



Docket No. 70-36  
License No. SNM-33

Director,  
Office of Nuclear Materials Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

**Subject: Submittal of License SNM-33 Application Pages Affected by Corporate Name Change**

References: 1) Application and attachment from ABB C-E Nuclear Power, Inc. to NRC from Robert S. Bell, Jr., dated March 10, 2000.  
2) U.S. Nuclear Regulatory Commission License, SNM-33, Docket No. 70-36.  
3) Letter from ABB C-E Nuclear Power, Inc. to NRC from Robert S. Bell, Jr., dated April 4, 2000.

Gentlemen

Consistent with the request stated in Reference 1, the affected pages within Part I of the SNM-33 license application have been updated to reflect the change to be made to the corporate name as stated in Reference 3. These pages are contained in Enclosure I. Also, Enclosure II contains an updated listing of effective pages for the SNM-33 license application. Provided for your use are six copies of this transmittal.

If you have any questions please contact me at (636) 937-4691, Ext. 399.

Sincerely,

ABB C-E NUCLEAR POWER, Inc.

  
Robert W. Sharkey  
Director, Regulatory Affairs

4-7-00  
Date

cc: Edwin Flack

RA00/043

ABB CE Nuclear Power, Inc

## Enclosure I to RA00/043

**CE Nuclear Power LLC**  
**List of Affected Pages**  
**Date: April 07, 2000**

CE Nuclear Power LLC provides those pages affected by the amendment application in Reference 1, and a revised List of effective pages. The replacement pages are provided in this enclosure.

<u>Delete Page</u>			<u>Add Page</u>		
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1-3	2	2/07/00	1-3	3	4/07/00
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1-7	4	2/07/00	1-7	5	4/07/00
2-6	2	2/07/00	2-6	3	4/07/00
2-10	3	2/07/00	2-10	4	4/07/00
3-1	3	2/07/00	3-1	4	4/07/00
4-1	5	2/07/00	4-1	6	4/07/00
7-1	4	2/07/00	7-1	5	4/07/00
8-1	3	2/07/00	8-1	4	4/07/00

## CHAPTER 1 STANDARD CONDITIONS AND SPECIAL AUTHORIZATIONS

### 1.1 Name, Address and Corporate Information

The name of the applicant is CE Nuclear Power LLC. The applicant is a limited liability corporation under the laws of the state of Delaware with principal corporate offices located at 2000 Day Hill Road, Windsor, CT 06095. The Nuclear Fuel offices are headquartered at 2000 Day Hill Road, Windsor, CT 06095. The address at which the licensed activities will be conducted is:

CE Nuclear Power LLC  
3300 State Road P  
Festus, Missouri 63028

### 1.2 Site Location

The Hematite fuel manufacturing facility of CE Nuclear Power LLC is located on a site of about 228 acres in Jefferson County, Missouri, approximately 3/4 mile northeast of the unincorporated town of Hematite, Missouri and 35 miles south of the city of St. Louis, Missouri. Activities with special nuclear materials are conducted within an 8 acre, controlled access area near the center of the site and adjacent to the access road, State Road P. Nuclear fuel manufacturing activities occur within the fenced, controlled area. These activities include conversion of  $UF_6$  to  $UO_2$ , fabrication of  $UO_2$  nuclear fuel pellets, fabrication of nuclear fuel assemblies, and related processes.

### 1.3 License Number and Period of License

This application is for Special Nuclear Material License (SNM) No. SNM-33 (NRC Docket 70-36). License SNM-33 was renewed July 28, 1994 for a period of ten (10) years.

### 1.4 Possession Limits

CE Nuclear Power LLC requests authorization to receive, use, possess, store and transfer at its Hematite site, the following quantities of SNM and source materials:

<u>Material</u>	<u>Form</u>	<u>Quantity</u>
Uranium enriched to maximum of 5.0 weight percent in the $^{235}\text{U}$ isotope	Any *	20,000 kilograms $^{235}\text{U}$
Uranium to any enrichment in the $^{235}\text{U}$ isotope	Any *	350 grams $^{235}\text{U}$
Source material Uranium and Thorium	Any *	50,000 kilograms
Cobalt 60	Sealed sources	40 millicuries total
Cesium 137	Sealed sources	500 millicuries total
Mixed Activation and Fission Product Calibration Sources Including $^{241}\text{Am}$	Solid Sources	200 microcuries total
Californium 252	Sealed Sources	4.0 milligrams total

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\* Excluding metal powders

### 1.5 Authorized Activities

This license application requests authorization for CE Nuclear Power LLC to receive, possess, use, store and transfer Special Nuclear Material under Part 70 of the Regulations of the Nuclear Regulatory Commission in order to manufacture nuclear reactor fuel utilizing low-enriched uranium (up to 5.0 weight percent in the isotope U<sup>235</sup>) and to receive, possess, use, store, and transfer Source Material under Part 40 of the Regulations of the Nuclear Regulatory Commission. Source materials are generally used for the start-up testing of a new process. Sealed cobalt-60 sources and solid sources are generally used for instrument calibration and testing. Sealed cesium 137 and californium 252 sources are used for performing quality checks on completed fuel rods. Authorized activities are conducted in the following buildings and facilities on the Hematite site:

