

Carolina Power & Light Company

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SERIAL: NLS-90-041

FEB 26 1990

LYNN W. EURY
Executive Vice President
Power Supply

Director, Office of Enforcement
U. S. Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325, 50-324/LICENSE NOS. DPR-71, DPR-62
REPLY TO A NOTICE OF VIOLATION (EA 89-235)

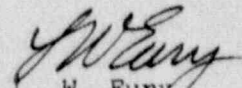
Gentlemen:

On January 26, 1990, the Nuclear Regulatory Commission issued a Notice of Violation (NOV) and Proposed Imposition of Civil Penalty (EA 89-235) for two issues which involve the failure to promptly identify and correct service water system design deficiencies at the Brunswick Steam Electric Plant (BSEP) Units 1 and 2. Carolina Power & Light Company (CP&L) hereby responds to the NOV. Attachment 1 to this letter is CP&L's "Reply to Notice of Violation" (10CFR2.201).

As noted in Attachment 1, CP&L acknowledges that the proposed violation constituted a violation of regulatory requirements. Enclosed is a check payable to the Treasurer of the United States in the amount of Seventy-Five Thousand Dollars (\$75,000).

If you have any questions, please contact Mr. L. I. Loflin at (919) 546-6242.

Yours very truly,


L. W. Eury

DBB/ecc (611ECC)

Attachment

cc: Mr. S. D. Ebner
Mr. W. H. Ruland
Mr. E. G. Tourigny
NRC Document Control Desk

9003090084 900226
PDR ADOCK 05000324
Q PNU

W/Check \$75,000 #313785
IE14
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Cont No RA48527869

L. W. Eury, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Delva C. Johnson
Notary (Seal)

My commission expires: June 26, 1994

ATTACHMENT 1

Carolina Power & Light Company
Brunswick Steam Electric Plant

Reply to Notice of Violation
Enforcement Action 89-235

Inspection Report Number
50-325/89-34 and 50-324/89-34

I. INTRODUCTION

In accordance with 10CFR2.201 and the NRC Staff's January 26, 1990, letter transmitting the subject Notice of Violation, Carolina Power & Light Company (CP&L) hereby replies to the cited Notice of Violation (NOV).

II. REPLY TO INDIVIDUAL ALLEGED EXAMPLES OF VIOLATION

In the NOV, the NRC Staff identified two examples of a Severity Level III violation, denoted as A and B, concerning an alleged failure to promptly identify and correct deficiencies with the service water (SW) system at CP&L's Brunswick Steam Electric Plant (BSEP). In this response, for each example of the alleged violation, CP&L will (1) admit the allegations, (2) provide the reasons for the violation, (3) identify the corrective steps taken and the results achieved, and (4) state further actions to be taken to avoid future violations, and the date when full compliance will be achieved.

The NOV states:

10CFR50, Appendix B, Criterion XVI-Corrective Action, Chapter 17.2.16 of the Updated Final Safety Analysis Report, and the licensee's accepted quality assurance program each require that measures shall be established to assure that conditions adverse to quality, such as deficiencies, are promptly identified and corrected.

Contrary to the above, measures were not adequately established to promptly identify and correct deficiencies with the service water system as evidenced by the following examples:

- A. The Plant Nuclear Safety Committee (PNSC), on February 12, 1988; the March 23, 1988, 50.59 evaluation; and Engineering Evaluation 88-167, Rev. 1, dated June 2, 1988; all incorrectly concluded that a single failure of SW-V106 would not affect system operability. In addition, service water nuclear to conventional header cross-tie valve leakage was found during the DET review. This potential leak path from the nuclear header was not previously considered in the system design or maintenance or the SW-106 evaluations referenced above.

These deficiencies were not identified and corrected until the NRC's Diagnostic Evaluation Team (DET) questioned the licensee about the issue in April 1989. As a result, there was no assurance that the SW system would have performed its intended function.

- B. Service water pump motors were identified as operating with high stator temperatures on August 6, 1988. While certain corrective actions were planned, the corrective action was not timely as indicated by the failure of one of the NSW pump motors affected by the over temperature problem and the necessary corrective action were not identified until the licensee was questioned about the issue by the DET in April and May 1989.

