

Environmental Impact Statement for Westinghouse Electric Company, LLC, Columbia Fuel Fabrication Facility License Renewal Application

Additional Clarifying Information Requests

RAI 4. Cultural Resource Protection Plans and Procedures

The U.S. Nuclear Regulatory Commission (NRC) reviewed Westinghouse Electric Company, LLC's (WEC's) 2019 Phase I Remedial Investigation Work Plan (RIWP) (and referenced in the Phase II RIWP dated September 2020, ADAMS Accession No. ML20353A280). The 2019 Work Plan indicates that WEC will use a private utility location contractor to identify subsurface utilities. Based on the NRC staff's May 2019 site visit to the Columbia Fuel Fabrication Facility (see the May 2019 site visit summary at ADAMS Accession No. ML19283A811), one of the methods WEC uses prior to well installation is the use of GPR to identify both subsurface utilities and other underground anomalies. Please confirm whether WEC plans to continue to use GPR during the execution of the remedial investigations.

Additionally, in WEC's responses (dated December 18, 2020, ADAMS Accession No. ML20353A275) to the NRC's Requests for Additional Information, RAIs (dated November 3, 2020, ADAMS Accession No. ML20275A251), WEC referred to the following procedures.

1. "Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains," provided as Appendix C of the 2020 Phase II RIWP. Confirm whether WEC plans to use this procedure for all future ground disturbing activities occurring on the Columbia Fuel Fabrication Facility (CFFF) site, including remediation activities.
2. RAF-104-5, "Environmental Protection Guidelines and Checklist," and TAF-500-11, "10 CFR 70.72 Engineering Pre-Screening Checklist." Please, clarify when these procedures were put in place.
3. RAF-104-5 asks the following: "Does the change potentially impact any archaeological or historical sites on the Westinghouse property, or have provisions been made for protection or mitigation in the event of an archaeological or historical discovery onsite?" Please, describe the "provisions" that would be implemented (e.g., references to the "Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains").
4. TAF-500-11 asks the following: "Activity involves land/soil disturbance or removal?" Please describe the next steps if the response to this question is "Yes."
5. Please describe WEC's plans and timing for consolidating procedures related to cultural resource protection and preservation.

And, please describe training related to the unanticipated discovery of potential cultural resources provided to personnel conducting ground disturbing activities

WEC Response

Yes, WEC plans to continue to use GPR during the execution of the remedial investigations.

1. CFFF does intend to use the “Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains” procedure for all future ground disturbing activities, including remediation activities.
2. RAF-104-5, “Environmental Protection Guidelines and Checklist,” was initially issued in September 1994. The question “Does the change potentially impact any archeological or historical sites on the Westinghouse property, or have provisions been made for protection or mitigation in the event of an archeological or historical discovery on-site?” was added in July 2006. TAF-500-11, “10 CFR 70.72 Engineering Pre-Screening Checklist” was initially issued in July 2018 and the initial issuance of TAF-500-11 asks if “Activity involves land/soil disturbance or removal?”.
3. CFFF has several provisions in place to mitigate impact to archaeological or historical sites on the Westinghouse property. The first provision is procedural guidance. Two procedures exist to govern soil disturbance activities including SYP-233, “Excavation” and RA-136, “Soil Sampling and Disposal”. Both procedures will instruct site personnel, including contractors to stop work if the excavation or soil sampling activity identifies an unknown anomaly. For these, stop work instances, EHS Environmental Engineering will be contacted for a subsequent evaluation per procedure RA-432, “Procedures Guiding the Unanticipated Discovery of Cultural Resources and Human Remains”.

