

29-460-3

Form AEC-313 (9-55)

ATOMIC ENERGY COMMISSION APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved. Judge, Bureau of Atomic Energy

DUPLICATED

INSTRUCTIONS: Complete Items 1 through 19 if this is a new application. For renewal or extension, 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 E, 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.) Research Division Curtiss-Wright Corp Clifton, New Jersey Attn: C. Roberts	(b) ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED (If different from shipping address) Wright Aeronautical Division (Bldg. 59) Curtiss-Wright Corporation Woodridge, New Jersey
2. DEPARTMENT TO USE BYPRODUCT MATERIAL Nuclear Power Department	
3. INDIVIDUAL USER (Name and title of individual(s) who will use or directly supervise use of byproduct material) Carlyle J. Roberts	
4. RADIOLOGICAL SAFETY OFFICER (Name of person qualified in radiological safety, if other than individual user) same as above	
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) 34779 (see 29-460-1 for information contained in Item 12-19)	

BYPRODUCT MATERIAL OR IRRADIATION SERVICE DESIRED

6. BYPRODUCT MATERIAL (Element and mass number) Iridium-192	7. CHEMICAL AND/OR PHYSICAL FORM (Or catalog number) Metallic pellet 1/8" x 1/8"	8. MAXIMUM AMOUNT OF RADIOACTIVITY IN MILLICURIES THAT YOU WILL POSSESS AT ANY ONE TIME 7000
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 Not applicable		

STATEMENT OF USE

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.)  
Iridium source will be used for experimental radiography of small turbine wheels and similar parts. Source will not be used for routine work, nor will it be used outside the radioisotope laboratory (bldg. 59)

(b) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL:  
Upon receipt of pellet from Brookhaven NL it will be placed in a capsule similar to the shown in accompanying sketch. This will be done behind lead shielding using mirrors and longhanded tongs.  
Capsule will be stored in lead container with minimum wall thickness of one inch. Container will be kept in storage pit 4' x 8' x 5' deep in one corner of bldg. 59. Specimen to be radiographed will be mounted at a suitable distance over container. To make an exposure, lid of container is removed. CERTIFICATE (see attached sheet for continuation)

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 Jersey  
County of Passaic  
Subscribed and sworn to before me this 2nd day of July 1956

Applicant named in Item 1: Curtiss-Wright Corp  
By: Carlyle J. Roberts  
Title of Certifying Official: Radiological Safety Officer  
Date: July 2, 1956

Arthur M. Davis an Attorney-at-Law  
Notary Public  
State of New Jersey

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.

**INSTRUCTIONS:** Complete Items 12 through 19 if this is a new application. This information may be omitted from subsequent applications provided there is no change in the information previously submitted, and reference is made in Item 5 to the application on which this information appears.

**TRAINING AND EXPERIENCE WITH RADIOACTIVITY OF INDIVIDUAL USER NAMED IN ITEM 3**

12. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)		FORMAL COURSE (Circle answer)	
			Yes	No	Yes	No
1. Principles and practices of radiological health safety. . . . .						
2. Radioactivity measurement standardization and monitoring techniques and instruments . . . . .						
3. Mathematics and calculations basic to the use and measurement of radioactivity. . . . .						
4. Biological effects of radiation. . .						
5. Actual use of radioisotopes in the types and quantities for which application is being made, or equivalent experience . . . . .						

13. ISOTOPE HANDLING EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

14. If Radiological Safety Officer named in Item 4 is different from individual user named in Item 3, use supplementary sheet to provide equivalent information on "Training and Experience With Radioactivity of Radiological Safety Officer." Supplementary sheet is attached (Circle answer) Yes No

**PHYSICAL FACILITIES, EQUIPMENT, AND RADIATION INSTRUMENTATION**

15. RADIATION DETECTION INSTRUMENTS (Use separate sheet if necessary)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (m/hr)	WINDOW THICKNESS (mg/cm <sup>2</sup> )	USE (Monitoring, surveying, measuring)

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

17. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE (For film badges specify method of calibration and processing, or name supplier)

18. (a) DESCRIBE BRIEFLY REMOTE HANDLING EQUIPMENT, STORAGE CONTAINERS, SHIELDING, AND LABORATORY FACILITIES (Working areas, fume hoods, etc.)

(b) SKETCHES OF SUCH FACILITIES ARE ATTACHED (Circle answer) Yes No

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

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(b) continued.

Lead bricks stacked around container will collimate beam and greatly reduce scattering of radiation into lab.

Previous experience with a multi curie Ir-192 source used in similar fashion indicates dose rate is less than MPL as close as several feet from pit. Ropes will bar access to above tolerance area during exposures.

Access to the building is strictly limited to a few members of the Nuclear Power Department. During an actual exposure a competent health physicist will be present, or, for a prolonged exposure, all personnel will leave, the lab door and outer security gate will be locked, and suitable warning signs posted.