

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, 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); and to import such byproduct and source material. 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. <u>KBI Division</u> Cabot Corporation		3. License number SMB-920, as renewed
2. County Line Road Boyertown, PA 19512		4. Expiration date December 31, 1988
		5. Docket or Reference No. 40-6940

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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
Natural uranium and thorium	any	500 tons as elemental uranium and thorium

9. Authorized Use.
- A. Receipt, possession and processing at the Boyertown, Pennsylvania facility in accordance with the statements, representations and conditions specified in the licensee's application dated September 15, 1977 and supplement dated June 18, 1982.
 - B. Possession only of contaminated materials and facilities at the Reading, Pennsylvania site. Further waste disposal at this site is specifically prohibited.
 - C. Possession only in the form of potentially contaminated facilities at the Revere, Pennsylvania site.
10. Prior to using source material at the Revere, Pennsylvania site, KBI shall obtain an amendment to this license authorizing the intended use. The application for amendment shall include an evaluation of the radiological and environmental impacts associated with using source material at the site, plans for monitoring of effluents, and plans for the decommissioning of the facility at the end of operations.
11. Within 6 months of the issuance of this license, the licensee shall form an ALARA review committee to review and make recommendations concerning radiation exposure, effluents, and contamination survey data. This committee shall meet at least annually. The committee membership shall include, as a minimum, the RSO, the radiological consultant, and a representative of plant production supervision. The findings of this committee shall be documented in a report provided to the plant manager and higher levels of management as appropriate.

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12. The minimum technical qualifications for the position of Radiation Safety Officer shall be a Bachelor's degree in the biological or physical sciences, completion of a basic radiation safety course, and 2 years of experience in the handling of radioactive materials.
13. Satisfactory understanding of the effects of radiation exposure and the procedures for handling radioactive materials, including emergency procedures, shall be documented through written examinations obtained upon the completion of all radiological safety orientations. Documentation of this examination shall be made a part of the employee's permanent exposure record.
14. A bioassay sample shall be collected from each individual with accumulated working time in areas where source materials are handled of greater than 2 months in any 12 month period.
15. Release of equipment and material from contaminated areas onsite for unrestricted use, or from contaminated to clean areas onsite, shall be in accordance with the enclosed Annex A, dated July, 1982.
16. Sludge storage buildings shall be designated as restricted areas and access controlled to prevent unauthorized entrance. Personnel shall be monitored and access controlled to ensure compliance with the requirements of 10 CFR Part 20 for airborne radioactivity.
17. Waste solids, such as CaF_2 and CaSO_4 , which are disposed of to unrestricted areas, shall be monitored for contamination prior to disposal. For essentially continuous routine disposal, monitoring shall be performed at least quarterly. Materials shall not be released if the concentration of natural uranium and natural thorium exceeds 10 pCi/g.
8. KBI shall conduct at least quarterly at the Reading slag dump a monitoring program that consists of the following:
 - a. Inspection for erosion.
 - b. Sampling groundwater at the base of the embankment and analyzing for, at a minimum, gross alpha and conductivity.
 - c. Measurement of direct radiation levels at 1 meter above the ground at all boundaries of the dump site.

KBI shall collect the following samples at the Boyertown site and analyze for gross alpha and gross beta-gamma concentrations at least quarterly:

- a. Wastewater samples in Lagoons 5 and 6.
- b. Composite samples from a continuously collected sample of the effluent at Outfall 001 when effluent is discharged.
- . Upstream and downstream water samples (relative to Outfall 001) of West Swamp Creek. If the gross alpha concentration exceeds 15 pCi/L or the gross beta-gamma concentration exceeds 50 pCi/L, isotopic analyses shall be made to identify the nuclides present and an investigation shall be made to determine the cause.

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- d. Sediment samples from upstream and downstream locations in West Swamp Creek and immediately downstream of Outfall 001. If gross alpha concentrations exceed 100 pCi/g, an investigation shall be made to determine the cause.
 - e. Groundwater samples from Monitoring Wells 1a, 2, 3, and 4 identified in Figure 4.1 of NUREG-1027. If any gross alpha or gross beta-gamma concentration exceeds 15 pCi/L or 50 pCi/L, respectively, the incident shall be reported to the NRC Region I office and appropriate corrective action shall be taken. Wells 1a, 2, and 3 shall also be monitored for fluoride. If the fluoride concentration in any of these wells exceed 2 mg/L the NRC Region I office shall be notified and corrective action shall be taken.
20. Within 90 days of the issuance of this license, KBI shall prepare and submit the following to the Uranium Fuel Licensing Branch:
- a. A complete description of the cause and extent of fluoride contamination in Monitoring Well 4 (identified in NUREG-1027), with sufficient detail to enable an independent assessment of what, if any, corrective action is necessary. A copy of this submittal shall also be sent to the Norristown Regional Office of the Pennsylvania Department of Environmental Resources.
 - b. A proposed groundwater monitoring program at the sludge storage mausoleums in Boyertown. Action levels, actions to be taken, and lower limits of detection shall be included.
 - c. A proposed ambient air monitoring program for the Boyertown site to determine the gross alpha concentration in airborne particulates. Action levels, actions to be taken, and lower limits of detection shall be included.
21. KBI shall monitor for fluoride in forage crops at least twice during harvest time from acreage adjacent to the Boyertown site on the east side of County Line Road. If the average fluoride concentration exceeds 40 ppm, the incident shall be reported in writing to the Pennsylvania Department of Environmental Resources, Norristown Regional Air Pollution Control Engineer, and to the Uranium Fuel Licensing Branch.
22. KBI shall maintain a record of all monitoring results obtained in accordance with license conditions 17, 18, 19, and 21.
23. Within 6 months of the issuance of this license, the licensee shall prepare and submit the following plans to the Uranium Fuel Licensing Branch. The submittals shall identify and discuss the factors that were considered in the design of the plan in sufficient detail to enable an independent review.
- a. A plan for the future decontamination and decommissioning of the places of use and sites authorized by this license so that they can be released for unrestricted use. The plan shall include an estimate of the costs involved and the financial arrangements that have been or will be made to ensure that adequate funds will be available to cover these costs at the time of decommissioning.

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- b. A plan for the ultimate disposition of the waste sludge located at the Boyertown facility. This plan shall investigate alternatives for waste treatment including, but not limited to, the reprocessing of wastes for licensed materials and other mineral values, and removal and disposal at other sites.
- c. A plan for the ultimate disposition of the waste materials located at Reading, Pennsylvania. This plan shall investigate alternatives for waste disposal including, but not limited to, stabilization in place, and removal and disposal at other sites.

FOR THE NUCLEAR REGULATORY COMMISSION

Dated:

DEC 20 1983

By:

Original Signed by
Ralph G. Page

Original Signed by
Ralph G. Page

Division of Fuel Cycle and
Material Safety
Washington, D. C. 20555

WTC
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