

February 27, 1997

Mr. Charles H. Cruse
Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657 - 4702

Dear Mr. Cruse:

On February 6, 1997, we met with your staff to discuss the results of your recently completed Calvert Cliffs Appendix R self-assessment. You had committed to perform the assessment as part of your corrective action for an Appendix R Violation earlier last year. The slides you presented during the meeting are attached.

Based on what we heard, we believe that you performed a successful assessment as evidenced by the number and extent of your findings. While we applaud you for your effort, the more critical work remains. That is, completing the required corrective actions to bring your plant into full compliance with Appendix R. Until then, we note that you gave us assurance at the meeting that the combined effect of all deficiencies would not prevent you from safely achieving safe shutdown in the event of a fire. This statement made by you considered the compensatory measures that you have in place until you complete the necessary modifications. We intend to inspect your corrective actions.

Thank you for your cooperation. If you have any questions or clarifications, please call me at (610) 337-5376.

Sincerely,

*Original Signed
By:*

William H. Ruland, Chief
Electrical Engineering Branch
Division of Reactor Safety

Docket Nos. 50-317, 50-318

Enclosures:

1. Slides from presentation
2. Attendees at meeting

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Mr. Charles M. Cruse

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cc w/encls:

T. Camilleri, Director, Nuclear Regulatory Matters (CCNPP)
R. McLean, Administrator, Nuclear Evaluations
J. Walter, Engineering Division, Public Service Commission of Maryland
K. Burger, Esquire, Maryland People's Counsel
R. Ochs, Maryland Safe Energy Coalition
State of Maryland (2)

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CALVERT CLIFFS APPENDIX R SELF-ASSESSMENT RESULTS

AGENDA

- I. INTRODUCTIONS
- II. BACKGROUND
- III. SELF-ASSESSMENT PROCESS
- IV. SELF-ASSESSMENT RESULTS
- V. ACTION PLAN
- VI. QUESTIONS

INTRODUCTIONS

- **C.H.CRUSE -**
VP, NUCLEAR ENERGY
- **P. G. CHABOT -**
MANAGER, NUCLEAR ENGINEERING
- **T.J.CAMILLERI -**
DIRECTOR, NUCLEAR REGULATORY MATTERS
- **G. L. DETTER -**
GENERAL SUPERVISOR, DESIGN ENGINEERING
- **R. B. SYDNOR -** PRINCIPAL ENGINEER
APPENDIX R/HVAC PROJECT MANAGER
- **C. R. SINOPOLI -** SENIOR ENGINEER
FIRE PROTECTION PROGRAM MANAGER

BACKGROUND

- June 96 Pre-enforcement Conference (Switchgear HVAC)
- Appendix R overview evaluation (completed June 14, 1996)
- Committed to a full Appendix R Self-Assessment in October 1996

SELF-ASSESSMENT PROCESS

- Conducted from 10/10/96 to 11/1/96
- Team Leader - CCNPP QA Supervisor
 - » Senior CCNPP QA Engineer
- Team Members -
 1. Senior CCNPP QA Engineer
 2. Five Senior Consultants from Engineering Planning & Management, Inc. With extensive experience in Nuclear Power, Appendix R, Fire Protection, and Self-assessment.

ASSESSMENT TEAM EXPERIENCE

Robert Kalantari - Senior Consultant

Licensing/Systems. Over 16 years Nuclear Power Engineering, Fire Protection Engineer. Worked on App R at 7 different Nuclear Plants.

Paul Ouellette - Mechanical Systems/App R Licensing.

15 years Nuclear Power Engineering, QA Auditor. Extensive App R and self-assessment experience.

Albert Melikian - Electrical Systems/App R.

15 years App R technical expertise in the area of Electrical Engineering compliance with APP R and self-assessment experience.

ASSESSMENT TEAM EXPERIENCE

Frank McGinnis - Technical Consultant, Fire Protection.
Over 12 years experience fire protection engineering,
8 in nuclear. QA Auditor. Experience in fire
protection audits at several different plants.

Mark Crompton - Technical Consultant, Fire Protection.
Masters Degree in Fire Protection. Experience in fire
protection programs at four nuclear plants.

SELF-ASSESSMENT PROCESS

- SCOPE - Overall CCNPP Appendix R program compliance with:
 - » 10CFR50, 50.48, Appendix R sections
 - III.G - Fire Protection of Safe Shutdown Capability
 - III.J - Emergency Lighting
 - III.L - Alternative Shutdown Capability
 - III.O - RCP Oil Collection (excluded)
- Method - IAW NRC Insp. Proc. 40501 & 64100

SELF-ASSESSMENT CHECKLIST (IP 64100)

I. SAFE SHUTDOWN ANALYSIS & REGULATORY CONFORMANCE

1. Exemptions or Deviations
2. Compliance with Generic Letters and I & E Notices
3. Evaluations, Analyses, and Compliance Strategies
4. Functions and Performance Goals
5. Systems, Equipment, Cables, and Instrument Sense Line Analysis
6. Electrical Distribution Systems Evaluations and Use of Offsite Power
7. Plant System Automatic Functions
8. Associated Circuits, Spurious Operations
9. High/Low Pressure Boundary Analysis
10. Alternative/Dedicated Shutdown
11. Licensing
12. Fire Protection, Fire Suppression Effects and Fire Area Separations
13. Habitability and Equipment Operability Environment

