NRC FORM 313
(7-87)
10 CFR 30, 32, 33, 34, 35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires: 6-30-90

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.

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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, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIALS SAFETY 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
NUCEAR MATERIALS SAFETY SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

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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:

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MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

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U.S. NUCLEAR REGULATORY COMMISSION, REGION V
NUCLEAR MATERIALS SAFETY 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 _____
- [X] C. RENEWAL OF LICENSE NUMBER 48-02369-02

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

Allen-Bradley Company
1201 South Second Street
Milwaukee, WI 53204

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

1201 South Second Street
Milwaukee, WI 53204

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION: Robert R. Walters

TELEPHONE NUMBER: (414) 382-2828

SUBMIT ITEMS 5 THROUGH 11 ON 8½ 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.

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

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY: 3L
AMOUNT ENCLOSED: $ 700.00

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
Robert R. Walters	Robert R. Walters	Senior Project Chemist	1/12/88

8903030103 880317
REG3 LIC30
48-02369-02 PNU

RECEIVED
JAN 15 1988
REGION III

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
Cov	Feb 1	3P	CONTROL NO 8472 B $580 Refund	
AMOUNT RECEIVED	**CHECK NUMBER**			**DATE**
$700	103992			2/1/88

NRC License 48-02369-02 Renewal Information

Item #5

Radioactive Material

See Items #6,#7,#8	NRC Materials License No. 48-02369-02 (March 28,1983)

Item #6

Purpose For Which Licensed Material Will Be Used

See Item #9	NRC Materials License No. 48-02369-02 (March 28. 1983)

Item #7

Individuals Responsible For Radiation Safety Program And Their Training And Experience

Robert R. Walters See Items #16,#17	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1982)
Ronald Nadolinski See Items #16,#17	Application for Byproduct Material License Renewal 48-02369-02 (September 28,1983)

See also Attachment A

Item #8

Training For Individuals Working In Or Frequenting Restricted Areas

See Item #16	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)

Item #9

Facilities And Equipment

See Item #13	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)
See also Amendment #16	Material License 48-02369-02 Supplementary Sheet (February 15, 1984)

Item #10

Radiation Safety Program

See Items #15,#16	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)

Item #11

Waste Management

See Attachment B

ATTACHMENT A

Oklahoma State University

ENGINEERING EXTENSION

512 ENGINEERING NORTH
STILLWATER, OKLAHOMA 74078
(405) 624-5146

April 3, 1986

TO WHOM IT MAY CONCERN:

Ronald Nadolinski has successfully completed the thirty-two (32) hour Radiation Safety Specialist Training Program and has passed the four (4) hour comprehensive examination. This course was conducted by Oklahoma State University in Oklahoma City, Oklahoma, March 10-14, 1986, and consisted of the following topics:

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   a) Nuclear notation
   b) Nuclear stability
   c) Isotopes

2) Radioactive Decay

   a) Decay schemes
   b) Half-life
   c) Chart of the nuclides
   d) Curie and Becquerel

3) Types of Radiation and Interaction

   a) X and gamma
   b) Alpha and beta
   c) Neutrons
   d) Bremsstrahlung

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   a) Absorbed dose: rad, gray
   b) Exposure dose: roentgen, C/kg
   c) Dose equivalent: rem, Sievert
   d) Quality factor

5) Biological Effects of Radiation

   a) Acute and chronic effects
   b) Radiation and protection guides
   c) Dose limits

6) External Radiation Protection

   a) Time
   b) Distance
   c) Shielding

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   a) Internal radiation hazards
   b) Control of contamination
   c) Waste disposal

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   a) Survey meters
   b) Radiation scalers
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   a) Licensing procedures
   b) Agreement and nonagreement states
   c) Code of Federal Regulations

10) Compliance

   a) Establishing and posting radiation areas
   b) Surveying and wipe testing work areas
   c) Leak testing sealed sources
   d) Counting statistics
   e) Transportation of radioactive materials

CENTENNIAL DECADE
1980 • 1990

The Radiation Safety Specialist Training included the following procedures which are expected of Radiation Safety Specialists.

