

Equipment Development and Performance Test for Decontaminated PFC Solution

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PFC (Perfluorocarbon) decontamination process is one of best method to remove hot particulate adhered at inside surface of hot cell and surface of equipments in hot cell. It was necessary to develop a particulate filtration equipment to reuse the PFC solution used on PFC decontamination due to its high cost and to minimize the volume of the second wastewater. The PFC filtration equipment was developed to remove particulate in PFC waste-solution. It was made a suitable size and weight in consideration of the size of the hot cell gate and the capacity of the crane. And it has wheels for easy movement. The ceramic filter was found highly stable within the high alpha radioactivity. And the equipment has two ceramic filters (pre-filter (1.4 μ m) and final-filter (0.2 μ m)) for high flux and high removal efficiency. The storage capacity of waste-solution is 10L. Flux and removal efficiency of the equipment was evaluated in several concentration conditions. The removal efficiency of equipment showed more than 99% and the average flux of that show 1042 L/m²hr at 0.3 g/L and at 300 kPa.