SELF-ASSESSMENT CHECKLIST (IP 64100)

II. QUALITY ASSURANCE AND CORRECTIVE ACTIONS

1. QA Program
2. Databases

III. DESIGN REVIEW AND CONFIGURATION MANAGEMENT

1. Calculations and Documentation
2. Long Term Conformance Maintenance and Procedures
3. Raceway Routing Information
4. Raceway Fire Barrier Wrap Use

IV. Operations and Maintenance

1. Repairs, Operating Procedures, Manual Actions, Maintenance

V. SURVEILLANCE AND TESTING

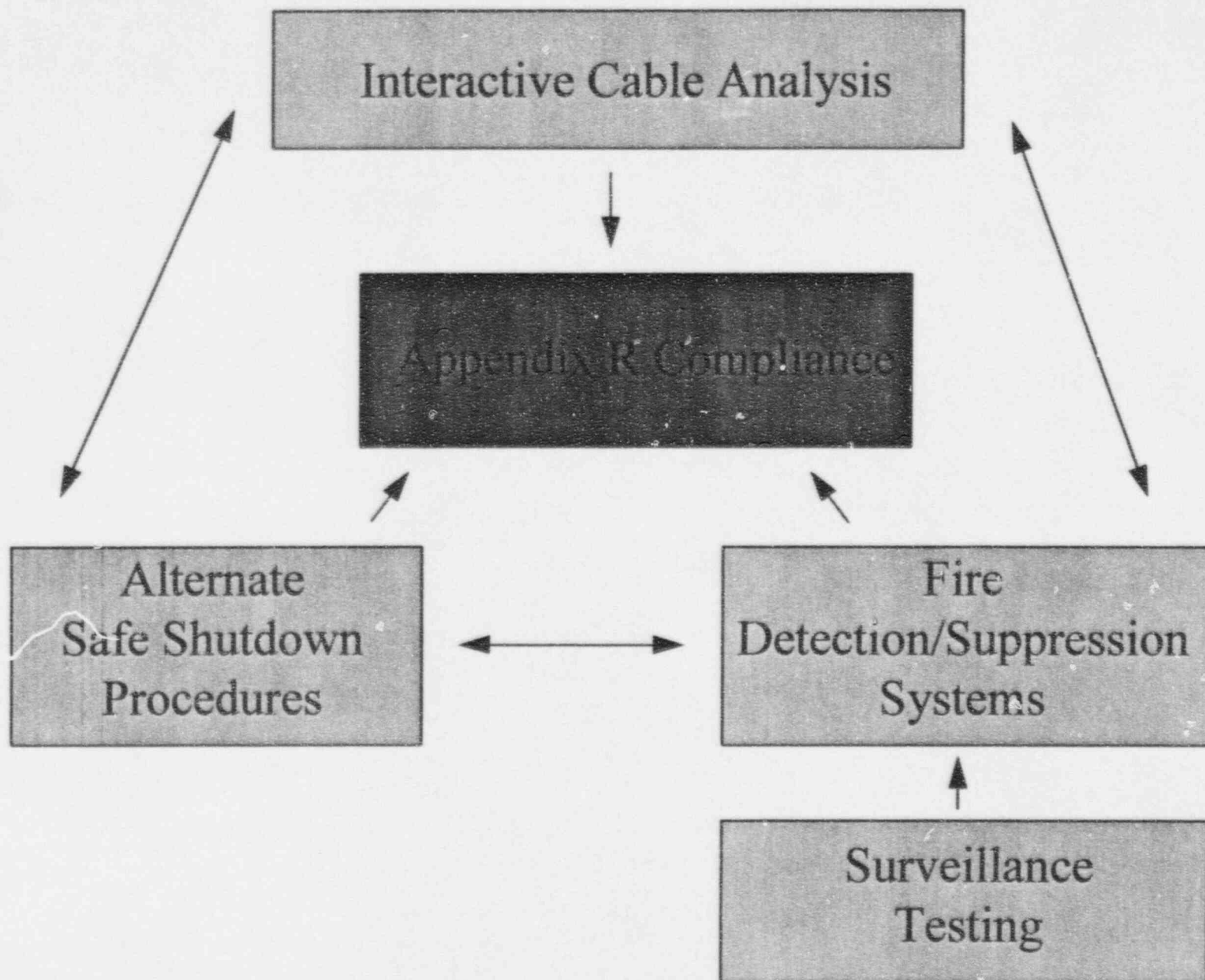
1. Tech Specs, Surveillance Requirements
2. Emergency Lighting, Communications, Fire Protections Features

SELF-ASSESSMENT FOCUS

- Specific areas of review were based on:
 - » Recurring industry issues
 - » Relative safety significance
 - » Previous NRC Inspection and Audit Findings in the industry
 - » Comparison to current practices at Other Utilities

