



70-36

October 28 1993
ML-93-044

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

Dr. Michael Tokar, Section Leader
Licensing Section II, Licensing Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety and Safeguards
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: **Response to NRC Comments on Hematite Organizational Amendment
(TAC No. L3595)**

Reference: Letter, M. Tokar (NRC) to J. A. Rode (C-E), dated September 30, 1993

Dear Dr. Tokar:

This letter provides responses to the referenced request for additional information concerning the Hematite organizational amendment application of our letter dated July 19, 1993.

Enclosure I provides the itemized responses. In addition, we take this opportunity to provide information reflecting a change of the individual fulfilling the Manager, Regulatory Compliance position. Enclosure II provides a listing of the license application change pages resulting from this amendment request, including the changes as a result of the responses in Enclosure I. Enclosure III provides the actual license application change pages for insertion into your copies. Six (6) copies of this document are provided for your use.

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ABB Combustion Engineering Nuclear Power

NFO4
[Handwritten signature]

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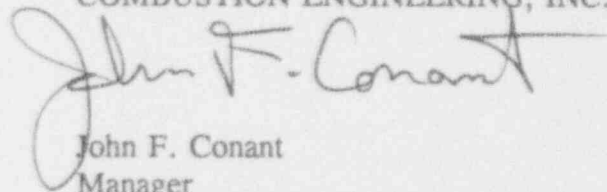
Dr. Michael Tokar
October 28, 1993

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If there are any questions or comments concerning this matter, please do not hesitate to call me or Mr. Mark A. Michelsen of my staff at (203) 285-5261.

Very truly yours,

COMBUSTION ENGINEERING, INC.

A handwritten signature in black ink, appearing to read "John F. Conant". The signature is written in a cursive style with a long horizontal stroke extending to the right.

John F. Conant
Manager
Nuclear Materials Licensing

Enclosures: As Stated

cc: G. France (NRC - Region III)
S. Soong (NRC)

Enclosure I to
ML-93-044

COMBUSTION ENGINEERING, INC.
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY
RESPONSE TO ORGANIZATIONAL AMENDMENT
REQUEST FOR ADDITIONAL INFORMATION

October 1993

COMBUSTION ENGINEERING, INC.
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY
RESPONSE TO ORGANIZATIONAL AMENDMENT
REQUEST FOR ADDITIONAL INFORMATION

Responses are provided below to the September 30, 1993, NRC request for additional information concerning the C-E Hematite organizational amendment application dated July 19, 1993. Each NRC comment is followed by C-E's response. A listing of affected license application pages is provided in Enclosure II, and the change pages for the license application are provided in Enclosure III.

General Comments:

1. CE should include the controls and limits that are important to safety in the license and supporting documents such as the operation sheets.
2. Section 2.6 states that limits and controls in the license are contained in operation sheets. These limits and controls are a necessary ingredient to the safety of the operation and should be maintained at all times. In addition, it is imperative to ensure that when items that may affect safety are replaced, these changes should be made under the auspices of a formal program that provides for review. Please provide a description of the program that CE utilizes to accomplish these objectives.

Response: *Part I Section 2.6 of the existing license application contains a description of the program that C-E utilizes for review of procedures (including procedures which contain safety limits and controls). Further description with respect to the review program for changes to plant equipment is provided below for your information.*

Proposed changes or modifications to equipment for SNM processing, handling, or storage, or related operations, are reviewed and approved for criticality safety and radiological safety as determined appropriate by the Manager, Regulatory Compliance. An engineering discipline (e.g., Process Engineering or Facilities Engineering) processes change requests and secure the necessary management and safety reviews and approvals prior to implementation of the change. Significant changes, as determined by the Manager, Regulatory Compliance, to operations involving radiological and/or criticality safety are also reviewed by the Hematite Plant Safety Committee. Facility change requests requiring a criticality safety review are evaluated by a Nuclear Criticality Specialist.

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 a previous safety analysis.

