Columbia Plant Overview

Nancy Blair Parr
Environment, Health & Safety
Columbia Fuel Fabrication Facility
Westinghouse Electric Company

Westinghouse Electric Company

Westinghouse Electric Company provides fuel, services, technology, plant design, and equipment to utility and industrial customers in the worldwide commercial nuclear electric power industry.

Nearly 50 percent of the nuclear power plants in operation worldwide, and nearly 60 percent in the United States, are based on Westinghouse technology.
Westinghouse Nuclear Fuel
US Customer Base (Over 50% of market)

= AP1000

=W PWR = CE PWR

= BWR (Fuel & CRB)

Westinghouse Nuclear Fuel
European Customer Base

France
Increasing beyond 25%
PWR - Gravelines 1,2,6,
Cruas 1,2, Belleville 1,
Dampierre 1,3, Blayais 2,
Tricastin 4

UK
100% AGR
100% Magnox
Springfields Fuel

Belgium
PWR: Tihange 2, 3
Doel 4

Finland
BWR: Olkiluoto 2
VVER: Loviisa

Sweden
BWR: Barsebäck 2
Oskarshamn 1, 2, 3
Vasteras Plant

Germany
BWR: Brunsbuttel, Krummel,
Philipsburg 1, Gundremmingen
PWR: Grohnde, Isar 2, Emsland

Spain
PWR: Almaraz,
Asco, Vandellos,
Zorita
BWR: Cofrentes
ENUSA (licensor)

Switzerland
BWR: Leibstadt

Slovenia
PWR: Krsko

Westinghouse
Westinghouse Nuclear Fuel
Asian Customer Base

Westinghouse Manufacturing Plant
Westinghouse Japan Offices
Westinghouse Korea Offices
Westinghouse China Mainland Offices
Westinghouse Taiwan Office
Westinghouse Technology Licensees
Westinghouse Materials Customers
Westinghouse Fuelled Reactors
Westinghouse AP1000 Reactors

ADDISON ROAD PLANT
Windsor, CT
Produces CE Design Mechanical Components

SPECIALTY METALS PLANT
Blairsville, PA
15.0M ft. capacity
13.0 M ft. load
Fabricates Fuel Tubing from WZ TREX

WESTERN ZIRCONIUM PLANT
Ogden, UT
4 M lb. capacity
3 M lb. load
Produces Zirconium Metal from Zircon Sand

COLUMBIA PLANT
Columbia, SC
1750 MTU capacity
1480 MTU load
Fabricates Fuel Assemblies and Performs Product Engineering and Testing
Westinghouse Nuclear Fuel

Columbia Plant

- Opened 1969
- 550,000 ft² facility (51,500 m²)
- 1156 acre site (4.7 km²)
- UF₆ conversion through fuel assembly (FA)
- FA and core component manufacture
- Product design and testing
- Originally rated at 1200 MTU/a
- Current capacity at 1700 MTU
- Over 90,000 PWR & 3500 BWR assemblies
- Approximately 1200 people, 900 in the plant
Westinghouse Columbia Plant – Other Key Facts

- Owned by Toshiba
- Over $100 M in annual compensation at Columbia Site
- ISO 9001 Certified (Quality)
- ISO 14001 Certified (Environmental)
- Some starting material made from blended down weapons grade uranium
- Over 10% of electricity generated in the entire US comes from nuclear fuel made at our plant

Columbia Plant Fuel Fabrication Process

1. UF₆
2. Convert to UO₂ Powder
3. Pellets
   - UO₂
   - Erbia
   - ZrB₂
4. Fuel Rods
5. Fuel Assemblies
6. Tubing, Springs & End Plugs
7. Nozzles
8. Grids & Skeletons
9. Zirc and Inconel Straps
10. UN
11. Recycle
Annual Fuel Production at Columbia Plant (1968 through 2012)

Westinghouse Columbia Priorities

Continuous Improvement In ...

Safety  Quality  Delivery

Pretend Someone is Watching…
Recent Trends in Safety

CFFF 12-month rolling Incident Rates

Recent Trends in Sustainability
Westinghouse Community Involvement

- Partnership with Mill Creek Elementary School
- Girls In Science
- Women In Nuclear (WIN)
- Wildlife and Industry Together (W.A.I.T.)
- NA-Young Generation of Nuclear (NAYGN)
- United Way
- Governor's School for Science & Mathematics
- Adopt-A-Highway
- Many Service Projects
- Adopt-A-Waterway
- We strive to be a responsible corporate citizen!

Other Columbia Plant Successes

- Created a Multi-Assault Counterterrorism Action Capabilities (MACTAC) program and taught the class to our law enforcement

- Created an Active Shooter Detection, Mitigation and Response seminar and sponsored the event through the American Society for Industrial Security (ASIS)

- Initiated a statewide group for industrial emergency preparedness to promote sharing of best practices, lessons learned and training opportunities
Other Columbia Plant Successes (continued)

- Seventeen volunteer employees were certified as Industrial Emergency Response Specialists (there are less than 200 currently in the USA)
- Continued our year-over-year reduction in radiation dose to employees and the environment
- Shipped fuel assemblies for new AP1000 China Plant and building fuel assemblies for plants currently under construction in South Carolina and Georgia
- Built first ever Small Modular Reactor Assembly

Ongoing Challenges

- Managing the cumulative impact of regulation for improving safety, regulatory efficiency and predictability
- Ongoing efforts to assure physical and cyber security for our facility
- Completion of “beyond design basis” seismic upgrades to our facility
- Continuing to meet year-over-year higher standards expected by ourselves and our customers
Questions?