

DUPLICATED
FOR EX. GR. 2

ISOTOPES SPECIALTIES COMPANY, INC.

703 South Main Street
Burbank, California
VI. 9-2273

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December 21, 1956

file as trans 4-580-4

United States Atomic Energy Commission
Oak Ridge, Tennessee

Attn: James W. Hitch, Assistant Chief, Byproduct Licensing Branch, Isotopes
Extension, Division of Civilian Application

Dear Mr. Hitch:

re Control # 2508

As discussed with Mr. Blanc during his visit to Isotopes Specialties Company December 6, the enclosed data concerning our anticipated procedures in handling polonium and the equipment and facilities with which these procedures will be used are submitted. In addition, a report on the film badge readings of Isotopes Specialties Company personnel for the last six weeks is enclosed. Records are now being kept of area monitoring. These had been kept sporadically in the past but somehow people who checked got into the habit of not bothering to make notations. We have now established the firm policy of keeping records of these monitoring operations and have a strong feeling that they will not lapse again. In line with Mr. Blanc's recommendation that all curielvel neutron sources be silver soldered, this will be done.

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memo

Since our polonium supplier will not put material into the pile to be irradiated until we have a firm authorization, I shall very much appreciate your acting as soon as possible on the request we submitted recently for 40 curies of polonium. Enclosed is an amended supplement B for this authorization.

Yours truly,

Allen M. Goldstein

Allen M. Goldstein
General Manager

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encl.

SUBSIDIARY OF NUCLEAR CORPORATION OF AMERICA, INC.



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TAGGED COMPOUNDS

ISOTOPES

DUPLICATED

FOR DIV. OF INSP.

ASSOCIATED EQUIPMENT

~~SECRET~~

ISOTOPES SPECIALTIES COMPANY, INC.

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OK.

PROCEDURES

1. Polonium will be received plated on metal foil. Package containing this foil will be opened in gloved box. Polonium plated foil will be assayed in gloved box and cut to proper activity. It will then be placed into capsule with beryllium and the cap inserted but not compressed, heated, or sealed. Neutron flux to this point is expected to be negligible.
2. The capsule is then transferred to gloved box #2 (the 2 boxes are connected so that there is no removal to uncontrolled atmosphere). The charge is then compressed and the lid silver-soldered. At this point the Polonium is distributed and the neutron flux becomes significant.
3. The excess flux is now removed from the capsule and the seal inspected visually through a neutron absorbing window. The sealed source is then scrubbed and wipe tested after which it is placed into a vacuum line still within the gloved box, tested for leaks, and then coated with carbonyl nickel.
4. The source is then roughly wipe tested again, removed from the gloved box and given a final wipe test, then stored in a sealed container for the required period before final wipe test and shipping.

DETAILS OF ALPHA-NEUTRON ROOM AND EQUIPMENT

The room to be used for above operations is reserved for work with high level alpha and neutron operations only. It is part of a separate 600 square foot building under construction in the rear part of Isotopes Specialties Company premises at 703 South Main Street, Burbank, California. The room itself is to be lined with rock lath and ceiling and walls covered with sheet plastic fastened with "temporary" cement so that it may be stripped if seriously contaminated. Two gloved boxes are fastened together with a sliding door between them and with separate airlocks. Both of these are connected to our main hood exhaust system through a CWS6 type filter and maintained at a slight negative pressure during operation. The second of these gloved boxes is fitted with a window incorporating a solution of gadolinium and/or europium in sufficient concentration to attenuate neutron flux to a tolerable level. This box is three feet deep to allow adequate shielding. Borax or rare earth solution will be the shielding medium. Second gloved box also has ball and socket handlers.

Sealed Source Files

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DEC 21 1956

Storage holes extend from bottom of each gloved box to about four feet below ground. An additional six foot deep storage hole outside gloved boxes is for clean sources during storage period.

SAFETY MEASURES

Beyond the usual safety measures used in handling of radioactive and toxic materials, there have been set up: urinalyses for personnel involved in polonium work; continual monitoring of effluent from gloved box exhaust beyond the filter; complete lining of walls and ceiling with scrubbable changeable sheet plastic; change room for alpha-neutron room only; equipment and supplies dedicated to use in this room only; restriction of handling polonium in curie amounts or large fractions of a curie to gloved boxes only except in sealed sources or packages. Standard rad-safe equipment including adequate shielding, alpha and neutron ratemeters and neutron dosimeters and badges, shoe covers (plastic booties), lab coats, gloves, tongs, handlers, etc. are all available. Complete tracer runs will of course be made before high level runs are attempted. Equipment and instrumentation will be checked out before actual operations. A record will be kept of any alpha contamination of drybox effluent in addition to records of area monitoring, film badge readings, and urinalysis results.

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MULTIPLICATION

Form AEC-313 (2-57)	<div style="text-align: right; margin-bottom: 5px;"><i>E. J. Hu</i></div> ATOMIC ENERGY COMMISSION APPLICATION FOR BYPRODUCT MATERIAL LICENSE	Form approved. Budget Bureau No. 38-R227.3.
<p>INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application. If application is for renewal of a license, complete only Items 1 through 7 and indicate new information or changes in the program as requested in Items 8 through 15. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U. S. Atomic Energy Commission, P. O. Box E, Oak Ridge, Tenn. Attention: Isotopes Extension, Division of Civilian Application. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30 and the licensee is subject to Title 10, Code of Federal Regulations, Part 20.</p>		
1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc.) ISOTOPES SPECIALTIES COMPANY 170 W. Providencia Burbank, Calif.		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).)
2. DEPARTMENT TO USE BYPRODUCT MATERIAL INDUSTRIAL		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) 4-580-3
4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.) Allen M. Goldstein General Manager		5. RADIATION PROTECTION OFFICER (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)
6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.) Same as in previous application.	(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.) Same as in previous application.	
7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.) Same as in previous application.		

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APPLICATION FOR BYPRODUCT MATERIAL LICENSE

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