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Incoming: 9300907

Department of Energy

Richland Operations Office
P.O. Box 550
Richland, Washington 99352

93-RPB-074

DEC 21 1992

Mr. David B. Jansen, P.E.
Hanford Project Manager
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Mr. Myron B. Saikewicz, P.E.
Engineering and Technical
Services Air Programs
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Jansen and Saikewicz:

RESULTS OF TEST OF ACTUAL EMISSIONS TO SUPPORT ENVIRONMENTAL HOT CELL EXPANSION, PROJECT W-041H

Enclosed please find the results of the test of actual emissions conducted to satisfy the State of Washington Department of Ecology (Ecology) conditional approval of the notice of construction for the Environmental Hot Cell Expansion, Project W-041H. The approval and condition were contained in a letter from Mr. D. B. Jansen and Mr. M. B. Saikewicz, Ecology, to Mr. R. D. Izatt, U.S. Department of Energy (DOE), Richland Field Office (RL), "Approval of the Notice of Construction for the Environmental Hot Cell Expansion, Project W-041H, M-11-00," dated July 13, 1992.

The approval stated, "The DOE is required to conduct actual tests of the existing units to prove xylene, toluene, and ethanol air emissions are all below their detection limits by December 1, 1992." Ecology was informed of the test on November 13, 1992, complying with the requirement to provide notice ten working days prior to the test. Samples were taken by the Hanford Environmental Health Foundation from the existing 222-S Laboratory emissions on November 30, 1992, complying with the December 1, 1992, deadline. A representative from Ecology was present for most of the testing. The results of the testing (enclosed) indicate that all three compounds were below their detection limits. The report of results also includes a summary of the process followed in obtaining the samples, in addition to the analytical procedure followed.



Messrs. Jansen and Saikewicz
93-RPB-074

-2-

DEC 21 1992

The approval also stated, "The approval of this letter will be invalid if the testing report is not submitted by December 31, 1992." This submittal is intended to comply with this requirement. With this submittal, RL has completed all requirements of the July 13, 1992, letter of approval. No further testing is planned.

Should you have any questions, please contact me or Mr. S. D. Stites of my staff on (509) 376-8566.

Sincerely,


James D. Bauer, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy

Enclosure:
Stack Sampling Results

cc: A. W. Conklin, DOH
P. T. Day, EPA
D. P. Hughes, WHC
G. W. Jackson, WHC
R. C. H. King, Ecology
D. A. Lauer, APCA
R. W. Oldham, WHC
E. D. Smith, HEHF
J. M. Willenberg, Ecology



HANFORD ENVIRONMENTAL HEALTH FOUNDATION

December 16, 1992

CO 18887

Westinghouse Hanford Company
MSIN R3-27

Attn: E. K. Carter

RESULTS OF 296-S-21 EXHAUST STACK SAMPLING, 222-S/200 W - NOVEMBER 30, 1992

PURPOSE

E. K. Carter, WHC project engineer, requested that HEHF sample and analyze the exhaust gas from the existing 296-S-21 stack for toluene, xylenes, and ethanol. The performance of this sampling was mandated by the State of Washington/Department of Ecology (WDOE) as part of the approval of a proposed expansion to the 222-S laboratory.

BACKGROUND

The 296-S-21 stack is used to exhaust the air from several hot cells and laboratory hoods in the 222-S facility. The air exhausted by this stack is tempered to comfortable room temperature and is well above the dew point. The stack gas temperature was 76 degrees F at the sampling location. Sampling and analysis methods for these compounds were not mandated by the WDOE, so existing HEHF methods were adapted for this situation and transmitted to WHC for concurrence (letter - Sampling Proposal; E. D. Smith, HEHF to E. K. Carter, WHC, dated November 23, 1992).

SAMPLING

Sampling was performed on the morning of November 30, 1992. An observer from WDOE was present for most of the sampling. Samples were collected following HEHF Operating Procedure HTSK90-404, "Collecting Samples with Solid Sorbent Tubes," with certain modifications to allow for greater sorbent capacity, simultaneous sample collection and sample extraction from a duct.

Sorbent tubes for ethanol analysis were collected simultaneously with tubes for xylenes and toluene analysis. Exhaust air was extracted from an available sample port approximately two feet downstream of the main fan and was drawn through the parallel sorbent tubes at nominal flow rates of 50 mL/min for a period of twenty minutes. Actual sample volume data are included in the attached table.

The sampling operation was repeated until three sample sets of air from the exhaust duct had been collected. At WHC's request, the ambient outdoor air from the north (building air intake) side of the 222-S laboratory was also sampled for these compounds. Samples were controlled during transportation



E. K. Carter, WHC

2

December 16, 1992

with a chain of custody form, following HEHF Operating Procedure HTSK70-3, "Initiating Custody Form when Collecting Samples."

