

November 1, 1996

EA 96-354

Carolina Power and Light Company
ATTN: Mr. W. R. Campbell
Vice President
Brunswick Steam Electric Plant
P. O. Box 10429
Southport, NC 28461

SUBJECT: MEETING SUMMARY - PREDECISIONAL ENFORCEMENT
CONFERENCE BRUNSWICK - DOCKET NOS 50-325 AND 50-324

Dear Mr. Campbell:

This refers to the predecisional enforcement conference on October 21, 1996, at the Region II office in Atlanta, Georgia. The purpose of this meeting was to discuss apparent violations of 10 CFR 50.49, relating to environmental qualification of electric equipment, and 10 CFR 50 Appendix B, Criterion XVI, relating to corrective action, requirements. The meeting was beneficial toward answering the questions provided by our letter dated October 4, 1996.

Enclosed is a List of Conference Attendees, the NRC's presentation material, and Carolina Power and Light Company's handouts. We have also enclosed your comments on NRC Inspection Report number 50-325, 324/ 96-14 which were submitted to NRC Region II via FAX on October 21, 1996. The results of the NRC's deliberations regarding the apparent violations, discussed at the predecisional enforcement conference, will be forwarded to you by separate correspondence.

In accordance with Section 2.790 of the NRC's "Rules of Practice, "Part 2, Title 10 Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

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PDR ADOCK 05000324
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Should you have any questions concerning this letter, please contact us.

Sincerely,

Original signed by
Charles A. Casto

Charles A. Casto, Chief
Engineering Branch
Division of Reactor Safety

EA 96-354
Docket Nos. 50-325, 50-324
License Nos. DPR-71, DPR-62

Enclosures: 1. List of Attendees
2. NRC Predecisional Enforcement
Conference Presentation
3. CP&L Presentation
4. CP&L Comments on Report No. 50-325, 324/96-14

cc w/encls:
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


William H. Crowe, Mayor
 City of Southport
 201 East Moore Street
 Southport, NC 28461

Distribution w/encls:

M. Shymlock, RII
 D. Trimble, NRR
 J. Lieberman, OE
 M. N. Miller, RII
 R. Aiello, RII
 G. A. Hallstrom, RII
 PUBLIC

NRC Resident Inspector
 U.S. Nuclear Regulatory Commission
 8470 River Road, SE
 Southport, NC 28461

SEND TO PDR? ☒ YES ☐ NO

OFFICE	RII-DRS	RII-ETCS	RII-DRP			
SIGNATURE						
NAME	J. Lenahan, pd	B. Fryc	M. Shymlock			
DATE	10 / 29 / 96	10 / 30 / 96	10 / 30 / 96	10 / / 96	10 / / 96	10 / / 96
COPY?	<input checked="" type="radio"/> YES <input type="radio"/> NO	<input checked="" type="radio"/> YES <input type="radio"/> NO	<input checked="" type="radio"/> YES <input type="radio"/> NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME:

ATTENDEES

Carolina Power and Light Co.

W. Orser, Executive Vice-President, Nuclear Generation
W. Campbell, Vice President, Brunswick
W. Habermeyer, Vice President, Engineering
J. Lyash, Manager, Brunswick Engineering Support Section (BESS)
M. Turkal, Supervisor, Brunswick Licensing
R. Williams, EQ Task Force Manager, BESS
T. Walt, Corporate Licensing
J. Gawron, Manager, Brunswick Nuclear Assessment Section
J. McIntyre, Superintendent, Design Control, BESS

NRC

S. Ebnetter, Regional Administrator, Region II (RII)
A. Gibson, Director, Division of Reactor Safety (DRS), RII
J. Jaudon, Acting Deputy Director, Division of Reactor Projects (DRP), RII
B. Uryc, Director, Enforcement and Investigation Coordination Staff
(EICS), RII
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M. Shymlock, Chief, Reactor Projects Branch 4 (RPB4), DRP, RII
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D. Trimble, Project Manager, NRR
G. Hubbard, Chief, Plant Systems Section, NRR
L. Watson, Senior Enforcement Specialist, EICS, RII
C. Evans, Regional Counsel, RII
C. Patterson, Senior Resident Inspector, Brunswick, DRP, RII
J. Lenahan, Reactor Inspector, EB, DRS, RII
N. Merriweather, Reactor Inspector, EB, DRS, RII

ENFORCEMENT CONFERENCE AGENDA

BRUNSWICK

OCTOBER 21, 1996, AT 10:00 A.M.

NRC REGION II OFFICE, ATLANTA, GEORGIA

- I. OPENING REMARKS AND INTRODUCTIONS
S. Ebnetter, Regional Administrator
- II. NRC ENFORCEMENT POLICY
B. Uryc, Director
Enforcement and Investigation Coordination Staff
- III. SUMMARY OF THE ISSUES
S. Ebnetter, Regional Administrator
- IV. STATEMENT OF CONCERNS / APPARENT VIOLATIONS
A. Gibson, Director
Division of Reactor Safety
- V. LICENSEE PRESENTATION
- VI. BREAK / NRC CAUCUS
- VII. NRC FOLLOWUP QUESTIONS
- VIII. CLOSING REMARKS
S. Ebnetter, Regional Administrator

APPARENT VIOLATIONS

VIOLATION A

10 CFR 50.49 requires licensees:

1. To prepare a list of electric equipment important to safety and include information concerning performance specifications, electrical characteristics and postulated environmental conditions for this electric equipment in a qualification file.
2. Maintain the list and information in the file current.
3. Qualify each item of electric equipment important to safety by testing of or experience, including a supporting analysis to show that the equipment to be qualified is acceptable.
4. Maintain a record of the qualification to permit verification that each item is qualified and meets its specified performance requirements under postulated environmental conditions.

NOTE: The apparent violation discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATIONS

VIOLATION A

1. The licensee failed to include the R. G. Lawrence and Target Rock solenoid valves in the Post Accident Sampling systems on the list of electric equipment important to safety and failed to test or document qualification of the valves.
2. The licensee failed to maintain the EQ List and EQ files current.
3. The qualification data packages (QDPs) for some EQ equipment did not include the latest Reactor Building environmental profiles and radiation profiles. Beta radiation effects were not addressed in the EQ files.
4. The licensee did not have documentation for qualification of 13 safety related Motor Control Centers (MCCs) which are located in the Reactor Building. The heat transfer analysis included in the file to demonstrate qualification for the MCCs was not based on the most severe design basis accident conditions.
5. The licensee failed to include reactor building 120/208 AC distribution panels, potentiometers, various types of fuses, and thread sealants on the EQ Master List.
6. The licensee failed to maintain the EQ list current by deleting the 300 EQ components listed in CP&L Great Idea numbers NED-326 and NED-327. Subsequent review of these EQ data changes in 1995 and 1996 disclosed that more than 50 of the 300 components had been downgraded, i.e. removed from the licensee's EQ Program, incorrectly. These components were subsequently reinstated in the EQ Program, as required by 10 CFR 50.49.

NOTE: The apparent violation discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATIONS

VIOLATION B

10 CFR 50, Appendix B, Criterion XVI requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. CP&L Plant Program Procedure PLP-4, "Corrective Action Management" implements the requirements of Criterion XVI at the Brunswick Nuclear Plant.

10 CFR 50, Appendix B, Criterion V, requires that activities affecting quality be prescribed by documented instructions or procedures, and shall be accomplished in accordance with these instructions or procedures.

NOTE: The apparent violation discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATIONS

VIOLATION B

Procedure PLP-4 was not followed to implement the corrective program as described below:

1. Corrective actions associated with Adverse Condition Report (ACR) 91-181 and ACR N93-0101 which were identified in April 1991 and August 1993 respectively for EQ program deficiencies were not implemented as of June 14, 1996.
2. Corrective actions were not initiated to document and correct EQ program deficiencies documented in March - May, 1995 in Engineering Service Request (ESR) numbers 9400752, 9400742, and 9400743.
3. Corrective actions were not initiated to document and correct numerous deficiencies in the Brunswick EQ program which were documented in an undated document, titled EQ Self-Assessment in November, 1995.
4. Corrective actions to resolve discrepancies in the EDBS safety classification for EQ equipment documented on Condition Report (CR) 95-00513, dated February 22, 1995 were not effective and were not properly implemented as of June 14, 1996.
5. On ~~July 18~~ ^{AUG 22}, 1996, NRC identified that a CR had not been initiated to document the fact that a Standing Instruction had not been issued to Control Room personnel regarding compensatory measures regarding potential failure of valves on the Post Accident Sampling System.

NOTE: The apparent violation discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

*Correction made during Enforcement Conference
J. J. Lenahan 10/21/96*

Predecisional Enforcement Conference Environmental Qualification Program

Carolina Power & Light Company
October 21, 1996

CP&L

Agenda

● Introduction

Bill Campbell

● Discussion of Violations

Jeff Lyash

● Summary

Bill Campbell

Introduction

- Acknowledge Proposed Violations
- Inspection Report Review/Comments
- Causal Factors/Root Cause
- Generic Implications Corrective Actions

Discussion of Violations

Jeff Lyash

CP&L

Discussion Of Violations

Topics

- *EQ Program Timeline*
- **Causal Factors**
- **EQ Program Corrective Action Plans**
- **Engineering Programs**

EQ Program Timeline

Activities Prior To 1993

- **EQ Program Executed By Contractors**
- **ACR 91-181 Issued**
 - ◆ **EQ Data Not Being Maintained Current In EDBS**
 - ◆ **Transferred To Other Tracking Methods Which Did Not Require Same Level Of Management Control**

EQ Program Timeline

1993 Activities

- **EQ Deficiencies Included In Three-Year Plan
(December 1992/January 1993)**
 - ◆ **Narrowly Focused, Not Directed At Programmatic Level**
 - ◆ **Project Limited To 14 Specific Engineering Items**
 - **7 Items Not Effectively Resolved**
- **EQ Program Contract Technical Support Ended
(March)**
 - ◆ **Loss Of Expertise And Continuity**

EQ Program Timeline

1994 Activities

- **EQ Program Responsibility Transferred From Electrical To I&C, Then From Corporate To Site (January - June)**
- **CP&L EQ Program Engineer Hired (March)**
- **Stone & Webster Assessment Of EQ Program Completed (December)**
 - ◆ **Several Improvements Identified**

EQ Program Timeline

1995 Activities

- **Self-Assessment 95-41 Issued (March)**
 - ◆ Captures And Expands On Issues Identified By Stone & Webster
 - ◆ Evaluation Of Issues Tracked By ESRs And CRs
- **Design Control Superintendent Directs Characterization Of Existing Deficiencies and Development Of Action Plan (October)**
- **EQ Engineer Prepares Assessment Of EQ Weaknesses And Preliminary Action Plan (November)**

EQ Program Timeline

1996 Response Activities

- **Three Additional CP&L Engineers Assigned To Evaluate And Resolve EQ Issues (Dec 95/Jan/May)**
- **EQ Engineer Notified Senior Management Of EQ Concerns (April)**
- **CP&L EQ Program Engineer From Robinson Conducted Assessment (April)**
- **Industry Expert Retained To Evaluate Problem Scope And Action Plans (May)**
- **Initiated Comprehensive EQ Reconstitution (June)**
 - ◆ **Dedicated Task Force Established**
 - **Staffed With CP&L Personnel**
 - **Augmented With Industry Expertise**
- **Short And Long Term Action Plans Developed (July)**

Discussion Of Violations

Topics

- **EQ Program Timeline**
- *Causal Factors*
- **EQ Program Corrective Action Plans**
- **Engineering Programs**

EQ Program Deficiencies

Causal Factors

- **CP&L Oversight**
- **Internal Expertise**
- **Corrective Action Program**
- **Self-Assessments**

CP&L Oversight

Causal Factors

- **Where We Were:**

- ◆ **Lack Of CP&L Technical Oversight Of EQ Program**
- ◆ **Execution And Administration By Contractors**

