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NRC FORM 313 (8-2000) 10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120 EXPIRES: 08/31/2002

Estimated burden per response to comply with this mandatory collection request: 7.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0000), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

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:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

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

SAM NUNN ATLANTA FEDERAL CENTER
U. S. NUCLEAR REGULATORY COMMISSION, REGION II
61 FORSYTH STREET, S.W., SUITE 23T85
ATLANTA, GEORGIA 30303-8931

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

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 JURISDICTIONS.

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

- [ ] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [X] C. RENEWAL OF LICENSE NUMBER 09-23745-01E

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Unison Industries
7575 Baymeadows Way
Jacksonville, FL 32256

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Jacksonville Plant: 7575 Baymeadows Way
Jacksonville, FL 32256

Norwich Plant: Norwich-Oxford Road
Norwich, NY 13815

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Bruce D. Markert

TELEPHONE NUMBER

904-739-4258

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 EXPERIENCE.

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

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

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

FEE CATEGORY N/A | AMOUNT ENCLOSED $ N/A

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

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, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED 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.

CERTIFYING OFFICER – TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Bruce D. Markert, Radiation Safety Officer	Bruce D Markert	09/09/04

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			$		
APPROVED BY				DATE	

NRC FORM 313 (8-2000)

PRINTED ON RECYCLED PAPER

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Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 5: RADIOACTIVE MATERIAL

Jacksonville Plant

a.	Element and Mass Number:	Krypton 85
b.	Chemical and/or physical form:	Gas
c.	Maximum amount which will be possessed at any one time:	10 Curies

Norwich Plant

a.	Element and Mass Number:	Krypton 85
b.	Chemical and/or physical form:	Gas
c.	Maximum amount which will be possessed at any one time:	1 Curie

Refer to attachment ***LICENSES*** for the State of New York and State of Florida Radioactive Materials Licenses.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 6: PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

Jacksonville Plant

Krypton-85 gas is used as an ionization initiator for spark gaps.

Refer to attachment ***SPARK GAPS***, containing engineering prints of each spark gap manufactured, plus a report of transfer pursuant to 10 CFR Part 32.16.c.2

Norwich Plant

Krypton-85 gas is used as an ionization initiator for electron tubes.

Refer to attachment ***SPARK GAPS***, containing engineering prints of each electron tube manufactured, plus a report of transfer pursuant to 10 CFR Part 32.16.c.3

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 7: INDIVIDUAL(S) RESPONSIBLE FOR THE RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE

Mr. Bruce D. Markert shall serve as Radiation Safety Officer, having ultimate responsibility for the radiation safety program at both plants, providing direction over site to the respective ARSOs of the two plants.

Mr. Gary Hanni shall serve as Assistant Radiation Safety Officer, residing on-site at the Jacksonville Plant.

Mr. Richard Swift shall serve as Assistant Radiation Safety Officer, residing on-site at the Norwich Plant.

Division of Responsibilities is as follows:

RSO Bruce Markert is directly responsible for:

- Responsible for maintaining and complying with USNRC License, including the timely submittal of transfer reports per 10 CFR Part 32.16.c.2.
- Oversight of ARSO at both the Jacksonville and Norwich locations.
- Verifying that State Materials Licenses are current and that Unison Industries is in compliance.

Both ARSO Gary Hanni and ARSO Richard Swift are, for the Jacksonville and Norwich plant, respectively, directly responsible for:

- Ensuring that Krypton-85 gas is used only in the production of spark gaps (electron tubes) and only by trained personnel.
- Oversight of the receipt of new cylinders, the return of used cylinders, and maintenance of related records.
- Ensure that all cylinders are contained in the proper "storage" or "use" containers.
- Provide annual training in operations and Radiation Safety to all applicable employees.
- Keep on-going monthly inventory of the quantity of gas on-hand as part of the calculations required by the New York State Department of Environmental Conservation (Richard Swift only).
- Collection, testing, review and dissemination of personal dosimetry reports. Ensure annual exposure is communicated to applicable employees.
- Serve as point-of-contact in case of any radiation emergency.
- Periodically monitor filling areas during normal filling operations.
- Maintain up-to-date calibration of all equipment.
- Responsible for maintaining and complying with State Materials License.

Refer to attachment ***RESUME'*** containing the résumé's, training, and experience documentation for Messrs. Markert, Hanni, and Swift. Resume's returned to RSO, Not needed for distribution license. They contained Privacy information in addition. ASK

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 8: TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTIRCTED AREAS.

Jacksonville Plant

Individuals assigned to tasks which may require working in or near an area in which radiation sources are used will be given instruction in the following:

- Principles and fundamentals of radiation protection
- ALARA principles
- Radioactivity measurements
- Use of radiation detection instruments and monitoring techniques
- Biological effects of radiation
- Appropriate section of Unison Industries' Radiation Safety Manual

Refer to attachment *TRAINING*. Returned to licensee, not needed. ofk

Norwich Plant

ARSO Richard Swift has 35+ years of experience with x-rays as a radiographer in the Quality Control Department. He also has 20+ years of experience in performing the mathematical calculations and conducting the periodic surveys of the Krypton-85 filling stations.

Radioactive materials shall be used by or under the supervision of Richard Swift. All individuals shall received basic on-the-job training in the use of Krypton-85 filling of electron tubes, be instructed in procedures, and given basic information on handling and the effects of radiation. No calculations are required for the job of filling electron tubes.

Refer to attachment *TRAINING* for safety training overview and Employee Safety Meeting acknowledgment. Returned, see above.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 9: FACILITIES AND EQUIPMENT

Jacksonville Plant

Licensed material will be at the Unison Industries facility located at 7575 Baymeadows Way, Jacksonville, Florida 32256.

Krypon-85 is used in the spark gap manufacturing area located in a limited access area in the Assembly Building. Refer to Attachment ***FACILITIES***. Returned as not needed for review. GJK

Introduction of gas containing Krypton-85 and the sealing of the gas-filled spark gaps is accomplished in a fume hood.

Gas cylinders, vacuum equipment, gas-filling manifold and associated plumbing are contained within the fume hood which continually exhausts to the outside environment.

The fume hood for containment of spark gap filling equipment and disposal of waste Krypton-85 gas from the filling operation is made of sheet metal construction. It is enclosed on three sides and has one face with a maximum opening of 31" high x 69" wide. The overall configuration of the spark gap work table is included in Attachment ***FACILITIES***. As above.

The exhaust fan has a nominal 3000cfm capacity. Height above the roof is 2'6". Distance to the nearest air inlet is 55' and the closest exhaust is 14'.

A vacuum pump/exhaust fan interlock will render the vacuum filling system inoperative unless the exhaust fan is running.

The Krypton-85 releases to the atmosphere have an anticipated annual discharge of five curies diluted by 3000cfm air flow from a continuously running exhaust fan. This results in an approximate average concentration of Krypton-85 effluent in air of 1.1×10^{-7} µCi/ml, which is below the maximum permissible concentration for Krypton gas as indicated in Chapter 64E-5 of the Florida Administrative Code.

The calculation for computing average concentration of Krypton-85 gas lost annually diluted by 3000cfm air flow from a continuously running exhaust fan will be:

5×10^{6} µCi/yr X yr/365 day X day/1440 min X min/3000 ft^3 X ft^3/28320 ml = 1.1×10^{-7} µCi/ml

The estimated 5 curies of Krypton-85 gas lost annually is based on past usage. Records of Krypton-85 usage are maintained on the appropriate form referenced in Attachment ***FACILITIES***. As above.

Storage of Krypton-85 cylinders (used and unused) is in an outside building; reference Attachment ***FACLITIES***. As above. This area is posted with appropriate cautionary signs and accessed by authorized personnel only. Keys for the locked area are held by the spark gap production supervisor and plant safety engineer only.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 9: FACILITIES AND EQUIPMENT (continued)

Norwich Plant

Licensed material will be at the Unison Industries facility located on Norwich-Oxford Road, Norwich, New York 13815. Location is approximately two miles south of Norwich on Route #12.

The building is constructed of 12-inch concrete blocks; the floor space is 156,000 ft^2. The metal roof deck is 13.5' high with a vapor barrier and has two inches of insulation. The floor is poured concrete and is covered with floor tiles. The building has 100% sprinkler system coverage on a 12-foot grid layout as required. The building is locked at all times and access is gained by employee badges during the day; after hours admission can be gained by ringing a bell for the night watchman. There is a watchman on duty after the end of the first shift until the beginning of the first shift the following day. During holidays and weekends, a watchman is on duty at all times.

The tube filling and exhaust station is located against the rear wall in the location shown in Attachment *FACILITIES*, Sketch #3. Two of the walls of the filling and exhaust station are concrete block which extend to the roof, the other two walls are of sheet rock and metal 2"x4" construction eight feet high. One tank of Krypton-85 in a lead shield will be "in use" and usually one tank will be stored in the lead-lined storage box, shown in Attachment *FACILITIES*, Sketch #2, behind the filling station. The tanks each contain 100 liters (at standard temperature and pressure) of Krypton-85. The filling station is labeled with radioactive signs as required. When used in the filling operation, the cylinder is placed in the lead shield tube and connected to the manifold system. The system (manifold and turntable) is checked at all joints to ensure there are no leaks.

Returned to license apk

The exhaust system runs continuously during the entire year. Reference Attachment *FACILITIES*, Sketch #1 for details.

As above.

