Enclosure 1 to
ML-91-008

COMBUSTION ENGINEERING, INC.

HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY

REVISION TO REQUEST FOR LICENSE AMENDMENT

LIST OF AFFECTED PAGES

FEBRUARY 21, 1991

HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY

REVISION TO REQUEST FOR LICENSE AMENDMENT

The following lists the pages of the Hematite Organizational Amendment Request and Supplement submitted previously (Letters LD-89-126 and LD-89-142, dated November 14, 1989 and December 20, 1989, respectively) that are affected by this revision.

Deleted Page			Added Page		
Page No.	Date	Rev.	Page No.	Date	Rev.
I.2-1	12/20/89	1	I.2-1	02/21/91	1
I.2-2	12/20/89	1	I.2-2	02/21/91	1
I.2-3	12/20/89	3	I.2-3	02/21/91	3
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I.2-5	12/20/89	2	I.2-5	02/21/91	2
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I.2-9	11/14/89	2	I.2-9	02/21/91	2
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I.2-11	11/14/89	1	I.2-11	02/21/91	1
I.2-12	12/20/89	0	I.2-12	02/21/91	0
II.3-22	11/14/89	0	II.3-22	02/21/91	0
II.3-23	11/14/89	0	II.3-23	02/21/91	0
II.3-24	11/14/89	0	II.3-24	02/21/91	0
II.3-25	12/20/89	0	II.3-25	02/21/91	0

Enclosure II to
ML-91-008

COMBUSTION ENGINEERING, INC.

HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY

REVISION TO REQUEST FOR LICENSE AMENDMENT

PROPOSED LICENSE APPLICATION PAGES

FEBRUARY 21, 1991

2.0 ORGANIZATION AND ADMINISTRATION

2.1 Organizational Responsibilities and Authority

The President, Nuclear Power Businesses has the ultimate responsibility for ensuring that corporate operations related to the Nuclear Power Businesses Division are conducted safely and in compliance with applicable regulations. The President has delegated the responsibility for nuclear fuel manufacturing and product development activities to the Vice President, Nuclear Fuel.

2.1.1 Plant Manager, Hematite

The Plant Manager, Hematite reports to the Vice President, Nuclear Fuel. He directs and has the overall responsibility for the safe operation of the Hematite facility including production, accountability, security, criticality safety, radiological and industrial safety, environmental protection, transportation, training, materials handling and storage, licensing, process and equipment engineering and maintenance. He fulfills these functions by delegation to a staff at Hematite that reports to the Plant Manager. He may also request support from the Windsor, CT staff to provide functions that may include criticality analysis, production methods, nuclear licensing and others as needed.

2.1.2 Manager, Nuclear Licensing, Safety and Accountability (NLS&A)

The Manager, Nuclear Licensing, Safety and Accountability reports to the Plant Manager. He manages radiological protection and industrial safety, SNM accountability, criticality safety, licensing, emergency planning, and environmental protection. His activities include review and approval of procedures for control, sampling, measurement and physical inventory of SNM, auditing of

2.1.2 Manager, Nuclear Licensing, Safety and Accountability (Continued)

plant operations. He reviews results from personnel and environmental monitoring and facility activities to ensure compliance with the requirements of License No. SNM-33. To enforce compliance, he has authority to halt any operation at the Hematite facility, and the operation shall not restart until approved by the Plant Manager or a duly authorized alternate.

2.1.3 Superintendent, Production

The Superintendent of Production reports to the Plant Manager. The Superintendent directs production operations in accordance with the content of Operation Sheets and Traveler documents. The Superintendent's activities include scheduling of production Shift Supervisors and of the activities of the Maintenance Supervisor, recommending improvements to equipment, processes and procedures, training and qualification of production operators through their Shift Supervisors and periodically directing the cleanout of the production equipment in conjunction with the physical SNM inventory.

2.1.4 Manager, Engineering

The Manager, Engineering reports to the Plant Manager. He manages the engineering of new equipment and of modifications to existing equipment. With support from his staff, his activities include recommendation, development and qualification of manufacturing processes, specification of process control methods and design, procurement and installation of processing equipment.