The second provision is the configuration control process. Configuration Control Changes / Forms (“CCFs”) are routed electronically to two or more EH&S Engineers, depending on the type change request. The EH&S Engineers include Industrial/Fire/Chemical Safety and Environmental Safety at a minimum but may also include Radiation Safety, Safeguards, and Nuclear Criticality Safety (NCS). The purpose of the EH&S Engineering function is to:

- (1) Establish and maintain the safety basis for the CFFF.
- (2) Ensure compliance with applicable regulations and environmental requirements.
- (3) Perform review of the change per RA-104, Regulatory Review of Configuration Change Authorizations. RA-104 includes review of the change per 10 CFR 70.72.
- (4) Verify the Project Engineer correctly assessed risk of the change to the safety basis.
- (5) Identify additional actions required for conformance to the safety basis.

As part of the CCF review process, Environmental Engineering utilizes form RAF-104-5, *Environmental Protection Guidelines and Checklist* to further assess those items that may have an impact to the environmental safety basis. One such item on the checklist asks: “Does the change potentially impact any archeological or historical

sites on the Westinghouse property, or have provisions been made for protection or mitigation in the event of an archeological or historical discovery on-site? This question prompts environmental engineering to review any land disturbance activities with the project engineer and if needed, assign project tasks that mitigate environmental risk.

The aforementioned CCF processes, combined with the site's procedural governance for excavations and soil sampling provide a robust mechanism for protecting any unanticipated discoveries.

4. Changes to the site's configuration are managed by TA-500, *Columbia Manufacturing Plant Configuration Control*. Procedure TA-500 establishes a process for evaluation, implementation, and tracking of changes to the site, structures, processes, equipment, and components at the Columbia Fuel Fabrication Facility (CFFF). Modifications are divided into the following categories (listed in increasing levels of review):
 - Pre-Approved Level 0 Modification
 - Pre-Approved Level 1 Modification
 - Pre-Approved Level 2 Modification
 - Major Modification

Potential changes are presented to the Risk Assessment Board (RAB), which (1) assures proper level of risk is assessed for proposed changes and (2) ensures consistency in selection of a proper configuration management process.

Form TAF-500-11, "10 CFR 70.72 Engineering Pre-Screening Checklist" is for Pre-Approved Level 0 Modifications. Project engineers complete TAF-500-11 when proposing a modification to the RAB as a Pre-approved Level 0 Modification.

If a "yes" were indicated on Form TAF-500-11 beside "activity involves land/soil disturbance or removal", then the pre-approved level 0 modification would be rejected by environmental engineering, requiring the project engineer to choose a different modification category other than pre-approved level 0. RAF-104-5 would need to be completed and steps described in item 3 would be followed.

5. CFFF currently has two procedures that govern subsurface soil disturbance activities including SYP-233, "Excavation" and RA-136, "Soil Sampling and Disposal". A third procedure, RA-432, "Procedures Guiding the Unanticipated Discovery of Cultural Resources and Human Remains" is being released in ETAPS in late March 2021.

All field personnel conducting or supervising ground disturbing activities will be trained to make them aware of the types of archaeological cultural resources that might be encountered within the project area and the procedures to be followed if possible evidence of archaeological remains is exposed. The content of this orientation will be prepared by a professional archaeologist who meets the Secretary of the Interior's Standards and Guidelines, and will provide an overview of prehistoric and historic archaeological site types in the region, such as prehistoric Native

American camps, villages and/or shell middens, and historic-period archaeological sites such as building foundations and trash dumps. It will also cover what kinds of artifacts, cultural features, and soil deposits are likely to be associated with these sites.

RAI 5. Incinerator Process - Waste Management

In its response to this RAI, WEC provided information on the uranium recovery process. Please describe the associated support systems (e.g., clinch columns, scrubber, HEPA filters) used in the uranium recovery process, and the resulting waste stream (e.g., HEPA filters would be deconstructed for uranium recovery).

WEC Response

Air emissions from the incinerator are not separated into radiological and non-radiological components. The multi-level incinerator controls are inherent and consist of quench vessels, wet venturi scrubbers, and packed bed absorber columns followed by HEPA filters to remove any remaining uranic particulates prior to entering the atmosphere.

Low-level radioactive combustible scrap at the CFFF is incinerated to permit the recovery of uranium. This incineration process consists of primary and secondary combustion chambers, off-gas scrubbing and filtration system, and an ash transfer milling system.