1) Use the Radiological Health Handbook and the Chart of the Nuclides.

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   e) Area surveys
   f) Leak tests
   g) Wipe tests
   h) Posting
   i) Pertinent record
   j) Radioactive storage and disposal
   k) Receiving and shipping

April 3, 1986
Date

Howard M. Johnson

HOWARD M. JOHNSON, Ph.D.
Associate Professor
Div. of Engineering Technology
Oklahoma State University

Oklahoma State University

COLLEGE OF ENGINEERING, ARCHITECTURE AND TECHNOLOGY
OKLAHOMA STATE UNIVERSITY

This is to certify that

RONALD NADOLINSKI

Has successfully completed the

RADIATION SAFETY SPECIALIST

TRAINING PROGRAM

conducted by Oklahoma State University

and in recognition thereof is hereby awarded this certificate.

Given at OKLAHOMA CITY *, Oklahoma this* 14 *day of* MARCH

in the year of 1986

OKLAHOMA STATE UNIVERSITY · 1890 · INSTRUCTION RESEARCH EXTENSION

Howard M. Johnson

Howard M. Johnson, Ph.D.
Associate Professor

Mary Reynolds

Mary Reynolds
Manager, Extension Programs

ATTACHMENT B

RADIFLO WASTE DISPOSAL PROCEDURES

The 'waste' from the Radiflo system is in the form of contaminated Radiflo components such as oils and rubber o-rings and also the reject switches which, of course, contain Kr-85. The following procedures are followed to insure that these items are discarded in a safe condition.

OILS

The oils which are drained from the compressor and vacuum pump #2 of the Radiflo system are contaminated with Kr-85. To de-contaminate, the oils are placed in a large beaker and heated on a stirring hot plate. The hot plate is placed adjacent to the Radiflo console exhaust to vent the gas driven from the oil to the external atmosphere. The radiation level of the oil is monitored and recorded. When it reaches background levels (background outside of the Radiflo room) it is discarded.

COMPRESSOR

Before the compressor is removed from the Radiflo, most of the oil has been removed. Residual oil from inside of the compressor is rinsed out with a suitable solvent. The rinse solvent is placed in a bread pan and evaporated next to the Radiflo console exhaust system. The compressor is retained in the Radiflo room until background levels are reached, at which time it is disposed of by the Air Conditioning Dept. after removal of the fittings.

TESTED SWITCHES

Switches are broken open next to the Radiflo console exhaust system so that the trapped gas will be vented. When the switches are at background levels they are given to Dept. 290 for disposal.

O-RINGS AND VALVE SEALS

All contaminated rubber components are placed in a bread pan and heated in an oven(250C) in the Radiflo room until the radiation level reaches 0.5 mrem/hr, or less. They are then placed in a ceramic crucible and combusted at 600C in the exhaust hood in the Inorganic Section of the Chemistry Lab. When background levels are reached, the crucible is allowed to cool and is disposed of.

R. Nadolinski
Revised 1/6/88

ALLEN-BRADLEY
A ROCKWELL INTERNATIONAL COMPANY

WORLD HEADQUARTERS
1201 South Second Street
Milwaukee, WI 53204 USA
Telephone 414/382-2000
Telex 4311016
Fax 414/382-4444

January 7, 1988

U.S. Nuclear Regulatory Commission, Region III
Materials Licensing Section
799 Roosevelt Road
Glen Ellyn, IL 60137

3/31/88
030-06721

Gentlemen:

Enclosed is our application for renewal of Byproduct Material (Radioisotopes) NRC License Number 48-02369-02.

R
Temp

As indicated in this application, we wish to have the people listed below included in the license for operation and/or maintenance of the Radiflo system.

Robert Walters	Radiation Safety Officer Radiflo Operation
Ronald Nadolinski	Assistant Radiation Safety Officer Radiflo Operation and Radiflo Maintenance
Thomas Piontek	Radiflo Operation and Radiflo Maintenance
Steve Rewa	Radiflo Operation
Wesley Ripley	Backup Radiflo Supervision

Qualifications of these individuals are described in Item #8 of the renewal application.

