

Form AEC-313 (9-55)

ATOMIC ENERGY COMMISSION APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved. Budget Bureau No. 38-R027.3.

DUPLICATED

INSTRUCTIONS: Complete Items 1 through 19 if this is a new application. If renewal is requested, complete only Items 1 through 11 provided that with respect to the other items there has been no change in the information previously submitted. Mail two copies to: U. S. Atomic Energy Commission, P. O. Box 117, Oak Ridge, Tennessee, Attention: Isotopes Extension, Division of Civilian Application. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. General requirements for issuance of an AEC Byproduct Material License are contained in Title 10, Code of Federal Regulations, Part 30.

1. (a) NAME AND SHIPPING ADDRESS OF APPLICANT (Institution, firm, hospital, person, etc.) Nuclear Development Corporation of America, 5 New Street, White Plains, New York (b) ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED (If different from shipping address) 1a and 90 Grove Street, White Plains, New York

2. DEPARTMENT TO USE BYPRODUCT MATERIAL Materials and Testing; Radiochemistry

3. INDIVIDUAL USER (Name and title of individual(s) who will use or directly supervise use of byproduct material) Dr. Lionel S. Goldring

4. RADIOLOGICAL SAFETY OFFICER (Name of person qualified in radiological safety, if other than individual user) Dr. N. Irving Sax

5. PREVIOUS LICENSE OR AUTHORIZATION NUMBER (If this is an application for renewal of a license for byproduct material obtained under a prior license or authorization for radioisotope procurement) Not Applicable

BYPRODUCT MATERIAL OR IRRADIATION SERVICE DESIRED

6. BYPRODUCT MATERIAL (Element and mass number) 7. CHEMICAL AND/OR PHYSICAL FORM (Or catalog number) 8. MAXIMUM AMOUNT OF RADIOACTIVITY IN MILLICURIES THAT YOU WILL POSSESS AT ANY ONE TIME

9. IF IRRADIATION SERVICE IS DESIRED, STATE PERTINENT DETAILS SUCH AS: CHEMICAL COMPOSITION AND WEIGHT IN GRAMS OF TARGET MATERIAL, RADIOACTIVITY, IRRADIATION TIME IN DAYS, AND NEUTRON FLUX Armcro iron, type 316 stainless steel, other stainless steels and components thereof; 0 to 50g samples; 0 to 50mc, 0-10 day irradiation time neutron flux = 1.3 x 10^12 neutrons/cm^2/sec

10. (a) DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If material is for "human use" complete Supplement A in lieu of this item. If material is to be used in or manufactured as a "sealed source" complete Supplement B in addition to this item.) Corrosion tests under contract # U.S.A.E.C. AT(30-1)862 (e) and contract (Dept. of Navy) NONR 1258(00)

(b) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL

"see attached" CONFIDENTIAL RELEASED OUTSIDE THE AEC

CERTIFICATE

11. The applicant and any official executing this certificate on behalf of the applicant named in Item 1, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and do solemnly swear (or affirm) that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

State of NEW YORK County of WESTCHESTER Nuclear Development Corporation of America Applicant named in Item 1. Subscribed and sworn to before me this 10th day of APRIL, 1956 By Arnold Wyzas General Business Manager Notary Public [Signature] Notary Public, State of New York No. 69-826359 Appointed in Westchester County Commission expires March 30, 1958 April 10, 1956

WARNING

18 U. S. C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

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10(b)

Samples will be monitored upon arrival to determine activity. They will be handled with tongs and where necessary in a shielded box. Personnel will be monitored to avoid exposure to more than the limits set forth in Appendix "A" of Proposed Rule For Standards For Protection Against Radiation or Rule No. 38 of New York State Department of Labor. People working with or near the samples will be required to wear both Tracerlab film badges and pocket dosimeters for daily, or where necessary, more frequent readings. When there is danger of airborne contamination, appropriate air samples will be taken and respiratory or other protection made part of the routine of the job. The samples will be stored in shielded containers and if there is more than negligible radiation from this container, it will be stored in a regularly monitored, posted area walled-off or roped-off at a point where the radiation level is 0.1 mr/hr or less.

As to disposal of wastes; no radioactive material in excess of the quantities set forth as limits in Regulation 9 of New York State Sanitary Code, Chapter XVI on Ionizing Radiation, will be committed to the environment. Unknown wastes will be held up pending analysis; too active wastes will be handled and stored as radioactive sources until they can be committed to the environment in a manner approved of by the New York State Commissioner of Health or disposed of in a manner approved of by the U.S. Atomic Energy Commission.