This is a Severity Level III violation (Supplement I).

Civil Penalty - \$75,000

A. Admission of the Violation

CP&L admits that the deficiencies stated in Example A of the NOV were not promptly identified and corrected, in that evaluations completed on these issues did not adequately address the single failure of the SW-V106 and system cross-tie valve leakage. CP&L also admits that, under certain worst-case scenarios, there was no assurance that enough flow would have been available for the SW system to perform its intended function, given the diverted flow through cross-tie valve leakage and the failure of the SW-V106.

CP&L also admits that, as stated in Example B, the corrective actions taken on SW pump motor high stator temperature problems were not timely, as evidenced by the failure of the 2B NSW pump on April 28, 1989.

B. Reason for the Violation

As noted in the Enforcement Conference and Licensee Event Report (LER) 1-89-019, the root cause of the SW system's inability to meet design requirements as identified in Example A was primarily the result of inadequacies now known to exist in the initial SW system and component design. Subsequently, failure to promptly recognize and evaluate these deficiencies is attributed to not adequately assessing original design when performing evaluations. This stems from a combination of the lack of accessibility of the original supporting design calculations, the accuracy of the calculations, the lack of maintaining this system in accordance with the original design basis (especially with respect to the cross-tie valve leakage), and the failure to recognize original Architect/Engineer design deficiencies.

High stator temperatures in the SW pump motors were identified as early as August 6, 1988. Analyses performed by the vendor at that time attributed high stator cooling temperatures to blockage of the stator cooling ports with stator varnish. Root cause analysis performed at that time failed to identify the major contributors of the restricted motor air flow and did not recognize the significance of overheating versus service life.

High stator temperature in the SW pump motors was discussed in Inspection Report 50-325/88-29 and 50-324/88-29. The inspection report also stated, "the licensee's proposed plan to overhaul each motor should correct any similar problems with the remainder of the motors." At that time, CP&L thought it had properly identified the root cause of the high stator temperatures. It was not until the failure of the 2B Nuclear Service Water pump on April 28, 1989, following flow testing which took the pump closer to pump run-out conditions, that further motor analysis was considered necessary. As a result of that failure, actions were promptly initiated by CP&L to identify the failure modes associated with the 2B NSW pump motor failure.

C. Corrective Steps Taken and Results Achieved

Tables 1 and 2 provide a chronology of the events which have transpired since April 16, 1989. Included in this chronology are Design Documents (Engineering Evaluations (EERs) and calculations) and plant modifications (PMs) completed since April 16, 1989.

The NRC DET for BSEP was conducted from April 10 through May 5, 1989. During this inspection, concerns were identified relative to the design adequacy of the SW system. On April 16, as a result of the concerns being generated, CP&L assembled a team of corporate and site engineering personnel to evaluate the adequacy of the SW system design, as supplied by the Architect/Engineer, United Engineers and Constructors (UE&C).

As noted in the Enforcement Conference and LER 1-89-019, the design deficiencies can be placed into three major categories: system hydraulic capability, cross-tie valve leakage, and pump motor reliability. The causes for each of the three types of deficiencies are discussed in LER 1-89-019.

Engineering evaluations, system and component testing, interim operating restrictions, and system modifications were performed to ensure continued operability of the system. As modifications have been installed and more accurate engineering information has become available, EERs have been written to document and establish less restrictive interim operational limits. The SW system is currently operable and capable of performing its intended safety functions.

The specifics of corrective actions for each violation example are addressed below.

