DEPARTMENT OF VETERANS AFFAIRS
Veterans Health Administration
National Health Physics Program
2200 Fort Roots Drive
North Little Rock, AR 72114

DEC 13 2010

In Reply Refer To: 598/115HP/NLR

Kevin Null
Division of Nuclear Material Safety
Nuclear Regulatory Commission (NRC), Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Dear Mr. Null:

In reference to NRC Master Materials License 03-23853-01VA, we are requesting release, for unrestricted use, of an incinerator and associated smoke stack adjacent to Building 4 at VA Medical Center, Kansas City, Missouri. The facility holds Permit Number 24-00496-06 under our master materials license. Pending approval by NRC and a permit amendment by VHA National Health Physics Program (NHPP), the permittee plans to demolish the incinerator building and associated stack. We are enclosing supporting information and closeout surveys that were performed by the permittee to support release of the structures. We request an expedited review of this request by NRC, if possible, since the permittee states the stack poses "a safety hazard to approaching and departing ambulance helicopters."

We request that the Derived Concentration Guideline Levels (DCGLs) published in Federal Register Vol. 63, No. 222, and consistent with Federal Register Vol. 65, No. 114, be applied as the release criteria. Using these criteria, the enclosed documents provide information consistent with 10 CFR 30.36 to evaluate these buildings for decommissioning action, and we conclude the enclosed survey results demonstrate that the areas are acceptable for unrestricted use in accordance with regulatory criteria in 10 CFR 20.1402.

If you have any questions or comments or need additional information to support your review, please contact Thomas E. Huston, Ph.D., NHPP, at 501-257-1578.

Sincerely,

GE Williams

Gary E. Williams
Director, National Health Physics Program

Enclosures (5)

RECEIVED DEC 17 2010

Enclosure 1

Permittee letter dated November 22, 2010, requesting release of structures and providing closeout survey information

DEPARTMENT OF VETERANS AFFAIRS
Medical Center
4801 Linwood Boulevard
Kansas City, MO 64128

November 22, 2010

11-29-10 A11:16 IN

To: National Health Physics Program (115HP/NLR)
Department of Veterans Affairs
Veterans Health Administration
2200 Fort Roots Drive, Bldg 101, Room 208
North Little Rock, AR 72114

From: Les Morrison, RSO
Kansas City VAMC
4801 E. Linwood Blvd
Kansas City, MO 64128

Les Morrison

Subject: Decommissioning of Incinerator and smoke stack

The Kansas City VA Medical Center, permit number 24-00496-06 is requesting decommissioning approval of an incinerator and an associated brick smoke stack. The approximate dimensions of the incinerator are 7 ft wide x 27 ft long x 8 ft high. The incinerator was installed approximately 1998 and operated until September 2000. This incinerator was operated under a previous NRC Limited Scope License, # 24-00496-06. The incinerator was used for incinerating low level radioactive waste, including animal carcasses. There is no indication that it was used for the incineration of hazardous chemicals.

The associated smoke stack is a red brick stack, approximately 250 ft in height and was in use prior to the installation of the incinerator as part of the boiler plant. The removal of the smoke stack is important because it is a safety hazard for approaching and departing ambulance helicopters.

Richard Poelling, a consultant Health Physicist to the KCVA from 2000 to 2004, performed a close out survey of the incinerator chamber in November, 2003. This was over 3 years since the incinerator was used last. According to Mr. Poelling' report, H-3 and I-125 were the only isotopes which were incinerated during the last 2 years of the incinerator's operation. Samples from the fire brick were taken and analyzed by liquid scintillation. Windows for H-3 and I-125 protocols were used. An open window protocol was used to detect any unknown isotopes which might have been involved. He found no indication of any contamination.

Isotopes which were used included H-3, C-14, P-32, P-33, S-35, Cl-36 and I-125. The data for the H-3 and I-125 is in Mr. Poelling's report. In the event that the other isotope may have been incinerated, P-32, P-33 and S-35 all have half lives of less than 90 days. The C-14 and Cl-36 which have long half lives, would have been detected in the open window channel in the event they were present. The survey procedure was determined with the verbal consultation of the NHPP staff.

The removal and demolition of the incinerator and smoke stack is anticipated as soon as funding is available.

If you have any questions or need further information, please contact me at Leslie.Morrison@VA.GOV or at 816-861-4700 ext 57699.

Attached: Richard Poelling's Incinerator Close out Survey report dated November 20, 2003

Department of Veterans Affairs

Memorandum

Date: November 20, 2003

From: Richard E. Poelling (Consulting Health Physicist)

To: Radiation Safety Officer

Subj: Close out survey of Building 4 Incinerator Chamber

1. On November 6, 2003 a confined space entry was performed with the support of Jeff Muehlmann, Industrial Hygienist and Robert Kent, Safety Technician into the incinerator chamber to collect scrappings of the fire brick surface and measure for residual radioactive material. The incinerator was taken out of service on September 6, 2000.

2. The exposure rate of the incinerator room and out side of the steel chamber was less than or equal to 0.02 mR/hr using a ludlum-3 GM survey meter with pancake probe. The internal chamber exposure was consistently about 0.03 to 0.04 mR/hr on the surface of the firebrick throughout the unit. Firebricks from the same lot that line the chamber were not available to determine background exposure readings. The consistent exposure rate about twice background was uniform throughout the chamber and problably respresents a natural radioactive material within the firebrick.

3. The surface of the chamber firebricks were scraped and the particles were analyzed in a liquid scintillation counter along with calibrated standards. No residual radioactive material contamination was note on any of the twenty seven samples.

4. The incinerator chamber does not appear to have any residual radioactive material contamination.

R. E. Poelling

RICHARD E. POELLING
Consulting Health Physicist

Attachments: Closeout Survey Questionnaire
Closeout Survey Grid Information
Sample data and raw counts

cc: Decommissioning File (Radiation Safety Office)

Closeout Survey Questionnaire

Building 4: Boiler Plant Incinerator Chamber

1. List radionuclides used in the room, circle form used (**S**ealed, **U**nsealed, or **G**as): *

Radionuclides Used	Form Used	First Use Date	Last Use Date
Hydrogen-3	S (U) G	Unknown	Sept 6, 2000
Iodine-125	S (U) G	Unknown	Sept 6, 2000
	S U G		
	S U G		
	S U G		

A review of the available documentation for the last two years of radioactive material incineration indicated that microcurie quantities of I-125 from the radioimmunoassay laboratory and some H-3 were incinerated.

2. Did a major spill occur in the room which resulted in residual radioactivity?
[X] No [ ] Yes (if yes, attach description)

3. Did any sealed sources stored or used in the room leak or fail a leak test?
[X] No [ ] Yes (if yes, attach description)

4. Were sealed sources which required a leak test transferred or relocated from the room? [X] No [ ] Yes (if yes, attach regulatory current test results)

5. Were all radioactive materials, sources, and equipment removed?
[ ] No [X] Yes (if no, attach description)

Incinerator was completely cleaned out of residual ash

Department of Veterans Affairs
Kansas City VA Medical Center
4801 Linwood Blvd
Kansas City, Missouri

* See NHPP reviewer notes for item 1 in Enclosure 5.
[illegible] 12/13/2010

6. What survey instruments were used?

A) Exposure Rate Measurements:
Ludlum-3 with pancake probe
SN 119621 Calibrated: Jan 31, 2003
Background reading: <0.02 mR/hr

B) Surface Scans for Fixed Radioactivity:
Ludlum-3 with pancake probe
SN 119621 Calibrated: Jan 31, 2003
Background reading: <0.02 mR/hr

