

030-35694

NRC FORM 313
(3-2009)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 3/31/2012

APPLICATION FOR MATERIALS LICENSE

Estimated burden per response to comply with this mandatory collection request: 4.3 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 and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), 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.

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:

OFFICE OF FEDERAL & STATE MATERIALS AND ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

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
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, 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 BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
612 E. LAMAR BOULEVARD, SUITE 400
ARLINGTON, TX 76011-4125

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 _____

C. RENEWAL OF LICENSE NUMBER 34-23877-01E

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

EYE LIGHTING INTERNATIONAL
9150 HENDRICKS RD.
MENTOR, OHIO 44060

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

9150 HENDRICKS RD.
MENTOR, OHIO 44060

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

JOHN HECHT RSO

TELEPHONE NUMBER
440-350-7000 EXT 2121

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 **SEE ATTACHMENT 1**

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. **SEE ATTACHMENT 2**

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

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

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT **SEE ATTACHMENT 3**

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

FEE CATEGORY **3.1** AMOUNT ENCLOSED \$ **0.00**

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, 36, 39, 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.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

TOM SALPIETRA PRESIDENT & COO

SIGNATURE *[Signature]* DATE **01/JUNE/11**

FOR NRC USE ONLY

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

575310



**APPLICATION FOR EXEMPT DISTRIBUTION LICENSE
ATTACHMENT 1
ITEM 5: RADIOACTIVE MATERIAL**

a Element and Mass Number	b Chemical and Physical Form	c Maximum Amount to be Possessed at Any One Time (Curies)
Krypton-85	Krypton-85 in the physical form of a gas containing Argon and Krypton. Its chemical form is a noble (i.e. non-reactive) gas. The gas is sealed inside a metal halide arc tube, which in turn is sealed inside a metal halide lamp.	Unlimited number of metal halide lamps, each containing an amount of Krypton-85 not exceeding the exempt quantity of 30 μ Ci.



**APPLICATION FOR EXEMPT DISTRIBUTION LICENSE
ATTACHMENT 2**

ITEM 6: PURPOSES FOR WHICH LICENSED MATERIAL WILL BE USED

The Krypton-85 is used in the arc tubes of metal halide lamps. These lamps are used in factories, commercial facilities, gymnasiums, sports stadiums, recreational facilities, etc., whenever there is a need for high output, high efficiency lamps providing "white" light.

A. Additive material

Sealed metal halide lamps will be received at the EYE Lighting facility. Each lamp will contain a sealed arc tube, which in turn will contain between about 0.1 and 1 μCi (between about 3.7 and 37 KBq) of Krypton-85.

We will be receiving sealed arc tubes and finishing them into lamps.

B. Commercial distribution of products

These metal halide lamps will be distributed commercially for use in factories, commercial facilities, gymnasiums, sports stadiums, recreational facilities, etc., whenever there is a need for high output lamps providing "white" light.

EYE Lighting has received a license from the State of Ohio to store metal halide lamps containing Krypton-85, pursuant to Section 32.14 of 10 CFR 32. This license number is 03214440004. A copy of this license is enclosed.

1. Type and quantity of byproduct material in each product.

There will be between about 0.1 and 1 μCi (between about 3.7 and 37 KBq) of Krypton-85 sealed in each arc tube. Each metal halide lamp contains one arc tube. The arc tube, which has a quartz body, is then assembled into a mount, which is then sealed in a glass outer envelope, to complete the construction of the high intensity discharge lamp. These lamps containing Krypton-85 are not manufactured at the EYE Lighting facility. They will be stored here prior to distribution.

2. Chemical and physical form of the byproduct material.

As stated in Attachment 1, the chemical form of the Krypton-85 byproduct material is a noble (i.e. non-reactive) gas. The Krypton-85 is in the physical form of a gas, mixed with argon (non-radioactive).

3. Solubility of the identified byproduct material.

Argon and Krypton are both noble gases. Thus the gas mixture is soluble only in concentrated hydrochloric acid, sulfuric acid, or aqua regia (nitric and hydrochloric acids).



**APPLICATION FOR EXEMPT DISTRIBUTION LICENSE
ATTACHMENT 2
ITEM 6: PURPOSES FOR WHICH LICENSED MATERIAL WILL BE USED**

B. Commercial distribution of products (continued)

4. Method of retaining the byproduct material in the product during normal and abnormal conditions of use.

The metal halide lamp consists of the following:

- A quartz arc tube, in which the Krypton-85, in the Ardon-Krypton gas mixture, is contained; and
- A glass lamp envelope, enclosing the arc tube.

During normal use the lamps are stored in cardboard boxes or are used in electrical sockets. During this time, the Krypton-85 byproduct material is double-contained within a sealed quartz arc tube, which is located inside a sealed glass lamp envelope.

During abnormal use, whether in storage or in use, the envelope could be broken. However, the arc tube would most likely remain intact (unless dropped from a great height or deliberately ground up – e.g., underfoot, with tools, or with a machine).

in any case, even if both containment vessels failed, a maximum of only about 1 μCi of Krypton-85 would be released.

5. The maximum external radiation levels at 5 and 25 cm from the surface of the product.

We cannot measure the dose rate at the external surface of the metal halide lamp with our survey meters. (These are Ludlum Model 3 survey meters, each equipped with a Ludlum Model 44-38 energy-compensated GM detector). Therefore, we have estimated these dose rates as described in Attachment 3, Section I(b)(7) below.

