, and make other needed adjustments.
6. Restore covers/panels.

3.3 GUIDE NUMBER MISC-3: SWEEPERS (GASOLINE)

Frequency: 2 – 6 times annually

Application: Gasoline or gas-powered riding type sweepers used in driveways, parking lots, sidewalks, etc.

NOTE

Obtain and review manufacturer's maintenance recommendations. Daily lubrication should be performed by operator.

1. Change oil, and change or clean filter, as appropriate, every fifty operating hours.
2. Service air and fuel filters.
3. Inspect engine, clean cooling air passages.
4. Clean and gap or change spark plug.
5. Check oil level in gearboxes.
6. Adjust tension and/or replace V-belts.
7. Adjust brakes, brushes, and operating mechanisms as recommended by the manufacturer instructions.
8. Inspect entire unit.
9. Restore covers/panels.
10. Identify and report any deficiencies.

3.4 GUIDE NUMBER MISC-4.1: BALERS

Frequency: Annual (To be scheduled simultaneously with a quarter)

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Dust or wipe clean all parts of machine.
2. Examine structural features.
3. Inspect upper and lower limit switch, etc. Clean and adjust as required.
4. Check that all safety decals are in place and legible.
5. Replace hydraulic fluid.
6. Adjust operating mechanism.
7. Restore covers/panels.
8. Identify and report any deficiencies.

3.5 GUIDE NUMBER MISC-4.2: BALERS

Frequency: Quarterly

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

1. Dust or wipe clean all parts of machine.
2. Check all hydraulic hoses for rubbing, chafing, deterioration, damage, or leaks.
3. Check press head/wear guides.
4. Check all hydraulic fittings for loosening and leaks.
5. Lubricate the grease Zerk fittings including those located at the turnbuckle (as required).
6. Check oil level with ram fully retracted.
7. Restore covers/panels.
8. Identify and report any deficiencies.

3.6 GUIDE NUMBER MISC-5.1: DOCK DOORS, POWER OPERATED

Frequency: Semiannual

Application: Warehouse, large overhead, and dock doors.

NOTE

Obtain and review manufacturer instructions.

1. Inspect general arrangement of door and mechanism, mountings, guides, wind locks, anchor bolts, counterbalances, weather stripping, etc. Clean, tighten, and adjust as required.
2. Operate with power from stop to stop and at intermediate positions. Observe performance of various components, such as brake, limit switches, motor, gearbox, etc. Clean and adjust as needed.
3. Check operations of electric eye, treadle, or other operating devices.
4. Check manual operation. Note brake release, motor disengagement, functioning or hand pulls, chains, sprockets, clutch, etc.
5. Examine motor, starter, push button, etc. Vacuum if required.
6. Inspect gearbox. Change or add oil as required.
7. Perform required lubrication.
8. Clean unit and mechanism thoroughly.
9. Identify and report any deficiencies.

3.7 GUIDE NUMBER MISC-5.2: DOCK DOORS, MANUALLY OPERATED

Frequency: Semiannual

Application: Warehouse, large overhead, and dock doors.

NOTE

Obtain and review manufacturer instructions.

1. Inspect general arrangement of door and mechanism, mountings, guides, wind locks, anchor bolts, counterbalances, weather stripping, etc. Clean, tighten, and adjust as required.
2. Check manual operation. Functioning of hand pulls, chains/cables, spring counterbalance sprockets, roller guides, etc.
3. Perform required lubrication.
4. Clean unit and mechanism thoroughly.
5. Identify and report any deficiencies.

3.8 GUIDE NUMBER MISC-6: DOOR, PEDESTRIAN DOORS, POWER OPERATED MAIN AND DOCK ENTRANCES

Frequency: Quarterly

3.8.1 Hinged Doors

1. Check alignment of door and mechanism. Inspect mountings, hinges, mats, trim, weather stripping, etc. Replace, tighten, and adjust as required.
2. Operate with power, observing operating of actuating and safety mats, door speed, and checking functions.
3. Check manual operation.
4. Inspect power unit, add oil, and tighten hydraulic lines as required.
5. Check operation of controls.
6. Inspect door-operating unit, tighten lines, and adjust as required.
7. Clean and lubricate door pivot points.
8. Identify and report any deficiencies.

3.8.2 Revolving Doors

1. Check alignment of door and mechanism. Inspect mountings, mats, trim, weather stripping, etc. Replace, tighten, and adjust as required.
2. Operate with power, observing operation of actuating and safety mats, door speed, and checking functions.
3. Remove obstructions and clean out track.
4. Fold door. Note action and freedom of motion.
5. Inspect locking device; adjust as needed.
6. Identify and report any deficiencies.

3.9 GUIDE NUMBER MISC-7: DOOR, PEDESTRIAN DOORS, NON-POWERED MAIN AND DOCK ENTRANCE

Frequency: Semiannual

Application: Entrance doors used in main entries to buildings.

3.9.1 Hinged Doors

1. Inspect the frame and supporting structure.
2. Inspect hardware, hinges, latch keeper, lock, etc. Apply appropriate lubricant where needed; wipe off excess.
3. Inspect glass, seals, or retaining pieces. Correct any deficiencies.
4. Operate door to observe functioning of check. Adjust and service as needed.
5. Identify and report any deficiencies.

3.9.2 Revolving Doors

1. Remove obstructions and clean out track.
2. Fold door. Note action and freedom of motion.
3. Inspect locking device; adjust as needed.
4. Clean pivot points and apply appropriate lubricant.
5. Inspect felt or rubber seals.
6. Identify and report any deficiencies.

3.10 GUIDE NUMBER MISC-8: DOCK LEVELERS, POWERED

Frequency: Quarterly

WARNING

According to the current Maintenance Management Order bulletin for Dock Levelers, Safety Lockout, and Maintenance Procedures, the dock leveler must be securely held in its raised position by two separate forms of approved bracing or support (not the leveler's own springs) that cannot be moved or forced out of position. Failure to comply with this bulletin while servicing, repairing, or maintaining dock levelers may result in serious injury or death.

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment and set up barricades as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Obtain and review manufacturer instructions.

1. Inspect structural features, framework, support members, anchor bolts, pit, platform, etc. Examine condition of bumper.
2. Remove dirt and trash from pit and verify pit drain is open.
3. Inspect motor, controls, starter, pushbuttons, solenoids, etc. Clean, adjust, and lubricate, as necessary.

3.10.1 Hydraulic Units

WARNING

Eye protection (goggles or face shield) must be worn when bleeding hydraulic lines. Failure to comply may result in personal injury.

1. Inspect coupling, pump, control valves, piping, relief valve, and reservoir, fill pipe, cap, vents, etc. Clean adjust and lubricate as needed.

2. Inspect cylinder, ram, packing glands, etc. Add or renew packing as required.
3. Change oil as required.

3.10.2 Electro-Mechanical and Air Bag Units

1. Clean and inspect air bag, coupling, reduction gear, sprockets, chain, gear trains, screw, and lever, and/or other mechanical features. Look for misalignment, loose bolts, evidence of binding or wear, excessive clearance, etc. Tighten, as necessary.
2. Examine lubrication devices. Service if required.
3. Test operation of ramp in all directions using a load if possible. Ensure ramp holds and does not creep when load is applied or removed. Adjust if necessary.
4. Check manual operation, power disengagement, etc.
5. Lubricate as required.
6. Identify and report any deficiencies.

3.11 GUIDE NUMBER MISC-9: FIRE DOORS - STAIRWELLS AND EXITWAYS (SWINGING)

Frequency: Quarterly*

1. Remove all hold-open devices, except approved smoke or magnetic operated releases.
2. Check hang and swing for close fit. Doors must latch on normal closing cycle and have a neat fit.
3. Remove any obstructions that retard full swing or movement of door.
4. Test operation of panic hardware.
5. Inspect door coordinates on pairs.
6. Check operation of any special devices such as smoke detectors or magnetic door releases.
7. Inspect door for damage.
8. Identify and report any deficiencies.

NOTE

Fire Door Definition: A fire door is a door with a fire-resistance rating (sometimes referred to as a fire protection rating for closures) used as part of a passive fire protection system to reduce the spread of fire and smoke between separate compartments of a structure and to enable safe egress from a building or structure or ship.

