

ATTACHMENT #9



**PREVENTIVE MAINTENANCE STANDARDS**

Solicitation OPM-RFP-00-00934HLW

GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
A-3	Humidification Systems	As Required	As Required
A-4	Air Compressor	Semi-Annual	2.30
A-6	Air-Conditioning - Package Unit (Comfort Cooling) 10 tons and under	Annual	2.20
	Over 10 tons	Annual	5.20
A-7	Air-Conditioning Machine- Package Unit (Computer Room) 10 tons and under	Monthly	2.20
	Over 10 tons	Monthly	5.20
A-8	Air-Conditioning Window Unit	Annual	1.00
A-9	Air Cooled Condenser 20 tons and under	Annual	3.00
	Over 20 tons	Annual	4.00
A-10	Heat Pumps 5 tons and under	Annual	2.50
	6 to 10 tons	Annual	5.00
	Over 10 tons	Annual	8.00
A-11	Air Handler Unit Under 5,000 c.f.m.	Annual	2.00
	5,000 to 15,000 c.f.m.	Annual	4.50
	15,001 to 30,000 c.f.m.	Annual	8.25
	30,001 to 50,000 c.f.m.	Annual	13.25
	50,001 to 75,000 c.f.m.	Annual	19.25
	75,001 and over c.f.m.	Annual	21.25
B-1	Battery Charger	Quarterly	0.25
B-2	Boiler (Coal, Oil, and Gas)	Annual	As Required
B-3	Burner, Gas	Annual	As Required
B-4	Burner, Oil	Annual	As Required
B-5	Electric Boilers	Annual	As Required

## Appendix F. Preventive Maintenance Standards

GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
C-1	Clocks, Central System	Semi-Annual	7.25
C-2	Remote Air Intake Dampers	Semi-Annual	0.50
C-3	Coils, Preheat, Reheat, Etc. (Remote Locations)	Annual	0.75
C-4	Central Mini-Computer, HVAC	As Required	As Required
C-5	Automatic Mixing Box - Pneumatic or Electric	Annual	1.00
C-6	Controls, Central System, HVAC	Annual	As Required
C-7	Condensate or Vacuum Pump	Annual	3.00
C-8	Central Control Panel	As Required	As Required
C-9	Cooling Tower Up to 50 tons Over 50 to 500 tons Over 500 to 1,000 tons Over 1,000 tons add 9.75 man-hours for each 250 ton increment.	Annual Annual Annual	4.00 21.50 43.25
C-10	Cooling Tower	As Required	As Required
C-11	Evaporative Condenser Up to 50 tons Over 50 tons	Annual Annual	7.50 11.75
D-1	Door, Power Operated	Semi-Annual	1.25
D-2	Dumbwaiter	Quarterly	3.75
D-3	Drains, Roof, Gutter (per 100')	Annual	0.50
D-4	Door, Hydraulic, Electric or Pneumatic Operated	Quarterly	As Required

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
D-5	Door, Main Entrance	Semi-Annual	1.00
D-6	Drains, Areaway, Driveway, Storm	Annual	0.50
E-1 to 12	Elevator, Electric or Hydraulic, 4 floors or less. For each additional floor add 1.5 man-hours	Monthly	6.00
E-15	Escalator	Weekly	1.00
E-16	Escalator	Annual	96.00
E-17	Expansion Joints in Piping	Annual	1.25
E-18	Emergency Lights (Wet Cell)	Quarterly	0.40
E-19	Emergency Lights (Closed Systems)	Quarterly	0.20
E-20	Induction Disc Over Current Relay	Annual	1.50
E-21	Over and/or Under Voltage Relay	Annual	1.60
E-22	Thermal Over Current Relay	Annual	0.80
E-23	Induction Disc-Directional Over Current Relay	Annual	0.50
E-24	Power Factor Reverse Current or Watt Type Relay	Annual	1.20
E-25	Ground Fault Type Transformer or Differential Relay	Annual	1.50

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
E-26	Low Voltage Molded Case Circuit Breaker	3 years	3.90
E-27	Low Voltage Power Circuit Breaker (Over 50 amps)	3 years	4.20
E-28	Motor Starters 100 hp and Up	3 years	6.00
E-29	High Voltage Oil Circuit Breaker	Annual	6.00
E-30	Switchboard (per cubicle)	5 years	2.00
E-31	Network Protectors	Annual	5.50
E-32	High Voltage Network and Power Type Transformer (Oil Filled) Power Type Network Type	Annual	3.00
		Annual	0.50
E-33	High Voltage Network and Power Dry Type Transformer Power Type Network Type	Annual	6.50
		Annual	5.00
E-34	Disconnects (isolating switch; per switch)	Annual	3.00
E-35	Motor Control Center (Includes Motor Starters under 100 hp)	Semi-Annual	3.00
E-37	Aluminum Bus Duct and Connectors Per disconnect or power take off Per 10 foot bus duct section	Semi-Annual	
			1.00
			0.20

