



*Mingo Logan Coal Company  
Ben Creek Complex  
1000 Mingo Logan Avenue  
Wharnccliffe, WV 25651  
Telephone: 304-664-4051*

*NMSB 3*

June 11, 2007

United States Nuclear Regulatory  
Nuclear Materials Safety Branch  
475 Allendale Road  
King of Prussia, PA 19406  
Attention: Licensing Section

*03030884*

RE: Application for License Amendment  
License No. 47-25025-01

Dear Sir/Madam:

Mingo Logan Coal Company requests that the USNRC issue an amended license for License # 47-25025-01. Included please find the following:

- NRC Form 313
- Requested Information- Appendix D
- Training Course Certificates

Any questions regarding this application should be addressed to William Epperson at 304-664-4029.

Best Regards,

*James M. Mullins*  
James M. Mullins  
Vice President and General Manager  
Mingo Logan Coal Company  
Ben Creek Complex

RECEIVED  
REGION 1  
2007 JUN 13 PM 12: 17

*140605*

NMSS/RGN1 MATERIALS-002

**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:**

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, 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, 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

03030884

**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.**

<p>1. THIS IS AN APPLICATION FOR <i>(Check appropriate item)</i></p> <p><input type="checkbox"/> A. NEW LICENSE</p> <p><input checked="" type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER <u>47-25025-01</u></p> <p><input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____</p>	<p>2. NAME AND MAILING ADDRESS OF APPLICANT <i>(Include ZIP code)</i></p> <p>Mingo Logan Coal Co.                  Black Bear Coal Preparation Plant                  1000 Mingo Logan Avenue                  Wharnccliffe, WV 25651-9707</p>			
<p>3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED</p> <p>1000 Mingo Logan Avenue                  Wharnccliffe, WV 25651-9707</p>	<p>4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION</p> <p>William Epperson</p> <p>TELEPHONE NUMBER</p> <p>(304) 664-4029</p>			
<p>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.</p>				
<p>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.</p>	<p>6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.</p>			
<p>7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.</p>	<p>8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.</p>			
<p>9. FACILITIES AND EQUIPMENT.</p>	<p>10. RADIATION SAFETY PROGRAM.</p>			
<p>11. WASTE MANAGEMENT.</p>	<p>12. LICENSE FEES <i>(See 10 CFR 170 and Section 170.31)</i></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">FEE CATEGORY</td> <td style="border: none;">AMOUNT ENCLOSED</td> <td style="border: none;">\$</td> </tr> </table>	FEE CATEGORY	AMOUNT ENCLOSED	\$
FEE CATEGORY	AMOUNT ENCLOSED	\$		
<p>13. CERTIFICATION. <i>(Must be completed by applicant)</i> THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.</p> <p>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.</p> <p>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.</p>				

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE <b>X JAMES M. MULLINS, VICE PRESIDENT</b>	SIGNATURE 	DATE 6/11/07
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**FOR NRC USE ONLY**

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	140605

## Reviewer Checklist for Fixed Gauge Application

### ITEM 1: ACTION TYPE

<b><u>ACTION TYPE:</u></b> <input type="checkbox"/> New <input checked="" type="checkbox"/> Amendment    47-25025-01 <input type="checkbox"/> Renewal	<b><u>ADMINISTRATIVE REVIEW:</u></b> <input type="checkbox"/> Current Guidance Used <input type="checkbox"/> References in Application Based On Current Regulations <input type="checkbox"/> All Attachments Referenced Included <input checked="" type="checkbox"/> Signature on Application
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### ITEM 2: LEGAL IDENTITY

<b>NAME:</b> Mingo Logan Coal Co.	Black Bear Coal Preparation Plant
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### ITEMS 2 & 3: ADDRESS

<b>LOCATION OF USE/STORAGE ADDRESS:</b> Black Bear Coal Preparation Plant 1000 Mingo Logan Avenue Wharncliffe, WV 25651-9707	<b>MAILING ADDRESS:</b>  SAME
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### ITEM 4: PERSON TO BE CONTACTED ABOUT THIS APPLICATION

