

Provide Annual Preventative Maintenance using Caterpillar Extended Oil Drain Program for two (2) MoDOT owned Generators.

Location: 1617 Missouri Boulevard, Jefferson City.

<b>Generator Manufacturer</b>	Caterpillar	<b>kW</b>	800	<b>Engine Manufacturer</b>	Caterpillar	<b>Oil Capacity</b> 38 Gallons
<b>Generator Model</b>	800	<b>Voltage</b>	480	<b>Engine Model</b>	3412	
<b>Generator S/N</b>	TFT000231	<b>Amps</b>	1,203	<b>Engine S/N</b>	BLG02666	

Location: 601 West Main, Jefferson City. When this generator is out of service for maintenance, a contractor supplied generator MUST be set in service to maintain continuous backup during the entire maintenance process.

<b>Generator Manufacturer</b>	Caterpillar	<b>kW</b>	800	<b>Engine Manufacturer</b>	Caterpillar	<b>Oil Capacity</b> 38 Gallons
<b>Generator Model</b>	3412	<b>Voltage</b>	480	<b>Engine Model</b>	3412	
<b>Generator S/N</b>	TFT00106	<b>Amps</b>	1,203	<b>Engine S/N</b>	BLG00584	

Annual Maintenance Description to include oil/filter change.

### Electrical Systems

- Check battery electrolyte level and top off
- Check and record battery voltage
- Check and record battery charger amperage
- Check battery connection terminals and clean as necessary
- Clean battery posts and terminals
- Check battery charger and adjust float rate (if necessary)

### Lubrication System

- Check crankcase oil level and add up to 2 gallons of Caterpillar DEO API CG4 engine oil
- Visually inspect oil for contamination by fuel water or glycol
- Visual inspection of front & rear crankshaft seals and lubrication system gaskets for leaks
- Check for excessive crankcase blowby with engine running

### Cooling System

- Check coolant level and correct level if necessary
- Visual inspection of radiator/heat exchanger for leaks, damage and obstructions
- Inspect condition of radiator cap, gaskets and sealing surfaces
- Visually inspect engine coolant for contamination
- Visually inspect water pump and cooling system gaskets for leaks
- Inspect engine belts for fraying and cracking
- Check jacket water heater(s) for proper operation and adjust thermostat settings as needed
- Check and adjust belt tension if necessary
- Inspect hoses for cracking, leaking, and pliability
- Check and record engine coolant antifreeze protection

#### **Fuel System**

- Check level of main storage tank
- Test day tank pump for proper operation and level
- Inspect fuel lines for leaks or cracking
- Drain water from fuel separator
- Check fuel injection and transfer pumps for proper operation and leaks
- Drain water from water separator and fuel tank
- Check governor linkages, and oil level if applicable
- Check and record level in main fuel tank

#### **Air Induction and Exhaust System**

- Inspect air filter for deterioration and plugging
- Check inlet and discharge louvers for proper operation with engine running and stopped
- Inspect air intake piping for leaks and possible dirt entry
- Inspect flexible exhaust couplings for cracks & excessive leakage
- Inspect exterior of exhaust manifolds for oil/fuel slobbering (signs of wet stacking)
- Inspect exhaust silencer for deterioration

#### **Engine Mounts**

- Inspect generator set vibration isolators and adjust as needed

#### **Control Panel**

- Operational check of warning and fault lamps
- Check proper operation of engine and generator monitoring displays with engine running
- Adjust governor control for optimum performance and frequency
- Adjust voltage regulator for proper voltage
- Check remote annunciator for proper operation (if applicable)

#### **Lubrication System**

- Obtain engine oil sample for analysis
- Change oil filters
- Change engine oil
- Dispose of engine waste oil and filters in a legal and environmentally safe way

#### **Fuel System**

- Clean primary fuel filter (if screen type)
- Drain water and sediment from day tank (if accessible)
- Replace primary and secondary fuel filter elements
- Inspect and lubricate governor linkages

#### **Cooling System**

- Replace coolant filter (if applicable)
- Check concentration level of coolant conditioner to prevent cylinder liner pitting or solder bloom

#### **Generator and Voltage Regulator**

- Inspect rotor & stator for damage and excessive oil or dirt buildup
- Inspect couplings and guards for loose or missing parts
- Check fastening of generator leads and voltage regulator control wiring
- Strap and tape any leads that are rubbing or have worn insulation

#### **Automatic Transfer Switch**

- Check Operation of Transfer Switch
- Transfer Building Load to Generator, Check Operation of Transfer Switch

#### **Operational Checks**

- Check Overcrank safety
- Check Overspeed safety
- Check engine low oil pressure safety
- Check engine high water temp safety
- Check alternator output (if applicable)
- Check for unusual noises or vibrations
- Check for proper operation of remote fan motors, thermostats, circulating pumps and solenoids
- Check for oil, fuel and coolant leaks
- Check and record engine oil pressure
- Check and record engine coolant temperature
- Check and record engine rpm
- Check and record generator frequency
- Check and record generator voltage
- Check and record amperage under building load

#### **Upon Completion of Service**

- Set all controls to automatic
- Set circuit breaker to correct position
- Return area to condition it was in upon our arrival

#### **Electrical System**

- Clean & apply corrosion inhibitors to lead acid battery terminals
- Inspect and tighten starter motor(s) connections and wiring

#### **Generator**

- Inspect generator strip heater (if applicable)
- Lubricate generator bearing with Caterpillar bearing lubricant for high speed applications

#### **Turbocharger**

- Inspect turbocharger compressor and turbine wheel (if accessible)
- Check turbocharger shaft end play (if accessible)

#### **Automatic Transfer Switch**

- Replace Nine Volt Battery in Transfer Switch
- Inspect Transfer Switch for proper operation
- Inspect for burnt contacts and loose connections