

ROBERT E. DENTON
Vice President
Nuclear Energy

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657
410 586-2200 Ext. 4455 Local
410 260-4455 Baltimore



August 8, 1995

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
Supplemental Information; Request for Temporary Relief from ASME Boiler &
Pressure Vessel Code Section XI Requirement IAW-5250

REFERENCE: Letter from Mr. R. E. Denton (BGE) to NRC Document Control Desk, dated
March 23, 1995, Request for Temporary Relief from ASME Boiler & Pressure
Vessel Code Section XI Requirement IAW-5250

We are providing additional information to supplement our relief request (Reference). We have requested relief to delay the repair of a half-coupling located on the bottom of the common saltwater discharge header in the service water pump room. As described in the referenced letter, repair of the half-coupling is impractical during plant operation. Therefore, we have proposed alternatives to the repair which would provide an acceptable level of quality and safety until the repair can be made. Those alternatives are described in the referenced letter.

The root cause of the leak will be determined when we remove the leaking half-coupling. Based on past experience, it appears that the leak may be due to corrosion at a point where the coal tar coating was insufficient. Therefore, there is no need for augmented inspections of other coupling locations.

We have not provided any leak mitigating measure, such as a clamp, based on the nature of the leak and the safety significance of the potential failure of the half-coupling. In addition, we have changed the schedule for ultrasonic examination from every six months to every three months.

110005

9508100321 950808
PDR ADDCK 05000317
P PDR

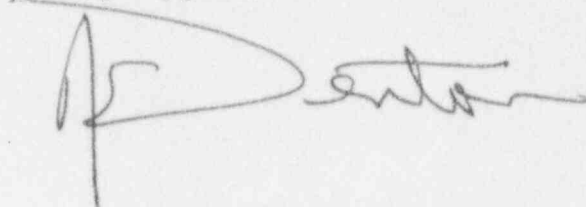
Accol
1/1

July 00, 1995

Page 2

Attached are the calculations described in our previous letter and additional information needed to assist the Staff's review of the code relief request. Should you have further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

A handwritten signature in dark ink, appearing to read "D. A. Brune". The signature is fluid and cursive, with a large initial "D" and a long horizontal stroke extending to the right.

RED/PSF/dlm

Attachment: As Stated

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
L. B. Marsh, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
P. R. Wilson, NRC
R. I. McLean, DNR
J. H. Walter, PSC

ATTACHMENT

SUPPLEMENTAL INFORMATION; REQUEST FOR TEMPORARY RELIEF, DATED MARCH 23, 1995

Saltwater Pipe

diameter = 30"
nominal wall thickness = .375 inches at ends of T (middle of T is thicker)
material = carbon steel - ASTM A-234, grade WPB
lining = neoprene rubber (coal tar at the coupling threads)

Half Coupling

assumed opening = 1.75" (for 1" half coupling)

Leakage Calculation

methodology - Crane Technical Paper 410
system pressure = design pressure = 50 psi (operating pressure at this location = 20 psi)
temperature = 95°F
fresh water assumed (less dense than saltwater)

Stress Analysis

methodology - ANSI B31.1
credit taken for .25" cover fillet weld (conservative since a groove weld is also present)

Unreinforced Opening Evaluation

methodology - ANSI B31.1
required minimum wall thickness = 0.17" (introduced a 2.0 uncertainty correction factor for calculation of A_1 to account for UT measurement inaccuracy)
service life = 13 months

Non-Destructive Examination

ultrasonic examination methods used
minimum measured wall thickness = 0.523"
UT report and map attached

ATTACHMENT 1, ENGINEERING SERVICE PACKAGE (ESP)
(Page 1 of 2)