<b>CONTACT PERSON:</b>	William Epperson
<b>TELEPHONE NUMBER:</b>	304-664-4029

APPENDIX D

**Table D.1 Items 5 and 6: Materials to Be Possessed and Uses**

Yes	No	Radioisotope	Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
	X	Cobalt-60	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number:	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ]  Specific description of the gauge use: _____ _____ _____	[ ] Not applicable _____ [ ] Uses are: _____
	X	Krypton-85	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number:	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ]  Specific description of the gauge use: _____ _____ _____	[ ] Not applicable _____ [ ] Uses are: _____
	X	Strontium-90	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number:	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ]  Specific description of the gauge use: _____ _____ _____	[ ] Not applicable _____ [ ] Uses are: _____
X		Cesium-137	Sealed source manufacturer or distributor and model number: <u>See Attached</u> Device manufacturer or distributor and model number: <u>See Attached</u>	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [X]  Specific description of the gauge use: <u>Density</u> _____ _____	[X] Not applicable _____ [ ] Uses are: _____

**Cs-137**

**Sealed source manufacturer or distributor and model number:**

Texas Nuclear Model #696894, 57157C  
Amersham Model # CDC.704, CDC.705, CDC.806  
Isotope Products Model # 225; CS7.PO2

**Device manufacturer or distributor and model number:**

To be used in any device authorized for distribution.

Yes	No	Radioisotope	Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
X		Americium-241	Sealed source manufacturer or distributor and model number: <u>Amerislan AMC 17</u> Device manufacturer or distributor and model number: <u>See Attached</u>	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input checked="" type="checkbox"/>  Specific description of the gauge use: <u>Measuring physical properties of material</u>	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:
X		Other Isotope (Specify):  Cf-252	Sealed source manufacturer or distributor and model number: <u>Attached</u> Device manufacturer or distributor and model number: <u>See Attached</u>	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input checked="" type="checkbox"/>  Specific description of the gauge use: <u>Measuring physical properties of material</u>	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:
<i>Financial Assurance Required and Evidence of Financial Assurance Provided</i>						

**Table D.2 Items 7 Through 11: Training and Experience, Facilities and Equipment, Radiation Safety Program, and Waste Management**

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p>7. Individual(s) Responsible for Radiation Safety Program and their Training and Experience</p> <p>7.1 Radiation Safety Officer (RSO) Name: <u>William Epperson</u></p>	<p>Before obtaining licensed materials, the proposed RSO will have successfully completed the training described in Criteria in the section entitled "Radiation Safety Officer," in NUREG-1556, Vol. 4 dated August 1998.</p> <p style="text-align: center;">AND</p> <p>Before being named as the RSO, future RSOs will have successfully completed the training described in Criteria in the section entitled "Radiation Safety Officer," in NUREG-1556, Vol. 4, dated August 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our license.</p>	X			

**Am-241      Device manufacturer or distributor and model number:**

To be used in any device authorized for distribution.

**Cf-252      Sealed source manufacturer or distributor and model number:**

Amersham CVN.CY6;  
Monsanto MRC 2765;  
Frontier Technology 100 Series

**Device manufacturer or distributor and model number:**

To be used in any device authorized for distribution.

