

NRC FORM 313
(10-2005)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 10/31/2008

APPLICATION FOR MATERIALS LICENSE

Estimated burden per response to comply with this mandatory collection request: 4.4 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 and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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:

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:

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
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-4005

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 21-00627-02
 C. RENEWAL OF LICENSE NUMBER _____

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

BASF Corporation
1609 Biddle Ave.
Wyandotte, MI 48192

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

BASF Corporation
1609 Biddle Ave.
Wyandotte, MI 48192

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Derek Hetes

TELEPHONE NUMBER

(734) 324-5282

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 AREAS

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM

11. WASTE MANAGEMENT.

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

FEE CATEGORY **NA** 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

Derek Hetes Radiation Safety Officer

SIGNATURE



DATE

02/03/2011

FOR NRC USE ONLY

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

RECEIVED FEB 08 2011



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CERTIFIED MAIL – RETURN RECEIPT REQUESTED:
7005 3110 0003 0609 8658

February 4, 2011

United States Nuclear Regulatory Commission
Region III
Nuclear Materials Licensing Branch
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Subject: **License Amendment Application**
License No. 21-00627-02

To whom it may concern:

Please find enclosed the Application for the amendment of the BASF Wyandotte, Michigan Site Material License. This submittal contains NRC Form 313 and the required information for items 5 - 11. Listed below are the requested modifications:

- 1) Remove the Ohmart Model 2000 source from our current license. The ownership of this source was transferred to QSA Global in 2009. BASF maintains the proper records showing QSA Global received and accepted ownership of these sources.
- 2) Revise Item # 17 on license regarding prohibition on non-routine maintenance activities such as: installation, initial radiation surveys, relocation, removal from service, alignment, replacement and disposal of sealed source. RSOs have completed training and provided non-routine maintenance procedures that comply with guide lines set forth in Appendix N of NUREG 15567. We request that Derek Hetes and Dan Hannewald be given authority to provide the above services for nuclear sources located at the Wyandotte site. Please see provided supporting information for approval of amendment request.

You can reach me at (734) 324-5282 or email me at derek.hetes@basf.com. with any questions or concerns.

Sincerely,

Derek Hetes
Radiation Safety Officer/ EHS Team Member
BASF- Wyandotte Site

BASF Corporation
1609 Biddle Avenue
Wyandotte, MI 48192
Tel: (734) 324-6100
www.basf.com/usa

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Exhibit Items Addressing Parts 5 - 11 Of Material License Application (NRC Form 313)

Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer Model No.	Quantity	Use as Listed on SSD Certificate	Other uses not listed on SSD Certificate
	X	Cesium-137	Ohmart Model 2000	300 mCi	No [x] Specific description of the gauge use: <u>Gauge has been removed from site and transferred to xxx for disposal.</u>	[x] Not applicable
X		Cesium-137	Kay-Ray/ Sensall Model # 7062B (TX-0634-D-172-B)	25 mCi	Yes[x] Specific description of the gauge use: <u>Used in Kay-Ray level gauging system.</u>	[x] Not applicable
X		Cesium-137	Kay-Ray/ Sensall Model # 7062B (TX-0634-D-172-B)	25 mCi	Yes[x] Specific description of the gauge use: <u>Used in Kay-Ray level gauging system.</u>	[x] Not applicable
X		Cesium-137	Kay-Ray/ Sensall Model # 7062B (TX-0634-D-172-B)	10 mCi	Yes[x] Specific description of the gauge use: <u>Used in Kay-Ray level gauging system.</u>	[x] Not applicable
X		Cesium-137	Kay-Ray/ Sensall Model # 7062B (TX-0634-D-172-B)	10 mCi	Yes[x] Specific description of the gauge use: <u>Used in Kay-Ray level gauging system.</u>	[x] Not applicable
X		Cesium-137	Thermo Fisher Scientific/ TN Technologies Model 5205A (TX-0634-D-142-B)	5 mCi	Yes[x] Specific description of the gauge use: <u>Used in Thermo Fisher Scientific/ TN Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Thermo Fisher Scientific/ TN Technologies Model 5205A (TX-0634-D-142-B)	5 mCi	Yes[x] Specific description of the gauge use: <u>Used in Thermo Fisher Scientific/ TN Technologies level gauging system.</u>	[x] Not applicable



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Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer Model No. (SSDR)	Quantity	Use as Listed on SSD Certificate	Other uses not listed on SSD Certificate
X		Cesium-137	Thermo Fisher Scientific/ TN Technologies Model 5205A (TX-0634-D-142-B)	5 mCi	Yes[x] Specific description of the gauge use: <u>Used in Thermo Fisher Scientific/ TN Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Thermo Fisher Scientific/ TN Technologies Model 5205A (TX-0634-D-142-B)	5 mCi	Yes[x] Specific description of the gauge use: <u>Used in Thermo Fisher Scientific/ TN Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cesium-137	Berthold Technologies Model LB300LP (TN-1031-D-104-B)	50 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable



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Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer Model No. (SSDR)	Quantity	Use as Listed on SSD Certificate	Other uses not listed on SSD Certificate
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.3510 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.3510 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.3510 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.622 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable



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Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer Model No. (SSDR)	Quantity	Use as Listed on SSD Certificate	Other uses not listed on SSD Certificate
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.622 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.622 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes[x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable



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Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer Model No. (SSDR)	Quantity	Use as Listed on SSD Certificate	Other uses not listed on SSD Certificate
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes [x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable
X		Cobalt-60	Berthold Technologies Model LB300L (TN-1031-D-104-B)	0.459 mCi	Yes [x] Specific description of the gauge use: <u>To be used in Berthold Technologies level gauging system.</u>	[x] Not applicable



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Table B.2 Items 7 through 10: Training, Experience, Facilities and Equipment and Radiation Safety Program

