Columbia Plant Overview

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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 half of the nuclear power plants in operation worldwide, and nearly 60 percent in the United States, are based on Westinghouse technology.
Westinghouse Core Businesses

Nuclear Fuel
A single-source fuel provider for PWR, BWR, VVER, and AGR reactors worldwide

Nuclear Power Plants
Specializing in the technology of new nuclear power plants and component manufacturing
Westinghouse Core Businesses

Nuclear Services

Maintenance, repair and replacement of equipment, engineering services and methods for the design, operation and safety of nuclear power plants

Nuclear Automation

Westinghouse is committed to providing customers support throughout the life cycle of the control and safety systems of their plants.
Westinghouse Nuclear Fuel
U.S. Customer Base

= W PWR Site
= CE PWR Site
= BWR Site
Westinghouse Nuclear Fuel
European Customer Base

- **France**
  - Increasing to 30% PWR
  - Gravelines 1, 2, 6 and others

- **Spain**
  - PWR Licensee: ENUSA
  - PWR: Almaraz, Asco, Vandellos, Zorita
  - BWR: Cofrentes

- **UK**
  - 100% AGR
  - 100% Magnox

- **Belgium**
  - PWR: Tihange 2, Doel 4

- **Finland**
  - BWR: Olkiluoto 2
  - VVER: Loviisa

- **Sweden**
  - BWR: Barsebäck 2
  - Oskarshamn 1, 2, 3

- **Germany**
  - BWR: Isar 1, Brunsbuttel, Krummel, Philipsburg 1
  - PWR: Grohnde, Isar 2, Neckarwestheim, Philipsburg 2

- **Czech Republic**
  - VVER: Temelin 1, 2

- **Switzerland**
  - BWR: Leibstadt

- **Slovenia**
  - PWR: Krsko
Westinghouse Nuclear Fuel
Asian Customer Base
Nuclear Fuel - U.S. Manufacturing

**SPECIALTY METALS PLANT**
Blairsville, PA
Fabricates Fuel Tubing from WZ TREX

**WESTERN ZIRCONIUM PLANT**
Ogden, UT
Produces Zirconium & Hafnium
Metal strip, Channel and Trex from Zircon Sand

**COLUMBIA PLANT**
Columbia, SC
Fabricates Fuel Assemblies and Components

**WINDSOR FUEL COMPONENTS FACILITY**
Windsor, CT
Produces CE Design Mechanical Components
Westinghouse Nuclear Fuel

Columbia Plant
Westinghouse Columbia Plant - Background

- Opened in 1969
- 550,000 ft$^2$ facility (51,500 m$^2$)
- 1,156 acre site (4.7 km$^2$)
- UF$_6$ conversion through fuel assembly fabrication, plus
  - FA component manufacture
  - Core component manufacture
  - Product design and testing
- Approximately 915 people in the plant
- Approximately 1,250 people on site
Westinghouse Columbia Plant – Other Key Facts

- Majority Owner: Toshiba
- Approximately $95 million in annual compensation at Columbia Site
- ISO 9001 Certified (Quality)
- ISO 14001 Certified (Environmental)
- Some starting material made from blended down high-enriched uranium
- More than 10 percent of electricity generated in the entire U.S. comes from nuclear fuel made at our plant
Annual Fuel Production at Columbia Plant
Columbia Plant
Fuel Fabrication Process

UF₆

Convert to UO₂ Powder

Pellets
- UO₂
- Erbia
- ZrB₂

Fuel rods

Fuel Assemblies

Tubing Springs & End Plugs

Nozzles

Zirc-4 Zirlo Coil

Grids & Skeletons

Recycle

UNH
The Columbia Site has one priority:
Continuous Improvement In ...

1. Safety
   Be safe

2. Quality
   Make good ones

3. Production
   Make plenty of them

Pretend someone is watching
Recent Columbia Plant Successes

- Eliminated use of anhydrous ammonia in our process
- Significant improvement in recycling of wood, cardboard, plastic and aluminum has led to a reduction of 32 percent in waste going to landfill in the past fiscal year
- W.A.I.T. (Wildlife and Industry Together) initiatives and partnership with Mill Creek Elementary recognized by Toshiba as one of the top biodiversity programs in the company
Recent Columbia Plant Successes (cont.)

- Strengthened our emergency preparedness partnership with local agencies (CFD, RCSO, RC EMS, DHEC, and Richland Memorial Hospital) through on-site drills, exercises, and other joint training activities.
- Continued our year-over-year reduction in radiation dose to employees and the environment.
- Providing fuel assemblies for new AP1000 plants currently under construction in South Carolina, Georgia, and China.
Ongoing Improvement Activities

- Invested > $10 million in facility improvements to enhance nuclear and chemical safety over the past five years
- Initiated a project to evaluate the facility response to seismic and severe weather events and will execute upgrades, as appropriate
- In the process of evaluating all facility job tasks using the Job Safety Analysis (JSA) process, with the goal of improving safety in all aspects of facility operation
Questions?