A fire door is a door used to reduce the spread of fire and smoke between separate compartments of a structure and to enable safe egress from a building (examples are entrances to stairwells and exit ways, and in the travel path of a corridor) they will have panic hardware.

An access door is installed in openings of fire rated walls/ceilings to provide access to the spaces they protect (examples are doors to offices, pipe shafts, ceiling crawl spaces, etc.).

*Access doors are not required to perform this checklist.

3.12 GUIDE NUMBER MISC-10: FIRE DOORS - SLIDING TYPE

Frequency: Quarterly

1. Clean track.
2. Lubricate all pulleys.
3. Inspect for damage, worn and binding cable or chain, and proper threading through pulleys.
4. Replace fusible links and other heat-actuated devices that have been painted. Check operation of heat-actuated devices, other than fusible links.
5. Replace damaged or stretched cables or chains. Adjust to proper length.
6. Check counterweight for proper suspension.
7. Operate door by disconnecting or lifting counterweight, or by other appropriate means.
8. Check for proper fit in binders and tight fit of wedge against stay roll. Inspect stay roll for wear.
9. Check for breaks in face covering of doors.
10. Examine metal clad doors for deterioration.
11. Inspect all hardware for damage or wear.
12. Identify and report any deficiencies.

3.13 GUIDE NUMBER MISC-11: STATIONARY PACKERS

Frequency: Weekly

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Do not enter the compactor charge box, including the space above the charge box behind the dumper cradle, or receiver box, or enter the charge box through the enclosure or by climbing over or under the dumper unit. This is a permit required confined space. Failure to comply may result in death.

NOTE

Obtain and review manufacturer instructions.

1. Oil shaft bearing under packer with appropriate lubricant.
2. Lubricate container roller fittings in axle.
3. Oil all moving joints on container door latch with appropriate lubricant.
4. Oil all container door hinges with appropriate lubricant.
5. Oil tie rod (lock hook) with appropriate lubricant. Inspect condition of cotter pins.
6. Wipe clean and apply heavy grease along top slide.
7. Wipe clean and apply heavy grease throughout length of slide channel.
8. Inspect cotter pins, closed end of packer cylinder. Look for signs of worn or broken cotter pins.
9. Clear all dirt and debris from under and around compaction unit carriage.
10. Check open-end packer cylinder mounting pin.
11. Close access panels.
12. Identify and report any deficiencies.

3.14 GUIDE NUMBER MISC-12: STATIONARY PACKERS

Frequency: Monthly

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Do not enter the compactor enclosure, compactor charge box, the space above the charge box behind the dumper cradle, or receiver box. Do not climb over or under the dumper unit. This is a permit required confined space.

NOTE

Obtain and review manufacturer instructions.

1. Remove breather cap on oil tank. Clean breather holes and replace cap. Do not press on so tightly as to block air passage.
2. Inspect mounting hardware on side and bottom slides. Check for lost or broken cotter pins and loose belts.
3. Check and tighten mounting hardware on scraper bar.
4. Restore covers/panels.
5. Identify and report any deficiencies.

3.15 GUIDE NUMBER MISC-13: STATIONARY PACKERS

Frequency: Quarterly

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Do not enter the compactor charge box, including the space above the charge box behind the dumper cradle, or receiver box, through the enclosure or by climbing over or under the dumper unit. This is a permit required confined space. Failure to comply may cause injury or death.

WARNING

Eye protection (goggles or face shield) must be worn when bleeding hydraulic lines. Failure to comply may result in personal injury.

NOTE

Obtain and review manufacturer instructions.

1. Check hydraulic oil for proper level and presence of contamination. Add or change oil as required.
2. Remove, clean, or replace oil filter.
3. Lubricate coupling following manufacturer specifications.
4. Restore covers/panels.
5. Identify and report any deficiencies.

3.16 GUIDE NUMBER MISC-14.1: PERSONNEL LIFT, POWERED (MEWP)

Mobile Elevating Work Platforms (MEWP), Vert-A-Lift, JLG, or other powered personnel lift devices used in building maintenance.

Frequency: Annual (This guide should be scheduled simultaneously with a quarterly.)

NOTE

This guide must be performed by a person(s) qualified on the specific type of MEWP.

WARNING

To prevent tip over, never maneuver the lift while it is elevated or with a person, tools, and materials on platform. Failure to comply may result in injury or death.

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is a corrosive solution. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. Anything touched by battery fluid must be immediately flushed with water.

NOTE

Daily battery charging, cleaning, and minor maintenance is performed by the personnel using the lift.

1. Perform manufacturer’s required annual maintenance.
2. Lubricate in accordance with manufacturer instructions.
3. Restore covers/panels, if necessary.
4. Identify and report any deficiencies.

3.17 GUIDE NUMBER MISC-14.2: PERSONNEL LIFTS, POWERED (MEWP)

Mobile Elevating Work Platforms (MEWP), Vert-A-Lift, JLG, or other powered personnel lift devices used in building maintenance.

Frequency: Quarterly

NOTE

This guide must be performed by a person(s) qualified on the specific type of MEWP.

WARNING

To prevent tip over, never maneuver the lift while it is elevated or with a person, tools, and materials on platform. Failure to comply may result in injury or death.

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is a corrosive solution. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. Anything touched by battery fluid must be immediately flushed with water.

NOTE

Daily battery charging, cleaning, and minor maintenance is performed by the personnel using the lift.

1. Visually check for needed repairs, leaks, etc.
2. Verify instructions, warnings and control markings are in place and are legible.
3. Verify that all equipment hazard decals are in place (crushing, falling, tip over, electrocution).
4. Check audible or visual alarms, if applicable, for proper operation; and any communication system between platform and ground is working properly.
5. Check all functions and their controls, including controls for emergency operations, for speed(s), proper operation, and limits of motion.
6. Check ground-level controls, including the provisions for overriding of additional controls.
7. Check lights, if applicable, for proper operation and illumination
8. Verify that operator's manual is legible, complete, and stored in storage container on equipment.
9. Check batteries for adequate fluid level if applicable and connections are secure and free from damage and corrosion.
10. Check electrical systems for signs of damage, deterioration, dirt, or moisture accumulation.
11. Visually inspect structural components and other critical parts such as fasteners, pins, shafts, turntable attachment devices and locking devices. Tighten critical structural bolts.
12. Check hydraulic or pneumatic systems, for proper fluid or pressure levels. Observable for proper operation, damage, leaks, or external wear.
13. Check all chain and cable mechanisms for adjustment and worn or damaged parts.
14. Check tires for damage and proper inflation, as applicable. Ensure wheel fasteners are in place and properly tightened.
15. Lubricate all moving parts in accordance with manufacturer instructions.
16. Inspect filter element(s), including checking levels of hydraulic oil, engine oil, and coolant.
17. Check drive systems, brakes, steering, and speed controls for proper operation.
18. Restore covers/panels/guards and ensure they are in good working order.
19. Identify and report any deficiencies.

3.18 GUIDE NUMBER MISC-15: SNOW BLOWER, WALKING TYPE

Frequency: Annually or every 50 run hours

Application: Gasoline-powered, walk-behind type.

NOTE

Routine daily lubrication should be accomplished by the operator.

1. Change engine oil. Oil should be changed, and gasoline drained at end of season prior to storage.
2. Service fuel filters.
3. Check for rust and apply paint or preservative as appropriate.
4. Clean and gap or replace spark plug.
5. Inspect for proper adjustment and operation.
6. Identify and report any deficiencies.

3.19 GUIDE NUMBER MISC-16: DOCK LEVELERS, MANUAL

Frequency: Quarterly

WARNING

According to the current Maintenance Management Order bulletin for Dock Levelers, Safety Lockout, and Maintenance Procedures, the dock leveler must be securely held in its raised position by two separate forms of approved bracing or support (neither of which are the leveler's own springs) that cannot be moved or forced out of position. Failure to comply with the bulletin while servicing, repairing, or maintaining dock levelers may result in serious injury or death.

WARNING

Energized equipment may expose personnel to potential hazards. Before performing the following procedure, power down and lockout the equipment and set up barricades as prescribed by the local lockout/restore procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may cause injury or death.

NOTE

Obtain and review manufacturer instructions.

1. Clean trash and dirt from pit.
2. Check clevis pins for wear and presence of clevis pin retainers.
3. Check springs and cable for wear.
4. Lubricate moving parts as required.
5. Check for proper operation.
6. Identify and report any deficiencies.