	Training & Experience	Yes	Alternative Procedures Attached
7. Individuals Responsible for Radiation Safety Program and Their Training Experience 7.1 Radiation Safety Officer: Derek Hetes Alternate: Dan Hannewald	The RSOs have completed Radiation Safety Training consistent with criteria in NUREG-1556 Vol. 4, October 1998. AND Before being named RSO, future RSO's will have successfully completed training consistent with criteria in NUREG-1556 Vol. 4, October 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our License.	[X]	[X] Training certificates for Non-Routine Maintenance Activities from Manufacturer provided for both RSOs.
7. Individuals Responsible for Radiation Safety Program and Their Training and Experience 7.2 Authorized Users	PROPOSED AUTHORIZED USERS: Before using licensed materials, authorized users will have successfully completed the training described in Criteria in the section titled Authorized Users in NUREG-1556, Vol. 4 dated October 1998.	[X]	[]
8. Training for Individuals in the Course of Employment are Likely to Receive doses in Excess of 100 mRem/ yr	BASF Wyandotte Site employees who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year shall receive training according to 10 CFR 19.12.	[X]	
9. Facilities and Equipment	We will ensure that the location of each fixed gauge meets the Criteria in the section entitled "Facilities and Equipment" in NUREG-1556, Vol. 4 dated October 1998.	[X]	[]
10. Radiation Safety Program - Survey Instruments	We will use instruments that meet the Criteria in the section entitled "Radiation Safety Program - Instruments" in NUREG-1556, Vol. 4 dated October 1998 and each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations.	[X]	[]
10. Radiation Safety Program - Material Receipt and Accountability	Physical inventories will be conducted at intervals not to exceed 6 months or at other intervals approved by the NRC, to account for all sealed sources and devices received and possessed under the license.	[X]	[]



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Table B.2 Items 10 through 11: Radiation Safety Program and Waste Disposal

	Training & Experience	Yes	Alternative Procedures Attached
10. Radiation Safety Program - Occupational Dosimetry	We will perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10CFR Part 20 or we will provide dosimetry that meets the Criteria in the section entitled, " Radiation Safety Program - Occupational Dosimetry," in NUREG-1556, Vol. 4 dated October 1998.	[X]	[]
10. Radiation Safety Program - Operating and Emergency Procedures	Operating and emergency procedures have been developed, implemented, maintained and distributed that meet Criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures" in NUREG-1556, Vol. 4 dated October 1998.	[X]	[]
10. Radiation Safety Program - Leak Test	Leak tests will be performed at intervals approved by the NRC and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by using a leak test kit supplied by an organization authorized by NRC to provide leak test kits to other licenses and according to the kit supplier's instructions.	[X]	[]
10. Radiation Safety Program - Maintenance	<p><u>ROUTINE MAINTENANCE</u> We have implemented and maintain procedures for routine maintenance of our fixed gauges according to each manufacturers or distributor's written recommendations and instructions.</p> <p><u>NON-ROUTINE OPERATIONS</u> The gauge manufacturer, distributor or other person authorized by NRC or an Agreement State will perform non-routine operations such as installation, initial radiation survey, repair, and maintenance of components related to the radiological safety of the gauge, gauge relocation, replacement, and disposal of sealed sources, alignment, or removal of a gauge from service</p>	[X]	[X] Included are attachments to address Appendix N guide lines for non-routine activity requests.
10. Radiation Safety Program - Fixed Gauge Use at Temporary Sites	Not applicable to our Program		[X] Not Applicable
11. Waste Mmgt.	No response required.		



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Appendix N Items

1) Describe the types of work, maintenance, cleaning, repair that involve:

- Installation, relocation, or alignment of the gauge.

Expected Activity: Level gauges installed, relocated or aligned on chemical process equipment and reactors by RSOs or Resins Maintenance Techs under direct supervision of authorized RSO.

- Components, including electronics, related to the radiological safety of the gauge (e.g., the source, source holder, source drive mechanism, shutter, shutter control, or shielding).

Expected Activity: None

- Replacement and disposal of sealed sources.

Expected Activity: Level gauges removed from service on chemical process equipment and reactors by RSOs or Resins Maintenance Techs under direct supervision of authorized RSO.

- Removal of a gauge from service.

Expected Activity: Level gauges removed from service on chemical process equipment and reactors by RSOs or Resins Maintenance Techs under direct supervision of authorized RSO.

- A potential for any portion of the body to come into contact with the primary radiation Beam.

Expected Activity: Level gauges on chemical process equipment and reactors will be locked out according to Site Procedure prior to any handling activities. Nonroutine maintenance activities will only be done or directly supervised by authorized RSOs. Potential for contact with unshielded beam is practically nonexistent.

- Any other activity during which personnel could receive radiation doses exceeding NRC limits.

Expected Activity: There are no activities that will be done on site in which BASF personnel will exceed an NRC exposure limit.

2) Identify who will perform non-routine operations and their training and experience.

Acceptable training would include manufacturer's or distributor's courses for non-routine operations or equivalent.

Primary- Site Radiation Safety Officer: **Derek Hetes**

- Successful completion of 40 hour radiation safety course. **Qualification: Completed initial 40- hr. RSO course by Nevada Technical Associates Dec. 1 – 6, 2002.**

Completed refresher 40-hr. RSO course by Engelhardt & Associates May 14- 18, 2007. Certificate included.