C) Swipe Surveys for Removable Radioactive Contamination:
Beckman LS-6000 Liquid Scintillation Counter (EE589-10841)
Sample Container: 20 ml LS glass vials
Counting Cocktail: Packard OptiFluor (10 ml)
Sample: 0.2 to 0.6 g of firebrick surface scrapings
Area Scraped: 100 cm^2

^{3}H Standard (Unquenched)			**^{14}C Standard (Unquenched)**		
106,000 dpm on 4/11/2001			101,600 dpm on 4/11/2001		
Count Window: (3H) 125I 14C 35S 32P Wide			Count Window: 3H 125I 14C 35S 32P (Wide)		
Background	13.3 cpm		Background	36.1 cpm	
Standard	54827 cpm	91657 dpm	Standard	97074 cpm	101568 dpm
Effic: 59.8 %	MDA 9.0 dpm		Effic: 95.5 %	MDA 9.3 dpm	

Isotope	Count Window	
^{3}H	0	400
^{125}I	0	567
^{14}C	0	670
^{35}S	0	688
^{32}P	0	945
Wide	0	1000

7. Were any results for exposure rate measurements or surface scans for fixed radioactivity greater than background readings? (>20 dpm/100 cm^2) *

[X] No [ ] Yes (if yes, attach description)

* See NHPP reviewer note for item 7 in Enclosure 5.
TA 12/13/2010

8. Were any swipe survey results greater than applicable release criteria in NUREG 1556, Volume 11, Table S.5?

[X] No [ ] Yes (if yes, attach description) *

Acceptable Surface Contamination Levels in Unrestricted Areas			
Nuclide	Average	Maximum	Removable
I-125, I-129	100 dpm/100cm^2	300 dpm/100cm^2	20 dpm/100cm^2
I-126, I-131, I-133, Sr-90	1,000 dpm/100cm^2	3,000 dpm/100cm^2	200 dpm/100cm^2
Beta-Gamma Emitters	5,000 dpm/100cm^2	15,000 dpm/100cm^2	1,000 dpm/100cm^2

Contamination found in unrestricted areas should be immediately decontaminated to background levels. When it is not possible to get to background levels, the licensee must ensure that the amounts do not exceed the contamination levels listed above.

9. Information attached (other than listed above):

[ ] Room diagram
[X] Survey grid
[X] Counting system calibration / quality assurance results
[X] Other (specify) Raw data counts

10. Point of contact Name: Richard E. Poelling, Health Physicist Consultant
Phone: (573) 814-6000 Ext. 2590
Fax: (573) 814-6600
E-mail: richard.poelling@med.va.gov

11. Survey performed by: R. E. Poelling 11/20/2003

12. Survey approved by: [signature] Date: 12-19-03

* See NHPP reviewer note for item 8 in Enclosure 5.
[signature]
12/13/2010

Closeout Survey Grid Information
For Incinerator Chamber

Location: Building 4, Boiler Plant Date Surveyed: November 6, 2003

1. The sample number in each box corresponds to a grid number on the chamber diagram.

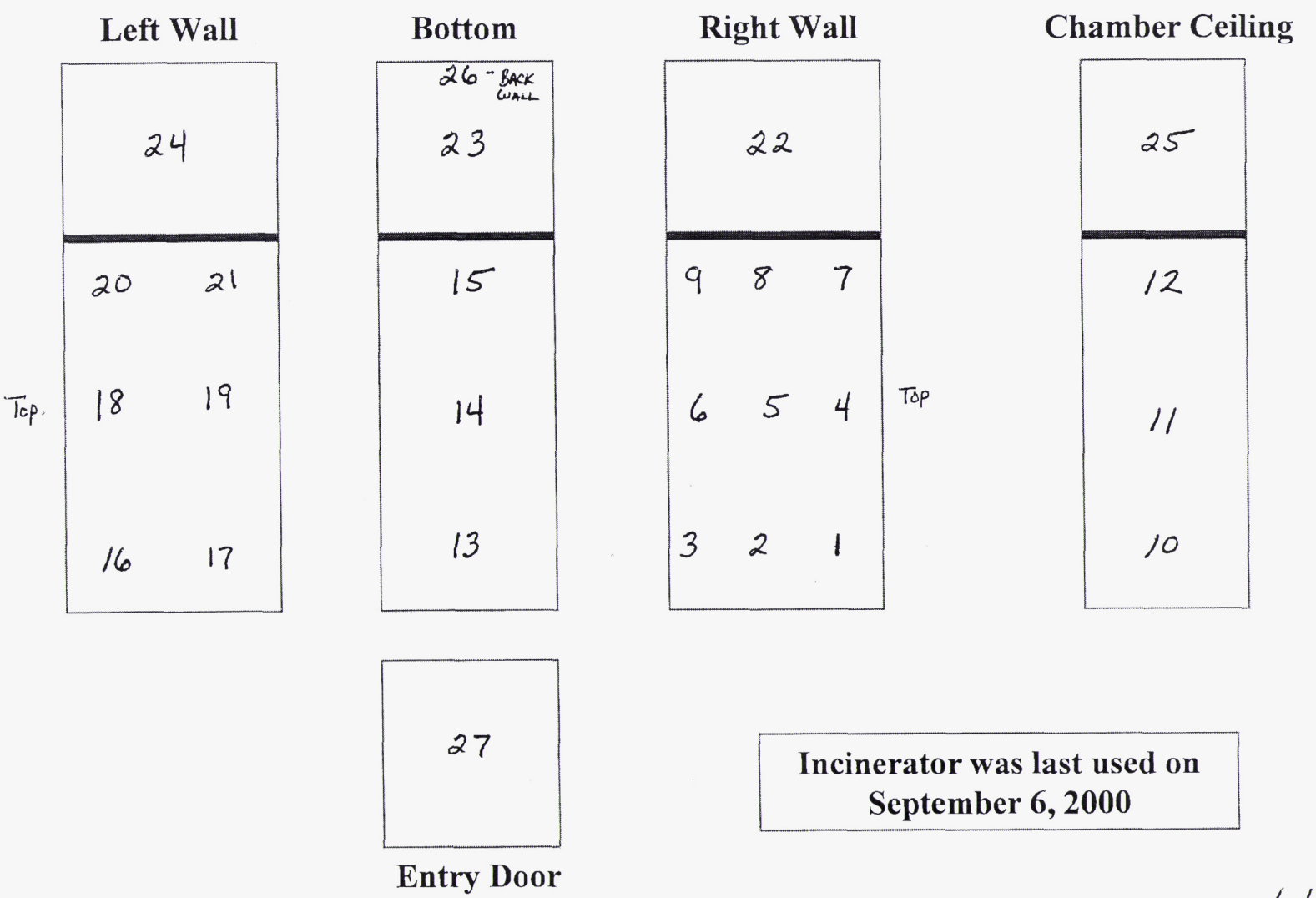
2. Exposure rate measurements in mR per hour. Background readings: <0.02 mR/hr

3. Dpm swipe survey results, in disintegrations per minute per 100 cm^2 for three energy levels. The firebrick surface was scraped in the specified areas in an area of about 4" x 4". The scraped particles were placed in individual glass vials for future processing. Each sample was weighed and placed in a clean 20 ml glass scintillation vial with 10 ml of Packard "Opti-Fluor counting cocktail and allowed to settle in the dark for 2 days. A Beckman liquid scintillation counter was used to count each sample for 10 minutes in a ^{3}H, ^{125}I, and wide window setting. Each sample was counted 3 times and the data was averaged.

4. See attached diagram and spread sheet for data.

Department of Veterans Affairs
Kansas City VA Medical Center
4801 Linwood Blvd
Kansas City, Missouri

Building 4 Boiler Plant Incinerator Chamber Fire Brick Sampling Diagram



Incinerator was last used on September 6, 2000

11/6/03 RP.

