

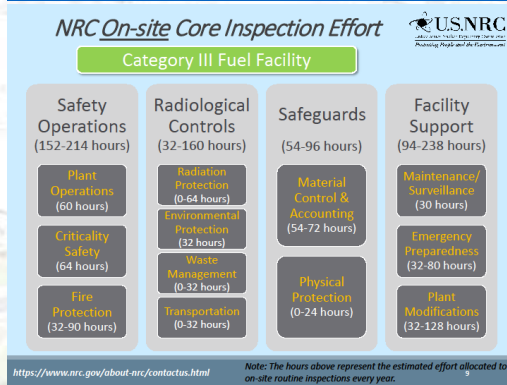


## **Westinghouse Columbia Fuel Fabrication Facility (CFFF)**

### **Frequently Asked Questions (FAQ)**

1. Is the Westinghouse Columbia facility a nuclear power plant?
  - a. **No, the Columbia site is a fuel fabrication facility, not a power plant. The Columbia Fuel Fabrication Facility (CFFF) manufactures the fuel used in commercial reactors worldwide to generate electricity. Nuclear power plants supply 21% of the electricity generated in the United States, and roughly 10% comes from the nuclear fuel produced in CFFF.**
2. Who regulates the operations of the CFFF?
  - a. **CFFF operates in compliance with the requirements of several regulators (federal and state):**
    - a. **The Nuclear Regular Commission (NRC)**
    - b. **The United States Environmental Protection Agency (USEPA),**
    - c. **South Carolina Department of Health and Environmental Control (SCDHEC)**
    - d. **Occupational Safety and Health Administration (OSHA)**
    - e. **Department of Transportation DOT)**

3. How often does the NRC conduct site inspections?  
 a. **The NRC conducts ~ 630 hours of inspection at CFFF each year.**  
<https://www.nrc.gov/info-finder/fc/westinghouse-fuel-fab-fac-sc-lc>



4. Why is Westinghouse applying for a 40-year license from the NRC? Why not 10 or 20 years?

**a. License renewal is a demanding process. The NRC spends considerable time determining the risk of a facility. If they conclude the site is low risk, coupled with its comprehensive system of oversight and monitoring, once licensed, the need to reapply every ten years is not there. There are a few reasons why applying for a 40-year license is favored over licenses with shorter terms:**

**1) Resources– The application process for license renewal is labor-intensive and lengthy for all parties involved – it’s also very costly. The fees and processes can reach the millions, and multiple renewal requests over a short period can severely impact a facility’s operational budget, potentially impacting headcount.**

**2) Industry – Within the industry, fuel customers traditionally sign long-term contracts with their fuel suppliers. Possessing a short-term license tends to shrink customer confidence, hindering the ability to do long-term deals. When this happens, customers take their business to competitors—severely impacting long-term economic viability.**

**Also worth noting, there are no differences in frequency or thoroughness of regulation and inspection between a ten-year license or a 40-year license since the NRC will conduct ~630 hours of inspections annually, regardless of license duration.**

5. In the Draft Environmental Impact Statement (DEIS), what does “small to moderate” impact on groundwater mean? What are the implications?

**a. The groundwater sampling data shows that the contaminant plumes from past CFFF site activities remain onsite but occur only in the surficial aquifer, and the current groundwater contamination is not likely to travel beyond the CFFF site boundary during the next 40 years. Additionally, the continued operation would not destabilize or significantly affect the groundwater resource because there is a low potential for contaminants to move offsite and impact the community or public. To date, no contaminants have moved or have been found offsite.**

**We have made significant improvements to reduce the likelihood of future inadvertent releases through our Consent Agreement with DHEC. However, past operations have had a noticeable effect on the water quality of onsite groundwater. The onsite surface water bodies possess some uncertainties that affect the evaluation of the fate and transport of contaminants in groundwater. Therefore, the NRC staff concluded that impacts on groundwater from the proposed action would be small to moderate due to that uncertainty.**

6. What action is Westinghouse taking to preserve burial grounds on the site?

**a. Westinghouse identified the Denley Cemetery (a historic African-American cemetery) while maintaining the site in 2007. Westinghouse performed a Ground Penetrating Radar (GPR) survey to locate and identify unmarked graves. In total, 167 total graves were found. Westinghouse fenced the perimeter of the area and continues to maintain the grounds. An environmental investigation will not be performed on the cemetery.**

**In July 2021, CFFF has received approval from State Historic Preservation Officers (SHPO) to begin the cultural resource survey at CFFF. This survey conducted with Brockington & Associates will ensure that ongoing operations are not impacting other possible historical artifacts. To date, no remains of any indigenous peoples/groups have been discovered.**

**The projected timeline of the survey is below:**

**Projected timeline:**

- i. Contract approved – July 2021 (complete)**
- ii. Survey Plan Approved by SHPO - August 2021 (complete)**
- iii. Survey of Property Begins – September 2021 (started as scheduled)**
- iv. Survey Report Complete – February 2022**

