

# BALTIMORE GAS AND ELECTRIC COMPANY

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VICE PRESIDENT  
SUPPLY

September 7, 1979

Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

ATTENTION: Mr. Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 2, Docket No. 50-318  
Sleeved CEA Guide Tube Evaluation Program

REFERENCE: (a) NRC Letter from R. W. Reid to A. E. Lundvall  
dated October 21, 1978

ENCLOSURE: (1) Guide Tube Wear Related Exams at Calvert Cliffs  
Unit No. 2

Gentlemen:

Reference (a) issued Amendment No. 18 to Facility Operating License No. DPR-69 for Calvert Cliffs Nuclear Power Plant No. 2 (CCNPP2). This amendment authorized operation with sleeved CEA guide tubes, but noted the need for further evaluation, including an inspection at the end of Cycle 2. The framework for this inspection has been completed and the basic program is attached as Enclosure (1).

The general objective of the program is to assess the value of specific design features used during this cycle to minimize the guide tube/CEA interaction. The program also will characterize guide tube sleeve crimp size to determine if recrimping will be required. Based on previous examinations, it is expected that this inspection will confirm the continued use of sleeving as a satisfactory solution to the guide tube wear problem.

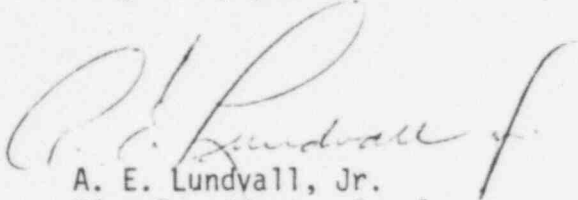
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If you have any questions, please do not hesitate to call.

Very truly yours,

A handwritten signature in cursive script, appearing to read "A. E. Lundvall, Jr.", written in dark ink.

A. E. Lundvall, Jr.  
Vice President - Supply

AEL/JAM/mrc

Copy To: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
Messrs. E. L. Conner, Jr. - NRC  
P. W. Kruse - CE

## ENCLOSURE (1)

### GUIDE TUBE WEAR RELATED EXAMS AT CALVERT CLIFFS UNIT NO. 2

#### OBJECTIVES

The objectives of the recommended eddy-current testing program are to:

1. Characterize crimp size as a basis for assessing the need to recrimp. Crimp acceptability must be demonstrated in order to remove the currently imposed operational restrictions on CEA movement.
2. Assess the degree of any guide tube wear that may be present in assemblies containing design features intended to mitigate the potential for guide tube/CEA interaction. This assessment will also indicate whether the assemblies satisfy the criteria for lifting and if sleeving may be required for continued usage.

Based on the comprehensive results of similar examinations at other sites, it is expected that this inspection will also confirm the absence of sleeve wear in Calvert Cliffs Unit No. 2.

The following work scope defines the proposed inspection program based on a preliminary Cycle-3 core loading pattern.

#### WORKSCOPE

##### Sleeved and Unsleeved Guide Tube Exams

The sleeved guide tube eddy-current test program at CCNPP2 EOC-II will include two types of fuel assemblies:

1. Bundles sleeved in 1978 and irradiated in Cycle-2 that are going into CEA locations for Cycle-3. This category subdivided as follows:
  - a. Assemblies that were sleeved "fresh" at BOC-2. These assemblies also employ a new crimp design which, based on qualification tests, resulted in more consistent crimps than the earlier design used at Calvert Cliffs Unit No. 1. This will be the first opportunity to examine fuel assemblies containing the new crimp design after operation.
  - b. Assemblies that were sleeved in the irradiated condition at BOC-2. Data obtained from other inspections conducted in 1979 revealed undersized crimps in bundles of this type.
2. Unsleeved bundles that were under CEA's during Cycle-2.

WORKSCOPE (continued)

The extent of the ECT program for each of the above categories is as follows:

Category 1a - Sleeved, 1-cycle assemblies under CEA's in Cycle 3

Two sleeved Batch D assemblies have been selected to confirm crimp adequacy. If this exam reveals some undersize crimps, then all remaining bundles in this category would be inspected (22 remaining Batch D assemblies based on a preliminary Cycle-3 loading patterns). The two "D" assemblies selected for the sample should be from high wear core locations F2 and S20.

Category 1b - Sleeved, 2-cycle assemblies under CEA's in Cycle-3

Based on a preliminary core loading pattern 16 "sleeved" Batch C assemblies fall into this category and will be inspected.

Category 2 - Modified Assemblies

Calvert Cliffs Unit No. 2 Batch D included 16 unsleeved test assemblies that had a reduced guide tube flow hole size (0.093 inch diameter). During Cycle-2, twelve of these bundles were located under CEA's. All twelve of the assemblies will be eddy-current tested to assess the degree of any wear that may be present.

CEA EXAMINATIONS

Up to 5 CEA's are recommended for eddy-current examination. The CEA's selected for this exam are from core coordinate positions F2, S20, T19, S18, and L11. These CEA's cover the spectrum of wear positions in the core as well as standard and modified assembly designs. Based on the eddy-current test results, one or two of these CEA's may then be visually examined to characterize surface appearance and for comparison to similar data from Calvert Cliffs Unit No. 1 examination programs.