- Successful completion of a fixed gauge manufacturer's course for users. **Qualification: Completed fixed gauge course of non-routine maintenance activities including: gauge installation, initial radiation surveys, removal and alignment by Berthold Technologies Nov 19, 2010. Certificate included.**

- Hands-on experience with fixed gauges. **Qualification: Back up or primary RSO for five years at current location. > 80 hrs. Hands on experience performing wipe testing, radiological surveys, shutter checks, observing and participating in gauge installations and removals by authorized NRC person.**



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Alternate- Radiation Safety Officer: **Dan Hannewald**

- Successful completion of 40 hour radiation safety course. **Qualification: Completed initial 40- hr. RSO course by ThermoFisher Scientific March 17, 2007. Certificate included.**

- Successful completion of a fixed gauge manufacturer's course for users. **Qualification: Completed fixed gauge course of non-routine maintenance activities including: gauge installation, initial radiation surveys, removal and alignment by Berthold Technologies Nov 19, 2010. Certificate included.**

- Hands-on experience with fixed gauges. **Qualification: Back up or primary RSO for four years at current location and previous employer. > 80 hrs. Hands on experience performing wipe testing, radiological surveys, shutter checks, observing and participating in gauge installations and removals by authorized NRC person.**

- 3) Submit procedures for non-routine operations. These procedures should ensure the following:
- doses to personnel and members of the public are within regulatory limits and ALARA (e.g., use of shielded containers or shielding);
 - the source is secured against unauthorized removal or access or under constant surveillance;
 - appropriate labels and signs are used;
 - manufacturer's or distributor's instructions and recommendations are followed;
 - any non-manufacturer/non-distributor supplied replacement components or parts, or the use of materials (e.g., lubricants) other than those specified or recommended by the

The following procedures are specific to non-routine maintenance activities. They are only to be carried out or supervised by an authorized RSO. Whether the activities are installation, initial radiation surveys, gauge relocation, replacement and disposal of sealed sources, alignment, or removal of a gauge from service; all of these activities will follow one of the procedures below. Included is supporting documentation for non-routine activities such as survey form, site standard with ALARA provisions.

NON-ROUTINE MAINTENANCE PROCEDURES

REMOVAL OF A NUCLEAR GAUGE FROM SERVICE

Removal of devices containing radioactive materials shall only be performed by or under the direct supervision of a Radiation Safety Officer (RSO) or persons specifically authorized by the USNRC to perform such tasks.

All removal activities must be documented on the Nuclear Gauge Survey and Lockout form.

To remove a nuclear gauge from service and transport from one location to another such as moving to a storage location, the following procedure must be adhered to:

1. Remove all guarding enclosing the gauge, as necessary, to allow for unhindered removal of the unit.
2. Secure the device following the Nuclear Gauge Lockout procedure as outlined in 5.8.



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3. Before removing the gauge retaining bolts, ensure that the source is securely strapped and protected against falling or unexpected movements.
4. Once the gauge is removed, ensure it is properly labeled, sealed and transported to a controlled and locked storage location. Refer to section 5.6 for storage requirements.
5. Upon completion of removal and transfer activities, the site RSO shall update Nuclear Source Inventory Log and file Survey record.

INSTALLATION OF A NUCLEAR GAUGE

Installation and initial radiation surveys of devices containing radioactive materials shall only be performed by or under the direct supervision of a Radiation Safety Officer (RSO), or persons specifically authorized by the USNRC to perform such tasks.

Installations shall be documented on the Nuclear Gauge Survey and Lockout form.

Prior to transport of the device from its storage location, the RSO shall ensure the device is locked out and perform a radiation survey of the source.

If radiation readings >10 mrem/hr at 12" are observed, further investigation is necessary to determine if there is leakage or contamination present.

If radiation levels are satisfactory, the RSO shall remove the device from its current storage location and ensure it is properly transported to its service location.

Install the gauge in a manner consistent with its defined conditions of normal use outlined in the Sealed Source Device Registry information and ensure that it is secured to prevent unauthorized removal.

Ensure that the unit has the proper labeling visible and the area is posted, as necessary, provided per 5.1.1.

Unlock the gauge and perform an initial radiation survey of the device.

Install guarding to prevent access to unshielded beam, as necessary.

Prior to returning to routine service, conduct a wipe test for leakage on the gauge using a NLTC Leak Test Kit and ensure it is tested to verify that it functions as designed.

Upon completion of installation activities, the site RSO shall update Nuclear Source Inventory Log and file Survey record.



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Excerpt form Site Standard regarding ALARA policy

4. ALARA PHILOSOPHY

4.1. In keeping with radiation protection philosophy and current regulatory requirements, BASF will maintain all exposures to personnel and the environment ALARA. Exposures will be maintained ALARA by minimizing source strength, using sufficient shielding, minimizing personnel time spent near the sources and by maximizing the distance from radioactive sources.

4) Confirm that individuals performing non-routine operations on gauges will wear both whole body and extremity monitoring devices or perform a prospective evaluation demonstrating that unmonitored individuals performing non-routine operations are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits.

See dose evaluation below for a Resins plant Maintenance Tech working under the direct supervision of an authorized RSO.

Occupational Dose Evaluation

Licensee's Name **BASF Corporation**

License No. **21-00627-02**

Evaluation for Maintenance Tech Model Berthold LB 300 LP Gauge 50 mCi Cs137 ⁽¹⁾

Time needed to perform the entire maintenance procedure. (Installation/removal of both point source gauges on side of 1200 train reactor- #1203.)	<u>180</u> minutes/60	<u>3</u> hour
Expected whole body dose rate received by the individual, determined using exposure rates measured at 12 in. from the gauge while the sealed source is in the unshielded position. ⁽²⁾		<u>7.8</u> mrem/hr
Time the hands were exposed to the shielded source.	<u>90</u> minutes/60	<u>1.5</u> hour
Expected extremity dose rate received by the individual, determined using measured exposure rates for the unshielded source on contact with the lead housing. ⁽³⁾		<u>50</u> mrem/hr

Whole Body Dose Formula*: (3 hours in Row A) x (7.8 m/hr in Row B) x (2 activities- one removal and one subsequent installation) = **47 Expected Whole Body Dose mrem**

Extremity Dose Formula**: (1.5 hours in Row C) x (50 mrem/hr in Row D) x (2 activities- one removal and one subsequent installation) = **150 Expected Extremity Dose mrem**



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- *Expected Whole Body Doses less than 500 mrem requires no dosimetry
 - ** Expected Extremity Doses less than 5000 mrem requires no dosimetry
 - **Based on the above calculations, no dosimetry will be required for non-routine maintenance activities.**
-

Notes:

1) It is highly unlikely that a Technician would perform more than one removal and one installation in any given year. It is more than likely that they will go several years in between any type of non-routine maintenance activities. Therefore, only a maximum frequency of two activities per year will be accounted for in both dose formulas. One activity is the removal of a gauge from service and placing it in storage. The other is retrieving gauge from storage and re-installing. Both activities should take about the same time to complete and will be the reverse operation of the other.