- **Where We Are:**

- ◆ **Defined Accountability For Programs In BESS**
- ◆ **Evaluating Program Maintenance And Status For Significant BESS Programs**

Internal Expertise

Causal Factors

- **Where We Were:**

- ◆ **Contractors Left 1993**
- ◆ **Little BNP Technical Expertise Remained**

- **Where We Are:**

- ◆ **Hired An Experienced EQ Engineer**
- ◆ **Provided EPRI EQ Training for Appropriate Personnel**
- ◆ **Provided Near-Term EQ Maintenance and Engineering Training**
- ◆ **Transferring Industry Expert Technology During Program Rebuild**

Corrective Action Program

Causal Factors

- **Where We Were:**

- ◆ **Less Aggressive Use Of Condition Reports (CRs)**
- ◆ **Paper To Paper Closure**
- ◆ **Insufficient Management Oversight**

- **Where We Are:**

- ◆ **More Aggressive Use Of CRs**
- ◆ **No Paper To Paper Closure**
- ◆ **Level II CRs Require Section Manager Approval**

Self Assessment

Causal Factors

- **Where We Were:**

- ◆ No Requirement To Initiate CRs For Findings
- ◆ Superintendent Review Of Reports
- ◆ Informal Followup Action Tracking
- ◆ No Disposition Of Recommendations

- **Where We Are:**

- ◆ CR Initiation Required For Findings
- ◆ Self-Assessments Presented To BESS Management Team, Section Manager Approval
- ◆ Formal Tracking Of Followup Actions In CAP System
- ◆ Documented Disposition Of Recommendations

Discussion Of Violations

Topics

- **EQ Program Timeline**
- **Causal Factors**
- *EQ Program Corrective Action Plans*
- **Engineering Programs**

EQ Program

Short Term Corrective Action Plan

Establish Team Of CP&L/Contract Experts To Ensure Technology Transfer	Complete
Reconstruct EQ Master List	Development Complete In Review
Establish Correct Environmental Conditions	Development Complete In Review
Revise Updated Final Safety Analysis Report	Development Complete In Review
Ensure Qualification Testing Envelopes Environmental Conditions	Development Complete In Review
Implement Near-Term EQ Training	Complete
Maintenance/NAS Assessment	Development Complete In Review

EQ Program

Short Term Corrective Action Plan

● Results

- ◆ Scope And Significance Of Issues Identified And Documented**
- ◆ Discrepancies Evaluated And Resolutions Complete Or In Progress**
- ◆ Identified Issues Are Primarily Documentation Related**
- ◆ No Operability Issues Identified**

EQ Program

Long-Term Corrective Action Plan

- **Actions To Be Completed By April 1997**
 - ◆ Develop Improved Program Procedures
 - ◆ Revise EQ Design Basis Document
 - ◆ Develop Long-Term Training
- **Actions To Be Completed By The End Of 1997**
 - ◆ Review Configuration Of Installed Equipment
 - ◆ Update Qualification Data Packages
 - ◆ Resolve Remaining Condition Report Action Items
 - ◆ Review Procurement Specifications
 - ◆ Implement Drywell Radiation and Temperature Monitoring Program

Discussion Of Violations

Topics

- EQ Program Timeline
- Causal Factors
- EQ Program Corrective Action Plans
- *Engineering Programs*

Engineering Programs

Current Status

- **Evaluated Current Program Status**

- ◆ Ownership Clearly Defined
- ◆ Program Procedure In-Place
- ◆ Supporting Organizations Identified
- ◆ Previous Internal Or External Assessment

- **Evaluated Vulnerability**

Engineering Assessments Completed

Engineering Programs

- **In-Service Inspection - Pressure Testing**
- **In-Service Inspection - Supports**
- **In-Service Inspection - Weld Examinations**
- **Engineering Product Quality**
- **Engineering Training And Qualification**
- **Corrosion Monitoring**
- **Flow Accelerated Corrosion Program**
- **Modification Turnover Process**
- **Motor Operated Valves (Chief Engineer)**
- **Temporary Modification Control**
- **INPO Assist (Training, System Engineering, Work Management)**

NAS/PES Assessments Completed

Engineering Programs

- **In-Service Inspection - Pressure Testing**
- **Local Leak Rate Testing**
- **Maintenance Rule**
- **Pressure Isolation Valves**
- **Snubbers/Pipe Supports**
- **SNM Accountability**
- **Station Blackout**
- **Vendor Manual Control**
- **Augmented In-vessel Internals Program**
- **Safe Shutdown**
- **ESR Process**
- **Operating Experience (SILs)**

Assessment Plans

Engineering Programs

● Near-Term Planned Assessments

- ◆ Equipment Data Base System
- ◆ Civil/Structural/Seismic Design
- ◆ Engineering Service Request Process
- ◆ Flow Accelerated Corrosion Program
- ◆ Fire Protection Engineering
- ◆ Containment Testing

● Long-Term Approach

- ◆ Develop Repetitive Engineering Program Self-Assessment Plan
- ◆ Complete Self-Assessments On Each Significant Program
- ◆ Establish NGG Program Peer Groups

Summary

Bill Campbell

CP&L

Generic Implications For Brunswick

- EQ Program Deficiencies Were Due To A Unique Combination Of Discrete Causal Factors
- Independent Consultants Have Periodically Assessed Safety Culture And Willingness To Identify Issues At BNP And Within BESS
- Initial Assessment Of Significant Programs Complete
 - ◆ Program Accountability
 - ◆ Program Procedures/Controlling Documents
 - ◆ Assessment History
- In-Depth Detailed Assessments Of Several Programs Complete
- In-Depth Assessments Of Programs Continuing
- Continuing Periodic Program Assessment Plan Being Developed

Summary

- **Licensee Identified**
- **Corrective Actions Are Comprehensive And Thorough**
- **Will Continue To Verify Absence Of Generic Implications To Other Programs Through Assessment**

BNP Three-Year Business Plan

Assessments

Date of Assessment	Assessor	Scope
7/27/93	3-Year Plan Team	Plan Implementation, Projects, and Initiatives
8/12/93	NAS	Projects and Initiatives
8/20/93	NRC	Plan Implementation
3/15/94	NAS	Plan Implementation and Initiatives
12/31/94	Regulatory Affairs	TY102, 3-Year Plan Implementation, Final Closeout Assessment
2/20/95	NAS	Plan Implementation and Initiatives
1/26/96	NAS	Plan Implementation and Initiatives
6/30/96	Regulatory Affairs	Projects Status Review
Initiative Final Closeout	Initiative Sponsor	Task Complete Verification, Effectiveness, and Documentation Assessment

Corrective Action Follow Through

Assessments

Date	Assessor	Scope
8/96	Licensing	NRC Commitments Self-Assessment (1993-1996 LERs, Violations, Bulletins, GLs)
9/96	Outage & Scheduling	Outage & Scheduling CAP Subprogram Self-Assessment
10/96	Maintenance	Maintenance CAP Subprogram Self-Assessment
Ongoing	NAS	NAS Issue Closure Review

CAP Self-Assessments

Group	Due Date	Status
NAS Sub-Program	6/96	Complete
Training Sub-Program	12/96	
Doc Svcs Sub-Program	9/96	
E&RC Sub-Program	9/96	
ESS Sub-Program	11/96	
IS Sub-Program	9/06	
LPU Sub-Program	8/96	
Maintenance Sub-Program	8/96	Complete
M&CS Sub-Program	12/96	
O&S Subpgm	12/96	Complete
Operations Subpgm	9/96	
Site CAP Pgm	8/96	Complete
Security Subpgm	12/96	

Thread Sealants

EQ Technical Issues

- Initiated CR 96-01445
- Developed JCO (ESR 96-00425)
- Thread sealants whose qualification had not been established were listed in Maintenance Procedure SPP-SEA001 and Specification 111-003 allowing them to be used in EQ applications
- Verified the qualification of sealants which had been used in EQ applications (Established QDP-94)
- Revised procedure and specification to delete sealants whose qualification had not been established
- Not an operability concern as only qualified sealants exist in plant applications

Reactor Building Environmental Report

EQ Technical Issues

- QDPs had not been updated to reflect the latest revision of the RBER
- RBER has been updated to include Power Uprate
- QDPs have been reviewed against latest revision of RBER
- Only GE 480v MCCs were qualified to non-bounding profiles
- Test data available that demonstrates MCC components have been qualified to bounding environment
- Generated JCO for these MCCs (ESR 96-501)

SBGT - V8/V9 MOV Potentiometers

EQ Technical Issues

- **Initiated CR 96-02258**
- **These four potentiometers had no QDP referenced**
- **They are made of ceramic with uninsulated metal conductors**
- **Only safety function is to prevent short circuit**
- **They have no failure mode due to temperature and radiation (ESR 96-00547)**
- **They require no QDP but remain in the program**

480v MCCs

EQ Technical Issues

- **Initiated CR 96-01609**
- **The MCCs were qualified to non-conservative environmental profiles**
- **The analysis incorrectly estimated inleakage area**
- **JCO based on qualification of internal components to steam environments (ESR 96-00415)**
- **We are pursuing modifications to completely seal the enclosures**

GIAW

EQ Technical Issues

- **300 items were removed from the EQ List**
- **Less than 50 were removed incorrectly (Associated Circuits)**
- **Identified in CR 96-02104**
- **These were all reinstated in the program without invalidating their qualified life**

777 Items With No QDP Referenced

EQ Technical Issues

- Identified 777 EQ items with no QDP referenced (CR 96-01400)
- Majority were MCC items contained within QDP 67 or fuse QDP 95
- Qualified lives were established for all items
- Only four items had qualified lives of less than 40 years
- None will exceed qualified life in current cycles
- Reference ESR 96-00547

Beta Radiation

EQ Technical Issues

- **Original 1985 submittal did not address beta radiation**
- **I&E Bulletin 79-01B beta radiation dose of 200 megarads is being used for qualification**
- **All equipment remains qualified based on this evaluation**
- **Final review of analysis is in progress**

Pass Valves & Limit Switches

EQ Technical Issues

- **EDBS identified 9 valves as Q-class A but not EQ**
 - ◆ Originally identified in ACR 91-181
- **Five of the nine valves and their associated position switches were tested to bounding environments**
 - ◆ Will be added to QDP-33 in update program.
- **Remaining valves, though qualifiable will have non-metallic parts replaced with qualified parts.**
 - ◆ Partially complete, only solenoids remain.
- **The JCO in ESR 96-00426 documents operability**

RHR Valves (PASS Issue)

EQ Technical Issues

- **Valves E11-FO79A,B and 80A,B local indicating lights were incorrectly left out of the EQ program**
- **These valves, though qualifiable as is will have non-metallic parts replaced with qualified parts.**
 - ◆ **Partially complete, only solenoids remain.**
- **The JCO in ESR 96-00426 documents operability**

Associated Circuits, Common Raceway

EQ Technical Issues

- **Cables for non-Q/non-EQ loads run in Q raceways and are not protected by Q/EQ Devices**
- **HELB could cause simultaneous faults and failures of protective devices resulting in damage to adjacent Q/EQ cables in the "common" raceways**
- **CR 96-01408 was developed, a JCO (ESR 96-00503) was developed based on qualification testing by others to a steam environment**
- **Modification to decommission those panel breakers in MCCs is under development**
- **Environmental testing program for remaining breakers is underway - scheduled complete by 11/1**

