



GAS TURBINE DIVISION

Case Study

HEPA Filter Performance Upgrade

Atlantic City, New Jersey

This cogen site utilizes one (1) 8.0 MW Solar Taurus 60 gas turbine at its central utility for generating power, heating, and chilling.

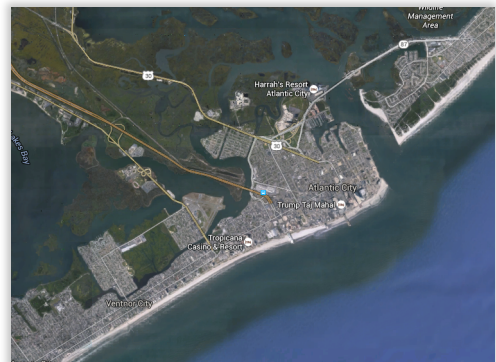
The air inlet filtration system on the gas turbine consisted of an upflow canister system, with Donaldson D-Salt filter elements rated E10 as per the EN1822 test standard.

Site is less than three miles from the ocean and surrounded by water, marshes, and interstate highways. The resulting environment presents salt spray, mist, fog, and hydrocarbons.

Problem

The operator was experiencing compressor fouling and high pressure spikes during fog, mist, rain, and high relative humidity events. As a result, the unit was experiencing performance degradation and filters were having to be replaced about every six (6) months.

The operator approached AAF as world leaders in HEPA technology looking to prevent compressor fouling and corrosion while at the same time extending the life of the filters.



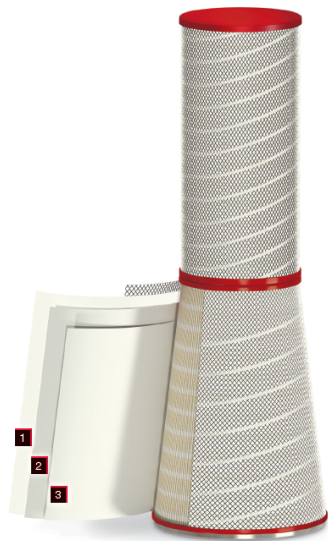
Atlantic City, New Jersey



Upflow Cartridge System



Competitive E10 filters spiked in pressure after six months of service



- 1 | **Hydro-Phobic Pre-Filter Layer**
- 2 | **Depth-Loading E12 (H)EPA Media**
- 3 | **High-Strength Substrate**



Urban and coastal environmental considerations

Solution

AAF replaced the existing filters with HydroShield XL filters that are rated at E12 per EN1822 test standards. The unique depth-loading membrane technology of the HydroShield offers maximum protection to the gas turbine, preventing compressor fouling, prevents hot end corrosion by eliminating salt ingestion and eliminates the need for both online and offline washing.

The HydroShield also comes standard with the HydroSleeve pre-filter, which is designed to coalesce moisture and keep the final filter dry during high humidity events, which helps to keep the resistance across the filter to a minimum.

Designed with the same geometry and dimensions as the existing OEM canisters, HydroShield XL was directly fitted into the existing filter house with no modifications to the equipment.

Successful Outcome

The HydroShield XL filters were installed and they lasted twice as long as the competitive brand of filters. Rain or heavy fog events are no longer a problem for this customer as the HydroSleeve technology prevents pressure spikes during these events.

No signs of fouling or corrosion were observed after the upgrade to the HydroShield XL product and the resulting resistance curves indicated that the HydroShield XL would achieve the same final resistance of the competitive filters after two years of service, but the customer decided to proactively change the filters after 12 months because that was already a 100% life extension versus what they had been obtaining with the competitive brand.

HydroShield XL is now the corporate standard for this end user.

**100%
Life
Extension**



NEW



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