

# Mobil Research and Development Corporation

CENTRAL RESEARCH DIVISION  
P. O. BOX 1025  
PRINCETON, NEW JERSEY 08540  
TELEPHONE (609) 737-3000

P. B. WEISZ  
MANAGER

June 27, 1975

Nuclear Regulatory Commission  
Materials Branch  
Division of Material and  
Fuel Cycle Facility Licensing  
Washington, D. C. 20555

Re: Control #55624

Attention: Mr. J. Brown

Dear Mr. Brown:

In reference to Control #55624 and to your letter of June 25, 1975, the following additional information is provided pertinent to our application.

1. Equipment and facilities. -- A laboratory sketch is attached showing locations of the designated hoods (face velocity 100 ft/min minimum), fire extinguishers, and safety shower. On receipt all radioactive samples are brought to hood A and are stored below the hood in a locked, metal cabinet. Reaction mixtures are prepared in hoods A and B with, at your suggestion, a disposable cloth covering. Tritium experiments are conducted in a research facility in hood A, individual experiments normally utilizing less than one millicurie of tritium. Carbon-14 experiments, also in the sub-millicurie range, are conducted in hood A and in a closed research test facility C which is directly connected to hood B.

Samples are prepared for liquid scintillation counting by combustion, such samples containing less than one microcurie/g (cf. Packard, Tech. Bull. #10, October 1962). Total H<sub>2</sub>O and CO<sub>2</sub> are trapped. Combustion is carried out in a hood in a second laboratory so as to physically separate our work on hydrogen-based processing and the oxygen-based combustion train.

COPIES SENT TO  
REGULATORY OPERATIONS  
13/4

Mobil

- 2 -

June 27, 1975

2. Waste Disposal. -- Radioactive waste material, and the bench-top covers, are discarded into a labelled, one-gallon metal container in hood B. When, based on record book entries, radioactivity of 100 millicuries has accumulated in the metal container -- or when the container is full -- Teledyne Isotopes will be contacted for pickup and removal.
3. Radiation Safety Officer, Lester Levin. -- Periodically reviews the safe handling procedures and practices, record keeping, monitoring, and licenses. Mr. Levin is available at all times for consultation regarding safe practices with radioactive materials. As I mentioned in our telephone conversation on June 4, Mr. Levin has been frequently consulted during the formative stages of this research effort (currently with exempt quantities).
4. Calibration. -- In addition to the internal source provided with our survey instrument, it is agreed that that instrument will be calibrated once a year with a 1 mg NBS radium standard in accordance with accepted practices. Mr. Levin will arrange for the calibration.
5. Bioassay. -- Urine samples of any person handling or exposed to millicurie quantities of tritium (in any form) will be taken 2-3 hours after such exposure. The sample will be added to a 10-fold excess of scintillation cocktail, counted and recorded. Comparison will be made to a count level before exposure.

I hope this additional information will answer your questions.

Very truly yours,

  
Louis D. Rollmann

LDR:lmc

cc: Lester Levin

Radiotracer Laboratory Sketch

- a. Safety shower
- b. Fire extinguishers
- c. Research testing units (attached overhead to hood B exhaust).