2) Installation scenario is with highest activity source on site. One foot distance was used as a conservative estimate of average Technician position relative to gauge. Although it is highly likely that the average distance would be greater over the course of the maintenance activity which would reduce actual amount of exposure. No data was available for one-foot exposure rate with source shielded and locked out which is required condition for this maintenance. Therefore an overly conservative higher value for exposure rate at 12 inches with the source in an unshielded position will be used for whole body calculation since we have actual field data on this measurement. One-foot dose rate 7.8 mR/h verified by field survey with Victoreen 290 by RSO on 10/15/2009.

3) Exposure represents actual amount of contact time for hands with gauge for Technician. Handling will be done with gauge in shielded and locked out position. Therefore, using the on contact exposure rate in an unshielded position is likely a conservative over estimate for the extremity calculation. The unshielded source on contact dose rate 50 mR/h was verified by field survey with Victoreen 290 by RSO on 10/15/2009.

5) Verify possession of at least one survey instrument that meets the criteria in "Radiation Safety Program - Instruments in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauges Licenses,' dated October 1998."

The site has three calibrated survey meters on site to use for non-routine maintenance activities. The calibration certificate for the one most likely to be used for such activities is included.

6) Describe steps to be taken to ensure that radiation levels in areas where non-routine operations will take place do not exceed 10 CFR 20.1301 limits. For example, applicants can do the following:

- commit to performing surveys with a survey instrument (as described above);
- specify where and when surveys will be conducted during non-routine operations; and
- commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by 10 CFR 20.2103.



The Chemical Company

Per the site lock out and non-routine procedures, a calibrated survey meter must always be used during such activities. Also as an additional safety precaution, we are considering purchasing a personal radiation dosimeter for monitoring during non-routine activities. All survey records are kept for at least 5 years per site records retention policy.



QSA GLOBAL

6765 Langley Drive
Baton Rouge, Louisiana 70809
Telephone: 225-751-5893
Fax: 225-756-0365

Date: May 18, 2009

Derek Hetes
BASF Corporation
1609 Biddle Ave
Wyandotte, MI 48192

MRA # 6959

This is to advise that the Radioactive Material as detailed below has been received by QSA Global, Inc as of 5-18-09 and we have taken possession of this source.

Manufacturer	Model	S/N	Isotope	Activity
Ohmart/Vega	SHD	M0079	Cs-137	300 mci

Please retain this record for your files. Should you require further assistance, please contact us at QSA Global, Inc.

Regards,

Rusty Barrett
Technical Service Manager

Rev1,mb5809

rusty.barrett@QSA-GLOBAL.COM

Ohmart/VEGA Corp.

Leak Test Report

4241 Allendorf Drive
Cincinnati, OH 45209
Phone (513) 272-0131 Fax (513) 272-0133

1089 ID
derek.hetes@basf.com E-mail

Customer Information: Derek Hetes
BASF Wyandotte North Works
1609 Biddle Avenue
Wyandotte, MI 48192

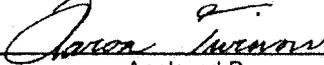
Analyzed By: Aaron Tiernan
Equipment #: NS-0095
Calibration Due: 7/23/2009
Analysis Date: 5/19/2009
Sources Analyzed: 1

OAC - 3701:1-38-24

(E) A sealed source shall be considered to be leaking if the presence of one hundred eighty-five becquerels (0.005 microcurie) or more of removable contamination on any test sample is identified.

Serial #	Isotope	mCi	Source Holder	Customer Tag #	Test Result	Test Date	Test Interval	Next Test Due
M0079	Cs-137	300	SHD	TDA Tank	< 0.005 (µCi)	5/14/2009	3 Years	5/14/2012

Ohmart/VEGA's leak test analysis is done per work instruction 450-03-005 in compliance with Ohio ODH License # 03214310002.


Analyzed By

5/19/09
Analyze Date


Reviewed By

5/19/09
Review Date

SHIPPED
5/14/09
MA

STRAIGHT BILL OF LADING - SHORT FORM
ORIGINAL - NOT NEGOTIABLE

_____ of _____

(Name of Carrier)
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

From:
Company BASF Wyandotte North Works

Address: 1609 Biddle Avenue
Wyandotte, MI 48192

The property described below, in apparent good order, except as noted (content and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Official, Southern, Western and Illinois Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classifications or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns

Consigned to QSA - Global
Destination 6765 Langley Dr.; Baton Rouge, La 70809
Route _____

No. Pkg.	H/ M	Kind of Packages, Description of Articles, Special Marks and Exceptions	*Weight Sub. to Cor.	Principal Radioactive Contents	Activity of Contents	T.I.	Type Label
1	X	UN 3332, RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, 7 1 Crate STC 1 Cask of Radioactive Material	250	Cs-137	11.1 GBq 300 mCi	0.1	Yellow II
<p>This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to applicable regulations of the Department of Transportation.</p> <p>24 Hour Emergency Contact: (734) 558-1072</p>							

SHIPPER'S REF. NO. 6110820-6971		Third Party Bill To:	
MATERIAL RETURN AUTHORIZATION NO. 6959	Prepaid <input checked="" type="checkbox"/>		
	Collect <input type="checkbox"/>		

SIGNATURE OF PERSON PREPARING THE SHIPMENT _____

NAME OF SHIPPER/OWNER Derek Hetes RECEIVED BY _____

Permanent post office address of shipper: 1609 Biddle Avenue Received date _____
Wyandotte, MI 48192

Shipper's Signature _____ Date signed _____

OHMART VEGA

Field Service Report

4241 Allendale Drive - Cincinnati, OH - 45209
 Phone 513-272-0131 Fax 513-272-4381

Field Service # 6110820-6971
 CO # M502011057
 Service PO # 4591657092
 Visit Date(s) 14-May-2009 Page 1 of 1
 Customer Contact Derek Hetes
 Customer Phone# (734)324-5282
 Customer RSO Derek Hetes

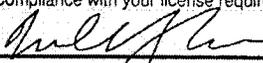
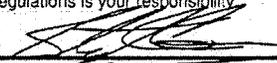
Invoice Address	Service Address	Equipment Worked On			
		Level	Density	Scale	Other
	BASF Wyandotte North Works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	1609 Biddle Avenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Wyandotte, MI 48192	Ion Chamber	Scintillator		Vega
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Smart Pro	HART		Other
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source Disposal

14 May 09: I arrived on site and met with Derek Hetes. I supervised the dismounting of 1 SHD source holder from the TDA tank. I packaged and labeled the source holder for shipment to QSA for disposal.

