Removal of Radioactive Particulate

Nuclear Filtration

porvair filtration group

Removal of Radioactive Particulate from Effluent Wastewater

Customer:	Nuclear Power Station
Application:	Low-level radioactive effluent filtration
Products:	Back-washable Duplex filter assembly (Sintered metal powder elements in vessels)
Primary Motive:	To remove radioactive particulate from effluent wastewater. New application for plant process expansion.
Location:	UK
Project Date:	2020-2021
Division:	Segensworth, UK

Customer Overview:

An established UK engineering consultancy company working on behalf of the plant owner on a new application in an existing operational nuclear power station.

Customer's Problem:

The customer approached Porvair for a solution to remove radioactive particulate from effluent wastewater.

The solution had to be designed to fit into the existing power plant process with size constraints and needed to include for a back-washable cleaning solution to be operated in-situ.

The solution was required to be robust in nature to withstand numerous back wash cycles and to be corrosive resistant to Boric acid.

Porvair's Solution:

Porvair Filtration Group custom-designed and manufactured a liquid back-wash Duplex filtration system, which consists of 2 stainless steel 316L vessels containing 17 each sintered metal powder (stainless steel 316L).

The filters were rated at 99.98% efficiency at 5µm in liquid. The customer preference was a manual back-wash system, however PFG can also supply automated systems and gas assisted systems to provide an enhanced cleaning solution.

Product and System Information:

2 vessels with swing bolts for easier access, one skid, Sintered Metal Powder filter elements and associated pipework.

Other Opportunities:

Porvair manufactures custom engineered solutions, both liquid and aerosol for every stage of the Nuclear Fuel Cycle.

We have the capability to provide everything from a single, specialised, retrofit element to a complete, packaged system to meet the precise needs of a complex application, together with on-site support and a complete after sales service.

In addition to our acknowledged leadership in both engineering and quality, we also have the capability to offer the services of our extensive laboratory, development and testing facilities.

Our range of products includes:

- Pulsed jet self-cleaning air and gas filtration systems
- HEPA filtration systems
- Caesium capture protection
- Waste package filter vents/breathers designed to meet filtration efficiency, hydrogen diffusion and pressure differential requirements
- A variety of other designed-for-purpose filtration and separation packages.

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World Class Filtration Solutions