

## APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

## FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20555

## ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,  
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNELVANIA,  
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION B  
631 PARK AVENUE  
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA,  
PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR  
WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
101 MARIETTA STREET, SUITE 2900  
ATLANTA, GA 30323

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR  
WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIALS LICENSING SECTION  
799 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA,  
NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH,  
OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON,  
AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS  
TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

## 1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☐ A. NEW LICENSE  
☐ B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_  
☒ C. RENEWAL OF LICENSE NUMBER 47-13348-02

## 2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Alcan Rolled Products Company  
Engineering Department  
P. O. Box 912  
Fairmont, WV 26555-0912

## 3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

1800 Speedway  
Fairmont, WV

## 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Jack R. Rush, Jr.

## TELEPHONE NUMBER

304-367-5000

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

## 5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount  
which will be possessed at any one time.

## 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR  
TRAINING AND EXPERIENCE.

## 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

## 9. FACILITIES AND EQUIPMENT.

## 10. RADIATION SAFETY PROGRAM.

## 11. WASTE MANAGEMENT.

## 12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

## FEE CATEGORY

3P

AMOUNT  
ENCLOSED

\$120.00

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE  
BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS  
PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN,  
IS TRUE AND CORRECT TO THE BEST OF THEIR 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.

## SIGNATURE—CERTIFYING OFFICER

## TYPED/PRINTED NAME

## TITLE

## DATE

Rick R. Lawrence

Plant Manager

7/28/87

## 14. ANNUAL RECEIPTS

<\$250K	\$1M-3.5M
\$250K-500K	\$3.5M-7M
\$500K-750K	\$7M-10M
\$750K-1M	>\$10M

b. NUMBER OF EMPLOYEES (Total for  
entire facility excluding outside contractors)

## c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours)  
ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE  
PROPOSED NRC REGULAT. IS THAT MAY AFFECT YOU? (NRC regulations permit  
it to protect confidential commercial or financial—proprietary—information furnished to  
the agency in confidence)

YES

NO

## FOR NRC USE ONLY

## TYPE OF FEE

## FEE LOG

## FEE CATEGORY

## COMMENTS

## APPROVED BY

## AMOUNT RECEIVED

## CHECK NUMBER

8801220214 870819  
REG2 LIC30  
47-13348-02 PDR

## DATE

## PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission  
Director, Division of Fuel Cycle and Material Safety  
Office of Nuclear Material Safety and Safeguards  
Washington, D.C. 20555

**ITEM 5. RADIOACTIVE MATERIAL**

	<u>ISOTOPE</u>	<u>MANUFACTURER</u>	<u>MODEL NUMBER</u>	<u>DEVICE NUMBER</u>	<u>MAXIMUM MILLICURIES</u>
1.	Strontium 90	AccuRay	S-18	U-6	800
2.	Strontium 90	AccuRay	S-18	U-6C	800
3.	Strontium 90	AccuRay	S-18	U-4	800
4.	Strontium 90	AccuRay	S-18	M-3	800
5.	Strontium 90	AccuRay	S-18	U-8D	800
6.	Americium 241	AccuRay	S-16	U-6	3000
7.	Americium 241	AccuRay	S-16	U-8D	3000

**ITEM 6. PURPOSE FOR WHICH LICENSED MATERIAL WILL BE USED**

All sealed source/device combinations will be used to measure metal thickness.