ANALYSIS METHOD

These samples were analyzed in the EHS laboratory utilizing EHS Method HAPR70-142 which is based on NIOSH Methods 1501 (Aromatic Hydrocarbons) and 1400 (Alcohols I). The toluene/xylene samples were desorbed in carbon disulfide and the ethanol samples were desorbed in 1% 2-butanol in carbon disulfide. All samples were analyzed using capillary gas chromatography and flame ionization detection (FID).

RESULTS

Results of this sampling are presented in the attached Table I.

CONCLUDING REMARKS

If you need further information or clarification, please contact me on 6-3430.

E. D. Smith, CIH
Environmental Health Sciences

attachment

cc: L. H. Jones, T6-12
C. E. Sowa, H4-57



CO 18887

TABLE I

296-S-21 EXHAUST STACK SAMPLING RESULTS

SAMPLE LOCATION	SAMPLED VOLUME(L)	TOLUENE	XYLENES	ETHANOL
Exhaust duct (Run #1)	0.924	ND, <1 ppm	ND, <1 ppm	
Exhaust duct (Run #1, Backup tube)	0.924	ND, <1 ppm	ND, <1 ppm	
Exhaust duct (Run #1)	0.924			ND, <4 ppm
Exhaust duct (Run #1, Backup tube)	0.924			ND, <4 ppm
Exhaust duct (Run #2)	1.09	ND, <1 ppm	ND, <0.9 ppm	
Exhaust duct (Run #2, Backup tube)	1.09	ND, <1 ppm	ND, <0.9 ppm	
Exhaust duct (Run #2)	1.04			ND, <4 ppm
Exhaust duct (Run #2, Backup tube)	1.04			ND, <4 ppm
Exhaust duct (Run #3)	1.11	ND, <1 ppm	ND, <0.9 ppm	
Exhaust duct (Run #3, Backup tube)	1.11	ND, <1 ppm	ND, <0.9 ppm	
Exhaust duct (Run #3)	0.980			ND, <4 ppm
Exhaust duct (Run #3, Backup tube)	0.980			ND, <4 ppm
Ambient air from north side of 222-S building	0.999	ND, <1 ppm	ND, <1 ppm	
Ambient air from north side of 222-S building	1.07			ND, <3 ppm

ND = None Detected

Note: Blank correction was not necessary since none of the analytes were detected on the field blanks (detection limits of 0.004 mg for xylenes, 0.004 mg for toluene, and 0.007 mg for ethanol).

9259337D

Enclosure 2



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

July 13, 1992

Mr. Ron D. Izatt, Director
Environmental Restoration Division
Department of Energy
Richland Operations Office
P. O. Box 550
Richland, WA 99352

Dear Mr. Izatt:

Re: Approval of the Notice of Construction for the Environmental Hot Cell Expansion, Project W-041H, M-11-00

Ecology has reviewed your notice of construction (NOC) for the environmental hot cell expansion project. The condition of approval of this NOC is:

Any toxic air release must be below detection limits.

The Department of Energy is required to conduct actual tests on the existing units to prove xylene, toluene, and ethanol air emissions are all below their detection limits by December 1, 1992. Our office needs to be notified at least 10 working days prior to these tests to allow for Ecology participation. The report of testing results shall be submitted to this office for approval. The approval of this letter will be invalid if the testing report is not submitted by December 31, 1992, or if any of these three air emissions is not below its detection limit.

Our intent to have Mr. Phil Cooke of Tri-counties Air Pollution Control Authority co-sign this application becomes impractical due to his retirement on July 1, 1992. Mr. Frank Spaniel, the chairman of the board, is the acting director at that office and he advised us to go ahead to approve all the NOCs as authorized by the state regulation without their involvement. He also told us the new person replacing Mr. Cooke will not be a professional engineer. Therefore, from now on, you should submit all NOC's to my office for review and approval.

Sincerely,

David B. Jansen, P.E.
Hanford Project Manager
Nuclear and Mixed Waste Management

Myron B. Saikewicz, P.E.
Engineering and Technical Services
Air Programs

DBJ:jr

cc: Frank Spaniel, APAC
Pauli Day, EPA
Steve Wisness, DOE
T.B. Veneziano, WNC
Al Conklin, WDOH
Dave Nylander, Ecology
Saran Brush, Ecology

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. D. Bauer, RL (C. E. Sowa, WHC)	D. B. Jansen, Ecology M. B. Saikewicz, Ecology	Incoming:9300907 XRef:9259337D

Subject: RESULTS OF TEST OF ACTUAL EMISSIONS TO SUPPORT ENVIRONMENTAL HOT CELL EXPANSION, PROJECT W-041H

INTERNAL DISTRIBUTION

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		G. D. Carpenter	H6-20	
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		C. J. Geier	H6-21	
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		Project Files	R1-28	
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