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PROPOSAL FOR ALTERNATE SOURCE MONITORING FOR THE PROCESS AREA TRASH COMPACTOR AT THE FERNALD ENVIRONMENTAL PROJECT (FEMP), PERMIT TO INSTALL (PTI)

01/15/92

WEMCO:EC&QA:92-019
WEMCO/SOUTHWESTERN OHIO
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LETTER

[redacted]

Westinghouse
Environmental Management
Company of Ohio

PO Box 398704
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(513) 738 6200

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WEMCO:EC&QA:92-019

January 15, 1992

Ms. Monica Meder
Environmental Scientist I
Southwestern Ohio Air Pollution
Control Agency
1632 Central Parkway
Cincinnati, Ohio 45210

Dear Ms. Meder:

PROPOSAL FOR ALTERNATE SOURCE MONITORING FOR THE PROCESS AREA TRASH COMPACTOR AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP), PERMIT TO INSTALL (PTI) 14-2288; OEPA NO. 1431110128 P227; FEMP ID NO. 8-037

Enclosed is a proposed method of monitoring for the Process Area Trash Compactor. As currently written, the draft PTI would require us to monitor in accordance with the NESHAP protocol, 40 CFR, Part 61, Subpart H, section 61.93, which requires monitoring following ANSI standard N13.1-1969. This required in-stack monitoring which would have required us to install a stack on a source that presently is not designed with one.

In place of in-stack monitoring, we propose using four area air sampling monitors to measure radionuclide concentration in the vicinity of the compactor. After installation, a flow pattern study will be made to determine the optimum placement of these monitors. As this source will vent to an enclosed building, these monitors should accurately measure the radionuclide emissions from the compactor, including any possible fugitive emissions from sources other than the exhaust vent.

We believe this monitoring plan will more than adequately address the intent of the current monitoring proposal, that is to measure the impact from this source. As this source is not required by the federal NESHAP to install monitoring, the calculated Effective Dose Equivalent (EDE) is less than 0.1 mRem/year [40 CFR 61.93(b)(4)]. We are not statutorily bound to follow the NESHAP protocol for in-stack sampling. This being the case, we feel this alternative monitoring plan is the most appropriate method of monitoring radionuclide emissions from this source. This alternate procedure will not cause an increase in the amount of emissions from this source.

If you have any questions concerning this proposal, please contact Ervin Fisher at (513) 738-6053.

Very truly yours,

Ellery D. Savage

Ellery D. Savage, Manager
Environmental Compliance and Quality Assurance

EF

Enclosures

c: S. M. Beckman, WEMCO
M. Humphries, SE-31 ORO
B. Shroff, FO
P. B. Spotts, WEMCO
T. Tucker, OEPA-CO

AR Files
Central Files
SC Files

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PROPOSED ALTERNATE MONITORING FOR PROCESS AREA TRASH COMPACTOR [redacted]

Sampling will be accomplished using area samplers. This sampling will utilize fixed head samplers. Based on air flow pattern studies to determine optimum placement, four (4) fixed head air samplers will be placed in the Trash Compactor area.

The use of a germanium detector or an alpha spectrometer will allow for spectral analysis to identify or confirm radionuclide(s) present in the sample media. This would be coupled with special counting techniques on an alpha/beta low background gas proportional counter (non-destructive).

Long-lived activity could be estimated 24 hours after sample collection. However, due to the degree of accuracy afforded by this method an alternate testing method is recommended. By delaying at least 5 to 7 days to allow for the decay of the short-lived radionuclide daughters, a higher degree of accuracy would be provided. Sample collection will be ongoing during system operation only.

II. Instrumentation and Equipment

Four fixed head air sampling units, operating retrospectively, would consist of these elements:

* A filter holder utilizing a 47 mm filter media. (selection based on availability of equipment and ability to perform preferred analytical analysis, count performed on an alpha/beta low background counter equipped with a 2" gas proportional detector.)

* A vacuum pump with a flowmeter calibrated in liters/min against a NIST traceable standard.

* Regulated and monitored constant flow.

A counting system that shall be calibrated against an NIST traceable standard.

Verification of radionuclide presence utilizing either a germanium detector or an alpha spectrometer. Process knowledge will be used to determine the radionuclide monitored.

III. Data Reporting and Storage

Sample results will be entered into the Air Sampling Program Data Base and retained on file for at least a period of five years. Results of the monitoring shall be included in the Effluent Information System and the dose calculations required by 40 CFR 61.93[a] shall be provided in an annual report to the Southwestern Ohio Air Pollution Control Agency (SWOAPCA).

This report shall also contain a description of the emission controls and control efficiencies employed by this source, and a brief description of all modifications made to this source during that calendar year. This report shall be submitted to the SWOAPCA by June 30 of each year.

