



The Elisha Gray II
Research and Engineering Center

MONTE ROAD, BENTON HARBOR, MICHIGAN 49022

March 31, 1987

Ms. Evelyn R. Matson
Materials Licensing Section
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Ms. Matson:

The following information is being sent in reply to your request for a closeout survey relative to termination of our NRC License No. 21-01784-01. Please refer to Control Number 82519.

The survey was conducted as stated in your letter by C. William Mutch, Ph.D., Associate Professor of Chemistry at Andrews University. Duplicate copies of his findings are enclosed. In addition, a diagram of all laboratories surveyed for radiation is also enclosed. All the information requested in your letter is presented in the report.

If you have any questions relative to this information, please contact me at (616) 926-5308.

Cordially,

A handwritten signature in dark ink, appearing to read "R W Ifkovits".

Richard W. Ifkovits
Senior Research Microbiologist

RWI:ce

cc: D. Robach
J. Wuepper
N. Roth

8708240177 870403
REG3 LIC30
21-01784-01 PDR

RECEIVED

APR 02 1987

REGION III

APR 2 1987



ANDREWS
UNIVERSITY

March 25, 1987

Dr. Richard Ifkovits
Senior Research Microbiologist
Whirlpool Corporation
Elisha Gray II Research and Engineering Center
Monte Road
Benton Harbor, MI 49022

Dr. Ifkovits:

The following is a report of procedures used and results obtained in the radiation survey of three laboratories of the Whirlpool Corporation in the Elisha Gray II Research and Engineering Center on March 12, 1987.

Procedures:

1. General monitoring: Each room was surveyed (floor, bench top deck, fume hood) using an Eberline Model E-140 Gieger-Mueller counter, which was calibrated by Stan A. Huber Consultants, Inc., in December, 1986.
2. Swipe test: Several locations in each room were checked by the swipe test using approximately 1 inch squares of Kim Wipes rubbed over a surface trail of 3 to 5 feet. Each square was put in a scintillation vial along with 15 mls of aquasol and counted on a Packard Tri-Carb Liquid Scintillation Spectrometer. This instrument was operating at 70% efficiency as determined by using a standard C-14 sample from Packard.

Results:

1. General monitoring: There were no areas in any room surveyed that indicated more than background radiation.

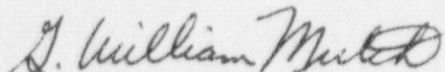
2. Swipe test: Data below is for a 5 minute counting interval.

<u>Sample</u>	<u>Area</u>	<u>Actual Count</u>	<u>Corrected Count*</u>	<u>Standard Deviation**</u>
Blank 1		247	353	19
Blank 2		245	350	19
Room 1053				
1	floor drain	261	373	19
2	bench top	223	319	18
Room 1058				
1	steel work box	278	397	20
2	floor	265	379	19
3	south bench top	251	359	19
4	north bench top	264	377	19
Room 1033				
1	north bench top	271	387	20
2	floor	292	417	20

*Corrected count is based on a counter efficiency of 70%. **Standard deviation, $S = (\text{corrected count})^{1/2}$

The low count rate makes a statistical analysis of the data unnecessary. If the difference between the highest count rate (417 counts per 5 minutes) and background is assumed to be statistically significant, then the amount of radioactivity (C-14) on the surface is about 1 pico curie ($1\text{pCi} = 1 \times 10^{-12} \text{ Ci}$), and is clearly insignificant. The three laboratories, therefore, are clean and free of radioactivity.

Cordially,



G. William Mutch, Ph.D.
Associate Professor of Chemistry
Radiation Safety Committee, Chairman

dmh

ELISHA GRAY II R&E CENTER FIRST FLOOR LAB WING

First Floor Offices

1001 Paul Bennett
1002 P.S. Roy
1003 Jean Banks
1004 John Nelson
1005 SCLIPES, P.C. TERM
1006 Ed Petersen
1007 William Pave
1008 OPEN
1008A John Wuepper
1009 Wayne Peterson
1010 Delbert Helling
1011 Shannon Medison
1012 OPEN
1013 A.M.E. DESIGN
1014 OPEN
1015 OPEN
1016 Tony Hardaway
1029 Doug Workinger
1065 Marty Immoos
1071 Dick Jones

First Floor Labs

1020 LUBRICATION LAB
1021 DISHWASHER DETERGENT CHEM
1022 PHYSICAL CHEMISTRY
1023 GAS CHROMATOGRAPHY
1024 WATER CHEMISTRY
1025 CHEM and FLOOR CARE
1026 DISTILLED WATER
1027 DETERGENT COMP. LAB
1030 DETERGENT CHEMISTRY
1031 ORGANIC CHEMISTRY
1032 TEXTILE CHEMISTRY
1033 TEXTILE CHEMISTRY
1035 HOME ECON LNDRY APP LAB
1036 HOME ECON LNDRY APP LAB
1038 SPECTROSCOPY
1039 SPECTROSCOPY
1040 PHOTOMICROSCOPY
1041 PHOTOMICROSCOPY
1042 PHOTOMICROSCOPY
1042A PHOTOMICROSCOPY
1043 ATOM ABSORP EMIS SPECTRO
1044 CORROSION
1045 SCAN ELEC MICROSCOPE
1046 SCAN ELEC MICROSCOPE
1050 POLYMER CHEMISTRY
1051 RHEOLOGY

First Floor Labs (cont)

1052 GEL PERMEATION
1053 APPLIANCE MICROBIOLOGY
1055 INCUBATOR ROOM
1056 STERILE ROOM
1057 MEDIA PREPARATION
1058 MICROBIOLOGY
1059 FLAMMABILITY TEST LAB
1061 MODEL SHOP
1065 STOCKROOM and SHOP CRIB
1066 HAZARDOUS CHEM STOREROOM
1068 PAINT ROOM
1068A PAINT STORAGE
1069 MFG. RESEARCH LAB
1070 MODEL SHOP
1070A PATTERN SHOP
1071 SHIPPING/RECEIVING
1072 REFRIGERATOR TEST ROOMS
1072A TENNEY TEST ROOMS
1072B COMPUTERIZED REF CONTROL ROOM/
Doug Leclerc
MFG RESEARCH
STORAGE BALCONY
R.A.C. TEST ROOM
R.A.C. COMPUTERIZED CONTROL ROOM
C.N.C. MACHINING CENTER
12/31/86