<u>Number</u>	<u>Name</u>	<u>Primary Utilization</u>
101	Tile Barn	Emergency center and equipment storage
110	Office Building	Guard station and offices
115	Emergency Utilities	Water pump for fire suppression, emergency generator
120	Wood Barn	Equipment storage
	Oxide Building and Dock	UF <sub>6</sub> to UO <sub>2</sub> conversion, UF <sub>6</sub> receiving

(d) At 2 year intervals from the date of NRC approval of this renewal application, the licensee shall update the demonstration sections of the renewal application to reflect the licensee's current operations. The updates to the application shall, as a minimum, include information for the health and safety section of the application as required by 10 CFR 70.22(a) through 70.22(f) and 70.22(i) and operational data and information on environmental releases as required by 70.21. In lieu of an update at the end of the 10-year renewal period, the licensee may file a renewal application on or before ten years from the date of NRC approval of this renewal application.

(e) CE Nuclear Power LLC shall perform Integrated Safety Assessments (ISAs; also termed hazard analyses) for plant processes. A schedule for such has been submitted to and approved by the NRC. New or significantly modified plant processes (as determined by the Director of Regulatory Affairs) shall include such hazard analyses. The guidance of the Branch Technical Position on Requirements for Operation (from the "Guidance On Management Controls/Quality Assurance, Requirements for Operation, Chemical

Safety and Fire Protection for Fuel Cycle Facilities”, Federal Register, March 21, 1989) will be considered during those hazard analyses. Specifically, the following will be included in hazard analyses for equipment important to safety:

1. operational parameters important to safety, and limiting specifications for those parameters;
2. documentation of the basis for important-to-safety requirements for operation; and
3. programs for testing, calibration, and inspection of all instrumentation and control systems important to safety to assure their reliability.

(f) (deleted)

(g) (deleted)

(h) CE Nuclear Power LLC is authorized to release hydrofluoric acid manufactured as a byproduct of the uranium hexafluoride to uranium oxide conversion process for unrestricted commercial use providing the following conditions are met:

1. A representative sample of each batch of hydrofluoric acid product shall be obtained and analyzed for uranium.
2. A batch shall be no larger than 20,000 liters.
3. The specific activity of any batch released for unrestricted Use shall be < 3 pCi/ml.

Minimum education and experience requirements for the Chairman are in Table I.2-1. The Committee is comprised of senior personnel from the technical staff of CE Nuclear Power LLC who have at least five (5) years experience in the nuclear industry. The Committee Chairman may invite participation by others from within Hematite or from the staff at Windsor.

#### 2.4 Approval Authority for Personnel Selection

Personnel for safety-related staff positions are approved by a higher level of management than the position of concern.

#### 2.5 Training

Hematite staff conduct or supervise the indoctrination of new employees in the safety aspects of the facility. The indoctrination topics shall include nuclear criticality, safety, fundamentals of radiation and radioactivity, contamination control, ALARA practices and emergency procedures. After test results demonstrate that a new employee has sufficient knowledge in the above topics, the new employee begins on-the-job training under direct line supervision and/or experienced personnel. The Supervisor monitors performance until it is adequate to permit work without close supervision.

The training and personnel safety program continues with on-the-job training supplemented by training in specialized topics such as personnel protective equipment, accident prevention, and other safety topics. Production Supervisors receive formal training in radiation and criticality control. Testing determines when they have sufficient knowledge to enable them to carry



handling, or storage, or related operations. The necessary management and safety reviews and approvals shall be performed prior to implementation of the change. Significant changes, as determined by the Director of Regulatory Affairs, to operations affecting radiological and/or criticality safety are also reviewed by the Hematite Plant Safety Committee. Facility change requests requiring a criticality safety review shall be evaluated by a Nuclear Criticality Specialist.

If it is deemed necessary, by any reviewer, that an inspection of equipment, procedures, and postings to assure completeness prior to startup of a new or modified process, the requirement for such an inspection will be so designated in the Change Request. Such inspections shall be documented as part of the records for this facility change.

A modified process is defined as one involving a change in equipment design, SNM amount and/or configuration, or process controls when that change invalidates any aspect of the previous safety analysis.

## 2.8 Audits and Inspections

Audits and inspections shall be performed to determine if plant operations are conducted in accordance with applicable license conditions, CE Nuclear Power LLC policies, and written procedures. Audits shall apply to safety-related and environmental programs. Qualified personnel having no direct responsibility for the plant operation being audited shall be used to ensure unbiased and competent audits.

## CHAPTER 3 RADIATION PROTECTION

### 3.1 Special Administrative Requirements

#### 3.1.1 ALARA Policy

It is the policy of CE Nuclear Power LLC to maintain a safe work place and healthful work environment for each employee and to keep radiation exposures to both employees and the general public As Low As Reasonably Achievable (ALARA). The annual audit team described in Section 2.8 considers ALARA requirements in conjunction with the intent of Regulatory Guide 8.10.

