



POWER GENERATION

Take regular samples representative of normal operating conditions. Send them to Enluse Laboratory for testing and analysis.



Enluse Laboratory processes the sample. Testing is completed, results are analyzed, recommendations are made and a report is generated.



Enluse Laboratory emails the results to the customer. The customer evaluates the recommended course of action.



Customer takes action and performs the necessary maintenance.



The money you can save and the unplanned outages you can avoid by routinely sampling power plant equipment easily justifies the expense of oil analysis. Effective condition monitoring through oil analysis allows you to perform oil changes and necessary maintenance based on test results - what is actually happening within the unit - rather than on the basis of hours in operation or days elapsed on a calendar. Dramatically reduce unscheduled outages. Give your maintenance program the power to prevent catastrophic ... It costs so little to protect so much.

Turbines, generator and back-up generator diesel engines, compressors, gearboxes and hydraulic systems are the units most critical to uninterrupted, trouble-free power generation. Fluid testing for power generation equipment can be separated into two regimes:

- Monitoring the condition of the unit and some fluid properties requires regular, monthly sampling to determine wear and contamination levels.
- Monitoring fluid quality requires sampling only once or twice a year from system reservoirs, bulk storage tanks or new lube totes to determine its suitability for use.

TURBINES

Turbine oils lubricate and cool bearings and gears. They should resist oxidation and prevent the formation of sludge and rust. Even slight changes in these properties, as well as viscosity levels, can warrant corrective action.

DIESEL ENGINES

Diesel engines are the power units for your business and without power, all work stops. It is imperative to monitor wear, contamination and the oil's properties to insure these engines do not fail prematurely. Unscheduled downtime is far more costly than the cost of repairs. Monitoring the condition of the coolant and the fuel along with the oil puts all of the pieces of the puzzle together to tell a clear story. Choose the testing regime below that meets your maintenance and financial goals for your fluid analysis program.

COMPRESSORS

High discharge temperatures and the continuous presence of heated air require compressor oils to be highly resistant to oxidation, which can adversely affect viscosity and acidity. Condensation is also a frequent problem. If the oil cannot properly separate the water out, emulsions form preventing adequate lubrication of metal surfaces.

GEARBOXES

Dirt and water are the two most common contaminants in gear systems and can cause significant wear drastically shortening the life of the gear system. Because of the type of wear that occurs in gear systems it is crucial to monitor not only the small wear particles in these systems but also the large wear particles. Choose the testing regime below that meets your maintenance and financial goals for your fluid analysis program.

HYDRAULICS

Cleanliness is critical for fluid power systems such as hydraulics and auto/powershift transmissions. If the fluid is dirty, valves will stick, components will wear and work will come to a screeching halt. Trying to fix these problems in the field without information on what needs to be corrected can create even more contamination problems, compounding your issues. Choose the testing regime below that meets your maintenance and financial goals for your fluid analysis program.

CONDITION MONITORING

This testing monitors equipment condition and can identify types and possible sources of wear and contamination. It includes a ISO Particle Count. A ISO Particle Count provides a three tiered ISO Cleanliness Code based on 4/6/14µm (microns) and a cumulative distribution of particles at 4,6,10,14,21,38,70 & 100µm. Analytical Ferrography/Micropatch is a qualitative, rather than quantitative, analysis that provides digital imagery of those particles and can be added to the Advanced Condition Monitoring package.

FLUID QUALITY TESTING

Testing fluid quality ensures that an oil meets manufacturer specifications and/or industry recommendations for long-term use. Sampling should be done once or twice a year from bulk storage tanks, new lube totes or from a system's reservoir if a large sump capacity makes oil changes impractical. ASTM's D 6224-98 is Standard Practice for In-Service Monitoring of Lubricating Oil and Auxiliary Power Plant Equipment. ASTM's D 4378-97 is Standard Practice for In-Service Monitoring of Mineral Turbine Oils for Steam and Gas Turbines. In accordance with these standards, POLARIS Laboratories® offers the following tests:

ADVANCED CONDITION MONITORING

TESTS INCLUDE:

- 24 Metals by ICP
- Water % by Karl Fischer
- Viscosity @ 40
- Total Acid Number
- Analytical Ferrography/ Micropatch
- Particle Quantifier (PQ) – ferrous density
- ISO Particle Count

FLUID QUALITY TESTING

TESTS INCLUDE:

- 24 Metals by ICP
- Water % by Karl Fischer
- Viscosity @ 40
- Total Acid Number
- Oxidation
- Particle Quantifier (PQ) – ferrous density
- Flash and Fire Points
- Rust
- Copper Corrosion
- Foam
- Insolubles
- Color
- Water Separability
- Ruler (LSV - % phenols/amines)
- RPVOT
- MPC – Varnish Potential