Specific Comments:

Page Comment

I.2-1 Section 2.1.1 should clarify that the Plant Manager is responsible for delegating an individual to his position during his absence.

Response: *Part II Section 3.0 has been revised to describe provisions for assumption of responsibilities in case of absence of key personnel.*

I.2-3 In Section 2.1.5, delete "or at other nuclear fuel locations."

Response: *The existing Section 2.1.5 (i.e., prior to the July 19, 1993, amendment request) refers to the Nuclear Criticality Specialist as located in Windsor, CT. The former second sentence in Section 2.1.5 of the amendment request regarding the location of the Nuclear Criticality Specialist has been deleted. A Windsor based nuclear criticality specialist can continue to fulfill this function without reference to his/her location base.*

I.2-6 Revise Section 2.6 as follows:

Include the position title of the individual who is responsible for determining the need for the Focused Factory Manager's approval of the operating procedures.

The Nuclear Criticality Specialist (NCS) and the Health Physicist (HP) may not sign the operating procedures in lieu of the Manager, Regulatory Compliance.

The Manager, Regulatory Compliance, may conduct the nuclear criticality safety evaluation only when he meets the qualification requirements for an NCS as defined in page I.2-12.

Response: *In accordance with the amendment request it would be a requirement that one of the three Focused Factory Managers approve each operating procedure. Therefore, it is not necessary for an individual to be responsible for determining the need for the Focused Factory Manager's approval of the operating procedures.*

The provisions for the Nuclear Criticality Specialist and the Health Physicist approving in lieu of the Manager, Regulatory Compliance have been changed. Section 2.6 has been modified to allow the Manager, Regulatory Compliance to determine whether other cognizant individuals, such as the Nuclear Criticality Specialist and/or the Health Physicist, have the appropriate experience and expertise to provide approvals in his stead for their areas of expertise.

With regard to the provision for allowing the Manager, Regulatory Compliance, to conduct the nuclear criticality safety evaluation if he meets the education and experience requirements of the nuclear criticality specialist, we believe the existing provisions in Part I Section 2.6 accomplish the intent of this comment.

I.2-7 In Section 2.6, replace "involving nuclear materials" with "affecting nuclear materials."

Response: The wording "affecting nuclear materials" has been included in the attached page changes. However, we see no change in its meaning.

I.2-9 In Section 2.7, the quarterly inspection of radiation safety should be conducted by an individual who meets the qualification requirements for the HP as defined on page I.2-12.

Response: The "education and experience requirements" for the Health Physicist of the existing license and the amendment request are one-and-the-same as the "qualification requirements ... in page I.2-12" of the NRC comment. Conversations with the NRC staff indicate that the word "function" was confusing in this provision; it has been reworded for clarity.

I.2-12 Experience requirements for the Manager, Regulatory Compliance, should include industrial safety.

Experience requirements for the Focused Factory Managers should include engineering design and process for nuclear manufacturing industry.

Experience requirements for the Nuclear Criticality Specialist should include 1 year of conducting nuclear criticality evaluations for a fuel fabrication facility.

Provide justification for reducing the years of required experience for the Manager, Regulatory Compliance.

Response: *Since the issue of industrial safety is both vague and outside the scope of License No. SNM-33, mention of industrial safety has been eliminated from Part I of the license. Consequently, there appears to be no reason to include requirements in the license for industrial safety experience for the Manager, Regulatory Compliance.*

It is important that the Focused Factory Managers have the experience necessary to perform their functions; those functions do not include design or process engineering functions. It is not necessary that a manager have the total experience base as those people who work in the factory; but rather it is important that he/she manage them well.

The experience requirements for a nuclear criticality specialist have been revised to include 6 months of conducting nuclear criticality evaluations applicable to fuel manufacturing. In light of the two years experience in nuclear criticality evaluations, a candidate nuclear criticality specialist need only become familiar with processes used at a fuel fabrication facility; six months experience should be sufficient to accomplish this. Further, it should be noted that the experience of a nuclear criticality specialist is supplemented by the requirement to have a second qualified nuclear criticality specialist review criticality safety evaluations.

