

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

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 three copies to: U. S. Atomic Energy Commission, Washington 25, D. C. Attention: Isotopes Branch, Division of Licensing and Regulation. 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.)</p> <p>Jones & Laughlin Steel Corporation Research Division 900 Agnew Road Pittsburgh 27, Pa.</p>	<p>(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).)</p> <p>J&L Research Lab and Steel Mill Pittsburgh, Pa.</p>
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<p>2. DEPARTMENT TO USE BYPRODUCT MATERIAL</p> <p>Instrumentation and Metallurgical Departments - Research Division</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</p>
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<p>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.)</p> <p>Walter A. Wilson</p>	<p>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.)</p> <p>Walter A. Wilson</p>
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<p>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)</p> <p>Silver, Ag-110-P</p>	<p>(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.)</p> <p>Processed, High Specific Activity Chemical Form: AgNO₃ in HNO₃ Solution Maximum of 10 Millicuries</p>
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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.)

The isotope will be used in research designed to determine the cause of cracks in seamless tubing. A dilute solution of the radioisotope will be brushed on a clean experimental bloom of steel in the vicinity of visible cracks. Excess solution will be removed. The bloom will then be processed into seamless tubes in the normal manner. The tubes from the labeled bloom will be sent to the research laboratory for counting.

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TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)		FORMAL COURSE (Circle answer)	
			Yes	No	Yes	No
a. Principles and practices of radiation protection	Industrial Nucleonics Corp	1 Year	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	University of Pittsburgh	2 Years	<input checked="" type="checkbox"/>	No	Yes	<input checked="" type="checkbox"/>
	Jones & Laughlin Steel Corp	3.5 Years	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
b. Radioactivity measurement standardization and monitoring techniques and instruments	Same as above	1 Year	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		2 Years	<input checked="" type="checkbox"/>	No	Yes	<input checked="" type="checkbox"/>
		3.5 Years	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
c. Mathematics and calculations basic to the use and measurement of radioactivity	University of Pittsburgh	6 Months	<input checked="" type="checkbox"/>	No	<input checked="" type="checkbox"/>	No
d. Biological effects of radiation			Yes	No	Yes	No

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Sr90	250 mc	Industrial Nucleonics	1 Year	Gaging
Th204	100 mc			
Kv85	1000 mc	Jones & Laughlin Steel	3.5 Years	
Irrad- Cyclotron		Univ. of Pgh.	2 Years	Irradiation

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
Radiation Survey Meters					
Universal Atomics UAC 407	1	Beta	0-50mr/hn	20 - 30	Survey
Tracerlab SU-1B	1	Gamma	0-2500	2 - 3	Survey
Decade Scaler Tracerlab					
Versamatic V	1	"			Counting-Measuring

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

Method: Measurement of Dosage Rate vs Dist. from Standard. Frequency: Monthly. Standard: 1.12 mg Radium in 0.05 mm 90% Pt, 10% in Needle

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

Film Badge Service Supplied by St. John X-Ray Laboratory, Califon, New Jersey

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

CERTIFICATE (This item must be completed by applicant)

16. 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 THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Date May 13, 1960

Applicant named in item 1
 By: Walter H. McLean
Jones and Laughlin Steel Corp.
 Title of certifying official Ed Dankley
Supervisor of Administrative Services - Research Division

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.

13. Storage containers consist of 1.5 inch thick steel and lead container properly marked and stored in underground vault accessible by combination lock only. All modern chemical laboratory facilities available, e.g. fume hood, shielding accomplished by combined use of steel plate, lead and lucite.
14. Licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation".
15. Licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standard for Protection Against Radiation", Section 20.301 through 20.304.

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