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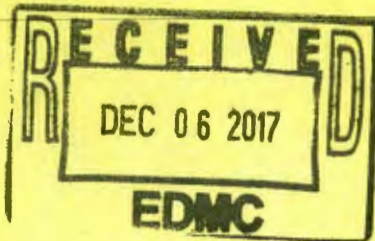
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**From:** Yasek, Donna M  
**Sent:** Wednesday, December 27, 2006 1:31 PM  
**To:** 'Boyd.Alicia@epamail.epa.gov'; Guercia, Rudolph F; Hendrickson, Douglas; Jarvis, Mary F; Laws, Gail L  
**Cc:** Woolard, Joan G; Kornish, Mark J; ^WCH Document Control; Landon, Roger J  
**Subject:** Air Monitoring Plan for the Radiological Counting Facility  
**Attachments:** rcf amp.PDF

In accordance with Action Memorandum #3 for the 300 Area Facilities, signed by EPA on November 11, 2006, the Radiological Counting Facility (RCF) is now subject to continued operation under CERCLA. The Action Memo states that:

"the RCF (MO-423 and MO-265) will continue to process samples under CERCLA authority for an extended period of time prior to being subject to D4. These facilities receive and analyze samples from CERCLA activities in the 100 and 300 Areas, as well as samples from ERDF. The activities in the RCF are being performed under the authority of the noncontiguous onsite provisions of CERCLA section 104(d)(4). As a consequence, no permits will be required at the RCF for processing samplings from CERCLA actions. The terms and conditions related to the RCF will be obsolete upon approval on an EPA-approved air monitoring plan."

The EPA-approved air monitoring plan is attached as a pdf file.

If you have any questions, please call me on 372-9978.

Donna



rcf amp.PDF (175  
KB)

**RADIOLOGICAL COUNTING FACILITY  
AIR MONITORING PLAN  
December 2006**

**INTRODUCTION/BACKGROUND**

The Radiological Counting Facility (RCF), composed of MO-265 and MO-423, is a minor source for potential diffuse and fugitive radionuclide emissions resulting from the preparation and counting of radiological samples from CERCLA projects in the 100 Area, 300 Area and ERDF. Since this facility receives only samples associated with CERCLA response actions it will continue to operate under CERCLA authority in accordance with Action Memorandum #3 for the 300 Area Facilities.

This air monitoring plan (AMP) replaces terms and conditions in the Hanford Site Air Operating Permit and the Department of Health License, which will be considered obsolete upon approval of this AMP. This AMP will be incorporated into the revised Removal Action Work Plan (RAWP) for 300 Area Facilities, DOE/RL-2004-77 (DOE 2004, as revised), anticipated to be approved in early 2007. The revised RAWP will supersede this AMP.

**PLANNED ACTIVITIES**

Various types of sample media may be prepared and counted including soil, filters, smears, and miscellaneous materials (e.g., pipe, concrete, clothing, oil, and liquids). In addition, a limited number of radiological standards may be prepared and/or counted at the RCF. Sample preparation typically involves physical processes (e.g., evaporation of liquids, wet ball milling of soils and other solids), mounting of air filters and other smears, and depositing the prepared material on planchets prior to counting rather than radiochemistry.

Counting capabilities include, but are not be limited to, liquid scintillation, gross alpha/beta gamma, gamma ray spectroscopy, and alpha spectroscopy.

**AIRBORNE SOURCE INFORMATION**

There is a very limited potential for diffuse and fugitive radioactive airborne emissions resulting from sample preparation/counting activities conducted at the RCF. [Note: the RCF ventilation unit has been de-energized and will not be reactivated].

A radioactive air emission estimate was prepared for the Notice of Construction Application Revision Form (DOE/RL 2004), dated October 25, 2004 that was approved by the Washington State Department of Health. Any potential emissions would be well within this estimate. The estimate is summarized in the table below. The estimate is based on a maximum of 2,000 liters of samples requiring invasive sample preparation (e.g., wet ball milling). The amount of samples invasively prepared is a small fraction of the total number of samples received at the RCF. Most of the samples received at the RCF are smears, air filters, etc. that do not require invasive sample preparation techniques. The actual total number of samples generally processed at the RCF is an order of magnitude less than 2,000 liters (~100 to ~300 liters).

