

Destruction of Perfluorinated Compounds (PFCs)

PFCs Extent of Problem

- Widely used in aerospace, automotive, building and construction, electronics, and consumer products
- Found in tap water of over 15 M Americans; detectable levels in blood of 96% of those tested
- Linked to public health issues like cancer; EPA health advisory of 70 parts per trillion

Problem with Conventional Water Treatment Technologies

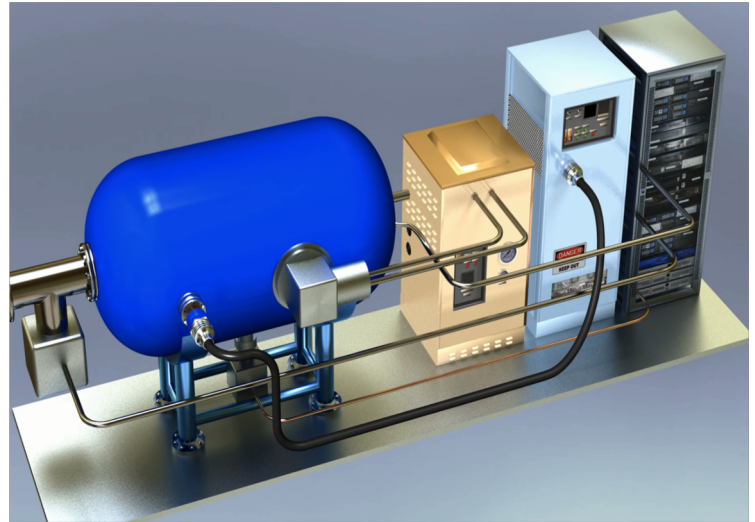
- Only concentrate PFCs, don't destroy
- Destruction of concentrates is expensive
- Don't work on short chain PFCs

Solution to Problem

- Electron beams can destroy PFCs
- Fermi National Accelerator Laboratory brings 50 years of groundbreaking accelerator expertise to bear to solve the PFC problem via a novel electron beam accelerator.

Benefits of Novel Water Treatment Tool

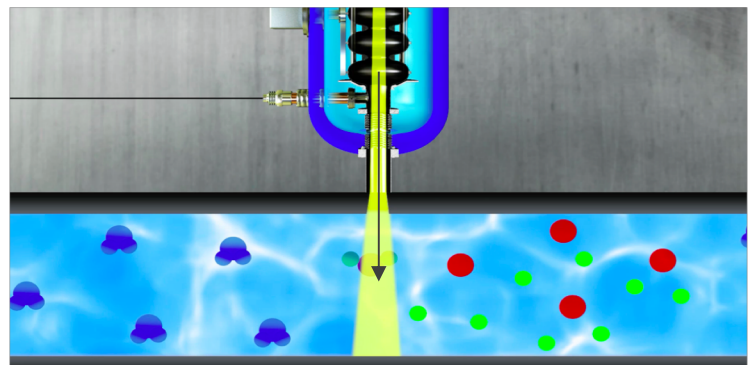
- Can completely destroy PFCs
- Can treat other known and emerging contaminants in water
- Can treat multiple contaminants simultaneously
- Technology mitigates future treatment, cost, compliance, and risk issues:
- Avoids the long ramp up period to develop new solutions



Department of Energy's Fermilab
Universal Water Treatment Tool

Advances to "E-beam" Technology

- Can treat 200k gal/day (5X Improvement)
- Small, 5x7x13 feet (was 3 Story Building)
- 30% reduced operating cost
- 50% reduced power requirement



During the treatment process, electrons create charged species that are very effective at breaking down many complex contaminants.