



Westinghouse Electric Company
Nuclear Fuel
Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, South Carolina 29061
USA

SCDHEC, BLWM
Kim Kuhn
2600 Bull Street
Columbia, SC 29201

Direct tel: 803.647.1920
Direct fax: 803.695.3964
e-mail: joynerdp@westinghouse.com

Your ref:
Our ref: LTR-RAC-21-20

February 12, 2021

Subject: RI Work Plan Phase II **Addendum**
Sediment Sampling Plan to Bound the Extent of Uranium Around SED-44

Mrs. Kuhn:

Please find attached for your review an **Addendum** to the Westinghouse Columbia Fuel Fabrication Facility Remedial Investigation Phase II Work Plan.

Respectfully,

A handwritten signature in blue ink, appearing to read "Diana P. Joyner".

Diana P. Joyner
Principal Environmental Engineer
Westinghouse Electric Company, CFFF
Inc.
803.497.7062 (m)

Plan Reviewed by:

A handwritten signature in black ink, appearing to read "Charles K. Suddeth".

Charles K. Suddeth, P.G.
Senior Hydrogeologist
AECOM Technical Services,

cc: J. Ferguson, EH&S Manager
N. Parr, Environmental Manager
C. Suddeth, AECOM Professional Geologist
J. Grant, AECOM Project Manager
ENOVIA Records

Background

The Westinghouse Columbia Fuel Fabrication Facility (CFFF) is conducting an environmental multi-media assessment of its facility for constituents of potential concern (COPCs). The assessment activities are based upon the AECOM Phase II Remedial Investigation (RI) Work Plan dated September 2020 and a Work Plan addendum dated October 29, 2020, both of which have been approved by the South Carolina Department of Health and Environmental Control (SCDHEC). These documents were prepared to satisfy Item 1 of Consent Agreement CA-19-02-HW (CA) between CFFF and SCDHEC.

The ongoing RI assessment included the collection of multiple sediment samples from November 9, 2020 through December 4, 2020 in the on-site stormwater ditches, the Gator Pond, Upper Sunset Lake, Lower Sunset Lake, and Mill Creek. Sample results from one location, SED-44 (0 to 6 inches) in Upper Sunset Lake, contained uranium (U) concentrations above the Industrial Use Screening Level (IUSL) that requires further investigation in accordance with site procedure, RA-433 “Environmental Remediation.” U concentrations in the other sediment samples were below IUSL.

In a January 14, 2021 conference call with SCDHEC, it was agreed upon that additional data is needed to bound the extent of U concentrations above IUSL around SED-44. The additional data will be used to support the dose and risk assessment required by RA-433, and the development of future remedies for the area to be included in a Feasibility Study (FS). As required by Item 7 of the CA, the FS will be performed upon completion of the RI.

Proposed Sediment Bounding Locations

CFFF proposes that two bounding areas (**Figure 1**) be placed around SED-44. The first bounding area will encompass approximately 10 square meters (m²). The second bounding area will encompass approximately 100 m². The corners of each bounding area will be sampled at intervals of 0 to 6 inches and 6 to 12 inches below the sediment surface (locations will be named SED-44B1 through SED-44B8). This sample depth has been chosen based on the elevated results previously identified in SED-44 at the 0-6 inch interval. The Upper Sunset Lake staff gauge water level will be recorded, along with the approximate level of water above the sediment surface at each location. This data will be used to better define the nature and extent of the elevated U levels in sediment and to provide data necessary to perform a dose and risk assessment of the area.

Proposed Additional Sediment Transect

CFFF proposes an additional sediment transect (**Figure 1**) be placed between the SED-44 location and the Upper Sunset Lake Dike to assess if additional deposition of U at concentrations above IUSL has been impounded by the dike. Although some sediment samples downstream of SED-44 have been identified with U concentrations above a Residential Use Screening Level (RUSL), no samples downstream of the dike (or anywhere else within Mill Creek) contained concentrations of U above IUSL.

This additional sediment transect will be placed approximately 25 ft upstream of the western edge of the Upper Sunset Lake Dike, with three locations across the transect (SED-66, SED-67, and SED-68). This transect location has been chosen to assess if additional depositional areas exist near the bottom of the slope forming the dike wall. Sediment samples from the core will be collected at 6-inch intervals (e.g. 0-6 inch, 6-12 inch) with a minimum of 1 foot and a maximum 2 foot of sediment core being collected. Should more than 1 foot of sediment be recovered at a particular location, the sediment from the deeper interval(s) will also be analyzed. If sediment is obtained from depths greater than 12 inches, the samples will be collected at 12-inch intervals (e.g. 12-24 inch) or to total depth (e.g. 12-16 inch). This total depth has been chosen to identify and attempt to sample native soil beneath the sediment. Sediment lithology will be logged to assess

if native soil was reached. The approximate level of water above the sediment surface will be recorded at each location.

Adjustments to the Sampling Plan

This portion of Mill Creek is heavily forested, lowland swamp typically containing standing water. A combination of chest-waders and/or a canoe will be used to access each sample location. The field sampling crew will attempt to adhere to the planned sample locations; however due to the nature of this area of Sunset Lake and considering safety and accessibility, the field sampling crew may adjust the actual sample locations, as necessary. The coordinates of each sample location will be recorded, and any future dose and risk assessments will be based on the actual sample area size.

A VibraCore sampler or multistage sediment sampler will be used to collect the sediment samples. A VibraCore can retrieve continuous, undisturbed core samples. A multistage sediment sampler is similar to a direct push macrocore sampler and consists of a two-foot long stainless steel tube with an acetate liner. When using the multistage sampler, should roots limit the ability to reach the desired depth after multiple attempts, a stainless steel hand auger may be used to attempt to extend the sediment sample borings to the desired depth. The selected sampling method of VibraCore, or multistage sampler will be determined by the field crew based on the conditions at each sample location.

Equipment Decontamination

Sample equipment will be decontaminated between sample locations as specified in the RI Phase II Work Plan and Addendum.

Sediment Analyses

Sediment samples will be analyzed for Isotopic Uranium and Technetium-99. Quality assurance and quality control samples will be collected as specified in the Phase II RI Work Plan and Addendum.

Sediment Sampling Schedule

After approval of this plan by SCDHEC, sediment sampling is anticipated to begin in early March 2021.

Reporting

The sediment sample analytical results, and associated dose and risk assessments of the SED-44 area will be reported to SCDHEC as outlined in the RI Phase II Work Plan and Addendum.

Figure 1 – Proposed Sediment Sampling Locations

