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July 20, 1989

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U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, DC 20555

ATTN: Mr. Chester Poslusny, NRR Project Manager
NRR Mail Stop 13-D-18

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Request for NRC Review of Rod
Burnup Limit to 60 MWD/Kg

Dear Mr. Poslusny:

In 1984, Combustion Engineering Inc. fuel performance models and supporting data were submitted to NRC as CENPD-269-P, Revision 1-P, "Extended Burnup Operation of Combustion Engineering PWR Fuel," to justify a fuel assembly maximum batch average burnup of 45 MWD/Kg and a maximum fuel rod burnup of 52 MWD/Kg. In August 1984, Combustion Engineering provided responses to NRC questions on CENPD-269-P, Revision 1-P. After NRC review, approval of these limits for both 14 x 14 and 16 x 16 fuel was given in a October 10, 1985 Safety Evaluation Report for Calvert Cliffs Nuclear Power Plant. Now, with five more years of operating experience and fuel performance data, we request your review of the enclosed report CEN-386-P which supports raising the fuel pin burnup limit to 60 MWD/Kg for 16x16 fuel. Since the batch average limit is not explicitly related to the factors involved in burnup dependent fuel performance, we are requesting that the batch average limit be deleted.

Beginning in 1985, Arkansas Power & Light initiated the transition of Unit 2 to an 18-month cycle. The Unit is now in Cycle 7, the second full 18-month cycle, and is expected to shutdown for refueling on September 27, 1989. Physics code predictions for the Cycle 8 core, even after some core redesign, indicate that the current fuel pin limit of 52 MWD/Kg will start to be exceeded, on a best estimate basis, around 320 effective full power days (EFPD) into the cycle. By the end of the planned 420 EFPD cycle, the maximum 1-pin burnup, including burnup uncertainties, is expected to reach 55.9 MWD/Kg. A fuel pin burnup histogram, on a best estimate basis, for the end of Cycle 8 is presented in the attached figure. In future cycles, when equilibrium is more nearly approached, it is expected that maximum 1-pin burnups approaching 60 MWD/Kg will be obtained.

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Until your approval is received, AP&L will have to begin planning for a refueling outage to begin no sooner than October 1990 when 320 EFPD would be reached for this cycle. This planning would have to begin approximately 10 months before the earliest possible start of the refueling outage to ensure fuel would be available at the outage date, as well as allowing proper lead time to prepare for other major outage activities. Therefore, in order that AP&L can plan for an appropriate outage date we request that you review CEN-386-P and provide us with your conclusions by January 1, 1990.

We have enclosed seven copies of the proprietary version of CEN-386-P, seven copies of the non-proprietary version, and the required affidavit pursuant to 10CFR2.790. If additional copies of the report are needed, please advise us. Additionally, AP&L stands ready to provide any assistance which would facilitate your review. We would appreciate your expeditious review of this matter to support our planned cycle length of 420 EFPD.