For Official Use Only

Premise No. / / /
Source No. /
Application No. /

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Trash Compaction

2. End product of this process Containerized Compacted Trash for Burial

3. Primary process equipment Trash Compactor
Your identification FEMP ID 8-037 Year Installed

4. Manufacturer Container Products Corp. Make or Model B-400 Super Compactor

5. Capacity of equipment (lbs./hr): Rated 1426.1 Max. 1426.1

6. Method of exhaust ventilation: [ ] Stack [ ] Window fan [ ] Roof vent
[X] Other, describe Vent into Building
Are there multiple exhausts? [ ] Yes [X] No

OPERATING DATA

7. Normal operating schedule: 16 hrs./day, 5 days/wk., 50 wks./year.

8. Percent annual production (finished units) by season:
Winter 25 Spring 25 Summer 25 Fall 25

9. Hourly production rates (lbs.): Average 1426.1 Maximum 1426.1

10. Annual production (indicate units) 2852 Tons/yr (Average)
projected percent annual increase in production 0 %

11. Type of operation: [ ] Continuous [X] Batch

12. If batch, indicate Minutes per cycle Variable Minutes between cycles Variable

13. Materials used in process:

List of Raw Materials	Principle Use	Amount (lbs./hr.)
Scrap Steel	Containerized Trash	500.0
Compressed Paper Bales	Containerized Trash	556.8
Wood Pallets	Containerized Trash	303.3
55 gal Drums	Containerized Trash	66.0

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment.
Process Flow Diagram included with original application.

[redacted]

PTI 14-2288
[redacted] A-2
OEPA NO. 1431110128 P227
FEMP ID NO. 08-037

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling Chamber
(B) Cyclone
(C) Multiple Cyclone
(D) Electrostatic Precipitator
(E) Fabric Filter
(F) Spray Chamber
(G) Cyclonic Scrubber
(H) Impingement Scrubber
(I) Orifice Scrubber
(J) Venturi Scrubber
(K) Plate or Tray Tower
(L) Packing Tower
(M) Adsorber
(N) Condenser
(O) Afterburner - Catalytic
(P) Afterburner - Thermal
(Q) Other, Describe HEPA 99.97 %
(R) 95 % Prefilter

15. Control Equipment Data:

Item	Primary Collector	Secondary Collector
(a) Type (See above Code)	R	Q
(b) Manufacturer	Container Product Corp.	Container Product Corp.
(c) Model No.	To Be Determined	To Be Determined
(d) Year Installed	To Be Determined	To Be Determined
(e) Your Identification	N/A	N/A
(f) Pollutant Controlled	Uranium & Particulate	Uranium & Particulate
(g) Controlled pollutant emission rate (if known)	See Emissions Estimates	See Emissions Estimates
(h) Pressure Drop	0.3 to 1.0 in W.G.	.10 to 3.0 in W.G.
i) Design efficiency	95 % @ 1 Micron	99.97 % @ .3 Microns
(j) Operating efficiency	See Emission Estimates	See Emission Estimates

STACK DATA

16. Your Stack Identification N/A

17. Are other sources vented to this stack? [ ] Yes [ ] No
If yes, identify sources _____

18. Type: [ ] Round, top inside diameter dimension _____
[ ] Rectangular, top inside dimensions (L) _____ X (W) _____

19. Height: Above roof N/A ft., above ground N/A ft.

20. Exit gas: Temp. AMB °F, Volume 3,600 ACFM, Velocity 2817.4 ft./min.

21. Continuous monitoring equipment: [X] Yes [ ] No
If yes, indicate : Type Area monitoring, Manufacturer To Be Determined
Make or Model N/A, Pollutant(s) monitored Radionuclide
Note: See attached proposed monitoring plan for description of monitoring equipment.

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [X] Yes [ ] No
If yes, check method: [ ] Stack Test [ ] Emission Factor [X] Material Balance

Completed by Ervin Fisher, Date 12/12/91

[redacted]

PROPOSED ADDITIONAL TERMS AND CONDITIONS NO. 3 FOR THE PROCESS AREA TRASH COMPACTOR'S RADIONUCLIDE MONITORING, TESTING AND REPORTING REQUIREMENTS

3. All radionuclide monitoring, testing and reporting shall be performed in accordance with an alternative testing procedure approved by the Ohio EPA. Particulate testing shall be performed in accordance with OAC Rule 3745-17-03 or through the use of an alternative testing procedure approved by the Ohio EPA.

   a. An area monitoring system designed to detect radionuclide activity and particulate shall be installed. The monitoring system shall be operated and maintained in accordance with the procedures specified by the manufacture. The monitoring system shall be operated continuously when emissions are exhausted.

   b. The monitoring system shall have three (3) components: a series of fixed head air sampling units, a counting system, and a system to verify the presence of radionuclide.

   c. The laboratory results from the radionuclide and particulate emission rate shall be kept on site, available for inspection by representatives of the Ohio EPA for a minimum of five (5) years.

   d. The Fernald Environmental Management Project shall provide the Southwestern Ohio Air Pollution Control Agency (SWOAPCA) with an annual report which includes the results of the monitoring as recorded by the Department of Energy's (DOE) Effluent Information System and the dose calculations required by 40 CFR 61.93[a]. This report shall also contain a description of the emission controls and control efficiencies employed by this source, and a brief description of all modifications made to this source during the calendar year for which this report is prepared. This report shall be submitted to the SWOAPCA by June 30 of each year.

[redacted]