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STATE OF MISSOURI      Jeremiah W. (Jay) Nixon, Governor      Mark N. Templeton, Director  
**DEPARTMENT OF NATURAL RESOURCES**

[www.dnr.mo.gov](http://www.dnr.mo.gov)

December 22, 2009

Mr. E. Kurt Hackmann  
Westinghouse Electric Company  
Hematite Decommissioning Project  
3300 State Road P  
Festus, MO 63028

Re: Air Pollution Control Program document with reference to ash burial, dated Dec. 2, 1993.

Dear Mr. Hackmann:

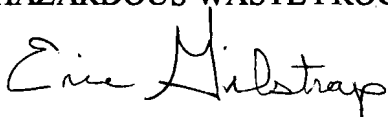
During a review of Air Pollution Control Program files located at the Missouri Department of Natural Resources St. Louis Regional Office, we found a report containing the statement "ash with low uranium content is prepared for burial." This report pertains to a December 1993 review of an Air Pollution Control Program permit application for operation of an incinerator at the Hematite facility.

We are bringing this to your attention since burial pits as recent as 1993 had not been identified for the site as part of the remedial investigation. Please investigate the matter and advise us of documentation and staff memory pertaining to the fate of the ash from the incinerator destined for disposal rather than recycling. A written response is desired for our records.

A copy of the report mentioned above is attached. The quote pertaining to burial of the ash can be found near the top of the sixth page and has been circled. If you have any questions, or wish for additional contents of the file, please contact me at (314) 265-3644. Please direct written inquiries to my attention at 917 N. Hwy 67, Suite 104, Florissant, MO 63031.

Sincerely,

HAZARDOUS WASTE PROGRAM



Eric Gilstrap, P.E.  
Federal Facilities Section

Mr. Kurt Hackmann

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EG:dd

- c: Mr. Branden Doster, P.E., Federal Facilities Section  
Mr. Kevin Harris, Westinghouse Project Coordinator  
Mr. John Hayes, U.S. Nuclear Regulatory Commission  
Mr. Bill Snell, U.S. Nuclear Regulatory Commission  
Ms. Julieann Warren, Superfund Section  
Ms. Shelley A. Woods, Attorney General Office

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Site: Westinghouse  
Jefferson County

File: SLRO

Document # JL-APA 030

Date: 1/7/1994

Description: CONSTRUCTION  
PERMIT FOR INCINERATOR

\* ~~THE~~ "PAPER WASTE, LIQUID,  
SOLID WASTES WILL  
BE INCINERATED"

"ASH WITH LOW URANIUM  
CONTENT IS PREPARED FOR  
BURIAL"

JEFFERSON COUNTY - APCP  
ABB COMBUSTION

Attached  
Construction  
permit for incinerator 2-

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Mel Carnahan, Governor • David A. Shorr, Director

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

January 7, 1994

Certified Number P 206 489 355

Mr. James A. Rode  
Plant Manager  
ABB Combustion Engineering Nuclear Fuel  
P. O. Box 107  
3300 State Road P  
Hematite, MO 63047

RE: Air Permit Application - Project/Facility No. 2280-0031-007

Dear Mr. Rode:

Review of your permit has been completed. Per our regulations, a processing fee of \$50 per hour has been charged. The processing time was 4 hours making the total required bill for your permit \$200.00. However, this fee is waived due to expiration of the statutory time limit.

If you have any questions or need additional information, please contact me at (314) 751-4817.  
Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P. E.  
Environmental Engineer

MJS:td

c: Source file

St. Louis Regional Office  
Date Received

JAN 11 '94

Route:

ADMU _____	APCU _____
HWMU _____	SWMU _____
WR-SURV _____	WR-PRMT _____
PDWP _____	_____

Copies to: \_\_\_\_\_

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Mel Carnahan, Governor • David A. Shorr, Director

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

January 7, 1994

Mr. James A. Rode  
Plant Manager  
ABB Combustion Engineering Nuclear Fuel  
P. O. Box 107  
3300 State Road P  
Hematite, MO 63047

RE: Air Permit Application - Project/Facility No. 2280-0031-007

Dear Mr. Rode:

Enclosed with this letter is your permit to construct. Please note the special conditions, if any, on accompanying pages. Operation in accordance with these conditions and your permit application is necessary for continued compliance. The document entitled "Review of Application for Authority to Construct" is part of the permit as well and should be kept with the permit in your files.

