

Columbia Fuel Fabrication Facility LEU+ Manufacturing Building Design

November 2024

Project Objectives



To support US pressurized water reactor transitions to 24 month refueling cycles, Westinghouse is pursuing an increase in allowable U235 enrichment (>5 wt%) at the Columbia Fuel Fabrication Facility (CFFF) site located in Hopkins, SC.



Westinghouse will construct a new building adjacent to the existing facility to produce fuel assemblies greater than the existing license requirements of 5 wt%.

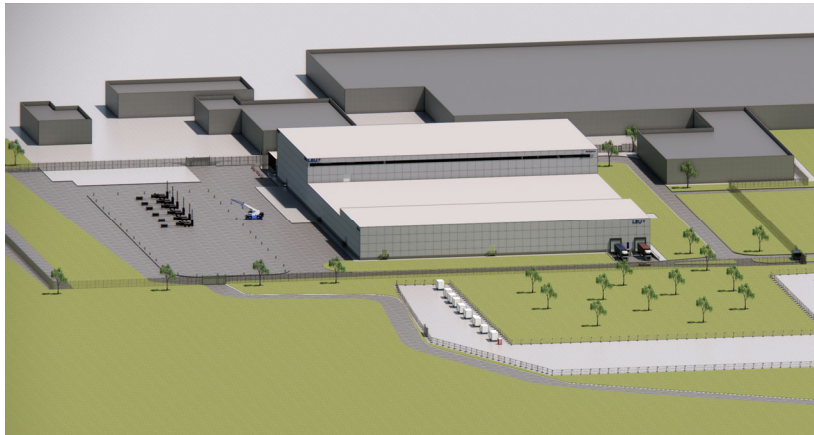


The new building will operate at up to 8 wt%. No changes to the existing fuel factory.



The expansion and processes for 8 wt% will require prior NRC approval of the License Amendment Request to the CFFF Special Nuclear Material License (SNM-1107) per 10 CFR 70.72.

Overview of LEU+ Manufacturing



Conversion

- Dry conversion process 8% enriched UF₆
- Ammonia free process
- Lower emissions with use of dry process
- Automated conversion lines and enclosed processes

Pelleting

- Advanced Doped Pellet Technology (ADOPT) blending
- Automated pelleting lines and enclosed processes

Burnable Absorbers/Rods

- Integrated Fuel Burnable Absorber (IFBA) dry room
- Gadolinium line
- Automatic rod loading and welding

Uranium Recovery

- Ammonia free process
- Reduces Nitrate discharge
- New processes do not require retention ponds
- 30B cylinder wash and recertification
- Gadolinium separation and uranium recovery process

Mechanical

- Eliminate fuel assembly washing
- Single control access point
- Ship to customers in Traveller package

LEU+ Building Design

- Baseline Design Criteria 70.64(a)(2)
 - New process at existing facility that requires a license amendment
 - Designed for adequate protection against most severely documented historical events
 - Seismic
 - Winds/Tornados/Hurricanes
 - Flood
 - Heavy Precipitation
- Aligned with guidance in NUREG-1520
- Application of various building codes or analysis

Questions?

End of the open portion