Calculation of Permissible Dose of Radioactive Krytpon-85 Gas in Controlled Areas per New York State Department of Labor, Part 38 – Ionizing Radiation Protection is found in Attachment *FACILITIES*.

As above.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 10: RADIATION SAFETY PROGRAM

Jacksonville Plant

The radiation safety program is covered in detail in its Radiation Safety Manual; reference Attachment RADIATION SAFETY. Unison Industries' Radiation Safety Manual covers the following items:

- Methods and occasions for conducting radiation survey
- Methods for controlling access to radiation areas
- Personnel monitoring and use of personnel monitoring instruments
- Transportation, shipment, and receipt procedures
- Emergency procedures
- Maintenance of records

Unison Industries' ALARA program defines management commitment in maintaining radiation dosage to personnel as low as reasonably achievable; reference Attachment ***RADIATION SAFETY.*** Retained if license as not needed for renewal. ODK

A sufficient number of calibrated and operable radiation survey meters shall be maintained to perform required radiation surveys and radiation monitoring. Survey meters are calibrated at intervals not to exceed 12 months or following servicing. Survey meters are calibrated by vendors with approved calibration procedures by a licensed agency (i.e., NRC).

Norwich Plant

Radiation protection program at the Norwich plant consists of three parts:

- Mandatory film badges required for personnel using radioactive Krypton-85 in the production of electron tubes.
- Periodic inspections by the State of New York, Department of Labor, Division of Safety and Health.
- Periodic checks using a Geiger counter are taken in the electron tube filling station and in the area of the lead-lined box where the gas cylinders are stored when not in use. The Geiger counters are calibrated by W.O.S. Testing, Inc. (E14370 Curler Road, Falls Creek, WI 54742) at a six-month frequency.

There is a written procedure for the receipt of the cylinders of Krypton 85 and is posted in the receiving and shipping area. A copy of this procedure is found in Attachment ***RADIATION SAFETY.*** Also contained in Attachment ***RADIATION SAFETY*** are EMERGENCY PROCEDURES and SAFETY PRECAUTIONS that are posted in the filling area. As above.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ITEM 11: WASTE MANAGEMENT

Jacksonville Plant

Krypton-85 waste gas is exhausted to the atmosphere via fume hood located within the constraints of Florida Department of Health, Control of Radiation Hazard Regulations, Chapter 64E-5, Florida Administrative Code.

Empty Krypton-85 cylinders are returned to the manufacturer: Nova Gas Technologies, 2781 Three Lakes Road, N. Charleston, South Carolina 29418.

Norwich Plant

Krypton-85 waste gas is exhausted to the atmosphere via fume hood located within the constraints of New York State Department of Labor, Part 38 – Ionizing Radiation Protection.

Empty Krypton-85 cylinders are returned to the manufacturer: Nova Gas Technologies, 2781 Three Lakes Road, N. Charleston, South Carolina 29418.

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ATTACHMENT ***LICENSES***

State of New York Radioactive Materials License

State of Florida Radioactive Materials License

STATE OF NEW YORK - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

RADIOACTIVE MATERIALS LICENSE

DL 02-393 **CORRECTED COPY**

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE DESIGNATED BELOW. A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIAL(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIAL(S) FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

1. NAME OF LICENSEE	3. LICENSE NUMBER
UNISON INDUSTRIES FEIN:59-3530410 PHONE:(607) 335-5478	0250-0992
	4. EXPIRATION DATE October 31, 2005
2. ADDRESS OF LICENSEE Norwich-Oxford Road Norwich, New York 13815	5a. REFERENCE No. 7 / b. AMENDMENT No. 3

6. RADIOACTIVE MATERIALS (element in mass number)	7. CHEMICAL AND/OR PHYSICAL FORM	8. MAXIMUM QUANTITY LICENSEE MAY POSSESS AT ANY ONE TIME
A. Krypton 85	A. Gas	A. 1 Curie

9. Authorized use.

Condition 6.A.:
For possession and use in filling electron tubes.

10. Licensed material shall be used by or under the supervision of Richard A. Swift (Radiation Safety Officer).

11. All use of Krypton 85 shall be in a properly operating fume hood.

12. The licensee shall have available appropriate survey meters that shall be maintained operational and shall be calibrated before initial use and at subsequent intervals not exceeding twelve months by a person specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. Records of all calibrations shall be kept a minimum of three years.

STATE OF NEW YORK - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

RADIOACTIVE MATERIALS LICENSE

3. License Number 0250-0992 5a. Ref. No. 7 b. Amend. No. -3-

13. Except as specifically provided otherwise in this License, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Department's Regulations shall govern, unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the Regulations.

A. License number 09-23745-01E issued by the U.S. Nuclear Regulatory Commission.

B. License Renewal Request dated September 1, 1999, signed by Gary D. Cummings.

C. License Renewal Application dated April 4, 2001, signed by Gary D. Cummings, with attachments.

D. Letter dated July 24, 2001, signed by Richard A. Swift.

E. Letter dated June 4, 2002, signed by Joe Cornell.

F. **License Renewal Request dated October 31, 2002, signed by Gary D. Cummings.**

Linda Angello
COMMISSIONER OF LABOR

Charles A. Burns

DATE: 3/24/03
DJS:msw

by: Charles Burns
Associate Radiophysicist

STATE OF FLORIDA
DEPARTMENT OF HEALTH
BUREAU OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 64E-5, Florida Administrative Code (F.A.C.), and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the state of Florida, Department of Health now or hereafter in effect and to any conditions specified below.

Licensee	
1. Name: **UNISON INDUSTRIES, L.P.**	3. License Number: **1594-2** is hereby renewed in its entirety, with reference to application dated January 22, 2002.
2. Address: **7575 Baymeadows Way Jacksonville, FL 32256**	4. Expiration Date: **02/28/2007** 5. Category: **3A**

6. Radioactive Material (element and mass number)		7. Chemical and/or Physical Form		8. Maximum Quantity Licensee May Possess At Any One Time	
A.	Cadmium 109	A.	Sealed source (Isotope Products Labs. series XFB or New England Nuclear Models NER 465, and NER 467, or Amersham CUC.D1)	A.	2 sources; not to exceed 8 millicuries each
B.	Americium 241	B.	Sealed source (Isotope Products Labs. Series GFS or New England Nuclear Model NER 478C; Amersham AMC 64 or AMC 65)	B.	2 sources; not to exceed 8 millicuries each
C.	Krypton 85	C.	Gas	C.	10 curies

9. Authorized Use

A. and B. For storage only.

C. Ionization initiator for spark gap assemblies.

CONDITIONS

10. The authorized place of use shall be at licensee's facility located at the address in Item 2.

11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to $1,000.00 per violation per day, pursuant to section 404.162, Florida Statutes.

12. A. Licensed materials shall be used by, or under the supervision of, Bruce D. Markert and Gary Hanni.

    B. The radiation safety officer is Bruce D. Markert.

13. The licensee shall comply with the provisions of Chapter 64E-5, F.A.C., Part IX, "Notices, Instructions and Reports to Workers; Inspections" and Part III, "Standards for Protection Against Radiation."

14. The licensee shall not transfer possession or control of radioactive material, or products containing radioactive material as a contaminant except:

    A. By transfer to a specifically licensed recipient; or

    B. As provided otherwise by specific provision of this license pursuant to the requirements of Chapter 64E-5, F.A.C.

15. Radioactive material transported on public thoroughfares shall be packaged, prepared for shipment and transported in accordance with Title 49, Code of Federal Regulations and Chapter 64E-5, F.A.C.

16. The licensee shall assure that each sealed source is tested for leakage or contamination and follow the appropriate actions as required by section 64E-5.1303, F.A.C. Sealed sources for storage only shall be tested for leakage before any use or transfer, unless they have been tested for leakage within six months before the date of use or transfer. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample shall be performed by individuals who are licensed by the department, NRC, agreement state, or licensing state to provide these services. The licensee is required to retain leak test records containing the manufacturer's name, model and serial number of each sealed source tested, identity of each sealed source radionuclide and its estimated activity, the measured activity of each test sample expressed in microcuries, the date of the test and signature of the radiation safety officer or designee. The records shall be maintained for 3 years for inspection by the department.

17. The licensee shall conduct a physical inventory and inspection at least every twelve months to account for all sealed sources for storage only, under this license as required by section 64E-5.1304, F.A.C. Inventory records shall be maintained for 3 years from the date of the inventory for inspection by the department, and shall include the manufacturer's name, model and serial numbers of each sealed source, the identity of each sealed source radionuclide and its estimated activity, the location of each sealed source, the date of the inventory and the signature of the radiation safety officer or designee.

18. The licensee shall notify the Office of Radiation Control at least 48 hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (407) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 680069, Orlando, Florida 32868-0069.

19. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8, and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated January 22, 2002, signed by Bruce D. Markert, RSO, and correspondence dated:

March 1, 2002 (multiple commitments and procedures), also signed by Bruce D. Markert, RSO

B. The licensee shall comply with all applicable requirements of Chapter 64E-5, Florida Administrative Code, and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

For the Bureau of Radiation Control:

Issuance Date: MAR 1 1 2002

Joseph E Major
Environmental Specialist II
Bin #C21
4052 Bald Cypress Way
Tallahassee, FL 32399-1741
(850) 245-4545

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ATTACHMENT ***SPARK GAPS***

Report of Transfer Pursuant to 10 CFR Part 32.16.c.2 for the Jacksonville Plant

Report of Transfer Pursuant to 10 CFR Part 32.16.c.3 for the Norwich Plant

Engineering Prints for Spark Gaps manufactured at the Jacksonville Plant
Engineering Prints for Electron Tubes manufactured at the Norwich Plant

Only Dwg. No. 10-187610, returned to show label. All other Dwgs. returned to licensee. afk

September 9, 2004

Unison Industries
7575 Baymeadows Way
Jacksonville, FL 32256 USA
Telephone: 904/739/4000
Facsimile: 904/739/4200
www.unisonindustries.com

United States Nuclear Regulatory Commission
Division of Fuel Cycle and Material Safety
Washington, DC 20555

RE: Report of Transfer pursuant to 10 CFR Part 32.16.c.2
License No. 09-23745-01E

In accordance with 10 CFR Part 32.16.c.2, Unison Industries—Jacksonville Plant is submitting the following information:

A total of 21,924 spark gaps, containing Krypton-85 activity of 0.026 curies, were shipped from 01/01/99 through 12/31/99.

A total of 27,165 spark gaps, containing Krypton-85 activity of 0.027 curies, were shipped from 01/01/00 through 12/31/00.

A total of 32,711 spark gaps, containing Krypton-85 activity of 0.035 curies, were shipped from 01/01/01 through 12/31/01.

A total of 26,433 spark gaps, containing Krypton-85 activity of 0..032 curies, were shipped from 01/01/02 through 12/31/02.

A total of 23,869 spark gaps, containing Krypton-85 activity of 0.026 curies, were shipped from 01/01/03 through 12/31/03.

If any additional information is required, please contact me at 904-739-4258, 904-739-4200 (facsimile), or markert_br@unisonindustries.com.

Sincerely,

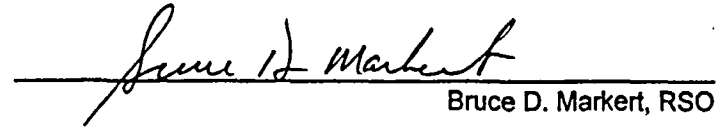
Bruce D. Markert, RSO
Jacksonville Plant

Unison Industries
License No. 09-23745-01E

Report of Transfer
Pursuant to 10 CFR Part 32.16.c.2

Jacksonville Plant Only

SPARK GAP PART NUMBER	ACTIVITY PER EACH SPARK GAP (Millicuries)	NUMBER OF DEVICES TRANSFERRED 1999 Quantity	1999 Millicuries	2000 Quantity	2000 Millicuries	2001 Quantity	2001 Millicuries	2002 Quantity	2002 Millicuries	2003 Quantity	2003 Millicuries	5-YEAR TOTAL Quantity	5-YEAR TOTAL Millicuries
10-187610	3.16E-04	4	1.26E-03	0	0.00E+00	1	3.16E-04	0	0.00E+00	0	0.00E+00	5	1.58E-03
10-348779	3.27E-04	222	7.26E-02	654	2.14E-01	541	1.77E-01	483	1.58E-01	444	1.45E-01	2344	7.66E-01
10-348780	2.24E-04	622	1.39E-01	1043	2.34E-01	584	1.31E-01	555	1.24E-01	1001	2.24E-01	3805	8.52E-01
10-348784	9.77E-05	0	0.00E+00	0	0.00E+00	53	5.18E-03	58	5.67E-03	159	1.55E-02	270	2.64E-02
10-348785	8.74E-05	786	6.87E-02	1696	1.48E-01	3273	2.86E-01	594	5.19E-02	843	7.37E-02	7192	6.29E-01
10-369529	8.41E-05	401	3.37E-02	499	4.20E-02	361	3.04E-02	53	4.46E-03	92	7.74E-03	1406	1.18E-01
10-370882	1.96E-04	56	1.10E-02	33	6.47E-03	252	4.94E-02	260	5.10E-02	119	2.33E-02	720	1.41E-01
10-374105	1.01E-04	6412	6.48E-01	7645	7.72E-01	7853	7.93E-01	9086	9.18E-01	6648	6.71E-01	37644	3.80E+00
10-374121	2.91E-03	6752	1.96E+01	6944	2.02E+01	9086	2.64E+01	8294	2.41E+01	7521	2.19E+01	38597	1.12E+02
10-374199	1.21E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	3	3.63E-04	3	3.63E-04
10-387429	2.87E-03	649	1.86E+00	623	1.79E+00	904	2.59E+00	808	2.32E+00	381	1.09E+00	3365	9.66E+00
10-387431	4.03E-03	536	2.16E+00	606	2.44E+00	962	3.88E+00	826	3.33E+00	397	1.60E+00	3327	1.34E+01
10-397128	4.03E-03	68	2.74E-01	1	4.03E-03	46	1.85E-01	12	4.84E-02	0	0.00E+00	127	5.12E-01
10-397599	9.87E-05	0	0.00E+00	0	0.00E+00	4	3.95E-04	0	0.00E+00	3	2.96E-04	7	6.91E-04
10-516521	1.01E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	2	2.02E-04	0	0.00E+00	2	2.02E-04
10-614860	1.01E-04	86	8.69E-03	1451	1.47E-01	972	9.82E-02	721	7.28E-02	1178	1.19E-01	4408	4.45E-01
10-614902	9.77E-05	0	0.00E+00	0	0.00E+00	77	7.52E-03	155	1.51E-02	44	4.30E-03	276	2.70E-02
10-621055	9.87E-05	5330	5.26E-01	5970	5.89E-01	7742	7.64E-01	4526	4.47E-01	5036	4.97E-01	28604	2.82E+00
TOTALS:		**21924**	**2.55E+01**	**27165**	**2.66E+01**	**32711**	**3.54E+01**	**26433**	**3.17E+01**	**23869**	**2.64E+01**	**132102**	**1.46E+02**



Bruce D. Markert, RSO

UNISON

Unison Industries
7575 Baymeadows Way
Jacksonville, FL 32256 USA
Telephone: 904/739/4000
Facsimile: 904/739/4200
www.unisonindustries.com

September 9, 2004

United States Nuclear Regulatory Commission
Division of Fuel Cycle and Material Safety
Washington, DC 20555

RE: Report of Transfer pursuant to 10 CFR Part 32.16.c.3
License No. 09-23745-01E

In accordance with 10 CFR Part 32.16.c.3, Unison Industries—Norwich Plant is submitting the following information:

A total of 6,113 tubes, containing Krypton-85 activity of 0.201 curies, were shipped from 07/01/99 through 06/30/00.

A total of 7,620 tubes, containing Krypton-85 activity of 0.020 curies, were shipped from 07/01/00 through 06/30/01.

A total of 6,435 tubes, containing Krypton-85 activity of 0.017 curies, were shipped from 07/01/01 through 06/30/02.

A total of 5,666 tubes, containing Krypton-85 activity of 0.017 curies, were shipped from 07/01/02 through 06/30/03.

A total of 4,343 tubes, containing Krypton-85 activity of 0.010 curies, were shipped from 07/01/03 through 06/30/04.

If any additional information is required, please contact me at 904-739-4258, 904-739-4200 (facsimile), or markert_br@unisonindustries.com.

Sincerely,

Bruce D. Markert, RSO
Jacksonville Plant

UNISON

UNISON Industries
Norwich/Oxford Road
5345 State Highway 12
P.O. Box 310
Norwich, NY 13815 USA
Telephone: 607/335/5000
www.unisonindustries.com

August 23, 2004

Unites States Nuclear Regulatory Agency
Division of Fuel Cycle and Material Safety
Washington, DC 20555

Attention: Radioisotope Licensing Branch

Reference: Unison Industries Inc.
License No. 09-23745-01 E

Subject: Annual Report on Tubes Containing Krypton-85

Gentlemen:

In accordance with AEC Act and regulations 10 CFR 30 section 32.14 and CFR Part 32, Unison is submitting the following information as required.

1. There were a total of 4,343 tubes shipped from 07/01/03 to 06/30/04 that contained Krypton-85.

2. The total Curies shipped in these tubes was 0.010335

Sincerely,

Joe Cornell
EHS Manager

082304

UNISON

UNISON Industries
Norwich/Oxford Road
5345 State Highway 12
P.O. Box 310
Norwich, NY 13815 USA
Telephone: 607/335/5000
www.unisonindustries.com

August 11, 2003

Unites States Nuclear Regulatory Agency
Division of Fuel Cycle and Material Safety
Washington, DC 20555

Attention: Radioisotope Licensing Branch

Reference: Unison Industries Inc.
License No. 09-23745-01 E

Subject: Annual Report on Tubes Containing Krypton-85

Gentlemen:

In accordance with AEC Act and regulations 10 CFR 30 section 32.14 and CFR Part 32, Unison is submitting the following information as required.

1. There were a total of 5.666 tubes shipped from 07/01/02 to 06/30/03 that contained Krypton-85.

2. The total Curies shipped in these tubes was 0.01704

Sincerely,

Joe Cornell
EHS Manager

081103

UNISON

UNISON Industries
Norwich/Oxford Road
5345 State Highway 12
P.O. Box 310
Norwich, NY 13815 USA
Telephone: 607/335/5000
www.unisonindustries.com

July 10 2002
~~July 31, 2000~~

United States Nuclear Regulatory Agency
Div. of Fuel Cycle and Material Safety
Washington, DC 20555

Attention: Radioisotope Licensing Branch

Reference: Simmonds Precision Engine Systems, Inc.
License No. 31-15292-01E, Amendment No. 04

Subject: Annual Report on Tubes Containing Krypton-85

Gentlemen:

In accordance with AEC Act and regulations 10 CFR 30 section 32.14 and CFR Part 32, Unison is submitting the following information as required.

