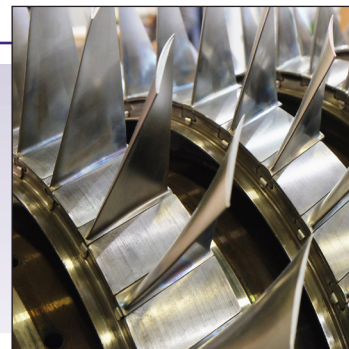


Power Generation, Oil and Gas

Pleated cartridges for high temperature gases, USA

Customer:	Power generation turbine manufacturer
Application:	Process: Purification of high temperature gases
Products:	Custom Sinterflo® F fiber cartridges
Primary Motive:	Maintain purity and quality of hot gas feed
Location:	USA
Project Date:	2020
Division:	Ashland, USA



Customer Overview:

One of the largest producers of power generation turbines in the world with a well-established presence in the Americas. They produce the turbines and build the balance of plant (turn-key combined cycle power plants).

This business model allows them to properly install the turbine and ancillary systems to guarantee the turbine for thousands of operating hours without downtime. These turbines are fuelled with natural gas (NG) which is preheated to high temperatures (600-800°F) before it enters the turbine.

Customer's Problem:

The customer was having issues with contaminant by-pass because the current metal cartridges were DOE with elastomeric seals which could undergo slight deformation due to the high temperature of the preheated natural gas (NG).

Porvair Solution:

Porvair worked with the customer to design a custom engineered multi-cartridge filtration system to handle the flow rate, incorporating Sinterflo® F fiber media. Each individual cartridge is now completely welded and includes special threads to ensure virtually no contamination by-pass, guaranteeing the purity of the NG into the turbine.

The elements allowed for a very robust sealing mechanism to avoid by-pass of contamination with an added ease of operation.

Project Overview:

Porvair's engineered design, incorporating Sinterflo® F fiber media, includes several one-piece cartridges fully welded with especially machined male threads and a matching female adapter to be welded to the pressure vessel. Both male and female threads are designed and manufactured according to the client's most stringent specifications. This ensures a virtually no by-pass connection to address the client's operational issue.

System Information:

The scope of supply includes several pleated cartridges constructed of SS 316L fibre and their respective matching female adapter constructed of Nitronic 60 to receive the cartridges.

Other Opportunities:

This technology can be utilized on all applications for high temperature gases (flue gas, mixed gas, natural gas (NG), and any gas flowing in the industry) where polymeric media is unable to withstand high temperature (800°F and above).

The cartridges can be tailored to handle various temperature requirements by using the appropriate material (Inconel, Hastelloy, Fecralloy, etc.).

These applications can be found in power plants (all combined cycle plants running on hot NG (600-1000°F), refineries and some processes at chemical plants.