The incinerator is a controlled air, natural gas-fired unit with two chambers. The lower ignition chamber operates at a lower temperature than the upper combustion chamber. System controls for ignition chamber draft (negative pressure), temperature of lower/upper chambers and exhaust filter house HEPA filter pressure drop are provided to ensure safe and efficient operation.

The gases given off during the burning of solid wastes are carbon monoxide (CO), carbon dioxide (CO₂), and mineral acids hydrochloride (HCL) and hydrofluoride (HF) due to burning of rubber, plastics and other chemicals. These gases rise out of the ignition chamber and enter the combustion chamber. The main purpose of the combustion chamber is to assure complete burning of rising solid (carbon) particles and converting CO gas given off during the burning to CO₂. The mineral acids present (HCL and HF) will remain in the off-gas stream until they reach the scrubber portion of the process. The combustion reactions can be found in the site's safety basis documentation.

The temperature of the off-gas stream leaving the incinerator, at about 1,750° F, is cooled to <200° F in the three quench columns. The scrubber solution used to cool the stream is treated with sodium hydroxide (NaOH) solution to maintain a pH of approximately 9. The solution is circulated through a closed loop pipe system for filtering and cooling. The cooling spray nozzles also remove solid particles in the gas stream. The off gas then passes through a venturi, where a pressure drop (suction) effect is created across the adjustable opening of the modulating venturi valve by the induced draft exhaust fans of the system. High turbulence in the venturi allows the scrubber solution sprays at the venturi valve to separate the solid particles and absorb some of the mineral acids from the gas. The gas stream is then drawn into, and up-through, the absorber packed column. As gas enters and rises in the column through a section of packing material (Tellerettes), scrubber solution entering at the top of the column mixes with the gas to remove the mineral acids (HCL and HF) still present.

The scrubber solution is pumped from its scrubber process tank (sump) and filtered to remove solids that are separated from the off-gas stream.

Prefilters and HEPA filters are used to support various air filtration processes throughout the plant. When filters have exceeded their useful life, they are transported to a cutting room where they are disassembled. The frames are removed from the filter media and shredded prior to drumming, assaying and shipping offsite as Low Level Radioactive Waste (LLRW). Operators attempt to remove additional particulate matter, including small amounts of Uranium (U), from the filter media in the cutting room and subsequently recycle the U in the process.

RAI 15. Environmental Sampling Values

Clarify changes to analysis equipment for lowering a minimum detection level (MDL) to achieve the change in MDL. And, clarify whether the volume samples in Tables 6.1.1 and 6.1.2 of WEC's March 2019 Environmental Report (ADAMS Accession No. ML19088A100) would be updated. Provide additional information about the detection equipment used in support of the reported analyses (e.g., alpha analysis, Tc-99).

WEC Response

In 2020, Westinghouse requested our third-party laboratory reduce detection limits (DL) for Tc-99 in various solid matrices. The DL was lowered from 50pCi/g to 1pCi/g. In order to support this change two variables were adjusted. First, laboratory analysts increased the amount of sample analyzed and secondly the amount of time the samples were counted increased. For example, in 2019 GEL analyzed approximately 0.3g of soil and counted the sample for 15 minutes. The MDL for this analysis averaged 15pCi/g. In 2020 GEL increased the sample volume to 2.5 g and the count time to 90 minutes. The MDL reduced to 0.8pCi/g. The analytical method, liquid scintillation (DOE EML HASL-300, Tc-02-RC Modified) and instrumentation (liquid scintillation counter) were not changed to achieve the lower detection limits.

The "typical sample quantity" of 100 grams provided in Table 6.1-2, Typical Environmental Program Radiological Analytical Sensitivities of the *March 2019 Westinghouse CFFF Environmental Report* (ER) does not need to change, as the sample quantity is more than sufficient to accommodate what is needed by the laboratory. There are no referenced sample volumes in Table 6.1-1 of the March 2019 ER; therefore, a change to this table would not be required.