Radiation Safety Training	Yes	No	Leak Test Performed	Yes	No	Radiation Survey	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Ohmart/VEGA Corporation believes strongly in the safe use of radioactive material by applying the ALARA principle. No comments, written or verbal, by any Ohmart/VEGA employee should be considered as a deviation from that philosophy or as permission to violate any regulation or condition of your license. Compliance with your license requirement and the appropriate regulations is your responsibility.

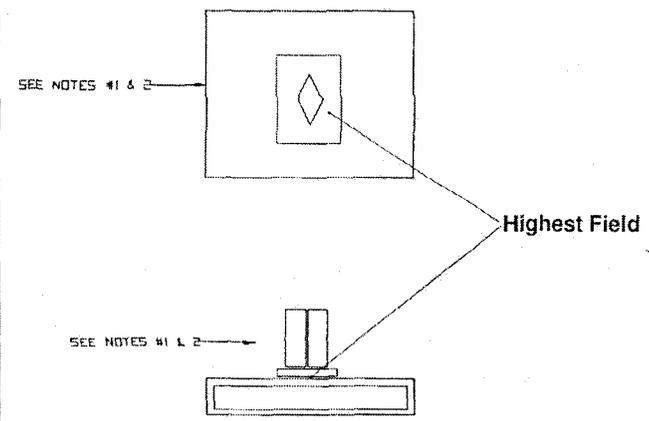
Customer Signature  Service Representative 
 Printed name Stephen Conway

ECON NUMBER	REV	REVISION	BY	DATE
1				

F.S. # 6110820-6971
 MRA # 6959
 SKID # 1

HIGHEST SURFACE FIELD 1.5
 (SEE NOTE #3)
 TRANSPORT INDEX 0.1
 (SEE NOTE #3)

SOURCE HOLDER(S) PACKED ON SKID N/A IN BOX 1



#1 SO/CO # M502011057
 SOURCE HOLDER LOCKED "OFF" Yes
 SOURCE HOLDER MODEL SHD
 SOURCE MATERIAL Cs-137
 SOURCE ACTIVITY 300 mCi (1 mCi=0.037GBq)
 SOURCE SERIAL # M0079
 ORIGINAL SHIP DATE 12/85
 GROSS CONTAMINATION CHECKED Yes
 LEAK TEST PERFORMED Yes

~~#3 SO/CO #
 SOURCE HOLDER LOCKED "OFF"
 SOURCE HOLDER MODEL
 SOURCE MATERIAL
 SOURCE ACTIVITY mCi (1 mCi=0.037GBq)
 SOURCE SERIAL #
 ORIGINAL SHIP DATE
 GROSS CONTAMINATION CHECKED
 LEAK TEST PERFORMED~~

#2 SO/CO #
 SOURCE HOLDER LOCKED "OFF"
 SOURCE HOLDER MODEL
 SOURCE MATERIAL
 SOURCE ACTIVITY mCi (1 mCi=0.037GBq)
 SOURCE SERIAL #
 ORIGINAL SHIP DATE
 GROSS CONTAMINATION CHECKED
 LEAK TEST PERFORMED

~~#4 SO/CO #
 SOURCE HOLDER LOCKED "OFF"
 SOURCE HOLDER MODEL
 SOURCE MATERIAL
 SOURCE ACTIVITY mCi (1 mCi=0.037GBq)
 SOURCE SERIAL #
 ORIGINAL SHIP DATE
 GROSS CONTAMINATION CHECKED
 LEAK TEST PERFORMED~~

Survey Meter
 MFG. Ohmart
 Model # 2402
 Serial # 232042
 Last Calibration Date 12/9/2008
 Survey By S. Conway Date 5/14/2009

LABELING
 DOT TYPE 7A PACKAGE Yes
 OVERPACK Yes
 HAZARDOUS MATERIAL IDENTIFICATION Yes
 WHITE I N/A mR/hr SURFACE (SURFACE <0.5mR/hr)
 YELLOW II 1.5 mR/hr SURFACE (0.5<SURFACE<50mR/hr)
 REPORTABLE QUANTITY (RQ) No

- NOTES:
- 1) INDICATE POSITION OF SOURCE HOLDER ON SKID OR IN BOX
 - 2) CHECK EACH SOURCE HOLDER OR EACH SIDE OF BOX FOR THE HIGHEST SURFACE FIELD. INDICATE WHERE THIS FIELD IS LOCATED BY DRAWING AN ARROW ().
 - 3) WRITE THE HIGHEST SURFACE FIELD READING IN THE FIELD AT THE TOP OF THIS FORM.
 - 4) SURVEY AT 1 METER (39.4 INCHES) FROM THE SURFACE/EDGE OF THE PALLET/BOX AND PAY PARTICULAR ATTENTION TO THE AREA OUT FROM THE HIGHEST SURFACE FIELD. THE TRANSPORT INDEX IS THE DIMENSIONLESS NUMBER (ROUND UP TO THE FIRST DECIMAL PLACE) EXPRESSING THE MAXIMUM RADIATION LEVEL IN MILLIREM PER HOUR AT ONE METER (3.3 FEET) FROM THE EXTERNAL SURFACE OF PACKAGE.