3.20 GUIDE NUMBER MISC-17: SWEEPERS, ELECTRIC (BATTERY)

Frequency: 4 - 12 times per year

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is corrosive. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. Anything touched by battery fluid must be immediately flushed with water.

WARNING

Eye protection (goggles or face shield) must be worn when bleeding hydraulic lines. Failure to comply may result in personal injury.

1. Check battery for correct water level. Add water if required.
2. Check battery terminals and cable clamps for corrosion and looseness.
3. Check hydraulic pump, hoses, lines, fittings, etc. for noise, leakage, and damage.
4. Check condition of tank and dust filter. Clean filter in solvent, as necessary.
5. Check belts and chains for proper tension, wear, alignment, and general condition.
6. Check operational controls for proper operation.
7. Check dust skirts for proper adjustment.
8. Check hydraulic fluid and add lubricant #HY-2 as required. Replace filter, as necessary.
9. Restore cover, if necessary
10. Follow manufacturer's instructions regarding preventive maintenance.

3.21 GUIDE NUMBER MISC-18: FLOOR SCRUBBER, AUTOMATIC

(Battery-powered scrubber vacuum)

Frequency: 4 - 12 times per year

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is a corrosive solution. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. If the fluid touches anything, immediately flush the contacted area with water.

NOTE

The daily charging of the batteries shall be performed by the operator.

1. Check condition and adjustment of squeegee brushes, etc. and replace as needed.
2. Check electrical terminals. Clean and renew as needed.
3. Check the specific gravity of battery electrolyte and replace to determine that batteries are good and being properly charged.
4. Visually check machine for need of repairs, leaks, etc.
5. Restore cover/panel, if necessary.
6. Lubricate in accordance with manufacturer's instructions.

3.22 GUIDE NUMBER MISC-19: BATTERY, FLOODED (LEAD ACID)

Frequency: Semiannual

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is a corrosive solution. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. Anything touched by battery fluid must be immediately flushed with water.

CAUTION

Clean batteries within the controlled confines of a battery charging room with proper ventilation and drainage in an acid neutralization pit at least once every six months.

NOTE

Do not remove vent caps during battery charging or washing.

1. Don face shield, goggles, rubber gloves, apron, and rubber boots.
2. Disconnect battery cables from motor by grasping the battery power connector, or connector handle, and separating from motor power connector. Do not pull on battery cables.
3. Remove battery from vehicle.
4. Make sure all vent caps are tight and inspected. If caps show any signs of physical damage, or if in doubt, replace with a new cap (eBUY Plus part number UP1093 VENT CAP BAYONNET 312460).
5. Wash the top of the battery with a solution of 1 pound of baking soda to 1 gallon of water. Utilize a battery washer when available.
6. Rinse with clear water and allow the battery to dry.
7. Replace battery in vehicle.

3.23 GUIDE NUMBER MISC-20: TRAILER RESTRAINTS

Frequency: Quarterly

Perform periodic inspection of components for damage or excessive wear.

1. Check bumper for damage or deformation. Ensure mounting hardware is tight.
2. Check frame, welds, and motor mounts for cracks. Ensure mounting hardware is tight. Ensure concrete anchor bolts are tight and intact.
3. Check electrical boxes and panels for water penetration.
4. Restore covers/panels.
5. Ensure chain tension (if applicable) and brake torque (if applicable) is within manufacture’s specifications.
6. Lubricate rollers and drive chains as needed.
7. Generate work orders for any issues needing attention.

3.24 GUIDE NUMBER MISC-21: TRAILER RESTRAINTS

Frequency: Annual

1. Verify hook arm adjustment/alignment is within manufacturer’s specifications.
2. Generate work orders for any issues needing attention.

3.25 GUIDE NUMBER MISC-22: ABOVEGROUND STORAGE TANKS (AST)

Frequency: Monthly

The monthly inspection requirement applies to ASTs of any size that contain hazardous materials (e.g., new and used oil, gasoline, diesel, new and used antifreeze, windshield washer fluid, diesel exhaust fluid (DEF), and heating oil).

3.25.1 Tanks

1. Ensure the tank appears in good structural condition with no signs of deterioration or damage (e.g., bulging, or dents).
2. Ensure the tank surface coating/paint is intact (i.e., not peeling) and provides consistent coverage and there is no evidence of corrosion/rust.
3. Check tank to ensure it is free of leaks with no visible signs of leakage on or around the tank and/or in secondary containment (if present) including staining, rust, drip marks, puddles, seepage, and/or localized dead vegetation.
4. Verify the AST bears a label indicating contents stored and AST capacity or volume.
5. Examine the AST supports (i.e., legs) and foundation to ensure they are in good condition with no deterioration, cracks, buckling, or rust.
6. Examine vent ports (if present) to ensure they are unblocked (i.e., unobstructed). If vent port can be lifted, check for internal and external obstruction.
7. Test the overfill alarm if present. Most audible alarms will have a TEST button to verify functionality.
8. If AST is grounded, check to ensure the ground wire is secured.

3.25.2 Piping

1. Examine the piping to ensure there are no signs of deterioration (e.g., corrosion or rust) or damage (e.g., bulging, cracks, or dents).
2. Examine the piping for leaks. Free of leaks means there are no visible signs of leaks on or around the piping including staining, rust, drip marks, puddles, seepage, and/or localized dead vegetation.
3. Examine the piping supports to ensure there is no deterioration, cracks, buckling, or rust.

3.25.3 Spill Response and Security

1. Verify spill kits are available in the vicinity and properly stocked.
2. Verify there is a drain cover/blocker available if a drain is in the vicinity.
3. Verify the fill port is clearly labeled and locked.

NOTE

Contact the Tank Questions response center at TankUSPSgov@usps.gov with any questions or issues.

4. In the event of a spill, email the Tank Questions response center at TankUSPSgov@usps.gov.
5. Advise the designated USPS environmental contact that response center has been notified.
6. Generate work orders for any issues needing attention.

3.26 GUIDE NUMBER MISC-23: ABOVEGROUND STORAGE TANKS

Frequency: Annual (For ASTs with monitoring devices only)

1. Inspect tank monitoring equipment and/or liquid level sensing devices, to ensure proper function.
2. Follow manufacturer’s instructions for the safe completion of the test.
3. Generate work orders for any issues needing attention.

3.27 GUIDE NUMBER MISC-24: BALL DECKING/BALL TRANSFER

Frequency: Annual

CAUTION

Never use lubricants on the Ball Transfer components. Cleaning the Ball Transfers can be accomplished with a degreaser, similar to Portion Pac 232 Green.

NOTE

Screwdriver or prybar can be used to remove ball transfer components.

1. Check each roller for free movement.
2. Clean with degreaser, any rollers which do not move freely.
3. Replace any roller which does not move freely after cleaning.
4. Periodically check the seam between the angle protection and side guide/guard to verify the seal is in good condition. The seam should be tight, not loose, and a piece of paper/mail should be unable to pass through the seam.

3.28 GUIDE NUMBER MISC-25: BALL DECKING/RAM LIFT

Frequency: Annual

CAUTION

Never use lubricants on the Ball Transfer components. Cleaning the Ball Transfers can be accomplished with a degreaser, similar to Portion Pac 232 Green.

NOTE

Screwdriver or prybar can be used to remove ball transfer components.

1. Check each roller for free movement.
2. Clean with degreaser, any rollers which do not move freely.
3. Replace any roller which does not move freely after cleaning.
4. Check all hydraulic hoses are within safe operation locations.
5. Check lift controls for proper operations.
6. Remove all debris from under the lift.

3.29 GUIDE NUMBER MISC-26: POWERED INDUSTRIAL VEHICLE (PIV) (BATTERY-POWERED PIV)

Frequency: Monthly

WARNING

Eye protection (goggles and face shield), rubber gloves, apron, and rubber boots must be worn while servicing batteries. Failure to comply may result in injury or death.

WARNING

Battery acid is corrosive. Do not allow eyes, skin, clothing, or painted surfaces to come in direct contact with the battery fluid. If the fluid touches anything, immediately flush the contacted area with water.

NOTE

This checklist applies to all MOPE unless identified with a separate Guide within this document. This checklist applies to the piece of equipment as applicable and any task not applicable would be removed. If the vehicle has an item that is not applicable, that check would not be included in the checklist.

