

# EPSS Maintenance Schedule

Suggested Maintenance Schedule for Emergency Power Supply Systems (EPSSs)

Source: NFPA 110-2016 Figure A.8.3.1(a)



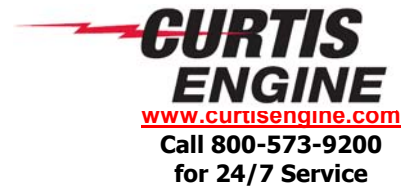
| Component (as applicable)                | Visual Inspection | (X=Action; R=Replace, if needed) |        |       |      | W=Weekly    | S=Semi-Annual |
|--|-------------------|----------------------------------|--------|-------|------|-------------|---------------|
|  |                   | Check                            | Change | Clean | Test | M=Monthly   | A=Annually    |
|  |                   |                                  |        |       |      | Q=Quarterly | #'s=hours     |
|  |                   |                                  |        |       |      | Level 1     | Level 2       |
| <b>Fuel System</b>                       |                   |                                  |        |       |      |             |               |
| Main supply tank level                   |                   | X                                |        |       |      | W           | M             |
| Day tank level                           | X                 | X                                |        |       |      | W           | M             |
| Day tank float switch                    | X                 |                                  |        |       | X    | W           | Q             |
| Supply or transfer pump operation        | X                 |                                  |        |       | X    | W           | Q             |
| Solenoid valve operation                 | X                 |                                  |        |       | X    | W           | Q             |
| Strainer, filter and/or dirt leg         |                   |                                  |        | X     |      | Q           | Q             |
| Water in system                          |                   | X                                |        | X     |      | W           | Q             |
| Flexible hose and connectors             | X                 |                                  | R      |       |      | W           | M             |
| Tank vents/overflow pipe blocked         |                   | X                                |        |       | X    | A           | A             |
| Piping                                   | X                 |                                  |        |       |      | A           | A             |
| Wiring in fuel system                    | X                 |                                  |        |       |      | A           | A             |
| Fuel in main tank                        |                   |                                  | R      |       |      | A           | A             |
| <b>Lubrication System</b>                |                   |                                  |        |       |      |             |               |
| Oil level                                | X                 | X                                |        |       |      | W           | M             |
| Oil change                               |                   |                                  | R      |       |      | 50 or A     | 50 or A       |
| Oil filter                               |                   |                                  | R      |       |      | 50 or A     | 50 or A       |
| Lube oil heater                          |                   | X                                |        |       |      | W           | M             |
| Crankcase breather                       | X                 |                                  | R      | X     |      | Q           | S             |
| <b>Cooling System</b>                    |                   |                                  |        |       |      |             |               |
| Coolant level                            | X                 | X                                |        |       |      | W           | M             |
| Antifreeze protection level              |                   |                                  |        |       | X    | S           | A             |
| Antifreeze                               |                   |                                  | R      |       |      | A           | A             |
| Adequate cooling water to heat exchanger |                   | X                                |        |       |      | W           | M             |
| Rod out heat exchanger                   |                   |                                  |        | X     |      | A           | A             |
| Adequate fresh air through radiator      |                   | X                                |        |       |      | W           | M             |
| Clean exterior of radiator               |                   |                                  |        | X     |      | A           | A             |
| Fan and alternator belts                 | X                 | X                                |        |       |      | M           | Q             |
| Water pump                               | X                 |                                  |        |       |      | W           | Q             |
| Flexible water hoses and connections     | X                 | X                                |        |       |      | W           | M             |
| Jacket water heater                      |                   | X                                |        |       |      | W           | M             |
| Inspect ductwork, clean louvers          | X                 | X                                |        | X     |      | A           | A             |
| Louver motor and controls                | X                 |                                  |        | X     | X    | A           | A             |
| <b>Exhaust System</b>                    |                   |                                  |        |       |      |             |               |
| Leakage                                  | X                 | X                                |        |       |      | W           | M             |
| Drain condensate trap                    |                   | X                                |        |       |      | W           | M             |
| Insulation and fire hazards              | X                 |                                  |        |       |      | Q           | Q             |
| Excessive back pressure                  | X                 |                                  |        |       | X    | A           | A             |
| Exhaust system hanger and supports       | X                 |                                  |        |       |      | A           | A             |
| Flexible exhaust section                 | X                 |                                  |        |       |      | S           | S             |
| <b>Battery System</b>                    |                   |                                  |        |       |      |             |               |
| Electrolyte level                        |                   | X                                |        |       |      | W           | M             |
| Terminals clean and tight                | X                 | X                                |        |       |      | Q           | Q             |
| Remove corrosion from case               | X                 |                                  |        | X     |      | M           | M             |
| Specific gravity or state of charge      |                   |                                  |        |       | X    | M           | M             |
| Charger and charge rate                  | X                 |                                  |        |       |      | M           | M             |
| Equalize charge                          |                   | X                                |        |       |      | M           | M             |