ESP No.: <u>ES199501352</u>	Supp No.: <u>-</u>	Rev. No.: <u>0</u>	Page <u>1</u> of <u>7</u>
INITIATION (Control Doc Type: ESP)		<input checked="" type="checkbox"/> SR	<input type="checkbox"/> NSR <input type="checkbox"/> AQ [B-4]
ORIGINATOR/EXT/DATE: <u>JOHN F. BASHOR</u> <i>[Signature]</i> PRINTED NAME AND SIGNATURE			
REQUESTED DUE DATE: <u>7-28-95</u>	<input checked="" type="checkbox"/> UNIT 1	<input type="checkbox"/> UNIT 2	<input type="checkbox"/> COMMON <input type="checkbox"/> ISFSI
NUCLEIS PRIORITY: _____	MECH No./NUCLEIS EQIP. ID: _____		
	IR/MO No.: <u>1R5028461</u> Sys No.: <u>012</u>		
REASONS FOR ENGINEERING SERVICES REQUEST/PROPOSED CHANGES: <u>DOCUMENT FORMAL</u>			
<u>CALCULATION TO JUSTIFY CONTINUED OPERATION OF SW SYSTEM UNIT-1</u>			
<u>WITH EXISTING THROUGH WALK LEAK ON ONE INCH HALF COUPLER</u>			
<input type="checkbox"/> Check here if additional sheets are attached (mark these sheets with ESP No. and Supplement and Rev. No., as applicable)			
Plant Engineering Review/Approval		For Modifications Only	
Service Classification (Check One)		<input type="checkbox"/> Major Mod <input type="checkbox"/> Minor Mod	
SYSTEM ENGINEER: <u>N/A</u>		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	
SUPERVISOR: <u>SELF</u>		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	
(Required for initial ESP modifications unless RDO initiated)			
PROJECT MANAGER: _____		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	
(Required for ESP modification supplements unless RDO initiated)			
COMMENTS: _____			
Assignment			
PROJECT MANAGER: <u>JOHN F. BASHOR</u>			
RESPONSIBLE GROUP: <u>PDSU</u>			
RESPONSIBLE ENGINEER: <u>JOHN F. BASHOR</u>			
SCREENS (Check all that apply)			
<input type="checkbox"/> SAFETY EVALUATION SCREENING (EN-1-102)	<input type="checkbox"/> SPECIALTY INPUT SCREEN (DS-020)		
<input type="checkbox"/> NUCLEAR SAFETY SIGNIFICANCE SCREEN (NS-2-101)	<input type="checkbox"/> ENVIRONMENTAL IMPACT SCREEN		
PACKAGE (Check all that are completed)			
<input type="checkbox"/> Configuration Document Change Evaluation	<input type="checkbox"/> Like-for-Like Evaluation		
<input checked="" type="checkbox"/> Engineering Evaluation	<input type="checkbox"/> Modification Evaluation		
<input type="checkbox"/> Equivalency Evaluation	<input type="checkbox"/> SSC Functional Evaluation		

ATTACHMENT 1, ENGINEERING SERVICE PACKAGE (ESP)
(Page 2 of 2)