1. Check to ensure operators manual is present and in good condition.
2. Check all safety labels, ensuring they are present and legible.
3. Check all safety devices specific to the equipment being worked on, Lights, horns, brakes, and seat belts, etc.
4. Check for visible damage.
   a. Cracks, or excessive wear on the frame, forks, hoses, and mast, etc.
   b. Ensure no loose parts, including bolts, nuts, and pins.
5. Check brake and hydraulic systems fluid levels
6. Check for fluid leaks
7. Check battery and electrical terminals for corrosion.
8. Check for proper operation: Brakes, tires, accelerators, hydraulics systems, forks, masts, and steering, etc.
9. Check for proper lubrication in accordance with manufacturer's instructions.
10. Restore covers and panels if necessary.

11. Check and record PIV hours; Hours are to be tracked and recorded in the current CMMS database system.

4.0 GUIDE SET PLUM

4.1 GUIDE NUMBER PLUM-1: FIRE EXTINGUISHER, PORTABLE, STORED-PRESSURE

Frequency: Annual

NOTE

This maintenance is a thorough examination for deficiencies requiring replacement. Fire extinguishers needing repair are to be replaced. Extinguishers removed from service must be immediately replaced with one of suitable extinguishing capabilities.

The monthly inspection must be performed at the same time as this annual maintenance is performed. Unless otherwise indicated, this guide is applicable to stored-pressure type extinguishers, with or without pressure gauge, regardless of the extinguishing agent used, e.g., multipurpose dry chemical, etc. Review MS-56 for additional information on fire extinguishing equipment.

1. Read Form 4705, Inspection tag and note if hydrostatic testing is required before the next annual maintenance. Report any extinguishers due for testing to maintenance supervisor or control office for replacement before due date. See MS-56 for test frequency.
2. Inspect the shell for corrosion, mechanical damage (denting or abrasion), paint condition, presence of repairs (welding, soldering, brazing, etc.), and broken hanger attachment concealing surface damage (nicks or corrosion).
3. Inspect the nameplate for illegible wording, corrosion, and loose plate. Replace labels with the new, pictographic type. See MS-56.
4. Inspect the nozzle for damage, deformation, cracks, blocked openings, damaged threads (corroded, cross-threaded, or worn), and aging (brittleness).
5. Inspect hose assembly for damaged hose (cut, cracked, worn, or plugged), damaged couplings, or swivel joint (cracked or corroded), damaged threads (corroded, cross-threaded, or worn), and inner tube cut at couplings.
6. Ensure the valve-locking device is in place and inspect for damage (bent, corroded, or binding).
7. If extinguisher has a pressure gauge, tap gauge lightly to determine if pointer is stuck or jammed. Inspect for missing pointer; missing, deformed, or broken crystal; illegible or faded dial; corrosion, dented case, and damaged crystal retainer. Read gauge. If not in operating range, remove and replace extinguisher.
8. If extinguisher is a non-gauge type, inspect for immovable or corroded pressure-indicating stem.

9. Ensure seal or tamper indicator is not missing or broken. Replace extinguisher if seal or tamper indicator is missing or broken.
10. Complete applicable portions of Form 4705, Fire Inspection Tag.
11. Check for proper alarm and signal operation.
12. Tighten loose parts, as necessary.
13. Identify and report any deficiencies.

4.2 GUIDE NUMBER PLUM-2: SUMP PUMPS

Frequency: Annual

1. Pump out and remove pit sediment.
2. Inspect and clean strainer.
3. Flush pit and wipe pump down.
4. Repack (if required) and lubricate pumps.
5. Check bail, float, rod, and guides.
6. Inspect motor, switch, controls, etc. Clean, adjust, and lubricate as required.
7. Check pump operation. Observe operation of check valve(s).
8. Inspect piping, pipe supports, etc.
9. Clean up area.
10. Identify and report any deficiencies.

4.3 GUIDE NUMBER PLUM-3: VALVES, REGULATING

(Steam valves at pressure reduction stations)

Frequency: Annual

Application: Single or double seated; diaphragm or spring loaded, pilot operated valves.

1. Clean strainer ahead of valve.
2. Check valve head and seats for wear or cuts.
3. Replace valve(s) as necessary.
4. Examine steam quality for foreign matter if valves are damaged.
5. Examine pilot lines for dirt.
6. Check steam gauges.
7. Check diaphragms for failures.
8. Check binding valve stem.
9. Adjust weighted lever or spring control tension.
10. Identify and report any deficiencies.

4.4 GUIDE NUMBER PLUM-4: VALVES, MANUALLY OPERATED (MAIN LINE)

Frequency: Main line: Annual; other valves over 2 inches: 5 years

Application: For valves not used on Fire Protection systems. Maintenance for valves used on fire protection systems is described under the appropriate guide for the specific item of fire protection equipment.

1. Exercise valve from one limit to the other (fully open to fully closed) to test freedom of motion. Lubricate stem and moving parts with appropriate lubricant.
2. Verify valve seats and holds properly.
3. Check packing gland, adjust, and lubricate. Repack as required.
4. For valves equipped with wheel and chain for remote operation, verify freedom of motion.
5. Identify and report any deficiencies.

4.5 GUIDE NUMBER PLUM-5: VALVES, MOTOR OPERATED

Frequency: Annual

1. Clean unit and examine all parts.
2. Operate from limit to limit. Observe operation - look for binding, sluggishness, action of limits, etc.
3. Verify valve seats and holds properly.
4. Apply appropriate lubricant to moving parts of valve.
5. Lubricate motor and gearbox, as necessary.
6. Inspect contacts, brushes, motor controls, switches, etc. Clean and adjust, as necessary.
7. Identify and report any deficiencies.

4.6 GUIDE NUMBER PLUM-6: STEAM TRAPS, ALL TYPES

Frequency: Annual (All types, low or high pressure)

Special instructions for all traps:

1. Check trap operation under steam pressure.
2. Remove and replace faulty traps or trap elements.

CAUTION

Ensure all safety requirements are followed.

4.6.1 Thermostatic Traps (Bellows or Diaphragm Type)

1. Remove cap or bonnet.
2. Clean interior of trap, valve, and seat.
3. Inspect bellows or diaphragm and note by sound whether it contains liquid charge.
4. Replace bellows or diaphragms, as necessary.
5. If valve seat is cut, replace seat.

4.6.2 Float and/or Thermostatic Traps

1. Remove bonnet.
2. Inspect linkage and float operation for leakage, defective operation, or deterioration.
3. Examine, clean, and check operation of bellows as in Step 1 above.

4.6.3 Inverted Bucket Trap

1. Remove bonnet.
2. Clean interior trap.
3. Inspect valve linkage mechanism and seating of valve.
4. Examine condition of bucket.
5. Examine vent or race, inlet, and outlet for evidence of corrosion.

4.6.4 Impulse Trap

1. Remove bonnet.
2. Inspect valve disc, inlet valve, and outlet surface.
3. See that fulcrum point is free of dirt.
4. Clean body of trap.
5. Identify and report any deficiencies.

4.7 GUIDE NUMBER PLUM-7: PUMPS, CENTRIFUGAL

Frequency: Annual

1. While pump is in operation, check performance, bearing temperature, stuffing box operation, pressure gauge, and flow indicators.
2. Shut down, lock out, and drain pump housing. Suction and discharge valves should hold.
3. Remove gland.
4. Examine shaft sleeve for wear; replace, as necessary.
5. Adjust gland evenly, finger tighten.
6. On pumps with oil ring lubrication, drain oil, flush, and then fill to proper oil level with new oil.
7. Perform lubrication in accordance with manufacturer instructions.
8. Clean strainers.
9. Put pump into operation. Stop and start pump. Check undue vibration noise, pressure, and action of check valve.
10. If test is satisfactory, start pump again, and adjust to slight leakage through gland.
11. When pump reaches normal operating temperatures, check pump and drive alignment.
12. Identify and report any deficiencies.

4.8 GUIDE NUMBER PLUM-8: ROOF, INSPECTION

Frequency: Semiannual

NOTE

Sites develop local calculations for the roof inspection and justification is required.

4.8.1 Roofing System

WARNING

Verify with your supervisor that roof access is permitted before attempting to gain access to the roof.