Example A

Example A concerns the failure to fully assess the impact that failure of the SW-V105 would have on the system's ability to perform its intended function during a LOCA/LOOP event, considering the system cross-tie header leakage. CP&L acknowledges that the evaluations by the site Plant Nuclear Safety Committee (PNSC) on February 12, 1988, the March 23, 1988, 50.59 evaluation and EER 88-167, Rev. 1, June 2, 1988, failed to assess the leak path and leakage from failure of the SW-V106 and cross-tie valve leakage. This is because neither the single failure of the SW-V106, nor the effect of cross-tie valve leakage was recognized during original system design by the Architect/Engineer. To alleviate the concern of the single failure of the SW-V106, motors were installed on the SW-V103 valve, which is in-line with the SW-V106. Cross-tie valve leakage has been quantified and a Final SW System Hydraulic Report issued, detailing the specific problems presented by cross-tie valve leakage, and actions necessary to ensure system operability. Major actions completed to date have been:

1. Quantified cross-tie valve leakage for Unit 2 and Unit 1.
2. Developed a new hydraulic model for the SW system, based on determined system hydraulic performance characteristics (including pump performance characteristics) and cross-tie valve leakage.
3. Replaced the Unit 2 cross-tie valves with new valves which have lower torque requirements for seating.
4. Completed the Hydraulic Report for the SW system, including accident scenarios and single failure analyses.
5. Developed surveillance testing for flow capability to be performed during the present Unit 2 outage and future refuel outages. A periodic test is under development for both Units 1 and 2 to measure system hydraulic performance.
6. Completed a review of historical SW system plant modifications.
7. Completed the SW System Final Project Report.

Example B

As stated in the violation, SW pump motors were identified as operating with high stator temperatures on August 6, 1988. Corrective actions at the time did not fully address the overall safety significance of the high temperature condition. Subsequent to the motor failure of NSW pump 2B on April 28, 1989, further evaluations and analyses were performed to determine the extent of this problem. In addition, air dams were installed around the motor

body shrouds to lower air temperature into the motor ventilation inlet. The SW System Final Project Report, completed December 29, 1989, addresses this issue and necessary corrective actions to ensure system operability. The following actions have been completed on this issue:

1. Initiated a program to modify motors, based on projected service life, to improve cooling. Modifications to the motors included upgrading motor insulation class, installing higher efficiency rotor fans and enlarging stator and frame air passages.
2. Initiated SW motor temperature monitoring program, including routine monitoring of stator RTD's, and determined the cumulative aging effects of insulation.
3. During hydraulic reviews, it was noted that SW pump motor thrust bearings may be overloaded should one Diesel Generator SW inlet Valve fail to open with high head conditions. Flow limits were established to assure adequate flow in accident conditions. Alternative long-term solutions are being reviewed.

GENERAL

CP&L recognizes that the activities engaged in at Brunswick that led to this violation needed improvement, especially in the area of "root cause" evaluation of deficiencies, 50.59 evaluations and aggressive initiation of corrective actions. The CP&L Integrated Action Plan (IAP), developed in response to the DET Report and CP&L-initiated evaluations, identified both Corporate and site improvements necessary for the ongoing implementation of an effective Corrective Action Program at BSEP. Table 3 lists the actions necessary for improvement in these areas, as defined in the IAP and their current status. CP&L is aggressively pursuing completion of these items.

CP&L has initiated a program to assemble system design basis documents, including design calculations, as well as other essential design information. This program is to include a review comparing plant modifications to original design basis. The information is being relocated to CP&L to improve access. CP&L has received design information from the A/E for 41 of 66 plant systems.

D. Corrective Actions Which Will Be Taken and Date When Full Compliance Will Be Achieved

Table 4 lists the individual recommendations identified by the Final Project Report and currently scheduled completion dates where established.

A SW Technical Specification revision, which will establish minimum operating pumps consistent with system design basis, will be submitted by the end of February 1990.

To help ensure that deficiencies are appropriately evaluated for operability, reportability, and that accurate root cause assessments have been completed, a Corporate Task Force has been organized to develop and institutionalize a Corporate Corrective Action Program throughout the nuclear program. As identified and discussed in the IAP, this item is scheduled for completion by the end of 1990.

Using the NUMARC guidance contained in NSAC-125, CP&L has developed a consistent Corporate methodology for performing 10CFR50.59 Safety Evaluations and Safety Reviews. This program is also scheduled to be implemented in 1990, following completion of site specific procedures and training for safety reviewers.