USER NAME BASF Wyandotte North Works
 USER ADDRESS 1609 Biddle Avenue
 Wyandotte, MI 48192
 P. O. # 4591657092
 CONTACT Derek Hetes
 TELEPHONE # (734)324-5282

PACKAGE NUMBER	56508
OHMART	
4241 Atencord Drive Cincinnati, Ohio 45209 USA	
RETURNED - SOURCE PACKAGE RADIATION FIELD SURVEY	
THIS DOCUMENT INCLUDES INFORMATION WHICH IS PROPRIETARY TO OHMART. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCUSSED HEREIN SHALL BE USED OR DISCLOSED TO OTHERS FOR MANUFACTURING OR ANY OTHER PURPOSE EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY OHMART. THIS DOES NOT APPLY TO INFORMATION FURNISHED BY VENDORS OR OTHERS OUTSIDE OHMART.	
FORM NO. C-56508	



**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
EMERGENCY AND RADIOLOGICAL SERVICES DIVISION
P.O. BOX 4312
BATON ROUGE, LOUISIANA 70821-4312**

RADIOACTIVE MATERIAL LICENSE

Pursuant to the Louisiana Environmental Quality Act (Louisiana Revised Statutes 30:2101 et seq.) and the Louisiana Radiation Regulations, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess and transfer radioactive material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in the Louisiana Revised Statutes 30:2105 of the Louisiana Nuclear Energy and Radiation Control Law, and is subject to all applicable rules, regulations, and orders of the Department now or hereinafter in effect, including the Louisiana Radiation Regulations (LAC 31:027) and to any condition specified in the license.

LICENSEE QSA Global, Inc. 40 North Avenue Burlington, Massachusetts 01803 Attention: Charles Ellars Radiation Safety Officer	LICENSE NUMBER LA-5934-L01	EXPIRATION DATE May 31, 2014
	PREVIOUS AMENDMENTS ARE VOID AMENDMENT NUMBER 26	AI NUMBER 38955
	THIS LICENSE ISSUED PURSUANT TO AND IN ACCORDANCE WITH Renewal Application SIGNED BY Michael Fuller	

ISOTOPE	MAX. WT.	MAX. NO. OF SOURCES	MAXIMUM ACTIVITY OR QUANTITY FOR SOURCE	SEALING METHOD, EXPIRATION DATE, CHEMICAL FORM, PHYSICAL STATE	STORAGE CONTAINER OR EXPOSURE DEVICE	APPROVED USE
Co	60	Any	1,500 Ci	Sealed Sources		Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Emergency Source Retrieval
Se	75	Total	1,000 Ci	Sealed Sources		Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Emergency Source Retrieval
Cs	137	Any	1,000 Ci	Sealed Sources		Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Emergency Source Retrieval
Ir	192	Any	15,000 Ci	Sealed Sources		Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Emergency Source Retrieval
U	238	Total	10,000 Kg	Solid		Shielding Material; Research and Development; Instrument Calibration
Any	3-218		100 Ci per Radio-nuclide	Sealed Sources or Leak Test Samples		Distribution, Repackage, Transfer, Demonstration; Research and Development; Instrument Calibration; Leak Testing

(²³⁵U, ²³⁸U, ²³²Th, ²³¹Pa, ²²⁷Ac, ²¹⁰Pb, ²¹⁰Bi, ²¹⁰Po, ²¹⁴Pb, ²¹⁴Bi, ²¹⁴Po, ²¹⁴At, ²¹⁴Rn, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, ²¹⁴Ba, ²¹⁴K, ²¹⁴F, ²¹⁴Ne, ²¹⁴Na, ²¹⁴Mg, ²¹⁴Al, ²¹⁴Si, ²¹⁴P, ²¹⁴S, ²¹⁴Cl, ²¹⁴Ar, ²¹⁴Kr, ²¹⁴Xe, ²¹⁴Rn, ²¹⁴At, ²¹⁴Bi, ²¹⁴Po, ²¹⁴Fr, ²¹⁴Ac, ²¹⁴Th, ²¹⁴Pa, ²¹⁴U, ²¹⁴Nd, ²¹⁴Pr, ²¹⁴Ce, ²¹⁴La, 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LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
RADIOACTIVE MATERIAL LICENSE

LICENSEE	LICENSE NUMBER	AMENDMENT NUMBER	AJ NUMBER		
QSA Global, Inc.	LA-5934-L01	26	38955	Page 2 of 4 Page(s)	
Ra	226	Total	25 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing; Emergency Source Retrieval
Ac	227	Total	25 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing
Th	232	Total	25 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing
Am	241	Total	200 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing; Emergency Source Retrieval
Cm	244	Total	25 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing
Cf	252	Total	25 Ci	Sealed Sources or Leak Test Samples	Distribution and Demonstration of Sealed Sources; Research and Development; Instrument Calibration; Leak Testing

The licensee is hereby authorized to perform the following services:

1. Demonstration, distribution and testing of industrial and radiography sources;
2. Emergency retrieval of industrial and radiography sources;
3. Instruction in the emergency retrieval of industrial and radiography sources;
4. Distribution of approved leak test kits and perform leak tests;
5. Calibration of radiation detection instruments;
6. Installation, relocation, repair/maintenance, packaging, leak testing and radiation surveys for gauges and measuring devices;
7. Exchange of industrial radiography sources;
8. Receive, repackage, re-use/recycle and/or transfer sources to a licensed organization that prepares the sources for disposal or a licensed disposal facility; and
9. Research and development