ITEM 7. INDIVIDUALS RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE

1. Jack R. Rush, Jr., Maintenance Engineer

- a. B. S. Degree in Electrical Engineering, West Virginia University, 1974
- b. Worked with Isotope thickness gauges at Alcan-Fairmont from January, 1985, through the present under USNRC General License and USNRC Specific License 47-13348-02. These gauges include:
  - (1) Model U-4 gauge with 70 mCi Sr 90 S-18 source
  - (2) Model U-4 gauge with 300 mCi Sr 90 S-18 source
  - (3) Two Model U-3 gauges with 70 mCi Sr 90 S-18 sources
  - (4) Model U-8D gauge with 300 mCi Sr 90 S-18 source
  - (5) Model U-8D gauge with 1000 mCi AM 241 S-16 source
  - (6) Model M-3 gauge with 620 mCi Sr 90 S-18 source
  - (7) Model U-S gauge with 3000 mCi AM 241 S-16 source
  - (8) Model U-6 gauge with 300 mCi Sr 90 S-18 source
  - (9) Model U-6C gauge with 70 mCi Sr 90 S-18 source
  - (10) Model U-6C gauge with 300 mCi Sr 90 S-18 source
- c. Attended Industrial Nucleonics one-week school on theory, maintenance, and operation of the Model 510 Isotope gauge in Columbus, OH, January 26, 1986.
- d. Successfully completed the Radiation Safety Training Course conducted by Texas Nuclear Corporation in Austin, TX, on April 30, 1976. See Attachment #1 for letter of certification and course outline.
- e. Assisted licensed Industrial Nucleonics personnel in our in-plant installation, survey, and startup of four (4) Industrial Nucleonics 510 Isotope gauges.
- f. Gauge operation training provided by Industrial Nucleonics personnel and by instruction manuals.
- g. Attended AccuRay 7000 Gauge School in Columbus, OH, the week of September 12, 1983, to learn the installation, servicing, and

operation of AccuRay 7000 gauges.

- h. Assisted AccuRay personnel during the in-plant installation, survey, and startup of one (1) AccuRay 7000 Isotope gauge
- i. Assisted AccuRay personnel during the in-plant conversion of five (5) Industrial Nucleonics Model 510 gauges to AccuRay Model 7000 gauges.
- j. Attended a three-day in-plant 7000 Gauge Training Class conducted by AccuRay February 26 through 28, 1985, covering operation and maintenance of the AccuRay gauges.

2. Gene A. Legg, Senior Process Engineer

- a. B. S. Degree in Electrical Engineering, West Virginia Tech, 1961
- b. Worked with isotope thickness gauges at Alcan-Fairmont from 1969 through present, variously under USNRC General License and USNRC Specific Licenses 47-13348-01 and 02. These gauges include:
  - (1) Four Model U-4 gauges with 70 mCi Sr 90 S-18 sources
  - (2) Three Model U-3 gauges, two with 70 mCi Sr 90 S-18 sources and one with 16 mCi Sr 90 S-18 sources
  - (3) Two Model M-3 gauges with 600 and 620 mCi Sr 90 S-18 sources
- c. Assisted licensed Industrial Nucleonics personnel in our in-plant installation, survey, and startup of four (4) Industrial Nucleonics Isotope gauges
- d. Gauge operator training provided by Industrial Nucleonics personnel and by instruction manuals
- e. Attended a three-day, in-plant 7000 Gauge Training Class conducted by AccuRay, February 26 through 28, 1985, covering operation and maintenance of the AccuRay gauges

ITEM 8. TRAINING FOR INDIVIDUALS WORKING ON OR FREQUENTING RESTRICTED AREAS

Training and instructions in the use of the AccuRay thickness measuring gauges was conducted by AccuRay Customer Engineers at the time of installation. This training was given to all Production and Maintenance employees who will use this equipment.

**ITEM 9. FACILITIES AND EQUIPMENT**

1. Attachment #2 shows the location of each gauge within the Alcan-Fairmont plant.
2. The environmental conditions to which the gauges are exposed do not exceed the maximum conditions as specified by the manufacturer. The gauges are designed by AccuRay for use in rolling mills and slitters.
3. The gauges are checked for accuracy and operation by Plant Electricians once per shift. This includes shutter operation and the integrity of the gauge windows. Operation of the shutter is also monitored continually by the AccuRay gauge electronics and will annunciate any improper operation. Radiation labels are inspected during the periodic leak tests.
4. Maintenance of the gauge electronics, pneumatics, and other mechanical components is performed by Alcan and by AccuRay Customer Engineers. Maintenance and repair of sealed sources and source holders is performed only by AccuRay Corporation or by other persons specifically authorized to perform such services.
5. Emergency Procedures

Attachment #3 details the procedures to be followed in the event of extensive damage to the gauges.