BE RELEASED OUTSIDE THE AEC

Decay
10/2/58

13. ISOTOPE HANDLING EXPERIENCE:

<u>Isotope</u>	<u>Maximum Amount</u>	<u>Where Experience was Gained</u>	<u>Duration of Experience</u>	<u>Type of Use</u>
Fission Prod.	Many Curies	ORNL	11/43 to 2/46	Chemical Separations
Fission Prod.	Many Curies	BNL	6/50 to 12/53	Chemical Separations
Fe ⁵⁹ , P ³³ , I ¹³⁰ , I ¹³¹ , Te ¹³⁰ , Te ¹³¹ , Na ²² , Na ²⁴ , Co ⁶⁰ , Mn ⁵² , Mn ⁵⁴ , Cr ⁵¹	Hundreds of Millicuries	M.I.T.	3/46 to 8/46	Chemical Separations

14. TRAINING AND EXPERIENCE WITH RADIOACTIVITY OF RADIOLOGICAL SAFETY OFFICER

1.
 - a) General Electric Company (KAPL)
1947 to 1952 - On the Job
 - b) Health and Safety Laboratory of U.S. Atomic Energy Commission
1952 to 1955 - On the Job
 - c) Nuclear Development Corporation of America
1955 to Present - On the Job
 - d) N.Y. University, courses in Radiological Safety and Air cleaning
1955 Formal Courses

2.
 - a) Same as 1a) above
 - b) Same as 1b) above
 - c) same as 1c) above
 - d) Same as 1d) above

14. TRAINING AND EXPERIENCE WITH RADIOACTIVITY OF RADIOLOGICAL SAFETY OFFICER (continued)

- 3. a) same as 1a) above
- b) same as 1b) above
- c) same as 1c) above
- d) same as 1c) above
- 4. See 1b) and 1d) above
- 5. See 1a), 1b) and 1c) above

15. RADIATION DETECTION INSTRUMENTS

<u>Type of Instruments</u>	<u>Number Available</u>	<u>Radiation Detected</u>	<u>Sensitivity Range</u>	<u>Window Thickness</u>	<u>Use</u>
SIC-17c Juno	3	γ, β, δ	0 to 5000	2	Monitoring & Survey
SGM-4D (GM)	2	β, δ	0 to 20	30	Monitoring & Survey
Proportional	2	γ, β	-	<1	Measuring
Scintillation	1	γ			Measuring

16. FILM BADGES, DOSIMETERS, AND OTHER PERSONNEL MONITORING DEVICES INCLUDING BIO-ASSAY PROCEDURES

"Tracerlab", B, monitoring film badges: "Landsverk" x-ray, γ -ray and slow neutron chambers; "Hi-Vol", air sampler for airborne contamination: A radio chemical laboratory for any required bio-assay work.

17. METHOD FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

Tracerlab film badges, changed every two (2) weeks
Landsverk Chambers, Hi-Vol air samples, SIC-17c (Junos)
SGM-4D (GM) are calibrated at HASL of USAEC every three
(3) months on an instrument recall program.

18. DESCRIBE BRIEFLY REMOTE HANDLING EQUIPMENT, STORAGE CONTAINERS, SHIELDING, AND LABORATORY FACILITIES.

We have a variety of shipping casks with lead shielding of from 1"-9" thick any of which will be used as needed for this material. Since 50mc is the maximum activity, 2" thick lead bricles for a shield + tongs for handling would be sufficient shielding, if not more is available. The work will be done in a radio-chemical lab with equipment already approved for up to 15 curies of mixed fission products.

19. DESCRIBE BRIEFLY RADIATION SURVEYING PROCEDURES AND METHODS OF DISPOSING OF RADIOACTIVE WASTES

- a) All material is monitored and logged in.
- b) Appropriate storage is provided.
- c) The storage area is periddically monitored (at least once a week), posted and roped off so that people who must go into this area wear film badges or dosimates although the level nowhere in the storage room will exceed a few mt. 1 hr.
- d) As to liquid waste, if it is too active to be disposed of via the sanitary sewers, it is held up, concentrated, and shipped to Earle, New Jersey in case of AEC contract wastes or private disposal in the case of non-AEC wastes.

BE REUSED PURCHASED BY AEC

Decay
Sewer
AEC