Hydrogen Water Chemistry

EQ Technical Issues

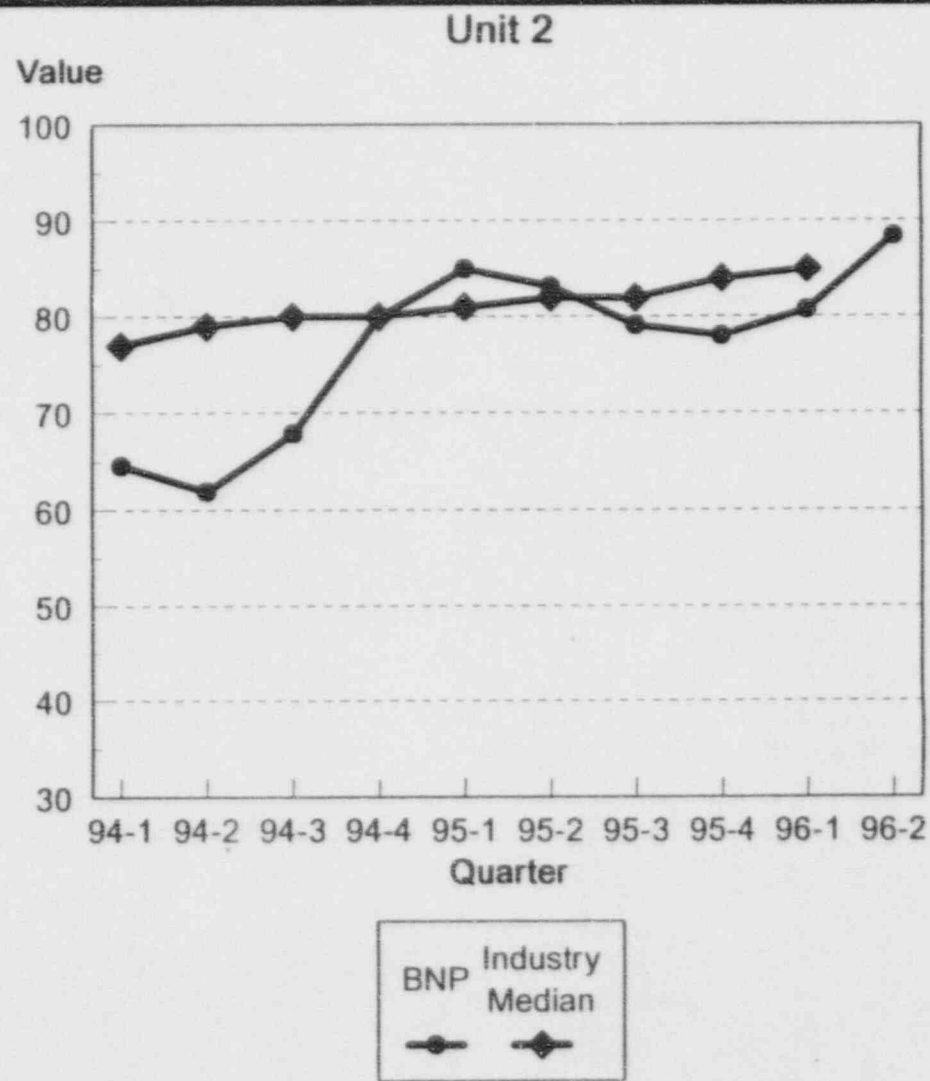
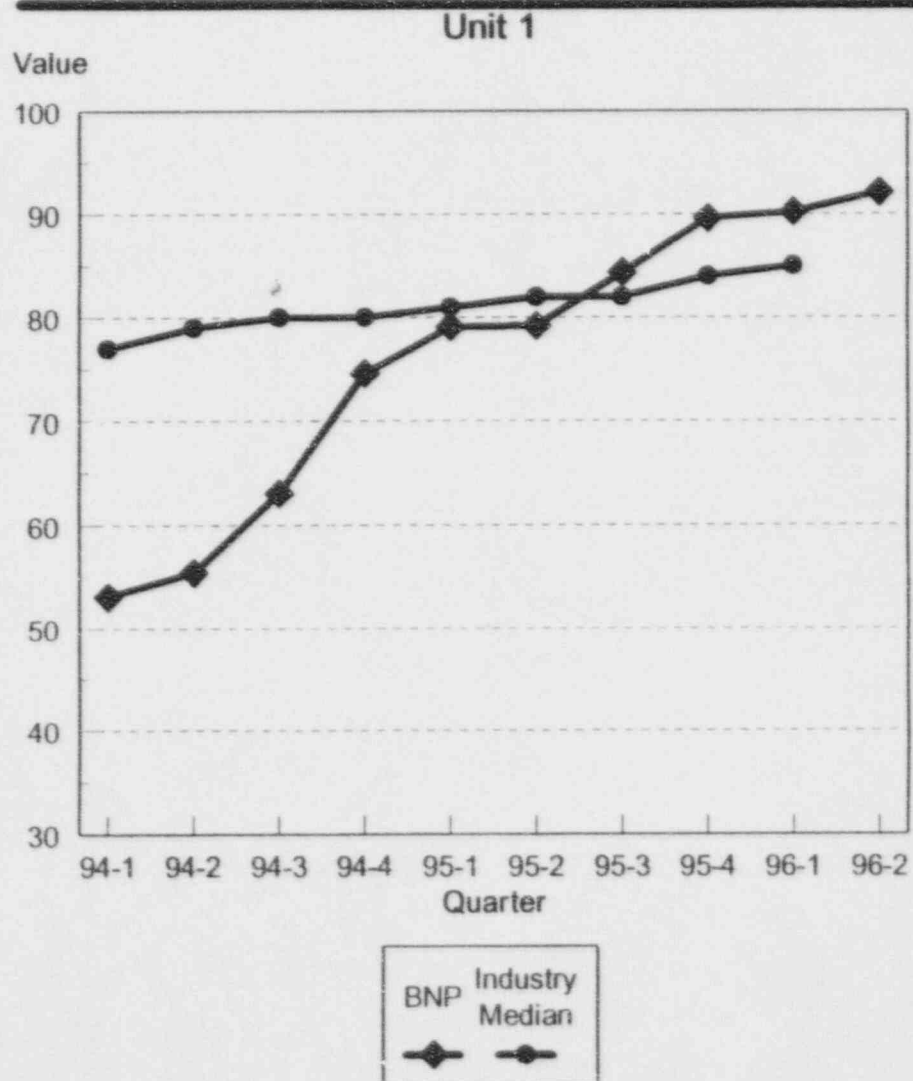
- The modification installing HWC did not assess impact on EQ program
- ESR 94-0052 determined there was no short term impact on EQ
- Effects of HWC have been factored into current radiation profiles
- QDPs were validated against latest revision of the RBER
- Must Update QDPs, DBDs, UFSAR

QDP - 92B (Herion Valve)

EQ Technical Issues

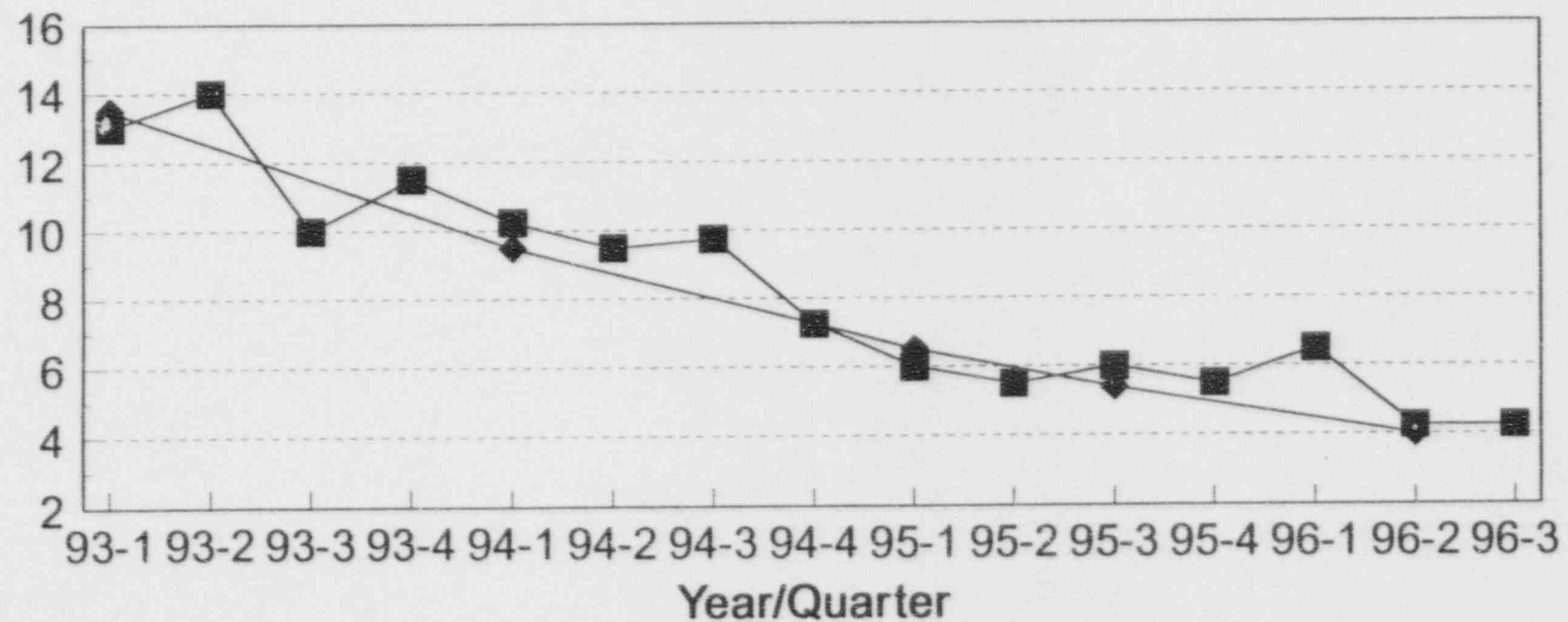
- **QDP-92B for recent modification was not found in document control system**
- **The file was reviewed, approved, and entered into the document control system**
- **Qualification test report and qualified life analysis (DR-214) were always in the EQ files**

