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August 9, 2007

U. S. Nuclear Regulatory Commission, Region I
Attn: Penny Lanzisera
Division of Nuclear Materials Safety
Licensing Assistance Team
475 Allendale Road
King of Prussia, PA 19406

MS16
P-6

Dear Ms. Lanzisera:

RE: NRC Byproduct Materials License 45-00048-17
Request for Amendment
Mail Control No. 140690

03003297

The University would like to request that its license be amended to remove Conditions 22.A. and 22.B. with regard to the disposal of licensed material by incineration. The Consumat incinerator (referenced in our license application dated September 29, 1999, and located at the licensed location) has never been used for the incineration of radioactive material. The old incinerator at this location used previously for incineration of small quantities of radioactive material has been out of commission since the mid-1980's. Records of the survey of this unit are attached. We used the guidance in NUREG-1757, Vol. 1, Rev. 2 to determine the specific requirements of our survey. No residual contamination remains in the incinerator and surrounding area and we therefore wish to remove it from our license.

As specified in Condition 22.B., we will notify the Chairman of the Board of Supervisors of Hanover County with regard to these actions once they have been approved. Should you have any questions or require any additional information, please contact Mary Beth Taormina in our Radiation Safety Section at (804) 828-7097. Thank you in advance for your assistance with this request.

Sincerely,

Brian J. Onlinger, PE
Associate Vice President for Facilities Management

Attachment

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NMSS/RGN1 MATERIALS-002

Final Status Survey
Virginia Commonwealth University (VCU)
Broad Scope License #45-00048-17
Animal Resources Hanover Farm Consumat Incinerator
119 - 121 Cheroy Road
Hanover County (Ashland), Virginia 23005

I. Introduction

The VCU Division of Animal Resources currently operates an 88 acre farm located at the above address. The property has been used in this capacity since the 1960's. In May, 1980, VCU received an amendment (#30) from the Nuclear Regulatory Commission to incinerate low level radioactive waste in the Consumat Model C-75P incinerator located at this facility. The Radiation Safety Office performed routine incinerations at this facility for several years during the early 1980's and the predominant isotopes incinerated were H-3 and C-14. Prior to each incineration, sum of fractions calculations were performed to ensure that the emissions did not exceed the maximum permissible concentrations in air per 10 CFR 20. In no instances were these concentrations exceeded. In 1993, VCU Animal Resources secured a permit to install a new incinerator at the Hanover farm. No radioactive waste was incinerated in this new unit; incineration of low level radioactive waste in the original Consumat incinerator was discontinued in the mid-1980's.

II. Assumptions

We referenced NUREG-1757, Volume 1, Rev. 2 in determining the minimum requirements for remediation of the Consumat incinerator. Using Figure 7.1 ("Determining the Appropriate Decommissioning Group"), we determined that this remediation would fall under Group 2. We followed the guidelines in Section 9 of the NUREG to demonstrate compliance with 10 CFR Part 20.1402 ("Radiological Criteria for Unrestricted Use").

III. Survey Methodology

The Consumat incinerator was examined for removable and fixed contamination during the final status surveys on July 23, 2007. Ash samples were collected and counted on August 7, 2007. Additionally, samples from areas adjacent to the incinerator were examined for soil surface contamination on August 9, 2007. Initial surveys were conducted using the following instrument:

Ludlum Model 2401-P GM Counter, SN 170266
Internal Pancake Probe
Calibrated 9/6/06

C-14 Efficiency = 3%
Background radiation levels measured between 30-50 cpm; all accessible surfaces of the incinerator were surveyed and no counts above background were detected. Following the surveys with the above instrument, wipe tests were conducted on the surfaces of the incinerator (see Attachment 1). No contamination exceeding the levels found in NUREG-1757, Volume 1, Rev. 2, Table B.1 were detected for H-3 and C-14. The presence of any other significant radioactive contamination would have been detected in Channel C (0-2000 keV); if any were present, a more detailed analysis would have been conducted. (See attached LSC counts - Attachment 2). Wipe analyses were conducted using the following instrument:

Perkin Elmer Liquid Scintillation Counter, Model 2900TR, SN DG04060771
Calibrated 7/23/07 for H-3 and C-14 efficiency
C-14 Efficiency = 96%, MDA = 16 dpm
H-3 Efficiency = 64%, MDA = 12 dpm

Residual ash samples from the floor of the incinerator were analyzed for radioactivity. No contamination above background levels was detected (see Attachment 3). In addition, 1 gram samples for soil surface contamination were analyzed. No radioactivity exceeding the screening values found in NUREG 1757, Volume 1, Rev. 2, Table B.2 were detected for C-14 (see Attachment 4). Analyses of the ash and soil samples were conducted using the following instrument:

Ludlum Model 120 GPC, SN PR 107277
Ludlum Model 2200 Scaler, SN 17527
Calibrated 8/8/07 for C-14 efficiency
C-14 efficiency = 30% (4π), MDA (ash) = 38.7 dpm, MDA (soil) = 33.7 dpm

IV. Conclusions

Based on the information provided above and the assumptions made concerning the methodology of the final status survey, we conclude that no residual contamination is present in the Consumat incinerator and that this unit and all associated use may be removed from our license.

