ABB
ASEA BROWN BOVERI

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Docket: 70-0036

March 11, 1993

Roy J. Caniano, Chief
Nuclear Materials Safety Branch
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

SUBJECT: EFFLUENT MONITORING REPORT - JULY THROUGH DECEMBER, 1992

Dear Mr. Grobe:

The subject report is submitted in accordance with the requirements of 10 CFR 70.59.

This information relates to activities conducted under License No. SNM-33, at ABB-Combustion Engineering Inc.'s facility located at Hematite, Missouri.

Cordially yours,

Harold E. Eskridge

Harold E. Eskridge
Manager, Regulatory Compliance

HEE/sld
RC/10071

Enclosure

cc: Director
Office of NMSS
U.S. Nuclear Regulatory Commission
Washington DC 20555

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ABB Combustion Engineering Nuclear Power

Combustion Engineering, Inc. P O Box 107, Highway P Hematite, Missouri 63047 Telephone (314) 937-4691 Telephone (314) 296-5640 Fax (314) 937-7955

EFFLUENT MONITORING REPORT

JULY - DECEMBER 1992

LICENSEE: ABB-COMBUSTION ENGINEERING, INC.
PO BOX 107, 3300 STATE HIGHWAY P
HEMATITE, MO 63047

LICENSE NO. SNM-33

DOCKET NO. 70-36

THE FOLLOWING QUANTITIES OF LOW-ENRICHED URANIUM WERE RELEASED TO UNRESTRICTED AREAS DURING THE PERIOD OF JULY - DECEMBER, 1992:

LIQUID(1)	2.60 E-02 CURIES (1.78 E+06 LITERS)
GASEOUS(2)	1.81 E-04 CURIES (2.3843E+10 CUBIC FEET)

(1) MEASURED AT DISCHARGE OF SITE POND TO FORM SITE CREEK, AND AT SEWAGE TREATMENT PLANT OUTFALL. INCLUDES NATURALLY OCCURRING ALPHA-EMITTERS PRESENT IN THE WATER.

(2) PARTICULATE URANIUM COMPOUNDS MEASURED BY CONTINUOUS EXHAUST STACK SAMPLING.

EFFLUENT MONITORING SUMMARY REPORT

ABB COMBUSTION ENGINEERING NUCLEAR POWER
COMBUSTION ENGINEERING INC.
HEMATITE, MO
JULY – DECEMBER 1993

LIQUID:	2.60E-02	CURIES	1.78E+06	LITERS
GASEOUS:	1.81E-04	CURIES	2.3843E+10	CUBIC FT.

FLUORIDE CONCENTRATIONS IN VEGETATION SAMPLES RANGE FROM:

6.2 ppm to 37 ppm

STACK DISCHARGE VOLUME

S-050	BLDG. 2[illegible] WEST SYSTEM	1.71E+09	CUBIC FEET
S-051	BLDG. 255 EAST SYSTEM	2.29E+08	CUBIC FEET
S-052	BLDG. 255 PELLETIZING AREA	1.12E+09	CUBIC FEET
S-053	BLDG. 255 FURNACE AREA	1.15E+09	CUBIC FEET
S-121	OXIDE GENERAL AREA VENTILATION	1.71E+09	CUBIC FEET
S-228	BLDG. 240 RECYCLE SIDE	1.40E+09	CUBIC FEET
S-230	BLG. 240 RECOVERY SIDE	9.36E+08	CUBIC FEET
S-232	BLDG. 240 GREEN ROOM	1.02E+09	CUBIC FEET
S-301	BLDG. 254 EAST SYSTEM	2.36E+09	CUBIC FEET
S-302	BLDG. 254 WEST SYSTEM	2.44E+09	CUBIC FEET
S-303	BLDG. 254 EAST FURNACE	3.06E+09	CUBIC FEET
S-304	BLDG. 254 WEST FURNACE	2.42E+09	CUBIC FEET
S-305	BLDG. 254 GRINDER AREA	3.04E+09	CUBIC FEET
S-401	BLDG. 253 BULK RECYCLE AREA	1.26E+09	CUBIC FEET