Kansas City VA Medical Center
Kansas City, Missouri

Building 4 Incinerator Close Out Survey Data Sheet

Sample Number	Sample Type	Firebrick Sample Wt (g)	H-3 Window		I-125 Window		Wide Window		Surface Exposure mR/hr
			cpm	dpm	cpm	dpm	cpm	dpm	
1	Scraping	0.25	13.9	0	10.7	0	44.9	0	<0.04
2	Scraping	0.14	11.4	0	8.5	0	38.2	0	<0.04
3	Scraping	0.54	16.0	0	10.8	0	54.3	0	<0.04
4	Scraping	0.27	14.2	0	11.0	0	45.0	0	<0.04
5	Scraping	0.16	10.9	0	7.7	0	35.3	0	<0.04
6	Scraping	0.23	11.3	0	7.4	0	39.4	0	<0.04
7	Scraping	0.19	13.3	0	8.0	0	40.4	0	<0.04
8	Scraping	0.32	11.3	0	7.8	0	36.6	0	<0.04
9	Scraping	0.26	12.2	0	7.6	0	42.0	0	<0.04
10	Scraping	0.41	14.2	0	12.3	0	54.8	0	<0.04
11	Scraping	0.60	13.5	0	11.3	0	52.5	0	<0.04
12	Scraping	0.53	14.2	0	8.1	0	47.1	0	<0.04
13	Scraping	0.24	9.7	0	6.6	0	35.5	0	<0.04
14	Scraping	0.17	8.8	0	7.0	0	33.3	0	<0.04
15	Scraping	0.45	8.6	0	6.9	0	35.4	0	<0.04
16	Scraping	0.26	14.9	0	10.5	0	46.4	0	<0.04
17	Scraping	0.26	12.0	0	8.3	0	38.7	0	<0.04
18	Scraping	0.28	12.0	0	9.2	0	43.4	0	<0.04
19	Scraping	0.71	12.0	0	8.8	0	41.8	0	<0.04
20	Scraping	0.52	14.4	0	11.0	0	51.0	0	<0.04
21	Scraping	0.32	12.3	0	7.7	0	38.8	0	<0.04
22	Scraping	0.52	13.3	0	8.4	0	43.7	0	<0.04
23	Scraping	0.30	9.0	0	7.0	0	35.2	0	<0.04
24	Scraping	0.28	11.7	0	8.7	0	40.6	0	<0.04
25	Scraping	0.40	13.5	0	8.3	0	41.9	0	<0.04
26	Scraping	0.46	12.3	0	8.8	0	44.2	0	<0.04
27	Scraping	0.43	9.5	0	8.6	0	38.2	0	<0.04
28	Bkg	0.22	17.5		9.7		49.3		0.02
29	Bkg	0.43	21.5		11.9		60.6		0.02
30	Bkg	0.64	27.5		15.8		69.7		0.02
31	H-3 Std		54827.0	59.80%	816.0	0.90%	55663.0	60.70%	
32	C-14 Std		17669.0	17.40%	49337.0	48.60%	97074.0	95.60%	
33	Unq Bkg		13.3		4.9		36.1		

Sample Quench Range (H#) 114-158
Background Quench Range (H#) 104-109

Exposure rate of the incinerator room was consistently <0.02 mR/hr
The outside of the incinerator housing was consistently <0.02 mR/hr
Inside the incinerator chamber next to the firebrick was consistently 0.03 to 0.04 mR/hr
The firebrick appears to contain sometype of natural radioactive material.

BECKMAN LS-6000 LIQUID SCINTILLATION COUNTER.
SN EE10,841 TRUMAN VA.

ID: KOSMOS INCIN. 9 NOV 2003 11:39
USER: 6 COMMENT:FIRE BRICK SCRAPE

PRESET TIME :	10.00						
DATA CALC :	CPM	H# :YES	SAMPLE REPEATS:	3	PRINTER	: STD
COUNT BLANK :	NO	IC# : NO	REPLICATES :	1	RS232	: OFF
TWO PHASE :	NO	ACC :YES	CYCLE REPEATS :	1		
SCINTILLATOR:	LIQUID	LUMEX:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:		none		

ISOTOPE 1:	3H	%ERROR: 0.20	FACTOR:1.0000	BKG. SUB:	0	
ISOTOPE 2:	125I	%ERROR: 0.20	FACTOR:1.0000	BKG. SUB:	0	
WIDE OPEN WINDOW		%ERROR: 0.20	FACTOR:1.0000	BKG. SUB:	0	

SAM NO	POS	TIME MIN	H#	3H CPM	3H %ERROR	125I CPM	125I %ERROR	WIDE CPM	WIDE %ERROR	LUMEX %	ELAPSED TIME
1	**-1	10.00	120.4	14.40	16.67	9.60	20.41	44.20	9.51	0.03	10.62
1	**-1	10.00	120.3	13.90	16.96	12.00	18.26	45.60	9.37	0.01	21.04
1	**-1	10.00	121.6	13.50	17.21	10.50	19.52	44.90	9.44	0.02	31.56
		Repeat Average CPM for		3H		13.93	COEF. OF VAR:		3.236		
		Repeat Average CPM for		125I		10.70	COEF. OF VAR:		11.331		
		Repeat Average CPM for		WIDE		44.90	COEF. OF VAR:		1.558		
2	**-2	10.00	121.5	11.20	18.90	8.20	22.09	35.80	10.57	0.04	42.29
2	**-2	10.00	124.4	10.30	19.71	9.00	21.08	38.30	10.22	0.03	52.70
2	**-2	10.00	123.0	12.80	17.68	8.40	21.82	40.40	9.95	0.03	63.14
		Repeat Average CPM for		3H		11.43	COEF. OF VAR:		11.075		
		Repeat Average CPM for		125I		8.53	COEF. OF VAR:		4.879		
		Repeat Average CPM for		WIDE		38.17	COEF. OF VAR:		6.034		
3	**-3	10.00	120.2	14.90	16.38	10.00	20.00	53.10	8.68	0.02	73.85
3	**-3	10.00	118.0	15.90	15.86	11.30	18.81	54.50	8.57	0.01	84.27
3	**-3	10.00	118.8	17.20	15.25	11.00	19.07	55.30	8.50	0.01	94.69
		Repeat Average CPM for		3H		16.00	COEF. OF VAR:		7.208		
		Repeat Average CPM for		125I		10.77	COEF. OF VAR:		6.322		
		Repeat Average CPM for		WIDE		54.30	COEF. OF VAR:		2.051		
4	**-4	10.00	121.4	15.50	16.06	10.50	19.52	45.10	9.42	0.02	105.42
4	**-4	10.00	122.8	12.70	17.75	11.00	19.07	43.80	9.56	0.01	115.84
4	**-4	10.00	122.2	14.30	16.72	11.50	18.65	46.30	9.30	0.01	126.25
		Repeat Average CPM for		3H		14.17	COEF. OF VAR:		9.916		
		Repeat Average CPM for		125I		11.00	COEF. OF VAR:		4.545		
		Repeat Average CPM for		WIDE		45.03	COEF. OF VAR:		2.668		
5	**-5	10.00	114.7	10.50	19.52	6.70	24.43	34.50	10.77	0.03	137.10
5	**-5	10.00	114.2	12.80	17.68	7.20	23.57	37.00	10.40	0.01	147.63
5	**-5	10.00	113.8	9.50	20.52	9.10	20.97	34.40	10.78	0.02	158.06
		Repeat Average CPM for		3H		10.93	COEF. OF VAR:		15.477		
		Repeat Average CPM for		125I		7.67	COEF. OF VAR:		16.516		
		Repeat Average CPM for		WIDE		35.30	COEF. OF VAR:		4.173		
6	**-6	10.00	123.7	12.20	18.11	8.00	22.36	39.50	10.06	0.05	168.77
6	**-6	10.00	125.6	10.10	19.90	6.10	25.61	38.30	10.22	0.04	179.20
6	**-6	10.00	124.8	11.50	18.65	8.10	22.22	40.30	9.96	0.04	189.62
		Repeat Average CPM for		3H		11.27	COEF. OF VAR:		9.491		
		Repeat Average CPM for		125I		7.40	COEF. OF VAR:		15.229		
		Repeat Average CPM for		WIDE		39.37	COEF. OF VAR:		2.557		
7	**-7	10.00	125.1	16.70	15.48	8.10	22.22	43.00	9.64	0.03	200.35
7	**-7	10.00	124.7	13.10	17.47	7.80	22.65	41.20	9.85	0.02	210.77