1. There were a total of ~~8,446~~ 6435 tubes shipped from ~~07/01/99 to 06/30/00~~ 07/01/01 to 04/30/02 that contained Krypton-85.

2. The total Curies shipped in these tubes was ~~0.0205~~ 0.011635

Sincerely,

Joe Cornell
HS&E Manager

UNISON

UNISON Industries
Norwich/Oxford Road
3303 State Highway 12
PO Box 310
Norwich, NY 13815 USA
telephone 607/335/5000
www.unisonindustries.com

July 31, 2001

United States Nuclear Regulatory Agency
Div. of Fuel Cycle and Material Safety
Washington, DC 20555

Attention: Radioisotope Licensing Branch

Reference: Simmonds Precision Engine Systems, Inc.
License No. 31-15292-01E, Amendment No. 04

Subject Annual Report on Tubes Containing Krypton-85

Gentlemen:

In accordance with AEC Act and regulations 10 CFR 30 section 32.14 and CFR Part 32, Unison is submitting the following information as required.

1. There were a total of 7,620 tubes shipped from 07/01/00 to 06/30/01 that contained Krypton-85.

2. The total Curies shipped in these tubes was 0.0201

Sincerely,

Joe Cornell
HS&E Manager

UNISON

UNISON Industries
Norwich/Oxford Road
6N5 State Highway 12
P.O. Box 310
Norwich, NY 13815 USA
Telephone: 607/335/5000
www.unisonindustries.com

July 31, 2000

United States Nuclear Regulatory Agency
Div. of Fuel Cycle and Material Safety
Washington, DC 20555

Attention: Radioisotope Licensing Branch

Reference: Simmonds Precision Engine Systems, Inc.
License No 31-15292-01E, Amendment No. 04

Subject: Annual Report on Tubes Containing Krypton-85

Gentlemen:

In accordance with AEC Act and regulations 10 CFR 30 section 32.14 and CFR Part 32, Unison is submitting the following information as required.

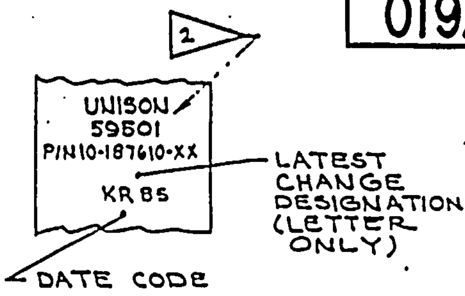
1. There were a total of 6,113 tubes shipped from 07/01/99 to 06/30/00 that contained Krypton-85.

2. The total Curies shipped in these tubes was 0.0205

Sincerely,

Joe Cornell
HS&E Manager

PART NO.	BREAKDOWN VOLTAGE D.C.	RELEASE
10-187610-1	2400-2700	35509-64
-2	2800-3100	
-3	2900-3200	42509-2
-4	3000-3300	
-5	3400-3700	
-6	2500-2800	
-7	2300-2600	
-8	3500-3800	
-9	3300-3600	
-10	1300-1600	
-11	900-1200	
-12	3100-3400	
-13	4400-4700	
-14	1900-2200	
-15	4700-5000	



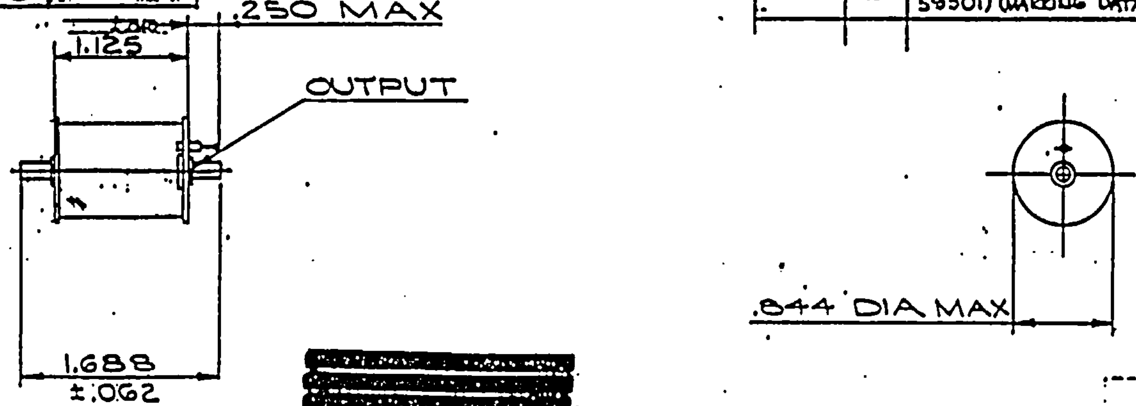
VIEW OF STAMPING

10-187610

REL NO. 35509-64

REVISIONS

CHG NO.	SYM	DESCRIPTION	DATE	APPROVAL
3720020	1	REM NOTE 1, DATE CODE PER 9-3420 FLAG 1, (9-3402, 9-3420)(PRO SPEC); ADDED NOTE 1, PART NO. & DATE CODE INFORMATION; REV STAMPING.	10/21/60 CLARK	[signature]
42509-2	2	REL -3	11-8-63 Lambrecht	[signature]
48942 -2	A1	(MFG): REM LOCAL PART NO. & DATE CODE INFO NOTE; CHG PICT (STAMPING)	4-9-68 Rudell	[signature]
49192 -2	A2	WAS 10-187606 (NEXT ASSY NO); REM 1.188 ±.047, NOTE 1, LOCAL THD NOTE; ADD. 1.688 ±.062; CHG PICT	4-19-68 Cable	[signature]
51903 -6	A3	ADD. PRO SH CONTROL 9-4796-1. (PRO SPEC)	8-21-70 Rudell	[signature]
55216 -26	A4	ADD. NOTES 1 & 2, VIEW OF STAMPING	1-8-74 Rudell	[signature]
0522023	B	(CLII) WAS BENDIX 77820 (UNISON 59501) (MARKING DATA)	12-11-88 [illegible]	[signature]



[redacted]

USE OF THIS DOCUMENT IS UNLIMITED. DOCUMENTS REFERENCED HEREON CONTAIN LIMITED RIGHTS DATA.

PROCESS SPEC
TEST 9-3418
PROCESS SHEET CONTROL 9-4796-1

ITEM	REQD	PART NO.	DESCRIPTION	UNIT WT	NEXT ASSY	USED ON
					10-324670	10-207125-1

LIST OF MATERIAL — APPLICATION

ORIG ENG JOB NO. 1063 H
DRAWN: Don Pixley DATE: 2-6-59
CHECKED: [signature] DATE: 5-10-59
STD'S: Whistler
CH DR: Carmel Davis
APPD: [signature] 5/1/59

TITLE: SPARK GAP. U

UNISON
UNISON INDUSTRIES
Jacksonville, FL. 32245-7880

10-187610

SCALE 1:1 WT CALC ACT 0.09 LBS 10-124233 DRAWING SIZE B TAB

FSCM 59501

2. MARKED WITH INFORMATION SHOWN. DIRECTION OPTIONAL.

1. CONTAINS KRYPTON 85.

NOTES:

Unison Industries
License No. 09-23745-01E
ATTACHMENT TO NRC FORM 313

ATTACHMENT *RADIATION SAFETY*

Unison Industries' Radiation Safety Manual (Jacksonville Plant)
Contains ALARA Program

Norwich Procedure for Handling Krypton-85

Norwich EMERGENCY PROCEDURES Notice

Norwich SAFETY PRECAUTIONS Notice

UNISON INDUSTRIES
7575 BAYMEADOWS WAY
JACKSONVILLE, FL 32256

RADIATION SAFETY MANUAL

REVISED
JANUARY, 1994

REVISED
SEPTEMBER, 1999 BDM

Bruce D. Markert

APPROVED -
BRUCE D. MARKERT
RADIATION SAFETY OFFICER

I. ALARA PROGRAM

A. PURPOSE

Part III of Chapter 64E-5, Florida Administrative Code establishes standards for protection against radiation hazards. In addition to complying with the requirements of Part III, every reasonable effort should be made to maintain radiation exposures at levels As Low As Reasonably Achievable (ALARA).

The fundamental concept of the ALARA philosophy is to avoid unnecessary exposure to radiation whenever possible. The objective is to reduce radiation exposure as far below regulatory limits as is reasonably achievable by means of good radiation protection planning and practice, and by a management commitment to policies that deter departures from good practices. The three primary methods of reducing radiation exposure are: TIME, DISTANCE, and SHIELDING.

B. MANAGEMENT COMMITMENT

We, the management of Unison Industries, are committed to the program described below for keeping radiation exposure (individual and collective) as low as reasonably achievable.

1. It will be a management priority that all users of source of radiation are made aware of our commitment to the ALARA philosophy and that they be instructed in the procedures and precautions to be used to keep their radiation exposure as low as possible.

2. Management has delegated authority to the Radiation Safety Officer (RSO) to ensure adherence to ALARA principles. Management will support the RSO in instances where this authority must be asserted.

3. Management will make all reasonable modifications to procedures, equipment and facilities to reduce exposures, unless the cost is considered to be unjustified. We will be prepared to describe the reason for not implementing modifications that have been recommended.