Use, operation, and maintenance of the Radiflo machine are described in our current license. The Radiation Safety Program will also be continued as described in this license. Waste Management of spent materials will be carried out as indicated in Item #11 of the license renewal application.

Included with this letter is a check for $700 to cover the license renewal fee as defined in 10CFR, Part 170.31, Paragraph 3L.

We trust that our application as submitted includes all information required for renewal of our license. Please address any correspondence regarding this application to me.

Sincerely,

Robert R. Walters

Robert R. Walters
RRW:jo

CONTROL NO. 84728

RECEIVED
JAN 15 1988
REGION III

8801300094

NRC FORM 313
(7-87)
10 CFR 30, 32, 33, 34,
35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires: 6-30-90

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799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

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MATERIAL RADIATION PROTECTION SECTION
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ARLINGTON, TX 76011

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1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

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- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [X] C. RENEWAL OF LICENSE NUMBER 48-02369-02

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1201 South Second Street
Milwaukee, WI 53204

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1201 South Second Street
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4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Robert R. Walters

TELEPHONE NUMBER: (414) 382-2828

SUBMIT ITEMS 5 THROUGH 11 ON 8½ x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

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10. RADIATION SAFETY PROGRAM

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12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)*

FEE CATEGORY: 3L

AMOUNT ENCLOSED: $ 700.00

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SIGNATURE—CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Robert R. Walters	Robert R. Walters	Senior Project Chemist	1/12/88

8803030103

RECEIVED
JAN 15 1988
REGION III

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
AMOUNT RECEIVED	CHECK NUMBER		CONTROL NO 84728	DATE

NRC License 48-02369-02 Renewal Information

Item #5

Radioactive Material

See Items #6,#7,#8	NRC Materials License No. 48-02369-02 (March 28,1983)

Item #6

Purpose For Which Licensed Material Will Be Used

See Item #9	NRC Materials License No. 48-02369-02 (March 28. 1983)

Item #7

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Robert R. Walters See Items #16,#17	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1982)
Ronald Nadolinski See Items #16,#17	Application for Byproduct Material License Renewal 48-02369-02 (September 28,1983)

See also Attachment A

Item #8

Training For Individuals Working In Or Frequenting Restricted Areas

See Item #16	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)

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Facilities And Equipment

See Item #13	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)
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Item #10

Radiation Safety Program

See Items #15, #16	Application for Byproduct Material License Renewal 48-02369-02 (September 28, 1983)

Item #11

Waste Management

See Attachment B

ATTACHMENT A

OSU

Oklahoma State University

ENGINEERING EXTENSION

512 ENGINEERING NORTH
STILLWATER, OKLAHOMA 74078
(405) 624-5146

April 3, 1986

TO WHOM IT MAY CONCERN:

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1980 • 1990

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   i) Pertinent record
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   k) Receiving and shipping

April 3, 1986
Date

Howard M. Johnson

HOWARD M. JOHNSON, Ph.D.
Associate Professor
Div. of Engineering Technology
Oklahoma State University

Oklahoma State University

COLLEGE OF ENGINEERING, ARCHITECTURE AND TECHNOLOGY
OKLAHOMA STATE UNIVERSITY

This is to certify that

RONALD NADOLINSKI

Has successfully completed the

PADIATION SAFETY SPECIALIST

TRAINING PROGRAM

conducted by Oklahoma State University
and in recognition thereof is hereby awarded this certificate.
Given at ~~OKLAHOMA CITY~~ *, Oklahoma this* 14 *day of* MARCH
in the year of 1986

OKLAHOMA STATE UNIVERSITY
1890
INSTRUCTION RESEARCH EXTENSION

Howard M. Johnson

Howard M. Johnson, Ph.D.
Associate Professor

Mary Reynolds

Mary Reynolds
Manager, Extension Programs

ATTACHMENT B

RADIFLO WASTE DISPOSAL PROCEDURES

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R. Nadolinski
Revised 1/6/88