SAM NO	POS	TIME MIN	HH	3H-I CFM	3H-I %ERROR	125I CFM	125I %ERROR	WIDE CFM	WIDE %ERROR	LUMEX %	ELAPSED TIME
7	**-7	10.00	124.4	10.20	19.80	8.20	22.09	36.90	10.41	0.02	221.21
		Repeat Average CPM for		3H		13.33	COEF. OF VAR:	24.422			
		Repeat Average CPM for		125I		8.03	COEF. OF VAR:	2.591			
		Repeat Average CPM for		WIDE		40.37	COEF. OF VAR:	7.764			
8	**-8	10.00	120.2	11.90	18.33	8.10	22.22	36.70	10.44	0.04	231.94
8	**-8	10.00	121.5	10.70	19.33	6.10	25.61	32.40	11.11	0.02	242.36
8	**-8	10.00	121.4	11.30	18.81	9.30	20.74	40.60	9.93	0.02	252.79
		Repeat Average CPM for		3H		11.30	COEF. OF VAR:	5.310			
		Repeat Average CPM for		125I		7.83	COEF. OF VAR:	20.637			
		Repeat Average CPM for		WIDE		36.57	COEF. OF VAR:	11.217			
9	**-9	10.00	127.1	13.80	17.03	7.50	23.09	44.30	9.50	0.04	263.51
9	**-9	10.00	126.8	13.00	17.54	7.40	23.25	40.80	9.90	0.03	273.94
9	**-9	10.00	127.2	9.70	20.31	8.00	22.36	40.90	9.89	0.03	284.46
		Repeat Average CPM for		3H		12.17	COEF. OF VAR:	17.863			
		Repeat Average CPM for		125I		7.63	COEF. OF VAR:	4.211			
		Repeat Average CPM for		WIDE		42.00	COEF. OF VAR:	4.744			
10	**-10	10.00	116.3	13.20	17.41	12.70	17.75	53.40	8.65	0.02	295.18
10	**-10	10.00	113.5	13.70	17.09	11.10	18.98	55.00	8.53	0.01	305.60
10	**-10	10.00	115.4	15.60	16.01	13.20	17.41	55.90	8.46	0.01	316.02
		Repeat Average CPM for		3H		14.17	COEF. OF VAR:	8.938			
		Repeat Average CPM for		125I		12.33	COEF. OF VAR:	8.894			
		Repeat Average CPM for		WIDE		54.77	COEF. OF VAR:	2.312			
11	**-11	10.00	115.8	13.50	17.21	12.60	17.82	52.80	8.70	0.01	326.76
11	**-11	10.00	114.4	12.50	17.89	10.20	19.80	50.10	8.94	0.01	337.18
11	**-11	10.00	114.4	14.60	16.55	11.10	18.98	54.70	8.55	0.01	347.61
		Repeat Average CPM for		3H		13.53	COEF. OF VAR:	7.762			
		Repeat Average CPM for		125I		11.30	COEF. OF VAR:	10.729			
		Repeat Average CPM for		WIDE		52.53	COEF. OF VAR:	4.400			
12	**-12	10.00	110.4	14.00	16.90	7.80	22.65	48.00	9.13	0.02	358.32
12	**-12	10.00	110.8	14.30	16.72	8.70	21.44	49.20	9.02	0.01	368.86
12	**-12	10.00	110.9	14.30	16.72	7.90	22.50	44.10	9.52	0.01	379.28
		Repeat Average CPM for		3H		14.20	COEF. OF VAR:	1.220			
		Repeat Average CPM for		125I		8.13	COEF. OF VAR:	6.065			
		Repeat Average CPM for		WIDE		47.10	COEF. OF VAR:	5.662			
13	**-1	10.00	150.0	9.30	20.74	6.10	25.61	34.50	10.77	0.10	390.13
13	**-1	10.00	153.0	9.40	20.63	6.70	24.43	34.20	10.81	0.09	400.56
13	**-1	10.00	152.1	10.50	19.52	7.10	23.74	37.90	10.27	0.09	410.99
		Repeat Average CPM for		3H		9.73	COEF. OF VAR:	6.841			
		Repeat Average CPM for		125I		6.63	COEF. OF VAR:	7.588			
		Repeat Average CPM for		WIDE		35.53	COEF. OF VAR:	5.784			
14	**-2	10.00	149.7	8.00	22.50	7.50	23.09	34.30	10.81	1.08	421.76
14	**-2	10.00	149.3	9.70	20.52	6.10	25.61	32.40	11.15	1.21	432.23
14	**-2	10.00	147.7	8.60	21.82	7.30	23.41	33.30	10.99	1.26	442.70
		Repeat Average CPM for		3H		8.77	COEF. OF VAR:	9.834			
		Repeat Average CPM for		125I		6.97	COEF. OF VAR:	10.869			
		Repeat Average CPM for		WIDE		33.33	COEF. OF VAR:	2.851			
15	**-3	10.00	153.0	7.70	22.79	7.70	22.79	34.80	10.72	0.17	453.43
15	**-3	10.00	156.3	9.40	20.63	5.20	27.74	34.80	10.72	0.15	463.98
15	**-3	10.00	154.2	8.70	21.44	7.80	22.65	36.50	10.47	0.15	474.41