Employees who access a walking-working surface with unprotected sides or edges that are 4 feet or more above a lower level must have one of the following to protect the employee: guardrail systems; safety net systems; or personal fall protection systems, such as personal fall arrest, travel restraint, or positioning systems.[2] Employee must contact a supervisor if this Personal Protective Equipment (PPE) is not available.

WARNING

Comply with all safety rules for working on rooftop. Check all tools and equipment for safe condition (ladders, rope safety lines, etc.). Review EL-801, Supervisor's Safety Handbook. Failure to comply may result in injury or death.

1. Clean all trash and debris from drains.
2. Check each drain for missing, broken, or corroded covers, proper drainage, tightness, gravel stop, etc.
3. Carefully inspect roof mat around each drain.

[2] OSHA 1910.28(b)(1)(i)(A-C) Unprotected sides and edges.

4.9 GUIDE NUMBER PLUM-9: HOT WATER HEATERS (CONVERTERS)

Frequency: Annual

Application: This guide applies to converters and heat exchangers that use steam to heat water for hot water heating systems.

1. With system in operation, check for steam and water leaks (interior and exterior).
2. Drain and flush tanks (storage and expansion).
3. Remove rust and scale; note rate of corrosion.
4. Remove coil or element; clean and examine condition.
5. Clean, adjust, and calibrate as required thermometers, aquastats, pressure reducing and relief valves and gauges, temperature relief, and steam regulating and control valves.
6. Check operation and condition of all traps.
7. Clean pump. Clean out dirt from motor, check controls, switches, and starters. Check condition of packing or seal and replace as required.
8. Identify and report any deficiencies.

4.10 GUIDE NUMBER PLUM-10: HOT WATER HEATERS - DOMESTIC TYPE

(Gas or Oil Fired)

Frequency: Annual

Application: This applies to domestic-type hot water heaters (residential), which can also be much larger (50-to-400-gallon tanks) and have a circulating pump.

1. Check for leaks.
2. Flush tank to remove scale and sediment.
3. Check thermostat and controls for proper setting.
4. Clean combustion chamber at fireside heat transfer surfaces.
5. Set burner for efficient operation on oil fired units. Take flue gas CO^2 reading to determine proper burner adjustment.
6. Clean and lubricate circulating pump.
7. Operate try lever on pressure-temperature relief device (valve). Water should now flow freely and stop when try lever is released. Replace valve if defective.
8. Identify and report any deficiencies.

4.11 GUIDE NUMBER PLUM-11: FIRE PUMPS, ELECTRIC MOTOR DRIVE

Frequency: Annual

WARNING

Before performing the following task, power down and lock out the equipment as prescribed by the local energy control procedures developed in accordance with the current local ECP providing lockout/restore procedures. Failure to comply may result in personal injury or death, and/or damage to equipment.

CAUTION

Give special attention to notifying all required officials that the fire pump will be out of service. Notice shall include estimated period of downtime and other special problems that may develop. If these work procedures can cause activation of an alarm and/or supervisory signal, the control center or fire department must be notified prior to starting work.

NOTE

Review manufacturer instructions.

1. Clean motor with clean rag or vacuum.
2. Visually inspect windings for cleanliness. Check for coating of oil or grease without disassembling motor.
3. Perform lubrication according to manufacturer's recommendations.
4. Inspect for moisture and protection from water.
5. Check motor mountings, supports, and couplings for tightness or other defects.
6. Remove lockout and operate pump long enough to observe general operation. Note pressures, sound, vibration, odor, or temperatures.
7. If pump has automatic starting equipment, start it by activating the mechanism so the automatic devices are tested at the same time as the pump.
8. Secure pump and leave in ready-to-run condition.
9. Notify proper officials that unit is back in service.
10. Clean up area and return tools to proper storage.
11. Identify and report any deficiencies.

4.12 GUIDE NUMBER PLUM-12: FIRE PUMPS, INTERNAL COMBUSTION ENGINE DRIVE

Frequency: Annual

WARNING

Have approved fire extinguisher available. Do not allow flames or smoking in area. Use safety fuel cans only. Failure to comply may cause injury, death or building damage.

CAUTION

Give special attention to notifying all required officials that the fire pump will be out of service. Notice shall include estimated period of downtime and other special problems that may develop. If these work procedures can cause activation of an alarm and/or supervisory signal, the control center and the fire department must be notified prior to starting work.

4.12.1 Gasoline or Natural Gas Engines

1. Check distributor point dwell. Replace points, capacitor, rotor, and spark plugs after 100 hours of operation.
2. Set timing and distributor advance. Check at idle and operating speed.
3. Adjust governor and carburetor for proper operation and speeds.
4. Check fuel supply. Replace fuel within the manufacturer’s recommendations.
5. Change engine oil and filter and perform other lubrication of engine and pump.
6. Inspect cooling system for cleanliness, leaks, and anti-freeze solution. Check V-belt for proper tension. Adjust, as necessary.
7. Secure pump and leave in ready-to-run condition.
8. Notify proper officials that the unit is back in service.

4.12.2 Diesel Engines

1. Change fuel filters.
2. Inspect and adjust racks, injectors, or unit injectors according to manufacturer's instructions.
3. Check governor for proper speed; adjust, as necessary.
4. Check fuel level, presence of water in fuel tank, or other contamination.
5. Change engine oil and filter. Perform other lubrication on engine and pump.

6. Inspect cooling system for leaks, cleanliness, and antifreeze solution. Check V-belt for proper tension. Adjust, as necessary.
7. Secure pump and leave in ready-to-run condition.
8. Notify proper officials that the unit is back in service.

4.12.3 Diesel and Gas Engines

1. Check mountings, supports, and couplings for tightness or defects.
2. Remove lockout and operate pump long enough to observe general operation. Note pressure, sound, vibration, odor, and temperatures.
3. If pump has automatic starting equipment, start it by activating the mechanism so the automatic devices are tested at the same time as the pump.
4. Secure pump and leave in ready-to-run condition.
5. Notify proper officials that the unit is back in service.
6. Clean up area and return tools to proper storage.
7. Identify and report any deficiencies.

4.13 GUIDE NUMBER PLUM-13: DRINKING WATER COOLERS

Frequency: Annual

1. Clean coils (vacuum) and fan blades.
2. Inspect P-trap, water supply valves, connections, and bubbler valve for proper operation.
3. Check belt for tightness and wear (if applicable).
4. Lubricate motor (if applicable).
5. Inspect for and repair leaks in refrigerant lines.

4.14 GUIDE NUMBER PLUM-14: EYEWASH

Frequency: Annual

NOTE

Use shower and eyewash flow rate test kit to avoid excessive water spillage.

4.14.1 Plumbed Eyewash Stations

1. Validate that controlled, low velocity flow completely rinses eyes and face, and is not injurious to user.
2. Ensure water flow is sufficiently high to allow user to hold eyes open while rinsing.
3. Ensure spray heads are protected from airborne contaminants, and covers are removed by water flow once unit is activated.
4. Ensure unit delivers at least 0.4 gallons of water per minute (GPM) for 15 minutes.
5. Confirm water flow pattern is positioned between 33” and 53” from the floor and at least 6” from the wall or nearest obstruction.
6. Confirm hands-free, stay-open valve activates in one second or less.
7. Ensure valve actuator is easy to locate and readily accessible to user.
8. Ensure unit washes both eyes simultaneously.
9. Ensure water flow covers the area indicated at no more than 8” above spray heads.

4.15 GUIDE NUMBER PLUM-15: EMERGENCY SHOWERS

Frequency: Annual

NOTE

Use shower and eyewash flow rate test kit to avoid excessive water spillage.

4.15.1 Plumbed Emergency Showers

1. Ensure water supply is sufficient to provide at least 20 GPM for 0.3 hours.
2. Ensure hands-free valve activates in one second or less and remains open until manually closed.
3. Ensure shower delivers 20 gallons of water per minute for 15 minutes in the required pattern.
4. Verify height of water column is between 82” and 96” above the floor.
5. Verify center of the water pattern is at least 16” from any obstruction.
6. Verify accessible actuator is easily located and no more than 69” above floor.
7. Verify water pattern is at least 20” in diameter at 60” above the floor.
8. If provided, ensure shower enclosure has minimum diameter of 34”.