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
7. Individual(s) Responsible for Radiation Safety Program and their Training and Experience	Optional Response Criteria for Acceptable Training Course for Radiation Safety Officer	X			
7.1 Radiation Safety Officer (RSO) (Cont'd)	Classroom Training: <ul style="list-style-type: none"> <li>• Radiation Safety <ul style="list-style-type: none"> <li>S Radiation vs. contamination</li> <li>S Internal vs. external exposure</li> <li>S Biological effects of radiation</li> <li>S Types and relative hazards of radioactive material possessed</li> <li>S ALARA concept</li> <li>S Use of time, distance, and shielding to minimize exposure</li> <li>S Locations of sealed source within the gauge</li> <li>S Use of survey meters and personal dosimetry, when required</li> </ul> </li> <li>• Regulatory Requirements <ul style="list-style-type: none"> <li>S Applicable regulations</li> <li>S License conditions, amendments, renewals</li> <li>S Locations of use and storage of radioactive materials</li> <li>S Material control and accountability</li> <li>S Annual audit of radiation safety program</li> <li>S Transfer and disposal</li> <li>S Recordkeeping</li> <li>S Prior events involving fixed gauges</li> <li>S Handling incidents</li> <li>S Recognizing and ensuring that radiation warning signs are visible and legible</li> <li>S Licensing and inspection by regulatory agency</li> <li>S Need for complete and accurate information</li> <li>S Employee protection</li> <li>S Deliberate misconduct</li> </ul> </li> <li>• Practical Explanation of the Theory and Operation for Each Gauge Possessed by the Licensee <ul style="list-style-type: none"> <li>S Operating and emergency procedures</li> <li>S Routine vs. non-routine maintenance</li> <li>S Lock-out procedures</li> </ul> </li> </ul>	X			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p>7. Individual(s) Responsible for Radiation Safety Program and their Training and Experience</p> <p>7.1 Radiation Safety Officer (RSO) (Cont'd)</p>	<ul style="list-style-type: none"> <li>• Supervised "Hands-On" Experience performing                             <ul style="list-style-type: none"> <li>S Operating procedures</li> <li>S Test runs of emergency procedures</li> <li>S Routine maintenance</li> <li>S Lock-out procedures</li> </ul> </li> </ul> <p><b>Training Assessment</b></p> <p>Course Instructor Qualifications:</p> <ul style="list-style-type: none"> <li>• Bachelor's degree in a physical or life science or engineering with successful completion of both a fixed gauge manufacturer's or distributor's course for users and an 8 hour radiation safety course and 8 hours hands-on experience with fixed gauges</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• Successful completion of a fixed gauge manufacturer's or distributor's course for users</li> <li>• Successful completion of 40 hour radiation safety course</li> <li>• 30 hours of hands-on experience with fixed gauges.</li> </ul> <p><i>Note:</i> Additional training is required for those applicants intending to perform non-routine operations.</p>	X			
<p>7 Individual(s) Responsible for Radiation Safety Program and their Training and Experience</p> <p>7.2 Authorized Users</p>	<p><b>Proposed Authorized Users</b></p> <p>Before using licensed materials, authorized users will have successfully completed the training described in Criteria in the section entitled "Authorized Users," in NUREG-1556, Vol. 4, dated August 1998.</p>	X			