Very truly yours,

Charles H. Turk

Charles H. Turk
Acting Manager, Licensing

CHT:MCS:lw

Enclosures

ANO-2 End-of-Cycle 8
Fuel Pin Burnup Distribution

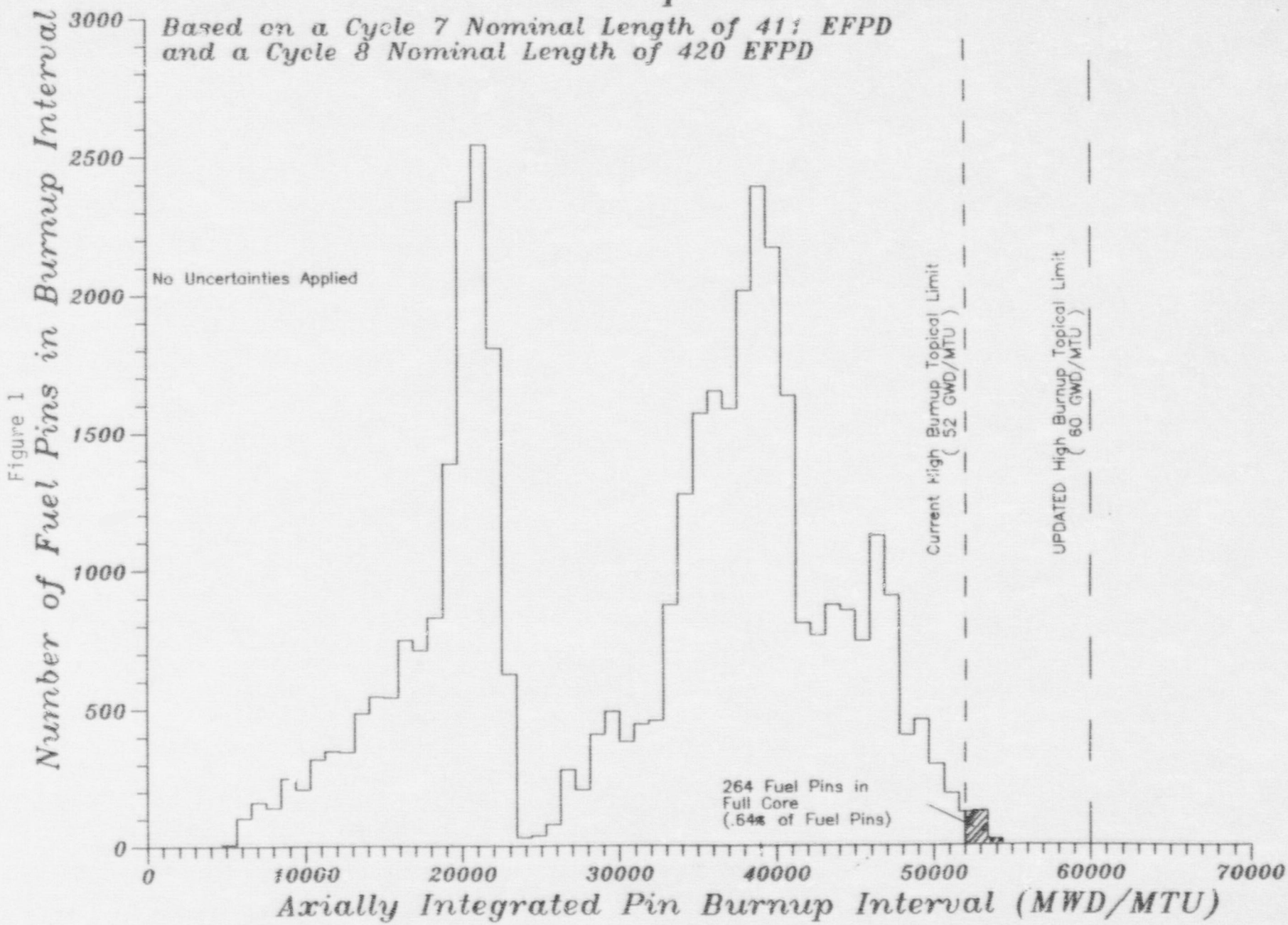

Figure 1

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

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

I, P. L. McGill, depose and say that I am the Vice President, Nuclear 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:

CEN-386-P, "Verification of the Acceptability of a 1-Pin Burnup Limit of 60 MWD/KG for Combustion Engineering 16 x 16 PWR Fuel", June, 1989.

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering 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 is the fuel performance of Combustion Engineering 16 x 16 fuel assembly designs at extended burnups, which is owned and has been held in confidence by Combustion Engineering.

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.

3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering 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 are 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 because:

a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.

b. Development of this information by C-E required tens of thousands of manhours of effort 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 related to the fuel performance of Combustion Engineering 16 x 16 fuel assembly designs at extended burnups.

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 the fuel performance of Combustion Engineering 16 x 16 fuel assembly designs at extended burnups, 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, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

f. In pricing Combustion Engineering'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's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.

P. L. McGill
Vice President
Nuclear Fuel

Sworn to before me
this 29th day of JUNE, 1989

Catherine P. McCarthy
Notary Public

My commission expires 3/31/93.