Frequently Asked Questions
Westinghouse Nuclear Fuel Fabrication Facility

General Information

Q1. What does Westinghouse do at this location?
A. Westinghouse Electric Company owns and operates a nuclear fuel fabrication facility in Hopkins, South Carolina, (the Columbia Fuel Fabrication Facility) that fabricates fuel for nuclear power plants. This facility will be referred to simply as "Westinghouse" or "the facility." The facility is approximately 550,000 square feet on 1,156 acres and has been in operation since 1969. This facility manufactures nuclear fuel assemblies and components. Nuclear fuel manufactured at this facility is used to generate electricity throughout the United States.

Q2. What is the NRC's regulatory role with regard to the Westinghouse facility and the environment?
A. The Nuclear Regulatory Commission (NRC) regulates the commercial use of nuclear material. In this capacity, the NRC protects public health and safety and the environment, by ensuring compliance with NRC regulatory requirements and the specific provisions of the NRC Westinghouse license. The NRC sets regulatory limits for radiation exposure to the public from NRC-regulated activities, including liquid effluents, which are found in Section 20.1301 of the *Code of Federal Regulations* (10 CFR 20.1301), "Dose limits for individual members of the public," and 10 CFR 20.1302, "Compliance with dose limits for individual members of the public." This includes radiological sources such as liquid and gaseous effluents and environmental monitoring programs used to demonstrate compliance with NRC requirements.

The NRC requires Westinghouse to submit a semi-annual report specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents during operations. These effluent monitoring reports are publicly available and can be found at: https://www.nrc.gov/info-finder/fc/westinghouse-fuel-fab-fac-sc-lc.html.

Additional information on how the NRC regulates can be found: https://www.nrc.gov/materials/fuel-cycle-fac.html .

Q3. Which regulatory agency has jurisdiction over radiological effluents from Westinghouse?
A. While the NRC has jurisdiction over radiological effluent releases resulting from activities authorized in the NRC license such as activities associated with the handling of nuclear material, the South Carolina Department of Health and Environmental Control (State) maintains authority over groundwater, drinking water, and surface water under the Safe Drinking Water Act and other relevant laws. The State has issued a permit to Westinghouse for discharges to the Congaree River from the Westinghouse facility. The State and Westinghouse have also entered into a Voluntary Cleanup Contract to address historical volatile organic compounds (VOCs) contamination located on the facility's property.

Additional information can be found at the South Carolina Department of Health and Environmental Control website:
https://www.scdhec.gov/westinghouse-electric-company

Environmental Releases

Q4. What happened recently related to a leak at Westinghouse in Hopkins?
A. In July of 2018, the NRC and the State were notified by Westinghouse that a leak had occurred in a building at the facility. Westinghouse informed the NRC that the equipment was immediately shut down upon discovering the leak in June. The area was further inspected and workers discovered damage to concrete below the equipment. The leak contained hydrofluoric acid (HF) and uranyl nitrate, a uranium salt. The acid caused damage to a small area (about 3 inches in diameter) of the concrete floor near the leak.

During Westinghouse's initial investigation, samples of soil directly underneath the location of the leak indicated that the leaked chemicals had seeped into the soil. Additional sampling is being conducted to continue to monitor the presence of the leaked chemicals.

Q5. When and where did the leak take place?
A. The leak occurred in one of two HF spiking station systems which are located inside the process building. The HF spiking station is used in the ammonium diuranate (ADU) conversion process where scrap uranium is dissolved in nitric acid to produce uranyl nitrate. The uranyl nitrate is then sent to the HF spiking station as part of the ADU process.

At 8 a.m. on June 16, 2018, an operator checked for leaks as part of daily procedures and found no leaks. (The spiking station is checked for leaks three times a day -- between midnight and 1 a.m., between 8 and 9 a.m., and between 4 and 5:00 p.m.)

At about 12:35 p.m. on June 16, the same operator found about three gallons of solution inside the dike resulting from a flange leak. When the process was stopped, some additional solution leaked into that area, but the total was estimated to be 30 gallons or less. The exact amount that may have gone through the crack in the dike area liner into the soil below the building is unknown. Therefore, the NRC estimates that the leak lasted approximately four and one-half hours.