C. RADIATION SAFETY OFFICE RESPONSIBILITIES

1. The RSO will emphasize the ALARA philosophy to all users of radiation, will encourage personnel to review current procedures and propose changes to reduce exposure levels.

2. The RSO will investigate, in a timely manner, the cause of any personnel exposure considered to be excessive. If warranted, the RSO will take corrective actions to ensure that unnecessary exposures are halted and recurrence is prevented. A report of each investigation and the action taken, if any, will be maintained for inspection purposes.

3. At least annually, the RSO will conduct a formal ALARA audit of the Unison Industries' radiation safety program. Audits will include a review of safety procedures, past operations and any incident involving sources of radiation. The goal of the audits will be to evaluate the ALARA program's success and to determine if modifications to the company's radiation safety program or procedures are needed. A summary of the results of each ALARA audit, including a description of actions proposed and taken, if any, will be documented by the RSO, discussed with management, and signed and dated by both. A report on each audit will be maintained on file for inspection purposes for 2 years from the date of audit.

The undersigned certify that ALARA program set forth above has been implemented.

Signature
Bradley D. Mottier, Senior Vice President

Signature
Bruce D. Markert, Radiation Safety Officer

II. ADMINISTRATION

This section delineates the administrative responsibilities implemented by Unison Industries to assure observance of regulatory requirements governing the use of radioactive materials.

A. ORGANIZATION OVERVIEW

The Administration of Unison Industries' radiation safety program shall be distributed among levels of management under the direction of the Radiation Safety Officer.

Unison Industries will notify the licensing agency by mail within 30 days of a change in the RSO or any significant change in the delegated authority outlined in this section.

Radiation Safety Officer (RSO): The RSO has the ultimate responsibility for all segments of Unison Industries' radiation safety program.

Radiation Safety Review Committee (RSRC): The RSRC is chaired by Bruce Markert, RSO and is responsible for reviewing the overall radiation safety program.

Each member of the RSRC will be selected by the RSO and assigned tasks and responsibilities appropriate to their operational activities.

B. RESPONSIBILITIES

Radiation Safety Officer

1. Ensure that all terms and conditions of the license and Chapter 64E-5, Florida Administrative Code (FAC) are complied with;

2. Ensure that sealed sources are leak tested within the required time frame and as prescribed by the license;

3. Ensure individuals which are assigned tasks in areas where radiation devices/sources are used wear personnel monitoring equipment;

II. ADMINISTRATION - continued

4. Maintain all records required by the license and Chapter 64E-5, FAC. These records shall include personnel monitoring records, leak test records, inventory records, training records, and receipt, transfer and disposal records;

5. Ensure that devices are properly secured against unauthorized access or removal;

6. Serve as a contact with the department for events such as loss, theft, or damage of devices; and

7. Ensure that all users read and understand the radiation safety manual.

Radiation Safety Review Committee

1. Is responsible for reviewing the overall Radiation Safety Program.

2. Seeks ways to reduce the occupational radiation exposure doses through the ALARA philosophy.

III. OPERATING AND EMERGENCY PROCEDURES

A. GENERAL

The following general safety practices are to be employed by each individual assigned duties involving the use of licensed material.

1. Receive general radiation safety training.

2. Wear a TLD (whole body and where appropriate, a ring) when working with radioactive materials.

3. Notify supervisor and radiation safety officer of any unsafe practices or equipment malfunction that could lead to radiation exposure.

4. In case of emergency, follow emergency procedures as outlined for the particular activity.

III. OPERATING AND EMERGENCY PROCEDURES - continued

A. GENERAL - continued

5. Have instrument calibration, maintenance and repair performed by appropriately licensed individuals.

6. Operations involving radioactive material shall not be started or continued unless all process and control equipment and exhaust hoods are functioning properly. In the event of an uncontrolled radioactive gas release, all personnel shall evacuate the area, which shall remain clean until surveyed by qualified personnel and declared safe for occupancy.

7. When the visual or audible alarm is observed from the area monitor, the operator should cease operation, shut off all gas cylinders and notify supervision. Supervision should cease operations involving radioactive materials and notify the radiation safety officer.

8. Only authorized persons shall enter any radiation area or handle radioactive material.

B. RADIATION WORK AREAS

1. Use of radioactive material shall be limited to processes as delineated by Manufacturing Layouts and the Engineering Materials Laboratory. All areas must be approved by the radiation safety officer.

2. Radiation source shall be transported and stored only in containers and locations authorized for such use. Radiation shall not be removed from a work area except for transport between authorized locations.

III. OPERATING AND EMERGENCY PROCEDURES - continued

C. EMERGENCY PROCEDURES

1. General Procedure

Any unplanned happening which could affect radiation safety is considered an accident. The most essential and often the most difficult problem in coping with accidents is the recognition that an accident has occurred. Any threat to human safety or the public at large would have to be considered an emergency requiring highest priority and urgency.

a) Contact RSO - Bruce Markert

b) Rope off and secure area involved in the incident. Those personnel involved should thoroughly wash their hands.

2. Emergency Procedures During Power Outage During Spark Gap Filling Operations

All operators shall be instructed that the entire spark gap filling operations are protected by normally closed solenoid valves, which will interrupt gas flow in case of power outage, thereby preventing the release and flow of any radioactive gas. Therefore, when a power outage occurs, the operator shall close cylinder valve on gas tank as an extra precaution and notify supervision.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP

1. Cleaning

a. The metal parts have been cleaned by the gas used in the copper brazing furnace. The slightest trace of contamination will result in bubbly, fused joints which are weak joints and subject to rejection with no rework possible. To maintain this cleanliness, the following precautions shall be observed:

III. OPERATING AND EMERGENCY PROCEDURES - continued

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

1. Cleaning - continued

1. Do not handle the parts with bare hands or with gloves or tools that are even slightly soiled or oiled.

2. Prior to fusing, keep parts under clean covers to prevent dust, contaminated air, moisture, etc., from settling on the parts.

3. Handle the parts by the exhaust tube or by the electrode support, maintaining utmost cleanliness even at these points.

b. Immediately prior to assembly, clean the glass housing as follows. After cleaning, the ends shall not be allowed to become contaminated. Precautions specified in paragraph D.1.a. also apply for the glass housing.

1. Place the glass housing in a cleaning solution consisting of 25 to 30 grams of Monsanto Dishall or equivalent per liter of water maintained at 160°F to 180°F.

2. Clean in the ultrasonic cleaner for 3 minutes minimum.

3. Rinse thoroughly with hot water immediately after removal from the ultrasonic cleaner.

4. Rinse at least 2 times in clean, distilled water.

5. Dry in a clean, warm atmosphere. To prevent contamination of glass housings, the atmosphere shall be free of dust, vapor and fumes of any kind.

III. OPERATING AND EMERGENCY PROCEDURES - continued

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

1. Cleaning - continued

    6. Transport in clean, dry, covered containers.

2. Fusing Kovar and Glass Exhaust Tubes

    a. Clean the outside of Kovar exhaust tube with emery cloth or sandpaper if necessary.

    b. Place the end plate and glass exhaust tube in a suitable fixture that will align the Kovar exhaust tube with the glass exhaust tube.

    c. Fuse the glass exhaust tube to the Kovar exhaust tube using a Lepel machine with a tow-turn coil of about 1/2 inch inside diameter. Work the glass exhaust tube into place about 1/8 inch over the end of the Kovar exhaust tube.

    d. To prevent strains in the glass, play the flame from a hand torch over the glass exhaust tube during the latter part of sealing and the first part of cooling cycle.

3. Fusing Electrodes and Glass Housing

    a. Assemble both electrode assemblies in a suitable fixture to hold parts square and concentric. The fixture shall provide means for fusing the end plate assemblies simultaneously. The fixture shall be adjusted by means of stops to provide a completed electrode spacing as specified on the drawing for the particular dash number being assembled. The spacing may be set up with a feeler gauge or shim. The selection of the correct shim thickness shall also consider changes in spacing due to expansion in fusing the glass. The amount the shim must be increased over gap spacings on the drawing shall be determined from the first few spark gaps, since this

III. OPERATING AND EMERGENCY PROCEDURES - continued

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

3. Fusing Electrodes and Glass Housing - continues

a. - continued

increase is dependent not only on the type of spark gap but also on the variations of the fixture in use. Spacing shall be checked with a suitable machinist's microscope. The spacing shall be within the drawing limits when the spark gaps are at room temperature.

b. Oxidize the outer edges of the end plates using a Lepel machine and a coil designed to heat both the end plates simultaneously. The amount of oxidization must be gained through experience to obtain the desired results.

c. Place the glass housing between the electrode assemblies in the fixture. A suitable ceramic support or equivalent may be used when necessary to support and maintain the centering of the glass housing during fusing.

d. Attach a source of inert gas (argon) to the exhaust tube of electrode assembly 10-374107. Admit the inert gas into the fixtured assembly at a pressure of 1 to 3 psi gauge for a period of 15 seconds.

e. With the inert gas flowing, fuse the glass housing to the end plates using a Lepel machine and a coil designed to heat the end plates simultaneously. The inter gas pressure must be removed when the glass begins to fuse. Care must be exercised to center the coil over the parts to obtain equal heating of both end plates. A very light force of 5 to 8 oz. is necessary to seal the end plates and the glass. A temperature of 1850°F is required in the fusing area to obtain a good joint. Extreme care is required to prevent burning of the end plate flanges. Setting of the Lepel machine

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

3. Fusing Electrodes and Glass Housing - continues

e. - continued

shall be determined experimentally. When the glass has melted and the fixture has stopped at the preset position, the Lepel machine shall be shut off. Before the gap has cooled, a gas flame shall be played on the gap glass (especially in the vicinity of the end plates) for about 15 seconds to strain relieve the glass for subsequent operations. The color of the flame around the gap will indicate completion of annealing. The ability to recognize the proper color must be gained through experience.

