U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 8

# 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 | In accordance with letter dated November 22, 2016, | 4. Expiration Date: August 31, 2022 |
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| 1. Jefferson Asphalt Company | | |
| 2. P.O Box 104868<br>Jefferson City, MO 65110-4868 | 3. License number: 24-32390-01 is amended in its entirety to read as follows: | 5. Docket No.: 030-35988<br>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 |
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| A. Radium-226 | A. Sealed Sources (AEA Technology, Model RAN.C1; Radium Chemical Co., Model 21.94) | A. 4.5 millicuries per source and 45 millicuries total | A. For use in Seaman Nuclear Corporation Models C-200 and C-300 portable gauging devices for measuring physical properties of materials. |
| B. Americium-241 | B. Sealed Sources (AEA Technology/QSA, Inc., Model X.2105) | B. 25 millicuries per source and 100 millicuries total | B. For use in Troxler Electronic Laboratories Model 3241 portable gauging devices for measuring physical properties of materials. |
| C. Americium-241 | C. Sealed Sources (AEA Technology/QSA, Inc., Model AMN.V997; Isotope Product Laboratories, Model Am1.NO2) | C. 44 millicuries per source and 264 millicuries total | C. For use in Humboldt Scientific, Inc. Model 5001 portable gauging devices for measuring physical properties of materials. |
| D. Cesium-137 | D. Sealed Sources (AEA Technology/QSA, Inc., Model CDC.805; Isotope Product Laboratories, Model HEG-137) | D. 11 millicuries per source and 66 millicuries total | D. For use in Humboldt Scientific, Inc. Model 5001 portable gauging devices for measuring physical properties of materials. |

**MATERIALS LICENSE SUPPLEMENTARY SHEET**

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| 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 |
|---|---|---|---|
| E. Californium-252 | E. Sealed Sources (Isotope Product Laboratories, Model HEG-252; QSA Global, Inc., Model CVN.CY2) | E. 0.11 millicuries per source and 1.32 millicuries total | E. For use in Troxler Electronic Laboratories Model 3242 portable gauging devices for measuring physical properties of materials. |
| F. Cesium-137 | F. Sealed Sources (AEA Technology/QSA, Inc., Model CDCW556; Isotope Products Laboratories, Model HEG-137) | F. 9 millicuries per source and 9 millicuries total | F. For use in Troxler Electronic Laboratories Model 3400 portable gauging devices for measuring physical properties of materials. |
| G. Americium-241 | G. Sealed Sources (AEA Technology/QSA, Inc., Model AMNV.997; Isotope Product Laboratories, Model 3021, 3027; Isotope Products Laboratories, Model AM1.NO2) | G. 44 millicuries per source and 44 millicuries total | G. For use in Troxler Electronic Laboratories Model 3400 portable gauging devices for measuring physical properties of materials. |

CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities located at:
    1. 2606 West Edgewood, Jefferson City, Missouri, 65109
    2. 2229 Christy Drive, Jefferson City, Missouri, 65101
    3. 1591 E. Prathersville Road, Columbia, Missouri, 65202

    Licensed material may be used at temporary job sites anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.

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If the jurisdiction status of a Federal facility within an Agreement State is unknown, the licensee should contact the Federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.

11. Licensed material shall only be used by, or under the supervision and in the physical presence of, individuals who have received the training described in the facsimile application received February 27, 2012. The licensee shall maintain records of individuals designated as users for 3 years following the last use of licensed material by the individual.

12. The Radiation Safety Officer (RSO) for this license is Stephen Myers.

13. A. Sealed sources and detector cells 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. In the absence of a registration certificate, sealed sources shall be tested for leakage and/or contamination at intervals not to exceed 6 months, or at such other intervals as specified.

    B. 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.

    C. 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.

    D. The leak test shall be capable of detecting the presence of 185 becquerels (0.005 microcuries) of radioactive material on the test sample. If the test reveals the presence of 185 becquerels (0.005 microcuries) 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.

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E. Analysis of leak test samples and/or contamination 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 authorized to collect leak test samples but not perform the analysis.

F. Records of leak test results shall be kept in units of becquerels (microcuries) and shall be maintained for 3 years.

14. Sealed sources or source rods containing licensed material shall not be opened or sources removed or detached from source rods or gauges 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 3 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.

16. Except for maintaining labeling as required by 10 CFR Part 20, or Part 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 U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or by an Agreement State.

17. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport or storage, or when not under the direct surveillance of an authorized user.

18. Any cleaning, maintenance, or repair of the gauge(s) that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

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19. A. If the licensee uses unshielded sealed sources extended more than 3 feet below the surface, licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface,the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.

B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparant that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U. S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.

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20. 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. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. 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 January 26, 2012 (ML120400667)
    B. Facsimile application received February 27, 2012 (ML12230A173)
    C. Letter dated July 7, 2016 (ML16193A073)
    D. Letter dated January 27, 2017 (ML17026A236)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: February 7, 2017

By: Jennifer L. Bishop
Jennifer L. Bishop
Region 3