ESP No.:	ES199501352	Supp No.:	—	Rev. No.:	0	Page 2 of 7
Package (Continued):						
<input type="checkbox"/>	Analytical Software	<input type="checkbox"/>	LCIPS Analysis			
<input type="checkbox"/>	Bill of Materials (BOM)	<input type="checkbox"/>	Like-for-Like/Equivalency Evaluation			
<input checked="" type="checkbox"/>	Calculation C900027	<input type="checkbox"/>	Master Calibration Data Sheet (MCDS)			
<input type="checkbox"/>	Configuration Document Change Evaluation	<input type="checkbox"/>	Modification/Design Input Requirements (DIR)			
<input type="checkbox"/>	Design Basis Document (DBD)	<input type="checkbox"/>	Operational Impact of Modifications			
<input type="checkbox"/>	Design Instructions	<input type="checkbox"/>	Safety Evaluation (50.59)			
<input type="checkbox"/>	Design Scope Document	<input type="checkbox"/>	Safety Evaluation (72.48)			
<input type="checkbox"/>	Electrical Device Setting Sheets	<input type="checkbox"/>	Seismic Qualification Review Summary			
<input type="checkbox"/>	Engineering Service Inventory Transmittal	<input type="checkbox"/>	Software Engineering			
<input type="checkbox"/>	Engineering Standard (ES)	<input type="checkbox"/>	Setpoint Change Transmittal Sheets			
<input type="checkbox"/>	Environmental Impact Statement	<input type="checkbox"/>	Specifications			
<input type="checkbox"/>	EQ Evaluation	<input type="checkbox"/>	Safety Parameters Display System (SPDS)			
<input type="checkbox"/>	EQTAR		Alarm Manual			
<input type="checkbox"/>	Issue Report (IR) Resolution	Other: _____				
Configuration Updates:						
<input type="checkbox"/>	Change Notification Records (CNR)	<input type="checkbox"/>	Stock Descriptions			
<input type="checkbox"/>	Database Print Screen Mark-up	<input type="checkbox"/>	Technical Information Turnover Sheet			
<input type="checkbox"/>	Drawing Change Mark-up	<input type="checkbox"/>	Turn Around Document (TAD)			
<input type="checkbox"/>	Drawing Change Notice (DCN)	<input type="checkbox"/>	License Amendment Change Request			
<input type="checkbox"/>	Request for Procedure Activity (RPA)	<input type="checkbox"/>	DCN/TAD Transmittal			
<input type="checkbox"/>	SAR Change Request	Other: _____				
Package Closure:						
<input type="checkbox"/>	Drawing Change Request (DCR)	<input type="checkbox"/>	Record of Walkdown			
<input type="checkbox"/>	Modification Turnover Checklist	Other: _____				
ENGINEERING REVIEW/APPROVALS (Printed Name and Signature)						
RESPONSIBLE ENGINEER:	JAMES F. BASHOR <i>JFB</i>		Date:	7-25-95		
INDEPENDENT REVIEWER:	John R. Spensel II <i>John R. Spensel II</i>		Date:	7/25/95		
APPROVAL:	John P. Mervican <i>John P. Mervican</i>		Date:	7/25/95		
IMPLEMENTATION REVIEW/APPROVALS						
POSRC MEETING No.:	N/A		Date:			
POSRC CHAIRMAN:						
PLANT GENERAL MANAGER:			<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved		
FINAL APPROVAL OF CHANGES AND TESTS RESULTS						
POSRC MEETING No.:			Date:			
POSRC CHAIRMAN:						
PLANT GENERAL MANAGER:			<input type="checkbox"/> Approved	<input type="checkbox"/> Disapproved		

ENGINEERING EVALUATION
(Attachment 24)