NOTE:

1. To assure consistently good seals, the atmosphere in the area of the fusing fixture shall not exceed 50% relative humidity at 70°F. The loop of the Lepel machine shall never be allowed to "sweat" because of the detrimental effects on fusing and cracking of the hot glass should it touch the loop.

2. At no time during the fusing process shall air be admitted to the gap being fused. Admitting air to the gap assembly while being fused will result in formation of oxides on the supports and electrode tips.

f. The inert gas supply must be maintained until the spark gap assembly has returned to room temperature so as to prevent formation of oxide on the supports and electrode tips.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

4. Annealing of Glass
The following procedure not only anneals the glass but also reduces excessive oxide, especially on copper.

CAUTION:

Hydrogen gas or hydrogen-argon gas as used in the following operations will burn readily in air. A mixture of hydrogen gas or hydrogen-argon gas, when combined with air, becomes a highly explosive mixture which may explode if exposed to excessive heat, flame, arc or spark. Extra-ordinary precautions shall be taken to prevent breaking any lines once the process has started with the gases. All exhausting or purging operations shall be performed in such a manner that the gas will escape to open air outside of the factory atmosphere, where the gas can combine with larger quantities of air, thus reducing the explosive hazard. Hydrogen-argon gas containing Krypton 85 shall not be used for this operation.

a. Attach the spark gap to suitable vacuum equipment and evacuate to a vacuum of 3 mm of mercury absolute pressure maximum. See appendix for equipment preparation.

b. Purge and admit 80% hydrogen-20% argon gas mixture at a pressure of 12 ± 1 inches of mercury absolute pressure and seal off the end of glass exhaust tube, allowing as large a length of glass as possible to remain on the spark gap.

c. Bury the gap in mica dust to prevent thermal shock.

d. Heat the spark gap to 960°F + 25°F -0°F. The maximum temperature rise shall be 40°F per minute. Hold for 1 to 15 minutes at 960°F +25°F -0°F. Cool no faster than 18°F per minute to room temperature. The temperature shall be measured by a thermocouple buried in the center of mica dust. The entire gap shall be heated and cooled uniformly.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

4. Annealing of Glass - continued

e. Refill with hydrogen and reanneal as above all gaps that indicate a discoloring of the copper.

5. Inspection of Glass-to-Metal Seal

a. Color - The seals shall have a color compatible with the acceptable limits shown in the standard samples set up by the Engineering Department. Optimum seals are those that have a silvery or mouse-gray appearance. Gray-brown seals are acceptable. Very black seals extending radically across the seal are questionable and subject to rejection, especially if the black seal shows an eroded finish. The seals shall be examined under a strong light using 5 to 7 power magnification at an angle of sight about 15° to 20° with the outside cylinder of the glass. Viewing the seal at a greater angle up to 45°, the seal might appear to have a very bright, metallic color directly under the interface of the glass where it originally contacted the end plate before melting. This condition is acceptable providing the melted, flowed portion of the seal is silvery or mouse-gray on each side of the bright area. If the bright, metallic seal viewed at 15° to 20° extends into the flowed portion of the glass to within .030 inch of the edge of the glass or immediately joins a very b lack ring at the edge of the glass, the seal is not acceptable.

b. Bubbles - Loss of seal width due to bubbles, either singularly or in aggregated, in excess of 25% is not acceptable. Bubbles are caused by fusing contaminated parts.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

5. Inspection of Glass-to-Metal Seal - continued

c. Shale - Width of shale in excess of 25% of the width of the seal is not acceptable. Shale or separation at seal is caused by excessive pressure on the gap during fusing or by fusing contaminated parts characterized by a round edge rather than a feather edge of glass at seal and a very dark seal at this portion of the joint.

d. Cracks - Cracks are not acceptable in any degree or in any location.

e. Chips - Chips are acceptable if no indication of cracks remain or if not in excess of 20% of seal width.

f. Strains - The glass shall be checked for stains using a strong light and Polaroid lenses. The use of the lenses and recognition of strains cannot be fully described in this memo. Personnel performing this check shall be trained on the job by observing the procedure and results. Gaps with any glass strains shall be reannealed using procedures of paragraph III.D.4.

6. Voltage Setting

a. Break off the extreme end of the glass exhaust tube in such a manner as to minimize entry of glass chips into the gap. Keep spark gap away from open flames and "spark-producing" equipment while glass tube is open.

b. Using suitable vacuum equipment, evacuate the spark gap to a vacuum of 2 mm of mercury absolute pressure maximum and purge with hydrogen or hydrogen-argon mixture. See appendix for equipment preparation. Place the gap in an oven, evacuate to a vacuum of 2 mm of mercury absolute pressure maximum and heat to 700°F +25°F -50°F. Rate of heating shall not exceed 25°F per minute.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

6. Voltage Setting - continued

c. When the gap reaches a temperature of 700°F +25°F -50°F, admit 80% hydrogen-20% argon mixture at atmospheric pressure.

d. Hold the 700°F temperature for 10 to 15 minutes and again draw a vacuum of 2 mm of mercury absolute pressure maximum. Cool to room temperature. Rate of cooling shall not exceed 18°F per minute. After parts are cooled to room temperature, admit dry nitrogen plus Krypton 85, 9-4126-1, gas to atmospheric pressure and again draw a vacuum (2 mm Hg).

NOTE:

At no time during this purging and baking process shall air be admitted to the gaps or system. Hydrogen or hydrogen-argon gas shall be used for all operations except the final purge and backfill to voltage. Dry nitrogen plus Krypton 85, 9-4126-1, shall be used for the purge and backfill only.

e. Place the gap into a suitable test fixture per paragraph C of Specification 9-3862 and admit a gas mixture of dry nitrogen plus Krypton 85 per 9-4126-1 specification until voltage breakdown is within 25 volts of the nominal voltage specified on the manufacturing (M) drawing. Voltage on drawing is specified as limits, with midpoint considered the nominal voltage. The spark rate at this time shall be one spark per second maximum. The pressure inside the gap shall never be less than 9.8 inches of mercury absolute pressure.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

6. Voltage Setting - continued

f. Using a torch, melt and seal off the glass exhaust tube in the approximate center of tube while maintaining voltage setting and inside pressure. Mark the voltage setting on the gap using a suitable non-permanent method.

7. Gap Burn-In

a. Place gap in breadboard circuit shown in Figure 1. Fill tube end of gap must be connected to output side of circuitry (fill tube end of gap connected to output transformer T2).

b. Gaps shall be burned in at 250°F with circuit operating at continuous duty at a monomial spark rate of 2.0 sparks per second.

c. Monitor breadboards daily to assure circuit is operating properly.

d. After 100 hours of operation, remove gap from test circuit.

8. Final Voltage Setting

a. Break off the extreme end of the glass exhaust tube in such a manner as to minimize entry of glass chips into the gap. Keep spark gap away from open flames and "spark-producing" equipment while glass tube is open.

b. Using suitable vacuum equipment, evacuate the spark gap to a vacuum of 2 mm of mercury absolute pressure maximum and purge with hydrogen or hydrogen-argon mixture. Place the gap in an oven, evacuate to a vacuum of 2 mm of mercury absolute pressure maximum and heat to 700°F +25°F -50°F. Rate of heating shall not exceed 25°F per minute.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

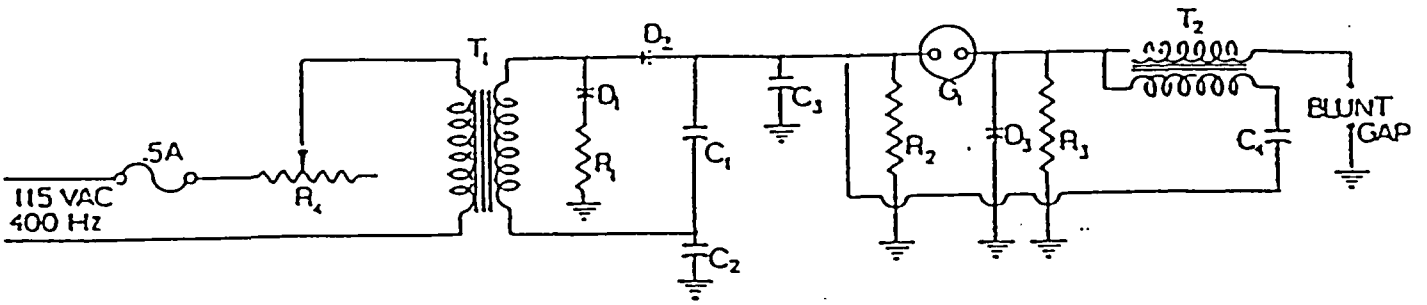
8. Final Voltage Setting - continued

c. When the gap reaches a temperature of 700°F +25°F -50°F, admit 80% hydrogen-20% argon mixture at atmospheric pressure.

d. Hold the 700°F temperature for 10 to 15 minutes and again draw a vacuum of 2 mm of mercury absolute pressure maximum. Cool to room temperature. Rate of cooling shall not exceed 18°F per minute. After parts are cooled to room temperature, admit hydrogen-argon nitrogen plus Krypton 85, 9-8030, gas to atmospheric pressure and again draw a vacuum (2 mm Hg).

