

All Metal Filter Module (AMFM)

Background

All metal filter modules (AMFM), developed by Dominion Engineering, Inc. (DEI) and offered by Westinghouse, were originally intended to collect large quantities of activated corrosion products liberated during ultrasonic fuel cleaning activities. While still in use for those applications, AMFMs are also now being installed as a cost-effective alternative to plastic filters for general filtration and vacuuming applications in the spent fuel pool and reactor cavity.

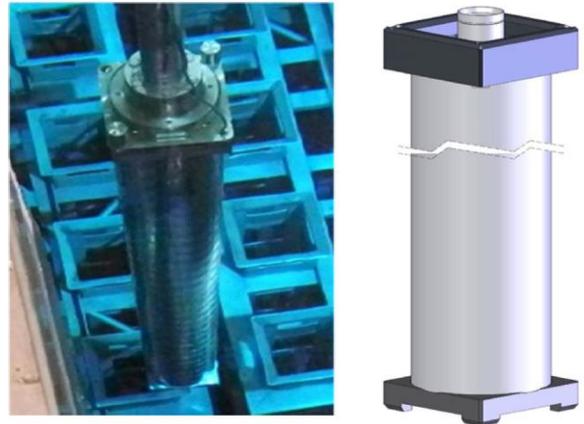
The capacity for high activity particulate removal through a single AMFM has been demonstrated to be equivalent to that from hundreds of plastic filters. For typical applications, a single AMFM is suitable for many years of service, eliminating costly handling and disposal of plastic filters.

Description

AMFMs are radiation tolerant, corrosion resistant, and are packaged with the same form factor and interfaces as a fuel assembly. They can be easily handled using plant-installed equipment and can be stored underwater in the spent fuel pool for extended periods (allowing for decay of collected activity). AMFMs with exhausted capacity can be disposed of in dry storage casks, either during plant decommissioning or during transfer of used fuel or other non-fuel waste to dry storage.



AMFM internals showing high-capacity, sintered metal filtration media (0.5 micron rating)



Patented AMFM design offers a high-capacity filter with the same form factor and interfaces as a fuel assembly

Key Features

- Currently in use at 20+ Pressurized Water Reactor (PWR) and Boiling Water Reactor (BWR) units
- Capacity for high activity particulate removal through a single AMFM demonstrated to be equivalent to that from hundreds of plastic filters
- Can be safely stored underwater in spent fuel rack throughout plant life with no loss of filter integrity
- Throughput up to 500 gpm per AMFM (higher flows possible with multiple AMFMs)
- AMFMs available to match any PWR or BWR fuel assembly type

Benefits

- Eliminates costly plastic filter management and disposal
- Saves outage time and reduces radiation exposure by maintaining water clarity
- Enhances operational flexibility by supplementing plant-installed equipment with a convenient, high flow rate filtration system

Experience

Westinghouse has more than 30 years of global chemical decontamination and effluent waste processing experience, supporting operating and decommissioning nuclear power plants, as well as Department of Energy and National Lab sites. Our variety of processes and systems allows Westinghouse to offer customized solutions suited to a customer's specific need.

Westinghouse has performed more than 300 BWR system decontaminations including all operating systems, fuel pool cooling (FPC) systems, recirculation pumps, moisture separators and FPC and reactor water cleanup (RWCU) heat exchangers.