WANO (INPO) Performance Indicator Index



BNP Performance Indicators

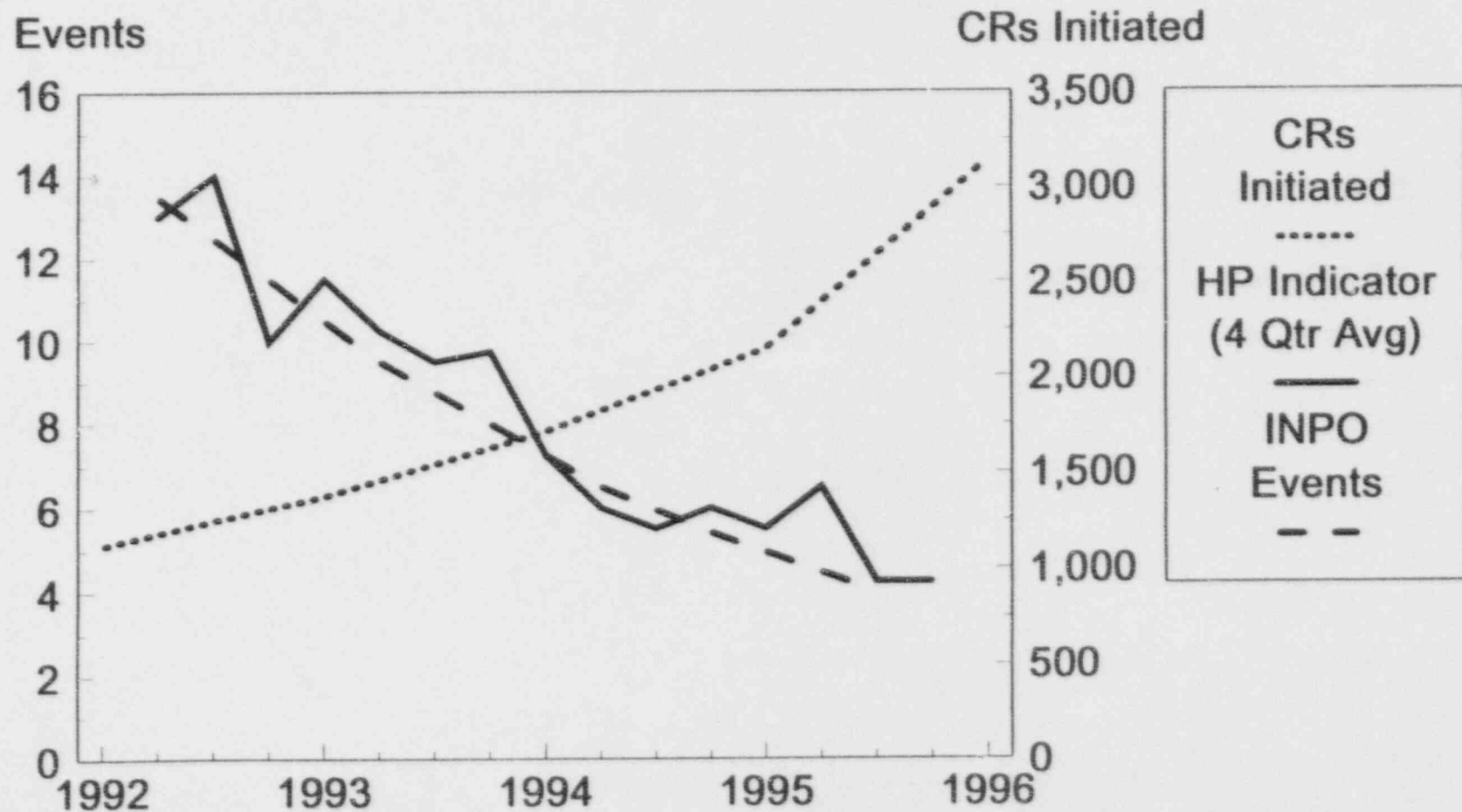
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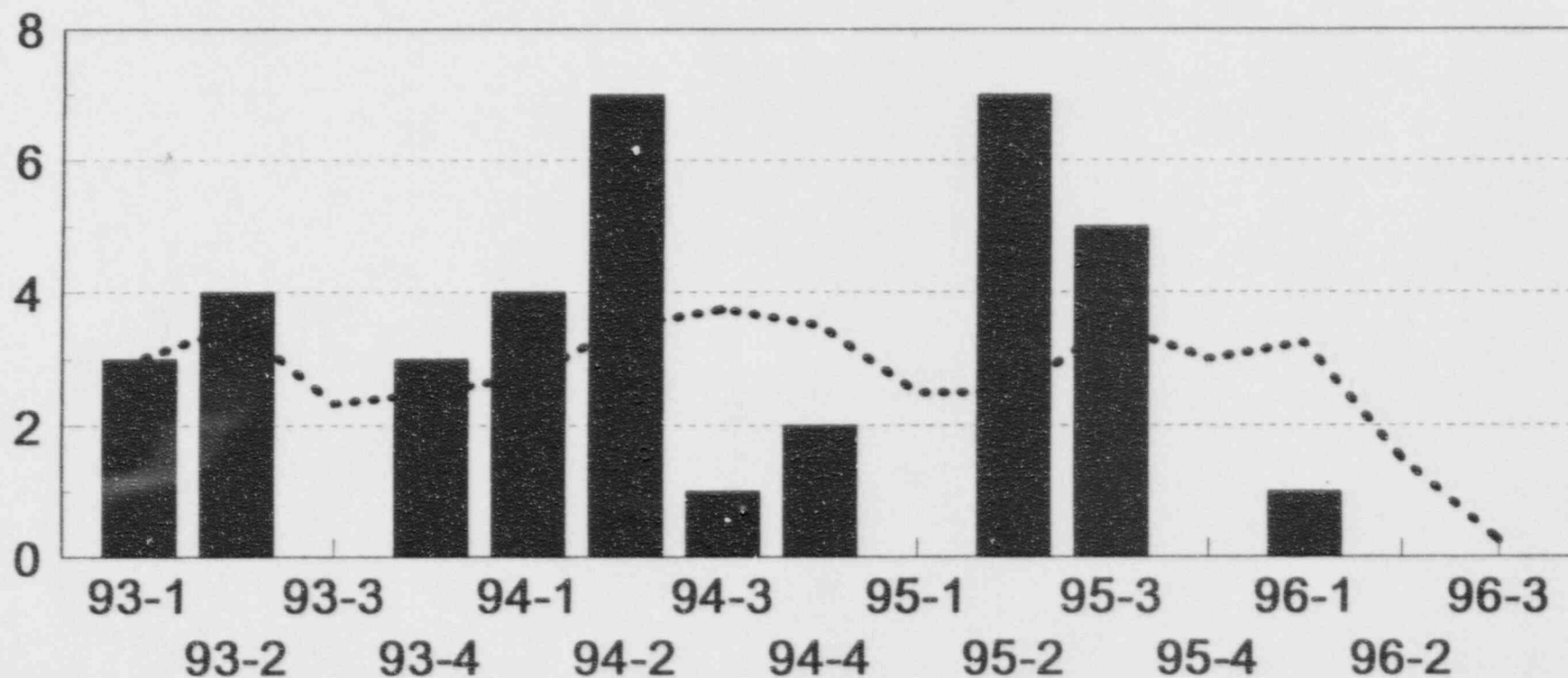


Identification & Correction



ESF Actuations

Events



ESF Actuations 4 Qtr Avg



.....

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30323-0199

EA 98-354

Carolina Power & Light Company
ATTN: Mr. W. R. Campbell, Vice President
Brunswick Steam Electric Plant
P. O. Box 10429
Southport, NC 28461
October 4, 1996

SUBJECT: NRC INSPECTION REPORT NO. 50-325/86-14 AND 50-324/96-14

Dear Mr. Campbell:

This refers to the inspection conducted on June 24 - September 17, 1996, at the Brunswick reactor facility. Based on the results of this inspection, two apparent violations were identified and are being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1500. The apparent violations involve your failure to maintain the environmental qualification (EQ) program for safety related electrical equipment in accordance with the requirements of 10 CFR 50.49, and your failure to take prompt and effective corrective actions to correct several nonconformances identified in the EQ program since 1991. Accordingly, no Notice of Violation is presently being issued for these inspection findings. In addition, please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review.

A predecisional enforcement conference to discuss these apparent violations has been scheduled for October 21, 1996. The decision to hold a predecisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference is being held to obtain information to enable the NRC to make an enforcement decision, such as a common understanding of the facts, root causes, missed opportunities to identify the apparent violation sooner, corrective actions, significance of the issues and the need for testing and effective corrective action. In particular, we expect you to address your failure to maintain the EQ program and the breakdown in your corrective action program despite the inclusion of these programs in the Brunswick Three Year Improvement Program submitted to NRC on December 15, 1992. In addition, this is an opportunity for you to point out any errors in our inspection report and for you to provide any information concerning your perspectives on:

Post-Net Fax Note	7671	Date	10/18/96	# of pages	27
To	CHARLES A. CASTRO	From	MARK TUNAL		
On	NRC REG-11/DNS/EB	Co.	CP&L Brunswick		
File #	484-331-4182	Phone #	910-857-3066		
Fax #	301-415-3359	Fax #			

484-331-5510 484-331-4489

Enclosure 4

- 1) the severity of the violations
- 2) the application of the factors that the NRC considers when it determines the amount of a civil penalty that may be assessed in accordance with Section VI.B.2 of the Enforcement Policy,
- 3) any other application of the Enforcement Policy to this case, including the exercise of discretion in accordance with Section VII.

This conference will be open to public observation in accordance with the Commission's continuing trial program as discussed in Section V of the NRC Enforcement Policy, NUREG 1600 (Enclosure 2). Although not required, we encourage you to provide your comments on how you believe holding this conference open to public observation affected your presentation and your communications with the NRC.

You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding these apparent violations is required at this time. In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,

Albert F. Gibson, Director

Division of Reactor Safety

Docket Nos. 50-325 and 50-324
License Nos DPR-71 and DPR-62

Enclosures: 1. Inspection Report 50-325, 324/96-14
2. NUREG 1600, Enforcement Policy

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-325, 50-324

License Nos: DPR-71, DPR-62

Report No: 50-325/96-14, 50-324/96-14

Licensee: Carolina Power & Light (CP&L)

Facility: Brunswick Steam Electric Plant, Units 1 & 2

Location: 6470 River Road SE
Southport, NC 28461

Dates: June 24 - August 23, 1996

Inspectors: J. Lenahan, Reactor Inspector
N. Meriweather, Reactor Inspector

Approved by: C. Casto, Chief, Engineering Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Brunswick Steam Electric Plant, Units 1 & 2

NRC Inspection Report 50-325/96-14, 50-324/96-14

This special inspection included a detailed review of the licensee's environmental qualification (EQ) program and followup on previous inspection findings (unresolved items) related to the licensee's EQ program. The areas inspected included followup on the licensee's corrective actions to address self-assessment findings and to resolve numerous nonconforming items related to the environmental qualification program.

Results:

A violation for Failure to Promptly Identify and Correct Nonconforming Conditions.

A violation for Failure to Maintain the Environmental Qualification Program in Accordance with 10 CFR 50.49.

An unresolved item regarding the effect of operability of the reactor building closed cooling water system on the post accident sampling system.

A weakness was identified in some of the licensee's procedures for control of the EQ program.

An unresolved item was identified pending further review of the UFSAR regarding environmental conditions in the reactor building.

An inspector followup item was identified to review the effect of EQ accuracy on instrument setpoint calculations.

An inspector followup item was identified to review the accuracy of ERFIS and SPDS data.

REPORT DETAILS

- 111. Engineering
- E1 Conduct of Engineering
- E1.1 Environmental Qualification Program

a. Inspection Scope

The inspectors reviewed issues related to the environmental qualification (EQ) of electrical equipment. These issues involved both technical and programmatic concerns that were identified in Self-Assessment Report 95-0041 and in a document titled "EQ Program Self-Assessment" which was written in November 1995, but never issued as a formal self-assessment report. The November 1995, report will herein after be referred to as the unpublished EQ self-assessment. The issues, some dating back to 1991, in both reports were similar and were never properly documented or resolved. When senior licensee managers became aware of the concerns in the unpublished EQ self-assessment they implemented a program review which resulted in initiation of Condition Report (CR) 96-01277 in April 1996. The licensee performed an additional assessment of the EQ Program at BNP to determine the technical and programmatic adequacy of the BNP EQ Program based on concerns raised in CR 96-01277. This Self-Assessment (96-0271) was performed during the period of April 22 through 26, 1996. During an inspection conducted June 10-14, 1996, 'six' unresolved items pertaining to the EQ program were identified which are documented in Inspection Report number 50-325, 324/96-08. Subsequent to the June 10 - 14, 1996, inspection, the licensee established an EQ task force to perform an overall review of the EQ program and to correct the numerous program deficiencies identified in the self assessments. Additional items have been identified since the licensee established the EQ Task Force. The specific issues addressed in this report are:

The EQ Data Base and Adequacy of EQ List

Consideration of Updated Environmental Data in EQ Evaluations

EQ of Post Accident Sampling System (PASS)

Corrective Actions to Resolve Previously Identified EQ Program Deficiencies

b. Observations and Findings

CR 96-01277 documented inconsistencies within the BNP EQ Program. These inconsistencies involved the Equipment Data Base System (EDBS) and information in the Updated Final Safety Analysis Report (UFSAR), and EQ documentation which was not updated with the latest plant information. Subsequent to the initiation of CR 96-01277, several additional CR's documenting specific program deficiencies were generated. The licensee has since completed the Root Cause Evaluation for CR 96-01277 and determined the following causes for the EQ Program deficiencies.

1. Personnel responsible for the EQ Program failed to implement the program effectively, and failed to take appropriate action to resolve known deficiencies.
2. Supervisors responsible for the EQ Program implementation failed to recognize the ineffectiveness of the program.

