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October 8, 1993

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

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

**Subject: Response to NRC Bulletin 91-01, Supplement 1: Reporting Loss of
Criticality Safety Controls**

References: (A) Letter, M. Tokar (NRC) to J. Conant (C-E), dated September 23, 1993
(B) Letter, J. F. Conant (C-E) to J. W. Hickey (NRC), ML-92-029, dated
May 15, 1992

Dear Sirs:

This letter provides the Combustion Engineering response to the subject bulletin for the Hematite nuclear fuel manufacturing facility. It should be noted that an extension, until October 8, 1993, was received via Reference (A).

Enclosure I describes Combustion Engineering's procedures to comply with Supplement 1 of Nuclear Regulatory Commission (NRC) Bulletin 91-01. Our prior response to NRC Bulletin 91-01, as contained in Reference (B) is thus superseded by Enclosure I.

This document is provided under oath or affirmation under the provisions of Section 182a, Atomic Energy Act of 1954, as amended. A signed affidavit is attached.

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ABB Combustion Engineering Nuclear Fuel

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If you have any questions concerning this matter, please feel free to contact me or Mr. John F. Conant of our Regulatory Affairs staff at (203) 285-5002.

Very truly yours,

COMBUSTION ENGINEERING, INC.

James A. Rode
Plant Manager

Enclosures: As stated

xc: J. Martin, Regional Administrator, NRC Region III
G. France (NRC - Region III)
S. Soong (NRC)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of:)
)
Combustion Engineering, Inc.) Docket No. 70-36

AFFIDAVIT

James A. Rode, being duly sworn, hereby deposes and says that he is the Plant Manager of Combustion Engineering, Inc., Hematite Nuclear Fuel Manufacturing Facility; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this response to NRC Bulletin 91-01, Supplement 1: Reporting Loss of Criticality Safety Controls; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

COMBUSTION ENGINEERING, INC.

By: James A. Rode
James A. Rode
Plant Manager
Hematite

Subscribed and sworn to before me this 8 day of October, 1993.

Elizabeth A. Roppel
Notary Public

ELIZABETH A. ROPPEL
NOTARY PUBLIC STATE OF MISSOURI
COUNTY OF JEFFERSON
MY COMMISSION EXPIRES MARCH 7, 1995

My Commission expires _____.

Enclosure I

**COMBUSTION ENGINEERING
NUCLEAR FUEL MANUFACTURING
RESPONSE TO NRC BULLETIN 91-01, SUPPLEMENT 1:
REPORTING LOSS OF CRITICALITY SAFETY CONTROLS**

October 1993

**COMBUSTION ENGINEERING
NUCLEAR FUEL MANUFACTURING
RESPONSE TO NRC BULLETIN 91-01, SUPPLEMENT 1:
REPORTING LOSS OF CRITICALITY SAFETY CONTROLS**

The Combustion Engineering procedures for reporting loss of criticality safety controls pursuant to Supplement 1 of NRC Bulletin 91-01 are described below.

Observation of the Event

The criticality specialist shall be notified when a condition or event involving a loss of criticality control is identified. The initial observation of the event or condition, as used herein, is that time when the criticality specialist is notified.

Cases Requiring an Immediate (4 hour) Report

When an immediate report is required, it shall be reported within 4 hours from the initial observation of the event or condition. Cases which require an immediate report are those where (1) moderation is used as the primary criticality control, or (2) more than a safe mass of fissionable material is involved (regardless of the type of controls used to satisfy the double contingency principle), and that meet one or more of the following reporting criteria:

1. Any event that results in the violation of the double contingency principle, as defined in ANSI 8.1, and where the double contingency principle cannot be re-established within 4 hours after the initial observation of the event.
2. The occurrence of any unanticipated or unanalyzed event for which the safety significance of the event or corrective actions to re-establish the double contingency principle are not readily identifiable.
3. Any case where it is determined that a criticality safety analysis was deficient and where the necessary controlled parameters were not established or maintained.
4. Any event involving a controlled parameter previously identified by the NRC or the licensee as requiring immediate reporting to the NRC and where the double contingency principle cannot be re-established within 4 hours after the initial observation of the event.

Determination of : "safe mass"

A safe mass is defined as 45 percent of the minimum critical mass of special nuclear material for a given enrichment.

Determination of: "... fissionable material ... involved ..."

The amount of fissionable material involved is the amount of fissionable material in the direct process step related to the problematic loss of criticality control in the event or condition to be reported. If it is likely that the event or condition had previously existed undetected, then the amount of fissionable material involved is the maximum amount of fissionable material which would likely have been in the direct process step at any one time during the period that the event or condition likely existed.

Determination of: "... parameter previously identified ..."

A "controlled parameter previously identified by the NRC or the licensee as requiring immediate reporting to the NRC" is considered as such if the following criteria A. and B. are met:

A. It is a controlled parameter required for criticality safety in order to meet the double contingency principle, and it is identified as such a controlled parameter in either of the following:

1) in Part I, License Conditions, of the current license application or in the current NRC License Conditions of the Materials License Certificate,

or

2) it is specifically identified in the current nuclear criticality safety analyses as a criticality safety "controlled parameter".

and

B. It is a controlled parameter identified as requiring immediate reporting to the NRC by virtue of either of the following:

1) It is identified in any of the documents of A.1) or A.2) above as a controlled parameter requiring immediate reporting to the NRC,

or

- 2) It meets the requirements of immediate reporting to the NRC pursuant to 10 CFR 70.50 or 10 CFR 20.403.

Cases Requiring a 24 Hour Report

All other criticality safety events that result in a violation of the double contingency principle, as defined in ANSI 8.1, and are not reported within 4 hours, shall be reported to the NRC within 24 hours from the initial observation of the event or condition. This includes those cases which would otherwise be immediately reportable in criteria 1 or 4 above, but where the double contingency principle is re-established within 4 hours from the initial observation of the event.

Reporting to the NRC

A report to the NRC which is required above (either an Immediate - 4 hour - or a 24 hour report) shall be made by initiating a telephone call to the NRC Operation Center, phone number (301) 951-0550. Information to answer the following questions shall be provided:

1. What type of facility (or operation) is involved?
2. What chemical process or physical operations are involved?
3. What is the chemical form of the material involved?
4. At what point in the process did the event occur?
5. What is the safety significance of the event?
6. Have releases occurred and are future releases possible?
7. What safety systems (including safeguards systems) are affected?
8. What corrective actions are being taken?

Attachment 1 from NRC Information Notice 93-60, dated August 4, 1993, will be utilized to assist in preparation for the telephone call.