Minor
OPERATION AND MAINTENANCE
Activity Plan

PAR Pond Dam Emergency Spillway Redevelopment

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1. INTRODUCTION

The Purpose of this Operation and Maintenance (O&M) Plan is to provide guidance for activities associated with the PAR Pond Dam Emergency Spillway Redevelopment and to return the emergency spillway at PAR Pond to as close to its original design configuration as feasible.

This O&M Activity Plan is defined as a "minor intrusive activity" based on the soil excavation meeting the definition of both "minor" and "intrusive" as defined in the SRS Operations and Maintenance Plan (RCRA/CERCLA), WSRC-RP-93-904.

2. AREA DESCRIPTION AND CONDITIONS

Contaminants of interest near the work area include:
Unit 110 "PAR POND (INCLUDING THE PRE-COOLER PONDS AND CANALS)
Releases in the form of process leaks, purges, and makeup cooling water have contaminated PAR Pond with cesium-137 and other radioactive and non-radioactive contaminants. Contamination is the result of fission products from historic reactor operations. During the course of reactor operations, relatively small quantities of radionuclides have been released from the reactors into PAR Pond. The predominant radionuclides released have been Cesium (Cs)-137 and tritium (H-3), with other radionuclides such as Cs-134, Cobalt (Co)-60, and plutonium isotopes released in much smaller quantities. Additionally, the pumping of Savannah River water resulted in the introduction of mercury into the reservoir.

The risk analysis for PAR Pond(WSRC1992) identified the following constituents as contaminants of concern in sediments:

Constituent	Maximum Concentration (mg/kg or pCi/kg)	Carcinogen (C)or Noncarcinogen(N)
Barium	500	N
Beryllium	3.99	C
Cadmium	2.37	N
Chromium	49.3	N
Mercury	0.614	N
Cesium-137	122,400	C
Cobalt-60	770	C
Plutonium-238	4.09	C
Plutonium-39	38.0	C

Potential exposures to these contaminants in sediments can occur through dermal contact, inhalation of suspended/airborne sediment, or in the case of gamma emitting radionuclides, external exposure to radioactive emissions.

The risk analysis showed that the only noncarcinogenic hazard was from mercury intake via the consumption of fish. Concentrations of the other noncarcinogenic constituents are low enough that reference doses would not be exceeded. Workers are specifically prohibited from consuming PAR Pond fish, therefore the likelihood of noncarcinogenic effects to workers is negligible. External exposure to gamma radiation emanating from Cs- 137 in the exposed sediments dominates the carcinogenic risks.

Completed Waste Unit 152 is located in the general vicinity but requires no actions or concerns.

3. O&M ACTIVITY

A. O&M Activity Description

Site Infrastructure is tasked with performing returning the emergency spillway at PAR Pond to as close to its original design configuration as feasible. The area has been surveyed for radiological contamination and none was identified. Radiological monitoring will be performed while work is in progress. If radiological work is later determined to be required, a separate Statement of Work will be generated. In general, tasks for this project include: Tree and stump removal, verifying channel grade, construction of a rip-rap berm, construction of a diversion berm, seeding and grassing the completed channel, and erosion control until a permanent vegetative cover is established.

ALL EXCAVATED SOILS WILL BE RETURNED TO THE ORIGINAL LOCATION OF SOIL DISTURBANCE. THE DISPOSAL OF ANY SOIL WILL BE PER THE ENVIRONMENTAL COMPLIANCE AUTHORITY (ECA) AND RP DIRECTION.

B. O&M Activity Sampling and Monitoring for Health and Safety

The identified units are in the FFA because of radiological contamination from past releases from Reactor operations.

Radiological surveys will be required at the excavation site. If radiological contamination is encountered, RP will determine if protective equipment and personnel access restrictions are required.

The work area will be barricaded with rope to ensure that access is controlled for personnel safety around the work area.

Worker health and safety will be directed and controlled as required in the Assisted Hazard Analysis.

C. Health and Safety Plan

The work will be completed in accordance with the requirements stated in the Assisted Hazards Analysis. The safety requirements and personal protective equipment described in the AHA are appropriate for the potential hazards of the RCRA/CERCLA Unit.

D. Characterization and Sampling Plan for the Affected Area near the Unit

A formal sampling plan will be utilized for work in this area. The sampling and characterization for this minor intrusive O&M activity will be per the sampling plan that is part of the Work Package. Material removed as part of the excavation will be returned as backfill when the job is completed.

Additional work scope and sampling from the soil disturbance areas will be addressed per SRNS-OSC guidance, should radioactive contamination be found present.

E. Contaminated Materials Management and/or Disposal

Any waste materials generated during this activity will be disposed of as appropriate. If media is determined to be "clean," normal work practices would occur. This waste will be managed as appropriate per facility Waste Management and ECA guidance and handled in accordance with existing SRNS waste guidance procedures. Clean soil can be put back in place once the work is complete.

F. **Environmental Plans and Permit Modification Requests**
This activity is not expected to involve other environmental plans / permits, required maintenance and inspections, or erosion control practices.

4. CONTINGENCY PLAN

If at any time during the implementation of the activity, the conditions change, such that the activity is no longer considered "minor" (greater than 10% of a waste unit area impacted or disturbed), the Shift Operations Manager (SOM) shall be notified and the Facility Manager (or designee) or the ECA shall:

- Immediately notify the SRNS-OSC. The SRNS-OSC will notify the DOE-OSC.
- Contain and stabilize the area, investigate as necessary to determine the necessary change in the activity plan, secure the area and stop work.
- Update the SRNS-OSC as to the findings and the requested path forward. The SRNS-OSC will communicate the information to the DOE-OSC and obtain concurrence on the path forward.

5. DOCUMENTATION & REPORTING

The Project Manager or designee will transmit the following documentation to the SRNS-OSC by the 20th day of the month following the month that the land disturbing activity was completed:

- The signed O&M Plan
- Any sampling and characterization data that was collected.
- The quantity of contaminated materials, if generated.
- The disposal location of any contaminated material, if generated.

References

1. WSRC-RP-96-45, Savannah River Site Plan for Performing Maintenance in Federal Facility Agreement Area (O&M) Plan (U), December 15, 1996.
2. AHA# INF-45691
3. WO# 1978953