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July 27, 1984  
LD-84-039

Mr. L. S. Rubenstein, Assistant Director  
Core and Plant Systems  
Division of Systems Integration  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: CEA Guide Tube Wear Sleeve Modification

- References: (1) CEN-83(B)-P, "Calvert Cliffs Unit 1 Reactor Operation With Modified CEA Guide Tubes", Combustion Engineering, Inc., February 9, 1978
- (2) CEN-96(A)-P, Rev. 1, "ANO-2 Reactor Operation With Modified CEA Guide Tube and Lengthened Upper Guide Structure Flow Channels", Combustion Engineering, Inc., July 12, 1979

Dear Mr. Rubenstein:

The purpose of this letter is to inform you of a planned modification to the design of the Combustion Engineering CEA guide tube wear sleeve. The design basis of the sleeve in terms of wear protection for the Zircaloy guide tubes will not be changed by this modification. The modified design will be employed in the future for both 14x14 and 16x16 fuel assemblies, where applicable.

The current sleeve design [for example, References (1) and (2)] is based on the dual considerations of wear protection and field installation facilitation. Field installation considerations initially made it desirable to (1) properly locate the guide tube sleeve axially by flaring the upper end of the sleeve at the top of the fuel assembly upper end fitting, and (2) minimize the expanded length between the sleeve and guide tube.

Developments have now made it possible to modify the original design. Foremost is the fact that new guide tube sleeves are now shop installed during fabrication. Relocation of the sleeve flare and elimination of the section of the sleeve within the upper end fitting will, therefore, be incorporated as part of the planned design modification. In addition, sleeve expansion over its full length will replace the partial length expansion used in the current design. Finally, the crimp which provides resistance to axial motion is maintained but has been relocated to permit sleeve installation in the guide tubes prior to the fabrication of the assembly skeleton.

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It is important to note that none of the functions affecting guide tube wear or proper operation of the control rods has been altered by the modifications described above. The degree of protection of the Zircaloy guide tube is identical since the length of coverage and sleeve thicknesses are maintained. Additionally, reconstitution of fuel assemblies is facilitated by the modified design, thereby easing ALARA considerations.

If there are any questions concerning this modification, please do not hesitate to call me or Mr. C. M. Molnar of my staff at (203) 285-5205.

Very truly yours,

COMBUSTION ENGINEERING, INC.



A. E. Scherer  
Director  
Nuclear Licensing

AES:las  
cc: L. E. Phillips (U.S. NRC)