At 5 cm and 25 cm from the lamp surface, the maximum external radiation levels would be about 0.27 $\mu\text{rem} / \text{hr}$ and 0.021 $\mu\text{rem} / \text{hr}$, respectively.

6. Estimated total quantity of byproduct material distributed annually.

At about 0.1 to 1 μCi of Krypton-85 per lamp, for a maximum distribution rate of about 20,000 lamps, the annual distribution of Krypton-85 gas is expected to be about 0.02 Curie.



EYE LIGHTING INTERNATIONAL

APPLICATION FOR EXEMPT DISTRIBUTION LICENSE ATTACHMENT 2

ITEM 6: PURPOSES FOR WHICH LICENSED MATERIAL WILL BE USED

C. Importing of Krypton-85

Pursuant to 10 CFR 110.27 (a)(3), Krypton-85 gas in high intensity discharge lamps may be imported for use involving activities covered under the specific byproduct material license (issued to us by the State of Ohio) for which this application is being submitted..

D. Exporting of Krypton-85 in Arc Tubes or in Lamps

Pursuant to 10 CFR 110.23 (1)(I), Krypton-85 gas in high intensity discharge lamps may be exported for use in foreign countries.



**EYE LIGHTING
INTERNATIONAL**

May 31, 2011

**APPLICATION FOR EXEMPT DISTRIBUTION LICENSE
ATTACHMENT #3
ITEM 5: RADIOACTIVE MATERIAL**

Disposal of arc tubes and lamps that contain thorium and Kr-85

As stated in OAC 3701-29-02.1 Appendix B [10 CFR 40.13(c)], any persons exempt from the regulations in 10 CFR 40 for possession and use of materials that are described in item (1) through (8) of OAC 3701-29.02.1 Appendix B [10 CFR 40.13(c)]. Intact lamps and arc tubes are included in this exemption according to OAC 3701-29.02.1 Appendix B [10 CFR 40.13(c) (1) (IV)] as “electric lamps for illuminating purposes”, as long as each lamp or arc tube contains less than 50 mg. of thorium. The arc tubes at EYE Lighting contain less than 50 mg. of thorium.

Therefore, with reference to the exemption described above, these arc tubes or intact lamps containing arc tubes will be transferred to a recycler for recovery of mercury and any other recyclable materials.

EYE Lighting International of North America, Inc.
a division of Iwasaki Electric of Japan

9150 Hendricks Road
Mentor, Ohio 44060

Tel: (440) 350-7000
Fax: (440) 350-7001

www.eyelighting.com

OHIO DEPARTMENT OF HEALTH
LICENSE FOR RADIOACTIVE MATERIAL

Pursuant to Chapter 3748 of the Ohio Revised Code, and in reliance on statements and representations made by the licensee, a license is hereby issued authorizing the licensee named herein to receive, acquire, possess, and transfer radioactive material as designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the applications of Chapter 3748 of the Ohio Revised Code and all applicable rules promulgated thereunder. This license is subject to all applicable rules, regulations and orders of the Ohio Department of Health now or hereinafter in effect and to any conditions specified below.

LICENSEE 1. Eye Lighting International North America, Inc. 2. 9150 Hendricks Road Mentor, OH 44060	LICENSE NUMBER 3. 03214440004 EXPIRATION DATE 4. July 1, 2015 FILE NUMBER / ID NUMBER 5. 501232 - 3880
---	---

- | | | |
|---|---|---|
| 6. RADIOACTIVE MATERIAL

A. Thorium (natural)

B. Thorium (natural) | 7. CHEMICAL AND/OR PHYSICAL FORM

A. Thorium-iodide not exceeding 4% by weight mixed with non-radioactive iodide (<i>Powder</i>)

B. Thorium-iodide not exceeding 4% by weight alloyed with tungsten oxide (<i>Solid</i>) | 8. MAXIMUM QUANTITY THAT LICENSEE MAY POSSESS AT ANY ONE TIME UNDER THIS LICENSE

A. 1.0 kg [8.14 MBq (0.22 mCi)]

B. 5.0 kg [40.7 MBq (1.1 mCi)] |
|---|---|---|

9. Authorized Use

- A. and B. For use in production of arc tubes for high intensity discharge lamps, arc tubes, thoriated tungsten wire, or electrodes or electrode assemblies containing thoriated tungsten wires.

CONDITIONS

10. Licensed material may only be used at the licensee's facilities located at: 9150 Hendricks Road, Mentor, OH 44060.
11. The Radiation Safety Officer for this license is: **John Hecht**.
12. Licensed material shall be used by, or under the supervision of, individuals who have satisfactorily completed the licensee's training program described in the licensee's application dated *March 31, 2010*.
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 Ohio Department of Health's statutes, rules, and orders shall govern unless statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. *Renewal application dated March 31, 2010 and e-mail correspondence dated August 6, 2010 and August 9, 2010; Amendment 4 renews license 03214440004 in its entirety.*

For the Ohio Department of Health

DATE: 8/17/10BY: 

Robert E. Owen, Chief
 Bureau of Radiation Protection
 on behalf of Director of Health