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Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p>7 Individual(s) Responsible for Radiation Safety Program and their Training and Experience</p> <p>7.2 Authorized Users (Cont'd)</p>	<p><b>Optional Response</b></p> <p>Classroom Training:</p> <ul style="list-style-type: none"> <li>• Radiation Safety                             <ul style="list-style-type: none"> <li>S Radiation vs. contamination</li> <li>S Internal vs. external exposure</li> <li>S Biological effects of radiation</li> <li>S Types and relative hazards of radioactive material possessed</li> <li>S ALARA concept</li> <li>S Use of time, distance, and shielding to minimize exposure</li> <li>S Location of sealed source within the gauge</li> <li>S Use of survey meters and personal dosimetry, when required</li> </ul> </li> <li>• Regulatory Requirements                             <ul style="list-style-type: none"> <li>S Applicable regulations</li> <li>S License conditions, amendments, renewals</li> <li>S Locations of use and storage of radioactive materials</li> <li>S Material control and accountability</li> <li>S Annual audit of radiation safety program</li> <li>S Transfer and disposal</li> <li>S Recordkeeping</li> <li>S Prior events involving fixed gauges</li> <li>S Handling incidents</li> <li>S Recognizing and ensuring that radiation warning signs are visible and legible</li> <li>S Licensing and inspection by regulatory agency</li> <li>S Need for complete and accurate information</li> <li>S Employee protection</li> <li>S Deliberate misconduct</li> </ul> </li> <li>• Practical Explanation of the Theory and Operation for Each Type of Gauge that may be used by the Authorized User                             <ul style="list-style-type: none"> <li>S Operating and emergency procedures</li> <li>S Routine vs. non-routine maintenance</li> <li>S Lock-out procedures</li> </ul> </li> </ul>	X			
		X			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p>7 Individual(s) Responsible for Radiation Safety Program and their Training and Experience</p> <p>7.2 Authorized Users (Cont'd)</p>	<ul style="list-style-type: none"> <li>Supervised Hands-on Experience Performing                             <ul style="list-style-type: none"> <li>S Operating procedures</li> <li>S Test runs of emergency procedures</li> <li>S Routine maintenance</li> <li>S Lock-out procedures</li> </ul> </li> </ul> <p><b>Training Assessment</b></p> <p>Course Instructor Qualifications:</p> <ul style="list-style-type: none"> <li>Bachelor's degree in a physical or life science or engineering with successful completion of both a fixed gauge manufacturer's or distributor's course for users and an 8 hour radiation safety course and 8 hours hands-on experience with fixed gauges</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>Successful completion of a fixed gauge manufacturer's or distributor's course for users</li> <li>Successful completion of 40 hour radiation safety course</li> <li>30 hours of hands-on experience with fixed gauges</li> </ul> <p><i>Note:</i></p> <ul style="list-style-type: none"> <li>Individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year must receive training pursuant to 10 CFR 19.12.</li> <li>Additional training is required for those applicants requesting to perform non-routine operations.</li> </ul>	X			
<p>8 Training for Individuals Who in the Course of Employment are Likely to Receive Occupational Doses of Radiation in Excess of 1 mSv (100 mrem) in a Year (Occupationally Exposed Workers) and Ancillary Personnel</p>	<p>The applicant is not required to, and should not, submit its training program, for individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year (occupationally exposed workers) and ancillary personnel, to the NRC for review during the licensing phase.</p>				Need Not Be Submitted with Application

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
9 Facilities and Equipment	<p>We will ensure that the location of each fixed gauge meets the Criteria in section entitled "Facilities and Equipment," in NUREG-1556, Vol. 4, dated August 1998.</p> <p style="text-align: center;"><b>OR</b></p> <p>Confirm that the fixed gauge is secured to prevent unauthorized removal or access; and submit specific information supporting the new conditions demonstrating that they will not impact the safety or integrity of the source or device. Address any instances where the proposed conditions exceed any conditions listed in the SSD Registration Certificate</p> <p><b>Optional Response</b></p> <ul style="list-style-type: none"> <li>• The area corresponds to the "Conditions of Normal Use" and "Limitations and/or Other Considerations of Use" on the SSD Registration Certificate</li> <li>• The fixed gauge is secured to prevent unauthorized removal (e.g., located in a locked room, permanently mounted, or chained and locked to a storage rack)</li> </ul>	X			
10 Radiation Safety Program - Audit Program	The applicant is not required to, and should not, submit its audit program to the NRC for review during the licensing phase	Need Not Be Submitted with Application			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Instruments</b></p>	<p>Surveys pursuant to 10 CFR 20.1501 will be performed by a person specifically authorized by the NRC or an Agreement State to perform these surveys.”</p> <p style="text-align: center;"><b>OR</b></p> <p>We will use instruments that meet the Criteria in the section entitled “Radiation Safety Program - Instruments,” in NUREG-1556, Vol. 4, dated August 1998, and one of the following:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• We will follow the model survey instrument calibration program in Appendix I to NUREG-1556, Vol. 4, dated August 1998.</li> </ul> <p><b>Optional Response</b></p> <p>The applicant may provide a description of an alternate method to perform surveys pursuant to 10 CFR 20.1501.</p>	X			
<p><b>10 Radiation Safety Program - Instrument Calibration</b></p>	<p>If required to do surveys pursuant to 10 CFR 20.1501, and requesting to calibrate their own survey meters:</p> <p>We will implement the model survey instrument calibration program published in Appendix I to NUREG - 1556, Vol. 4, dated October 1998.</p>		X		