2.1.5 Nuclear Criticality Specialist

The Nuclear Criticality Specialist is located at Windsor, CT. He reports functionally for criticality evaluations to the Plant Manager at Hematite. The Nuclear Criticality Specialist verifies that equipment, processes and procedures satisfy the criticality criteria in Section 4 of Part I by performing the review described in Section 2.6 of Part I. Alternatively, for criticality analyses that require elaborate computational techniques, he may supervise the analysis and review at Windsor. He may also perform the annual audit at Hematite required by Section 2.7.

2.1.6 Supervisor, Health Physics

The Supervisor of Health Physics reports to the Manager of Nuclear Licensing, Safety and Accountability. He supervises the health physics technicians in the radiological surveillance of activities that involve radioactive materials, in personnel radiation monitoring and in the collection and measurements of environmental samples. He has the authority to suspend unsafe operations.

2.1.7 Health Physics Specialist

The Health Physics Specialist reports to the Manager of Nuclear Licensing, Safety and Accountability. His activities include observation of plant operations and evaluation of results from personnel and environmental monitoring. He compares quantitative measurements and other observations of Facility activities with the requirements of License No. SNM-33.

2.1.8 Health Physics Technicians

The Health Physics Technicians and Senior Health Physics Technicians report to the Supervisor, Health Physics. The Technicians are responsible for the day-to-day monitoring of operations. Monitoring is accomplished through the collection of data which allows the effectiveness of radiological, criticality and industrial safety, environmental protection and emergency planning programs to be assessed. Technicians also monitor the proper implementation of radiation work permits (called Special Evaluation Travelers).

2.2 Personnel Education and Experience Requirements

Table I.2-1 lists the minimum education and experience requirements for the positions described in Section I.2.1.

2.3 Hematite Plant Safety Committee

The Hematite Plant Safety Committee meets at least once each calendar quarter to review plant operations, to compare them with selected safety requirements of Part I and the License Conditions and to consider other aspects of safety the Committee believes appropriate. The Plant Safety Committee shall perform an annual review of each of the following:

- o Environmental protection trends
- o Radiation safety trends
- o Criticality safety practices
- o Industrial safety trends
- o Adequacy of emergency planning and drills
- o Effectiveness of ALARA program
- o Internal inspection and audit reports
- o Abnormal occurrences and accidents including recommendations to prevent reoccurrence
- o Review of significant physical facility changes in the pellet ship and significant changes to operations involving radiation and/or nuclear criticality safety

2.3 Hematite Plant Safety Committee (Continued)

The review of findings and recommendations of corrective action shall be reported to the Plant Manager for action.

The Committee Chairman or Plant Manager determines which committee members, as a minimum, shall attend each quarterly meeting, according to the topics to be considered. The Committee submits a quarterly meeting report to the Hematite manager level personnel and the Plant Manager at Hematite. The Plant Manager appoints the committee members to represent, as a minimum, engineering, production, health physics, and criticality safety. He may also approve alternate(s) for the members.

Minimum education and experience requirements for the Chairman are in Table I.2-1. The engineering and production member(s) shall have, as a minimum, the education and experience requirements, or the equivalent, of the Engineering Manager and Production Superintendent, respectively. The health physics and criticality safety member(s) shall have, as a minimum, the education and experience requirements of the NLS&A Manager and the Nuclear Criticality Specialist, respectively. The Committee Chairman or Plant Manager may invite participation by others from within Hematite or from the staff at Windsor.

2.4 Approval Authority for Personnel Selection

Two higher levels of management shall approve personnel for safety-related staff positions.

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

2.5 Training (Continued)

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 regularly scheduled meetings conducted by line supervision and specialists in the subjects covered. Topics include personnel protective equipment, industrial safety and 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 out their training functions. Operating personnel receive a re-training course in criticality control and radiation safety on a biennial basis. The effectiveness of retraining is determined by testing. Formal training shall be documented. The health physics staff will receive professional related training at least biennially.

2.6 Operating Procedures

Operations which involve licensed material shall be conducted in accordance with approved written procedures. Operating Procedures, called Operation Sheets, are issued and controlled by Quality Control. They provide the detailed instructions for equipment operation and material handling and the limits and controls required by the License. Operation Sheets are the basic control document; before issuance or revision they require Engineering, Production, Quality Control, and Nuclear Safety, Licensing and Accountability approval by signature. Health Physics activities will be conducted in accordance with approved written procedures; these procedures must be approved by the Manager, NLS&A.

