



June 17, 1994
NFBWR-94-023

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ATTN: Timothy Collins
Acting Chief, Reactor Systems Branch
Division of Systems Safety and Analysis

Subject: Transmittal for NRC review of CENPD-287-P, "Fuel Assembly Mechanical Design Methodology for Boiling Water Reactors"

Dear Mr. Collins:

Please find as Enclosure I twenty three (23) copies of the Licensing Topical Report CENPD-287-P titled, "Fuel Assembly Mechanical Design Methodology for Boiling Water Reactors" Licensing Topical Report CENPD-287-P is being submitted for NRC review and acceptance for referencing in licensing actions at a future date. Also provided are five (5) non-proprietary copies of the Licensing Topical Report identified as CENPD-287-NP.

This Licensing Topical Report defines a comprehensive methodology for performing ABB BWR fuel assembly design. The Licensing Topical Report is part of the ABB generic BWR fuel assembly methodology begin submitted in support of SVEA-96 fuel deliveries commencing the beginning of 1996.

Specifically, the purpose of this report is to obtain NRC acceptance for licensing application of:

1. The ABB mechanical integrity design criteria for evaluation of BWR nuclear fuel assemblies. These design criteria are consistent with Section 4.2 of the NUREG-0800, General Design Criterion 10 in 10 CFR 50, Appendix A, and Section III of the ASME code,
2. The ABB methodology for fuel rod and fuel assembly design evaluation relative to the design criteria described in the report, and
3. The general approach that, once the ABB mechanical integrity design criteria and methodology are approved, new fuel designs or changes in existing designs satisfying those criteria as demonstrated by the approved methodology do not require explicit staff review.

9406270348 940617
PDR TOPRP EMVC-E
C PDR

ABB CENO Fuel Operations

Post Office Box 500
1000 Prospect Hill Road
Windsor, Connecticut 06095-0500

Telephone
203-687-8001

Fax
203-687-8002

*Two Rios
T007 1/23 Prop
T008 1/5 Non Prop*

The design criteria and methodology have been applied to the ABB SVEA-96 design. This specific application of the methodology to the SVEA-96 design demonstrates that the design is acceptable for use in GE BWR/2 through BWR/6 reactors to a peak pellet burnup of 65 MWd/kgU and a peak assembly burnup of 55 MWd/kgU.

The ABB mechanical design criteria identified in Section 3 of CENPD-287-P are intended to satisfy the staff proposal that a set of acceptance criteria be established for each fuel vendor such that, once the criteria are approved, the fuel designs or changes satisfying those criteria would not require explicit staff review. Since one of the general criteria in Section 3 is that evaluation methodology approved by the NRC be utilized, NRC acceptance of both the ABB design criteria and the ABB evaluation methodology relative to those criteria are requested.

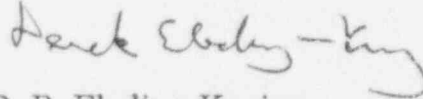
The SVEA-96 design is described in detail. The ABB mechanical design methodology described in this report is applied to the SVEA-96 design, and it is demonstrated that the design criteria are satisfied up to a peak pellet burnup of 65 MWd/kgU and an assembly burnup of 55 MWd/kgU. As identified in the description of the ABB methodology, these burnup values only will be extended as sufficient justification is obtained, including operating data and ex-core test results, to justify use of the evaluation methodology to higher burnups. The detailed description of the SVEA-96 design and the illustrative evaluation of the SVEA-96 design relative to those criteria are provided to assist in the review of the design criteria and methodology and to provide the staff the opportunity to review the current SVEA-96 design. Therefore, while substantive changes in the design criteria and methodology will be submitted for NRC review, it is our intention to apply the approved criteria and methodology to new designs and design changes without requesting specific NRC approval.

The material in CENPD-287-P contains Combustion Engineering, Inc. proprietary information consisting of trade secrets, commercial, or financial information which we consider privileged or confidential pursuant to 10 CFR 2.790(4). In conformance with the requirements of 10 CFR Section 2.790, as amended, of the Commission's regulations, we are submitting as Enclosure II an Affidavit supporting this request for Withholding Proprietary Information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the commission.

This material is for your internal use only and may be used only for the purpose for which it is submitted. It should not be otherwise used, disclosed, duplicated or disseminated, in whole or in part, to any person or organization outside the Office of Nuclear Reactor Regulation without the prior written approval of Combustion Engineering, Inc. Correspondence

with respect to the Application for Withholding, should reference NFBWR-94-023 and be addressed to D. B. Ebeling-Koning, Manager of Licensing and Safety Analysis, BWR Fuel Operations, CEP 5330-AD07, ABB Combustion Engineering, 1000 Prospect Hill Road, Windsor, CT 06095.

Very truly yours,



D. B. Ebeling-Koning
Manager, Licensing and Safety Analysis
BWR Fuel Operations

Enclosure I: Copies No. 00001-00023
Enclosure II: Affidavit

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

Combustion Engineering, Inc.)
State of Connecticut)
County of Hartford) SS.: Windsor

I, D. B. Ebeling-Koning, depose and say that I am the Manager, Licensing and Safety Analysis, BWR Fuel Operations, of Combustion Engineering, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations for withholding this information.

The information for which proprietary treatment is sought is contained in the following document:

CENPD-287-P, "Fuel Assembly Mechanical Design Methodology for Boiling Water Reactors," June, 1994.

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering, Inc. in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure, which is owned and has been held in confidence by Combustion Engineering, Inc., includes extensive mechanical design information, data from in-plant irradiation and hot cell examinations, and design methodologies and correlations.
2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in substantial competitive advantage to Combustion Engineering, Inc.
3. The information is of a type customarily held in confidence by Combustion Engineering, Inc. and not customarily disclosed to the public. Combustion Engineering, Inc. has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F. M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein is proprietary.
4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.
5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering, Inc. because:
 - a. A similar product is manufactured and sold by major light water reactor competitors of Combustion Engineering, Inc.

- b. Development of this information by Combustion Engineering, Inc. required tens of thousands of manhours and millions of dollars. To the best of my knowledge and belief, a competitor would have to undergo similar expense in generating equivalent information.
- c. In order to acquire such information, a competitor would also require considerable time and inconvenience to develop the extensive analytical calculations and resulting analysis methodology.
- d. The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.
- e. The information consists of includes extensive mechanical design information, data from in-plant irradiation and hot cell examinations, and design methodologies and correlations, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, Inc., take marketing or other actions to improve their product's position or impair the position of Combustion Engineering, Inc.'s product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.
- f. In pricing Combustion Engineering, Inc.'s products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

- g. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with their technology development. In addition, disclosure would have an adverse economic impact on Combustion Engineering, Inc.'s potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.

D. B. Ebeling-Koning
D. B. Ebeling-Koning
Manager, Licensing and Safety Analysis
BWR Fuel Operations

Sworn to before me
this 17th day of June, 1994

Janet Toelle
Notary Public

My commission expires: August 31, 1999