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Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Instrument Calibration</b> <i>(Cont'd)</i></p>	<p><b>Optional Response</b></p> <ul style="list-style-type: none"> <li>• Training and experience of individual performing calibration.</li> <li>• Description of facilities, equipment</li> <li>• Specify calibration source radionuclide, activity, traceability (source activity sufficient to provide a dose rate of at least 30 mR/hr at 100 cm, similar in energy to gauge sources. NIST traceable)</li> <li>• Specific procedures for calibration</li> <li>• Calibration report</li> <li>• Calibration tag, sticker: <ul style="list-style-type: none"> <li>S source</li> <li>S for each scale or decade not calibrated, indication checked for function only or scale not operative</li> <li>S calibration date</li> <li>S due date</li> <li>S exposure rate from check source if used</li> </ul> </li> <li>• Maintain calibration records for 3 years</li> </ul>		X		
<p><b>10 Radiation Safety Program - Material Receipt and Accountability</b></p>	<p>Physical inventories will be conducted at intervals not to exceed 6 months or at other intervals as approved by the NRC, to account for all sealed sources and devices received and possessed under the license.</p> <p><b>Optional Response</b></p> <p>A description of the procedures for ensuring that no fixed gauge has been lost, stolen, or misplaced and how often they will be conducted.</p>	X			
<p><b>10 Radiation Safety Program - Occupational Dosimetry</b></p>	<p>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 10 CFR 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.</p> <p><b>Optional Response</b></p> <p>Alternative response demonstrates compliance with 10 CFR Part 20 requirements.</p>	X			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
10 Radiation Safety Program - Public Dose	The applicant is not required to submit a response to public dose section during the licensing phase. Documentation demonstrating compliance will be examined during inspection.	Need Not Be Submitted with Application			
10 Radiation Safety Program - Operating & Emergency Procedures	<p>If the gauge meets one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program - Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated October 1998 state the following:</p> <p>Operating and emergency procedures will be developed, implemented and maintained and will meet the Criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures," in NUREG-1556, Vol. 4, dated October 1998.</p> <p>For each gauge requested that does not meet one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program - Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated October 1998 provide your operating, emergency and lock-out (if applicable) procedures to NRC for review.</p>	X			

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Operating &amp; Emergency Procedures (Cont'd)</b></p>	<p><b>Optional Response</b></p> <p>For each type of gauge:</p> <ul style="list-style-type: none"> <li>• Operating Procedures                             <ul style="list-style-type: none"> <li><b>S</b> Instructions for operating the gauge</li> <li><b>S</b> Instructions for performing routine cleaning and maintenance according to the manufacturers' or distributors' recommendations and instructions</li> <li><b>S</b> Instructions for testing each gauge for the proper operation of the on/off mechanism (shutter) and indicator, if any, at intervals not to exceed 6 months or as specified in the SSD certificate</li> <li><b>S</b> Instructions for lock-out procedures, if applicable, that are adequate to ensure that no individual or portion of an individual's body can enter the radiation beam.</li> <li><b>S</b> Instructions to prevent unauthorized access, removal, or use of fixed gauges</li> <li><b>S</b> Steps to take to keep radiation exposures ALARA</li> <li><b>S</b> Steps to maintain accountability (i.e., physical inventory)</li> <li><b>S</b> Instructions to ensure that 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 are performed by the manufacturer, distributor or person specifically authorized by the NRC or an Agreement State</li> <li><b>S</b> Steps to ensure that radiation warning signs are present, visible, and legible</li> </ul> </li> </ul>	X			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Operating &amp; Emergency Procedures (Cont'd)</b></p>	<p>Emergency Procedures:</p> <ul style="list-style-type: none"> <li>• Stop use of the gauge</li> <li>• Restrict access to the area</li> <li>• Contact responsible individuals (Telephone numbers for the RSO, authorized users, the gauge manufacturer or distributor, fire department, or other emergency response organization, as appropriate, and the NRC should be posted or easily accessible)</li> <li>• Do not attempt repair or authorize others to attempt repair of the gauge except as specifically authorized in a license issued by the NRC or an Agreement State</li> <li>• Require reporting to NRC pursuant to 10 CFR 20.2201-20.2203, 10 CFR 30.50, and 10 CFR 21.21</li> <li>• Take additional steps, dependent on the specific situations.</li> </ul> <p><i>Note:</i></p> <ul style="list-style-type: none"> <li>• Copies of operating and emergency procedures provided to all gauge users</li> <li>• Post copies of operating and emergency procedures at each location of use or post a notice describing where procedures may be examined.</li> </ul>	X			
<p><b>10 Radiation Safety Program - Leak Tests</b></p>	<ul style="list-style-type: none"> <li>• Leak tests will be performed at intervals approved by the NRC or an Agreement State and Specified in the SSD Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions. Records of leak test results will be maintained.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• We will implement the model leak test program published in Appendix M to NUREG-1556, Vol. 4, dated October 1998.</li> </ul>	X			