ESP No.: ES199501352	Supp No.: XXX	Rev. No.: 0000	Page 3 of 7
REASONS FOR ENGINEERING EVALUATION: PROVIDE TECHNICAL JUSTIFICATION FOR CONTINUED OPERATION OF THE UNIT 1 SALTWATER SYSTEM FOLLOWING THE DISCOVERY OF A THROUGH WALL LEAK ON A 1" HALF-COUPLING IN THE SERVICEWATER ROOM. REFERENCE BGE CALCULATION CA00027			
DESCRIPTION OF CHANGE(s): THIS EVALUATION PROVIDES THE DISPOSITION FOR ISSUE REPORT IR5028461			
DETAILED EVALUATION OF CHANGE(s): CALCULATION CA00027 WAS PERFORMED TO DETERMINE THE MAXIMUM FLOW THROUGH THE SALTWATER SYSTEM IN THE EVENT THE LEAKING HALF-COUPLING CATASTROPHICALLY FAILED. AN OPENING EQUAL TO THE O.D. OF THE 1" HALF-COUPLING WAS ASSUMED TO BE 1.75" WITH A MAXIMUM SALTWATER DESIGN PRESSURE AT THIS LOCATION OF 20 PSI. SINCE THE HALF COUPLING IS LOCATED ON THE BOTTOM OF THE COMMON DISCHARGE PIPE IN THE UNIT-1 SERVICE WATER ROOM THERE IS NO EFFECTIVE LOSS OF COOLING WATER CAPACITY AS A RESULT OF THE LEAK. THE SERVICE WATER ROOM HAS BEEN ANALYZED FOR A FLOODING RATE OF 447 GPM BY THE FLOODING DESIGN GUIDELINES MANUAL, DS-001. ANY FLOODING RATE LESS THAN 447 GPM IN THE SERVICE WATER ROOM DOES NOT CHALLENGE ANY OF THE SAFETY RELATED EQUIPMENT IN THE ROOM SUCH THAT THE EQUIPMENT COULD BE PREVENTED FROM PERFORMING ITS SAFETY RELATED FUNCTION. SINCE THE CALCULATED SALTWATER BLOWDOWN RATE IS SIGNIFICANTLY LESS THAN 447 GPM, NO OPERABILITY CONCERNS EXIST DUE TO POTENTIAL FLOODING. AN UNREINFORCED OPENING EVALUATION WAS PERFORMED AS PART OF CA00027, ASSUMING THE HALF-COUPLING WAS COMPLETELY REMOVED. THE METHODOLOGY DESCRIBED IN ANSIB31.1 WAS USED. THE RESULT OF THIS EVALUATION DEMONSTRATED THAT SUFFICIENT REINFORCEMENT IS PROVIDED BY THE EXCESS MATERIAL IN THE HEADER WALL. BASED ON THE MINIMUM READING OF .523" THE CALCULATED NUMBER OF MONTHS UNTIL THE UNREINFORCED OPENING NO LONGER MEETS THE CODE REQUIREMENTS IS 13 MONTHS. BASED ON THE RECOMMENDATION CONTAINED IN NRC GENERIC LETTER 90-05 AN INSPECTION INTERVAL OF 3 MONTHS IS RECOMMENDED BY PDSU. FINALLY, THE SEISMIC LOADS IN THE FLAWED WELD WERE EVALUATED. CREDIT WAS ONLY TAKEN FOR THE .25" COVER FILLET ON THE HALF-COUPLING, THIS IS EXTREMELY CONSERVATIVE SINCE A GROOVE WELD IS ALSO PRESENT. IT WAS DETERMINED THAT THE WELD WAS LOADED TO LESS THAN 5% OF THE ALLOWABLE. ALTHOUGH THE FLAW IN THE HALF COUPLING CANNOT BE CHARACTERIZED, THIS PROVIDES A LEVEL OF ASSURANCE THAT CATASTROPHIC WELD/HALF-COUPLING FAILURE IS HIGHLY UNLIKELY. IN SUMMARY PDSU CONSIDERS THE SALTWATER HEADER TO BE OPERABLE. PURSUIT OF FORMAL SECTION XI CODE RELIEF WITH THE NRC IS IN PROGRESS, THEREFORE, IN THE INTERIM DECLARING THE HEADER INOPERABLE IS NOT REQUIRED.			

ATTACHMENT 6, ENGINEERING SERVICE INVENTORY TRANSMITTAL
(Page 1 of 4)

ESP No.:	ES199501352	Supp No.:	—	Rev. No.:	0	Page	4 of 7
Engineering Change Evaluation (Check type of evaluation below)							
<input type="checkbox"/>	Like-for-Like Evaluation	<input type="checkbox"/>	Modification Evaluation				
<input checked="" type="checkbox"/>	Engineering Evaluation	<input type="checkbox"/>	Configuration Document Change Evaluation				
<input type="checkbox"/>	Equivalency Evaluation	<input type="checkbox"/>	SSC Functional Evaluation				
Evaluation No.		Rev. No.		Evaluation No.		Rev. No.	
ES199501352		0					
Database Changes							
<input type="checkbox"/>	ETDB Screen Print Mark-ups			<input type="checkbox"/>	TADs		
Applicable Unique Equipment Identifiers (UEIs)				Applicable Unique Equipment Identifiers (UEIs)			
N/A							
↓							
<input type="checkbox"/> Vendor Technical Information Changes							
Vendor Tech Manual Titles/No.						Rev. No.	
N/A							
↓							