TOTAL = 2.38E+10 CUBIC FEET

STACK CURIE LOSS

MONTH	ENR.	GRAMS – – U X	SPA (CURIES/GRAMS U) =	CURIES (10E+06)
JUL	3.65	2.56	1.83 X 10E-06	4.69
JUL	4.00	0.81	1.97 X 10E-06	1.60
JUL	4.03	0.19	1.99 X 10E-06	0.38
JUL	4.05	0.05	1.99 X 10E-06	0.10
JUL	4.11	1.21	2.02 X 10E-06	2.44
JUL	4.14	5.11	2.03 X 10E-06	10.38
JUL	4.40	0.04	2.14 X 10E-06	0.09
AUG	3.60	6.32	1.81 X 10E-06	11.45
AUG	4.00	4.35	1.97 X 10E-06	8.59
AUG	4.40	26.37	2.14 X 10E-06	56.37
SEP	3.60	13.35	1.81 X 10E-06	24.19
SEP	4.00	5.03	1.97 X 10E-06	9.93
SEP	4.20	0.28	2.06 X 10E-06	0.58
SEP	4.40	0.40	2.14 X 10E-06	0.86
OCT	3.00	0.16	1.57 X 10E-06	0.25
OCT	3.10	0.25	1.61 X 10E-06	0.40
OCT	3.50	0.16	1.77 X 10E-06	0.28
OCT	3.60	2.25	1.81 X 10E-06	4.08
OCT	3.66	10.18	1.84 X 10E-06	18.69
OCT	3.90	0.05	1.93 X 10E-06	0.10
OCT	4.00	0.08	1.97 X 10E-06	0.16
OCT	4.20	0.06	2.06 X 10E-06	0.12
OCT	4.40	0.59	2.14 X 10E-06	1.26
NOV	3.10	0.26	1.61 X 10E-06	0.42
NOV	3.56	4.88	1.80 X 10E-06	8.76
NOV	3.60	0.84	1.81 X 10E-06	1.52
NOV	4.20	0.02	2.06 X 10E-06	0.04
DEC	3.10	0.01	1.61 X 10E-06	0.02
DEC	3.31	0.01	1.70 X 10E-06	0.02
DEC	3.58	0.04	1.80 X 10E-06	0.07
DEC	3.60	4.10	1.81 X 10E-06	7.43
DEC	3.61	0.01	1.82 X 10E-06	0.02
DEC	3.70	0.31	1.85 X 10E-06	0.57
DEC	3.89	0.01	1.93 X 10E-06	0.02
DEC	4.00	2.64	1.97 X 10E-06	5.21

TOTAL = 1.81E-04 CURIES 181.10

STACK OPERATING DAYS

S-050									
JUL	33.75	DAYS	X	6741	CFM	X	1440	MIN/DAY =	3.28E+08
AUG	27.97	DAYS	X	6741	CFM	X	1440	MIN/DAY =	2.72E+08
SEP	24.70	DAYS	X	6741	CFM	X	1440	MIN/DAY =	2.40E+08
OCT	35.01	DAYS	X	6741	CFM	X	1440	MIN/DAY =	3.40E+08
NOV	30.61	DAYS	X	6741	CFM	X	1440	MIN/DAY =	2.97E+08
DEC	24.31	DAYS	X	6741	CFM	X	1440	MIN/DAY =	2.36E+08
									1.71E+09 CUBIC FT.
S-051									
JUL	19.55	DAYS	X	8142	CFM	X	1440	MIN/DAY =	2.29E+08
AUG	0.00	DAYS	X	0	CFM	X	1440	MIN/DAY =	0.00E+00
SEP	0.00	DAYS	X	0	CFM	X	1440	MIN/DAY =	0.00E+00
OCT	0.00	DAYS	X	0	CFM	X	1440	MIN/DAY =	0.00E+00
NOV	0.00	DAYS	X	0	CFM	X	1440	MIN/DAY =	0.00E+00
DEC	0.00	DAYS	X	0	CFM	X	1440	MIN/DAY =	0.00E+00
									2.29E+08 CUBIC FT.
S-052									
JUL	34.96	DAYS	X	4652	CFM	X	1440	MIN/DAY =	2.34E+08
AUG	20.97	DAYS	X	4652	CFM	X	1440	MIN/DAY =	1.40E+08
SEP	21.05	DAYS	X	4652	CFM	X	1440	MIN/DAY =	1.41E+08
OCT	35.03	DAYS	X	4652	CFM	X	1440	MIN/DAY =	2.35E+08
NOV	30.61	DAYS	X	4652	CFM	X	1440	MIN/DAY =	2.05E+08
DEC	24.30	DAYS	X	4652	CFM	X	1440	MIN/DAY =	1.63E+08
									1.12E+09 CUBIC FT.
S-053									
JUL	34.96	DAYS	X	4664	CFM	X	1440	MIN/DAY =	2.35E+08
AUG	27.98	DAYS	X	4664	CFM	X	1440	MIN/DAY	1.88E+08
SEP	28.02	DAYS	X	4664	CFM	X	1440	MIN/DAY	1.88E+08
OCT	25.03	DAYS	X	4664	CFM	X	1440	MIN/DAY	1.68E+08
NOV	30.61	DAYS	X	4664	CFM	X	1440	MIN/DAY	2.06E+08
DEC	24.30	DAYS	X	4664	CFM	X	1440	MIN/DAY	1.63E+08
									1.15E+09 CUBIC FT.
S-121									
JUL	33.75	DAYS	X	6741	CFM	X	1440	MIN/DAY	3.28E+08
AUG	27.97	DAYS	X	6741	CFM	X	1440	MIN/DAY	2.72E+08
SEP	24.70	DAYS	X	6741	CFM	X	1440	MIN/DAY	2.40E+08
OCT	35.01	DAYS	X	6741	CFM	X	1440	MIN/DAY	3.40E+08
NOV	30.61	DAYS	X	6741	CFM	X	1440	MIN/DAY	2.97E+08
DEC	24.31	DAYS	X	6741	CFM	X	1440	MIN/DAY	2.36E+08
									1.71E+09 CUBIC FT.
S-228									
JUL	32.34	DAYS	X	5907	CFM	X	1440	MIN/DAY	2.75E+08
AUG	25.86	DAYS	X	5907	CFM	X	1440	MIN/DAY	2.20E+08
SEP	22.61	DAYS	X	5907	CFM	X	1440	MIN/DAY	1.92E+08
OCT	34.95	DAYS	X	5907	CFM	X	1440	MIN/DAY	2.97E+08
NOV	28.03	DAYS	X	5907	CFM	X	1440	MIN/DAY	2.38E+08
DEC	20.88	DAYS	X	5907	CFM	X	1440	MIN/DAY	1.78E+08
									1.40E+09 CUBIC FT.