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10. Receive, repackage, and make final disposition of leaking sources to a licensed facility in accordance with letter dated May 27, 2005.
-
1. Radioactive material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Protection and General Safety Committee.
2. A. Radioactive materials shall be used and stored at:
- QSA Global, Inc. AI No. 83179
5765 Langley Drive
Baton Rouge, Louisiana 70809
- B. Radioactive materials shall also be used at temporary jobsites of the licensee for the services listed below:
- 1) Possession, storage, and handling incident to distribution to persons authorized to receive the licensed material pursuant to the terms and conditions of a specific license issued by the Department, an Agreement State or the U. S. Nuclear Regulatory Commission;
 - 2) Demonstration of sources/devices;
 - 3) Research and development;
 - 4) Leak testing of sources/devices as a customer service;
 - 5) Instrument calibration as a customer service;
 - 6) Installation, relocation, repair/maintenance, packaging and radiation surveys for gauges and measuring devices; and
 - 7) Exchange of industrial radiography sources.
 - 8) Emergency retrieval of industrial and radiography sources.
3. The Radiation Safety Officer for this license is Charles Ellars. The Site Radiation Safety Officer is Rusty Barrett.
4. The licensee shall conduct leak tests in accordance with LAC 33:XV.426 and 544.
5. Sealed sources shall not be opened by the licensee.
6. The licensee is authorized to repair, modify, dismantle or effect a change in a gauge which is being installed, maintained, relocated, or leak tested, provided that each modification has been previously evaluated by the Department, an Agreement State, or the U.S. Nuclear Regulatory Commission.
7. The licensee shall conduct a physical inventory every six months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for two years from the date of each inventory.

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8. The Department shall require financial assurance in accordance with LAC 33.XV.325 and LAC 33.XV.351, except that all radioactive material rather than specifically by-product material, will be considered in the financial assurance requirements.
9. The licensee shall submit an updated decommissioning funding plan to be reviewed and approved by the Department three (3) years from the date of the most recent financial assurance review, performed March 30, 2009.
10. The licensee must submit notification to the Department announcing the dates of the source retrieval class at least two (2) weeks in advance.
11. If, in an emergency, it becomes necessary for the licensee to evacuate the facility at which radioactive material is stored, it shall be the responsibility of the licensee to notify the Office of Environmental Compliance (225) 219-3041 prior to leaving. The licensee shall submit a detailed description of how the storage location was secured prior to leaving and the licensee's temporary address, phone number(s) or other means of being contacted. This information shall be kept updated until the licensee is able to return to the licensed storage location.
12. The licensee shall comply with the requirements described in Order EA-07-305 (the Order). The licensee shall complete implementation of said requirements within 180 days from the issuance of the license amendment. The licensee shall notify the Department of Environmental Quality when they have achieved full compliance with the requirements described in the Order. The notification shall be made within twenty-five days after full compliance has been achieved. This notification shall include a certification that the Trustworthiness and Reliability (T&R) Official (and any subsequent T&R Official) is themselves deemed trustworthy and reliable by the Licensee as required in paragraph B.2. of the Order. The licensee shall notify the Department of Environmental Quality within 24 hours if the results from a criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Data Base.
13.
 - A. Except as specifically provided otherwise by the license, the licensee shall possess and use radioactive material described in all schedules of this license in accordance with LAC 33:XV and statements, representations and procedures contained in the licensee's application (complete submission) dated March 24, 2009, and in all subsequent correspondence.
 - B. The licensee shall comply with the requirements described in the Louisiana Department of Environmental Quality letter dated November 3, 2005 and attached document entitled "Increased Controls for Licensees that Possess Sources Containing Radioactive Material Quantities of Concern." The licensee shall complete implementation of said requirements within 6 months from the issuance of the license amendment or the first day that radionuclides in quantities of concern are possessed at or above the limits specified in Table 1 of the attachment, whichever is later. Within 25 days after the implementation of the requirements of this condition, the licensee shall notify the Department of Environmental Quality in writing that it has completed the requirements of this condition.

PMH:JR

Certificate of Completion

awarded to

Derek Hetes

for participation in

Radiation Safety Officer Course
May 14-18, 2007 – Madison, WI



ENGELHARDT & ASSOCIATES, INC.

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Certificate of Completion

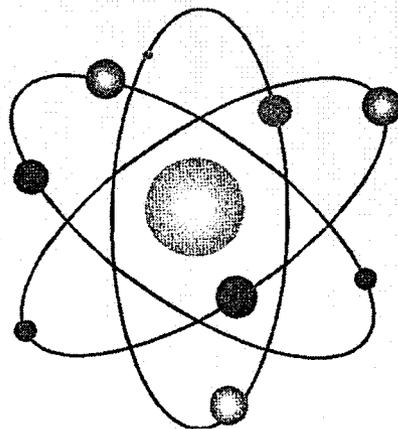
is hereby granted to:

Derek Hetes

to certify that they have completed to satisfaction

- *Initial Radiation Surveys*
- *Source Alignment*
- *Gauge Removal*
- *Installation*

Granted: 11/19/2010



Topics Covered

Radiation Basics

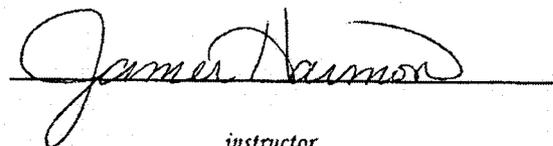
Biological Effects

Radiation Protection

Emergency procedures

Shutter Checks & Design

Shield Removal/ Installation


instructor



Berthold Technologies
USA, LLC
99 Midway Lane
Oak Ridge, TN 37830 USA
Phone: 865-483-1488
Fax: 865-425-4309
www.berthold-us.com

Certificate of Completion

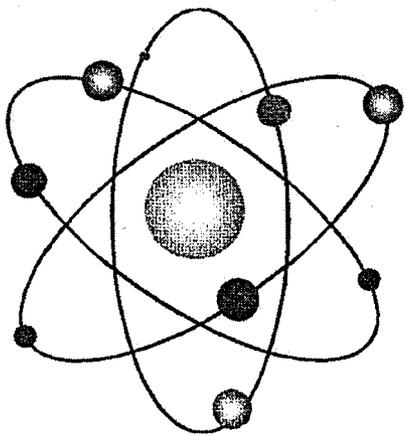
is hereby granted to:

