



TURBINE TIPS

Turbine Tips provided by Pond and Lucier, LLC. ®
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If I Owned Some Gas Turbines...

If I was responsible for gas turbines that only started and operated infrequently, but were vital to the emergency and peaking power plan for the utility, this is what I would do to assure that the units were reliable and available:

- On the **1st Monday** of the month, I'd put the unit in **CRANK** and give it a start signal. I would do a walk around and look in each compartment for oil or water leaks, etc. Then I'd, shut it down and record the time it took to roll down to rest and go on ratchet. If I found something wrong, or if the unit did not achieve "cranking" speed, I'd issue a work order to fix it right away.
- On the **2nd Monday** of the month, put the unit in **FIRE** and give it a start signal. If the unit established "flame," I would walk around and look into the combustion and accessory compartments and look for fuel leaks. If the unit did not light off, I'd switch back to "crank" and purge the unit for 5 minutes at cranking speed and try to fire again. If it did not fire, I'd shut it down and test the spark plugs and flame detectors.
- On the **3rd Monday** of the month, I'd select **AUTO** and go for FSNL. I'd record start-up data and plot start-up curves. Then I'd compare it to previous starts. I'd walk around and check operations and look for lube oil, compressor, air, water, or fuel leaks.
- On the **4th Monday**, I'd select **AUTO** and run it up to full speed/no load (FSNL), synchronize to the power grid and load to **BASE** temperature control. I'd run for at least one hour, or until wheel-space thermocouples temperatures stabilized. I'd record full sets of operating data. Again, I'd walk around and check for lube oil, air, water, or fuel leaks.
- I would repeat these actions **every** month, particularly during months leading up to the running season, when the units "might" be called upon to run. Also, I would change lube oil and fuel oil filter cartridges when they reached a high Delta-P, or follow the manufacturer's "one year wet rule," whichever comes first.
- I would perform a borescope inspection **annually**. Also, I would perform an inlet duct and inlet plenum inspection bi-monthly. Look for witness marks for any lube oil leaks at the #1 turbine bearing. Look in the exhaust area for oil leaks that could cause fires.
- Trace out any grounds that may arise with the Speedtronic™ controls or thermocouples.

These are the actions I would take if it were my job to make sure the gas turbines under my control were ready and reliable to meet peaking or emergency demands.

If you have any questions about maintenance for your turbines, please contact Dave Lucier at Pond and Lucier, LLC at dave@pondlucier.com or call 518-371-1971.