NRC Form 313 I (12-81) 10 CFR 30

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

1. APPLICATION FOR: *(Check and/or complete as appropriate)*

X	a. NEW LICENSE
	b. AMENDMENT TO: LICENSE NUMBER
	c. RENEWAL OF: LICENSE NUMBER

2. APPLICANT'S NAME *(Institution, firm, person, etc.)*

ASARCO Incorporated

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION

314-689-2911

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Manfred B. Parker, Personal & Safety Director

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION

314-689-2911

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

P.O. Box 116, Bunker, Missouri 63629

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*

Route KK and Black River Crossing
Reynolds County, Missouri

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	John D. Lepo	Electrical Superintendent (See Attached)
b.		
c.		

7. RADIATION PROTECTION OFFICER

Manfred B. Parker

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

Personnel & Safety Director (See Attached)

Applicant
Check No.
Amount
Type of Fee
Date Check Rec'd
Received By

8. LICENSED MATERIAL

LINE NO.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Cesium - 137	Sealed Source	Ohmart Corporation Model # Densart 3460	100
(2)				
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL

E

(1) To be used in an Ohmart Model SR-1A source holder as part of model # Densart 3460 gauge. Gauge to measure ore concentrate slurry in a 10" C.S. SCH. 40 Rubber-lined pipe. Rubber lining is 3/8" thick. SEE CONDITIONS ATTACHED.

(2)

(3)

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9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Source Housing	Ohmart	SR-1A
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	Portable Radiation Meter	Victoreen	#493	One (1)	Gamma	0.5-50 MR/HR
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☒ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

Victoreen Annually

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE N/A ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☐ (3) OTHER (Specify): _____	N/A	☐ MONTHLY N/A ☐ QUARTERLY ☐ OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).

☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. N/A
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED N/A

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

Sealed source will be returned to the Ohmart Corporation, Cincinnati, Ohio, when its use is no longer necessary.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

16. FORMAL TRAINING IN RADIATION SAFETY. Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

    a. Principles and practices of radiation protection.

    b. Radioactivity measurement standardization and monitoring techniques and instruments.

    c. Mathematics and calculations basic to the use and measurement of radioactivity.

    d. Biological effects of radiation.

17. EXPERIENCE. Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, 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.

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.

RECEIVED

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)* $230.00	b. CERTIFYING OFFICIAL *(Signature)* John D. Lowe MAY 09 1985
	c. NAME *(Type or print)* John D. [illegible] REGION III
(1) LICENSE FEE CATEGORY: 3P	d. TITLE Manager
(2) LICENSE FEE ENCLOSED: $ $230.00	e. DATE May 3, 1985

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CONTROL NO. 7892

CONDITIONS

1. Licensed material shall be used only at the licensee's address in Item 5 in application.

2. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections. Part 20, "Standards for Protection Against Radiation."

3. Licensed material shall be used by, or under the supervision of John D. Lepo and Manfred B. Parker.

4. A.(1) Each scaled source shall be tested for leakage and/or contamination at intervals not to exceed three years. In the absence of a certificate from a transferer indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.

   (2) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.

   B. The test shall be capable of detecting the presence of 0.005 microcurie or radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the scaled source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.

   C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the test with the U. S. Nuclear Regulatory Commission, 799 Roosevelt Road, Building #4, Glen Ellyn, Illinois, 60137.

   D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.

5. Sealed sources containing licensed material shall not be opened or removed from their respective source holders by the licensee.

6. Installation and periodic relocation of devices containing licensed material may be performed by John D. Lepo and/or Manfred B. Parker or by persons under the direct supervision of John D. Lepo and/or Manfred B. Parker. Initial radiation survey of the device or devices containing licensed material shall be performed by Manfred B. Parker, Radiation Protection Officer.

7. Maintenance and repair of devices containing licensed material and installation, replacement, and disposal of sealed sources containing licensed material shall be performed only by the manufacturer or by other persons specifically authorized by the Commission or an Agreement State to perform such services.

8. The licensee shall possess and use licensed material described in this application according to statements, representations, and procedures contained therein and dated May 03, 1985.

INDUSTRIAL DEVICE INSTALLATIONS

By definition "installation" of Industrial Devices containing radioactive material means the removal of the source housing (containing the source) from its original shipping box or container and placing, or supervising the placement of, the source housing in a position of use. Each separate placement or relocation is to be construed as a new installation.

Installation of these Industrial Devices may be conducted only by those persons who have a specific license condition authorizing them to perform this work, or by persons under direct supervision of those named in the specific application.

At the time of installation, the individual will be equipped with an appropriate survey meter for the type of source and calibrated leak test standards.

Inspection and Installation Procedure:

1. The shipping box or crate will be surveyed at the storage location to determine if damage has been done in shipping.

2. The outer cover of the box or shipping crate will be removed but the unit will not be removed from the base skid. An inspection will be made to the unit for transportation damage to the locking mechanism and correctness of labeling.

3. A brief radiation survey to insure the security of the source and shutter will be made.

4. If visible damage is evident, the unit will be leak tested for contamination. Damage or any degree of contamination precludes installation and the appropriate manufacturer will be notified immediately. Following inspection and survey, the device will be transported to the mounting location.