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
E-38	High Voltage Air Circuit Breaker	Annual	6.20
E-39	Supervision Set	Annual	As Required
E-40	Emergency Generator, Electric, Gasoline, or Natural Gas	Annual	As Required
E-41	Emergency Generator, Electric Diesel Power	Annual	As Required
E-42	Emergency Generator, Electric	Monthly	1.25
E-43	Lead Acid Battery (per cell)	Quarterly	0.03
E-44	Edison Nickel-Iron-Alkaline Battery (per cell)	Quarterly	0.02
F-1	Alarm Check Valves and Accessories	Semi-Annual	1.25
F-2	Dry Pipe, Deluge and Preaction Valves	Annual	2.75
F-3	Fire Post Indicator Valve	Annual	0.75
F-4	Fire Control Valves (4 in. or over) for Interior Water Distribution Systems	Annual	0.20
F-5	Fire Pump (Motor or Engine Driven)	Weekly	0.60
F-6	Fire Pump (Motor or Engine Driven)	Monthly	0.20
F-7	Fire Pump, Motor Driven	Annual	1.60
	Engine Driven	Annual	3.40
F-8	Fire Hose (1 1/2 in. Racked in Buildings)	Annual	0.20

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
F-9	Fire Department Hose Connections (Standpipe Outlets)	Annual	0.15
F-10	Fire Department Pumper Connections (Standpipe or Sprinkler)	Annual	0.30
F-11	Fire Doors - Stairwells and Exitways (Swinging)	Quarterly	0.05
F-12	Fire Doors - Sliding Type	Quarterly	0.20
F-13	Fire Supervisory Signal - Testing	Quarterly	0.30
F-14	Automatic Fire Detection or Alarm Devices	Quarterly	0.30
F-16	Fire Alarm System - Recorder	Weekly	0.10
F-17	Fire Alarm Box (Manual - Coded and Uncoded)	Quarterly	0.30
F-18	Fire and Smoke Dampers	2 years	0.20
F-19	Fire Hydrant (Dry Barrel or Wet Barrel)	Annual	0.65
F-20	Sprinkler Head - Sprinklered Areas (per 1,000 sq. ft.)	Semi-Annual	0.10
F-21	Fire Extinguisher - Soda Acid, or Foam	Annual	0.75
F-22	Fire Extinguisher - Stored Pressure with Gauge	Annual	0.10
F-23	Fire Extinguisher - Gas Cartridge or Cylinder (No Gauge)	Annual	0.20

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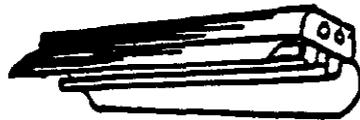
GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
F-24	Fire Extinguisher - Inspection	Monthly	0.02
F-25	Fire Extinguisher, Hydrostatic Testing of Carbon Dioxide, Stored Pressure and Cartridge Type	As Required	1.00
F-26	Fire Extinguisher System - Carbon Dioxide (High Pressure), Halon, Dry Chemical	Semi-Annual	As Required
F-27	Fan, Centrifugal Up to 5,000 c.f.m.	Annual	1.00
	Over 5,000 to 10,000 c.f.m.	Annual	1.30
	Over 10,000 to 15,000 c.f.m.	Annual	1.60
	Over 15,000 to 20,000 c.f.m.	Annual	1.95
	For each additional 5,000 c.f.m. over 20,000 c.f.m. add .30 man-hours		
F-28	Filter, Movable Curtain, Oil Coated	As Required	1.75
F-29	Filter, Roll Type, Disposable Media	As Required	1.75
F-30	Filter, Viscous Type (Wire Mesh)	As Required	0.50
F-31	Filter, Roll Type, Disposable Media, Manual or Motor Driven	Annual	As Required
F-32	Filter, Throw Away	As Required	0.08
F-33	Filter, Electrostatic	As Required	2.50

## Appendix F

GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
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F-34 Fluorescent Lighting  
Fixture, Washing and  
Relamping

Industrial Type

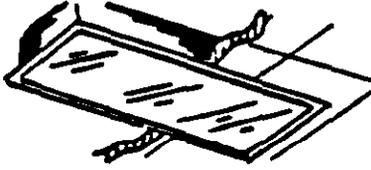


(1) Lamp/48"	2.5 years	0.07
(1) Lamp/96"	2.5 years	0.12
(2) Lamps/48"	2.5 years	0.12
(2) Lamps/96"	2.5 years	0.20
(3) Lamps/48"	2.5 years	0.17
(4) Lamps/48"	2.5 years	0.19

