

WALTHAM COMPASS CORPORATION

Manufacturers of Precision Instruments

609 MAIN STREET

WALTHAM, MASSACHUSETTS 02154

Returned to
Sender
By
1/13/70
12/17/70

January 13, 1970

U. S. Atomic Energy Commission
Washington, D. C. 20545

Attention: Mr. Robert E. Brinkman
Isotopes Branch
Division of Materials Licensing

Re: Application for Amendment to License No. 20-12943-01

Dear Sirs:

Supplementing our communication of September 30, 1969 and in support of our application to amend the captioned license to permit the application of paint containing promethium-147 to compass parts, we submit for your consideration the following:

a) Description of facilities and equipment for mixing paint

A ventilated enclosure will be used exclusively for the promethium screening operations. A lockable shielded container is provided for the storage of luminous compound. The entrance to the work area is equipped with a step off pad, shoe cover rack and thin window (G. M. type) survey meter. The receptacle used for drying the luminous compound is ventilated and located at least 3 meters from the working area. A steel drum equipped with top is supplied by Tracerlab Inc. and used for radioactive waste disposal.

b) Description of method of preparation of paint

The promethium paint will be purchased in the form of biologically inert microspheres available from 3M Inc. The phosphor, microspheres and binder are shipped in two compartment plastic pouches. Breaking the seal between the compartments allows for mixing the binder with the microspheres and phosphor without any contamination problems. The paint is then applied by simple screening techniques.

c) Description of training to be given to persons actually handling such paint

Mr. Bolton, M. I. T.'s Radiation Protection Chemist, is acting as our consultant and has instructed our employees in the principles and practices of radiation protection, radioactive measurements and techniques and biological effects of radiation.

The manual used for training is the IAEA manual, "Safe Handling of Radioisotopes."

Prior to performing any work under this amendment, Mr. Bolton will hold a refresher course for our employees.

The actual painting operation will be performed by a man who has had many years of experience working with radium.

d) Written instructions to be provided to persons opening, handling, mixing and applying such paint

1. Full protective clothing including shoe covers, gloves, safety glasses and lab coats must be worn when in the application room.
2. Cover all work areas with clean absorbing paper.
3. Open all radioactive shipments in the hood.
4. Wipe tests will be made on the plastic vials containing phosphor, microspheres and binder using moist 1" filter paper. Check the wipes with the thin window G. M. survey meter. Report to the Radiological Safety Officer all readings above background.
5. Break the seal between compartments allowing the binder microspheres and phosphor to mix.
6. Mount the compass parts on screening board.
7. Apply the promethium paint to screen.
8. Remove excess paint with squeegee.
9. Remove the screened compass parts to the ventilated drying area.
10. Clean all contaminated tools with organic solvent. The contaminated solvent must be collected, evaporated in the hood, and disposed of as solid radioactive waste.
11. Remove absorbing paper from hood at the end of the work day and dispose into the radioactive waste container.
12. Monitor the work area with the ultra-violet light and survey meter. Report any contamination not readily removable by standard wet techniques i.e. soap and water. All decontamination solutions must be collected and disposed of as radioactive waste.

13. Monitor hands, feet and clothing with survey instrument prior to leaving the application room.

- e) Surveys to be performed to determine whether there may be contamination of the facility and steps required to be taken if contamination is found
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Wipe tests will be made daily when screening operations are performed. Areas wiped will include floor in front of hood and drying area, inside hood, and the drying bench. Wipes will be made using one inch diameter filter paper wiping an area of 100 cm². The wipes will be checked with the thin window survey meter and then turned over to Mr. Bolton for counting in windowless gas flow proportional counter or liquid scintillation counter. Screening operations will not continue until wipe test results are obtained from Mr. Bolton. Area where wipes read greater than 1000 dpm will be considered contaminated and will be decontaminated under the supervision of the Radiological Safety Officer.

- f) Description of our bioassay program

Monthly urine specimens will be collected from employees involved in the screening operations. The specimens will be analyzed for gross beta activity by Mr. Bolton at M. I. T.

On November 18, 1969 our facility was inspected by an A. E. C. Compliance Inspector.

We enclose for your records and information a photocopy of the inspection findings.

Very truly yours,

WALTHAM COMPASS CORPORATION



Benjamin D. Pollack
Clerk

Enclosure