RAI. 17 – Geologic Characterization of the Site

A.2 Clarify the information and assumptions used to understand the existence of silt and clay lenses beneath Lower Sunset Lake, Gator Pond, and particularly East Lagoon since there are no wells or borehole directly penetrated the bed sediment of these surface water bodies. Also, clarify how the results of the planned soil sampling underneath the East Lagoon liner will be considered in the development of the conceptual site model.

C.1 Provide additional clarification regarding WEC's consideration of the presence of "chemical odors" in the boring log for the basal sands at L-1 on the installation of well W-95 at an elevation 50' above the bottom of the aquifer.

C.2. Provide additional information about range of thickness of the confining unit considering the new boreholes installed within that region.

C.3. Provide additional information regarding erosion of the confining unit

WEC Response

A.2

Lower Sunset Lake: Boreholes have been installed around Lower Sunset Lake where accessible to a Direct Push Technology (DPT) drill rig. The silt and clay lenses depicted beneath Lower Sunset Lake are projected from L-2, L-3, and L-4 which were constructed along the earthen dam between Upper and Lower Sunset Lakes. The observations derived from these borings have been projected onto Cross Sections B-B', F-F', G-G'. Sediment samples that were collected to a depth of 2 ft within Lower Sunset Lake were used to define the shallower deposits and are also shown on Cross Sections B-B', F-F', G-G'.

Gator Pond: Sediment samples collected to a depth of 2' within Gator Pond were used to define the uppermost deposits. Other lithologic data displayed on the cross section are derived from borings within 100 ft of the Gator Pond and transitions from one lithology to the next are shown through pinch-outs.

East Lagoon: Nearby lithologic data have been projected onto the cross section to depict the lithologies beneath the East Lagoon. Following removal of the sludge above the liner, soil sampling will be conducted in accordance with Section 7.0 of the SCDHEC-approved *East Lagoon Closure Plan*. In summary, samples will be collected from beneath the liner in 1 ft intervals to a depth of 4 ft from at least 16 locations. The analytical results from these samples will inform the need for additional sampling and/or remediation. All data collected during the East Lagoon Closure will be integrated into the CSM and the fate and transport model interpretation, which is completed in the Feasibility Study.

C.1

In selecting the depth to screen monitoring well W-95 near boring L-1, Westinghouse's environmental consultants, including SC Registered Professional Geologists, followed the procedures specified in Section 3.5.10 of the *Remedial Investigation Work Plan* ("Work Plan") including modifications, all of which had been approved by the SCDHEC. After collecting lithologic information in the floodplain, the CFFF team recommended, and DHEC agreed that groundwater samples should be collected from temporary groundwater screening points to

assess potential migratory groundwater pathways of impacted groundwater within the floodplain.

In the case of lithologic boring L-1, the data analysis performed by a SC certified analytical laboratory of the depth-specific groundwater samples indicated the presence of COPCs at a depth of 28 ft – 33 ft. No elevated COPCs were identified by analysis of the groundwater sample collected at depths of 10-15 ft, 48-53 ft, 63-68 ft, and 78-83 ft. The 78-83 ft interval corresponds to the depth that odors were noted in soil and the top of the Black Mingo confining clay. Therefore, well W-95 was screened at the depth where COPCs were identified by laboratory analysis as opposed to the depth where odors were noted (but no COPCs were identified by laboratory analysis). This decision adheres to the methodology prescribed in the approved *Work Plan*, and recognizes that certified laboratory data is more conclusive than odors noted in the field.

The depth at which COPCs were identified by laboratory analysis is consistent with the interpretation in the CSM, which displays that COPCs are most likely to occur above a low permeability hydrogeologic unit. The silt encountered at a depth of 34.5 to 45 ft in lithologic boring L-1 appears to be hydrogeologically connected to the chlorinated volatile organic compound (CVOC) impacted groundwater within the lower zone of the surficial aquifer on the northern side of Upper Sunset Lake. Additionally, the data from permanent monitoring well W-95 correspond to the concentrations that were identified in the temporary well screening data. Nevertheless, Westinghouse installed a paired well, W-111, at this location that is screened on top of the clay at the depth of 76 – 81 ft. Groundwater from monitoring well W-111 was sampled on February 16, 2021, and results confirmed the temporary CVOC screening results. Additionally, the groundwater analytical results from W-111 indicate that groundwater at this depth is not impacted by COPCs.