**Table – Emission Estimate**

<b>Radionuclide</b>	<b>Inventory (Ci)</b>	<b>Release Fraction</b>	<b>Potential to Emit (Ci/yr)</b>	<b>Unabated TEDE (mrem/yr)</b>
Alpha Emitters <sup>1</sup>	6.36E-03	1.00E-03	6.36E-06	1.31E-03
Beta/Gamma Emitters <sup>2</sup>	4.31E-02	1.00E-03	4.31E-05	9.95E-05
Totals	-	-	4.95E-05	1.41E-03

TEDE = TOTAL EFFECTIVE DOSE EQUIVALENT

<sup>1</sup>Alph emitters represented by Am-241

<sup>2</sup> Beta emitters represented by Cs-137

The radionuclides that could contribute greater than 10% of the potential to emit TEDE to the MEI are Am-241, Pu-238, Pu-239, Pu-240, U-234, U-235, U-238, Co-60, Sr-90/Y-90, Cs-137/Ba-137, Eu-152, Eu-154. Other radionuclides, which could contribute less than 10% of the dose may also be present in samples processed at the RCF.

#### **AS LOW AS REASONABLY ACHIEVABLE CONTROL TECHNOLOGY (ALARCT)**

Radiological material in the RCF is controlled through the use of standard radiological control practices. Sample activities at the RCF are conducted under a radiological work permit. Samples may be opened within a contamination area, if warranted by the radiation levels, which is typically established just prior to opening the sample. After sample handling activities (e.g., sample preparation or counting) are completed, the area is surveyed and the contamination area is removed. Sample preparation activities may infrequently be conducted in an enclosure, depending on the sample activity level or contaminants determined by screening. These practices and controls are considered ALARCT.

#### **AIR MONITORING**

Potential diffuse and fugitive emissions from the RCF will be monitored by air monitoring stations 300 South West #1 (N557), 300 Trench, 300 NE, 300 Water Intake, 300 South Gate; in accordance with 40 CFR 61, Appendix B, Method 114(3) and WAC 246-247-075(3). The locations of the air monitoring stations are shown in Figure B-1 of Appendix B of the Removal Action Work Plan #1 for the 300 Area Facilities (DOE/RL 2004). The operation of the air monitors will follow the protocol for the Environmental Surveillance Program or the Near-Facility Environmental Monitoring Program on the Hanford Site. The air samples will be changed every 2 weeks and analyzed for total alpha and total beta. The current protocol for these air samplers is as follows:

- 300 South West #1 (N557), 300 Trench, 300 NE, 300 Water Intake, and 300 South Gate air monitors will be composited quarterly and analyzed for gamma energy-emitting radionuclides, strontium, plutonium, and uranium. The EPA may choose to take split samples of composite air samples.
- The data results for these air monitors are entered into the Hanford Environmental Information System and/or the Automated Bar Coding of Air Samplers at Hanford database.

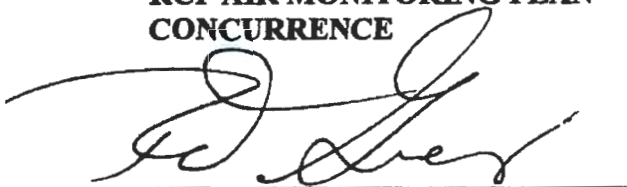
The data collected from air monitoring described above will be summarized in the annual report that is prepared for the Hanford Site in compliance with 40 CFR 61 Subpart H and WAC 246-247 and that is used to demonstrate compliance with 40 CFR 61.92.

#### **REFERENCES**

DOE/RL 2005, "Removal Action Work Plan #1 for 300 Area Facilities", DOE/RL-2004-77, Revision 1, U. S. Department of Energy, Richland Operations Office, Richland, Washington. 006665

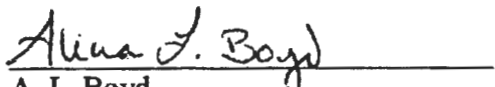
DOE/RL 2004, "Revised Notice of Construction Application Revision Form for the Radiological Counting Facility", Letter 04-AMRC-0260 (CCN 118254), U. S. Department of Energy, Richland Operations Office, Richland, Washington.

**RCF AIR MONITORING PLAN  
CONCURRENCE**



R. F. Guercia  
U. S. Department of Energy, Richland Operations Office

12/27/06  
Date



A. L. Boyd  
U. S. Environmental Protection Agency

Dec. 22, 2006  
Date