Attachment 1.

Swipes of VCU Hanover Animal Farm Incinerator
Survey performed 7/23/07

1. Background
2. Loading door handle
3. Around loading door opening
4. Inside loading door
5. Inside unloading door face
6. Inside unloading door chamber walls
7. Inside unloading door chamber walls
8. Inside chamber walls
9. Inside chamber walls
10. Inside chamber floor
11. Inside chamber floor
12. Inside air diffuser
13. Around vent duct
14. Around stack

Attachment 2.

Protocol# 5 - Lab Swipes.lsa User: Default

Animal Farm Incinerator
Kanjure

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	DPM C	tSIE	MESSAGES
1	10.00	8	15	10	0	0	13	424.98	B - Background
2	1.00	1	0	2	6	0	2	399.77	
2	1.00	2	0	0	6	0	0	401.57	
		1	0	0	6	0	0	400.67	A
3	1.00	3	4	0	2	6	0	414.25	
3	1.00	6	0	0	12	0	0	414.04	
		4	2	0	7	3	0	414.15	A
4	1.00	0	0	0	6	0	0	435.30	
4	1.00	4	0	1	11	0	1	435.00	
		2	0	0	8	0	0	435.15	A
5	1.00	11	0	0	28	0	0	409.76	
5	1.00	1	0	0	10	0	0	409.03	
		6	0	0	19	0	0	409.39	A
6	1.00	15	2	3	31	3	4	405.16	
6	1.00	7	0	3	17	0	4	405.88	
		11	0	3	24	2	4	405.52	A
7	1.00	7	4	0	11	6	0	436.92	
7	1.00	12	9	1	17	14	1	437.51	
		9	7	0	14	10	0	437.22	A
8	1.00	10	0	6	22	0	7	444.94	
8	1.00	7	0	9	17	0	11	445.58	
		8	0	7	19	0	9	445.26	A
9	1.00	8	3	0	14	5	0	435.97	
9	1.00	3	0	0	9	0	0	434.45	
		5	0	0	11	2	0	435.21	A
10	1.00	2	0	0	7	0	0	434.67	
10	1.00	1	0	0	7	0	0	438.37	
		1	0	0	7	0	0	436.52	A
11	1.00	9	14	0	5	22	0	409.79	
11	1.00	11	0	0	24	0	0	410.40	
		10	7	0	14	11	0	410.09	A
12	1.00	5	1	0	9	2	0	432.44	
12	1.00	1	0	0	8	0	0	434.62	
		3	0	0	8	1	0	433.53	A
13	1.00	6	4	0	9	6	0	409.73	
13	1.00	3	4	0	2	6	0	410.76	
		4	4	0	5	6	0	410.25	A
14	1.00	12	7	0	19	11	0	408.93	
14	1.00	17	6	0	31	10	0	409.05	
		14	7	0	25	10	0	408.99	A

Attachment 3
Ash Sample Analyses

Sample #	Gross CPM	Background CPM	Net CPM	Net DPM	Result (μCi)
1	65.3	62.2	3.1	10.3	4.6E-6
2	59.7	62.2	-2.5	-8.3	-3.8E-6
3	64.4	62.2	2.2	7.3	3.3E-6
4	61.6	62.2	-0.6	-2.0	-9.0E-7
5	62.7	62.2	0.5	1.7	7.5E-7

Attachment 4
Soil Sample Analyses

Sample #	Gross CPM	Background CPM	Net CPM	Net DPM	Result (μCi)
1	47.9	47.3	0.6	2.0	9.0E-7
2	43.4	47.3	-3.9	-13.0	-5.9E-6
3	46.6	47.3	-0.7	-2.3	-1.0E-6
4	49.1	47.3	1.8	6.0	2.7E-6
5	44.2	47.3	-3.1	-10.3	4.6E-6
6	48.1	47.3	0.8	2.7	1.2E-6
7	44.9	47.3	-2.4	-8.0	-3.6E-6
8	46.1	47.3	-1.2	-4.0	-1.8E-6