Louver Type



(1) Lamp/43"	2.5 years	0.18
(2) Lamps/48"	2.5 years	0.23
(3) Lamps/48"	2.5 years	0.29
(4) Lamps/48"	2.5 years	0.33

GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
	Diffuser Type		
			
	(1) Lamp/48"	2.5 years	0.13
	(2) Lamps/48"	2.5 years	0.17
	(3) Lamps/48"	2.5 years	0.22
	(4) Lamps/48"	2.5 years	0.25
F-35	Fluorescent Light Fixture Relamping Only		
	(1) Lamp	5 years	0.05
	(2) Lamps	5 years	0.07
	(3) Lamps	5 years	0.11
	(4) Lamps	5 years	0.13
F-36	Fan, Propeller, 24 in. Diameter or Larger	Annual	0.75
F-37	Floor Polishing Machine	Semi-Annual	0.35
F-38	Lightning Protection (per down conductor)	Annual	0.50
G-2	Grease Traps	Monthly	0.75
H-1	Hot Water Converter (Steam)	Annual	6.00
H-2	Hot Water Heater - Gas	Annual	0.60
H-3	Hot Water Heater - Electric	Annual	0.60
I-1	Incinerator	Annual	15.25
I-2	Fan Coil Unit, Under Window Type	Annual	0.40

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
I-3	Induction Unit, Under Window Type	Annual	0.40
L-1	Lawn Mower and Edger	Semi-Annual	As Required
L-2	Loading Ramp, Adjustable	Quarterly	1.25
L-3	Lighting, Special Fixture	Annual	0.50
L-4	Lighting, Outside Incandescent Fluorescent, Mercury Vapor or High Pressure Sodium	Semi-Annual	As Required
		5 years	As Required
L-5	Lawn Sprinklers (per nozzle)	Annual	0.25
M-1	Manhole, Electrical	Annual	2.00
M-2	Manhole, Sewer	Quarterly	2.00
M-3	Motors 1 to 7.5 hp Over 7.5 to 50 hp Over 50 hp	Annual	0.30
		Annual	0.50
		Annual	0.60
P-1	Paper Baler	Annual	As Required
P-4	Pump, Centrifugal 1 to 25 hp Over 25 to 100 hp Over 100 hp	Annual	1.50
		Annual	5.50
		Annual	6.50
R-1	Radiator, Heating	5 years	0.15
R-2	Roof Inspection (per square, or 100 sq. ft.)	Semi-Annual	0.03
R-3	Refrigeration Machine (Absorption) Up to 500 tons Over 500 to 1,000 tons Over 1,000 tons	Annual	60.00
		Annual	100.00
		Annual	140.00

GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
R-5	Refrigeration Machine (Centrifugal and Reciprocating) Up to 50 tons	Annual	16.00
	Over 50 to 250 tons	Annual	24.00
	Over 250 to 500 tons	Annual	40.00
	Over 500 to 750 tons	Annual	56.00
	Over 750 to 1,000 tons	Annual	72.00
	Add 16 man-hours for each additional 250 ton increment over 1,000 tons		
R-10	Railroad Trackage (per 1,000 ft.)	Annual	3.50
R-12	Railroad Turnout	Annual	0.55
S-2	Sewage Ejector (Pneumatic Tank Type Ejectors)	Annual	4.00
S-5	Sweeper	Semi-Annual	As Required
S-7	Sump Pump	Annual	3.75
S-10	Scrubbing Machine (Battery or Propane Powered)	Quarterly	1.00
S-11	Snow Blower	Annual	0.90
T-1	Tank, Water (All Types)	3 years	6.25
T-3	Tank, Fuel Oil Storage	4 years	6.25
T-5	Trash Compactor	Annual	4.00
T-8	Traps, All Types High Pressure	Annual	0.50
	Low Pressure	5 years	0.50
T-9	Turbine, Steam	Annual	11.50

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GUIDE NO.	ITEM	FREQUENCY	MAN-HOURS
U-1	Unit Heater (Steam and Hot Water)	Annual	1.00
U-2	Unit Heater (Gas and Oil Fired)	Annual	As Required
V-1	Vacuum Cleaner, Heavy Duty, Tank Type	Semi-Annual	0.50
V-3	Valve, Regulating	Annual	0.60
V-5	Valve, Manually Operated Main Line or Critical Other over 2 inches	Annual 5 years	0.40 0.40
V-6	Valve, Motor Operated	Annual	0.40
W-1	Drinking Water Filter Systems	As Required	As Required
W-3	Water Softener	As Required	As Required
W-5	Window Washing Scaffold Power Operated	Annual	As Required