C.2

Twenty-eight borings were constructed as part of the Phase II RI. All borings reached the surface of the Black Mingo confining unit, confirming its presence throughout the study area. However, none of the borings were intended to completely penetrate the confining unit since penetrating aquitards could potentially exacerbate migration of COPCs. Therefore, CFFF does not plan to further evaluate the thickness of the confining unit because no data indicates that COPCs have potentially migrated through the confining unit or have a significant potential to do so. The data from the new borings will be used to further refine the understanding of the nature and extent of the surface of the Black Mingo confining unit.

C.3

Twenty-eight borings were constructed as part of the Phase II RI. The lithologic data indicated differing amounts of erosion of the confining unit. These data will be used to further refine the understanding of the nature and extent of the surface of the Black Mingo confining unit. The boring logs and updated CSM will be included in the Phase II RI Report.

RAI. 22 Mill Creek Sediments and Pathway Assessment

Please provide additional clarification about the role of the RIWP, baseline risk assessment, and feasibility study in the WEC's environmental monitoring program, including biota sampling in Mill Creek and Sunset Lake.

WEC Response

The Remedial Investigation Work Plan ("*Work Plan*") is designed to provide a comprehensive evaluation of groundwater, surface water, sediment and soils and encompasses all areas that could be affected by releases by the CFFF. Additionally, the *Work Plan* outlines investigations with the goal to determine the full source, nature, and extent of any such release. The *Work Plan* includes, but is not limited to, provisions for the following: determining the sources(s), nature, and extent of contamination, including an assessment of surface water, groundwater, and soil underlying the site; and evaluating risks to human health and the environment. The *Work Plan* includes a Conceptual Site Model (CSM) that will provide Westinghouse's current understanding of the hydrogeology, known contaminant sources, and potential pathways of contaminant releases. The CSM will be a living document that will be updated and refined as new information is developed. Upon completion of the investigation phase as determined Westinghouse and with approval from DHEC the CFFF will issue a Remedial Investigation (RI) Report.

The RI Report will include a baseline risk assessment (BRA) which will support decisions on the remedial actions and remediation goals of the Feasibility Study (FS). The need for biota sampling in Mill Creek and Sunset Lake is one aspect of the overall site remedial strategy that will be evaluated against the information obtained in the RI and BRA and made part of the FS submitted to DHEC for approval via the Record of Decision. It follows that any information obtained in the investigation process will also influence the site's environmental monitoring program. Section 2.4.1 of the draft Environmental Assessment (EA) (ML19928A278) credited a proposed license condition requiring Westinghouse to submit a revision to the environmental monitoring program to the NRC for review and approval upon (1) completion of the RI Report or (2) in 5 years, whichever comes first. This license condition assures that the NRC will be able to approve any changes to the environmental monitoring program in light of the information gained in the RI and BRA. Westinghouse assumes this License condition will exist in the renewed license.

RAI. 30 Exposure Pathways

Provide additional information about the agricultural environment around Westinghouse in support of the public and occupational health impact analysis (e.g., crops grown, meat and milk production, fishing). See section 6.4.12.2.1 in NUREG-1748 Section 6.4.12.2.1, *Pathway Assessment*, which describes information that can be used to understand the pathways to the public, including water use downstream, to be used in NRC Dose.

Additionally, considering the information in Tables 3-3 through 3-6 of Enclosure 19 of WEC's responses to NRC's RAIs, "Preliminary Human Health Risk Assessment-Westinghouse CFFF 5801 Bluff Road Hopkins, South Carolina" dated March 2019 (ADAMS Accession No. ML20353A296), provide the background value for gross alpha onsite or provide explanation for the difference between total uranium and gross alpha values provided in these tables.