SAM NO	POS	TIME MIN	HH	3H CFM	3H %ERROR	125I CFM	125I %ERROR	WIDE CFM	WIDE %ERROR	LUMEX %	ELAPSED TIME
		Repeat Average CPM for		3H		8.60	COEF. OF VAR:		9.935		
		Repeat Average CPM for		125I		6.90	COEF. OF VAR:		21.349		
		Repeat Average CPM for		WIDE		35.37	COEF. OF VAR:		2.775		
16	**-4	10.00	124.1	15.80	15.91	9.10	20.97	44.10	9.52	0.03	485.27
16	**-4	10.00	125.1	14.80	16.44	10.70	19.33	46.50	9.27	0.03	495.69
16	**-4	10.00	126.1	14.00	16.90	11.60	18.57	48.60	9.07	0.03	506.11
		Repeat Average CPM for		3H		14.87	COEF. OF VAR:		6.066		
		Repeat Average CPM for		125I		10.47	COEF. OF VAR:		12.093		
		Repeat Average CPM for		WIDE		46.40	COEF. OF VAR:		4.853		
17	**-5	10.00	126.5	12.70	17.75	8.30	21.95	40.80	9.90	0.02	516.84
17	**-5	10.00	126.2	11.00	19.07	9.30	20.74	39.20	10.10	0.02	527.25
17	**-5	10.00	126.9	12.40	17.96	7.40	23.25	36.10	10.53	0.02	537.67
		Repeat Average CPM for		3H		12.03	COEF. OF VAR:		7.541		
		Repeat Average CPM for		125I		8.33	COEF. OF VAR:		11.405		
		Repeat Average CPM for		WIDE		38.70	COEF. OF VAR:		6.174		
18	**-6	10.00	118.5	13.30	17.34	11.40	18.73	45.00	9.43	0.01	548.51
18	**-6	10.00	117.3	11.20	18.90	8.70	21.44	43.90	9.56	0.01	558.93
18	**-6	10.00	118.0	11.40	18.73	7.60	22.94	41.30	9.84	0.01	569.35
		Repeat Average CPM for		3H		11.97	COEF. OF VAR:		9.685		
		Repeat Average CPM for		125I		9.23	COEF. OF VAR:		21.177		
		Repeat Average CPM for		WIDE		43.40	COEF. OF VAR:		4.378		
19	**-7	10.00	127.7	11.90	18.33	9.40	20.63	40.70	9.91	0.04	580.18
19	**-7	10.00	130.0	12.40	17.96	9.50	20.52	44.80	9.45	0.03	590.61
19	**-7	10.00	130.8	11.60	18.57	7.50	23.09	39.80	10.03	0.04	601.04
		Repeat Average CPM for		3H		11.97	COEF. OF VAR:		3.377		
		Repeat Average CPM for		125I		8.80	COEF. OF VAR:		12.806		
		Repeat Average CPM for		WIDE		41.77	COEF. OF VAR:		6.381		
20	**-8	10.00	118.6	15.60	16.01	12.60	17.82	53.00	8.69	0.01	611.77
20	**-8	10.00	121.6	13.10	17.47	10.00	20.00	49.40	9.00	0.01	622.20
20	**-8	10.00	120.4	14.40	16.67	10.30	19.71	50.60	8.89	0.01	632.62
		Repeat Average CPM for		3H		14.37	COEF. OF VAR:		8.703		
		Repeat Average CPM for		125I		10.97	COEF. OF VAR:		12.971		
		Repeat Average CPM for		WIDE		51.00	COEF. OF VAR:		3.594		
21	**-9	10.00	124.5	14.00	16.90	7.30	23.41	40.30	9.96	0.02	643.35
21	**-9	10.00	125.5	11.00	19.07	6.80	24.25	36.00	10.54	0.01	653.89
21	**-9	10.00	128.9	11.90	18.33	8.90	21.20	40.10	9.99	0.01	664.30
		Repeat Average CPM for		3H		12.30	COEF. OF VAR:		12.516		
		Repeat Average CPM for		125I		7.67	COEF. OF VAR:		14.308		
		Repeat Average CPM for		WIDE		38.80	COEF. OF VAR:		6.255		
22	**-10	10.00	117.2	15.00	16.33	9.50	20.52	48.10	9.12	0.01	675.04
22	**-10	10.00	115.1	10.70	19.33	8.20	22.09	39.90	10.01	0.01	685.45
22	**-10	10.00	113.8	14.10	16.84	7.50	23.09	43.00	9.64	0.01	695.87
		Repeat Average CPM for		3H		13.27	COEF. OF VAR:		17.095		
		Repeat Average CPM for		125I		8.40	COEF. OF VAR:		12.082		
		Repeat Average CPM for		WIDE		43.67	COEF. OF VAR:		9.482		
23	**-11	10.00	135.5	10.70	19.33	7.70	22.79	36.30	10.50	0.02	706.60
23	**-11	10.00	134.9	8.00	22.36	6.00	25.82	32.50	11.09	0.02	717.02
23	**-11	10.00	134.4	8.30	21.95	7.30	23.41	36.90	10.41	0.02	727.45

SAM NO	POS	TIME MIN	H#	3H-I CPM	3H-I %ERROR	125I CPM	125I %ERROR	WIDE CPM	WIDE %ERROR	LUMEX %	ELAPSED TIME
		Repeat Average CPM for		3H		9.00	COEF. OF VAR:		16.443		
		Repeat Average CPM for		125I		7.00	COEF. OF VAR:		12.697		
		Repeat Average CPM for		WIDE		35.23	COEF. OF VAR:		6.772		
24	**-12	10.00	114.5	11.80	18.41	7.70	22.79	41.20	9.85	0.02	738.19
24	**-12	10.00	112.9	11.60	18.57	8.10	22.22	39.50	10.06	0.01	748.60
24	**-12	10.00	114.9	11.70	18.49	10.30	19.71	41.10	9.87	0.01	759.03
		Repeat Average CPM for		3H		11.70	COEF. OF VAR:		0.854		
		Repeat Average CPM for		125I		8.70	COEF. OF VAR:		16.092		
		Repeat Average CPM for		WIDE		40.60	COEF. OF VAR:		2.350		
25	**-1	10.00	104.5	15.20	16.22	7.90	22.50	44.30	9.50	0.01	769.86
25	**-1	10.00	105.7	13.10	17.47	8.40	21.82	42.50	9.70	0.01	780.29
25	**-1	10.00	105.6	12.20	18.11	8.70	21.44	38.90	10.14	0.01	790.70
		Repeat Average CPM for		3H		13.50	COEF. OF VAR:		11.404		
		Repeat Average CPM for		125I		8.33	COEF. OF VAR:		4.850		
		Repeat Average CPM for		WIDE		41.90	COEF. OF VAR:		6.562		
26	**-2	10.00	111.4	13.20	17.41	7.60	22.94	43.90	9.55	0.01	801.43
26	**-2	10.00	114.1	12.30	18.03	9.30	20.74	45.40	9.39	0.01	811.85
26	**-2	10.00	113.5	11.40	18.73	9.40	20.63	43.30	9.61	0.01	822.27
		Repeat Average CPM for		3H		12.30	COEF. OF VAR:		7.317		
		Repeat Average CPM for		125I		8.77	COEF. OF VAR:		11.539		
		Repeat Average CPM for		WIDE		44.20	COEF. OF VAR:		2.447		
27	**-3	10.00	153.2	8.30	21.95	8.10	22.22	37.10	10.38	0.03	833.01
27	**-3	10.00	149.1	10.10	19.90	9.30	20.74	39.10	10.11	0.02	843.42
27	**-3	10.00	148.7	10.00	20.00	8.40	21.82	38.30	10.22	0.03	853.97
		Repeat Average CPM for		3H		9.47	COEF. OF VAR:		10.686		
		Repeat Average CPM for		125I		8.60	COEF. OF VAR:		7.262		
		Repeat Average CPM for		WIDE		38.17	COEF. OF VAR:		2.637		
28	**-4	10.00	103.7	16.60	15.52	9.10	20.97	45.50	9.38	0.01	864.69
28	**-4	10.00	104.3	18.20	14.82	11.00	19.07	52.60	8.72	0.00	875.10
28	**-4	10.00	104.8	17.70	15.03	9.00	21.08	49.90	8.95	0.00	885.54
		Repeat Average CPM for		3H		17.50	COEF. OF VAR:		4.677		Bkg Brick
		Repeat Average CPM for		125I		9.70	COEF. OF VAR:		11.618		0.22 g.
		Repeat Average CPM for		WIDE		49.33	COEF. OF VAR:		7.264		
29	**-5	10.00	107.7	21.80	13.55	12.70	17.75	61.10	8.09	0.01	896.26
29	**-5	10.00	107.0	22.10	13.45	11.40	18.73	62.50	8.00	0.00	906.69
29	**-5	10.00	106.5	20.70	13.90	11.60	18.57	58.20	8.29	0.00	917.21
		Repeat Average CPM for		3H		21.53	COEF. OF VAR:		3.423		Bkg Brick
		Repeat Average CPM for		125I		11.90	COEF. OF VAR:		5.883		0.43 g.
		Repeat Average CPM for		WIDE		60.60	COEF. OF VAR:		3.619		
30	**-6	10.00	109.1	27.50	12.06	13.70	17.09	67.60	7.69	0.01	927.93
30	**-6	10.00	108.5	26.20	12.36	18.00	14.91	70.10	7.55	0.00	938.35
30	**-6	10.00	109.0	28.80	11.79	15.70	15.96	71.20	7.49	0.00	948.79
		Repeat Average CPM for		3H		27.50	COEF. OF VAR:		4.727		Bkg Brick
		Repeat Average CPM for		125I		15.80	COEF. OF VAR:		13.619		0.64 g.
		Repeat Average CPM for		WIDE		69.67	COEF. OF VAR:		2.710		
31	**-7	10.00	1.2	54868.80	0.27	835.50	2.19	55724.40	0.27	0.00	959.77
31	**-7	10.00	0.6	54694.30	0.27	806.00	2.23	55521.90	0.27	0.00	970.48
31	**-7	10.00	0.1	54917.00	0.27	805.40	2.23	55744.00	0.27	0.00	981.17

