



CHARLES CENTER · P. O. BOX 1475 · BALTIMORE, MARYLAND 21203

JOSEPH A. TIERNAN  
VICE PRESIDENT  
NUCLEAR ENERGY

September 29, 1988

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 1; Docket No. 50-317  
Inservice Inspection Reports

- ENCLOSURES:
- (1) ASME Boiler & Pressure Vessel Code Section XI, Form NIS-1
  - (2) 1988 Inservice Examination of Selected Class 1, Class 2, and Class 3 Components and Systems of Calvert Cliffs Nuclear Power Plant Unit 1, Volumes 1 through 5
  - (3) Steam Generator #11 and #12 Eddy Current Testing Final Report, April/June 1988

Gentlemen:

Please find enclosed the Inservice Inspection reports for Calvert Cliffs Unit 1. The results are incorporated within the three enclosures submitted. These inspections fulfilled the intentions and requirements stated in our program plan and our commitment to comply with ASME Code Section XI Inservice Inspection requirements.

Should you have any questions on the contents of this report, please do not hesitate to contact us.

Very truly yours,

JAT:LMD:mlc

Enclosures

AOA7  
" Limited  
Dist

Document Control Desk  
September 29, 1988  
Page 2

cc: (w/o Enclosures)  
D. A. Brune, Esquire  
J. E. Silberg, Esquire  
R. A. Capra, NRC  
S. A. McNeil, NRC  
W. T. Russell, NRC  
D. C. Trimble/V. L. Pritchett  
T. Magette, DNR

ENCLOSURE (1)

TO

BALTIMORE GAS AND ELECTRIC COMPANY'S

INSERVICE INSPECTION REPORT

FOR CALVERT CLIFFS UNIT 1

ASME BOILER AND PRESSURE VESSEL CODE  
SECTION XI, FORM NIS-1

DATE: September 29, 1988

PAGE 1 of 7 NIS-1

NIS-1

FORM NIS-1 OWNER'S DATA REPORT FOR INSERVICE INSPECTIONS

(As Required by the Provisions of the ASME Code Rules)

1. Owner: Baltimore Gas and Electric Company  
P. O. Box 1475  
Baltimore, MD 21203
2. Plant: Calvert Cliffs Nuclear Power Plant  
Lusby Post Office  
Lusby, MD 20657
3. Plant Unit: #1 4. Owner Certification of Authorization: NA
5. Commercial Service Date: May 8, 1975 6. National Board Number for Unit: 20911
7. Components Inspected:

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	MANUFACTURER OR INSTALLER SERIAL #	STATE OR PROVINCE #	NATIONAL BOARD NUMBER
Reactor Pressure Vessel	Combustion Engineering	CE-67107	14000N	20911
Pressurizer	Combustion Engineering	CE-67602	14000N	20915
Steam Generator #11	Combustion Engineering	CE-67504	14000N	20922
Steam Generator #12	Combustion Engineering	CE-67505	14000N	20923
Reactor Coolant Pipe	Combustion Engineering	CONTRACT No. 72467		
#11A Reactor Coolant Pump/Support	Byron Jackson/Bechtel	SN-0437		
#11B Reactor Coolant Pump	Byron Jackson	SN-0438		

DATE: September 29, 1988

PAGE 2 of 7 NIS-1

NIS-1

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7. Components Inspected (Continued):

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	MANUFACTURER OR INSTALLER SERIAL #	STATE OR PROVINCE #	NATIONAL BOARD NUMBER
#12A Reactor Coolant Pump	Byron Jackson	SN-0439		
#12B Reactor Coolant Pump/ Support	Byron Jackson/ Bechtel	SN-0440		
#11A RCP Motor Flywheel	Westinghouse	SN-2S-79P528		
#11B RCP Motor Flywheel	Westinghouse	SN-1S-77P108		
#12A RCP Motor Flywheel	Westinghouse	SN-2S-77P108		
#12B RCP Motor Flywheel	Westinghouse	SN-1S-89P957		
Shutdown Cooling Piping/ Supports	Kellogg/Bechtel ITT Grinnell			

DATE: September 29, 1988

PAGE 3 of 7 NIS-1

NIS-1

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7. Components Inspected (Continued):

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	MANUFACTURER OR INSTALLER SERIAL #	STATE OR PROVINCE #	NATIONAL BOARD NUMBER
Safety Injection Piping/ Supports	Kellogg/Bechtel ITT Grinnell			
Pressurizer Spray Piping/ Support	Kellogg/Bechtel ITT Grinnell			
Charging Piping/ Supports	Kellogg/Bechtel ITT Grinnell			
RCS Drain Piping/ Support	Kellogg/Bechtel ITT Grinnell			
Main Steam Piping	Kellogg/Bechtel			
Feedwater Piping	Kellogg/Bechtel			
Pressurizer Surge Support	ITT Grinnell/ Bechtel			
Pressurizer Safety & Relief Support	ITT Grinnell/ Bechtel			

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7. Components Inspected (Continued):

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	MANUFACTURER OR INSTALLER SERIAL #	STATE OR PROVINCE #	NATIONAL BOARD NUMBER
Letdown Supports	ITT Grinnell			
#11 Shutdown Cooling Heat Exchanger	Engineers & Fabricators/ Bechtel	S-15783-A	14054NV	1143
Regenerative Heat Exchanger	Whitlock/ Bechtel	75251	56360NV	75251

8. Examination Dates: January 13, 1987 to July 4, 1988
9. Inspection Interval: April 1, 1987 to April 1, 1997
10. Abstract of Examinations: (Include list of exams and statements concerning status of work required for current interval).

