

Learn why it will take more than a simple system flush to prevent varnish formation and keep your operation pushing forward

Varnish...

...is a coating that's made up of organic residue mixed with metals, inorganic salts and other contaminants that stick to surfaces and restrict equipment performance.

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What's the cause...

The main culprit is **oil degradation** over time in your system.

High operating temperatures deplete the protective additives in your lubricant. The byproducts precipitate out and attach to surfaces, building up varnish.

and the effects?

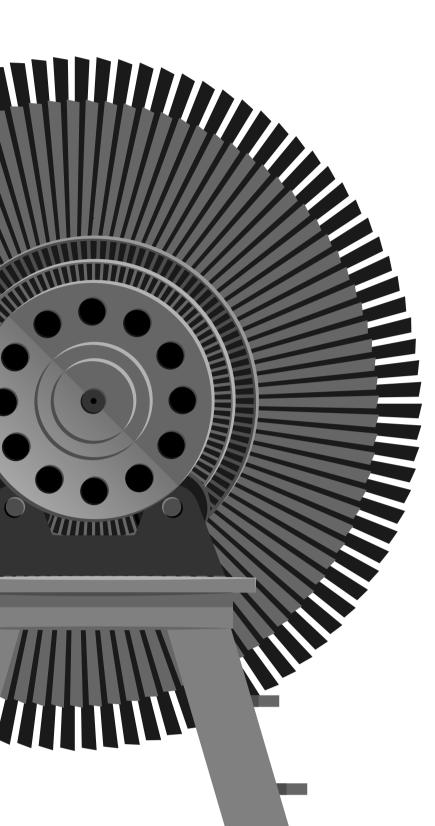
Component damage

- Reduced lubricant, filter and seal life
 - Seized or stuck valves
 - Inefficient heat exchangers
 - Bearing failures

efficiency

Lower operational

- De-rated equipment
- Unplanned shutdowns
- Failure to meet peak demand
- Increased maintenance workload



Higher costs and **lost profits** for the business owner

Operating costs

Filtration hardware capital costs

Incremental oil analysis costs

Maintenance costs for servo valves and last-chance filters

Top-treat chemical costs

Estimated \$40,000 per turbine, per year

Penalties and lost revenue due to failure to start or trip event

Approximate \$100K to \$1 M range from



The real impact: A vicious cycle

necessary, but not enough A more holistic

varnish solution

Flushing is

Discover the VARTECH™ Solution

Even with a flush, more varnish layers will continue to form. The problem spirals toward inevitable equipment failure and its consequences.

As varnish builds up over time, it raises the temperature

of your system and causes further degradation.

Waiting to react to varnish after it causes problems won't

solve them. You need to take action sooner—and if oil

degradation is part of the problem, then oil choice needs to be part of the solution.

Regular oil analysis can give you vital information about lubricant health to help you fight varnish when—and

before—it forms. The real answer is a combination of reliable cleaning and an oil that's designed to prevent

varnish formation in the first place.



System Cleaner (ISC) Developed to excel where conventional competitive

cleaners fall short, VARTECH™ ISC is added near the end of the in-service oil's life to clean existing varnish.

It provides drain schedule flexibility and prepares the system for fresh oil—all while the operation remains online. Cuts through hard varnish to remove it as micro-sized particles



Captures and stabilizes varnish particles in a protective barrier to enable removal

Provides compatibility with in-service



oil for optimum operational flexibility and performance

Control Using GST Advantage™

Formulated with advanced chemistry to limit varnish precursors, GST Advantage™ with VARTECH™ Technology

with VARTECH™ Technology

turbine oils help maintain peak performance, reliability and productivity by preventing varnish formation before it starts.

Helps reduce oil degradation



Helps improve oxidation stability



Helps extend oil life by limiting

varnish precursors

of Chevron Intellectual Property LLC or their respective owners.

Most importantly, you need to work with a partner who understands your policies for management of change. We understand that process, and what it will take to make a lubricant switch work while keeping your operation pushing forward.