SAM NO	POS	TIME MIN	HH	3H-I CPM	3H-I %ERROR	125I CPM	125I %ERROR	WIDE CPM	WIDE %ERROR	LUMEX %	ELAPSED TIME
		Repeat Average CPM for		3H		54826.70	COEF. OF VAR:		0.214	3H STD.	
		Repeat Average CPM for		125I		815.63	COEF. OF VAR:		2.110		
		Repeat Average CPM for		WIDE		55663.40	COEF. OF VAR:		0.215		
32	**-8	10.00	-0.7	17628.80	0.48	49305.70	0.28	97103.20	0.20	0.00	992.30
32	**-8	10.00	-1.1	17701.20	0.48	49383.60	0.28	97106.40	0.20	0.00	1003.10
32	**-8	10.00	-1.0	17677.50	0.48	49321.70	0.28	97013.70	0.20	0.00	1013.90
		Repeat Average CPM for		3H		17669.17	COEF. OF VAR:		0.210	14C STD.	
		Repeat Average CPM for		125I		49337.00	COEF. OF VAR:		0.086		
		Repeat Average CPM for		WIDE		97074.44	COEF. OF VAR:		0.033		
33	**-9	10.00	11.1	10.70	19.69	4.40	30.15	31.20	11.40	2.19	1024.77
33	**-9	10.00	10.6	14.80	16.66	5.00	28.28	39.40	10.13	1.52	1035.31
33	**-9	10.00	10.6	14.30	16.78	5.40	27.22	37.60	10.33	0.99	1045.82
		Repeat Average CPM for		3H		13.27	COEF. OF VAR:		16.860	UNQUENCHED BACKGROUND.	
		Repeat Average CPM for		125I		4.93	COEF. OF VAR:		10.203		
		Repeat Average CPM for		WIDE		36.07	COEF. OF VAR:		11.949		

Radioactive Decay Calculator For Sealed Sources

Todays Date 11/9/2003

Isotope	Activity	Calibration Date	Days of Decay	Remaining Activity	Activity Units	I.D. No.	Decay Factor (Days)
E-Vial Reference Sources							
Co-57	5.329	10/1/2002	404	1.902	mCi	146	271.79
Co-57	5.608	10/15/2000	1120	0.323	mCi	133	271.79
Ba-133	250	5/9/1985	6758	74.001	uCi	H-5	3847
Ba-133	272	11/3/1998	1832	195.544	uCi	126	3847
Cs-137	201	8/14/1984	7026	128.850	uCi	B-28	10950
Gamma Reference Disc Source Set (NES-101S)							
Na-22	1.1	2/28/1994	3541	0.08310	uCi		950
Mn-54	1.16	8/2/1994	3386	0.00064	uCi		312.7
Co-57	0.9959	9/15/2002	420	0.34129	uCi		271.79
Co-57	1.18	6/29/1994	3420	0.00019	uCi		271.79
Co-60	0.84	6/29/1993	3785	0.21488	uCi		1924
Cd-109	8.5	2/23/1994	3546	0.04260	uCi		464
Ba-133	1.05	6/18/1993	3796	0.52992	uCi		3847
Cs-137	1.02	1/31/1994	3569	0.81378	uCi		10950
GM Calibration Source							
Cs-137	135	1/31/1984	7222	85.474	mCi		10950
Sr-90	9.879	9/15/2002	420	9.606	uCi		10402.5
Sr-90	0.022	2/11/1976	10133	0.011	uCi		10402.5
C-14	0.182	2/9/1976	10135	0.181	uCi		2091450
12x75 Well Counter Sources							
Co-57	213000	4/21/2003	202	126827	dpm		270
I-125	264000	4/17/2003	206	24645	dpm		60.2
I-129	107000	1/27/2003	286	107000	dpm		6205000000
Co-57	213000	8/14/2002	452	66764	dpm		270
I-125	213000	8/14/2002	452	1098	dpm		59.46
Co-57	222000	4/24/2000	1294	8016	dpm		270
I-125	262000	4/12/2000	1306	0	dpm		59.46
Unquenched Liquid Scintillation Standards (Beckman 9696)							
H-3	106000	4/11/2001	942	91657	dpm		4490
C-14	101600	4/11/2001	942	101568	dpm		2091450

Enclosure 2

NHPP memorandum dated December 3, 2010, requesting additional information

DEPARTMENT OF VETERANS AFFAIRS

Memorandum

Date: DEC 03 2010

From: Director, VHA National Health Physics Program (NHPP) (115HP/NLR)

Subj: Request for Information for VHA Permit Number 24-00496-06 (for radioactive materials use)

To: Director (589/00), VA Medical Center, Kansas City, Missouri

1. We are responding to a memorandum from your Radiation Safety Officer (RSO) that was dated November 22, 2010, and requested decommissioning approval (i.e., release for unrestricted use) of an incinerator and associated smoke stack which were historically used to incinerate wastes containing radioactivity.

2. Due to the circumstances of the release (viz., historical use of radionuclides with half-lives greater than 120 days and plans for demolition of these structures), we will need to defer this request to the Nuclear Regulatory Commission (NRC) for their review and approval before we can approve a permit amendment to release the structures for unrestricted use. The NRC review process often takes up to 60 days, depending on their priorities and any follow-up questions.

3. As additional information for our review, please provide a site diagram showing the location of the structures to be released relative to other existing buildings and site boundaries. The diagram may be provided in hardcopy format or electronically to our group e-mail at vhconhpp@va.gov. Please provide this information within 30 days from the date of this memorandum. After we receive this information, we will forward a request to the NRC to release structures. We will provide a copy of the submittal to your RSO as information.

4. Please note 10 CFR 30.36(d) requires notifications to NHPP/NRC within specific timeframes for circumstances involving an inactive separate building where residual radioactivity above release levels could exist. In this case, we received no notification about status of these inactive structures until receipt of the RSO memorandum dated November 22, 2010. Also, the release survey for the structures appears to have been completed about a year after the notification window closed. As a mitigating factor, the radiation surveys that were provided by the RSO appear to support the absence of residual radioactivity in these structures. To identify whether other similar circumstances might exist and to prevent recurrence of this apparent deficiency, you should evaluate whether additional corrective actions are warranted. NHPP will likely follow up on this item during your next routine facility inspection.

Request for Information for VHA Permit Number 24-00496-06 (for radioactive materials use)

5. Please note that, as a limited-scope research permittee, a permit amendment from NHPP is required to add new areas of radioactive material use and to release, for unrestricted use, areas in which radioactive materials were previously used.

6. If you have any questions about this memorandum, please contact Thomas E. Huston, Ph.D., NHPP, at 501-257-1578.

Gary E. Williams

Enclosure 3

Permittee e-mail dated December 3, 2010, with attached facility diagram and requesting expedited review

(Note: Item 2 in that e-mail references a different area and is not included in this request.)

