POWER GENERATION

FACILITY:	APPLICATION PROBLEM:	SOLUTION:	SUCCESS SINCE:
Combustion Turbine Plant N. Mississippi, USA	Dual Fuel Water Injected Turbines High Flow Lockout	DFT® Model GLC® Check Valve 3" - 600 lb 316SS/316SS	2008

Challenge:

Water injected combustion turbines are notorious for being difficult to start when switching from diesel fuel to natural gas. If any of the twenty (20) factory installed check valves fail, it will allow air to back up to the isolation valves causing a failure mode on the turbine. Since it is impossible to detect which valve has failed, all 20 must be taken out of the line and checked. All of this causes the turbine to go into "High Flow Lock Out", which is even more of a problem for remote start stations.

The customer wanted to remote start the turbine from a distant location in 15 minutes from a cold start. Diesel fuel is the only option for this quick start.

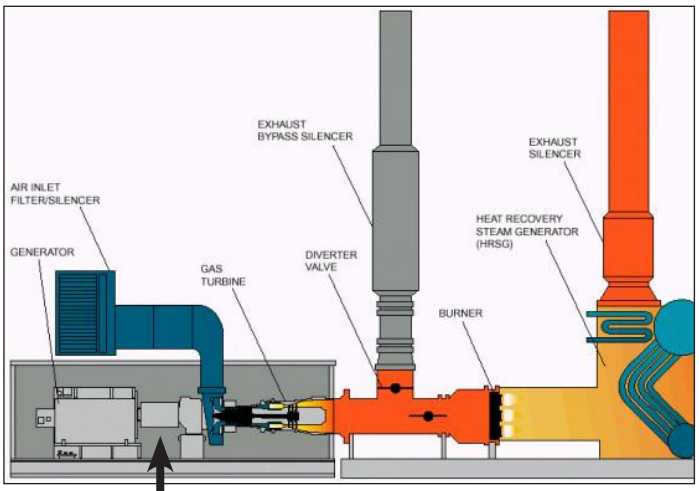
The turbines can run on natural gas or diesel fuel. The customer must get permission from the local gas company to run its turbines on natural gas. Any disruption of natural gas would rely on the diesel back up. This is due to turbines consuming so much natural gas that the gas company must make sure that its compressor station in the area is running at max capacity. If not, downstream customers may be negatively affected.

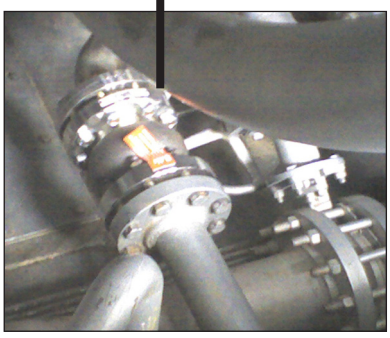
Solution:

The customer installed the 3" 600# 316SS/316SS GLC with special sizing, soft seat and special spring on the water injection line near the turbine. This has eliminated the back up of air to the isolation valve. The turbines are working properly on diesel fuel or natural gas. This retrofit has been in service since 2008 without any failure of the diesel fuel system.

Contact DFT for a solution to your problem.

The image below shows the DFT model GLC Check Valve installed on Low NOx Dual Fuel Turbines. When the turbine runs on diesel fuel, water is injected with the diesel fuel to lower the emissions and increase power. There is a 3" 600# water injection line running to each turbine. At the turbine the line is split into 20 – ¾" lines that are spaced equally around the turbine.





INSTALLATION: The DFT 3" ASME 600# 316SS/316SS GLC with sizing, soft seat, and special spring on the water injection line near the turbine in the box (approximate location indicated by arrow in above picture).

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