THIS PAGE BLANK

ATTACHMENT 3

USPS BUILDING EQUIPMENT ANNUAL STAFFING

WORKHOUR REQUIREMENT FORMS

1.0 STAFFING WORKHOUR REQUIREMENT FORMS

The following forms are output from the entries made in the staffing software application.

NOTE

Due to periodic software changes, current versions of the forms may be visually different from those shown in Figure 3-1 to Figure 3-11.

- PS Form 4893 – Annual Building Equipment Operational and Preventive Maintenance Workhour Summary (Figure 3-1)
- PS Form 4893B – Annual Building Equipment Override and Supplemental Maintenance Justification (Figure 3-2)
- PS Form 4894, Page 1 of 2 – Annual Standard Requirement Building Operational Maintenance (Figure 3-3)
- PS Form 4894, Page 2 of 2 – Annual Standard Requirement Building Operational Maintenance (Figure 3-4)
- PS Form 4895 – Annual Workhour Requirement for Central Chill Water Plant Operational Maintenance (Figure 3-5)
- PS Form 4896, Page 1 of 1 – Annual Supplemental Requirement for Building Preventive and Operational Maintenance (Figure 3-6)
- PS Form 4896A, Page 1 of 5 – Annual Standard Requirement Building Preventive Maintenance (Figure 3-7)
- PS Form 4896A, Page 2 of 5 – Annual Standard Requirement Building Preventive Maintenance (Figure 3-8)
- PS Form 4896A, Page 3 of 5 – Annual Standard Requirement Building Preventive Maintenance (Figure 3-9)
- PS Form 4896A, Page 4 of 5 – Annual Standard Requirement Building Preventive Maintenance (Figure 3-10)
- PS Form 4896A, Page 5 of 5 – Annual Standard Requirement Building Preventive Maintenance (Figure 3-11)

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL BUILDING EQUIPMENT OPERATIONAL AND PREVENTIVE MAINTENANCE WORKHOUR SUMMARY	BUILDING(s):	GROSS AREA:	GROSS INTERIOR SQFT:	SPRINKLERS SQFT:	DATE: PREPARED BY:

LINE NO.	WORK DESCRIPTION	PREVENTIVE MAINTENANCE		OPERATIONAL MAINTENANCE			CORRECTIVE/MISC MAINTENANCE	TOTAL ANNUAL WORKHOURS
		4896A	4896	4894	4895	4896		
A	B	C	D	E	F	G	H	I
1	HVAC							
2	ELEC							
3	PLUM							
4	EMS							
5	MISC							
6	SUBTOTALS							
7	CORRECTIVE	*	*				**	
8	MISCELLANEOUS						†	
	TOTAL WORKHOURS							
	TOTAL FTE							

* 8% of the Subtotal
** 8 Hours per 1000 SQFT (Gross Area) for USPS Maintained
*** 4 Hours per 1000 SQFT (Gross Area) for Lessor Maintained
† 0.1 Hours per 1000 SQFT (Sprinkler SQFT)

PS FORM 04-01-2024 **4893 - BLANK FORM**

Figure 3-1. PS Form 4893 – Annual Building Equipment Operational and Preventive Maintenance Workhour Summary

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL BUILDING EQUIPMENT OVERRIDE AND SUPPLEMENTAL MAINTENANCE JUSTIFICATION		BUILDING(s):	DATE: PREPARED BY:

TABLE A: OPERATIONAL MAINTENANCE				
GUIDE CAT/NO	TASK DESCRIPTION	EQUIPMENT TYPE	EQUIPMENT DESCRIPTION	JUSTIFICATION
OVERRIDE TASKS				
*				
*				
*				
*				
*				
SUPPLEMENTAL TASKS				
*				
*				
*				
*				
*				

TABLE B: PREVENTIVE MAINTENANCE				
GUIDE CAT/NO	TASK DESCRIPTION	EQUIPMENT TYPE	EQUIPMENT DESCRIPTION	JUSTIFICATION
OVERRIDE TASKS				
*				
*				
*				
*				
*				
SUPPLEMENTAL TASKS				
*				
*				
*				
*				
*				

PS FORM
04-01-2024 **4893B - BLANK FORM**

Figure 3-2. PS Form 4893B – Annual Building Equipment Override and Supplemental Maintenance Justification

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL STANDARD REQUIREMENT BUILDING OPERATIONAL MAINTENANCE		BUILDING(s):	DATE: PREPARED BY:

TABLE A: HVAC						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
SUBTOTAL						

TABLE B: ELEC						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
NONE	BATTERY SYSTEM, 24 VOLT		1	0.08		
NONE	BATTERY SYSTEM, 48 VOLT		1	0.16		
NONE	BATTERY SYSTEM, 120 VOLT		1	0.33		
EMS-11	GROUND FAULT CIRCUIT INTERRUPTER (GFCI)		2	0.02		
NOGUIDE1	MAIN ELECTRICAL CUBICLE/SWITCHGEAR ROOMS (>600VAC)		52	0.08		
NOGUIDE2	SWITCHBOARD ROOMS (<600VAC)		52	0.05		
NOGUIDE3	TRANSFORMER VAULTS		52	0.06		
SUBTOTAL						

TABLE C: PLUM						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
NOGUIDE4	HYDRO-PNEUMATIC SYSTEM (INCL FIRE PROTECTION SYSTEM)			0.08		
NONE	PRESSURE REDUCING AND REGULATING STATIONS - STEAM AND WATER		1	0.02		
NONE	PUMPS >5HP, REMOTE FROM OTHER EQUIPMENT		1	0.03		
NONE	SUMP PUMP, OPERATIONAL		12	0.05		
SUBTOTAL						

TABLE D: EMS						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
EMS-10	EMERGENCY EXIT SIGNS		1	0.02		
EMS-4	EMERGENCY EXIT SIGNS		12	0.02		
EMS-12	EMERGENCY EYEWASH, SELF-CONTAINED		52	0.02		
EMS-1	EMERGENCY EYEWASHES		52	0.10		
EMS-9	EMERGENCY LIGHTS		1	0.02		
EMS-3	EMERGENCY LIGHTS		12	0.02		
EMS-2	EMERGENCY SHOWERS		52	0.10		
EMS-14	FIRE CONTROL VALVE, LOCKED OR SUPERVISED		12	0.10		

Figure 3-3. PS Form 4894, Page 1 of 2 – Annual Standard Requirement Building Operational Maintenance

TABLE D: EMS						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
EMS-14	FIRE CONTROL VALVE, SEALED		52	0.10		
EMS-7	FIRE EXTINGUISHER, PORTABLE, STORED-PRESSURE		12	0.02		
EMS-8	FIRE PUMPS		52	0.40		
SUBTOTAL						

TABLE E: MISC						
GUIDE NO	TASK DESCRIPTION	QUANTITY	FREQUENCY	WORK HOURS (per freq)	ANNUAL TRAVEL TIME	TOTAL ANNUAL WORKHOURS
SUBTOTAL						

PS FORM 04-01-2024 **4894 - BLANK FORM**

Figure 3-4. PS Form 4894, Page 2 of 2 – Annual Standard Requirement Building Operational Maintenance

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL WORKHOUR REQUIREMENT FOR CENTRAL CHILL WATER PLANT OPERATIONAL MAINTENANCE		BUILDING(s):	DATE: PREPARED BY:

BUILDING				
LINE NO.	EQUIPMENT DESCRIPTION	OPERATING DAYS	WORKHOURS (per day)	ANNUAL WORKHOURS
1			0.5	
2	SUBTOTAL			
3	COOLING TOWER OPERATING DAYS		0.5	
	TOTAL WORKHOURS *			

* Chiller operational checks are limited to 0.5 hours per operating day.
Cooling Tower operational checks are limited to 0.5 hours per operating day.