Q6. Is there any risk to the public from the recent leak?
A. Based on current information and data received by the NRC, there is no immediate threat to the public from this recent release. This release is confined to a small area underneath the building and well within the property of Westinghouse. The NRC and the State continue to oversee an investigation of this leak and will notify the public if at any time there are any potential offsite impacts to public health.

Q7. What were the chemicals that leaked?

A. The leak contained hydrofluoric acid and uranyl nitrate. Hydrofluoric acid, also known as "HF," is a strong acid. Uranyl nitrate is a uranium salt. Because the leak is confined to a small area on a secure site, the NRC does not expect that the public will have been exposed to the chemicals that leaked. The NRC and the State are overseeing an ongoing investigation by Westinghouse to determine whether or not any of the process fluid has leaked into the soil with the potential to impact the groundwater in the future.

Q8. How much uranium leaked into the ground?
A. The exact amount that may have gone through the crack in the dike area liner into the soil below the building is unknown. When the event was discovered, Westinghouse estimated that about 30 gallons of liquid leaked into the area contained within the dike. Most of the liquid was recovered, so the amount getting into the soil was far less than 30 gallons. Since it is possible additional material may have entered the soil before it was discovered, Westinghouse is implementing a soil sample plan approved by the State to determine the extent of contamination in that area.

Q9. How did a hole develop in the containment vessel?
A. On March 23, 2018, an annual liner integrity test was successfully completed and no leaks were found. Sometime between March 23 and June 16, a small hole or crack developed in the liner which allowed some of the spilled liquid to get between the liner and the concrete dike, resulting in the small hole in the concrete floor beneath the HF spiking station.

Q10. What is going on now to evaluate the leak?
A. In order to determine the extent of the leaked material, a team of technical staff from the State and Westinghouse has developed a soil sampling plan. The company has removed a portion of the concrete floor inside the process building and is in the process of sampling the soil nearest to the location of the leak.

Q11. Why hasn't there been a determination whether the leaked chemicals reached the groundwater?
A. Westinghouse must take extra safety precautions due to the nature of the chemicals used in the process. Sampling must be done in a manner that prevents any spread of contamination. Westinghouse has an approved soil sampling plan from the State to determine the extent of the contamination and determine if the chemicals have reached groundwater. The analysis of each soil sample is time consuming and will take several weeks to complete.

Q12. How fast does the groundwater move, and in what direction?
A. Groundwater in this location moves from the site in a south-southwest direction, away from the Hopkins Community, at a speed of approximately 150 feet per year.

Q13. What will be the remediation action for the leak?
A. The leak occurred in one of two spiking station systems which was emptied of all chemicals, placed into a "safe shut down" mode and removed from service. The other spiking station liner was re-tested and no leaks were found. Long term corrective actions are still being developed

by Westinghouse. A corrective action was entered into their Corrective Action Program to determine the extent of condition and develop long term corrective actions. Once these actions are approved internally, they will be implemented and the same actions will be taken on the other spiking station. The NRC plans an inspection in September to follow up on the event and evaluate the corrective actions being taken and planned.

Westinghouse continues to work with the State on their soil sampling plan to determine the extent of contamination. Concrete below the HF Spiking station was removed and soil samples taken from various locations at different depths to determine the extent of contamination. Westinghouse is waiting on lab results for these samples, and once received, will coordinate with the State for the next steps in accordance with the soil sampling plan.

Q14. What is the NRC doing about these leaks at Westinghouse?
A. The NRC is supporting the State with their investigation into this event and is reviewing the corrective actions Westinghouse has placed in effect. The NRC had inspectors on site reviewing the event on August 13, 2018. In addition, the NRC will have an inspection team on site the week of September 17, 2018, to conduct an environmental inspection in accordance with Inspection Procedure 88045, "Effluent Controls and Environmental Protection." Through the inspection process, the NRC will evaluate Westinghouse's procedures to minimize leaks to ensure that if future spills occur Westinghouse has the procedures and controls in place to stop and address the leaks appropriately. The inspection will also evaluate whether there are adequate monitoring methods to determine if contamination migrates offsite and the corrective actions Westinghouse takes if needed.