The justification of the reduction of the years experience (from 5 years to 4 years) for the position of Manager, Regulatory Compliance, is in light of the recent requirements for the positions of Health Physicist and Nuclear Criticality Specialist. These are senior positions held by experienced personnel, who now perform functions formerly performed solely by the Manager, Regulatory Compliance. Since the experience base in these functions has been broadened, it is reasonable that the experience requirements for the Manager of Regulatory Compliance be reduced.

1.3-6 Section 3.2.4 should indicate whether the Health Physicist or Supervisor, Health Physics, has responsibility for determining if radiation safety monitoring is required for all non-routine operations.

Response: *Part I Section 3.2.4.1 now states that this is Regulatory Compliance's responsibility. The Manager of Regulatory Compliance assigns this responsibility to an individual in the Regulatory Compliance group as the situation warrants. While the current assigned individual is the Supervisor, Health Physics, others, such as the Health Physicist, may*

may also fulfill this responsibility. It is important to maintain this flexibility in the license.

II.4-1 Section 4.1 should identify the position title of the individual who is responsible for posting the criticality and radiological safety limits in each work station. Also, clarify that the production Supervisors are responsible for assuring that these safety limits, as required by the license and/or regulations, are properly posted.

Response: *Part I Section 2.1.2 states that the Manager, Regulatory Compliance is responsible for radiological protection and criticality safety, which includes requisite postings. He may assign this responsibility to others as the situation warrants. Currently, the criticality specialist is responsible for criticality safety postings and the health physicist is responsible for radiological postings. Since the existing provisions of the license application are sufficient for safety purposes, we see no reason to specify the assignments in the license.*

The production supervisors' role regarding postings is different than the nuclear criticality specialist and health physicist for postings. The production supervisors need to understand the postings so that they can adequately communicate requirements to the operators, and can adequately monitor their performance with respect to the posted requirements. In order to avoid confusion over who is responsible for such postings, the text has been revised.

Enclosure II to
ML-93-044

COMBUSTION ENGINEERING, INC.
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY
RESPONSE TO ORGANIZATIONAL AMENDMENT
REQUEST FOR ADDITIONAL INFORMATION

LIST OF AFFECTED PAGES

October 1993

**COMBUSTION ENGINEERING, INC.
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY
RESPONSE TO ORGANIZATIONAL AMENDMENT
REQUEST FOR ADDITIONAL INFORMATION**

LIST OF AFFECTED PAGES

Combustion Engineering, Inc. is submitting an amendment to its license application for the Hematite facility in response to an NRC request for additional information. The following identifies the changed license pages. The affected pages are provided as change pages in Enclosure III.

The license application pages affected are as follows:

<u>Delete Page</u>			<u>Add Page</u>		
<u>Page No.</u>	<u>Rev.</u>	<u>Date</u>	<u>Page No.</u>	<u>Rev.</u>	<u>Date</u>
<u>PART I</u>			<u>PART I</u>		
<u>Chapter 2</u>			<u>Chapter 2</u>		
I.2-1	1	8/12/91	I.2-1	2	10/28/93
I.2-3	3	8/12/91	I.2-3	4	10/28/93
I.2-6	2	8/12/91	I.2-6	3	10/28/93
I.2-7	2	8/12/91	I.2-7	3	10/28/93
I.2-8	1	8/12/91	I.2-8	2	10/28/93
I.2-9	2	8/12/91	I.2-9	3	10/28/93
I.2-12	0	8/12/91	I.2-12	1	10/28/93

<u>Delete Page</u>			<u>Add Page</u>		
<u>Page No.</u>	<u>Rev.</u>	<u>Date</u>	<u>Page No.</u>	<u>Rev.</u>	<u>Date</u>
<u>Part II</u>			<u>Part II</u>		
<u>Chapter 3</u>			<u>Chapter 3</u>		
II.3-1	1	8/12/91	II.3-1	2	10/28/93
II.3-4	1	8/12/91	II.3-4*	2	10/28/93
NA*			II.3-17*	2	
NA*			II.3-18*	2	
NA*			II.3-19*	2	
NA*			II.3-29*	1	10/28/93
<u>Chapter 4</u>			<u>Chapter 4</u>		
II.4-1	0	1/29/92	II.4-1	1	10/28/93

*Note: These pages replace corresponding numbered pages in our submittal dated July 19, 1993.

