

Polaroid Corporation
300 Fifth Avenue
Waltham, Massachusetts 02254

 **Polaroid**

August 13, 1985

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Mr. Jack Davis
Nuclear Materials Safety Section B
Division of Radiation Safety and Safeguards
U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

License No. 20-02848-03
Docket No. 030-04626
Mail Control No. 03781

Dear Mr. Davis:

This is in reference to your request for additional information in your letter dated May 30, 1985.

Item 1. Handling of Volatile Radioactive Materials: Iodinations will be performed in a glove box. All other handling of volatile radioactive materials will be performed in a laboratory fume with an average face velocity of 120 feet per minute. The face velocity will be tested every six months using an Anemotherm air meter or equivalent instrument. Both the fume hood and the glove box will be located in a room dedicated to and designed for the handling of volatile radioactive material, hereafter referred to as the iodination laboratory.

Item 2. Monitoring of Incoming Isotope Shipments: Shipments of specifically licensed radioactive material are delivered directly to the building in which they are to be used. General procedures for monitoring incoming shipments are outlined in the Polaroid Radiation Safety Rules, and more specific instructions for users of unsealed material are described in the Polaroid Procedures for Opening Packages Containing Radioactive Materials. Copies of both these documents are attached for your information. The quantities of I-125 and H-3 that we currently receive are exempt from the contamination monitoring requirements under 10 CFR Part 20.205. We do not anticipate receiving larger shipments at this time, however if we should do so in the future, the non-exempt shipments would be monitored for surface contamination in accordance with the requirements of 10 CFR Part 20.205. In any case, the monitoring of incoming shipments of unsealed radioactive material is the responsibility of the NRC-licensed user to whom it is being delivered. The actual monitoring would be done by this individual or under his direct supervision.

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Item 3. Laboratory Surveys

- a. Laboratory personnel monitor representative working surfaces and equipment for surface contamination on a monthly basis. If more than 100 cpm/100 cm² above background are found, steps are taken to decontaminate the surface. Hands and clothing will be monitored before leaving the iodination laboratory.
- b. When work with volatile radioactive material begins, airborne concentrations will be monitored in three locations:
 1. Personal breathing zone samples will be collected on the people performing the first iodinations. If the results indicate that no significant exposure occurs during these operations, this sampling will be discontinued.
 2. Area sampling will be performed routinely in the iodination laboratory when work with volatile I-125 is being performed.
 3. The local exhaust ventilation system for the iodination laboratory will be equipped with a charcoal filter bed to remove I-125. The exhausted air will be monitored downstream of this charcoal filter. This monitoring will be done when the laboratory is being used for handling or storage of volatile radioactive materials.
- c. While in use, the drum used for disposal of waste contaminated with volatile radioactive material will be stored in an exhausted enclosure in the iodination laboratory. This enclosure will be monitored for surface contamination as part of the routine monthly surveys.

In addition to the above surveys, the Radiation Safety Officer (RSO) surveys the laboratory for direct radiation and surface contamination every six months. The RSO will also oversee the start-up of the air sampling program in the iodination laboratory.

Item 4. Bioassay Program: The quantities of I-125 handled by any individual over a 3 month period are not expected to exceed 10% of the values given in Table 1 of Regulatory Guide 8.20, thereby making bioassay unnecessary according to this guide. However, all individuals working with unsealed I-125 are required to have a baseline thyroid scan regardless of the quantities they expect to handle. In addition, individuals working with volatile I-125 will be required to have their thyroids scanned within 24 to 72 hours after completing an iodination and document the results of this scan. If an elevated reading is obtained, appropriate steps will be taken as outlined in Regulatory Guide 8.20. It is anticipated that an average of one iodination will be done per month, using less than 1 mCi per iodination. As mentioned before, the iodinations will be done in a glove box.

With regard to tritium, our broad scope license limits the quantity of unsealed material to 10 millicuries per isotope, and therefore bioassays are not required.

Item 5. Laboratory Instructions for Working with Radioactive Materials: The general instructions requested are specified in the Polaroid Radiation Safety Rules, a copy of which is attached. Air monitoring is not covered in these rules but has been discussed in item 3b above. Measures to be taken for dispersion control are covered in item 1 above.

Item 6a. and 6b. Emergency Procedures: The general emergency procedures to be followed in case of a spill are covered in the Polaroid Radiation Safety Rules. However, in the radioisotope laboratory, the authorized users would be expected to handle their own spills using the following procedures:

- Isolate area
- Locate contaminated area with survey meter (fitted with I-125 probe)
- Absorb spilled liquid with appropriate material
- Bag contaminated absorbent and dispose in solid waste drum
- Decontaminate area with detergent solution
- Dispose of all contaminated material properly
- If activity persists, isolate contaminated area immediately, post notification. Shield with lead sheet if necessary
- Notify radiation safety officer

It should be noted that the quantities of unsealed radioactive material used are small enough so that all spills may be considered minor and therefore one procedure applies for all.

Item 6c.: The means of contacting the Radiation Safety Officer are specified in the Radiation Safety Rules.

Item 7. Closeout Surveys: Unsealed radioactive material has never been used by Polaroid by either 640 Memorial Drive, Cambridge, MA or 1250 Main Street, Waltham, MA. Therefore a comprehensive closeout survey is not considered necessary.

Item 8. Cobalt 57: Polaroid will notify the Commonwealth of Massachusetts of its intent to possess the source described in our letter of April 30, 1985.

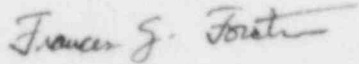
Item 9. Qualification of Dr. William T. Vetterling: Please disregard the request to add Dr. Vetterling to Condition 12A. He will be working only with sealed sources and therefore may be authorized to do so by the RSO, as specified in our license renewal application.

In addition to the items requested in our letter of April 30, 1985, please amend the broad scope aspect of our license to include Atomic Nos. 1 and 2 (License item 6A), as originally requested in our license renewal application submitted in July, 1983. A review of the license returned to us in response to the renewal application has revealed that it covers only Atomic Nos. 3 to 83, rather than the 1-83 requested in our application.

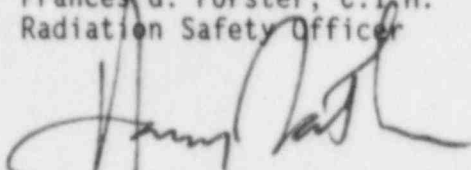
If further information is required, please do not hesitate to contact me at (617) 684-2827.

Sincerely yours,

POLAROID CORPORATION



Frances G. Forster, C.I.H.
Radiation Safety Officer



Harry W. Fatkin, Director
Health, Safety and Environmental Affairs

Enclosures: 1. Letter
2. Polaroid Radiation Safety Rules, 2 copies
3. Polaroid Procedures for Opening Packages Containing
Radioactive Material, 2 copies

cc: W.A. Burgess
R.L. Hill
M.C. Kuo
S. Levin, Consultant
W.T. Vetterling