From Beginning, to End, We Can Help You Save & Show You How!

Enhanced Measurement & Verification and Performance Restoration – Large Data Centre

PERFORMANCE RESTORATION
DEEP CLEAN
ALL-NATURAL

Looking For A Solution

In 2019 BioScrub™ worked with a large Data Centre that were looking to add more equipment to their already large Facility without investing in more cooling capacity to their current Computer Room Air Conditioning (CRAC) Units. The organization reached out to Bioteknik Environmental to investigate the benefits of using the BioScrub™ Coil Restoration Process to reduce the current energy consumption and take hold of some energy and cost savings while restoring the performance of their current cooling equipment.

Analysis Plan

In order to provide the Data Centre with the most detailed and accurate data to make informed decisions for their future business strategies, our BioScrub™ Experts proposed performing a controlled Demonstration Project which included Measurement & Verification performed independently by Renteknik Group's professional Engineers to compare energy consumption and estimated energy savings on a reference CRAC Unit (CRAC #1) that was not treated with BioScrub™ and a CRAC Unit which received the BioScrub™ Restoration (CRAC #2).

The Project Methodology

Our BioScrub™ Experts went to work actioning the Demonstration Plan.

CRAC #1 Circuit A was utilized as a reference only, with no application implemented.
CRAC #1 Circuit B was cleaned using Supersaturated Steam only without the application of the BioScrub™ probiotic cleaning solution.
CRAC#2 Circuit A & B: Both received the BioScrub™ Coil Restoration including proprietary probiotic application and Supersaturated Steam to remove biofilm.

Both Systems were monitored pre and post BioScrub™ application, to be able to truly compare the energy consumption and energy savings achieved by utilizing our innovative BioScrub™ process under the same operating conditions.

The BioScrub™ Restoration Process is an innovative service and approach that can be applied to virtually any type of Heating, Cooling, Refrigeration, Heat Exchangers and Ventilation equipment across any application and industry range. Our probiotic solution is all-natural and 100% safe on all surfaces. Our services go beyond traditional offerings, providing our Clients with Engineering support to help with recommissioning, optimization and measurement & verification services.

The Scope of Services included collecting data on the baseline operation of the two (2) Compressors (Circuit A and B) on each of the two (2) CRAC Units utilizing a proprietary *ClimaCheck* Performance Analyzer. This Analyzer allowed for the collection of real-time performance data on the equipment including, temperatures, pressures, and power to measure energy use as well as efficiency of the Units.

BioScrub™

By implementing and monitoring both CRAC Units and their respective Circuits (A and B), with the *ClimaCheck* Performance Analyzer, the engineers were independently able to accurately measure and compare the System's Efficiency Profile, Power Profile and Energy Savings based on System reference and treatment applications. With this real-time insight and data, the Client was provided with much needed information into pre and post performance, which ultimately was extremely helpful for the Data Centre's future business decisions.

M & V Results

The baseline Power Profile results on both CRAC Units found the average power consumption of the CRAC Units were directly proportional to Outdoor (ambient) temperature. This means that in their baseline state, if there is an increase in outdoor temperature, there will be a resulting increase in power consumption on the Units. This was proven on CRAC #1 Circuit A which was untreated and showed no change in energy consumption in the pre and post data. CRAC #2, on the other hand demonstrated a significant decrease in energy consumption post BioScrub™ despite the increase in outdoor temperature.

The post BioScrub™ Performance Restoration application analysis demonstrated significant improvements in performance within the overall equipment. Utilizing the kW/ton improvement and the power profile for the compressors, the annual energy consumption of the compressors provided a substantial **energy savings of 13,539 kWh.**

13,539 kWh
OVERALL ENERGY SAVINGS

13%
SAVINGS IN TOTAL ENERGY CONSUMPTION

8.9 MONTHS
SIMPLE PAYBACK (4.4 Months with incentives)

WHY BIOSCRUB™?

- An innovative service & approach that can be applied to virtually any HVAC/R equipment.
- Improves equipment performance and operational efficiency.
- Improves equipment reliability and extends service life.
- Improves health and wellness outcomes within surrounding environment.
- Increases productivity of equipment.
- Decreases utility costs.
- Our Engineering experts will provide performance based monitoring to identify unforeseen issues prior to equipment shut down or replacement.

If you would like to learn more or discuss this case study further please contact us!

1-855-634-3888 | Info@bioteknikenviro.com | Bioscrubefm.com

BioScrub™