ATTACHMENT 4

NESHAPS EVALUATION

Environmental Services Division

BROOKHAVEN
NATIONAL LABORATORY

Building 535A
P.O. Box 5000
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managed by Brookhaven Science Associates
for the U.S. Department of Energy

Memo

Date: *September 30, 1999*

To: Steve Moss

From: Jerry Simiele

Subject: BGRR Pile Fan # 5 Removal and Fan House Decontamination

As per your request, the subject activity was reviewed for NESHAP compliance issues based on the source term presented in BGRR-SE-99-0, *Unreviewed Safety Issue Determination and Safety Evaluation for WBS 1.2, Fan Removal and Decontaminate Fan House.* The CAP88-PC model was used to determine this project would result in a hypothetical maximum exposed individual receiving less than 2.0E-04 mrem as documented in Attachment 1. Consequently, the project is exempt from permitting requirements in accordance with 40 CFR 61.96(b) since the offsite dose potential is less than 0.1 mrem.

Although this project is exempt from NESHAP permitting requirements, quantification of any airborne releases is required to satisfy the annual emissions reporting requirements found in 40 CFR 61.94(a). It is recommended that a local air sampling program designed to measure the isotopes of concern be implemented to quantify any actual emissions. Please forward the sampling results and/or calculations showing estimated emissions following completion of this project.

Please contact me on extension 8107 with any questions regarding this assessment.

Attachment

GAS:rt

Cc: K. Carney
R. Lee
S. Pulsford
EC5220.99

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Population Assessment
Sep 30, 1999 08:09 am

Facility: BGRR
Address: Brookhaven National Laboratory
City: Upton
State: NY Zip: 11973

Source Category: D&D
Source Type: Area
Emission Year: 1999

Comments: BGRR-SE-99-0 Source Term for # 5 Fan Removal
Resuspension Factor of 1.0E-03

Effective Dose Equivalent (mrem/year)
1.93E-04

At This Location: 3000 Meters South Southwest

Dataset Name: BGRR Pile Fan #5
Dataset Date: Sep 30, 1999 08:09 am
Wind File: C:\CAP88PC2\WNDFILES\BNL_1998.WND
Population File: C:\CAP88PC2\POPFILES\BNL98A.POP

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 3000 Meters South Southwest
Lifetime Fatal Cancer Risk: 1.47E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	3.12E-05	1.55E-03
BREAST	5.10E-06	3.00E-04
R MAR	1.85E-04	8.93E-03
LUNGS	5.27E-04	2.43E-02
THYROID	5.11E-06	3.01E-04
ENDOST	2.26E-03	1.08E-01
RMNDR	1.03E-04	4.96E-03
EFFEC	1.93E-04	9.16E-03

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	5053191	5053191	9.92E-07	9.92E-07

RADIONUCLIDE EMISSIONS DURING THE YEAR 1999

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
CO-60	Y	1.00	2.5E-10	2.5E-10
SR-90	D	1.00	1.2E-07	1.2E-07
Y-90	Y	1.00	1.2E-07	1.2E-07
CS-137	D	1.00	1.3E-06	1.3E-06
BA-137M	D	1.00	1.3E-06	1.3E-06
U-233	Y	1.00	1.7E-08	1.7E-08
U-234	Y	1.00	1.7E-08	1.7E-08
U-235	Y	1.00	3.0E-09	3.0E-09
U-238	Y	1.00	3.7E-08	3.7E-08
PU-238	Y	1.00	2.8E-08	2.8E-08
PU-239	Y	1.00	1.0E-06	1.0E-06
PU-240	Y	1.00	1.0E-06	1.0E-06
AM-241	W	1.00	3.6E-07	3.6E-07

SITE INFORMATION

Temperature:	10	degrees C
Precipitation:	115	cm/y
Mixing Height:	2000	m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 100.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density:	5.83E-02
Milk Cattle Density:	8.56E-02
Land Fraction Cultivated for Vegetable Crops:	1.88E-02

POPULATION DATA

	Distance (m)						
Direction	875	2000	2500	3000	9625	24000	40000
N	0	0	0	1	4650	0	94925
NNW	0	0	0	1	7845	0	211745
NW	0	0	0	1	18410	1605	137435
WNW	0	0	0	1	42735	59885	135
W	0	0	0	1	50715	137075	243225
WSW	0	97	0	1	38830	147520	360480
SW	0	198	0	1	22325	66440	3495
SSW	0	0	0	1	21875	1120	0
S	0	0	0	1	15900	35	0
SSE	0	0	0	1	22925	0	0
SE	0	0	0	1	9270	16325	0
ESE	0	0	0	1	6375	7080	0
E	0	0	0	1	3095	765	17765
ENE	0	0	0	1	2540	0	13175
NE	0	0	0	1	3015	0	0
NNE	0	0	0	1	7740	0	7125

	Distance (m)	
Direction	56000	72000
N	252075	262180
NNW	108585	54880
NW	124535	104675
WNW	217780	131090
W	227190	373120
WSW	427075	778140
SW	0	0
SSW	0	0
S	0	0
SSE	0	0
SE	0	0
ESE	0	0
E	9250	585
ENE	15220	2300
NE	13750	33525
NNE	45010	66315

Environmental Services Division

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BROOKHAVEN
NATIONAL LABORATORY

managed by Brookhaven Science Associates
for the U.S. Department of Energy

Memo

Date: *November 23, 1999*

To: Steve Moss

From: Jerry Simiele

Subject: BGRR Pile Fan Removal and Fan House Decontamination

As per your request, the subject activity was reviewed for NESHAP compliance issues based on the source term presented in BGRR-SE-99-03, *Unreviewed Safety Issue Determination and Safety Evaluation for WBS 1.2, Fan Removal and Decontaminate Fan House.*

The potential airborne source term was developed using 40 CFR 61 Appendix D methodology. The analysis takes no credit for administrative or engineered controls and is based on the following assumptions: (1) the total inventory is available for release; (2) a release fraction of 1.0E-03 is appropriate for all materials; and (3) the release occurs at ground level with no plume momentum or buoyancy. The CAP88-PC model was used to determine this project would result in a hypothetical maximum exposed individual receiving less than 3.0E-04 mrem as documented in Attachment 1. Consequently, the project is exempt from permitting requirements in accordance with 40 CFR 61.96(b) since the offsite dose potential is less than 0.1 mrem.

Although this project is exempt from NESHAP permitting requirements, quantification of any airborne releases is required to satisfy the annual emissions reporting requirements found in 40 CFR 61.94(a). It is recommended that a local air sampling program designed to measure the isotopes of concern be implemented to quantify any actual emissions. Please forward the sampling results and/or calculations showing estimated emissions following completion of this project.

Please contact me on extension 8107 with any questions regarding this assessment.

GAS:rt
Attachment

Cc: B. Lee
K. Carney
S. Pulsford
EC5220.99

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Population Assessment
Nov 19, 1999 09:35 am

Facility: Brookhaven National Laboratory
Address:
City:
State: NY Zip:

Source Category: D&D
Source Type: Stack
Emission Year: 1999

Comments: Removal of Fans 2, 3, 4 and 5

Effective Dose Equivalent (mrem/year)
2.93E-04

At This Location: 3000 Meters Southeast
Dataset Name: BGRR Fan Removal
Dataset Date: Nov 19, 1999 09:35 am
Wind File: C:\CAP88PC2\WNDFILES\GAS1998.WND
Population File: C:\CAP88PC2\POPFILES\BNL98A.POP