



**Preventative Maintenance &
Operation Plan
for
REO Town Station
1365 kW/1818 BHP with 1,300kW
Generator Emergency Natural Gas
Engine**

March 1, 2022

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1.0 Plan Overview

The purpose of this Preventative Maintenance & Operation Plan the Stationary Emergency Spark-Ignition (SI) Reciprocating Internal Combustion Engines (RICE) is to describe the emissions control-related operational and preventative maintenance actions that will be taken to assure compliance with the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary RICE, 40 CFR Part 63 Subpart JJJJ requirements. [60.4230]

This Plan is not intended to address all preventative maintenance checks or actions that are recommended by a manufacturer, insurance carrier or otherwise required to be conducted by the Company for purposes of assuring startup and operation of an engine.

The current Plan, and prior versions, must be maintained for a period of five (5) years and made available upon request of an Agency.

The following personnel or positions (or their designees) are responsible for assuring that the most recent copy of this Plan is made available to personnel involved with the engine's operation, maintenance and readiness testing activities. This includes ensuring that the necessary employees are aware / trained in the procedures and requirements contained in this Plan.

Chad Koontz, Plant Manager
Patrick Sibley, Maintenance Supervisor

2.0 Equipment Covered by Plan

This Plan covers the 1365 kW (1818 Brake Horsepower) natural gas (i.e. spark-ignition) stationary emergency RICE with a generator capable of 1,300kW at the REO Town Station, 1201 S. Washington Ave., Lansing, Michigan 48910.

3.0 Engine Operation

The engine must be installed, maintained and operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require reduction of emissions to levels beyond those required by the NESHAP regulation [60.4320]

Engine settings:

All engine settings are to follow Caterpillar emissions related written instructions and are to be installed, configured, operated and maintained accordingly. Do not change any emissions related control settings unless authorized by the manufacturer. This will likely

void the engine's emissions certification and subsequently require emission testing to demonstrate continued regulatory compliance.

Emergency Operation:

An emergency engine may be operated for unlimited duration in the event of an emergency situation. Examples of an emergency include use of a stationary RICE to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc..

Maintenance & Readiness Testing:

An emergency engine may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The engine may not be operated for these purposes in excess of 100 hours per calendar year.

Other Non-Emergency Operation:

Operation outside of emergency situations, maintenance and readiness testing is strictly constrained. Contact the Environmental Services Department to discuss compliance requirements for other operating circumstances.

Operation Log:

A log of the hours of operation of each engine shall be maintained to document compliance. The log must include how many hours are spent for emergency operation, maintenance, readiness testing, and non-emergency operation (if applicable), as well as what constituted the emergency operation. Verify hourly limitations have not been exceeded on a calendar year basis.

4.0 Scheduled Maintenance

The following preventative maintenance actions must be conducted and documented for each engine on the identified schedule:

Before performing any operation or maintenance procedures, ensure that the Safety Information, warnings, and instructions are read and understood.

The maintenance that is recommended for Every Week can be performed by an authorized operator. The maintenance that is recommended for subsequent maintenance intervals must be performed by an authorized service technician or by the Caterpillar dealer.

Before each consecutive interval is performed, all of the maintenance requirements from the previous interval must be performed.

Every Week

A list of weekly preventative maintenance checks to be conducted prior to operating can be found in Appendix A.

Semiannual, Annual, and Triennial Maintenance

Other standard maintenance must be performed as recommended by the manufacturer. The manual recommends inspection and maintenance by an authorized service representative every six months, every year, and every three years. Specific inspection and maintenance tasks will be performed according to the manufacturer's recommendations.

NOTE: If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule specified, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources **must report** any failure to perform the work practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

6.0 Retention of Records

All compliance records shall be maintained for a period of five (5) years and may be retained in hardcopy or electronic format. Records must be readily accessible and made available to an Agency upon request.

Compliance records include:

- Documentation that the required maintenance activities were conducted
- Records of deviations for not conducting the required maintenance
- Corrective actions taken during periods of a malfunction to restore a malfunctioning equipment to its normal operation
- Record the operating hours and reason of use (i.e. emergency, maintenance, readiness testing) for each time an emergency RICE is run. Include a statement describing any emergency operations.

Appendix A

Weekly Startup Preventative Maintenance Inspections REO Town Natural Gas Emergency Engine

Below are the weekly maintenance checks recommended by Caterpillar, the engine manufacturer when conducting operational checks. For more specific information consult the operation and maintenance manual. A copy of the maintenance manual is available in the Control Room.

- Check Air Inlet Filter
- Check Air Starting Motor Lubricator Oil Level
- Drain Air Tank Moisture and Sediment
- Inspect Automatic Start/Stop
- Check Battery Charger
- Check Battery Electrolyte Level
- Measure/Record Bearing Temperature
- Check Cooling System Coolant Level
- Check Electrical Connections
- Inspect Electrohydraulic System
- Inspect Engine Air Cleaner Service Indicator
- Clean Engine Air Precleaner
- Check Oil Level
- Check Fuel System Filter Differential Pressure
- Check Generator Load
- Check Jacket Water Heater
- Check Power Factor
- Check Space Heater
- Check Standby Generator
- Measure/Record Stator Winding Temperature
- Check Voltage and Frequency
- Conduct Walk-Around Inspection