Q15. How has the NRC communicated with the local community?
A. The NRC was first notified of the leak through an Event Notification (EN) submitted by Westinghouse to the NRC Operations Center on July 12, 2018. The event notification (EN 53504) is publicly available through the NRC website (https://www.nrc.gov/reading-rm/doc-collections/event-status/event/). As stated above, the NRC will conduct an inspection into this issue on the week of September 17, 2018 and the results of that inspection will be publicly available by the end of October. Additionally, the NRC will be conducting a public meeting in October to discuss the license renewal and inspection activities.

License Renewal Review

Q16. When would the 40 year license renewal take effect, if approved? Would the 40 years be in addition to what was left on the license or just start 40 years upon approval?
A. If the license renewal is issued for a 40 year renewal term, the 40-year period would start the day the renewal is issued. For example, if the NRC were to renew the license on September XX, 2018, the expiration of the new license would be September XX, 2058.

Q17. Is the NRC considering granting Westinghouse a license to be renewed for 40 years or can the NRC consider a different renewal period?

A. The NRC has established a maximum license term of 40 years for fuel cycle facilities. When issuing new licenses or renewing existing licenses, the NRC has the discretion to grant licenses for shorter periods of time after considering all relevant factors on a case by case basis. As part of the renewal review, the NRC staff is evaluating whether Westinghouse's safety programs are adequate to ensure safe operation for the maximum 40-year renewal period or whether a shorter renewal period is appropriate.

Q18. Is the public provided the opportunity to comment on the results of the NRC license renewal review?

A. In accordance with our licensing process, the NRC provided public notice of receipt of Westinghouse's application for license renewal and the opportunity to request a hearing in a Federal Register Notice published on February 27, 2015 (80 FR 10727). The public notice stated that the deadline for receipt of hearing requests was April 28, 2015. Under the NRC's regulation governing the filing of hearing requests, in 10 CFR 2.309, hearing requests filed after the deadline must demonstrate good cause for the late filing under the standards set forth in 2.309(c).

The NRC staff is also reviewing information concerning the leak reported in July 2018. This information emerged after the NRC published its environmental assessment and finding of no significant impact (EA and FONSI). The NRC will either issue a draft supplemental EA and FONSI for public comment or, if the staff cannot make a FONSI in light of this new information, the staff will proceed with the development of an environmental impact statement (EIS). If the staff decides to prepare an EIS the public will have an opportunity to participate in the EIS scoping process and comment on the draft EIS. The NRC will notify the public of the opportunity and means to provide comments by publishing a notice in the Federal Register. All comments will be considered and addressed by the NRC staff before making any final environmental conclusions and issuing a final EA and FONSI or EIS.

National Environmental Policy Act (NEPA) Review

Q19. Why didn't the NRC staff prepare an environmental impact statement (EIS) for the license renewal request?

A. The provisions in 10 CFR 51.20(b) identify actions for which an EIS must be prepared. A license renewal request for a fuel fabrication facility is not among the listed actions. Therefore, the NRC staff prepared an environmental assessment to determine whether the action was one that would significantly affect the quality of the human environment. The assessment identified no significant impact if the license renewal request was granted. Based on the assessment results, preparation of an EIS was not warranted and a Finding of No Significant Impact was published in the Federal Register on June 15, 2018 (83 FR 28014).

Q20. What was the NRC's conclusion about potential impacts to groundwater in its June 2018 EA?

A. In the EA, the NRC acknowledges pre-existing ground-water contamination onsite at Westinghouse above EPA's drinking water standards. However, because (1) the pre-existing ground-water contamination remains onsite, (2) there is no pathway for human consumption of

the ground water, (3) there is ongoing monitoring as part of the State and NRC requirements, (4) there is a lack of contamination thus far of the deeper Black Mingo aquifer, (5) Westinghouse has committed to developing a corrective action plan if action levels are triggered, and (6) Westinghouse must maintain sufficient funds to decommission the site, the NRC determined that the potential impacts on ground-water quality as a result of continued operations at CFFF, while noticeable, are not expected to be significant if monitored properly.