NOTE:

At no time during this purging and baking process shall air be admitted to the gaps or system. Hydrogen or hydrogen-argon gas shall be used for all operations except the final purge and backfill to voltage. Hydrogen-argon nitrogen plus Krypton 85 shall be used for the final purge and backfill only.



LEGEND

T_1	Power Transformer 10-392391 (CF6) or 10-516351 (TF34)
T_2	Output Transformer 10-617996
R_1	Resistor 10-90847-96
R_2	Resistor 10-600152
R_3	Resistor 10-90846-91 (4 pcs.), 2 in series and paralleled with 2 in series
R_4	Ohmite Pot: 300 ohms, 50 watts
C_1, C_2	Capacitor 10-617754
C_3	Capacitor 10-621049
C_4	Capacitor 10-621108
D_1, D_2	Diode 10-621033-6
D_3	Rectifier 10-600315
G_1	Test Gap

FIGURE 1

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

8. Final Voltage Setting - continued

e. Place the gap into a suitable test fixture per paragraph C of Specification 9-3862 and admit a gas mixture of hydrogen-argon nitrogen plus Krypton 85, 9-8030, per drawing specification until voltage breakdown is within 25 volts of the nominal voltage specified on the manufacturing (M) drawing. Voltage on drawing is specified as limits, with midpoint considered the nominal voltage. The spark rate at this time shall be one spark per second maximum. The pressure inside the gap shall never be less than 19 inches of mercury absolute pressure.

f. Using a torch, melt and seal off the glass exhaust tube in the approximate center of tube while maintaining voltage setting and inside pressure. Mark the voltage setting on the gap using a suitable non-permanent method.

9. Sealing Kovar Exhaust Tube

a. Set the inert gas welding machine in accordance with schedule.

b. Assemble the spark gap in suitable chill blocks that will flatten the exhaust tube and at the same time apply sufficient pressure to maintain reduced pressure inside of spark gap. Flattening of exhaust tube must be at least 1/16 inch from brazed joint or tube may crack, causing leakage and scrap.

c. Cut off the exhaust tube about .047 above chill blocks and inert gas electrical weld "pinch-off" on exhaust tube. Exhaust tube may be cut off and "pinch-off" welded in the same operation.

d. Check the weld for pin holes, etc., and repair seal if necessary before pressure is removed from the exhaust tube.

D. ASSEMBLY & TESTING OF HERMETICALLY SEALED TWO-ELECTRODE SPARK GAP -continued

10. Checking Voltage Setting

After 48 hours minimum from time of sealing Kovar exhaust tube, recheck the breakdown voltage to the temporary marking. Remark and hold any gaps on which the voltage change is more than 25 volts but still within the drawing limits. After one week, recheck these gaps and reject any that have changed more than 25 volts or are out of the drawing limits. Voltage shall be checked with the same test equipment and spark rate as specified in paragraph III.6.e

11. Final Test

Test the spark gap per Specification 9-3862, except do not use voltage values of paragraph C for initial voltage breakdown test. Use voltage values specified on manufacturing (M) drawing. The gap shall be in complete darkness when tests are performed.

12. Marking

Remove temporary voltage stamp and apply part number and date code number as shown on drawing.

13. Storage

Place spark gap in either individual or multiple paper board containers to prevent damage in storage or subsequent transportation.

IV. PACKAGING AND SHIPPING PROCEDURE FOR RADIOACTIVE MATERIALS

A. Under provisions of Title 49 CFR, all licensed products manufactured by Unison Industries at Jacksonville, FL are exempt from specification packaging and labeling.

B. All other shipments of radioactive materials (e.g., gas cylinder and radioactive waste) shall be packaged and labeled in accordance with applicable DOT regulations.

C. The RSO or his designee shall survey each container and prepare applicable labels.

D. A description of the radioactive contents of each package, including type, quantity and radiation level, shall be supplied to the Shipping Department for preparation of the shipping document, which must accompany each shipment.

E. Containers waiting shipment shall be held in a designated secured area.

F. A record of the contents of each package shall be maintained at Unison Industries and a signed receipt shall be obtained from the carrier confirming transfer of the radioactive material to the carrier.

V. SURVEYS, RECORDS AND REPORTS

Periodic surveys of work and storage areas shall be made to insure that radiation levels are maintained as low as possible and do not exceed permissible limits prescribed by State of Florida 64E-5.

A. A daily use log for spark gap assembly operations shall be maintained as a running record of utilization and disposal of Krypton gas.

B. Personnel dosimetry records shall be maintained permanently by Unison Industries.

C. Records of surveys, leak tests and waste disposal shall also be maintained as required by State of Florida 64E-5.

V. SURVEYS, RECORDS AND REPORTS, continued

D. Licensed material transferred shall be reported to the NRC within 30 days after: filing the previous report; or filing an application for renewal of the USNRC license per 10CFR32.16.

HRS Form 1081 ("Notice to Employees") shall be posted in a sufficient number of places to permit individuals engaged in work under the license....to observe them on the way to or from any particular work location to which the document applies (see attachment).

VI. WASTE DISPOSAL

Krypton gas discharged from the spark gap filling operation is exhausted to the outside atmosphere via a stack from the hood-enclosed assembly area. The concentration of Krypton gas in effluent air must be maintained within limits specified by State of Florida 64E-5. In cases of breakage of a spark gap, normal room ventilation dilutes and dissipates, the small quantity of gas released.

Scrap gaps are disposed of by venting via an authorized exhaust hood or by transfer to a licensed waste disposal service.

UNISON INDUSTRIES

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
CONTROL OF RADIATION HAZARDS
NOTICE TO EMPLOYEES
STANDARDS FOR PROTECTION AGAINST RADIATION: NOTICES INSTRUCTIONS AND REPORTS TO WORKERS: INSPECTIONS

CHAPTER 10D-91

In "Standards for Protection Against Radiation", Part 4, Chapter 10D-91, Florida Administrative Code (F.A.C.), "Rules for Control of Radiation Hazard Regulations", the State of Florida HRS has established standards for your protection against radiation hazards, under authority of the Florida Radiation Protection Act, Chapter 404, Florida Statutes. Also in Part 10, Chapter 10D-91, F.A.C., HRS has established certain provisions for the rights of workers engaged in work under Department license or registration.

YOUR EMPLOYER'S RESPONSIBILITY.

Your employer is required to:

1. Apply these regulations to work involving sources of radiation.
2. Post or otherwise make available to you a copy of these regulations, the licenses, certificates of registration, and the operating procedures which apply to work you are engaged in, and explain their provisions to you.
3. Post the results of HRS inspections involving radiological working conditions, proposed imposition of civil penalties and orders.

YOUR RESPONSIBILITY AS A WORKER.

You should familiarize yourself with those provisions of the regulations, and the operating procedures which apply to the work you are engaged in. You should observe their provisions for your own protection and protection of your co-workers.

WHAT IS COVERED BY THESE REGULATIONS.

1. Limits on exposure to radiation and radioactive material in controlled and uncontrolled areas (restricted and unrestricted areas);
2. Measures to be taken after accidental exposure;
3. Personnel monitoring, surveys and equipment;
4. Caution signs, labels, and safety interlock equipment;
5. Exposure records and reports;
6. Options for workers regarding HRS inspections; and
7. Related matters.

REPORTS ON YOUR RADIATION EXPOSURE HISTORY.

1. HRS regulations require that your employer give you a written report if you receive an exposure in excess of any applicable limit as set forth in the regulations or in the license. The basic limits for exposure to employees are set forth in Sections 10D-91.402, 10D-91.404 and 10D-91.405, F.A.C. These sections specify limits on exposure to radiation and exposure to concentrations of radioactive material in air and water.
2. If you work where personnel monitoring is required, and if you request information on your radiation exposures,
   (a) Your employer must give a written report, upon termination of your employment, of your radiation exposure, and
   (b) Your employer must advise you annually of your exposure to radiation.

INSPECTIONS.

All licensed or registered activities are subject to inspection by representatives of the State of Florida, HRS. In addition, any worker or representative of workers who believes that there is a violation of Chapter 404, F.S., the regulations issued thereunder, or the terms of the employer's license or registration with regard to radiological working conditions in which the worker is engaged, may request an inspection by sending a notice of the alleged violation to this state agency. The request must set forth the specific grounds for the notice, and must be signed by the workers or the representative of the workers. During inspections, HRS inspectors may confer privately with workers, and any worker may bring to the attention of the inspectors any past or present condition which he believes contributed to or caused any violation as described above.

INQUIRIES.

Inquiries dealing with the matters outlined above can be sent to the State of Florida, HRS, Office of Radiation Control, 1317 Winewood Blvd., Tallahassee, Florida 32301. Telephone (904) 487-2437.

POSTING REQUIREMENTS

Copies of this notice must be posted in a sufficient number of places in every establishment where employees are employed in activities licensed or registered, pursuant to Rules, HRS, Radiation Control, Chapter 10D-91, F.A.C., "Control of Radiation Hazard Regulations" to permit employees working in or frequenting any portion of a controlled (restricted) area to observe a copy on the way to or from their place of employment.

Copies of Chapter 10D-91, F.A.C., Florida Radioactive Materials License, Registration, Operating Procedures, Notices of Violations or Orders issued and responses thereto may be examined at

the Radiation Safety Office located in the Engineering Department (Assembly Building) telephone extension 4258.