The reverse side of your permit certificate has important information concerning your rights and obligations.

If you have any questions or need additional information regarding this permit, you can contact me by phone at (314) 751-4817 or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

*Michael J. Stansfield*  
Michael J. Stansfield, P. E.  
Environmental Engineer

St. Louis Regional Office  
Date Received

JAN 11 '94

MJS:td

Enclosures

c: St. Louis Regional Office  
APCP Technical Support  
Source file

Route:

ADMU _____	APCU _____
HWMU _____	SWMU _____
WR-SURV _____	WR-PRMT _____
PDWP _____	_____

Copies to: \_\_\_\_\_



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STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION



PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the facility described below, in accordance with the laws, rules, and conditions as set forth herein.

Permit Number: 0194-005 Facility I.D. Number: 2280-0031-007  
Owner: Asea Brown Boveri, Inc.  
Owner's Address: 900 Lone Ridge Road, Stamford, Connecticut 06904  
Facility Name: ABB Combustion Engineering Nuclear Fuel  
Facility Address: 3300 State Road P, P. O. Box 107, Hematite, MO 63047  
Legal Description: Jefferson County, Section 19, Township 40N, Range 5E

Application for Authority to Construct was made for:

\*\*\*\* [REDACTED] This review was conducted in accordance with Section (2) of Missouri State Rule 10 CSR 10-6.060, Permits Required. \*\*\*\*

- Special Conditions are not applicable to this permit.
- Special Conditions do apply to this permit and are listed as attachments starting on page 2.

Jan. 7, 1994  
EFFECTIVE DATE

John A. Young  
DIRECTOR  
DIVISION OF ENVIRONMENTAL QUALITY



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REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT  
A DEMINIMIS SOURCE OPERATION  
Project ID: 2280-0031-007  
Permit Number: 0194-005

ABB Combustion Engineering  
3300 State Road  
P.O. Box 107  
Hematite, MO 63047

Complete: September 15, 1993  
Reviewed: December 2, 1993

Jefferson County, Section 19, Township 40N, Range 5E

SUMMARY

- \* No adverse ambient air quality impact is expected to occur from the operation of the proposed incinerator.
- \* This review is conducted under Section (2) of Missouri State Rule 10 CSR 10-6.060, "Permits Required."
- \* Emissions of all criteria pollutants will be well [REDACTED]
- \* Approval of this permit application is recommended.

GENERAL DESCRIPTION

This company manufactures nuclear fuel, mainly for the American market. It is an existing [REDACTED] of air contaminants, with emissions of all pollutants below the de minimis levels ~~except hydrogen fluoride, a toxic air pollutant, which is emitted~~ [REDACTED] ~~of this facility.~~ [REDACTED] ~~is the~~ [REDACTED] ~~application for~~ [REDACTED] ~~authority to install and operate a~~ [REDACTED] ~~multi-chamber incinerator to replace an existing Econochem~~ incinerator. Particulate emissions from the operation of the new incinerator will be ~~controlled by a rotating filter control~~ device manufactured by Air Purification Inc., and rated for a control efficiency in excess of ~~ninety percent~~.

The processing consists of the production of uranium dioxide from uranium hexafluoride, uranium dioxide pellet production, fuel rod manufacturing and fuel bundle assembly. The chemical factory producing uranium dioxide also has a facility where uranium is recovered from different kinds of waste and process residues. The uranium concentration in the materials handled in the recovery plant ranges from less than one percent to over eighty percent. The recovered uranium is purified to a level where it can be reused for nuclear fuel manufacturing. ~~The incinerator is used to prepare contaminated solid and liquid waste for uranium recovery.~~ ~~and~~ from the incinerator is analyzed for uranium content, and high grade material is ~~disposed in nitric acid~~.

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The uranium is precipitated in a pure form from this liquid. Ash with low uranium content is prepared for burial. In addition to paper waste, liquid and solid wastes will be incinerated to recover uranium product. The applicant states that it will be updating its license with the Nuclear Regulatory Commission, which has regulatory authority due to the nature of the business.

