

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 70 and 71, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee 1. Peabody Midwest Mining, LLC		In accordance with letter dated May 17, 2016.	4. Expiration Date: July 31, 2017
2. 566 Dickeyville Road Lynnville, IN 47619		3. License number: 13-26785-01 is amended in its entirety to read as follows:	5. Docket No.: 030-34405 Reference No.:
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	9. Authorized use
A. Californium-252	A. Sealed Sources (Amersham, Model CVN.CY6; Frontier Technology, Model 100 Series; Monsanto, Model MRC 2765)	A. 9 sources not to exceed 108 millicuries total. Total activity 108 millicuries	A. To be used in Gamma-Metrics Bulk Material Analyzer Model 2000 source holder for measurements of elemental analysis of coal and measurements of density/weight.
B. Cesium-137	B. Sealed Sources (Amersham, Model CDC.704 and CDC.705; Isotope Products Labs , Model 225)	B. 2 sources not to exceed 25 millicuries. Total activity 25 millicuries.	B. To be used in Gamma-Metrics Bulk Material Analyzer Model 2000 source holder for measurements of elemental analysis of coal and measurements of density/weight.
C. Californium-252	C. Sealed Sources (AEA Technologies, Inc, Model CVN.CN2, CVN.CY6, CVN.5, CVN.6, CVN.7, CVN.10, and CVN.11; Frontier Technology, Model 100 and 100S)	C. One analyzer, not to exceed 6 sources. Total activity 13.5 millicuries	C. To be used in Sabia Model XC-25 Series material analyzer for analysis of the chemical elemental composition of coal.

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**CONDITIONS**

10. A. Licensed material listed in Subitems 6.A and 6.B. shall be used at the licensee's facility located at Francisco Mine, County Road 850 East, Francisco, Indiana.
- B. Licensed material listed in Subitem 6.C. shall be used at the licensee's facilities located at Somerville Central Mine, R.R. #3, Box 155, Oakland City, Indiana.
11. A. The Radiation Safety Officer (RSO) for this license is Alan Pancake.
- B. The Assistant Radiation Safety Officer for this license is James Evans.
12. Licensed material shall only be used by, or under the supervision of individuals who have received the training described in facsimile dated July 24, 2007. The licensee shall maintain records of individuals designated as users for 3 years following the last use of licensed material by the individual.
13. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State.
- B. Notwithstanding Paragraph A of this condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.

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- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material.
- E. Sealed sources need not be tested if they are in storage and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- G. Tests for leakage and/or contamination, limited to leak test sample collection, shall be performed by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. The licensee is not authorized to perform the analysis. Analysis of leak test samples must be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
- H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 3 years.
14. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee, except as specifically authorized.
15. The licensee shall conduct a physical inventory every 6 months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory, and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.

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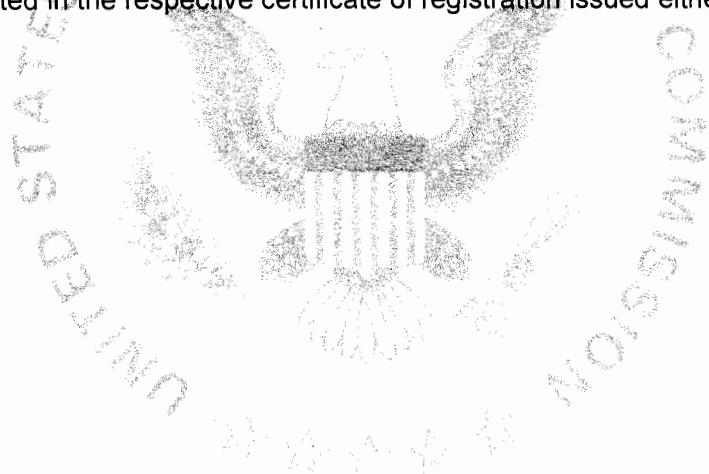
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16. A. Each gauge shall be tested for the proper operation of the on-off mechanism (shutter) and indicator, if any, at intervals not to exceed 6 months or at such longer intervals as specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or the equivalent regulations of an Agreement State.
- B. Notwithstanding the periodic on-off mechanism (shutter) and indicator test, the requirement does not apply to gauges that are stored, not being used, and have the shutter lock mechanism in a locked position. The gauges exempted from this periodic test shall be tested before use.
17. The following services shall not be performed by the licensee: installation, initial radiation surveys, relocation, removal from service, dismantling, alignment, replacement, disposal of the sealed source and non-routine maintenance or repair of components related to the radiological safety of the gauge (i.e., the sealed source, the source holder, source drive mechanism, on-off mechanism (shutter), shutter control, shielding). These services shall be performed only by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
18. A. The licensee may maintain, repair, or replace device components that are not related to the radiological safety of the device containing byproduct material and that do not result in the potential for any portion of the body to come into contact with the primary beam or in increased radiation levels in accessible areas.
- B. The licensee may not maintain, repair, or replace any of the following device components: the sealed source, the source holder, source drive mechanism, on-off mechanism (shutter), shutter control, or shielding, or any other component related to the radiological safety of the device, except as provided otherwise by specific condition of this license.
19. Prior to initial use and after installation, relocation, dismantling, alignment, or any other activity involving the source or removal of the shielding, the licensee shall assure that a radiological survey is performed to determine radiation levels in accessible areas around, above, and below the gauge with the shutter open. This survey shall be performed only by persons authorized to perform such services by the U.S. Nuclear Regulatory Commission or an Agreement State.
20. The licensee shall operate each device containing licensed material within the manufacturer's specified temperature and environmental limits such that the shielding and shutter mechanism of the source holder are not compromised.

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21. The licensee shall assure that the shutter mechanism of each device is locked in the closed position during periods when a portion of an individual's body may be subject to the direct radiation beam. The licensee shall review and modify, as appropriate, its "lock-out" procedures whenever a new device is obtained to incorporate the device manufacturer's recommendations.
22. Except for maintaining labeling as required by 10 CFR Part 20, or 71, the licensee shall obtain authorization from the U.S. Nuclear Regulatory Commission before making any changes in the sealed source, device or source-device combination that would alter the description or specifications as indicated in the respective certificate of registration issued either by the Commission pursuant to 10 CFR 32.210 or by an Agreement State.



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23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated March 13, 2007 (ML070790413)
  - B. Letter dated March 13, 2007 (ML 070790413)
  - C. Letter dated August 2, 2011 (with attachments) (ML112500445)
  - D. Letter dated January 9, 2012 (ML120120331)
  - E. Letter dated February 28, 2012 (ML120610768)
  - F. Letter dated February 20, 2014 (ML15051A320)
  - G. Facsimile dated May 29, 2007 (with attached application and its Attachment A) (ML 071490498)
  - H. Facsimile dated May 29, 2007 (addressing two replacement Assistant RSOs) (ML 071500157)
  - I. Facsimile dated July 24, 2007 (modified Attachment A to renewal application) (ML 072060087)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: July 20, 2016By: *William Reichhold*  
William Reichhold  
Region 3