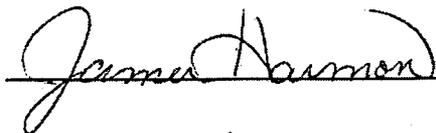
Dan Hannewald

to certify that they have completed to satisfaction

- *Initial Radiation Surveys*
- *Source Alignment*
- *Gauge Removal*
- *Installation*

Granted: 11/19/2010





instructor

Topics Covered

Radiation Basics
Biological Effects
Radiation Protection
Emergency procedures
Shutter Checks & Design
Shield Removal/ Installation

Certificate of Training

This is to certify that

Daniel G. Hannewald

Has Successfully Completed

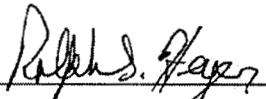
A 40-Hour Radiation Safety Training Course

Presented by Thermo Electron

Date Issued: March 16, 2007

ThermoFisher
SCIENTIFIC

1410 Gillingham Lane, Sugar Land, Texas 77478



Ralph S. Hoyer, Radiation Training Manager

Certificate of Training

This is to certify that

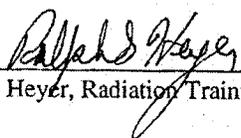
Daniel G. Hannewald

Has successfully completed general awareness, function-specific, and safety training applicable to the transport of nuclear gauging devices, and has been tested on these subjects as required by 49CFR172 Subpart H.

Date Issued: March 16, 2007 Expires: March 16, 2010

ThermoFisher
SCIENTIFIC

1410 Gillingham Lane, Sugar Land, TX 77478


Ralph S. Heyer, Radiation Training Manager

Nuclear Source Survey and Lockout Form



SURVEY PURPOSE

Check One: Lockout Only Confined Space Entry Installation (Complete Installation Section) Removal (Indicate storage location)

(Source Receipt must use Nuclear Source Receipt Checklist)

Storage Location

GAUGE/SOURCE INFORMATION

Manufacturer Serial # Plant/Location
 Model # Isotope/ Activity Vessel/ Equip. #

SURVEY INSTRUMENT INFORMATION

Manufacturer/ Model # Serial # Calibration Date

GENERAL SURVEY DATA/ LOCKOUT RECORD

Shutter Locked? Yes No

	NA	mR/Hr
Shutter Open Highest Contact Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Shutter Open Highest 12" Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Shutter Closed Highest Contact Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Shutter Closed Highest 12" Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>

	NA	mR/Hr
Reading Inside Vessel (Confined Space only)	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Highest General Area Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Storage Area Perimeter Reading	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>
Reading >10 mR/hr at 12" closed? Yes <input type="checkbox"/> No <input type="checkbox"/>		

(If yes, investigate to determine source of leakage)

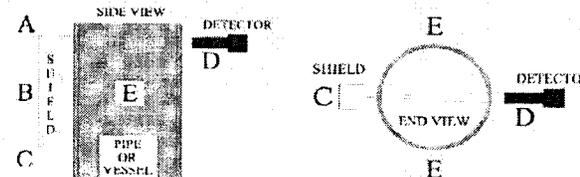
INSTALLATION SURVEY DATA (RSO Authorized Activity Only)

Visual inspection for any damage/ proper labeling Pass Fail
 Gauge/ shutter functions as designed Pass Fail
 Leak test completed and results received Pass Fail

Location Points at 12 inches from Surface: A B C D E

Shutter Closed	<input style="width: 100%;" type="text"/>				
Shutter Open	<input style="width: 100%;" type="text"/>				

(Any Readings >10 mR/hr should be investigated)



Surveyor: _____
 (Print)

 (Signature)

Date: _____



MICROTEC SERVICES, INC.

110 Charles Street ♦ Pasadena, TX. 77506
Tel (713) 475-2274 Fax (713) 475-2362

LEAK TESTING
CALIBRATIONS
REPAIR
NEW INSTRUMENTS

◆◆ CERTIFICATE OF CALIBRATION ◆◆

CUSTOMER: TRACERCO

LOCATION: PASADENA, TX

◆◆ DESCRIPTION OF INSTRUMENT ◆◆

TRACERCO MODEL T202 IS SURVEY METER, S/N: 090202

DATE OF CALIBRATION: Jan 27, 2011

NEXT DUE DATE: Jan 27, 2012

INSTRUMENT RANGE	REFERENCE CAL. POINT (mR/hr)	METER READING (mRem/h)	% ERROR
mRem/h	800	805.0	0.63
	200	196.0	-2.00
	80	80.7	0.88
	20	19.5	-2.50
	8	8.10	1.25
	2	2.10	5.00
	0.8	0.80	0.00
	0.2	0.20	0.00

COMMENTS: CALIBRATED WITH FRONT OF INSTRUMENT FACING SOURCE BEAM.

TEMPERATURE: 79 °F

RELATIVE HUMIDITY: 31%

BAROMETRIC PRESSURE 30.00 inHg

CALIBRATED BY: Q. STOKLEY, SR. Q.A. TECHNICIAN

SIGNATURE: _____

DATE: Jan 28, 2011

ENERGY CALIBRATED TO Cs-137 (662 keV) TRACEABLE TO N.I.S.T. MICROTEC SERVICES, INC. CERTIFIES THE ABOVE NAMED INSTRUMENT HAS BEEN CALIBRATED IN ACCOURDANCE WITH 10 CFR, TITLE 25 TAC CHAPTER 289, ANSI/NCSL Z540-1-1994, AND/OR MANUFACTURERS SPECIFICATIONS.

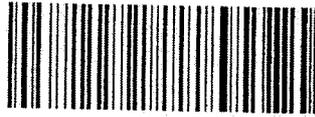
TEXAS LICENSE NO. L04656

□ - BASF

The Chemical Company

BASF Corporation
1609 Biddle Avenue
Wyandotte, MI 48192

ATTN: DEBRIL HERES



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U.S. Nuclear Regulatory Commission
Region III,
Nuclear Mtrls Licensing Branch
2443 Warrenville Rd., Suite 210
Lisle, IL 60532-4352