Enclosure III to
ML-93-044

COMBUSTION ENGINEERING, INC.
HEMATITE NUCLEAR FUEL MANUFACTURING FACILITY
ORGANIZATIONAL AMENDMENT

AFFECTED PAGES

October 1993

2.0 ORGANIZATION AND ADMINISTRATION

2.1 Organizational Responsibilities and Authority

The President, Nuclear Fuel has the ultimate responsibility for ensuring that corporate operations related to Nuclear Fuel are conducted safely and in compliance with applicable regulations. The President has delegated the responsibility for nuclear fuel manufacturing to the Vice President, Manufacturing Operations, who in turn has delegated this responsibility to the Plant Manager, Hematite.

2.1.1 Plant Manager, Hematite

The Plant Manager, Hematite reports to the Vice President, Manufacturing Operations. He directs and has the overall responsibility for the safe operation of the Hematite facility including production, accountability, security, criticality safety, radiological 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, Regulatory Compliance

The Manager, Regulatory Compliance reports to the Plant Manager. He manages radiological protection 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 plant operations.

2.1.5 Nuclear Criticality Specialist

The nuclear criticality specialist function reports to the Manager, Regulatory Compliance. 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, the specialist may supervise and/or review the analyses. The specialist 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 Regulatory Compliance. 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 Physicist

The health physicist function reports to the Manager of Regulatory Compliance. Activities include observation of plant operations and evaluation of results from personnel and environmental monitoring. Quantitative measurements and other observations of Facility activities are compared with the requirements of License No. SNM-33.

2.5 Training (Continued)

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, 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 affect licensed material shall be conducted in accordance with approved written procedures. Operating Procedures, called Operation Sheets, are issued and controlled by Quality Coordinators. 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 signed approval by the appropriate Focused Factory Manager and the Manager, Regulatory Compliance. In the Manager's absence, another individual meeting the Manager's minimum education and experience requirements, or the Plant Manager, may provide approval. Health Physics activities will be conducted in accordance with approved written procedures; these

procedures must be approved by the Manager, Regulatory Compliance or the Health Physicist.

Supervision is required to assure that handling, processing, storing and shipping of nuclear materials is given prior review and approval by the Manager of Regulatory Compliance, 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 line supervision. Within their respective responsibilities, members of Regulatory Compliance 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. Regulatory Compliance authorization must be obtained for each change involving nuclear safety or radiological safety. Regulatory Compliance reviews shall be documented, except for minor changes within existing safety parameters.

The Manager of Regulatory Compliance 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 Manager of Regulatory Compliance). This evaluation shall be in sufficient detail to permit subsequent review.

- b. The criticality safety evaluation has been reviewed by a second person who has fulfilled the education and experience requirements for a Nuclear Criticality Specialist (and who may be the Manager of Regulatory Compliance). 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 Manager of Regulatory Compliance has concluded that the operation can be conducted in accordance with applicable health physics criteria.

Review and verification shall include written approval by the reviewer.

The Manager of Regulatory Compliance has the authority to determine whether other cognizant individuals, such as the Nuclear Criticality Specialist and/or the Health Physicist, have the appropriate experience and expertise to provide approvals in the stead of the Manager of Regulatory Compliance for their areas of expertise. If he so determines, he may delegate his approval authority.

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

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 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 Health Physics technicians, who observe, note and make general observations in addition to their other duties. Problems are normally corrected on the spot by the Production Supervisor. More significant problems are listed on the daily exception report distributed to the Plant Manager and manager level staff. The appropriate Focused Factory Manager is responsible for corrective action.