The licensee's EQ task force has identified numerous additional CRs related to deficiencies in the EQ program. The inspectors reviewed the CRs, the proposed corrective actions, and discussed the recovery plan to restore the EQ program with the EQ task force Manager. The specific issues reviewed and results of these reviews are discussed in the paragraphs below.

Review of the EQ Equipment Data Base

10 CFR 50.49 (d) requires licensees to prepare a list of electrical equipment important to safety, and to include with the list performance specifications of the equipment during and following design basis accidents, operating characteristics of the equipment, and the environmental conditions at the location where the equipment must perform. The licensee is required to keep the list and information current and retain the files in an auditable form for the life of the plant. 10 CFR 50.49 requires each item of EQ equipment to be qualified by testing. 10 CFR 50.49 also requires licensees to maintain qualification records for EQ equipment in an auditable form for the life of the plant.

The inspectors reviewed the following procedures which implement the above requirements:

Procedure OPLP-02, Program Document for Compliance with 10 CFR 50.49 (Environmental Qual of Safety-Related Electrical Equipment), Rev 4

Engineering Procedure OENP-34.1, Design Control of Environmentally

Error in report (trivial):

10CFR50.49(f) allows qualification by means other than testing as well, similarity, material analysis.

Qualified Environment, Revision 004C

Engineering Procedure OENP-34.3, Qualification Data Package (QDP)
Control Procedure, Revision 6

Engineering Procedure OENP-33.6, Equipment Data Base System
(EDBS) Control and Revision, Revision 8

In accordance with the licensee's EQ Program, Procedure OPLP-02, Section 5.3, Program Controls, the list of EQ Equipment is displayed on EDBS, Function 408, and the primary document for demonstrating qualification of the device (equipment) is the Qualification Data Package (QDP). The procedure also specifies that QDPs will be generic in its evaluations and that reference to specific plant (tag) identification is provided through the EQ List on the EDBS 408 Screen.

Engineering Procedure OENP-34.3, Section 4.2.1, QDPs, requires a QDP file be established for each unique type of qualified equipment, and that each file be given a unique QDP numeric designator which will be referenced for each device (i.e., EDBS Component Tag number) for each unit. The procedures require each EQ component to be referenced to a QDP.

On April 28, 1996, the licensee identified and documented in CR 96-01400 that the EQ List maintained in the EDBS Database, Function 408, had 777 components identified as EQ without a reference to a qualification data package (QDP). The licensee reviewed the list of 777 components to determine if there was a qualification basis for each of the items on the list. Several of the items were confirmed qualified by existing QDPs; however, weldowns were required in some cases to verify traceability between the installed components and the qualification documentation. A majority of the items that were listed in the EDBS without a reference to a QDP were associated with the reactor building motor control centers (MCCs) which include compartments, breakers, overload relays, contacts, control power fuses, etc. The licensee also identified several fuses in the reactor building MCC compartments that were not addressed in the existing QDPs for the MCCs (i.e. QDP 67 or 79) or in any other existing QDP. The unqualified fuses were identified as Types FRN-R, FNA-6, FNA-10, FNM-1.6, FRN-6, FRN-R-6, NOS-30, RES-30, NON-10, and SC-6. The Status Report included in CR 96-01400 indicated that QDP-67 would be revised to include qualification for the FRN-R (rejection type) based on similarity to the qualified FRN fuse. The other fuse qualifications will be addressed in QDP-95, which had been developed, but not approved and issued. The licensee also identified four potentiometers (1-1XE-EBO-POT, 1-1XF-EE2-POT, 2-2XE-EBO-POT, and 2-2XF-EE2-POT) for which a QDP had not been found. These potentiometers are in the control circuit for motor operated valves 1 (2)-SGT-V8N9 which are required post accident during operation of the accident containment atmospheric dilution (ACAD) system. Failure of the potentiometers due to a harsh environment could prevent opening the valves resulting in loss of the

The FRN-R fuses will be included in QDP 95 rather than QDP-67

ability to operate the ACAD system. The licensee informed the inspector that the ACAD system is not the primary means of hydrogen control. Notwithstanding the above, NRC Generic Letter 84-09 requires that the purge/repressurization systems for Mark I BWR Plants be maintained as safety grade pursuant to the applicable requirements of 10 CFR 50.44(f) or 10 CFR 50.44(g).

The inspectors concluded from the above that the list of electric equipment important to safety required to be environmentally qualified (EQ Master List) was not being maintained current and the EQ files were not auditable. Failure to maintain the list current and files auditable was identified to the licensee as an apparent violation of 10 CFR 50.49 (d) and (j). The failure to have qualification data packages in the EQ files demonstrating qualification for the subject potentiometers and fuses is an apparent violation of 10 CFR 50.49 (f) and (j). Both of the above examples of apparent violations were identified to the licensee as EEI 50-325,324/96-14-01, Failure to Maintain the EQ Program in Accordance with 10 CFR 50.49.

The licensee was developing qualification documentation or a justification for continued operation (JCO) for equipment for which they did not have a QDP.

Paragraph 6.2.2.1 of CP&L procedure O-ENP-33.6, Equipment Data Base System (EDBS) Control and Revision, Revisions 6 and 7, dated 7/22/93 and 415194, requires changes to the EQ data in the EDBS system be identified and approved on Form 208. Paragraph 6.2.2.2 of O-ENP-33.6 requires any EQ data changes that are not the result of an approved design change document will be approved by the NED EQ group.

Discussions with licensee engineers and review of licensee records disclosed that the EQ data in EDBS was revised in 1994 for the "300" EQ components listed in CP&L Great Ideas NED-326 and NED-327 without being identified and approved on Form 208, and without the approval of the NED EQ group. Subsequent review of these EQ data changes in 1995 and 1996 disclosed that more than 50 of the 300 components had been downgraded, i.e. removed from the licensee's EQ Program incorrectly. These components were subsequently reinstated in the EQ Program, as required by 10 CFR 50.49.

This problem was subsequently documented on CR 96-02104.

Paragraph 5.8.3.2 of CP&L procedure OENP-33.6, Revision 8, dated 10/30/95 requires that any EQ data changes that are not the result of an approved design change document shall be approved by an EQ Technical Reviewer.

Contrary to this requirement, the inspectors determined that EQ data was changed in the EDBS in conjunction with ESR 95-01140, a 'non-design' change ESR, on March 27, 1996, without the review and approval of an EQ Technical Reviewer. This problem was subsequently documented on CR 96-02361. During review of procedure OENP-33.6, the inspectors questioned licensee engineers regarding the meaning of the "or equivalent" in the procedure as it pertains to the 206 Form when removing items from EQ Program. The inspectors noted that the term was not defined in the procedure. The inspectors also noted that the procedure referenced the FSAR, instead of SAR, under the discussion of 10 CFR 50.59 safety evaluations. The licensee issued CR 96-02145 to document these discrepancies. This issue was identified to the licensee as a program weakness.

Consideration of Undated Environmental Data in EQ Evaluations

Based on review of CRs and discussions with licensee engineers, the inspectors determined that, in general, the EQ files did not incorporate the latest design information related to temperature, pressure, and radiation conditions expected during postulated design basis accidents (i.e., HELBs and LOCAs) in the reactor building and drywell. The inspectors also determined that the information contained in the UFSAR regarding peak temperatures in the reactor building during accident conditions and drywell maximum temperatures during normal operation may not reflect current plant conditions and/or latest design documents. The inspectors also determined that the motor control centers (MCCs) in the reactor building were initially evaluated for qualification using the temperature and pressure response data developed in Revisions 1 or 2 of the Reactor Building Environmental Report. Revision 4, the current revision of the Reactor Building Environmental Report was approved on December 16, 1991. The licensee is presently preparing Revision 5 of this report which will include consideration of the power uprate project. The licensee prepared a JCO to address the qualification of the MCCs.

The inspectors were informed by the licensee that Revision 4 of the environmental report had not been incorporated into the applicable QDPs. Revision 4 showed significant changes to some of the environmental profiles in the reactor building e.g., the peak HELB temperature at the 20 foot elevation in reactor building went from 225° F peak to 282° F. The hydrogen water chemistry (HWC) modification is another example where plant changes resulted in the normal radiation levels in the drywell and reactor building being higher than those previously analyzed in the QDPs. The 40 year integrated radiation dose used in the QDPs was similar to those referenced in UFSAR Section

The latest design information was less severe than the profiles included in the EQ data files. The two exceptions to this were the MCC's which referenced a non-conservative profile and the pipe tunnel which contains no EQ equipment.

The inspectors did not determine this, it was self identified by the EQ engineer and documented in CR 96-01609

The inspectors did not determine this it was identified by the task force team and documented in CR 96-02545
CR 96-01277

Again, with the exception of the MCC's the equipment was qualified to profiles which bound the updated environments, including the effects of HWC.

3.11. These values were used in the qualification documentation to determine the total integrated dose. The HWC operation has increased the normal expected radiation doses in the proximity of the main steam piping. These increases in the normal radiation levels have not been assessed in the QDPs or EQ Files. The licensee has reviewed the impact of the radiation increases due to the HWC mod and made a preliminary determination that the EQ age of affected equipment will not be exceeded prior to the next refueling outage for either unit. Also several EERs and ESRs that have not been incorporated into the QDPs. This resulted in the QDPs not being maintained current and in an auditable form. Failure to maintain the EQ files current and auditable was identified to the licensee as another example of apparent violation EEI 50-325.324/96-14-01.

As stated above, the inspectors determined that the safety related MCCs in the Reactor building had been evaluated in QDP-67 for qualification using the environmental profiles developed from Revision 1 of the Reactor Building Environmental Report dated October 26, 1982. This report had a peak surface temperature in the Reactor Building due to a HELB of 198° F. This surface temperature was then used in a thermal lag analysis to show that the MCC components would not exceed the temperature at which the MCCs had been tested. The licensee's response to 10 CFR 50.49 (g) dated May 20, 1983, stated in part that "the derivation of the temperature and pressure response for the reactor building is shown in Reactor Building Environmental Report Revision 2, dated February 2, 1983." In this submittal, the licensee also provided the temperature response curves in Section VI identified as Profiles P-1, P-2, P-3, P-4, and P-5. The profile applicable to the qualification of the MCCs was identified as P-4 in the submittal. The P-4 Profile provided the HELB surface temperature and pressure profile for elevation 20 and higher in the reactor building. This curve showed a peak surface temperature of 225° F. Subsequent to this submittal, plant modifications have been implemented which resulted in changes in the reactor building accident environment, as discussed earlier. Revision 4 of the Reactor Building Environmental Report now shows a peak surface temperature of 282° F from an HELB. However, QDP-67 used a peak temperature of 198° F, from the Revision 1 of the Reactor Building Environmental Report, for evaluating the qualifications for the safety-related MCCs in Units 1 and 2. The inspectors concluded that the MCCs were not qualified based on the information contained in the licensee's EQ Files. This was identified to the licensee as another example of apparent Violation EEI 50-325.324/96-14-01.

Another problem identified by the inspectors concerning the MCCs was that the licensee's analysis assumed the MCC cabinet panel entrances were sealed and that the door baskets were intact. During a walkdown, the inspectors

Bulk temperature.

identified several MCCs which had small diameter holes in the panels where nameplates had been previously removed and some potentially degraded gaskets around the door panels. The licensee issued CR 96-02545 to document this concern.

