



February 16, 1994  
NFBWR-94-007

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

ATTN: Robert C. Jones, Jr.  
Chief, Reactor Systems Branch  
Division of Systems Technology

References:

1. Topical Report, ASEA-ATOM BWR Control Rods for US BWR's, TR UR 85-225, October 1985 (proprietary).
2. Letter, H. N. Berkow (NRC) to E. Tenerz (ASEA-ATOM), Subject: Acceptance for Referencing of Licensing Topical Report TR UR 85-225, 'ASEA-ATOM Control Rods for US BWRs,' February 20, 1986.
3. Supplement 1 to TR UR 85-225A, ASEA-ATOM Control Rods for US BWRs, October 1987 (proprietary).
4. Letter, A. C. Thadani (NRC) to E. Tenerz (ASEA-ATOM), Subject: Acceptance as a Reference Document of Supplement 1 to Topical Report TR UR 85-225 'ASEA-ATOM Control Rods for US BWRs,' May 5, 1988.
5. Supplement 2 to TR UR 85-225-A, ASEA-ATOM Control Rods for US BWRs, March 1988 (proprietary).
6. Letter, A. C. Thadani (NRC) to E. Tenerz (ABB ATOM), Subject: Acceptance of Supplement 2 to Topical Report UR-85-225A 'ASEA-ATOM Control Rods for US BWRs' as a Reference Document,' August 8, 1989.
7. Supplement 3 to TR UR 85-225-A, ASEA-ATOM Control Rods for US BWRs, Concerning High Worth Control Rods, November 1988 (proprietary).

**Subject: Transmittal for NRC Staff Review of CENPD-290-P, "ABB BWR Generic Control Rod Design Methodology"**

Dear Mr. Jones:

Please find as Enclosure I twenty three (23) copies of the Licensing Topical Report CENPD-290-P titled, "ABB BWR Generic Control Rod Design Methodology." Licensing Topical Report CENPD-290-P is being submitted for NRC review and acceptance for referencing in licensing actions at a future date. Also provided are five (5) copies Non-Proprietary copies of the Licensing Topical Report identified as CENPD-290-NP.

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ABB Combustion Engineering Nuclear Fuel

*Two RDS  
T007 1/22 Prop  
T008 1/5 NP*

CENPD-290-P describes our method for systematically reviewing proposed control rod design changes using performance and safety criteria to determine if NRC review is required for each proposed design change prior to using it in BWR's in the US. This report defines a comprehensive set of Design Requirements and a set of specific Acceptance Criteria which, if met, ensure that an ABB Control Rod will function as required in a BWR built by General Electric. Use of the design requirements and acceptance criteria will allow various specific ABB Control Rod designs within the basic ABB design to be built to meet particular specific design requirements without requiring explicit NRC approval for each specific design. This report is a logical extension to the methods and analyses documented, reviewed, and approved in UR 85-225-A and subsequent Supplements (See References 1 through 7). The methodology described in CENPD-290-P is consistent with the NRC's expressed desire for a systematic licensing process.

The general design concept of ABB BWR control rods, to which the enclosed Topical Report will be applied, is enveloped by the existing approved topical report referenced above. This general design consists of an ABB control rod which:

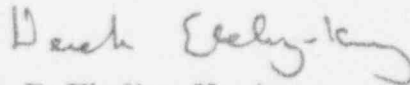
- Has horizontal absorber holes drilled in solid stainless steel wings,
- Uses guide pads (buttons) rather than the guide pins and rollers used in the Original Equipment Manufacture control rods,
- Uses boron and/or hafnium as the neutron absorbing material(s),
- Has a velocity limiter,
- Weighs less than the design weight for the control rod drive,
- Has an initial worth within 5 percent of the initial worth of the control rod that it is replacing, and
- Does not negatively impact the ability of the Core Monitoring System to monitor the core.

As we have in the past, we will continue to keep the NRC appraised of our control rod design and technology. This will be done via the updates specified in Section 12 of Enclosure I.

The material in CENPD-290-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-94-007 and be addressed to D. B. Ebeling-Koning, Manager of Licensing and Safety Analysis, BWR Fuel, ABB CENO, 1000 Prospect Hill Road, Windsor, CT 06095.

Very truly yours,



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

Enclosure I: CENPD-290-P, Copies No. 00001-00023  
Enclosure II: CENPD-290-NP (5 Copies)  
Enclosure III: 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, 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-290-P, "ABB BWR Generic Control Rod Design Methodology,"  
February 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., are analytical calculations, design bases, and test data which define the control rod design methodology.
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 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 analytical calculations, design bases, and test data which define the control rod design methodology, 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.

*Derek Ebeling-Koning*

D. B. Ebeling-Koning

Manager, Licensing and Safety Analysis  
BWR Fuel

Sworn to before me,  
this 16th day of February, 1993

*Janet Talle*

Notary Public

My commission expires: March 31, 1994