7. If the plant was to shut down, what is the plan for decommissioning?
- a. Per [10 CFR 70.25 Financial Assurance and Recordkeeping for Decommissioning](#), CFFF has a Decommission Funding Plan (DFP) in place, which is maintained and available even if the company goes bankrupt. The DFP is submitted to the NRC every three years for approval through an SNM-1107 licensing amendment. The NRC approved the latest DFP for CFFF in August 2020 per SNM-1107 Amendment 24 ([ML20204A769](#)).
8. What pollutants at CFFF and Westinghouse Government Services (WGS), formerly known as WesDyne, are present and emitted into the environment?
- a. CFFF liquid effluents are controlled through a state-approved NPDES permit. Gaseous effluents are controlled through a state-approved Minor Source Operating Permit. Additionally, radiological effluents are managed under NRC 10CFR20 regulations and the site's NRC license, SNM-1107. CFFF generates landfill waste, universal waste, low-level radioactive waste, hazardous waste, and mixed waste. All wastes are disposed of at permitted facilities following applicable state and federal regulations. CFFF strives to minimize the waste it generates and to recycle and reuse materials as well.  
  
WGS operations **do not** produce nuclear waste. WGS operations do not have liquid or gaseous effluents.
9. How long has WGS been in operation at this facility?
- a. WGS (formerly Wesdyne International) signed a contract with NNSA in 2000 to reconfigure space within the CFFF to assemble TPBARs. The agreement included establishing an environmentally controlled area, i.e., humidity and temperature control, along with personnel access control.
10. Are there any potential airborne and groundwater chemical hazards released from CFFF that could impact the community?
- a. Historic CFFF operations have impacted groundwater onsite only. There is no offsite impact or impact to the public. There are no active sources, and the site does not use offsite groundwater for its operations. The data supporting these conclusions is publicly available on the Westinghouse and SCDHEC websites. One hundred eighteen onsite wells are monitoring historic groundwater impact.
  - b. Westinghouse entered into a comprehensive Consent Agreement with SCDHEC to fully characterize the site and determine what cleanup may be necessary, following the EPA CERCLA process. Westinghouse is nearing the completion of the Remedial Investigation phase of the process. Based on the investigative fieldwork performed since June 2019 and the independent

sampling SCDHEC completed offsite, there is no threat to public or worker health and safety.

c. WGS operations **do not** have liquid or gaseous effluents. A small amount of hazardous waste (i.e., acetone rags and zirconium fines) is generated by WGS operations which SCDHEC regulates.

11. What is Westinghouse Government Services (WGS), and how is it related to tritium production in the U.S.?

a. Westinghouse Government Services LLC (WGS), previously known as WesDyne International LLC, is a subsidiary of Westinghouse Electric Company (WEC). The Department of Energy/National Nuclear Security Administration (DOE/NNSA) contracts with WGS to fabricate tritium-producing burnable absorber rods (TPBARs). TPBARs are assembled at Westinghouse's Columbia Fuel Fabrication Facility (CFFF) in Hopkins, SC, before being sent to Spring City, TN, to the Watts Bar Nuclear Reactors operated by the Tennessee Valley Authority (TVA). Tritium is produced when the TPBARs are irradiated in a nuclear reactor.

12. What is Tritium?

a. Tritium is a radioactive isotope of hydrogen that exists naturally in the environment but occurs in too small amounts for practical recovery. Chemically, tritium is identical to the other two isotopes of hydrogen - protium (the most naturally abundant form of hydrogen) and deuterium. Tritium can be produced artificially in a nuclear reactor where lithium\* is bombarded with neutrons (particles within an atom that have no charge). The lithium breaks apart into tritium and helium. Since tritium is radioactive, it naturally decays over time and has a half-life of 12.3 years. Tritium has various uses, from luminous watch dials to tracers in biomedical research, and the Department of Defense also uses it for national security purposes.

13. What is a TPBAR?

a. Tritium-producing burnable absorber rods (TPBARs) are assembled at the CFFF in Hopkins, SC, from components supplied by sources from across the United States. A TPBAR is made of a stainless-steel rod filled with lithium and zirconium alloy. TPBARs are inserted, along with fuel rods, into the core of a nuclear power reactor that is producing electricity. While they are in the nuclear reactor core, the TPBAR is irradiated, that is, bombarded by neutrons. As a result, the lithium contained in the TPBAR breaks apart to form tritium and helium. The tritium is then absorbed into the zirconium alloy

**components, all contained within the stainless-steel rod. After irradiation, the TPBAR is sent to the Savannah River Site in Aiken, SC, where the tritium is extracted from the TPBARs.**

14. Does WGS work with radioactive material when it assembles TPBARs at the CFFF?

**a. No. TPBARs are comprised of stainless steel, zirconium alloy, and a non-radioactive isotope of lithium. No radioactive material is present in TPBARs at the CFFF. The assembly facility for TPBAR components is in a standalone manufacturing area with controlled access and no roof penetration to the environment. Once assembled, TPBARs are eventually coupled with nuclear fuel assemblies in the nuclear fuels section of the CFFF facility before being sent to TVA for insertion and irradiation in the Watts Bar nuclear reactors.**