PS FORM 04-01-2024 **4895 - BLANK FORM**

Figure 3-5. PS Form 4895 – Annual Workhour Requirement for Central Chill Water Plant Operational Maintenance

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL SUPPLEMENTAL REQUIREMENT FOR BUILDING PREVENTIVE AND OPERATIONAL MAINTENANCE		BUILDING(s):	DATE: PREPARED BY:

TABLE A: PREVENTIVE MAINTENANCE						
GUIDE	TASK DESCRIPTION	EQUIPMENT TYPE	EQUIPMENT DESCRIPTION	FREQUENCY (per year)	WORKHOURS (per freq)	TOTAL WORKHOURS
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
	SUBTOTAL					0

TABLE B: OPERATIONAL MAINTENANCE						
GUIDE	TASK DESCRIPTION	EQUIPMENT TYPE	EQUIPMENT DESCRIPTION	FREQUENCY (per year)	WORKHOURS (per freq)	TOTAL WORKHOURS
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
	SUBTOTAL					0

PS FORM
04-01-2024 **4896 - BLANK FORM**

Figure 3-6. PS Form 4896, Page 1 of 1 – Annual Supplemental Requirement for Building Preventive and Operational Maintenance

FOR REVIEW PURPOSES - BLANK FORM

U.S. POSTAL SERVICE ANNUAL STANDARD REQUIREMENT BUILDING PREVENTIVE MAINTENANCE		BUILDING(s):	DATE: PREPARED BY:

TABLE A: HVAC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
HVAC-1	AC PACKAGE UNIT <10 TONS		1	8.50	
HVAC-1	AC PACKAGE UNIT >=10 TONS		1	10.00	
HVAC-2	AIR-CONDITIONING, WINDOW UNITS		1	0.50	
HVAC-3	AIR COOLED CONDENSERS <= 10 TONS		1	0.75	
HVAC-3	AIR COOLED CONDENSERS >10 TONS and <=30 TONS		1	1.00	
HVAC-3	AIR COOLED CONDENSERS >30 TONS		1	1.75	
HVAC-4	AIR HANDLERS >10HP		1	4.50	
HVAC-4	AIR HANDLERS <=10HP		1	2.50	
HVAC-5	BOILERS, OIL FIRED		1	10.00	
HVAC-6	BOILERS, CAST-IRON AND STEEL		1	10.00	
HVAC-7	BURNER, GAS		1	5.00	
HVAC-8	BURNER, OIL		1	5.00	
HVAC-9	COILS, PREHEAT, REHEAT, ETC. (REMOTE FROM AIR HANDLER)		1	1.00	
HVAC-10	CONDENSATE OR VACUUM PUMPS (ON STEAM RETURN SYSTEM)		1	2.00	
HVAC-11.1	COOLING TOWERS 501 - 1000 TON SPRING STARTUP (1 CELL)		1	20.30	
HVAC-11.1	COOLING TOWERS 501 - 1000 TON SPRING STARTUP (2 CELLS)		1	40.60	
HVAC-11.1	COOLING TOWERS 501 - 1000 TON SPRING STARTUP (3 CELLS)		1	60.90	
HVAC-11.1	COOLING TOWERS 501 - 1000 TON SPRING STARTUP (4 CELLS)		1	81.20	
HVAC-11.1	COOLING TOWERS 51 - 500 TON SPRING STARTUP (1 CELL)		1	10.15	
HVAC-11.1	COOLING TOWERS 51 - 500 TON SPRING STARTUP (2 CELLS)		1	20.30	
HVAC-11.1	COOLING TOWERS 51 - 500 TON SPRING STARTUP (3 CELLS)		1	30.45	
HVAC-11.1	COOLING TOWERS 51 - 500 TON SPRING STARTUP (4 CELLS)		1	40.60	
HVAC-11.1	COOLING TOWERS <= 50 TON SPRING STARTUP (1 CELL)		1	4.90	
HVAC-11.1	COOLING TOWERS <= 50 TON SPRING STARTUP (2 CELLS)		1	9.80	
HVAC-11.1	COOLING TOWERS <= 50 TON SPRING STARTUP (3 CELLS)		1	14.70	
HVAC-11.1	COOLING TOWERS <= 50 TON SPRING STARTUP (4 CELLS)		1	19.60	
HVAC-11.1	COOLING TOWERS > 1000 TON SPRING STARTUP (1 CELL)		1	26.95	
HVAC-11.1	COOLING TOWERS > 1000 TON SPRING STARTUP (2 CELLS)		1	53.90	
HVAC-11.1	COOLING TOWERS > 1000 TON SPRING STARTUP (3 CELLS)		1	80.85	
HVAC-11.1	COOLING TOWERS > 1000 TON SPRING STARTUP (4 CELLS)		1	107.80	
HVAC-11.2	COOLING TOWERS 501 - 1000 TON FALL SHUTDOWN (1 CELL)		1	8.70	
HVAC-11.2	COOLING TOWERS 501 - 1000 TON FALL SHUTDOWN (2 CELLS)		1	17.40	

Figure 3-7. PS Form 4896A, Page 1 of 5 – Annual Standard Requirement Building Preventive Maintenance

TABLE A: HVAC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
HVAC-11.2	COOLING TOWERS 501 - 1000 TON FALL SHUTDOWN (3 CELLS)		1	26.10	
HVAC-11.2	COOLING TOWERS 501 - 1000 TON FALL SHUTDOWN (4 CELLS)		1	34.80	
HVAC-11.2	COOLING TOWERS 51 - 500 TON FALL SHUTDOWN (1 CELL)		1	4.35	
HVAC-11.2	COOLING TOWERS 51 - 500 TON FALL SHUTDOWN (2 CELLS)		1	8.70	
HVAC-11.2	COOLING TOWERS 51 - 500 TON FALL SHUTDOWN (3 CELLS)		1	13.05	
HVAC-11.2	COOLING TOWERS 51 - 500 TON FALL SHUTDOWN (4 CELLS)		1	17.40	
HVAC-11.2	COOLING TOWERS <= 50 TON FALL SHUTDOWN (1 CELL)		1	2.10	
HVAC-11.2	COOLING TOWERS <= 50 TON FALL SHUTDOWN (2 CELLS)		1	4.20	
HVAC-11.2	COOLING TOWERS <= 50 TON FALL SHUTDOWN (3 CELLS)		1	6.30	
HVAC-11.2	COOLING TOWERS <= 50 TON FALL SHUTDOWN (4 CELLS)		1	8.40	
HVAC-11.2	COOLING TOWERS > 1000 TON FALL SHUTDOWN (1 CELL)		1	11.55	
HVAC-11.2	COOLING TOWERS > 1000 TON FALL SHUTDOWN (2 CELLS)		1	23.10	
HVAC-11.2	COOLING TOWERS > 1000 TON FALL SHUTDOWN (3 CELLS)		1	34.65	
HVAC-11.2	COOLING TOWERS > 1000 TON FALL SHUTDOWN (4 CELLS)		1	46.20	
HVAC-12	FAN, CENTRIFUGAL <7HP		1	1.75	
HVAC-12	FAN, CENTRIFUGAL >=7HP AND <=15HP		1	2.75	
HVAC-12	FANS CENTRIFUGAL >15HP		1	2.75	
HVAC-13	FILTERS, ROLL-TYPE, DISPOSABLE MEDIA		4	1.75	
HVAC-14	CONTROLS AND MECHANISMS ROLL TYPE FILTERS		1	1.50	
HVAC-15	FILTERS, THROW-AWAY		4	0.10	
HVAC-16	FAN, PROPELLER, PEDESTAL AND WALL MOUNTED		1	0.75	
HVAC-17	HEAT/COOLING UNIT, ROOF TOP		2	8.50	
HVAC-18	REFRIGERATION MACHINES, ABSORPTION TYPE <= 40 TONS		1	15.25	
HVAC-18	REFRIGERATION MACHINES, ABSORPTION TYPE 41 - 100 TONS		1	19.25	
HVAC-18	REFRIGERATION MACHINES, ABSORPTION TYPE 101 - 400 TONS		1	23.00	
HVAC-18	REFRIGERATION MACHINES, ABSORPTION TYPE > 400 TONS		1	30.75	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) <= 40 TONS		1	23.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) 41 - 100 TONS		1	31.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) 101 - 350 TONS		1	39.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) 351 - 500 TONS		1	59.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) 501 - 750 TONS		1	66.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) 751 - 1000 TONS		1	77.00	
HVAC-19	REFRIGERATION MACHINES (CENTRIFUGAL AND RECIPROCATING) > 1000 TONS		1	96.00	
HVAC-20	HEATER, ELECTRIC, IN-DUCT		1	0.25	
HVAC-21	HEATER, ELECTRIC, BASEBOARD		1	0.15	
HVAC-22	UNIT HEATERS (STEAM AND HOT WATER)		1	1.00	