Planned and documented quarterly inspections cover criticality control and radiation 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 Manager of Regulatory Compliance. The inspection of radiation safety will be conducted by an individual meeting at least the education and experience requirements of the position of Health Physicist. Items requiring corrective action are documented in a report distributed to the Plant Manager and manager level staff. The appropriate Focused Factory Manager is responsible for corrective action, except where another manager is specifically designated. Follow-up actions taken by the appropriate Focused Factory Manager, or responsible manager, shall be documented. Documentation shall be maintained for at least the period stated in Section 2.9.

TABLE 2-1

MINIMUM EDUCATION AND EXPERIENCE REQUIREMENTS FOR KEY PERSONNEL

<u>POSITION</u>			
Described In Section No.	<u>Title</u>	<u>Education</u>	<u>Experience (Years/Field)</u>
I.2.1.1	Plant Manager	Bachelors, Science or Engineering	5/Nuclear manufacturing
I.2.1.2	Manager, Regulatory Compliance	Bachelors, Science or Engineering	4/Health Physics with 2/Operational health physics with uranium bioassay techniques, internal exposure control, and radiation measurement techniques
I.2.1.3	Focused Factory Managers	Bachelors, Science, Engineering or Manufacturing	4/Nuclear manufacturing industry
I.2.1.5	Nuclear Criticality Specialist	Bachelors, Science or Engineering	2/Nuclear criticality evaluations, including 6 months applicable to fuel manufacturing
I.2.1.6	Supervisor, Health Physics	High School Diploma	5 Total/Nuclear industry, with 3/Health Physics Technician
I.2.1.7	Health Physicist	Bachelors, Science or Engineering	2/Operational Health Physics applicable to fuel manufacturing
I.2.1.8	Health Physics Technician	High School Diploma or GED Equivalent	6 months/Training and experience in radiation protection activities
I.2.3	Chairman, Plant Safety Committee	Bachelors, Science or Engineering	5/Nuclear manufacturing industry

3.0 ORGANIZATION AND PERSONNEL

Section I.2.1 describes the key positions important to safety and the line of authority to top management. Section I.2.2 lists the education and training requirements for those positions. In general, higher level management may assume the responsibilities and authorities of key personnel in their absence. Either the individual key person or higher level management may assign one or more other suitable individual(s) to temporarily assume the responsibilities and authorities of key personnel who are absent.

The following Section II.3.1 describes additional positions of the organization. Section II.3.2 gives the resumes for personnel currently holding the key positions described in Part I.

3.1 Organizational Responsibilities

Figure II.3-1 is the Hematite plant organization chart. The following sections describe some of the supervisory and higher level positions shown in Figure II.3-1 that are not included in Section I.2.1.

3.1.1 Manager, Administration

The Manager, Administration reports to the Plant Manager. He manages the control of SNM from receipt at the Hematite facility, through the production process until it is shipped as product or waste. His activities include scheduling of production, selection of SNM for use in the production process, specification of the product lot makeup, scheduling of SNM shipments from the supplier to Hematite and from Hematite to the customer, coordination of the packaging and shipment of SNM waste and residues to a commercial, licensed disposal facility and development of procedures for packaging, shipping and receiving. He also performs facility administration duties including the supervision of the guards, site purchasing and personnel services.

3.2

Resumés of Personnel

Resumés of key personnel important to safety are provided in this section for the following personnel:

J. A. Rode - Plant Manager

S. G. Borell - Manager, Chemical Operations

G. F. Palmer - Manager, Ceramic Operations

G. C. Kersteen - Manager, Assembly Operations

R. W. Sharkey - Manager, Regulatory Compliance

R. J. Klotz - Nuclear Criticality Specialist
(located in Windsor)

M. R. Eastburn - Nuclear Criticality Specialist

A. M. Keklak - Health Physicist

E. W. Criddle - Supervisor, Health Physics

ROBERT W. SHARKEY - MANAGER, REGULATORY COMPLIANCE

EDUCATION:

University of Lowell

M.S. - Radiological Science and Protection, 1990

B.S. - Radiological Health Physics, 1988

LICENSE:

U.S. Nuclear Regulatory Commission, Reactor Operator, License No. 10723

EXPERIENCE:

COMBUSTION ENGINEERING, INC.

