

**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, 39, 40, and 70, 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.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and the applicable parts of Title 10, Code of Federal Regulations, Chapter I, Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 51, 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. Cabot Corporation	3. License Number SMB-920, Amendment 7
2. County Line Road Boyertown, PA 19512	4. Expiration Date May 26, 2014
	5. Docket No. 40-6940 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
Natural uranium and thorium	Any	400 tons as elemental uranium and thorium
SEALED SOURCES		
A. Strontium-90	electroplated metal	5uCi
B. Thorium-230	electroplated metal	5uCi
C. Natural uranium	metal	5 nCi
D. Radium-226	metal	5 uCi

(Applicable Amendment No. 6)

- 9. Authorized place of use: The licensee's facility at County Line Road, Boyertown, Pennsylvania.
- 10. Authorized use: Receipt, possession, and processing at the Boyertown, Pennsylvania, facility in accordance with the statements, representations, and conditions specified in the license renewal application dated March 23, 2004 (ML040860633 form 513 dated February 6, 2004, ML040860628), with transmittal letter dated March 29, 2004 (ML040930203), as modified by page changes dated May 24, 2004 (ML041460211).

(Applicable Amendment No. 6)

- 11. The licensee shall document all ALARA Committee's recommendations for achieving ALARA in radiation protection, proposed in each meeting. A copy of the recommendations shall be provided to the General Manager.

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12. DELETED by Amendment 1, June 1997.
13. Release of equipment, facilities, or packages to the unrestricted area or to uncontrolled areas onsite shall be in accordance with applicable NRC guidance, such as "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated April 1993.

(Applicable Amendment No. 6)

14. The licensee shall sample at the following Boyertown sites at least quarterly, and analyze for uranium and radium-226 and radium-228, as specified in the 2004 license renewal application:
- The effluent at Outfall 001 when effluent is discharged.
  - Upstream and downstream (relative to Outfall 001) surface water of West Swamp Creek.
  - Groundwater from Monitoring Wells MW-3, 4, 95-01, 95-03, 95-04, 97-06, and Production Well 2 identified in Figure 2 of Appendix E in the 2004 license renewal application.
  - Sediments from upstream and downstream locations in West Swamp Creek.

The licensee shall collect and analyze air samples at background (upwind of the site) and downwind site boundary locations as follows:

- Continuous air particulate samples from 3 locations analyzed quarterly for isotopic uranium and thorium.
- Continuous air samples from 4 locations analyzed quarterly for radon-222 concentrations.

If the concentration of a radionuclide specified in the licensee's monitoring plan exceeds 30 percent of the corresponding value in 10 CFR Part 20, Appendix B, Table II, the licensee shall implement a response that consists of internal notification of management and investigation of potential causes of the elevated readings. If the concentration exceeds 80 percent, the licensee shall include reporting the incident to the NRC Region I Administrator with proposed corrective actions, if warranted, within 30 days after the licensee receives the analytical results.

The licensee shall maintain a record of all monitoring results obtained in accordance with this license condition for at least 5 years.

(Applicable Amendment No. 6)

15. Every two years, starting March 24, 2006, the licensee shall submit the current estimated decommissioning and closure costs, if accomplished by a third party, for all existing licensed operations and any planned licensed operational changes for the upcoming year. Such costs include all cited activities and groundwater restoration, as well as off-site disposal of all material. Along with each proposed revision or update of the surety, the licensee shall submit supporting documentation showing a

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breakdown of the costs and the basis for the cost estimates (adjusted for inflation, if not current estimates), maintenance of a minimum 15 percent contingency (if justified, otherwise 25 percent), changes in engineering plans, activities performed, and any other conditions affecting estimated costs for site closure. The approved funding plan includes a maximum of 3628 metric tons of stored presscake (ore residue). If the amount of presscake on site ever exceeds this amount, the surety amount would need to be adjusted accordingly within 60 days.

The amended financial surety instrument (letter of credit) incorporating the approved decommissioning cost shall be provided to NRC within 60 days of NRC's approval of the new surety amount. The surety instrument shall not be changed without NRC approval. The currently approved amount is \$5,740,722.

Any required original, signed documents should be sent to:

Chief, Fuel Cycle Facilities Branch, c/o Document Control Desk  
Division of Fuel Cycle Safety and Safeguards  
Office of Nuclear Material Safety and Safeguards  
Mailstop T8-F42  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Rockville, MD 20852-2738

(Applicable Amendment No. 6)

16. In accordance with the provisions of 10 CFR 40.14, "Specific Exemptions" and notwithstanding the requirements of 10 CFR 40.5, "Communications," the licensee is hereby authorized to submit electronically any communication or report concerning the regulations in Part 40 and any application filed under these regulations.

(Applicable Amendment No. 5)

17. The licensee shall ensure that the duties of the Radiation Safety Officer (RSO) are assigned to and carried out by a responsible, qualified individual at all times during plant operation. The licensee shall define and implement a system to provide back-up, on-call support to ensure that lapses in RSO coverage do not occur.

(Applicable Amendment No. 6)

18. The licensee shall maintain documentation on unplanned release of source material and related process chemicals. Documented information shall include, but not be limited to: date, volume, total activity of each radionuclide released, radiological survey results, soil sample results (if taken), corrective actions, results of post remediation surveys (if taken), and a map showing the spill location and the impacted area.

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19. The licensee shall evaluate the consequences of the spill or incident/event against 10 CFR 20, Subpart "M," and 10 CFR 40.60 reporting criteria. If the criteria are met, then report to the NRC Operations Center as required. Incident and event notifications, which require telephone notification under 10 CFR 20.2202 and 10 CFR 40.60, shall be made to the NRC Operations Center at (301) 816-5100.

If the licensee is required to report any spills or leaks of source material, and process chemicals that may have an impact on the environment, or any other incidents/events, to State or Federal agencies, a notification shall be made to the NRC Headquarters Project Manager (PM) by telephone or electronic mail (e-mail) within 48 hours of the event. This notification shall be followed, within thirty (30) days of the notification, by submittal of a report to the NRC Headquarters PM and the Region I Administrator, detailing the conditions leading to the spill, leak, or incident/event, corrective actions taken, and results achieved.

(Applicable Amendment No. 6)

20. The waste water filtercake source material limit for release to a landfill or a cement kiln operation (recycling to a cement kiln as described in submittal dated January 28, 2005) is the sum of fractions as follows: uranium/10 pCi/g + thorium/3 pCi/g = 1. This limit applies to a representative monthly average for filtercake released from the site.

To provide assurance that the dilution ratio of the filtercake will be maintained at a minimum of 100:1, CSM will incorporate appropriate language into its contract, with the cement kiln, requiring their agreement to maintain this ratio. In addition, the contract will include a clause that authorizes staff or managers from CSM to inspect the kiln operation at least once in any year that significant quantities of filtercake are shipped there, with the intent of verifying that the dilution ratio is maintained. Records of these inspections will be maintained in CSM's NRC license files maintained by the SH&E department.

(Applicable Amendment No. 7)

FOR THE NUCLEAR REGULATORY COMMISSION

Date: \_\_\_\_\_

By: \_\_\_\_\_

Gary S. Janosko, Chief  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards  
Washington, DC 20555