

Management and safe disposal of contaminated waste chemical and rinse water from off-line compressor cleaning has always been a very costly problem for gas turbine operators.

That's why Rochem decided to put it's many decades of chemical cleaning and water treatment knowledge to good use and is now pleased to offer the most elegant and cost-effective total solution to this problem.

Get ROKET™ and resolve your crank-wash effluent problems in the most economical and ecological way possible.



## ROCHEM Technical Services Group

Another important innovation from the world leader in compressor cleaning systems and chemicals

Introducing ROKET™ the most cost-effective and environmentally friendly solution to the problems of dealing with contaminated chemical waste from offline gas turbine compressor washing



Recover 90% of your crank wash waste.....

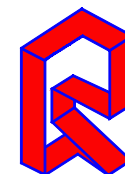


.....from a ROKET™ system like this.....

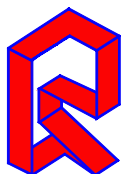


.....as pure, reusable water like this!

[www.rochem.net](http://www.rochem.net)



Always learning, leading and innovating



**Rochem's "Krankwash™ Effluent Treatment" system ROKET™ can save gas turbine operators a lot of money and a lot of headaches in trying to comply with costly pollution regulations while also trying to maintain plant efficiency at the highest possible levels**

Regular gas turbine compressor cleaning is vital to maintain power output and fuel efficiency- especially in today's world of very high fuel prices and low margins of profit.

Some operators utilise a combination of on-line and off-line washing while others rely solely on off-line washing to maintain acceptable levels of cleanliness and efficiency.

However, while on-line fired washing offers the distinct advantage of having no contaminated waste to deal with, off-line, crank-washing procedures - no matter how effective - carry the considerable extra cost penalty of having to safely deal with the considerable volumes of contaminated waste chemical and rinse water which result from this cleaning procedure.

**And this is how ROKET™ can reduce the problems and costs associated with the collection and disposal of crank-wash water and chemical waste by 90% or more**

- Automatically collects and separates all crank-wash waste chemical and rinse water back into its original constituents of (a) concentrated chemical and (b) pure water
- Recovers 100% of the water element as pure demineralised water which can be stored for future re-use or be safely discharged to drain.
- Recovers 100% of the original post-wash chemical element—including the removed compressor contamination—in concentrated form either for longer term storage within the system or for immediate incineration on site.
- By separating 100% of the water element from the crank-wash waste - which includes all the contaminated post rinsing water - the remaining volume of contaminated chemical waste that has to be disposed of is typically reduced by some 90% or even more depending upon how much rinsing water has been used and what the original water/chemical solution mix ratio was
- This process allows for following two disposal options both of which are elegant simple, non-polluting and which offer major cost savings.

**Option 1** is to simply to store the much reduced volume of concentrated chemical waste safely within the system and/or other storage facility on site until sufficient has been collected for disposal in one economical load-instead of 20 separate loads-by a contractor

**Option 2**-is to mix the relatively small volume of chemical concentrate with fuel oil and burn on site in any low grade boiler system—thereby achieving the absolute optimum of **ZERO DISCHARGE** from compressor washing procedures

**How the ROKET™ system works and how it was developed**

The expertise and experience within the Rochem Group of companies which enabled the successful development of the ROKET™ system lies in four specific areas of product design, manufacture and world-wide marketing

- Marine and industrial chemicals of every kind - over 35 years
- Cleaning systems for gas turbine and process compressors - over 25 years
- Reverse Osmosis (RO) and ultra filtration (UF) systems - over 20 years
- RO and UF membrane manufacture - over 10 years

The development of ROKET™ required knowledge and expertise in all four of those disciplines for the following reasons

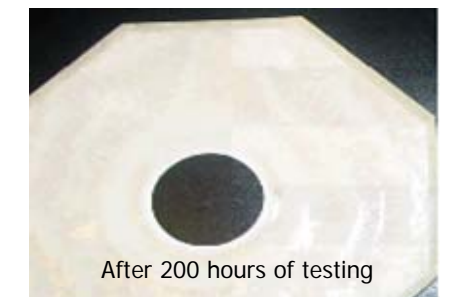
- Chemical knowledge to produce cleaning agents that effectively remove compressor contamination.
- Cleaning system knowledge to ensure the optimum delivery of the cleaning agents for both on and off-line cleaning.
- RO And UF system knowledge to understand how best the spent crank wash chemical and water could be successfully separated
- Membrane knowledge in order to successfully develop a new membrane material that could withstand chemical attack from the crank wash waste and which could be effectively cleaned in service to restore efficiency



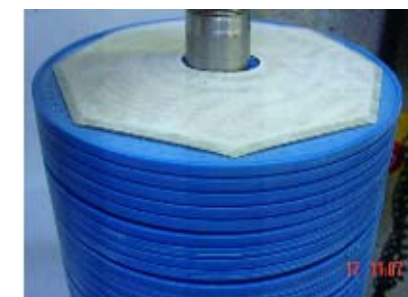
It all started with this miniature proof of concept working model



And the development of this special RO membrane



That proved impervious to damage or chemical attack



Using the unique patented and highly successful Rochem Disc tube membrane module technology



Capable of recovering 95% of the crank wash effluent as pure reusable water



And now available with standard treatment capacities of 500, 1000 and 2000 litres/day

Rochem will also be pleased to custom design and manufacture the ROKET™ system to any treatment capacity to suit the specific requirements of any Gas Turbine OEM or any operator with multiple sites and differing treatment capacity requirements