The existing incinerator processed less than 20 tons of material during 1992. This new incinerator is expected to process less than 50 tons per year, though the applicant desires the incinerator to be permitted for a processing rate of 100 pounds per hour at 8,400 hours per year.

The incinerator itself is a Crawford C1000H hot-loading incinerator, which is designed to accommodate mixed waste streams ranging from pathological to high-BTU content plastics while operating at high temperatures and residence times. The charging mechanism uses a sealed hydraulic ram with a 0.3 cubic yard hopper. The primary chamber operates within a range from ~~1,400 to 1,800 F.~~ while the secondary chamber operates within a range from ~~1,800 to 2,200 F.~~ The secondary chamber volume is 63 cubic feet, giving a retention time of ~~20 seconds at 1,800 F. to 10 seconds at 2,200 F.~~ Primary and secondary chamber temperatures will be continuously monitored and controlled, with the primary chamber temperature maintained at ~~1,400 F. minimum~~ and the secondary chamber maintained at ~~1,800 F. minimum~~.

All of the waste contains uranium. Radioactive emissions are regulated through the U.S. Nuclear Regulatory Commission. Testing of this model incinerator at HCA Hospital in Jackson, Tennessee, was conducted in March of 1991. That unit was not fitted with any control devices. Results of the testing indicate a particulate emission rate of 0.065 gr/dscf @ 12% CO<sub>2</sub>. Waste processed will consist of up to 420 tons of Type 0 waste (8,500 BTU/lb), 4 tons of Type 1 waste (6,500 BTU/lb), and 5 tons of Type 9 waste (6,500-19,000 BTU/lb). The Type 0 waste will consist mostly of HEPA filters and various other filter cartridges. The Type 9 waste will include:

- Lubricating oil - 800 liters
- Rubber gloves - 800 kg
- Filter aid, filter cloth - 400 kg
- Metallographic mounts - 50 kg
- Mop water & laundry sludge - 400 kg
- TBP/Hexane 3/10 + 7/10 - 20 liters
- TBP/CCl<sub>4</sub> 4/4 - 20 liters
- Sponge and cleaning solutions - 1,000 kg
- Carbon sludge - 1 ton

This incinerator will be fitted with a ROTOFILTER, manufactured by Air Purification, Inc. This device is based on forcing the airstream into intimate contact with liquid, forming the contaminants to be removed into the liquid. The contaminated airstream passes through the ROTOFILTER perpendicular to the



plane of rotation of counterrotating rotors. Cleaning is achieved by airfoil shaped spokes which are coated with a thin film of water. As the spoked wheels spin, gaseous and particulate contaminants are entrained in the water film, removed from the airstream, and transported to the outer collection chamber by centrifugal force.

Emission factors used are SCC code 5-03-001-01, for the disposal of solid waste using a multiple chamber industrial incinerator. The emission factors are expressed in pounds per ton of waste incinerated. Emissions expected from this unit are given in the following table. Annual emissions are calculated on the basis of operation of the unit at maximum capacity for 8,760 hours per year. Particulate emissions are reduced by 90% to account for the particulate control device used.

Emissions from Proposed Incinerator			
Pollutant	Emission Factor (lb/ton burned)	Hourly Emissions (lbs/hr)	Annual Emissions (tons/yr)
PM <sub>10</sub>	4.7	0.024	0.1
Sulfur Dioxide	2.5	0.13	0.6
Nitrogen Oxides	3	0.15	0.7
Carbon Monoxide	10	0.5	2.2
Volatile Organic Compounds	3	0.15	0.7

[REDACTED]  
 this incinerator are such as to categorize this [REDACTED] source operation. This incinerator is considered to be [REDACTED] in that the heat input rate of 850,000 BTU/hr is under 1.3 MMBTU/hr.

**PERMIT RULE APPLICABILITY**

This review is conducted under Section (2) of Missouri State Rule 10 CSR 10-6.060, *Permits Required*. This section requires that this facility make application for and receive a [REDACTED] to construct an air contaminant source. It does not require ambient air quality modeling or monitoring.