The original EQ equipment at BNP was required to be qualified in accordance with the requirements of the NRC Division of Operating Reactors (DOR) Guidelines. The DOR Guidelines provided criteria for addressing Beta radiation in the qualification of EQ equipment. The DOR Guidelines states, in part, that "if it can be shown, by assuming a conservative unshielded surface beta dose of 2.0×10^8 RADS and considering shielding factors discussed here, that the beta dose to radiation sensitive equipment internals would be less than or equal to 10% of the total gamma dose to which an item of equipment has been qualified, then that equipment may be considered qualified for the total radiation environment (gamma plus beta). If this criterion is not satisfied, the radiation service condition should include the sum of the gamma and beta doses." The licensee informed the inspectors that the current EQ Files do not document or explain how beta radiation exposure was addressed in evaluating the qualification of EQ equipment inside the dr-well. The inspectors concluded that this issue appeared to be a documentation issue and that sufficient margin existed in the design parameters so that EQ age of affected equipment would not be exceeded prior to the next refueling outage for either unit. The failure to address Beta radiation in the service environment and lack of documentation, required by 10 CFR 50.49 (d), (f), (g), and (k), is another example of apparent violation EEI 50-325, 324/96-14-01. The discrepancies in the UFSAR regarding environmental conditions will be evaluated by NRC in a future inspection. Pending further review, this issue was identified to the licensee as Unresolved Item 50-325, 324/96-14-02, UFSAR Environmental Data Discrepancies.

EQ of Post Accident Sampling System (PASS)

The licensee identified in CR 96-01633 that nine PASS solenoid valves in each unit classified as safety-related Class "A" were not in the EQ Program. The nine valves consisted of five Target Rock Solenoid valves, plant tag nos., 1 (2)-RXS-SV-4182, 4183, 4184, 4185 and 4192; and four R. G. Laurance valves, plant tag nos., 1 (2)-RXS-SV-4180, 4181, 4193, and 4194. The licensee indicated that documentation was available to demonstrate qualification for the Target Rock Valves based on similarity to a previously tested configuration; however, documentation demonstrating qualification of the R. G. Laurance valves had not been identified. Other non-EQ equipment was also identified as being necessary to support the PASS system operation. This equipment included: four RHR valves, 1 (2)-E11-F079A/B and 1 (2)-E11-F080A/B, and

associated local indicating lights; control switches; limit switches; heat tracing; and reactor building closed cooling Water system (RBCCW).

The inspectors reviewed the licensing basis and regulatory requirements for EQ of the PASS. The inspectors found that in a response dated May 8, 1984, to Generic Letter 82-33, Supplement 1, NUREG-0737, Requirements for Emergency Response Capability Regulatory Guide 1.97, the licensee committed to make the Post Accident Sampling System seismically and environmentally qualified. In addition, the licensee's response dated January 28, 1983, to NUREG-0737 Item II.B.3, Post-Accident Sampling Implementation, stated in part that, "The system is designed to provide useful samples under all conditions ranging to a full LOCA." The licensee also stated in this response that "valves added to interface the PASS with plant systems have been selected with seismic and environmental qualifications demonstrating their ability to operate in an accident environment." NRC evaluation of the licensee's submittal on PASS dated October 29, 1983, stated, in part, that "the PASS valves which are not accessible after an accident are environmentally qualified for the conditions in which they need to operate." Based on a review of the above, the inspectors concluded that the PASS System components are required to be environmentally qualified in accordance with 10 CFR 50.49. The failure to include such items as the nine PASS solenoid valves, four RHR valves, limit switches, etc., on the EQ List as required by 10 CFR 50.49 was identified as another example of apparent violation EEI 50-325,324/96-14-01. The licensee issued a JCO to address operability of PASS.

The RBCCW system is required to be operational in order to obtain samples from the PASS since one of the functions of RBCCW is to cool the samples. If RBCCW is not operable, the samples would flash to steam when the sample valves are opened. Questions have been raised regarding the operability of RBCCW during some postulated accidents and the effect of loss of RBCCW on the PASS. Pending further review by NRC, this issue was identified to the licensee as URI 50-325, 324/96-14-03, Effect of RBCCW Operability on PASS.

Review of the Corrective Actions For Adverse Condition Report (ACR) 91-181 ACR 91-181 dated April 5, 1991, identified that the EQ data in EDBS was not being maintained current based on plant design changes. The ACR was considered a significant adverse condition requiring a formal root cause analysis. The root cause was identified and corrective actions were put in place. One of the required corrective actions assigned to the Nuclear Engineering Department (NED) was to verify that safety-related electrical items located in a harsh environment are on the EQ List in EDBS with a "Y" in the EQ data field and associated qualification documentation was in the EQ File.

We are currently maintaining that the only part of PASS which must be EQ are the 9 valves. Not the rest of the system. The PASS System installed at BNP was originally designed by GE and the BWROG as a generic system for use by BWR plants. The system was not designed or installed as a "safety related" system. The intent of the BNP commitment is in NUREG 0737 response.

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This item was being tracked by the licensee as FACTS Item 91B1190. The corrective action for this FACTS Item (91B1190) had been extended several times and was subsequently closed on April 29, 1993, with the remaining corrective actions being transferred to ACR numbers N93-0027 and N93-0101. The NED follow-up response to FACTS Item 91B1190 was submitted as part of a request to extend the corrective action due date. The extension was based upon the remaining and follow-up actions identified in the submittal. In this follow-up response, NED identified electric equipment important to safety that required an EQ Flag change from "N" to "Y" in EDBS. In Enclosure 4, Detail Component Evaluations (Pages 16 and 17 of 28), NED provided the results of their evaluation of the EQ classification for PASS solenoid valves and integral limit switches. NED concluded that they should be qualified for post-LOCA conditions and the EQ Flags should be changed in EDBS to EQ "Y". However, it appears that no action was taken to establish qualification for the valves and limit switches.

As discussed above, the licensee documented on May 22, 1996, in CR 96-01633 that the PASS solenoid valves were not included in the EQ Program and a qualification data package did not exist addressing the qualification for these valves. In addition, this CR acknowledged the fact that these valves had been identified previously in ACR 91-181 as requiring EQ. It further indicated that ACR 91-181 had been closed without resolution of the required corrective action. The specified corrective action was to review ACR 91-181 to determine if other EQ equipment had been omitted from the program. This review had not been completed during this inspection.

Table 1 below is a list of those PASS solenoid valves and limit switches that were identified in 1991 in ACR 91-181 that should be included in the EQ program by changing the EQ Flag in EDBS from "N" to "Y".

TABLE 1

List of PASS Solenoid Valves and Limit Switches Shown in ACR 91-181

Unit 1	Unit 2
1-RXS-SV-4180	2-RXS-SV-4180
1-RXS-SV-4180-33-C	2-RXS-SV-4180-33-C
1-RXS-SV-4180-33-0	2-RXS-SV-4180-33-0
1-RXS-SV-4181	2-RXS-SV-4181
1-RXS-SV-4181-33-C	2-RXS-SV-4181-33-C
1-RXS-SV-4181-33-0	2-RXS-SV-4181-33-0
1-RXS-SV-4182	2-RXS-SV-4182
1-RXS-SV-41 82-33-C	2-RXS-SV-41 82-33-C

1 -RXS-SV-4182-33-0	2-RXS-SV-4182-33-0
1 -RXS-SV-4183	2-RXS-SV-4183
1-RXS-SV-4183-33-C	2-RXS-SV-4183-33-C
1 -RXS-SV-4183-33-0	2-RXS-SV-4183-33-0
1 -RXS-SV-4184	2-RXS-SV-4184
1-RXS-SV-4184-33-C	2-RXS-SV-4184-33-C
1 -RXS-SV-4184-33-0	2-RXS-SV-4184-33-0
1 -RXS-SV-4185	2-RXS-SV-4185
1 -RXS-SV-4185-33-C	2-RXS-SV-4185-33-C
1 -RXS-SV-4185-33-0	2-RXS-SV-4185-33-0
1-RXS-SV-4192	2-RXS-SV-4192
1 -RXS-SV-4192-33-C	2-RXS-SV-4192-33-C
1 -RXS-SV-4192-33-0	2-RXS-SV-4192-33-0
1 -RXS-SV-4193	2-RXS-SV-4193
1 -RXS-SV-4193-33-C	2-RXS-SV-4193-33-C
1-RXS-SV-4193-33-0	2-RXS-SV-4193-33-0
1 -RXS-SV-4194	2-RXS-SV-4194
1 -RXS-SV-4194-33-C	2-RXS-SV-4194-33-C
1 -RXS-SV-4194-33-0	2-RXS-SV-4194-33-0

ESR 95-01266 was issued by the licensee to evaluate the environmental qualification for the eight PASS limit switches (four limit switches on each unit) shown in Table 2.

Table 2

List of Limit Switches Evaluated for Qualification in ESR 95-01266

Unit 1	Unit 2
1 -RXS-SV-4180-33-0	2-RXS-SV-4180-33-0
1 -RXS-SV-4180-33-C	2-RXS-SV-4180-33-C
1-RXS-SV-4181 -33-0	2-RXS-SV-4181 -33-0
1 -RXS-SV-4181 -33-C	2-RXS-SV-4181-33-C

The ESR indicated that the limit switches, which were installed prior to February 22, 1983, had recently been upgraded to Quality Class "A" and that they were required to be EQ qualified in order to assure associated safety related circuits would not be degraded by failure of the switches. The inspectors concluded from a review of ACR 91-181 that these same limit switches had been categorized as Class "A" as early as September 1991. An NED evaluation associated with ACR 91-181 indicated that all of the above valves could be used to obtain post-accident samples and based on this fact the valves and limit switches should be qualified. However, it did not address

the fact that some of the limit switches were also associated with other safety related circuits and that failure of the switches could cause loss of position indication for containment isolation valves: 1 (2)-RXS-SV-4186, -4187, -4188, and -4189. The position indication for the containment isolation valves is required to be EQ qualified in accordance with the licensee's commitments to RG 1.97, Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident.

The inspectors concluded that the above equipment important to safety listed in Tables 1 and 2 was omitted from the EQ Program as identified in ACR 91-181. This is a violation of 10 CFR 50.49. The failure of the licensee to take prompt corrective action for the deficiencies identified in ACR 91-181 is a violation of 10 CFR 50 Appendix B, Criterion XVI. This was identified to the licensee as apparent violation item EEI 50-325,324 J-14-04, Failure to Promptly Identify and Correct Nonconforming Conditions.

ESR 95-01266 only addressed the qualification of the limit switches shown in Table 2. It did not address the qualification for those limit switches associated with solenoid valves 1(2)-RXS-SV-4182, 4183, 4184, and 4185. Although in ACR 91-181, these limit switches were previously identified to be upgraded to EQ. These limit switches are required to maintain control circuit continuity for the position indication of containment isolation valves, 1(2)-RXS-SV-4186, -4187, -4188, and -4189. Failure of the limit switches as a result of a postulated design basis accident could cause a loss of the position indication for these valves. The position indication is required by the licensee's commitments to RG 1.97. Equipment associated with RG 1.97 is required to be environmentally qualified in accordance with 10 CFR 50.49(b)(3). The failure of the licensee to document a significant condition adverse to quality after discovering that the limit switches described in Table 1 above had not been EQ qualified was identified to the licensee as another example of apparent violation EEI 50-325,324/95-14-04.

ESR 95-01266 evaluated the qualification of the limit switches shown in Table 2 against the criteria of the DOR Guidelines. The conclusion reached in the ESR was that the switches were qualified based on similarity to the switches previously qualified in QDP-41. The conclusion section of the ESR indicated that QDP-41 had been revised to incorporate the results of the ESR. The inspector reviewed QDP-41, Revision 1 in the licensee's EQ File and determined that it had not been revised to incorporate ESR 95-01266. In addition, the inspector found that the Index of applicable QDPs that is required by OENP-34.3, Section 4.2, Organization of Qualification Documentation Files, was last revised on February 7, 1992. Review of this index noted that the current revision of QDP-41 was revision 1. The inspector also noted that Finding No.1 in the licensee's Self Assessment 95-00271 identified a similar

All PASS valve limit switches associated with "other" safety related components are fully qualified for their application per ESR 96-01266, QDP-41 & original certification from the vendor (Target Rock Valves).