STACK OPERATING DAYS (cont)

S-230								
JUL	26.35	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.72E+08
AUG	23.70	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.55E+08
SEP	16.89	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.10E+08
OCT	28.91	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.89E+08
NOV	29.52	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.93E+08
DEC	17.74	DAYS	X	4543	CFM	X	1440	MIN/DAY	1.16E+08
									9.36E+08 CUBIC FT.
S-232								
JUL	35.33	DAYS	X	4652	CFM	X	1440	MIN/DAY	2.37E+08
AUG	22.68	DAYS	X	4652	CFM	X	1440	MIN/DAY	1.52E+08
SEP	19.79	DAYS	X	4652	CFM	X	1440	MIN/DAY	1.33E+08
OCT	34.86	DAYS	X	4652	CFM	X	1440	MIN/DAY	2.34E+08
NOV	22.94	DAYS	X	4652	CFM	X	1440	MIN/DAY	1.54E+08
DEC	17.04	DAYS	X	4652	CFM	X	1440	MIN/DAY	1.14E+08
									1.02E+09 CUBIC FT.
S-301								
JUL	35.11	DAYS	X	8984	CFM	X	1440	MIN/DAY	4.54E+08
AUG	28.08	DAYS	X	8984	CFM	X	1440	MIN/DAY	3.63E+08
SEP	27.94	DAYS	X	8984	CFM	X	1440	MIN/DAY	3.61E+08
OCT	34.93	DAYS	X	8984	CFM	X	1440	MIN/DAY	4.52E+08
NOV	30.72	DAYS	X	8984	CFM	X	1440	MIN/DAY	3.97E+08
DEC	25.28	DAYS	X	8984	CFM	X	1440	MIN/DAY	3.27E+08
									2.36E+09 CUBIC FT.
S-302								
JUL	35.11	DAYS	X	9291	CFM	X	1440	MIN/DAY	4.70E+08
AUG	28.08	DAYS	X	9291	CFM	X	1440	MIN/DAY	3.76E+08
SEP	27.94	DAYS	X	9291	CFM	X	1440	MIN/DAY	3.74E+08
OCT	34.93	DAYS	X	9291	CFM	X	1440	MIN/DAY	4.67E+08
NOV	30.72	DAYS	X	9291	CFM	X	1440	MIN/DAY	4.11E+08
DEC	25.28	DAYS	X	9291	CFM	X	1440	MIN/DAY	3.38E+08
									2.44E+09 CUBIC FT.
S-303								
JUL	35.11	DAYS	X	12800	CFM	X	1440	MIN/DAY	6.47E+08
AUG	28.08	DAYS	X	12800	CFM	X	1440	MIN/DAY	5.18E+08
SEP	27.94	DAYS	X	12800	CFM	X	1440	MIN/DAY	5.15E+08
OCT	34.93	DAYS	X	12800	CFM	X	1440	MIN/DAY	6.44E+08
NOV	21.01	DAYS	X	12800	CFM	X	1440	MIN/DAY	3.87E+08
DEC	18.69	DAYS	X	12800	CFM	X	1440	MIN/DAY	3.44E+08
									3.06E+09 CUBIC FT.
S-304								
JUL	30.12	DAYS	X	9889	CFM	X	1440	MIN/DAY	4.29E+08
AUG	28.08	DAYS	X	9889	CFM	X	1440	MIN/DAY	4.00E+08
SEP	27.94	DAYS	X	9889	CFM	X	1440	MIN/DAY	3.98E+08
OCT	34.93	DAYS	X	9889	CFM	X	1440	MIN/DAY	4.97E+08
NOV	30.73	DAYS	X	9889	CFM	X	1440	MIN/DAY	4.38E+08
DEC	18.30	DAYS	X	9889	CFM	X	1440	MIN/DAY	2.61E+08
									2.42E+09 CUBIC FT.
S-305								
JUL	35.11	DAYS	X	12219	CFM	X	1440	MIN/DAY	6.18E+08
AUG	28.08	DAYS	X	12219	CFM	X	1440	MIN/DAY	4.94E+08
SEP	27.94	DAYS	X	12219	CFM	X	1440	MIN/DAY	4.92E+08
OCT	34.93	DAYS	X	12219	CFM	X	1440	MIN/DAY	6.15E+08
NOV	21.01	DAYS	X	12219	CFM	X	1440	MIN/DAY	3.70E+08
DEC	25.67	DAYS	X	12219	CFM	X	1440	MIN/DAY	4.52E+08
									3.04E+09 CUBIC FT.