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Leak Tests</b></p>	<p><b>Optional Response</b></p> <ul style="list-style-type: none"> <li>Identify the individual who will make the analysis; their training and experience</li> <li>Leak test frequency as specified in the appropriate Sealed Source and Device Registration Certificate.</li> <li>How and where test samples taken; materials to be used; methods of handling samples to prevent or minimize exposure to personnel.</li> <li>Type of instrument(s) used, counting efficiency, and minimum levels of detection for each radionuclide</li> </ul> <p><i>Note:</i> An instrument capable of making quantitative measurements should be used; hand-held survey meters will not normally be considered adequate for measurements.</p> <ul style="list-style-type: none"> <li>Specify the standard calibration sources including for each: the radionuclide, quantity, accuracy, and traceability to primary radiation standards</li> </ul> <p><i>Note:</i> Accuracy of standards should be within <math>\pm 5\%</math> of the stated value and traceable to a primary radiation standard such as those maintained by the National Institutes of Standards and Technology (NIST).</p> <ul style="list-style-type: none"> <li>Sample calculation to convert measurement data to becquerels (or microcuries)</li> <li>Instructions on actions, notifications regarding leaking source</li> <li>Maintain records of leak test results</li> </ul>		X		
<p><b>10 Radiation Safety Program - Maintenance</b></p>	<p><b>Routine Maintenance</b></p> <p>We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's or distributor's written recommendations and instructions.</p> <p><b>Optional Response</b></p> <ul style="list-style-type: none"> <li>Adequate training, experience</li> <li>Manufacturer's or distributor's written instructions</li> <li>Considers ALARA</li> <li>Ensures gauge functions as designed</li> <li>Ensures source integrity not compromised</li> </ul>	X			

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Maintenance (Cont'd)</b></p>	<p><b>Non-Routine Operations</b></p> <p>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> <p><b>Optional Response</b></p> <p>Provide the information listed in Appendix N supporting a request to perform non-routine operations in-house.</p> <ul style="list-style-type: none"> <li>• Types of work to be performed</li> <li>• Identify the individual who will perform non-routine operations, their training and experience</li> <li>• Procedures to ensure:                             <ul style="list-style-type: none"> <li><b>S</b> doses to public, personnel are ALARA and within regulatory limits</li> <li><b>S</b> security</li> <li><b>S</b> posting</li> <li><b>S</b> manufacturers or distributors instructions and recommendations are followed</li> <li><b>S</b> 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 manufacturer or distributor are evaluated to ensure that they do not degrade the engineering safety analysis</li> <li><b>S</b> before being returned to routine use, the gauge is tested to verify that it functions as designed and source integrity is not compromised</li> </ul> </li> <li>• Use of whole body and extremity monitoring, if required</li> <li>• Possess survey instrument calibrated by NRC/Agreement State licensee; or as defined in Appendix I; checked before use</li> <li>• 10 CFR 20.1301 surveys                             <ul style="list-style-type: none"> <li>- when and where surveys performed</li> <li>- survey records maintained for 3 years</li> </ul> </li> </ul>		X		