SELF-ASSESSMENT RESULTS

- Our Basic Appendix R Program is sound
 - » Fire Detection and Suppression
 - » App R Interactive Cable Analysis
 - » Operations Safe Shutdown Procedures
 - » Surveillance Procedures
 - » Design Process and documentation
- Awareness of industry experience was Good
- Identified Concerns warrant increased attention



SELF-ASSESSMENT RESULTS

- 19 Concerns Identified
 - » 7 Group I concerns - recommended corrective action be taken/upgraded
 - » 12 Group II concerns - corrective action in progress
- 14 recommendations for improvement (Group III)
- All concerns will be addressed through our corrective action process
- We have completed action on 11 items

SELF-ASSESSMENT KEY CONCERNS

- Ventilation Systems-analysis and mods
- Motor operated Valves (iN92-18)
- Dual fusing of alternate S/D circuits (IN85-09)
- Electrical Analysis
 - > external hot shorts
 - > spurious operations
- EDG circuits (1997 RFO)

SELF-ASSESSMENT KEY CONCERNS

- Emergency lighting
- Various fire protection analyses
 - » Raceway enclosure qualification
 - » Large fire area analysis
- Instrument Air system fire effects
- Self-induced Station Blackout
- Reportability of Appendix R issues
- Manual actions requiring tools

ACTION PLAN

- Created the Appendix R/HVAC Project Team and assigned a full-time Project Manager
- Appendix R ownership consolidated in Engineering
- Complete Analysis - 1997 (90% confidence)
- Complete currently identified Plant Mods - non-outage 1997-98, outage related 1998 and 1999 RFO's
- Appendix R Training - Complete

APPENDIX R PROJECT

- Overall Project Manager- Russ Sydnor
- Project Team -
 - » Five Electrical Engineers
 - » Two HVAC Engineers
 - » Two Fire Protection Engineers
 - » Operations Liaison
 - » Modification Project Managers

APPENDIX R PROJECT GOALS

- Resolve Current Concerns
 - » Complete analysis
 - » Identify modifications early
 - » Modifications approved and scheduled
 - » Communicate status to Management and the NRC

APPENDIX R PROJECT GOALS

- Establish Framework for Continued Compliance
 - » Process improvements
 - » Ownership
 - » Training
 - » Self-assessment/Management oversight

MANAGEMENT ISSUES

- Appendix R level of knowledge
 - > Initial training complete
- Challenge and validate assumptions
 - Determine the issue vice being defensive
 - > Addressed by Engineering Department Manager and General Supervisors
- Consolidate Management responsibility for Fire Protection Programs and Appendix R
 - > Done
- Enforce Action Item commitments
 - > Improved, continuing

SUMMARY

- Self-assessment thorough and credible
- Findings
- Corrective actions and compensatory actions
- Safety is first priority
- Responsibility

<u>ISSUE</u>	<u>ACTION COMPLETE</u>	<u>ACTION IN PROGRESS</u>	<u>COMP. MEASURES</u>
Ext. Hot Shorts		■	No
Emerg Lights		■	Yes
EDG Circuit		■	Yes
Reportability	■		
Self Induced SBO		●	No
Raceway Enclosure		●	No
Manual Actions, Tools	●		
Dual Fusing, IN 85-09		■	Yes
MOV, IN 92-18		■	Yes
Spurious Operations		■	No
Large Fire Areas		●	No
Instrument Air Functionality		●	No
Air Bottle, CV-517	●		
Inst. Sensing Line	●		
Mult. High Imped Fault		●	No
Ventilation Systems		●	Yes
Manual Action Feasibility		●	No
Embedded Conduits	●		
Fire Suppression Effects	●		
Process Monitoring	▲		
Fire Barrier Evals		▲	
App. R QA	▲		
FHA		▲	
Fire Damper Operability		▲	
Communications	▲		
ICA Format		▲	
Report on Alt. S/D	▲		
Comp. Equip. List		▲	
Electrical Dist. Systems			
Breaker/Fuse Coord.		▲	
C. T. Analysis	▲		
High/Low Pressure		▲	
Long Term Compl. Proc.		▲	

- Potential Noncompliances: Potential plant/documentation deviations from Fire Protection regulations/license basis.
- General Concern: Plant condition appears to deviate from guidance documentation or documentation is not available to support compliance.
- ▲ General Observation: Conditions that appear to be inconsistent with other compliant nuclear stations or areas for improvement.

ENCLOSURE 2

ATTENDEES AT MEETING

Licensee

Peter Chabot, Engineering Manager
Terry Camilleri, Director, Nuclear Regulatory Matters
Clifford Sinopoli, System Engineer, Fire Protection
Russell Sydnor, Principle Engineer, Fire Protection
Gary Detter, General Supervisor, Design Engineering

NRC

James Stewart, SRI, Calvert Cliffs
Larry Doerflein, Projects Branch No. 1, DRP
William Ruland, Chief, Electrical Engineering Branch, DRS
A. Randolph Blough, Deputy Director, DRS
Alex Dromerick, NRR
Steven Adams, Reactor Engineering, DRP
Thomas Moslack, Project Engineer, DRP