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|             |               |
|-------------|---------------|
| W=Weekly    | S=Semi-Annual |
| M=Monthly   | A=Annually    |
| Q=Quarterly | #'s=hours     |
| Level 1     | Level 2       |

| Component (as applicable) | Visual Inspection | (X=Action; R=Replace, if needed) |        |       |      | Level 1 | Level 2 |
|---------------------------|-------------------|----------------------------------|--------|-------|------|---------|---------|
|                           |                   | Check                            | Change | Clean | Test |         |         |

## Electrical System

|   |   |   |   |   |   |                    |                    |
|---|---|---|---|---|---|--------------------|--------------------|
| General inspection                            | X |   |   |   |   | W                  | M                  |
| Tighten control and power wiring connections  |   | X |   |   |   | A                  | A                  |
| Wire chafing if subject to movement           | X | X |   |   |   | Q                  | S                  |
| Operation of safeties and alarms              |   | X |   |   |   | S                  | S                  |
| Boxes, panels and cabinets                    |   |   |   | X |   | S                  | S                  |
| Circuit breakers, fuses                       | X | X | R | X | X | M                  | A                  |
| Transfer switch main contacts                 | X |   |   | X |   | A                  | A                  |
| Calibration of voltage-sensing relays/devices |   | X |   |   | X | A                  | A                  |
| Wire insulation breakdown                     |   |   |   |   | X | 5/500 <sup>a</sup> | 3/500 <sup>b</sup> |

## Prime Mover (Engine)

|   |   |   |   |   |   |                    |                    |
|---|---|---|---|---|---|--------------------|--------------------|
| General inspection  | X |   |   |   |   | W                  | M                  |
| Service air cleaner   |   |   | R | X |   | S                  | S                  |
| Governor oil level and linkage  | X | X |   |   |   | M                  | M                  |
| Governor oil  |   |   | R |   |   | A                  | A                  |
| Ignition system - plugs, cap, rotor, secondary wire insulation            | X | X | R | X | X | A                  | A                  |
| Choke setting and carburetor adjustment                                   |   | X |   |   |   | S                  | S                  |
| Injector pump and injectors for flow rate, pressure, and/or spray pattern |   |   |   |   | X | A                  | A                  |
| Load test at minimum of 30% nameplate rating                              |   |   |   |   | X | 3/4 <sup>c</sup>   | 3/4 <sup>c</sup>   |
| Valve clearance   |   |   |   |   | X | 3/500 <sup>b</sup> | 3/500 <sup>b</sup> |
| Torque bolts  |   |   |   |   | X | 3/500 <sup>b</sup> | 3/500 <sup>b</sup> |

## Generator End

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| Brush length, appearance free to move in holder                                    | X | X |   | X |   | S | S |
| Commutator and slip rings  | X |   |   | X |   | A | A |
| Rotor and stator   | X |   |   | X |   | A | A |
| Bearings   | X |   | R |   |   | A | A |
| Bearing grease   |   | X | R |   |   | A | A |
| Exciter  | X | X |   | X |   | A | A |
| Voltage regulator  | X | X |   | X |   | A | A |
| Measure and record resistance readings of windings with insulation tester (Megger) |   |   |   |   | X | A | A |

## General Condition

|  |   |  |  |   |  |   |   |
|--|---|--|--|---|--|---|---|
| Unusual noises, vibrations, leakage, temperatures or deterioration | X |  |  | X |  | W | M |
| Service room/surrounding area                                      | X |  |  | X |  | W | M |
| <b>Restore system to automatic operation condition</b>             | X |  |  |   |  | W | M |

a Every 5 years or 500 hours

b Every 3 years or 500 hours

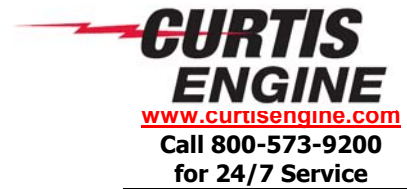
c Every 3 years for 4 hours

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## Automatic Transfer Switch

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| General inspection                                  | X |   |   |   |   | W | M |
| Exercise the system under load                      |   |   |   |   | X | W | M |
| Automatic control system                            |   |   |   |   | X | M | Q |
| Cabinet exterior                                    | X |   |   | X |   | M | Q |
| Tighten external components                         | X | X |   |   |   | M | Q |
| External operating mechanism                        | X |   |   | X |   | Q | A |
| Inspect interior of transfer switch                 | X |   |   |   |   | Q | A |
| Tighten internal components                         | X | X |   |   |   | A | A |
| LED indicators and remote control systems operation |   |   |   |   | X | A | A |
| Transfer switch main contacts                       | X |   | R | X |   | A | A |
| Tighten wiring connections                          |   | X |   |   |   | A | A |
| Thermographic temperature scan                      |   |   |   |   | X | A | A |
| Wire insulation deterioration                       |   |   |   |   | X | A | A |

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