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
10 Radiation Safety Program - Transportation	The applicant is not required to submit a response to transportation section during the licensing process; this issue will be reviewed during inspection.	Need Not Be Submitted with Application			
10 Radiation Safety Program - Fixed Gauges Used At Temporary Job Sites	<p>This is not applicable to the applicant's program. Applicant will not use fixed gauges at temporary job sites.</p> <p style="text-align: center;"><b>OR</b></p> <p>Procedures will be developed, implemented, maintained and distributed and will meet the Criteria in the section entitled "Radiation Safety Program - Fixed Gauges Used at Temporary Job Sites," in NUREG-155, Vol. 4, dated October 1998.</p>	<input checked="" type="checkbox"/>			
		<input type="checkbox"/>	<input type="checkbox"/>		

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
<p><b>10 Radiation Safety Program - Fixed Gauges Used At Temporary Job Sites</b> <i>(Cont'd)</i></p>	<p><b>Optional Response</b></p> <ul style="list-style-type: none"> <li>• Develop, implement, maintain, and distribute operating and emergency procedures containing the following elements:                             <ul style="list-style-type: none"> <li><b>S</b> Instructions for transporting radioactive material to ensure compliance with DOT regulations</li> <li><b>S</b> Instructions for using gauges at temporary job sites and performing routine maintenance according to the manufacturer's or distributor's recommendations and instructions</li> <li><b>S</b> Instructions for maintaining security during storage and transportation</li> <li><b>S</b> Instructions to keep gauges under control and immediate surveillance or secured to prevent unauthorized use or access</li> <li><b>S</b> Steps to take to keep radiation exposures ALARA</li> <li><b>S</b> Steps to maintain accountability during use</li> <li><b>S</b> Steps to control access to a potentially damaged gauge</li> <li><b>S</b> Steps to take, and whom to contact, when a gauge has been lost or damaged.</li> </ul> </li> <li>• If gauges are to be installed at temporary job sites, the operating and emergency procedures should contain instructions on the use of personal dosimetry, and survey instruments and conducting surveys.</li> <li>• Provide copies of operating and emergency procedures to all gauge users and maintain copies at each job site.</li> </ul>		X		
<p><b>10 Radiation Safety Program - Minimization of Contamination</b></p>	<p>The applicant does not need to provide a response to this item under the following condition. NRC will consider that the above criteria have been met if the applicant's responses meet the criteria for the following sections: Radioactive Material - Sealed Sources and Devices, Facilities and Equipment, Radiation Safety Program - Operating and Emergency Procedures, Radiation Safety Program - Leak Testing, and Waste Management - Gauge Transfer and Disposal.</p>	Need Not Be Submitted with Application			

APPENDIX D

Item Number and Title	Suggested Response	Applicant's Response			
		Yes	No	Other	
				Yes	No
11 Waste Disposal - Fixed Gauge Disposal & Transfer	The applicant is not required to submit a response to waste management section during the licensing process; however, the licensee should develop, implement, and maintain fixed gauge transfer and disposal procedures in its radiation safety program.	Need Not Be Submitted with Application			



## **CERTIFICATE OF RADIOLOGICAL TRAINING**

*This is to certify that*

***William Epperson***

*has successfully completed the*

***24-HOUR RADIATION SAFETY OFFICER TRAINING  
COURSE AND INSTRUCTION AS REQUIRED BY  
NUREG-1556, VOLUME 4, APPENDIX G***

*presented by Applied Health Physics, Inc.*

*April 30<sup>th</sup> through May 2<sup>nd</sup>, 2007*

  
\_\_\_\_\_  
**Todd Y. Mobley**  
*Director, Technical Services*

May 2, 2007

\_\_\_\_\_  
*Date*