2.6 Operating Procedures (Continued)

Supervision is required to assure that handling, processing, storing and shipping of nuclear materials is given prior review and approval by the NLS&A Manager, that suitable control measures are prescribed, and that pertinent control procedures relative to nuclear criticality safety and radiological safety are followed.

Primary responsibility and authority to suspend unsafe operations is placed with Operating Supervision. Within their respective responsibilities, members of NLS&A also have authority to suspend operations not being performed in accordance with approved procedure.

Supervision is further required to assure that, prior to the start of a new activity involving nuclear materials, approved procedures are available. A review procedure has been established for changes in processes, equipment and/or facilities prior to implementation. NLS&A authorization must be obtained for each change involving nuclear safety, radiological safety or industrial safety. NLS&A reviews shall be documented, except for minor changes within existing safety parameters.

The NLS&A Manager shall grant approval only when:

a. A nuclear criticality safety evaluation has been performed based on the criteria and standards of Chapters 3.0 and 4.0 by a person who meets the education and experience requirements for a Nuclear Criticality Specialist (and who may be the NLS&A Manager). This evaluation shall be in sufficient detail to permit subsequent review.

2.6 Operating Procedures (Continued)

b. The criticality safety evaluation has been reviewed by a person who has fulfilled the education and experience requirements for a Nuclear Criticality Specialist for at least two years (and who may be the NLS&A Manager). This review is based on the criteria and standards of Chapter 4.0 and includes verification of each of the following:

1) assumptions
2) correct application of criteria of Section 4.0
3) completeness and accuracy of the evaluation
4) compliance with the double contingency criteria

c. The NLS&A Manager has concluded that the operation can be conducted in accordance with applicable health physics and industrial safety criteria.

Review and verification shall include written approval by the reviewer.

The minimum frequency for review, for the purpose of updating, of operating procedures involving Special Nuclear Materials and health physics procedures shall be every two (2) years. Updating of operating procedures is the responsibility of the cognizant manager.

2.7 Audits and Inspections

Audits and inspections shall be performed to determine if plant operations are conducted in accordance with applicable license conditions, C-E policies, and written procedures. Audits shall apply to safety-related and environmental programs. Qualified

2.7 Audits and Inspections (Continued)

personnel having no direct responsibility for the plant operation being audited shall be used to ensure unbiased and competent audits.

Daily checks for safety related problems are made by NLS&A technicians, who observe, note and make general observations in addition to their other duties. Problems are normally corrected on the spot by the Shift Supervisor. More significant problems are listed on the daily exception report distributed to the Plant Manager and manager level staff. The Superintendent, Production, is responsible for corrective action.

Planned quarterly inspections, performed by an individual who meets the education and experience requirements of the NLS&A Manager, cover criticality control, radiation safety and industrial safety. The inspection of criticality control shall be performed by an individual meeting at least the education and experience requirements of a Nuclear Criticality Specialist and at least one of the quarterly inspections regarding criticality control will be by an individual who is not the NLS&A Manager. Items requiring corrective action are documented in a report distributed to the Plant Manager and manager level staff. The Superintendent, Production, is responsible for corrective action, except where another manager is specifically designated. Follow-up actions taken by the Superintendent, Production, or responsible manager, shall be documented. Documentation shall be maintained for at least the period stated in Section 2.9.

2.7 Audits and Inspections (Continued)

Annual audits are conducted in which the results of previous inspections or audits are reviewed, as an evaluation of the effectiveness of the program. These audits may also involve a detailed review of non-safety documents such as operation procedures, shop travelers, etc., and are documented by a formal report to the Vice President, Nuclear Fuel. Annual audits are performed by a team appointed by the Vice President, Nuclear Fuel. The team shall include, as a minimum, a Nuclear Criticality Specialist and a radiation specialist who shall audit criticality and radiation safety, respectively. The radiation specialist who conducts the annual audit shall have as a minimum a Bachelor's degree in Science or Engineering with two years experience in operating health physics for uranium bioassay techniques, internal exposure controls and radiation measurement technique. The annual audit will review ALARA requirements in conformance with Regulatory Guide 8.10, as applicable. The NLS&A Manager shall be responsible for follow-up of recommendations made by the audit team.

2.8 Investigations and Reporting

Events specified by applicable regulations or license conditions shall be investigated and reported to NRC. The NLS&A Manager shall be responsible for conducting the investigation and documentation of reportable events.

Non-reportable occurrences shall be investigated and documented as appropriate. Such reports shall be available for NRC inspection.