ATTACHMENT 6, ENGINEERING SERVICE INVENTORY TRANSMITTAL
(Page 2 of 4)

ESP No.:	ES199501352		Supp No.:	—	Rev. No.:	0	Page <u>5</u> of <u>7</u>
<input type="checkbox"/> Stock Description Changes							
Mech. No.	Mech. No.	Mech. No.	Mech. No.				
Specification Changes							
<input type="checkbox"/> Design Specifications				<input type="checkbox"/> Procurement Specifications			
Specification No.	Rev. No.	Specification No.	Rev. No.				
N/A							
Electrical Device Setting Changes							
<input type="checkbox"/> Protective Relay Setting Sheets (PRSS)				<input type="checkbox"/> Relay Setting Sheet (RSS)			
<input type="checkbox"/> Electrical Metering Calibration Data Sheet (EMCDS)				<input type="checkbox"/> Motor Control Center Protective Device Setting Sheet (MCCPDS)			
<input type="checkbox"/> Transformer TAP/Voltage Regulator Setting Sheet (TTVRSS)							
Affected Devices No.	Rev. No.	Affected Devices No.	Rev. No.				
N/A							

ATTACHMENT 6, ENGINEERING SERVICE INVENTORY TRANSMITTAL
(Page 3 of 4)

ESP No.:	ES199501352	Supp No.:	—	Rev. No.:	0	Page	6 of 7
<input type="checkbox"/> Seismic Qualification Review Summary Changes							
SQRS No.	Rev. No.	SQRS No.	Rev. No.				
N/A							
Environmental Qualification (EQ)							
<input type="checkbox"/> EQ Evaluations				<input type="checkbox"/> EQ Technical Assessment Report (EQTAR)			
EQTAR/EQ File No.	Rev. No.	EQTAR/EQ File No.	Rev. No.				
N/A							
<input checked="" type="checkbox"/> Calculations							
Calculation No.	Rev. No.	Calculation No.	Rev. No.				
CA 00027	0						
<input type="checkbox"/> Master Calibration Data Sheets (MCDSs) Changes							
MCDS No.	Rev. No.	MCDS No.	Rev. No.				
N/A							

ATTACHMENT 6, ENGINEERING SERVICE INVENTORY TRANSMITTAL
(Page 4 of 4)

ESP No.:	FS199501352	Supp No.:	—	Rev. No.:	0	Page	7 of 7
<input type="checkbox"/> Setpoint Change Transmittal Sheets (SCTS) Changes							
SCTS No.		Rev. No.		SCTS No.		Rev. No.	
N/A							
↓							
Safety Evaluation							
<input type="checkbox"/> 50.59 Safety Evaluation				<input type="checkbox"/> 72.48 Safety Evaluation			
Safety Evaluation No.		Rev. No.		Safety Evaluation No.		Rev. No.	
N/A							
↓							
Software							
<input type="checkbox"/> Software Requirements Specification (SRS)				<input type="checkbox"/> Hazards Analysis (HAZ)			
<input type="checkbox"/> Software Design Description (SDD)				<input type="checkbox"/> Software V&V Report (SVVR)			
<input type="checkbox"/> Software Quality Assurance Plan (SQAP)				<input type="checkbox"/> Software Test Report (SWTR)			
<input type="checkbox"/> Software Program Component (SPC)							
Document ID.		Rev. No.		Document ID.		Rev. No.	
N/A							
↓							
Drawings							
Drawing No.		Rev. No.		Drawing No.		Rev. No.	
N/A							
↓							
DCNs							
DCN No.		Rev. No.		DCN No.		Rev. No.	
N/A							
↓							