Figure 3-8. PS Form 4896A, Page 2 of 5 – Annual Standard Requirement Building Preventive Maintenance

TABLE A: HVAC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
HVAC-23	UNIT HEATERS (GAS FIRED)		1	1.50	
HVAC-24	FIRE DAMPERS (IN DUCT)		1	0.20	
HVAC-25	SPLIT SYSTEM EVAPORATOR UNITS (ANNUAL)		1	4.00	
HVAC-26	SPLIT SYSTEM EVAPORATOR UNITS (MONTHLY)		12	0.50	
	SUBTOTAL				
TABLE B: ELEC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
ELEC-1	MOTORS		1	1.00	
ELEC-2	BACK-UP GENERATOR- GAS OR NATURAL GAS ENGINES		1	2.00 to 6.00	
ELEC-3	EMERGENCY GENERATORS, DIESEL POWER		1	3.00 to 8.00	
ELEC-5	PANEL, ELECTRICAL (INFRARED SCAN)		1	0.15	
	SUBTOTAL				
TABLE C: PLUM					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
PLUM-1	FIRE EXTINGUISHER, PORTABLE, STORED-PRESSURE		1	0.10	
PLUM-2	SUMP PUMPS		1	3.75	
PLUM-3	VALVES, REGULATING		1	1.00 to 4.00	
PLUM-4	VALVES, MANUALLY OPERATED (MAIN LINE)		1	1.00	
PLUM-4	VALVES, MANUALLY OPERATED (OTHER VALVES OVER 2 INCHES)		0.2	0.50	
PLUM-5	VALVES, MOTOR OPERATED		1	1.50	
PLUM-6	STEAM TRAPS, ALL TYPES		1	0.50	
PLUM-7	PUMPS, CENTRIFUGAL >=25HP		1	6.00	
PLUM-7	PUMPS, CENTRIFUGAL >5HP AND <25HP		1	4.00	
PLUM-8	ROOF, INSPECTION		2	1.00 to 2.00	
PLUM-9	HOT WATER HEATERS (CONVERTERS)		1	4.50	
PLUM-10	HOT WATER HEATERS, DOMESTIC TYPE		1	1.50	
PLUM-11	FIRE PUMPS, ELECTRIC MOTOR DRIVE		1	0.75	
PLUM-12	FIRE PUMPS, INTERNAL COMBUSTION ENGINE DRIVE		1	0.75 to 1.50	
PLUM-13	DRINKING WATER COOLERS		1	1.00	
PLUM-14	EYEWASH, PLUMBED		1	0.30	
PLUM-15	SHOWERS, EMERGENCY		1	0.30	
	SUBTOTAL				

Figure 3-9. PS Form 4896A, Page 3 of 5 – Annual Standard Requirement Building Preventive Maintenance

TABLE D: EMS					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
EMS-5	EMERGENCY GENERATORS		12	1.00 to 2.00	
EMS-6	FIRE ALARM BOXES (MANUAL)		4 to 6	0.10	
	SUBTOTAL				
TABLE E: MISC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
MISC-1	AIR COMPRESSORS		1	1.00	
MISC-2	LAWNMOWERS AND EDGERS		2	1.00	
MISC-3	SWEEPERS (GASOLINE)		2 to 6	2.00	
MISC-4.1	BALERS, ANNUAL		1	3.00	
MISC-4.2	BALERS, QUARTERLY		4	1.00	
MISC-5.1	DOCK DOORS, POWER OPERATED		2	2.00	
MISC-5.2	DOCK DOORS, MANUALLY OPERATED		2	1.00	
MISC-6	DOOR, PEDESTRIAN DOORS, POWER OPERATED MAIN AND DOCK ENTRANCES		4	1.00	
MISC-7	DOOR, PEDESTRIAN DOORS, NON-POWERED MAIN AND DOCK ENTRANCE		2	1.00	
MISC-8	DOCK LEVELERS, POWERED		4	1.25	
MISC-9	FIRE DOORS, STAIRWELLS AND EXITWAYS (SWINGING)		4	0.10	
MISC-10	FIRE DOORS, SLIDING TYPE		4	0.10	
MISC-11	STATIONARY PACKERS, WEEKLY		52	1.00	
MISC-12	STATIONARY PACKERS, MONTHLY		12	1.00	
MISC-13	STATIONARY PACKERS, QUARTERLY		4	2.00	
MISC-14.1	LIFT, PERSONNEL POWERERED (MEWP), ANNUAL		1	4.00	
MISC-14.2	LIFT, PERSONNEL POWERERED (MEWP), QUARTERLY		4	2.00	
MISC-15	SNOW BLOWER, WALKING TYPE		1	1.00	
MISC-16	DOCK LEVELERS, MANUAL		4	0.50	
MISC-17	SWEEPERS (BATTERY)		4 to 12	1.00	
MISC-18	FLOOR SCRUBBERS, AUTOMATIC; VACUUM, BATTERY POWERED		4 to 12	1.00	
MISC-19	BATTERY, PIV, FLOODED LEAD ACID		2	0.30	
MISC-20	TRAILER RESTRAINTS - QUARTERLY		4	1.00	
MISC-21	TRAILER RESTRAINTS - ANNUAL		1	0.50	
MISC-22	ABOVEGROUND STORAGE TANKS (AST), MONTHLY		12	0.30	
MISC-23	ASTs W/MONITORING DEVICES ONLY, ANNUAL		1	0.00 to 0.10	
MISC-24	BALL DECKING (Frequency Equals SQFT.) (Work Hours Equals .005hrs)		1 to 9999	0.01	
MISC-25	RAM LIFT, BALL DECKING		1	0.25	
MMO03718	COMPACTOR, PTR		1	27.89	
MMO06221	COMPRESSED AIR LEAK SURVEY		1	0.00 to 24.00	

Figure 3-10. PS Form 4896A, Page 4 of 5 – Annual Standard Requirement Building Preventive Maintenance

TABLE E: MISC					
GUIDE NO.	TASK DESCRIPTION	QUANTITY	FREQUENCY (per year)	WORK HOURS (per freq)	TOTAL WORK HOURS
MMO09615	PIVMS VAC (MONTHLY)		12	0.55	
MMO09615	PIVMS VAC (QUARTERLY)		4	0.52	
MMO09520	S6 PALLET JACK - 5 DAY		260	0.31	
MMO09520	S6 PALLET JACK - 6 DAY		312	0.30	
MMO09520	S6 PALLET JACK - 7 DAY		364	0.30	
MMO09620	DAIFUKU PALLET JACK 5 DAY		260	0.32	
MMO09620	DAIFUKU PALLET JACK 6 DAY		312	0.31	
MMO09620	DAIFUKU PALLET JACK 7 DAY		364	0.31	
MMO09720	DAIFUKU TOW MOTOR 5 DAY		260	0.32	
MMO09720	DAIFUKU TOW MOTOR 6 DAY		312	0.31	
MMO09720	DAIFUKU TOW MOTOR 7 DAY		364	0.31	
MMO09820	SEEGRID TOW MOTOR 5 DAY		260	0.28	
MMO09820	SEEGRID TOW MOTOR 6 DAY		312	0.27	
MMO09820	SEEGRID TOW MOTOR 7 DAY		364	0.27	
MMO16619	HOIST, 5 DAY OPERATION		260	0.15	
MMO16619	HOIST, 6 DAY OPERATION		312	0.15	
MMO16619	HOIST, 7 DAY OPERATION		364	0.15	
MMO16619	HOIST, MONTHLY		12	0.15	
MMO16619	HOIST, SEMI-ANNUAL (ALL)		2	0.93	
MMO16619	HOIST, SEMI-ANNUAL (PENTHOUSE)		2	0.15	
MMO16619	HOIST, WEEKLY		52	0.15	
	FORKLIFT, ANNUAL		1	50.00	
	MOBILE OP EQ, OTHER, ANNUAL		1	1.00	
	PALLET TRUCK, MOTORIZED, ANNUAL		1	50.00	
	PALLET TRUCK, NON MOTORIZED, ANNUAL		1	1.00	
	TOW TRACTOR, ANNUAL		1	52.00	
	SUBTOTAL				

PS FORM 04-01-2024 **4896A - BLANK FORM**

Figure 3-11. PS Form 4896A, Page 5 of 5 – Annual Standard Requirement Building Preventive Maintenance