January, 1985

UNISON INDUSTRIES

EMERGENCY RESPONSE INFORMATION

reference section 100-91. 2003, F.A.C., 49 CFR Subpart G, DOT P 5800.5 ERG90 and section USG-17 of IATA Dangerous Goods Regulations)

1) PROPER SHIPPING NAME AND HAZARD CLASS: RADIOACTIVE MATERIAL, RQ, special form, n.o.s, UN 2974 (sealed source)

POTENTIAL HAZARDS

1) IMMEDIATE HAZARDS TO HEALTH

External radiation hazard from unshielded radioactive material.
Potential internal radiation hazard from inhalation, ingestion, or breaks in skin, but only if special form capsule is breached.
Radioactive material; degree of hazard will vary greatly, depending on type and quantity of radioactive material.
Materials in special form or in Type B packaging are not expected to cause contamination in accidents.

1) FIRE OR EXPLOSION

No risk of fire or explosion; radioactivity does not change flammability or other properties of the materials.

EMERGENCY ACTION

1) IMMEDIATE PRECAUTIONS

Isolate hazard area to at least a 150 foot radius and restrict access; greater distances may be necessary if advised by qualified Radiation Control Authority.
Enter hazard area only to save life; limit entry to shortest possible time.
Emergency response actions may be performed prior to any measurement of radiation.
Notify local authorities and Radiation Control Authority of accident conditions.
Detain uninjured persons, isolate equipment with suspected contamination, and delay cleanup until instruction from Radiation Control Authority.

EMERGENCY RESPONSE INFORMATION

1) FIRE

Do not move damaged containers; move undamaged containers out of fire zone.
Fight fire from maximum distance.
Small fire: Dry chemical, CO2, Halon, water spray, or standard foam
Large fire: Water spray, fog (flooding amounts)

1) SPILL OR LEAK

Do not touch damaged containers or exposed contents.
Damage to outer container may not affect primary inner container.
Special form capsules are not expected to leak as a result of an accident or fire.

1) FIRST AID

Use first aid treatment according to the nature of the injury.
Advise medical personnel that victim may be contaminated with radioactive material.
If not affecting injury, remove and isolate potentially contaminated clothing and shoes. Wrap victim in blanket before transporting.
Except for the injured, detain persons exposed to radioactive material until arrival or instruction of Radiation Control Authority.

CALL THE FOLLOWING FOR EMERGENCY ASSISTANCE:

OCAL AUTHORITIES: 911, police, sheriff, fire department

ADIATION SAFETY OFFICER: Bruce Markert
RSO PHONE NUMBER: Work: x4258 Home: 287-5003

STATE OF FLORIDA OFFICE OF RADIATION CONTROL (STATE WARNING POINT):.....(904) 488-1320

Kevex Corporation (Cd109/Am241 Radioisotope)...415-573-5866

Cryogenics Rare Gas (Krypton 85)...800-221-0830

Radiological Health Services (Calibration/Leak Test Vendor)...353-5742

PROCEDURE FOR HANDLING KRYPTON - 85

Receipt of New Containers:

1. The receiving clerk shall notify the radiation safety officer when a new cylinder of gas containing Krypton - 85 is received.

2. The receiving clerk will keep the container on the Receiving Dock, outside of the main building and under his surveylance until the arrival of the Radiation Safety Officer.

3. The Radiation Safety Officer will then monitor the cylinder for leakage. He will also check the cylinder for activity by using a survey meter at 3 feet and record the reading in a log book. He will then check his readings against the shipping tag to verify the activity of the cylinder.

4. The serial number of the cylinder will be recorded in the log book along with the date and contents of the cylinder. The log book will be kept by the Radiation Safety Officer.

5. The cylinder will then be moved to the locked storage area which is accessible only to authorized personnel.

RETURN OF CYLINDERS:

Cylinders will only be returned to a company which has a current license to handle radioactive materials. A copy of the license will be kept on file by the Radiation Safety Officer.

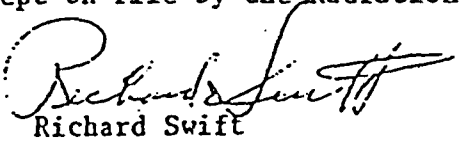
1. Activity of the cylinder will be monitored at a distance of 3 feet using a survey meter. This activity will be recorded in the log book and will be recorded on the shipping tag attached to the cylinder.

2. Any pressure of compressed gas remaining in the cylinder will also be checked and the P.S.I. will be recorded in the log book and on the shipping tag.

3. The type of carrier gas for the KR-85 will also be recorded in the log book and on the shipping tag.

4. The serial number of the cylinder, the destination and the packing slip number will be recorded in the log book.

5. A receipt from the recipient confirming the receipt of the cylinder will be required, and a copy will be kept on file by the Radiation Safety Officer.



Richard Swift
Radiation Safety Officer

UNISON INDUSTRIES
Norwich - Oxford Road (Route 12 South)
Norwich, New York 13815

NOTICE

EMERGENCY PROCEDURES

In the event of substantial release of Krypton 85 gas ...

1. Clear immediate area if blower is working and break occurs under the hood.

2. Clear the southwest quarter of the building if break occurs under hood and blower becomes inoperative, or break occurs not under hood.

3. Call the Radiation Safety Officer* and proceed to survey the fringe areas. Normal background readings will permit return of the workers.

UNISON INDUSTRIES
Norwich - Oxford Road (Route 12 South)
Norwich, New York 13815

NOTICE

SAFETY PRECAUTIONS

1. Ascertain that blower is operating prior to and during any Krypton 85 filling operation.

2. Always shut off the bottle of Krypton 85 and purge system at the conclusion of a work day.

3. Should the blower become inoperative during a filling operation, close off the bottle of Krypton 85. Do not release any Krypton 85 before blower is repaired.

4. The activity limit for exempt customers is 30 micro-curies per tube. Please advise the Radiation Safety Officer of any request for tubes or gaps containing more than 30 micro-curies. Do not process work orders for special tubes or gaps with Krypton 85 fills, unless accompanied by a statement of anticipated radio-activity.

5. This notice shall be posted at the Krypton 85 fill station.

R1201021 LICENSING TRACKING SYSTEM DATE: 20040913
PAGE: 1

LTS WORKSHEET

DOCKET NO : 03031066 LICENSE NO : 09-23745-01E STATUS: 0

MAIL CONTROL: 022434 RECEIPT DATE : 20040913 ACTION TYPE: 3
DUE DATE : 20050312

FED. GOVT : C 20041209 INST. CODE : 23745 LICENSE REGION: 0 20141231

ISSUE DATE: ~~20020423~~ ORIGINAL DATE: 19890419 EXPIRATION DATE: ~~20040930~~

NAME : UNISON INDUSTRIES DECOM FIN ASSUR REQD: N
SUBM: _

DEPT/BUREAU: _____ CONT PLAN REQD: N APPRV: _

BUILDING : _____

STREET : 7575 BAYMEADOWS WAY

CITY : JACKSONVILLE STATE: FL ZIP: 32256

CONTACT PERSON: BRUCE D. MARKERT PHONE: 904-739-4258

PRIMARY PGM CODE : 03251 SECONDARY PGM CODES: _____

INSPECTION REGION: 1 PRIORITY CODE: 5 INSPECTION CATEGORY: E

RADIATION SAFETY OFFICER: ~~BENNIE CHESTER, JR.~~ Bruce D. Markert

RSO PHONE: 904-739-4258 RSO FAX NUMBER: 904-739-4200

RSO EMAIL ADDRESS: Bruce.Markert@unison.ae.ge.com

STATES WHERE USE IS AUTHORIZED: 1
0 - ALL LISTED STATES
1 - SAME AS STATE IN ADDRESS
2 - ALL STATES
3 - NON-AGREEMENT STATES

AUTHORIZED STATES: _____ (USE ONLY IF ABOVE IS ZERO)

REPORTING IDENTIFICATION SYMBOL: _____

APPROVAL FOR: REDISTRIBUTION: N STORAGE ONLY: N
TEMPORARY JOB SITES: N INCINERATION: N
BURIAL: N

EXEMPTIONS GRANTED : _____

EXEMPTIONS REQUESTED: _____

EXEMPTIONS DENIED : _____

NAME	AUTHORIZATION

ADDRESS WHERE MATERIAL IS USED OR POSSESSED

BUILDING:	*	**
ROOM:		
STREET:	7575 BAYMEADOWS WAY.	NORWICH-OXFORD RD
CITY:	JACKSONVILLE	NORWICH
STATE:	FL 32256	NY 13815
INSPECTION DATE:		INSPECTION DATE:

BUILDING:		
ROOM:		
STREET:		
CITY:		
STATE:		
INSPECTION DATE:		INSPECTION DATE:

BUILDING:		
ROOM:		
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STATE:		
INSPECTION DATE:		INSPECTION DATE:

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03251
Status Code: 0
Fee Category: 3I
Exp. Date: 20040930
Fee Comments:
Decom Fin Assur Reqd: N

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
   Applicant/Licensee: UNISON INDUSTRIES
   Received Date: 20040913
   Docket No: 3031066
   Control No.: 22434
   License No.: 09-23745-01E
   Action Type: Renewal

2. FEE ATTACHED
   Amount: 0
   Check No.:

3. COMMENTS

Signed
Date 9/13/04

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/)

1. Fee Category and Amount:

2. Correct Fee Paid. Application may be processed for:
   Amendment
   Renewal
   License

3. OTHER

Signed
Date