Mayo, Kelly

From: Morrison, Leslie (KCVA)
Sent: Friday, December 03, 2010 2:00 PM
To: VACO NHPP
Cc: Hill, Kent D. (SES- KCVA)
Subject: Requested diagram plus more information
Attachments: KANSAS CITY VA SITE PLAN.pdf

Attached is a copy of the site diagram that you requested. It is a PDF format so you should be able to view and print the diagram easily. There are 2 points that I need to bring to your attention on this diagram.

1. The smoke stack that we are requesting decommissioning of is the circle, located in the lower right hand corner. It is just above the upper left corner of Building 4. The incinerator that we are requesting to be decommissioned is located in an extension of Building 4, just to the right of the smoke stack. The structure between the smoke stack and the extension of Building 4 is an above ground walkway.

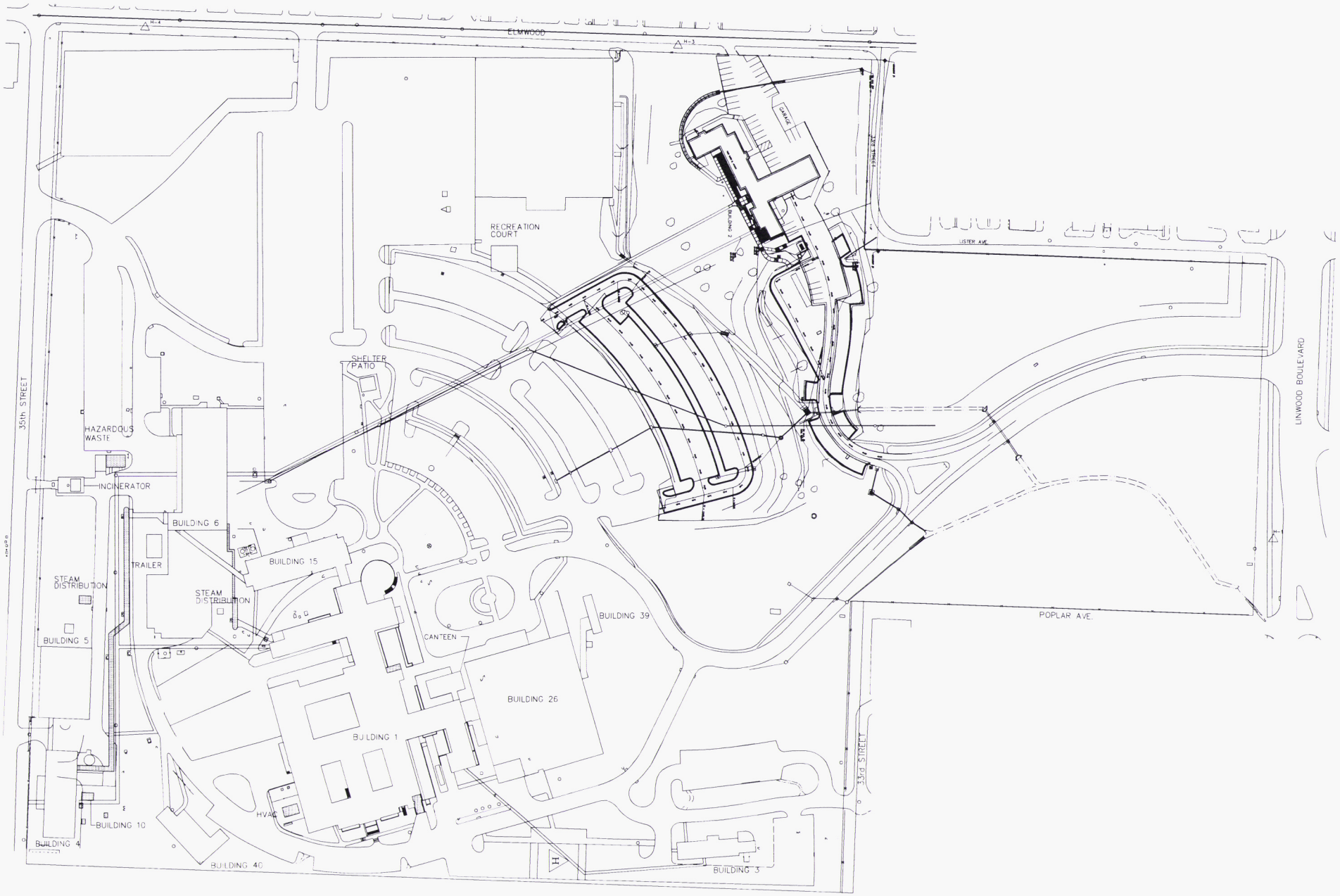
2. If you look at the bottom of the diagram and towards the middle, you will see a small building structure that is labeled, "Incinerator". This building is a small 2 level building. I have found out that this building housed an incinerator, which was used for the incineration of radioactive waste prior to the current incinerator that we are requesting decommissioning of. This previous incinerator started operation approximately 1975, was located in the lower part of the building. This incinerator was approved by the NRC for incineration of radioactive material in May of 1980, as part of Amendment #41. This incinerator was removed many years ago and the building has been used for storage. I have not been able to find any records of what materials were actually burned. According to a March 28, 1980 request, the anticipated isotopes to be incinerated were: H-3, C-14, I-125, P-32, V-48, S-35,Fe-55, Fe-59 and Se-75. Animal carcasses (rabbits, rats and mice) would be used with an anticipated activity range of 1- 10 uCi per animal would be incinerated as well as flammable liquid scintillation cocktail. I have not been able to find, at this point in time, any information pertaining to the release of this building by the NRC.

We would like to request, if possible, for an expedited review of our original request so that the contract for the removal of the current incinerator in Building 4 can proceed.

We are also requesting guidance on how to procedure with the former incinerator building.

Thank you.

Les Morrison, Radiation Safety Officer
Kansas City VAMC
816-861-4700 ext 57699


ELMWOOD
H-4
H-3
GARAGE
RECREATION COURT
LISTER AVE.
SHELTER PATIO
35th STREET
HAZARDOUS WASTE
INCINERATOR
BUILDING 6
BUILDING 15
TRAILER
STEAM DISTRIBUTION
STEAM DISTRIBUTION
BUILDING 5
CANTEEN
BUILDING 39
BUILDING 26
BUILDING 1
HVAC
BUILDING 10
BUILDING 4
BUILDING 40
BUILDING 3
33rd STREET
POPLAR AVE.
LINWOOD BOULEVARD