Manager, Regulatory Compliance - Hematite

1993 - Present

Responsible for licensing, safety, and safeguards at Nuclear Fuel Manufacturing - Hematite. Responsible for development and implementation of the health physics, criticality and industrial safety, and accountability programs for the Hematite facility. Audits manufacturing operations and supervises safety and safeguards personnel in day-to-day operations.

Manager, Radiological Protection and Industrial Safety - Windsor 1991 - 1993

Provides information, advice, and assistance to fuel manufacturing operating personnel and management to ensure personnel and environmental protection measures are adequate. Maintains records documenting safety related facility operations. Defines programs and standards related to radiological, criticality and industrial safety, environmental protection and emergency planning for both the fuel manufacturing facility and product development laboratory.

ROBERT W. SHARKEY (continued)

JACOBS ENGINEERING GROUP, INC.

Health Physicist

1989 - 1990

Developed the Weldon spring site internal dosimetry program. Developed worker health and safety plans for remediation activities. Developed air monitoring plan to comply with 40 CFR 61 radionuclide NESHAPS. Provided radiation safety training for all site personnel.

UNIVERSITY OF LOWELL

Nuclear Reactor Operator

1988 - 1989

Setup and conducted experiments using the ULR 1MW research reactor and a 800,000 Curie Co-60 gamma source. Maintenance of all electrical and mechanical facilities. Inspect, repair and calibrate nuclear instrumentation and radiation detection equipment. Training of undergraduate engineers in nuclear reactor operations.

Teaching Assistant

1987 - 1988

Instruction of the laboratory course, Nuclear Instrumentation.

E.I. DuPONT de NEMOURS & COMPANY, NEW PRODUCTS

BILLERICA, MASSACHUSETTS

Radiochemistry Technologist

1987 - 1988

Utilization of radiation detection equipment and smear surveys to minimize exposure and contamination. Preparation of radiopharmaceuticals in a hot cell proton bombardment. Radioassy of pharmaceuticals using nuclear instrumentation.

ROBERT W. SHARKEY (continued)

