

Medicine  
Health Physics  
Industrial Hygiene  
Toxicology  
Medical Department/3M

3M Center  
St. Paul, Minnesota 55144  
612/733 1110

October 3, 1985

RECEIVED BY LFMB	
Date	Oct 13, 1985
Log	Oct 15 <sup>th</sup>
Orig. To	N/TH
Action Compl	

*3G*  
*(Survey)*  
*amend*  
*dradiation Survey report*

'85 OCT 15 A10:39

**3M**

**FEE EXEMPT**

U.S. NRC  
LIC. FEE MGMT BRANCH

'85 OCT 18 P1:53

RECEIVED

Licensing Management Branch  
Division of Fuel Cycle and Material Safety  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Gentlemen:

Subject: U.S. NRC License 22-00057-61

In accordance with the provisions of Condition 17 of the subject license, attached is a copy of the radiation survey report for the survey conducted by Atomic Energy of Canada Limited (AECL) personnel on September 17, 1985 at 3M's Brookings, South Dakota gamma sterilization facility subsequent to installation of an additional 184,925 curies of Cobalt-60. It is noted that external to the facility with the Cobalt-60 source rack in the irradiate position, (1) detectable levels of radiation were only observed on the sterilizer roof, which is a controlled access unoccupied area, where a level of 2.8 millirem per hour was noted at one location with all other observed levels being at or below 2.0 millirem per hour, and (2) no radiation levels were observed (minimum detectable level is 0.03 millirem per hour) at all other areas which includes occupied areas. Thus, the design criteria of 2 millirem per hour maximum and 0.25 millirem per hour average in occupied areas was met. With the source rack in its storage position in the storage pool, it is noted radiation levels in the sterilization room are less than 0.03 millirem per hour. The AECL measurements were made with a Berthold Model RATO/F GM survey meter calibrated with Cobalt-60.

The above survey information was basically confirmed by an independent, comprehensive survey performed on September 17, 1985 by F. B. Entwistle and D. A. Halper of 3M Health Physics Services. Further, the independent survey showed that there were no areas of detectable radiation on the sterilizer roof other than those areas denoted on the AECL radiation survey report and the maximum level observed during this survey on the sterilizer roof (at the same location as AECL's maximum reading) was 1.7 millirem per hour. The survey meter upon which this reading was obtained was an Eberline Instrument

8512040365 851112  
REG3 LIC30  
22-00057-61 PDR

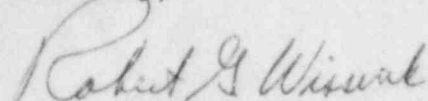
19307

Licensing Management Branch  
Division of Fuel Cycle and Material Safety  
Page 2  
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Corporation Model RO-3 "Cutie-Pie" air ionization type survey meter. Details of this survey along with a copy of AECL's survey report are being maintained in the 3M Health Physics Services' files in St. Paul, Minnesota and in the 3M plant Radiation Safety Officer files in Brookings, South Dakota.

Should you have any questions regarding the radiation survey report, please contact Duane C. Hall of our office at 612/733-7316.

Sincerely,

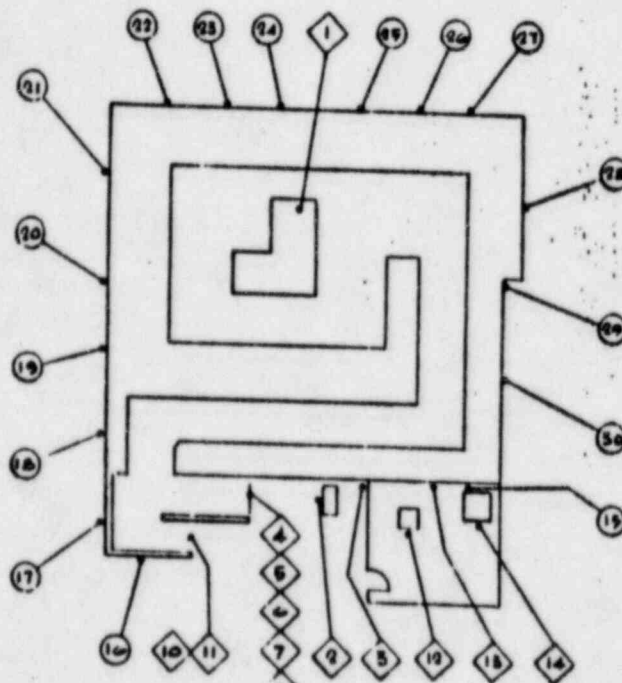
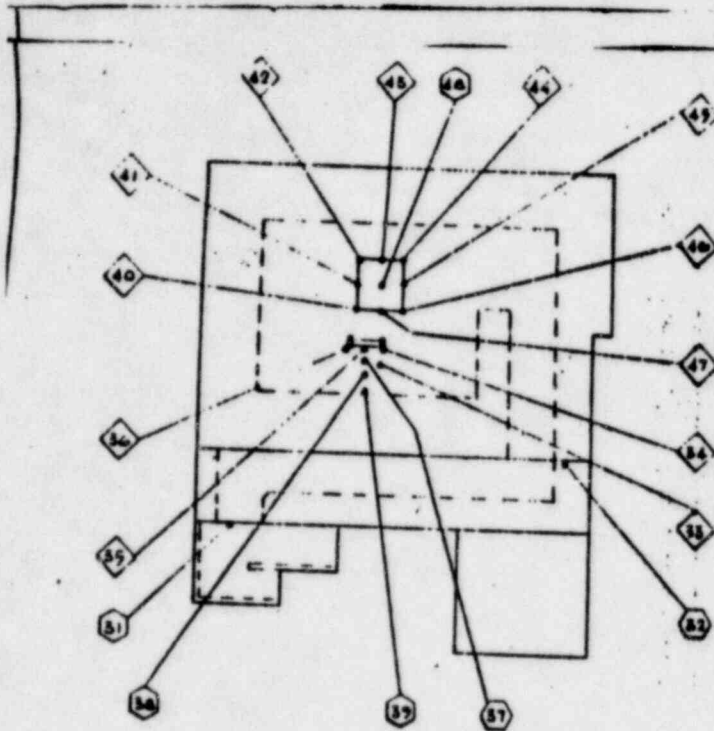