5. A radiation survey will be made by Manfred B. Parker in accordance with the appropriate survey pattern sheet and the original will be kept as a permanent record.

6. Manfred B. Parker will conduct a leak test and send the leak test kit to the Ohmart Corporation for proper testing. When the leak test certificate is received, it will be kept as a permanent record.

INDUSTRIAL DEVICE SAFETY PROGRAM

1. Installation, relocation, maintenance, repair and radiation surveys will only take place when the Radiation Safety Officer Manfred B. Parker gives permission to proceed.

2. Permission by the Radiation Safety Officer Manfred B. Parker will include closing of the source shutter head and locking the device closed.

3. The key to the lock will only be in the hands of the Radiation Safety Officer Manfred B. Parker and John D. Lepo, Electrical Superintendent.

4. If the job in question can not be completed in a normal eight hour shift, the gauge will be crated within the department where it is located and security arranged so unauthorized personnel will be kept away.

5. A radiation survey and leak test will be made by Manfred B. Parker prior to any sealed source being installed, relocated, maintained, repaired or whenever deemed necessary. See Industrial Device Installations format.

6. All leak tests will be performed using the test material as outlined by the Ohmart Corporation, Leak Test Kit.

7. If any damage or leakage is found to a device, the appropriate manufacturer, the U. S. Nuclear Regulatory Commission, will be notified in writing immediately. All precautions will be taken to protect personnel and the environment from contamination.

CONTROL NO. 78921

FORMAL TRAINING IN RADIATION SAFETY

Mr. Manfred B. Parker attended the Ohmart Factory Training School, Cincinnati, Ohio in 1974, covering Principles of Nuclear Gaging. The following areas were covered:

I. PRINCIPLES OF NUCLEAR GAGING:

- A. Basic Concept
- B. Typical Process Applications (Level, Density, Thickness)
- C. Gage Configuration
- D. Safety Features of OHMART Nuclear Gages

II. RADIATION SAFETY:

- A. Types of Radiation - Uses
- B. Detector Types
- C. Transmission vs. Thickness/Density
- D. Shielding Methods
- E. Doseage and Effects
- F. Exposure Calculations
- G. Source Holder & Mechanism (Demonstration of Disassembled Holder)
- H. Leak Test Demonstration

III. NRC REQUIREMENTS:

- A. General License Definitions & Limitations
- B. Specific License Definitions & Limitations
- C. License Application/Modification Procedures
- D. Responsibility of Licensee
- E. Source Identification Tags
- F. Posting of Areas & Personnel Monitoring
- G. Leak Testing Requirements
- H. Emergency Measures
- I. Storage, or Disposal of Sources

Mr. Parker received practical experience with Asarco Incorporated at the Manchester Unit, Lakehurst, New Jersey from 1974 through September 1981 under NRC number 29-15724.

During those seven (7) years he performed numerous leak tests and radiation surveys as per the above numbered license number, NRC regulations, manufacturer's recommendations and the Industrial Device Safety Program. Maximum millicuries in use and/or storage at any given time under prior license number 29-15724 was 4700 mci, all of which was with the radioisotope, cesium 137.

As the Radiation Protection Officer Mr. Manfred B. Parker will be performing the same general work at the West Fork Unit of Asarco Incorporated. The use of the Ohmart Density Gauge #3460 will be similar to the uses Mr. Manfred B. Parker experienced at the Manchester Unit under NRC license 29-15724. (Measurement of a slurry in a pipe.)

FORMAL TRAINING IN RADIATION SAFETY

Mr. John Lepo, Electrical Superintendent, received four (4) hours of on the job training by an Ohmart field representative in 1973. Those areas of training covered the following.

I. PRINCIPLES OF NUCLEAR GAGING:

- A. Basic Concept
- B. Gage Configuration
- C. Safety Features of OHMART Nuclear Gages

II. RADIATION SAFETY:

- A. Types of Radiation - Uses
- B. Transmission vs Thickness/Density
- C. Shielding Methods
- D. Doseage and Effects
- E. Exposure Calculations

III. NRC REQUIREMENTS:

- A. Specific License Definitions & Limitations
- B. Responsibility of Licensee
- C. Source Identification Tags
- D. Posting of Areas & Personnel Monitoring
- E. Leak Testing Requirements
- F. Emergency Measures
- G. Storage, or Disposal of Sources

Mr. John D. Lepo received practical experience with ASARCO Incorporated at the Manchester Unit, Lakehurst, New Jersey, from 1973 through December 1981 under NRC License Number 29-15724.

Mr. John D. Lepo's experience during the above period of time was more in line with the electronics and calibration of the gauge. He did supervise removal of the source head and measurement devices when the pipe needed changing necessitating locking the gauge in the closed position. Any leak tests and radiation surveys were performed by Mr. Manfred B. Parker whose training and experience have been previously listed.

Mr. John D. Lepo will be performing primarily the same function at the West Fork Unit of ASARCO Incorporated, as listed under previous NRC LICENSE NUMBER 29-15724. Mr. Lepo's past experience was with a maximum of 4700 mci of cesium 137.