

Reasons for Generator Preventative Maintenance Service

Battery failure

The single most frequent service call for generator failure is related to battery failure.

80% of all battery failure is related to sulfation buildup.

Battery experts recommend replacing them every three years.

Low coolant levels

The most obvious cause for a low coolant level is either an external or internal leak.

While many generators are equipped with low coolant level alarms, few have a dedicated alarm indicator for low coolant. Commonly, this alarm will be tied in to a high coolant temp shutdown circuit.

The thermostat will not open enough to allow proper circulation during regular weekly running of the generator. It will have to be tested under a full load test with an external load bank. It is the only accurate way to check a cooling system.

Low coolant temp alarms

Low coolant temp alarms are mainly the result of faulty block heaters. Given the fact that they run 24 hours a day, seven days a week, they're going to fail periodically

Oil, fuel, or coolant leaks

Most often, oil leaks are not in fact leaks but the result of "wet stacking" (or "engine slobber") caused by excessive no-load run time. Diesel engine generators are designed to operate with a load, most effectively in the 70% to 80% range of rated output. When generators operate considerably below the rated output level, the engine can start to over-fuel or "wet stack" and damage the engine.

Wet stacking - an accumulation of carbon particles, unburned fuel, lube oil, condensed water, and acids in the exhaust system — is caused by low-combustion chamber temperature. When a diesel engine wet stacks, the engine will need to be cleaned up by installing an external Load bank on the unit for a few hours and burning off the excess fuel. If a diesel engine generator steadily runs loads considerably below the rated output level, you should Load bank test your Generator once a year to prevent "Wet Stacking".

Another cause of oil leaks is directly related to the crankcase breathers.

The most common coolant leak occurs in the block heater hoses.

Cooling system maintenance will help prevent leaks.

Replacement of hoses and coolant every three years is recommended.

Most fuel leak service calls are due to overfilling of the base tank. This is due to either human error or a failure of a pump system.

Controls not in auto

“Not in auto” messages are the direct result of human error. The obvious reason for “not in auto” situations is because the main control switch was left in the off/reset position. This usually occurs after testing or servicing of a generator. After any service is performed on a unit, always double check the generator system yourself.

The control switch may have several positions as in “off/reset” and “cool down,” which will cause the generator not to start in the event of a power outage. These positions should give an alarm. “Not in auto” is a generic term for the unit not being shut off, and may not actually be the main control switch. Alarms not reset, breakers open, switchgear not reset, and emergency stop buttons activated are all examples of “not in auto” failures.

Simulate a fault to see what it takes to get the generator to run in the event of an emergency.

Air in the fuel system

This is a common problem with newer generators that are not run on a regular basis. Closer tolerances within the fuel systems to meet today's emission requirements make fuel systems more susceptible to air affecting startup. This is not as common with older generators — many of which may have a leak in a line or check valves that are not properly holding the fuel in the engine.

Ran out of fuel

Mechanical fuel level gauges may not always be accurate. Unlike a vehicle that is moving and using a higher percentage of its tank's capacity, a generator tank has no movement, causing the fuel to become stagnant. Mechanical gauges may also stick in a position until vibrations break them free.

Low level alarms must also be addressed, as they provide the same failure alarm. Some generators are equipped with “low level shutdown” or “critical fuel level shutdown.” These shutdowns are there to prevent the fuel system from drawing in air when running out of fuel is eminent. Bleeding air out of a fuel tank can be an extremely difficult procedure.

Running out of fuel due to plugged fuel filters can be prevented by maintaining the fuel tanks. Fuel Filter should be replaced once per year.

Breaker trip

First, verify that nobody has accidentally pushed a remote emergency power off switch.

If a breaker trips after the automatic transfer switch (ATS), the generator will not start. The status of the automatic transfer switch should be checked during a power outage. The ATS should have lights or a display showing the switch position and source availability. If you find a breaker tripped, make sure you can determine the cause of the trip prior to resetting.

Never try to manually operate an ATS if you don't know how to do so properly. Severe bodily injury or immediate death can occur. The transfer switch is smarter than you think and has a specific reason for being in its current position; attempting manual operation may drag you into a live bus if done incorrectly.