#### ITEM 10. RADIATION SAFETY PROGRAM

1. Installation, relocation, and initial radiation survey of the gauging devices will be performed by Jack R. Rush, Jr. or Gene A. Legg, or other persons specifically authorized to perform such services. Gauge installation and survey procedures are shown in Attachment #4.
2. Maintenance, repair, and/or removal of sealed sources and source holders will only be performed by AccuRay Corporation, 650 Ackerman Road, Columbus, Ohio, 43202, USNRC By-product Material License 34-00255-03, or other persons specifically licenses to perform these services.
3. Maintenance of associated gauge electronics, pneumatics, and other mechanical components will be performed by Alcan personnel.
4. Film badges will be provided to Alcan personnel while they are performing installation, relocation, and initial radiation survey or shipping of devices. Badges will be exchanged monthly.
5. A Searle geiger-type survey meter, Model 2650, 2651, with a sensitivity range of background to 100 Mr/hr, is available to perform appropriate surveys. The calibration procedure for the survey meter is shown in Attachment #5. Alternately, the survey meter may be sent to an outside firm for calibration. The outside firm will be Applied Health Physics, By-product Material License 37-09135-01, or other company capable of performing such service.
6. Leak testing will be performed by Alcan personnel as named in Item #7 using Applied Health Physics Mark V leak test kit, or other specifically authorized kit, using the instructions and procedures included with the kit. The samples will be evaluated by Applied Health Physics, P. O. Box 197, Bethel Park, PA, 15102, USNRC By-product Material License 37-09135-01, or other persons specifically authorized by the Commission or an Agreement State to perform such services.
7. Alternately leak testing services will be contracted completely to AccuRay Corporation or other authorized persons during the time an on-going service agreement is in force.
8. The metal thickness gauges in use in the Alcan Plant have gaps between the source head and the deflector head ranging from 1-1/2 inches to 12 inches. A major portion of an employee's body cannot be exposed by entering the radiation beam during maintenance, repairs, or during use of the equipment due to this limited space and consequent crushing hazard. During production use of the gauges, aluminum sheet moves through the gauge at a high rate of speed which prevents the operators from getting close to the open source.

9. AccuRay gauges have safeties built in to monitor the status of the shutter. Limit switches operate when the shutter is in the fully closed position and the fully open position. Signal lights are mounted to display the status of the shutter, alerting employees as to the fact the gauge shutter is open and operating.
10. All maintenance, repairs, and work on plant equipment is subject to Alcan tagout and/or lockout procedures.
11. In all cases, the procedures and training provided by the device manufacturer will be followed for both operator and servicing of the gauges.

ITEM 11. WASTE MANAGEMENT

Disposal of sealed sources containing licenses material used in devices shall be transferred to a licensee specifically authorized to possess the radioactive material.

## LETTER OF CERTIFICATION

This is to certify that

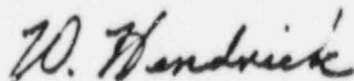
JACK R. RUSH, JR.

has attended and successfully completed a course of instruction, conducted under the auspices of Texas Nuclear Corporation and described in the attached Course Agenda. The course covers fundamentals of radiation, units of dose and quality of radiation fields, hazards of radiation exposure, detection devices, regulatory controls, industrial devices and specific training on installation and leak testing of Texas Nuclear density, level and weigh gauges.

The said course of instruction, together with prior experience, is structured to qualify persons who complete it to understand and safely perform various operations involving nuclear devices including the installation, relocation and leak testing of such equipment. The operations are to be done in accordance with the rules and regulations of the United States Nuclear Regulatory Commission and/or "Agreement States", and are in all respects subject to such rules and regulations.

This letter cannot be used in lieu of a specific license from or other sanction by an appropriate regulatory agency.