WEC Response

The following farms (with addresses and a list of crops they produce/animals they raise) are located within 10 miles of the CFFF¹:

- Farm A
 - Estimated to be 3.5 miles North from the CFFF
 - Produce – Arugula, Basil, Bok Choy, Herbs, Kale, Lettuce, Mixed Leafy Greens (Collards, Kale, Mustard, Turnips), Swiss Chard
- Farm B
 - Estimated to be 3.5 miles Northwest from the CFFF
 - Produce – Asparagus, Beans, Beets, Blackberries, Blueberries, Broccoli, Cabbage, Corn, Cucumbers, Green Onions, Green Peanuts, Herbs, Mixed Leafy Greens (Collards, Kale, Mustard, Turnips), Muscadine Grapes, Okra, Parsley, Peas, Pecans, Peppers (Variety), Pumpkins, Radishes, Yellow Squash, Strawberries, Sweet Corn, Tomatoes, Turnip Greens, Turnips, Watermelon, Zucchini
- Farm C
 - Estimated to be 6.5 miles Northeast from the CFFF
 - Produce – Strawberries
- Farm D
 - Estimated to be 6.5 miles Northeast from the CFFF
 - Produce – Beans (Snap, Pole, Variety), Beets, Broccoli, Cabbage, Cantaloupe, Cauliflower, Corn, Cucumbers, Eggplant, Green Onions, Herbs, Leeks, Lettuce, Mixed Leafy Greens (Collards, Kale, Mustard, Turnips), Okra, Parsley, Peas, Peppers (Variety), Radishes, Rutabagas, Sweet Potatoes, Tomatoes, Turnip Greens, Turnips, Watermelon, Zucchini
- Farm E
 - Estimated to be 7.0 miles North from the CFFF
 - Animals Raised – Chicken, Pork, Quail
- Farm F

¹ List of farms was collected via <https://certifiedsc.com/>.

- Estimated to be 8.0 miles Northeast from the CFFF
- Produce – Beans (Snap, Pole, Variety), Broccoli, Butter Beans, Cabbage, Cantaloupe, Corn, Cucumbers, Green Onions, Herbs, Mixed Leafy Greens (Collards, Kale, Mustard, Turnips), Okra, Peas, Peppers (Variety), Pumpkins, Radishes, Sweet Corn, Sweet Potatoes, Tomatoes, Watermelon, Zucchini
- Farm G
 - Estimated to be 9.0 miles East from the CFFF
 - Produce – Beans (Snap, Pole, Variety), Corn, Mixed Leafy Greens (Collards, Kale, Mustard, Turnips), Okra, Peas, Sweet Corn
- Farm H
 - Estimated to be 10.0 miles Northwest from the CFFF
 - Produce – Microgreens

The following fish farms are located within 10 miles of the CFFF

- Farm I
 - Estimated to be 4.5 miles southeast from CFFF
 - Fish farm specialized in raising fish for pond stocking. The fish are not sold directly to markets or for the sole purpose of consumption. Therefore, production numbers for each fish are not provided herein.
 - Pond Stock Fish (Copper nose Bluegill, Redear Sunfish, Redbreast, Largemouth Bass, Channel Catfish, Gambusia Minnows, Sterile Grass Carp, Tilapia)

The United States Department of Agriculture (USDA) has published state and county data for crop and farm animal production based on a 2017 Agriculture Census². The following data documents the number of farms producing a specific crop in Richland County, SC, as well as the yield (reported in acres and/or bushels). While the list of farms above represent only a subset of farms in Richland County (i.e., those within a 10 mile radius of the CFFF), the data below is aggregated for all of Richland County, so it does not represent any specific farm information. Note, not all produce/animals listed above were included in the USDA report (only those included in the report are provided below).