15. What kind of waste is produced from the assembly of TPBARs at the CFFF?

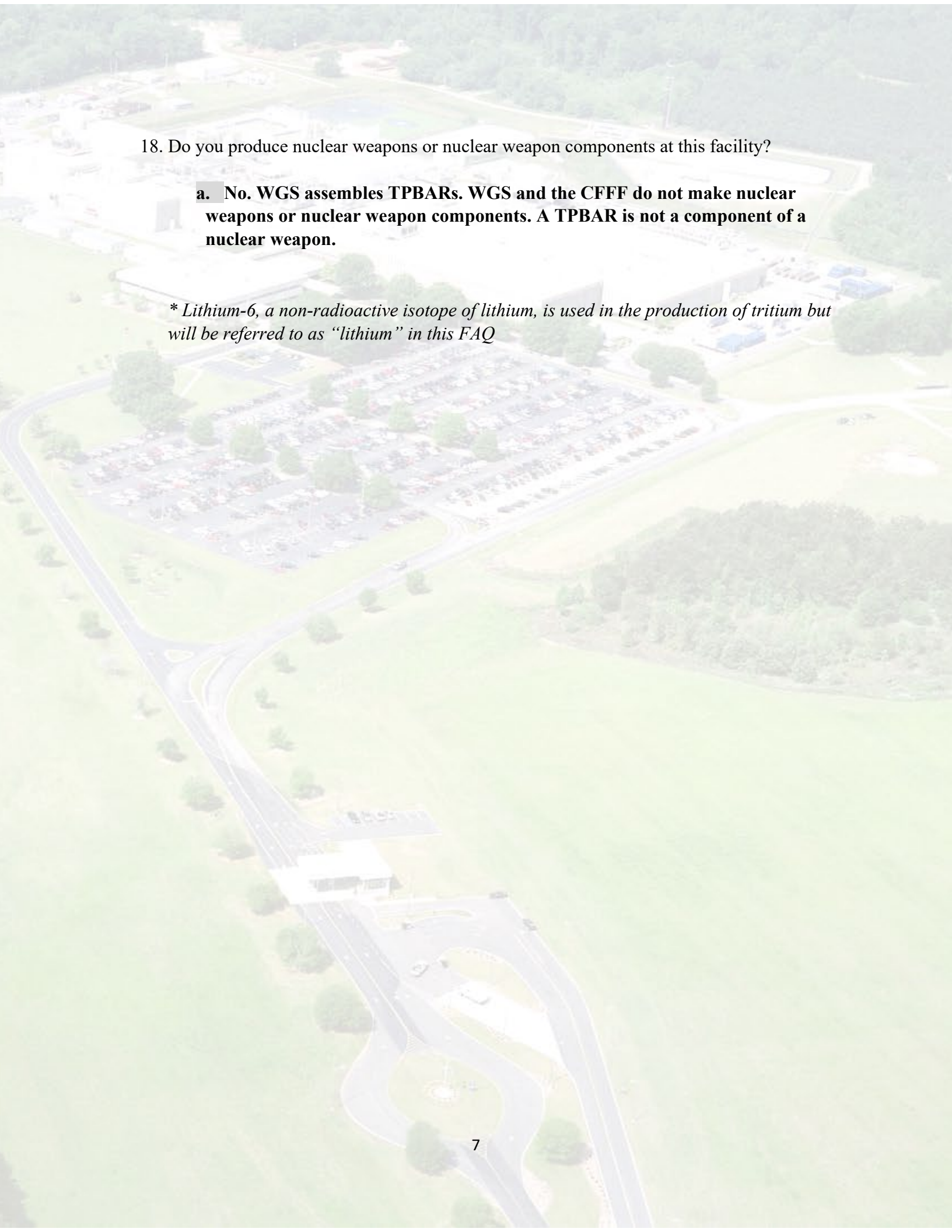
**a. A small amount of non-radioactive waste can be produced during the assembly of TPBARs at the CFFF. This waste can include acetone rags (similar to nail polish remover) and zirconium alloy metal shavings. Faulty or unused components may be sent back to the original vendor to be disposed of or recycled.**

16. Do the TPBAR assembly activities at the CFFF produce any airborne or water hazards that pose a risk to the community?

**a. No. The TPBAR assembly facility within the CFFF is a standalone manufacturing area with controlled access and no roof penetrations to the environment. TPBAR components do not have liquid or gaseous effluents that could be released into the environment.**

17. Who regulates the TPBAR assembly facility at the CFFF?

**a. The Westinghouse Columbia Fuel Fabrication Facility (CFFF) works closely with the South Carolina Department of Health and Environmental Control (SCDHEC) and the Nuclear Regulatory Commission (NRC) to ensure the entire facility is operating within federal, state, and county health and safety regulations. Since there are no radioactive materials involved in the assembly of TPBARs, the NRC does not regulate the WGS TPBAR area within the CFFF.**



18. Do you produce nuclear weapons or nuclear weapon components at this facility?

**a. No. WGS assembles TPBARs. WGS and the CFFF do not make nuclear weapons or nuclear weapon components. A TPBAR is not a component of a nuclear weapon.**

*\* Lithium-6, a non-radioactive isotope of lithium, is used in the production of tritium but will be referred to as “lithium” in this FAQ*