Enclosure 4

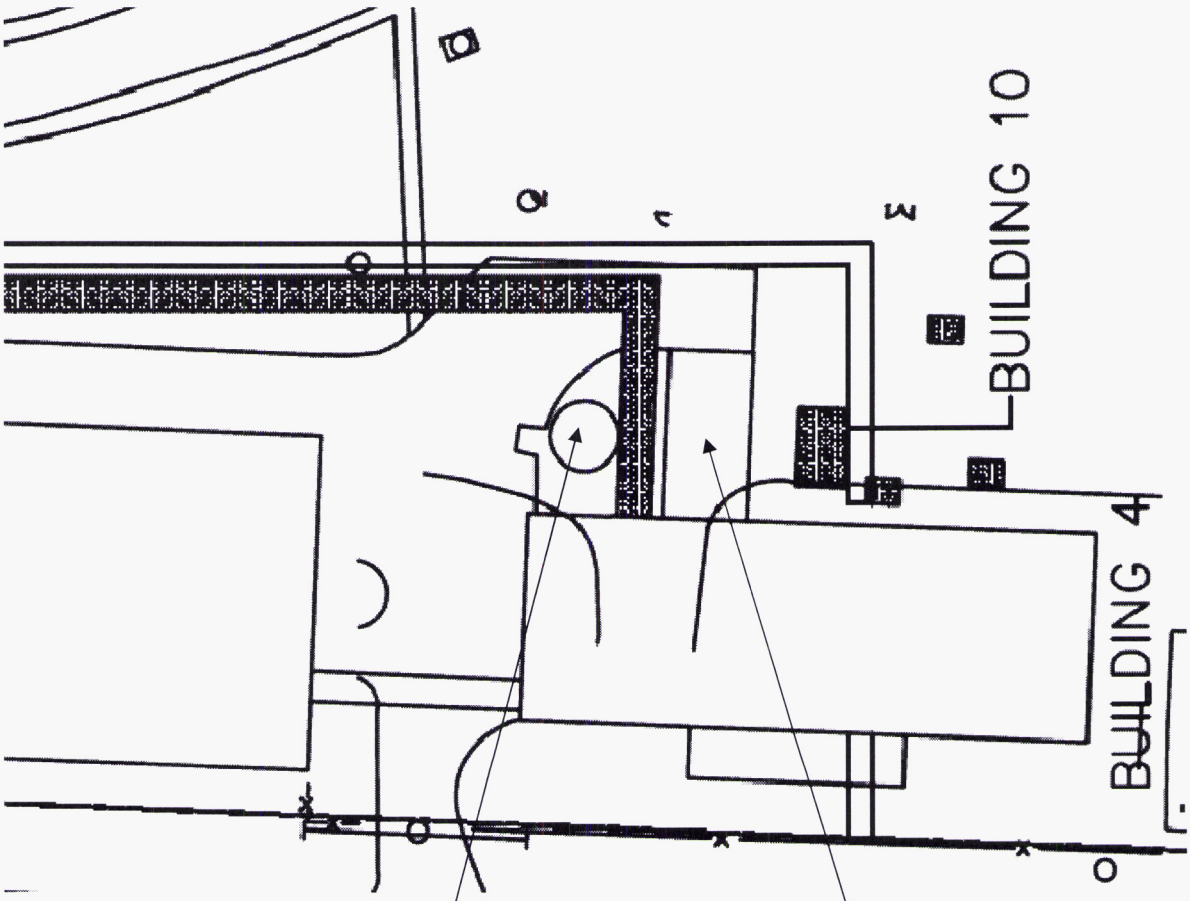
Additional e-mail correspondence between NHPP and permittee dated December 6, 2010, with clarifying details to identify structures involved in this request

-----Original Message-----
From: Morrison, Leslie (KCVA)
Sent: Monday, December 06, 2010 9:49 AM
To: Huston, Thomas E.
Cc: Hill, Kent D. (SES- KCVA); VACO NHPP
Subject: RE: Requested diagram plus more information

Yes, the two areas are marked appropriately.

Les Morrison, RSO

> -----Original Message-----
> From: Huston, Thomas E.
> Sent: Monday, December 06, 2010 9:43 AM
> To: Morrison, Leslie (KCVA)
> Cc: Hill, Kent D. (SES- KCVA); VACO NHPP
> Subject: RE: Requested diagram plus more information
>
> Les,
>
> Thank you for the information.
>
> I am attaching an annotated version of your drawing to identify more clearly for NRC the stack and incinerator subject to the current request for release. Please confirm (by email back to me) that I have correctly marked those two areas.
>
> We will submit your request to release, for unrestricted use, the incinerator and stack adjacent to Building 4, to NRC for review.
>
> In our submittal to NRC, we will note our desire for an expedited review; however, we cannot control NRC's timetable for these types of review.
>
> NRC might have follow-up questions or requests for information that could delay the review/approval process.
>
> For the other former incinerator building (referenced in item 2 of your the email below), if you are not able to find any information that the building was released for unrestricted use by NRC (NHPP's permit file information only dates back to around 1984), then our advice is that you all perform a decommissioning quality survey of the area and submit that information to NHPP for review for unrestricted use.
>
> Thomas E. Huston, PhD, CHP
> National Health Physics Program (115/HP) Veterans Health Administration
> Wk: 501-257-1578; Cell: 501-454-7264; Fax: 501-257-1570



Stack
(requested for unrestricted use)

Incinerator
(requested for unrestricted use)

Prepared December 6, 2010

Enclosure 5

NHPP reviewer notes on specified items in closeout survey report included as Enclosure 1.

NHPP reviewer notes on survey report dated November 20, 2003:

Item 1. Comments about radionuclides of concern:

Only H-3 and possibly C-14 and Cl-36 appear to be radionuclides of concern. Assuming a residual hold-up activity of 1000 uCi for other short-lived nuclides (< 120 day half life) at the time of last use (i.e., P-32 (14.3 d), P-33 (25.3 d), S-35 (87.5 d), and I-125 (59.4 d), no residual activity from these nuclides would be expected after 10 years decay (10 year decay of 1000 uCi for longest half-life of 87.5 days→ 2.8E-10 uCi).

Item 7. Comments about exposure rate and surface scan results:

Please disregard the comments in the survey report for this item. Exposure rate measurements and surface scans were less than or equal to about two times background, or 0.04 mR/hr, using a GM pancake detector. Typical background level for a Ludlum Model 44-9 GM pancake probe is around 0.02 mR/hr or about 60 cpm. It is very likely that the brick and construction materials used for the incinerator provided a natural background level higher than simple ambient instrument background measured outside the incinerator. This opinion is supported by the lack of measureable activity for the wipe samples. However, the surveyor did not identify a natural background level for the incinerator construction materials. Using the lower instrument background of 0.02 mR/hr does not alter the overall conclusions that the area appears free from residual contamination above unrestricted release levels.

For C-14, the two-times-background level corresponds to a contamination level of around 1200 dpm-net for C-14 assuming a 5% (4-pi) efficiency (i.e., 120 cpm gross→ (60 cpm net/0.05 cpm/dpm)→1200 dpm-net). For a typical window area of 15 cm^2, the "two times background" level corresponds to about 8000 dpm/100cm^2 (1200 dpm/15cm^2 * 100cm^2). The two-times-background level is well below 1% of the NRC screening level for C-14 in NUREG-1757, Vol. 1, Rev. 2 (3,700,000 dpm/100cm^2). For higher energy beta emitters (e.g., Cl-36), the detection efficiency is significantly higher than that for C-14, and two-times-background would correspond to a much lower level. A general conclusion is that the total residual activity is well below the screening levels for C-14 (3,700,000 dpm/100cm^2) and Cl-36 (500,000 dpm/100cm^2).

While the scanning technique would not have detected H-3, the wipe results did not indicate any removable H-3 activity. It is unlikely that elevated H-3 activity would be present at or near screening levels in Federal Register Vol. 63, No. 222 (i.e., 120,000,000 dpm/100 cm^2) and none be removable. Therefore, a conclusion is that no removable or fixed H-3 is present at levels approaching the screening level release criteria.

Item 8. Comments about release criteria for removable activity:

Please disregard reference to NUREG-1556, Volume 11, Table S.5. We are currently requesting use of screening level criteria published in Federal Register Vol. 63, No. 222, and consistent with Federal Register Vol. 65, No. 114, as basis for release of the area for unrestricted use. The

screening level values are: H-3 (120,000,000 dpm/100cm2), C-14 (3,700,000 dpm/100cm2), and Cl-36 (500,000 dpm/100cm2). The screening level derivation assumes 10% of the activity is removable. No removable activity was detected in wipe surveys.

Additional Comment about Stack:

We acknowledge that the surveys pertain to the incinerator area only. The absence of any measureable activity in the incinerator supports a position that the stack is also free of residual activity.

NHPP reviewer: Thomas E. Huston, Ph.D., CHP Date: 12/13/2010

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UPS NEXT DAY AIR **1**

TRACKING #: 1Z A47 7F5 01 9135 9301

BILLING: P/P

Reference # 1: KRM

CS 12.8.10. WXPIE70 09.0A 10/2010