- Beans (Snap, Pole, Variety) – 8 farms, acres unavailable
- Bell Peppers – 8 farms, 1 acre
- Blackberries – 7 farms, 5 acres
- Blueberries – 21 farms, 49 acres
- Cantaloupe – 3 farms, 1 acre
- Chicken – 8 farms, 1,500,096 sold
- Collards – 6 farms, 2 acres
- Corn – 33 farms, 6,692 acres, 940,604 bushels
- Cucumbers – 5 farms, 1 acre
- Eggplant – 3 farms, less than ½ acre

² AC-17-A-40, “2017 Census of Agriculture, South Carolina, State and County Data,” Volume 1, Geographic Area Series, Part 40, Issued April 2019, https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/South_Carolina/scv1.pdf.

- Grapes – 12 farms, 18 acres
- Green Onions – 3 farms, less than ½ acre
- Green Peanuts – 2 farms, acres/bushels unavailable
- Herbs – 3 farms, less than ½ acre
- Kale – 7 farms, 1 acre
- Okra – 4 farms, 1 acre
- Pecans – 11 farms, 26 acres
- Pork – 21 farms, 170 in inventory (10 farms, 94 sold)
- Strawberries – 10 farms, 91 acres
- Sweet Corn – 9 farms, 4 acres
- Tomatoes – 20 farms, 11 acres
- Watermelon – 4 farms, acres unavailable
- Yellow Squash – 10 farms, 2 acres

Westinghouse does consider drinking water withdrawn from the Congaree River as one of the exposure pathways evaluated in the semi-annual dose assessment report submitted to NRC to comply with 10 CFR 40.65 and 10 CFR 70.56. However, based on SCDHEC data there are no surface water withdrawals registered within the Saluda River Basin downstream of the Westinghouse NPDES discharge.

Regarding Tables 3-3 through 3-6 of the “Preliminary Human Health Risk Assessment-Westinghouse CFFF”, background data for gross alpha was not available for soil, vegetation, sediment, and fish tissue media.

Gross alpha is a measure of the combined alpha particle activity from the alpha emitters in the sample, such as uranium, thorium, and radium. Total uranium is a measure of the concentration of uranium expressed as either a mass or activity per unit mass or volume. A conversion factor (based on the current weighted specific activity for uranium at WCFFF) was used as needed to convert between mass and activity for screening based on the units of the screening value available for comparison.

RAI. 31 Air Permit

WEC's air permit renewal application describes greenhouse emissions from the CFFF of 35,507 tons/yr. Clarify the greenhouse gas (GHG) emissions in light of U.S. Environmental Protection Agency' reporting limit of 25,000 tons/yr. Additionally, please clarify whether the values for NO_x and CO₂ in Table 1 of the air permit renewal application are potential emissions or actual emissions.

WEC Response

The 35,507 short tons/year of carbon dioxide equivalents (CO₂e) shown in Table 1 of the May 2019 revised air permit renewal application is the potential to emit of this equipment (that is these fuel combustion sources running at their maximum heat input rating continuously 8,760 hour per year). Potential to emit is much higher than actual emissions at most facilities.

The USEPA threshold for reporting under the GHG reporting rule is 25,000 metric tons CO₂e per year based on actual emissions, not potential to emit.

For calendar year 2020, Westinghouse reviewed records of facility-wide natural gas consumption. Westinghouse also reviewed records of natural gas curtailments for the boilers during 2020 (26 days cumulatively), the period the boilers would have utilized back up diesel fuel. The incinerator and five calciners are in dedicated natural gas service and do not use diesel fuel as back up.

Based on records of facility-wide natural gas consumption and estimated worst-case diesel fuel consumption by the boilers, actual GHG emissions from Westinghouse in calendar year 2020 were ~7,224 metric tons CO₂e per year, well under the USEPA GHG reporting rule threshold of 25,000 metric tons CO₂e per year.

Example *actual* CO₂e emissions calculations for calendar year 2020 are attached.

All values shown in Table 1 of the air permit renewal application (including NO_x and CO₂) are potential emissions, not actual emissions.