STACK OPERATING DAYS (cont)

S–401

JUL	34.86	DAYS	X	4837	CFM	X	1440	MIN/DAY	2.43E+08
AUG	28.08	DAYS	X	4837	CFM	X	1440	MIN/DAY	1.96E+08
SEP	27.93	DAYS	X	4837	CFM	X	1440	MIN/DAY	1.95E+08
OCT	33.58	DAYS	X	4837	CFM	X	1440	MIN/DAY	2.34E+08
NOV	30.74	DAYS	X	4837	CFM	X	1440	MIN/DAY	2.14E+08
DEC	25.28	DAYS	X	4837	CFM	X	1440	MIN/DAY	1.76E+08

1.26E+09 CUBIC FT.

Gross Alpha pCi/l	X	Total liters x 10E+06		pCi x 10E+06
197		0.0032	*	0.6
86		0.0032	*	0.3
69		0.0032	*	0.2
83		0.0032	*	0.3
94		0.0032	*	0.3
83		0.0032	*	0.3
160		0.0032	*	0.5
67		0.0032	*	0.2
75		0.0032	*	0.2
77		0.0032	*	0.2
46		0.0032	*	0.1
47		0.0032	*	0.2
50		0.0032	*	0.2
27		0.0032	*	0.1
52		0.0032	*	0.2
2		0.0032	*	0.0
22		0.0032	*	0.1
23		0.0032	*	0.1
24		0.0032	*	0.1
27		0.0032	*	0.1
48		0.0032	*	0.2
30		0.0032	*	0.1
49		0.0032	*	0.2
12		0.0032	*	0.0
39		0.0032	*	0.1
27		0.0032	*	0.1

0.1 X 10E+06 liters — 4.9 X 10E+06 pCi

4.9 X 10E+06 pCi X l/Ci = — 4.9E-06 CURIES

10E+0E + 12pCi

* VOLUME BASED ON THE AVERAGE USAGE OF 1200 GALLONS/DAY.

Alpha pCi/l	Total liters x 10E+06	pCi x 10E+06
117	0.1	11.7
60	24.2	1452.0
23	4.1	94.3
25	1.9	47.5
25	1.8	45.0
15	5.6	84.0
33	4.4	145.2
36	2.3	82.8
45	5.8	261.0
104	3.4	353.6
60	3.0	180.0
29	2.8	81.2
33	1.5	49.5
56	1.6	89.6
171	1.6	273.6
9	1.5	13.5
105	12.2	1281.0
797	23.0	18331.0
243	10.2	2478.6
17	5.8	98.6
26	3.4	88.4
11	6.6	72.6
13	9.4	122.2
13	8.7	113.1
13	12.7	165.1
1	20.0	20.0

TOTALS 177.6 X 10E+06 liters 26035.1 X 10E+06 pCi

26035.1 X 10E+06 pCi X l/Ci = 2.60E-02 CURIES

10E+0E + 12pCi