(See Enclosures 2 and 3 for the list of exams).

The examinations reported herein constitute the ninth such report of Inservice examination performed at Calvert Cliffs Unit 1, and the first report within the first period of the second interval of commercial operation. The examinations for the second interval as required by the Long-Term Examination Plan for Calvert Cliffs Unit 1, were performed in accordance with the 1983 Edition of ASME Code Section XI with Addenda through Summer 1983. Hydrostatic and System Pressure Testing Procedures are available at the plant site for review.

## NIS-1

## 11. Abstract of Conditions Noted:

(See Enclosures 2 &amp; 3)

- a. Eddy current examinations of #11 and #12 Steam Generators revealed signs of steam generator tube degradation. Results of #11 Steam Generator examinations showed that of the 8,463 tubes examined, 21 were defective ( $\geq 40\%$  wall loss), 149 were degraded (between 20 and 39% wall loss), and 135 had imperfections ( $< 20\%$  wall loss). Inspection of #12 Steam Generator revealed that of the 8,482 tubes examined, 17 were defective, 136 were degraded and 152 had imperfections.
- b. Code-allowable indications were recorded during ultrasonic testing examinations of Main Steam piping welds 34-MS-1202-10 and 13, Steam Generator 11 weld SG-11-3, and Steam Generator 12 weld 12-4-102.
- c. During the PT examinations of Reactor Coolant piping weld 30-RC-11B-7 and Safety Injection piping weld 12-SI-1009-16, arc strike indications were recorded.
- d. Linear indications were recorded during the PT examination of support lugs for RCP-11A and RCP-11B. Also on RCP-11B, visual examination of the capscrews revealed heavy pitting, gouging and/or heat cracking in the threads.
- e. Visual examinations of supports revealed 5 supports with construction/installation deficiencies at the integral attachments; 8 supports with missing or loosened items; 2 supports with improper spring settings; and 6 supports with other construction deficiencies.

## 12. Abstract of Corrective Measures Recommended and Taken:

(See Enclosures 2 &amp; 3)

- a. Those tubes found to contain imperfections greater than 40% wall loss were removed from service by plugging each end with a mechanical ribbed tube plug. Additionally, 31 tubes which showed eddy current indications of less than 40% nominal wall loss were plugged. These 31 tubes were plugged because of the potential for a local active intergranular attack (IGA) mechanism in the sludge pile area. Previous metallurgic examination of Unit 1 tubing has shown degradation in this area of each steam generator was caused by IGA.
- b. All ultrasonic testing indications were evaluated, per ASME Code Section XI 1983 Edition through Summer 1983 Addenda, and found acceptable by Baltimore Gas & Electric.



DATE: September 29, 1988

PAGE 6 of 7 NIS-1

NIS-1

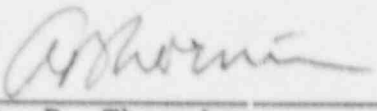
- c. The arc strikes on Reactor Coolant piping weld 30-RC-11B-7 and Safety Injection piping weld 12-SI-1009-16 were removed by light grinding, and following reexamination were found acceptable and returned to service.
- d. The indications found during the examination of RCP 11A and 11B support lugs were removed by light grinding, and following reexamination were found acceptable and returned to service. The capscrews were replaced.
- e. The supports were either accepted by evaluation in accordance with IWF-3122.4 or repaired by bringing them into conformance with their original design.

13. NAMES OF INSPECTORS: R. W. Lawrence, N. S. Hewitt

EMPLOYER OF INSPECTORS: Factory Mutual Engineering  
One Bala Plaza Suite 200  
Bala Cynwyd, PA 19004

We certify that the Statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

DATE: 9/9, 1988.

SIGNED: , Baltimore Gas & Electric Company  
A. R. Thornton  
General Supervisor -  
Plant & Project Engineering

Certificate of Authorization No. NA Expiration Date NA

DATE: September 29, 1988

PAGE 7 of 7 NIS-1

NIS-1

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Maryland and employed by Arkwright-Mutual Insurance Company have inspected the components described in this Owner's Data Report during the period January 13, 1987 to July 4, 1988, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

DATE: SEPT. 27, 1988.

Robert W. Lawrence  
INSPECTOR SIGNATURE  
FACTORY MUTUAL SYSTEM

COMMISSION: NB 8226, MD 647  
National Board State  
Province and No.

ENCLOSURE (2)

TO

BALTIMORE GAS AND ELECTRIC COMPANY'S

INSERVICE INSPECTION REPORT

1988 INSERVICE EXAMINATION OF  
SELECTED CLASS 1, CLASS 2, AND CLASS 3  
COMPONENTS AND SYSTEMS  
OF CALVERT CLIFFS NUCLEAR POWER PLANT  
UNIT 1

VOLUMES 1 THROUGH 5