A written report shall be made by the Director of Regulatory Affairs to the Director of Uranium Operations every six months providing employee radiation exposure (internal and external) and effluent release data. Trends in the reported data may reveal areas where exposures and releases can be lowered in accordance with the above ALARA commitment. The data may also help to identify problems in personnel exposure, in effluent release, in process control or in equipment for measuring effluents and exposures.

## CHAPTER 4 NUCLEAR CRITICALITY SAFETY

The administrative conditions and technical criteria in this chapter provide protection against an unplanned nuclear chain reaction (criticality). These conditions and criteria are applicable where fissile materials are to be stored, handled, or processed, and where the quantities of such fissile materials may create a potential nuclear criticality hazard.

Administrative conditions define:

- (a) the design philosophy used in the definition of processes involving the handling and storage of special nuclear materials (SNM),
- (b) the lines of responsibility for ensuring criticality safety aspects of the process are reviewed, documented, and approved by management, and
- (c) the written procedures and postings governing the processes for handling and storage of SNM.

Technical criteria provide the bases for:

- (a) limits and controls used in the processing, handling, and storage of SNM,
- (b) criticality evaluations, and
- (c) engineered process controls.

### 4.1 Administrative Conditions

#### 4.1.1 Process Design Philosophy

The process design philosophy used by CE Nuclear Power LLC to ensure nuclear criticality safety is based on the following key elements:

## CHAPTER 7 DECOMMISSIONING PLAN

CE Nuclear Power LLC reaffirms that, upon terminating activities involving materials authorized under license SNM-33, affected facilities will be decommissioned in a manner that will protect the health and safety of the public in accordance with 10 CFR 70.38. Financial assurances in the letters dated July 19, 1990, May 28, 1993, December 10, 1993, May 23, 1994, July 29, 1994, June 18, 1999, and February 7, 2000, should be considered a part of this license application.

## CHAPTER 8 EMERGENCY PLAN

CE Nuclear Power LLC shall maintain and execute the response measures of the Hematite Emergency Plan submitted to the NRC via letter dated October 28, 1993. CE Nuclear Power LLC shall also maintain implementing procedures as necessary to implement the Plan. No change shall be made in this Plan that would decrease its response effectiveness without prior approval of the NRC as evidenced by a license amendment. Changes which do not decrease the response effectiveness of the Plan may be made without prior NRC approval; such changes to the Plan shall be reported to the NRC within 6 months after the change is made.

**Enclosure II to RA00/043**

**CE NUCLEAR POWER LLC  
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY  
LICENSE APPLICATION  
LIST OF EFFECTIVE PAGES  
Date: 4/05/00**

CE Nuclear Power LLC provides changes to the Hematite license application. The following is a comprehensive List of Effective Pages summarizing the latest applicable submittal dates for each page of the application.

<u>Pages</u>	<u>Revision</u>	<u>Date</u>	<u>Pages</u>	<u>Revision</u>	<u>Date</u>
<u>License Application Title Page</u>			2-10	4	4/07/00
			2-11	2	8/11/97
<u>Table of Contents</u>			2-12	1	8/08/97
			2-13	1	8/08/97
i	1	2/07/00	2-14	2	8/08/97
through			<u>Chapter 3</u>		
xi					
<u>Chapter 1</u>			3-1	4	4/07/00
			3-2	1	8/08/97
1-1	4	4/07/00	3-3	0	4/20/94
1-2	5	4/07/00	3-4	1	8/08/97
1-3	3	4/07/00	3-5	0	6/14/94
1-4	0	3/21/94	3-6	0	3/21/94
1-5	0	6/14/94	3-7	0	3/21/94
1-6	5	4/07/00	3-8	1	8/08/97
1-7	5	4/07/00	3-9	1	8/08/97
<u>Chapter 2</u>			3-10	0	6/14/94
			3-11	1	8/08/97
2-1	2	8/08/97	3-12	0	3/21/94
2-2	2	8/08/97	3-13	0	3/21/94
2-3	1	8/08/97	<u>Chapter 4</u>		
2-4	0	4/20/94			
2-5	2	8/08/97	4-1	6	4/07/00
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4-7a	4	12/6/99	<u>Chapter 11</u>		
4-8	3	7/10/98	11-1	1	9/28/98
through			through		
4-28			11-16		
<u>Chapter 5</u>			<u>Chapter 12</u>		
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5-3	1	8/08/97	12-8		
5-4	0	4/20/94	<u>Chapter 13</u>		
<u>Chapter 6</u>			13-1	1	9/28/98
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6-2	1	8/08/97	13-21		
6-3	0	10/29/93	<u>Chapter 14</u>		
<u>Chapter 7</u>			14-1	1	9/28/98
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<u>Chapter 8</u>			14-79		
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<u>Chapter 9</u>			15-1	1	9/28/98
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through			15-84		
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<u>Chapter 10</u>					
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through					
10-14					