The EQ List was found to be incomplete, however, the Target Rock valves and Limit Switches were originally procured as "EQ" and have been fully qualified since installed at BNP. They were just never included in the program. The Limit Switches associated with the R.G. Laurance valves are fully qualified to prevent loss of primary containment isolation valve position indication per ESR 96-01266. Therefore, all limit switches capable of degrading PCIS valve position indication are currently EQ qualifiable.

The evaluation performed per ESR 96-00426 (PASS JCO) verified these limit switches are currently EQ. They are an integral part of the Target Rock valves and this documentation must be added to the program. The valves and limit switches were procured with full certification to the applicable qualification test report. They are fully qualified for their application at BNP.

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concern that over '25' QDPs had not been revised for more than 1 year after the equipment was declared operable. The inspector requested information from the licensee regarding which QDPs had not been revised in a timely manner. The licensee responded with the list of QDPs that are shown in Attachments 1 and 2. Attachment 1 identifies QDPs with a pending revision. A majority of the QDPs listed have been in revision status for over two years. Attachment 2 identifies those QDPs that were never issued. Failure to maintain the EQ files current was identified to the licensee as an apparent violation of 10 CFR 50.49 and another example of apparent violation EEI 50-325, 324/96-14-01.

The licensee initiated CR 96-02410 on August 12, 1996, when it was identified that a new type of solenoid valve (Enertech/Herion) was added by ESR 94-00390 during the Unit 2 outage in 1995 and declared operable without a QDP being issued and placed in the licensee's EQ Files. A review of ESR 94-00390 Drawing/Document Update Form indicated that the EQ Data Base did not require update prior to turnover to Operations. The only basis given was a reference to QDP-92. The qualification for the new valve, however, is addressed in QDP 92B as shown by EDBS for Plant Tag # 2-B32-SV-F019. This QDP had not been approved and issued prior to the modification being declared operable. In addition, when the inspector first questioned the licensee regarding those QDPs that had been in revision or pending issue (during the week of August 5 through 9, 1996), it appears that the licensee was not aware that this QDP was missing or had not been issued. This is demonstrated by the fact that QDP-92B is not shown on Attachments 1 or 2 which was provided to the inspector by the licensee during that period. The failure of the licensee to have qualification documentation in a file to demonstrate qualification of the Enertech/Herion solenoid valve, 2-B32-SV-F019 is an apparent violation of 10 CFR 50.49 (f) and (g) which was identified to the licensee as another example of apparent violation EEI 50-325, 324/96-14-01.

Review of Corrective Action for ACR N93-0101 - Associated Circuits

The licensee initiated ACR N93-0101 (later superseded by ACR 94-0980) on August 20, 1993, to address a concern that the safety classifications for certain electrical panel boards did not account for protection of Class 1 E circuits from associated circuits in the same raceway/cables. The design bases allowed cables supplying non-safety loads to be routed within the safety-related raceway system. However, the breakers feeding these non-safety related loads were classified as non-safety and non-EQ in the EDBS system. The licensee determined that if the protective devices are not "EQ Qualified," potential common cause and/or common mode failure mechanisms are possible. The licensee postulated that a HELB or LOCA could result in reactor

building environmental conditions which could cause multiple load faults and at the same time cause failures of the breakers to trip. This could allow the cable to be damaged to the extent that the damage could propagate to the adjacent cables in the raceway serving safety-related loads. The corrective actions required by the ACR were to upgrade the non-safety classification for electrical panels, 1(2)A-RX, 1(2)B-RX, 1(2)C-RX, 1(2)D-RX, and 1(2)AB-RX to safety-related, Quality Class "A".

The above panels are wall mounted 120/208 volt AC distribution panels located in the reactor buildings. However, there are other wall mounted panels in the reactor building, and there are other electrical distribution panels located in the reactor building such as the 120 volt AC panels that are internal to the MCCs. The inspector noted that the corrective actions for ACR N93-0101 did not address these panels. Furthermore, the problem description contained in Section b of ACR 93-0101, clearly stated that the problem involved other panels such as the 120 volt distribution panels that were internal to the motor control centers. Yet the ACR failed to identify corrective actions for these panels and breakers. The inspector noted that the subject panels and associated breakers were not on the EQ Master List.

On April 29, 1996, CR 96-01408 was initiated which re-identified the associated circuit issue. Corrective actions included development of a JCO and initiating ESR 96-00503 to justify operability of the MCCs and panel breakers that are associated with Class 1 E circuits. The list of reactor building power supplies that are required to be EQ qualified are summarized in Attachment A of the ESR. It is clear from review of this list that ACR N93-0101 did not address all panels located in the reactor building. In addition, the breakers that were upgraded to Quality Class "A" were never added to the EQ Program.

The inspectors concluded from this review that electric equipment important to safety identified in ESR 96-00503, Attachment A, was omitted from the EQ

Program in violation of 10 CFR 50.49 (d), (f), and (g). This issue was also identified to the licensee as another example of apparent violation EEI 50-325,324/96-14-01. The failure to identify the full extent of the condition adverse to quality regarding the classification and qualification of 120 Volt panels in the reactor buildings when the problem was initially identified in 1993 was identified to the licensee as an apparent violation of 10 CFR 50 Appendix B, Criterion XVI. This was identified as another example of EEI 50-325,324/96-14-04.

Additional EQ Issues

During review of various documents and discussions during the inspection, two additional issues were identified pertaining to environmental qualification of equipment. One issue concerned how environmental effects (uncertainties) were addressed in evaluating instrument loop errors and establishing instrument loop setpoints. Pending further review by NRC, this issue was identified to the licensee as Inspector Follow-up Item (IFI) 325, 324/96-14-05, Effect of EQ Accuracy on Instrument Setpoint Calculations. The other issue pertained to the accuracy of reactor vessel level determination using the emergency response facilities information system (ERFIS) and the accuracy of containment isolation valve position indications in the safety parameters display system (SPDS). Pending further review by NRC, this issue was identified to the licensee as IFI 325, 324/96-14-06, Accuracy of ERFIS and SPDS Data.

c. Conclusions

The licensee issued JCOs to address questions regarding equipment operability related to the EQ program deficiencies. The inspectors reviewed the JCOs and concluded that they contained sufficient information to permit continued operation of both Units 1 and 2 pending resolution of the EQ program deficiencies. The licensee also reviewed the EQ age of equipment affected by the EQ program deficiencies and determined that the equipment would remain operable for each unit until at least the next current scheduled refueling outages. The inspectors concluded that the licensee failed to maintain control of their EQ program for safety-related equipment, as required by 10 CFR 50.49, and failed to take prompt and effective corrective action when indications of problems were identified in 1991. The licensee also committed to maintain the EQ program in the CP&L Brunswick Three Year Improvement Program which was submitted to NRC on December 15, 1992. Two apparent violations were identified. Two unresolved items, two inspector followup items, and a weakness were also identified.

E.8 Miscellaneous Engineering Issues

E.8.1 (Closed) Unresolved Item 50-325,324/96-08-04, Inconsistencies in the EQ Program

The inspectors reviewed the issues related to the apparent inconsistencies in the EQ Program that had been identified in Condition Report (CR) 96-01277. These issues, which were originally identified during Self-Assessment 95-041, were as follows:

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1. The EQ List, as reflected in the Equipment Data Base System (EDBS), shows some equipment tag numbers as "EQ" without referring to a qualification data package (QDP) which demonstrate qualification. In addition, some referenced QDPs and "qualified life" information shown on the EQ List appear to be inconsistent.
2. There appears to be inconsistencies between the Q List of safety related equipment, EQ List, EQ Maintenance Data Base and EQ qualification data.
3. EQ documentation does not currently incorporate the latest environmental parameters, capture changes caused by engineering evaluation requests (EERs), engineering service requests (ESRs) and EQ backlog, and address other parameters such as margin, mechanical cycling and Beta exposure.
4. The UFSAR does not reflect the latest environmental conditions in the Brunswick Nuclear Plant (BNP).

The results of the followup inspection are discussed in report Section E-1, above. Unresolved item 50-325, 324/96-08-04 is closed and upgraded to apparent violation EEI 50-325, 324/96-14-01.

E.8.2 (Closed) Unresolved Item 50-325,324/96-08-05, Associated Circuit Issue

It has been determined by the licensee that the fault overload protection on non-safety related equipment cabling which is not qualified for a harsh environment, could fail to perform its protective function due to the effects of a high energy line break (HELB). This could result in damage to adjacent safety related cables routed in the same raceway. This issue was initially identified in 1993 as documented on Adverse Condition Report N93-0101. This event is postulated to occur in both divisions simultaneously due to the effects of the HELB in the reactor buildings. The inspectors reviewed the corrective actions for ACR N93-0101. The results of the review is discussed in Section E1, above. The conclusion reached from a review of the corrective actions for ACR N93-0101 was that ten non-safety related panels and breakers located in each reactor building were identified to be upgraded in EDBS to Class "A". The panels were upgraded in EDBS to Class "A", however, the issue regarding whether these panels had to be environmentally qualified was not addressed by the above EDBS change. In fact the panels and breakers were never added to the EQ List as equipment important to safety required to be qualified by the EQ Rule. Another

N93-0101 was that the corrective actions did not address all associated circuit components that were discussed in the original problem. The licensee has subsequently identified that there are six categories of power supplies in the reactor building relating to this issue. None of these components were previously identified on the EQ List. The licensee identified that 480 volt AC MCCs, 1XG, 1XJ, 1XK, 1XL, 2XJ, 2XK, and 2XL, were required to be EQ. These MCCs were originally procured as Q and were subsequently downgraded to non-Q. The licensee performed a review of work order records to determine if any non-Q parts had been used in the MCCs during the time they were classified as min-safety. None were found. Based on this review the MCCs were upgraded in EDBS to Class "A". The licensee also indicated that the qualification for these MCCs is the same as that for the safety-related MCCs; however, the qualification for the safety-related MCCs has not been established based on current Reactor Building Environmental data. A review was still in progress as of the inspection date to determine if the breakers had exceeded their qualified lives. This issue will be reviewed as followup action for the apparent violations. Other equipment involving associated circuits included: panels located internal to reactor building AC MCCs, wall mounted distribution panels associated with reactor building DC MCCs, wall mounted distribution panels that are associated with MCCs, and fuses. A list of the panels is shown in ESR 95-00503. Unresolved item 50-325, 324/95-08-05 is closed.

E.B.3 (Closed) Unresolved Item 50-325, 324/96-08-06, Qualification of Post Accident Sampling System (PASS).

The Post Accident Sampling system is currently classified as safety-related (Class A) while the original plant modifications that installed the system classified it as non-safety and non-EQ. The licensee performed a review of the PASS components and determined that the system was installed in accordance with seismic design criteria, and that all components were classified as safety related and were included in the EQ program except for nine valves on each unit, and certain other components. A detailed discussion of PASS is included in Section E1, above. CR 95-01939 was issued to document and disposition this issue. Review of documentation disclosed that five of the valves on each unit were purchased as safety-related components; however, these valves had not been included in the licensee's EQ program. Licensee engineers performed a review of purchase and maintenance records and determined that these five valves still met the requirements for safety related components and were currently EQ qualified. These five valves have been incorporated into the EQ program. The four remaining valves on each unit were purchased as non-safety related components. Two of these valves are

installed on the shell side of the RHR heat exchangers, while the remaining two are installed on the reactor building air sampling system. The electrical circuits for the valves on the RHR heat exchanger are interconnected with the containment isolation valves on the hydrogen/oxygen analysis (CAC) system. Failure of the valves on the RHR system could possibly effect the CAC valves, which could result in loss of position indication (open or closed) in the control room. Discussions with the EQ task force supervisor disclosed that compensatory actions to address the effect of failure of the PASS valves on the RHR system (loss of position indication) were transmitted from engineering to operations as a Standing Instruction on July 3, 1996. On July 18, 1996, at approximately 3:00 PM, the inspector went to the control room and reviewed the standing instructions. The standing instruction for the PASS valves was not in the standing instruction logbook. The inspector questioned the shift supervisor and the Unit 1 & 2 senior reactor operators regarding the standing instruction. These individuals were not aware of the issue. Further discussions with licensee personnel disclosed that the standing instruction had not yet been issued by operations management and that the operators on shift at 3:00 PM on July 18, 1996, had not briefed on the problem for a variety of reasons. A standing instruction covering compensatory actions regarding possible failure of the PASS valves was issued on July 19, 1996. On August 23, 1996, further discussions with BESS engineering manager disclosed that the issue may have been included in the shift supervisor's logbook but may have been inadvertently deleted on or about July 15, 1996. The inspector questioned the licensee regarding their investigation of the cause of failure to disseminate the information regarding the PASS valves to the personnel on shift on July 18, 1996. These discussions disclosed that the licensee had not issued a CR to identify and correct the problem and apparently did not conduct an investigation into the issue. Failure to document the problem on a CR was identified as another example of apparent violation EEI 325, 324/96-14-04. The licensee is continuing to review resolution of the environmental qualification for the eight valves which were originally purchased as non-safety related.