TEXAS NUCLEAR CORPORATION



W. G. Hendrick  
Health Physicist

ATTACHMENT #1

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RADIATION SAFETY TRAINING COURSE  
AGENDA

First Day's Session

8:30 - 9:30	Introduction <ol style="list-style-type: none"><li>1. Contents and Purpose of Course</li><li>2. Agenda</li></ol> Review of Preparation Material
9:30 - 10:00	Atomic Structure <ol style="list-style-type: none"><li>1. Nomenclature</li><li>2. Periodic Table</li></ol>
10:00 - 10:15	Coffee Break
10:15 - 12:00	Radioactive Materials <ol style="list-style-type: none"><li>1. Isotopes</li><li>2. Radioactivity</li><li>3. Decay</li><li>4. Half-Life</li></ol>
12:00 - 1:00	Lunch
1:00 - 3:00	Radiation Interaction with Matter <ol style="list-style-type: none"><li>1. Ionizing Radiation<ol style="list-style-type: none"><li>a. electromagnetic</li><li>b. charged particle</li><li>c. neutron</li></ol></li><li>2. Specific Ionization</li></ol>
3:00 - 3:15	Coffee Break
3:15 - 4:30	Radiation Dosimetry <ol style="list-style-type: none"><li>1. Definitions and Units of Dose</li><li>2. Quality Factor</li></ol>
5:30 - 7:00	HAPPY HOUR  Homework Assignment -  Read over work covered. Study new definitions and concepts.

## Second Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:00	Radiation Dosimetry (Continued) <ul style="list-style-type: none"><li>3. Gamma Exposure Rate</li><li>4. Neutron Exposure Rate</li></ul>
10:00 -10:15	Coffee Break
10:15 -12:00	Biological Effects <ul style="list-style-type: none"><li>1. Dose Limits</li><li>2. Radiation Protection Guides</li></ul>
12:00 - 1:00	Lunch
1:00 - 3:00	Radiation Detection <ul style="list-style-type: none"><li>Detection Instruments<ul style="list-style-type: none"><li>1. Basic Operation</li><li>2. Ionization Chambers</li><li>3. Geiger-Mueller Instruments</li><li>4. Neutron Detectors</li></ul></li><li>Personnel Dosimetry</li></ul>
3:00 - 3:15	Coffee Break
3:15 - 4:30	Distance, Time, Shielding <ul style="list-style-type: none"><li>1. Inverse Square Law</li><li>2. Half-Value Layer</li></ul>
	Discussion and Review
	Homework Assignment - <ul style="list-style-type: none"><li>Complete Part I of Radiation Safety Manual.</li><li>Complete Study Quiz I.</li><li>Briefly look over Part II of Manual.</li></ul>

### Third Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:00	Working Definitions
	Licensing
	1. Title 10 Code of Federal Regulations
	2. Agreement States
	3. Specific License
	Radiation Area and Posting
10:00 -10:15	Coffee Break
10:15 -12:00	Device Installation
	1. Requirements
	2. Format
	3. Responsibility
12:00 - 1:00	Lunch
1:00 - 2:45	Shipping Radioactive Material
	1. Definitions
	2. Classification
	3. Labels
2:45 - 3:00	Coffee Break
3:00 - 3:30	Occupational Safety & Health Act
3:30 - 4:30	Emergency Procedures
	1. Guidelines
	2. Fire or Explosion
	3. Incident Report
	Homework Assignment -
	Read Part II of Radiation Safety Manual.
	Complete Study Quiz II on regulations.
	Material Review for Exam.

Fourth Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:15	Written Test on Lectures and Homework Assignments
10:15 -10:30	Travel to Texas Nuclear
10:30 -12:30	Laboratory Work at Texas Nuclear Corporation <ol style="list-style-type: none"><li>1. Check-out and briefing on use of portable radiation survey meters.</li><li>2. Survey density, level and belt weigh devices.</li><li>3. Leak test devices using QT/IS procedure<ol style="list-style-type: none"><li>a. count swabs</li><li>b. prepare leak test certificates</li></ol></li></ol>
	Class Discussion on Remaining Questions
1:00	ADJOURNMENT