2.9 Records

Retention of records required to be maintained by the regulations, and by the conditions of this license, shall be the responsibility of the cognizant manager. Records of tests, measurements, and

2.9 Records (Continued)

surveys identified as requiring preservation until the NRC authorizes disposition shall be retained indefinitely. Records of NLS&A evaluations and approvals shall be retained for a period of at least six months after use of the operation has been terminated, or for two years, whichever is longer. Other safety significant records shall be retained for at least two years.

MINIMUM EDUCATION AND EXPERIENCE REQUIREMENTS FOR KEY PERSONNEL

TABLE 1.2-1

POSITION			
Described In Section No.	Title	Education	Experience (Years/Field)
1.2.1.1	Plant Manager	Bachelors, Science or Engineering	5/Nuclear manufacturing
1.2.1.2	Manager, NLS&A	Bachelors, Science or Engineering	5/Health Physics with 2/Operational health physics with uranium bioassay techniques, internal exposure control, and radiation measurement techniques
1.2.1.3	Superintendent, Production	High School Diploma	10 Total/Nuclear industry, with 5/nuclear fuel manufacturing including 3/Production coordination
1.2.1.4	Manager, Engineering	Bachelors, Science or Engineering	5/Engineering design or process, systems or facilities
	Nuclear Criticality Specialist	Bachelors, Science or Engineering	2/Nuclear criticality evaluations
	Supervisor, Health Physics	High School Diploma	5 Total/Nuclear industry, with 3/Senior Health Physics Technician
	Health Physics Specialist	Bachelors, Science or Engineering	2/Operational Health Physics applicable to fuel manufacturing
	Senior Health Physics Tech.	High School Diploma	2/Training and experience in Radiation Protection activities
	Chairman, Plant Safety Committee	Bachelors, Science or Engineering	5/Nuclear manufacturing industry

TABLE I.2-1

MINIMUM EDUCATION AND EXPERIENCE REQUIREMENTS FOR KEY PERSONNEL

POSITION			
Described In Section No.	Title	Education	Experience (Years/Field)
I.2.1.1	Plant Manager	Bachelors, Science or Engineering	5/Nuclear manufacturing
I.2.1.2	Manager, NLS&A	Bachelors, Science or Engineering	5/Health Physics with 2/Operational health physics with uranium bioassay techniques, internal exposure control, and radiation measurement techniques
I.2.1.3	Superintendent, Production	High School Diploma	10 Total/Nuclear industry, with 5/nuclear fuel manufacturing including 3/Production coordination
I.2.1.4	Manager, Engineering	Bachelors, Science or Engineering	5/Engineering design or process, systems or facilities
I.2.1.5	Nuclear Criticality Specialist	Bachelors, Science or Engineering	2/Nuclear criticality evaluations
I.2.1.6	Supervisor, Health Physics	High School Diploma	5 Total/Nuclear industry, with 3/Senior Health Physics Technician
I.2.1.7	Health Physics Specialist	Bachelors, Science or Engineering	2/Operational Health Physics applicable to fuel manufacturing
I.2.1.8	Senior Health Physics Tech.	High School Diploma	2/Training and experience in Radiation Protection activities
I.2.3	Chairman, Plant Safety Committee	Bachelors, Science or Engineering	5/Nuclear manufacturing industry

ENOS W. CRIDDLE - SUPERVISOR, HEALTH PHYSICS

Cape Girardeau Central High School, Graduated 1981
Naval Nuclear Power School, 1982
Naval Nuclear Power Prototype Training, 1983
Naval Nuclear Engineering Laboratory Technician, 1983
Naval Damage Control School, 1984
Naval Fire Fighting Training, 1985

PROFESSIONAL EXPERIENCE:

ABB Combustion Engineering Nuclear Power, 1988 to Present

Health Physics Supervisor, 1990 to Present

Responsible for the daily operations management of the health physics department and staff at Nuclear Fuel Manufacturing - Hematite. Implements health physics and industrial safety program through training, supervision, and daily audit. Develops and revises departmental operations procedures and emergency plan implementing procedures.

Health Physics Technician, 1988 to 1990

Responsible for radiological and industrial safety at Nuclear Fuel manufacturing - Hematite. Duties include instrument calibration, environmental sampling, documenting employee exposures, maintaining health physics documents, and performing routine radiological and industrial safety monitoring.