Robert G. Wissink  
Licensing Administrator  
Radioactive Materials

FBE/RGW:lmo

Attachment

cc: U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement, Region III  
Atomic Energy of Canada Limited  
E. M. Aho - Brookings Plant Eng. - Brookings 01/036



○ AT 1m ABOVE FLOOR  
 ○ AT FLOOR OR ON ROOF  
 ◇ ON NAMED FEATURE  
 (SURVEYOR TO ADD AS NECESSARY)

MAXIMUM RADIATION DESIGN LEAKAGE SO THAT  
 NO ONE SHALL RECEIVE MORE THAN 10 mrem IN  
 A 40 HOUR WORK WEEK WITH  $3 \times 10^6$  CURIES  
 OF COBALT-60 INSTALLED.

OCCUPANCY HOURS/WEEK	DOSE RATE IN mrem/h IN AREA	
	MAXIMUM	AVERAGE
40	2.0	0.25

SURVEY PERFORMED BY S. JAEGER  
 DATE 17 SEP 1995 F. BOND

SURVEY INSTRUMENT MODEL RAD/F  
 SERIAL NO. 2157 CALIBRATION DATE 85-7-5  
 SOURCE CONTENT 857,834 CURIES 60  
 ON DATE SEP 1, 1995

READINGS LESS THAN 0.3 mrem/h  
 SHOWN THUS \*

NO	READING	REMARKS
1	*	POOL SURFACE
2	*	CONTROL CONSOLE
3	*	FLOOR OVER DUCT
4	*	ABOVE RST DOOR
5	*	RST DOOR OPEN
6	*	RST DOOR CLOSED
7	*	LEFT DOOR BOMB
8	*	RIGHT DOOR BOMB
9	*	CRACK AT FLOOR
10	*	UPPER CONV.
11	*	LOWER CONV.
12	*	AIR FILTER
13	*	FLOOR TRASH
14	*	ORIONIZE
15	*	
16	*	
17	*	
18	*	
19	*	
20	*	
21	*	
22	*	
23	*	
24	*	
25	*	
26	*	
27	*	
28	*	
29	*	
30	*	
31	*	
32	*	
33	*	AIR LINE
34	*	GUIDE CABLE
35	1.2	HOIST CABLE
36	*	GUIDE CABLE
37	*	
38	*	
39	*	
40	0.6	PLUM CRACK
41	2.8	PLUM CRACK
42	1.0	PLUM CRACK
43	0.16	PLUM CRACK
44	0.1	PLUM CRACK
45	*	PLUM CRACK
46	*	PLUM CRACK
47	*	PLUM CRACK
48	*	
49	*	
50	*	
51	*	
52	*	
53	*	
54	*	
55	*	
56	*	
57	*	
58	*	
59	*	
60	*	

SURVEY TO USNRC

ATOMIC ENERGY OF CANADA LIMITED  
 OTTAWA COMMERCIAL PRODUCTS CANADA

RADIATION SURVEY REPORT  
 AFTER SOURCE INSTALLATION NO. ---  
 IN 1R100 BM COMPANY  
 BROOKING & D.