

ESP Varnish Removal: Industrial Gasses Manufacturer Extends Compressor Life by 2 Years



Industrial Gases Manufacturer Uses Fluitec to Extend Oil Life by Two Years and Keeps Production Running.

One of the world's largest providers of industrial gasses, manufacturing oxygen, nitrogen, argon, hydrogen, carbon monoxide needs to be operational 24/7/365 in order to serve hospitals and manufacturers worldwide.

"We used Fluitec ESP to extend the (compressor) maintenance interval. We have a few machines that are running just because we have the Fluitec ESP machines on them."

Navin Raj Natarajan
Mechanical Engineer



Executive Summary

The Maintenance Centre team at an industrial gas separation plant has the overwhelming responsibility of one simple thing... to keep production running. Being down for even a moment has massive repercussions throughout the industrial gases business pipeline.

Many lube oil degradation problems are widely acknowledged in the industrial gases industry, including varnish deposits on bearing pads that result in elevated bearing temperatures and, ultimately, shut downs. Oil analysis indicated high MPC (Membrane Patch Colorimeter) varnish potential in their oil on several pieces of their compressor equipment.

Challenges

Navin Raj Natarajan, a Mechanical Engineer, and his team were heavily concerned with the evidence of deposits throughout their lubricating systems. This led to shutting down operation, changing out the oil or even replacing the entire unit.

With the help of Fluitec, Navin's team crafted a proactive approach to identify and correct these issues. Keeping their critical customers



like hospitals that rely on steady delivery of even more critical gases in mind, they wanted to completely avoid down time, save on expensive maintenance intervals and do so in an environmentally positive way.

How Fluitec Helped

Navin and his team sought out industry maintenance best practices and as a result turned to Fluitec for the solution. The goal was to understand, identify, remove and control varnish contamination. They installed Fluitec's ESP (Electrophysical Separation Process) technology to remove oil degradation contaminants. In more than five years since the installation, Navin hasn't experienced a single lubrication related failure.

"I feel the advances we've made in our lube oil program is from Fluitec helping us. We understand our oil better and we now know how to take care of our oil even more..."Navin Raj Natarajan



The manufacturer was experiencing high varnish potential as measured by MPC. Since installing Fluitec's ESP technology they have been able to extend their equipment maintenance intervals by two years.

Results, Return on Investment and Future Plans

Beyond the fact that the air separation plant has not had a lubrication related failure since installing Fluitec's ESP, they're also able to extend the life of the oil to match the maintenance intervals of the machine.

"What were three or four year (maintenance intervals) is now five or six years. We are able to extend the life of the oil to the maintenance interval of the machine," said Navin.

Navin and his team have a culture of instilling and promoting proactive maintenance practices and their forward-thinking approach; working with Fluitec has paid off in dividends.

"Fluitec was able to explain how MPC correlates to the varnish potential of the oil as well as how the oil behaves at high temperatures inside our machines. Their expertise actually enabled us to understand our machines better."