U.S. Navy Engineering Laboratory Technician, 1981 to 1987

Stationed on board USS Lafayette SSBN 616 (G) responsible for radiological safety throughout the ship. Qualified supervisor for administration and control of radiological materials and records. Responsible for instrument and gauge calibration program, chemical inventory and storage, and water chemistry controls for reactor plant and steam plant.

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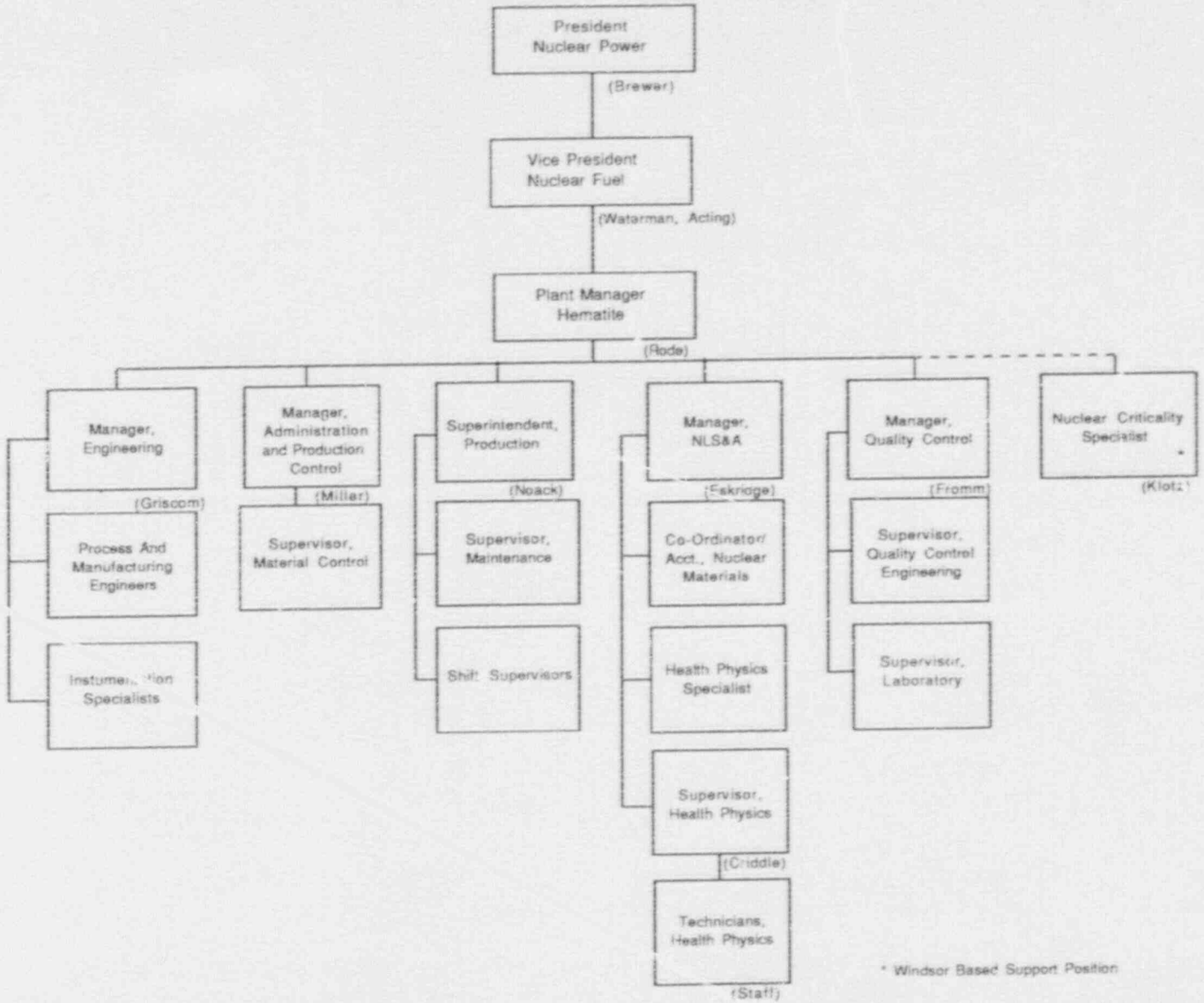

FIGURE II.3-1
HEMATITE PLANT ORGANIZATION CHART