U.S. AIR FORCE

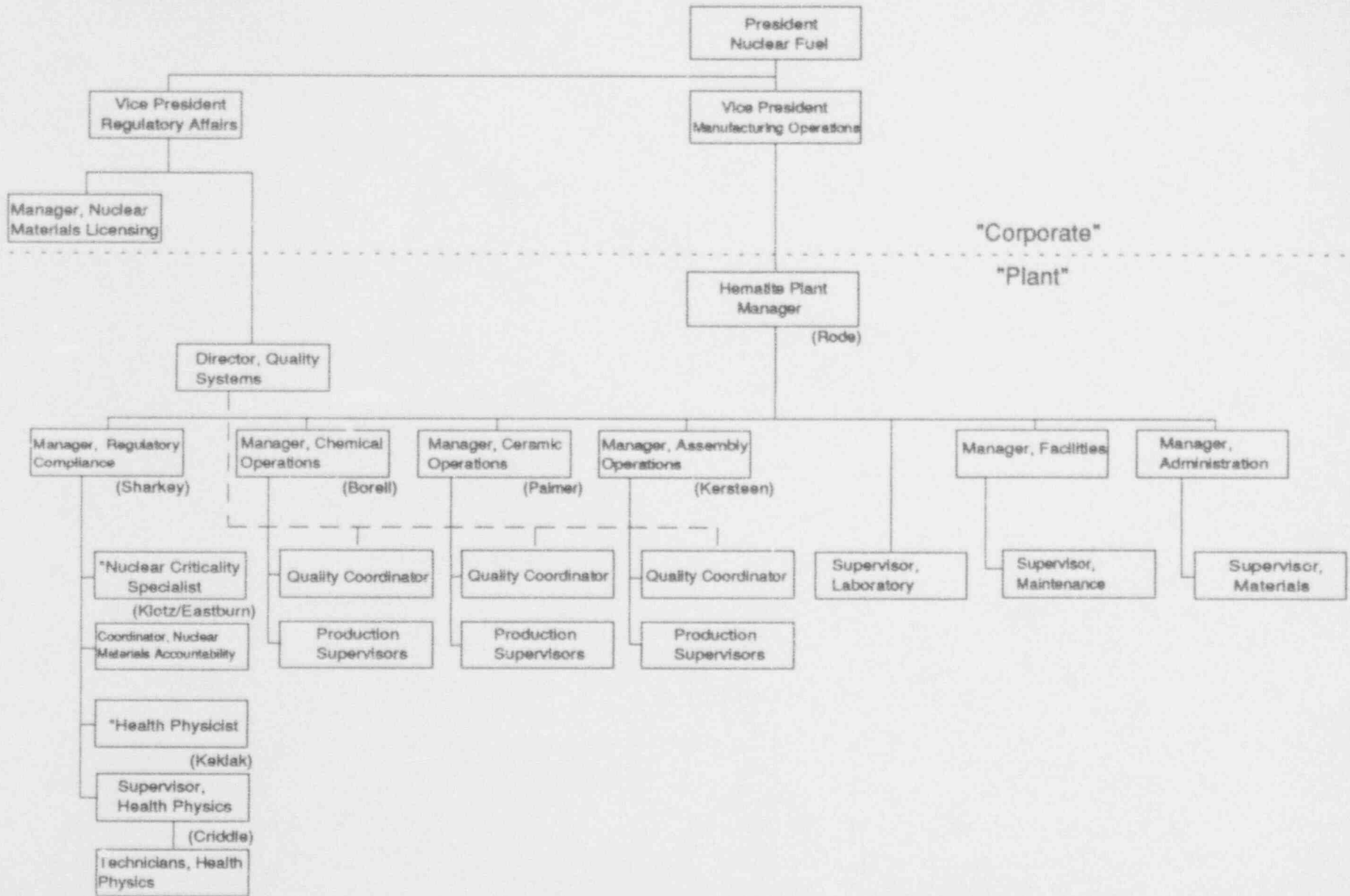
Avionic Navigation Systems Specialist

1980 - 1985

Test, troubleshoot and repair avionics to component level. One year special assignment as an aircraft maintenance controller directing all flight maintenance activities.

MEMBERSHIP

St. Louis Chapter, Health Physics Society



"Corporate"
"Plant"

Figure 11.3-1

Hematite Plant Organization Chart

*May be Windsor Based Support

4.0 RADIATION PROTECTION PROCEDURES AND EQUIPMENT

4.1 PROCEDURES

A manual containing procedures necessary to implement the radiation safety program described in Part I of this renewal application is maintained by Regulatory Compliance.

All routine operations involving SNM handling are covered by an Operation Sheet (O.S.) and/or by a Special Evaluation Traveler (S.E.T.). A separate O.S. covers plant-wide radiation safety procedures, while procedures specific to a certain operation are covered in the O.S. for that operation.

The Manager, Regulatory Compliance or Health Physicist, reviews all O.S.s and S.E.T.s regarding all aspects of safety; approvals are documented. The Production Supervisors instruct operators to assure their understanding of the operations and of the operations' safety limits and restrictions. The Production Supervisors also ensure that operations are performed in compliance with posted limits and written instructions.

4.2 Posting and Labeling

Work stations involving nuclear fuel handling are posted with criticality safety limits. Radiological posting of areas is in accordance with 10 CFR 20.203. Mass-limited containers of SNM are labeled as to their contents.