The inspector reviewed EER number 96-00426 which documents review of the seismic integrity of the PASS components. The conclusions of the ESR was that all PASS equipment was seismically supported, although some documentation was confusing pertaining to seismic design qualifications. A walkdown inspection was completed by a licensee civil/structural engineer to determine if the PASS components were installed in accordance with seismic design criteria. The results of

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the walkdown disclosed that all components met seismic design criteria, with the exception of some panels which were identified as outliers under the licensee's USI A-46 program. The Inspector performed a walkdown in the Unit 1 reactor building and examined portions of the PASS. The Inspector concluded that the system had been installed in accordance with the licensee's seismic design criteria and in accordance with the design requirements shown on Drawing numbers F-73059, -73060, and -73064. The Inspector concurred with the conclusions of ESR 96-00426. Unresolved item 325, 324/96-08-06 is closed.

E.8.4 (Closed) Unresolved Item 50-325, 324/96-08-07, Adequacy of the EQ Equipment List as shown in EDBS.

Numerous discrepancies have been noted with the information provided in the EQ Equipment List as shown in EDBS Screen 408. CR 96-01277 documented that 777 items were identified on the EQ List without a reference to a QDP. After a review by the licensee of the 777 items it was later determined that EQ documentation did not exist for some of the items included on the EQ List. Some of these items are discussed in this report. The corrective action for ACR 91-181 identified several components that were required to be added to the EQ List e.g. PASS valves and limit switches. These components had not been added to the EQ List. In addition several other discrepancies noted in ACR 91-181 with the EQ List were also not resolved in regard to the EQ List in EDBS. Additionally, approximately 300 items were removed from the EQ List in response to Great Ideas NED-327 and NED-328. It has now been determined that many of these items were removed improperly and most are required to be in the EQ Program. The licensee's task force on EQ is currently evaluating the EQ List in EDBS and comparing it to the List submitted to NRC by letter dated May 20, 1983.

Differences identified are being reviewed to verify the bases for the change. The licensee is currently reviewing the completeness of the EQ List in conjunction with the review of previously identified ACRs that identified discrepancies with the list in EDBS. The failure by the licensee to properly identify equipment important to safety requiring environmental qualification and failure to maintain the list current was identified as examples of apparent violation 50-325, 324/96-14-01, as discussed in Section E1, above. Unresolved item 50-325, 324/96-08-07 is closed.

E.8.5 (Closed) Unresolved Item 50-325, 324/96-08-08, Use of Thread Sealant on Environmentally Qualified Equipment.

An installation specification and maintenance procedures listed some thread sealants for use on EQ equipment which had not been qualified. This problem was

reviewed under ESR 94-00743. The conclusions of the ESR were that some thread sealants were listed in various site procedures which had not been EQ qualified under a testing program. Failure to initiate corrective action to revise the procedures was identified to the licensee as another example of apparent violation EEI 325/324/96-14-04. The licensee documented this problem on CR 96-01445. The licensee is in the process of reviewing EQ equipment installation records to determine if any of the unqualified thread sealants had been used onsite. Review of purchase records disclosed that at least one of the qualified sealants was purchased for use as augmented quality. A JCO has been prepared to address the use of potentially unqualified thread sealants. Materials purchased as augmented quality have limited qualifications but do not meet the requirements for use in EQ or safety-related applications. The licensee has documented the procedural discrepancies and is in the process of making the necessary corrections to list only thread sealants for use on EQ equipment which have been qualified. Unresolved item 50-325, 324/96-08-08 is closed.

E.8.6 (Closed) Unresolved item 50-325, 324/96-08-09, Adequacy of Corrective Actions to Address Self Assessment Findings.

One strength, 20 findings and 'eight' recommendations (areas for improvement) identified in self-assessment 95-041, EQ Program Adequacy. The self-assessment was performed by contractors under the guidance and approval of the site EQ engineer. The strength stated that the overall EQ program met the general requirements of CP&L procedures and licensing commitments. However, the 20 findings identified numerous deficiencies in the EQ program including deficiencies in procedures, documentation, EQ calculations, design drawings, and equipment data bases. The areas for improvement outlined planned corrective actions to address some of the findings. The inspectors question whether the corrective actions to resolve the 20 findings identified during the self-assessment were adequate.

The inspectors noted that these same issues were re-identified during the recently completed self-assessment 96-0271. The licensee documented the findings from assessment 96-0271 on CRs.

The inspectors reviewed the 20 findings in self-assessment 95-041 to determine the adequacy of the licensee's corrective actions to resolve the EQ issues. This review disclosed that discrepancies in the EQ program were evaluated by ESRs. Some of the problems were also documented on CRs. The inspector reviewed the ESRs listed below

and determined that the findings from assessment 95-041 were not properly addressed in accordance with the licensee's corrective action program. ESRs reviewed were as follows:

ESR 94-00742 - This ESR required screening of previously issued engineering evaluation reports (EERs) to determine which ones were EQ related and could impact qualification data packages (QDPs). A total of 369 EERs were reviewed. The licensee determined that 36 of the EERs could potentially impact the QDPs. A list of the 36 EERs was attached to the ESR. However, no additional actions were initiated by the licensee to review the QDPs and determine the impact of the 36 EERs on the applicable QDPs.

ESR 94-00743 - This ESR was issued to address a finding that some components may not be installed to reflect as-tested configurations for EQ installation criteria. The ESR provided a list of some QDPs which may be affected by this problem. The licensee determined that some thread sealants listed in the site specification and site installation procedures had not been tested. A list of potentially affected QDPs were listed in the ESR. However, no additional corrective actions were initiated to resolve this concern.

ESR 94-00752 - This ESR was an evaluation of the impact of the hydrogen water chemistry (HWC) related increased radiation levels on EQ equipment. The conclusions of the ESR was that additional review of this issue be performed and that a project be initiated to perform the review. An associated CR, CR 95-00701 was closed out based on the ESR resolution; however, additional review was not performed and corrective action was not initiated for approximately 13 months. The ESR referenced EER 94-0061 which evaluated the HWC modification. The EQ impact form attached to EER 94-0061 indicated that the HWC mod had no impact on EQ. The inspectors noted that EER 94-0061 was not listed as an EER reviewed under ESR 94-00742. This also questions the adequacy of the review performed under ESR 94-00742.

The licensee's corrective action program, PIP-04, requires personnel to identify, evaluate, and correct adverse conditions and other conditions not meeting expectations, i. e., nonconformances per the definition of 10 CFR 50 Appendix B, Criterion XVI. The corrective action program requires the use of Condition Reports (CRs) to identify and document

nonconformances. Condition Reports were not issued to document and identify the nonconformances identified on ESRs 94-00743, 743, and 752. This was identified to the licensee as another example of apparent violation EEI 325, 324/96-14-04, Failure to Promptly Identify and Correct Nonconformances.

Further review of the findings from Self-Assessment 95-041 disclosed that the site EQ engineer prepared an undated document titled "EQ Program Self-Assessment" in November 1995. This document is a restatement of the findings from self-assessment 95-041. However, the wording used in the document indicates that the findings from self-assessment 95-041 are serious issues which have not been resolved and could possibly impact operability of plant equipment. The document stated that the purpose of the November 1995 assessment was to alert management of the deteriorating condition of the EQ program. The undated document listed ten concerns and approximately ten serious deficiencies in the EQ program. The document listed possible resolutions of the problems/issues. The EQ engineer discussed the assessment with his immediate supervisor and his next level supervisor several times during December and January, 1996. The inspectors determined that no actions were taken by either of the three individuals to initiate CRs to document and disposition the problems (nonconformances) until CR 95-01277 was initiated on April 12, 1996. The failure to initiate a CR for conditions they became aware of, which is a requirement of PLP-4, was identified as another example of apparent violation EEI 50-325, 324/96-14-04. The licensee initiated a self assessment due to the concerns raised in CR 95-01277. The conclusions of the self-assessment, documented in Self Assessment Report 95-00271, was that the Brunswick Environmental Qualification program has not been effectively maintained resulting in identification of 17 findings were identified in the assessment.

On February 22, 1996, the licensee initiated CR 95-00618 to document a discrepancy in EDBS regarding the safety classification and EQ status of 250 volt DC overload relays. Discussions with licensee engineers disclosed that the CR resulted from revisions to EDBS made while changing the EQ data fields for the equipment listed in CP&L Great Idea numbers NED-326 and 327. However, the licensee failed to conduct an adequate review of the cause of this CR and failed to ensure corrective actions to resolve the problem were effective. Additional discrepancies related to the improper classification (either the safety or EQ classification of the equipment listed in NED-326 & 327) have been recently identified as a result of the EQ program review. This resulted in initiation of additional CRs. The failure of the licensee to ensure that assigned corrective actions are effective and are implemented as

required by Paragraph 8.0 of PLP-4 was identified to the licensee as another example of apparent violation 50-325, 32496-14-04.

V. MANAGEMENT MEETINGS

The inspectors presented the inspection results to members of licensee management on August 23, 1996 and during a telephone conversation on September 17, 1996. Post inspection briefings were conducted on June 28 and July 12, 1996. The licensee acknowledged the findings presented. Dissenting comments were not received from the licensee. The licensee did not identify any materials used during the inspection as proprietary information.

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 IP 37550: Engineering
 IP 37551: Onsite Engineering
 IP 92903: Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-325, 324/96-14-01
 50-325, 324/96-14-02
 50-325, 324/96-14-03
 50-325, 324/96-14-04
 50-325, 324/96-14-05
 50-325, 324/96-14-06

Closed

50-325, 324/96-08-04
 50-325, 324/96-08-05
 50-325, 324/96-08-06
 50-325, 324/96-08-07
 50-325, 324/96-08-08
 50-325, 324/96-08-09

EEL Failure to Maintain the Environmental Qualification Program in Accordance with 10CFR 50.49 (Paragraph E1)
 URI UFSAR Environmental Data Discrepancies (Paragraph E1)
 URI Effect of RBCCW System Operability on PASS (Paragraph E1)
 EEL Failure to Promptly Identify and Correct Nonconforming Conditions (Paragraph E1)
 IFI Effect of EQ Accuracy on Ins. Jument Setpoint Calculations (Paragraph E1)
 IFI Accuracy of ERFIS and SPDS Data (Paragraph E1)
 URI Inconsistencies in the EQ Programs (paragraph E8.1)
 URI Associated Circuits Issue (Paragraph E8.2)
 URI Qualification of PASS (Paragraph E8.3)
 URI Adequacy of EQ Equipment List as Shown in EDBS (Paragraph E8.4)
 URI Use of Thread Sealants on EQ Equipment Installations (Paragraph E8.5)
 URI Adequacy of Corrective Actions to Address Self-Assessment Findings (Paragraph E8.6)