CP&L has recently completed a Safety System Functional Inspection (SSFI) and Modification Review on the SW system at the Brunswick plant. The results of these assessments are being reviewed, along with the High Pressure Coolant Injection (HPCI) and Standby Liquid Control (SLC) SSFI results, to identify potential generic design issues, trends, or patterns. This item is scheduled for completion in June 1990.

CP&L is scheduled to complete the review of the safety-related design information packages by the end of 1991. These documents are to be kept current as plant modifications are made.

Once the extent of the SW issue became clear, CP&L moved aggressively and expeditiously in developing a resolution to the SW system problems. CP&L feels it is in full compliance with regulations regarding the Brunswick SW system. System enhancements are necessary, however, to ensure system reliability and efficiency under certain operating conditions.

TABLE 1

HYDRAULIC CAPABILITY

CHRONOLOGY OF EVENTS BEGINNING APRIL, 1989

<u>DATE</u>	<u>DESCRIPTION</u>
4/16/89	Nuclear Engineering Department (NED) personnel dispatched to BSEP in support of DET questions on SW.
4/27/89	Special Procedure SP 89-021 performed to test hydraulics on Unit 2 SWS.
4/30/89	Special Procedure SP 89-023 performed to measure crosstie leakage on Unit 2.
5/2/89	EER 89-0147, Rev.0, Determination of correct SW pump auto-start setpoint
5/4/89	JCO EER 89-0135 approved. Implemented restrictions on maximum RBCCW flow and inlet temperature (78 degrees).
5/5/89	EER 89-0153 approved evaluating Unit 1 crosstie leakage as bounded by Unit 2 results.
5/6/89	TSI 84-06, Rev. 5, issued implementing more restrictive Tech. Spec. requirements on SWS.
5/8/89	SW Project Action Plan approved by management.
5/14/89	EER 89-0163 approved evaluating alternate SW lineup. Raised temperature limit to 85 degrees.
5/15/89	Started engineering on PM's 89-048 and 89-049 to upgrade SW valve SW-V103 to motor operated to provide redundant backup to valve SW-V106.
5/24/89	Unit 1 special procedure SP 89-024 performed to measure Unit 1 crosstie leakage (leakage was approximately half of Unit 2's).
5/30/89	Hydraulic analysis of Intake Canal completed by Daniels and Associates.
6/7/89	PM's 89-050 and 89-051, "RHR SW Pump Supply for Header pressure Switches," approved for installation.

TABLE 1 (CONT.)

<u>DATE</u>	<u>DESCRIPTION</u>
6/8-12/89	Typical SW pump tested at Johnston Pump facility for NPSH curve, thrust requirements and head/capacity. Report from Johnston dated 6/29/89.
6/9/89	EER 89-0166 approved establishing design basis for RHR SW flow (4500 gpm).
6/12/89	EER 89-0135, Rev. 1, approved incorporating RHR SW design basis information. Raised allowable inlet temperature to 87 degrees.
6/13/89	EER 89-0163, Rev. 1, approved incorporating RHR SW design basis information. Raised alternate lineup temperature limit to 87 degrees.
6/15/89	PM 89-049 approved for installation.
6/16/89	Revised scope of PM's 89-048 and 89-049 to include throttling setpoint for valves SW-V103 and SW-V106 for interim solution to potential overload of SWP motor thrust bearings at minimum flow.
6/21/89	PM 89-048 approved for installation.
6/22/89	EER 89-0204 Rev.0, UNIT 2 NSW low flow operation evaluation
6/23/89	Unit 2 special procedure SP 89-032 performed additional testing on Vital Header.
7/11/89	EER 89-0220 approved evaluating system limits with modifications on SW-V103 installed (PM's 89-048 and 89-049). Raised temperature limit to 89 degrees, pending modification implementation, with RBCCW flow at it's design maximum.
7/18/89	Unit 1 special procedure SP 89-027 performed to test system hydraulically.
7/20/89	PM's 89-050 and 89-051 operable.

TABLE 1 (CONT.)

<u>DATE</u>	<u>DESCRIPTION</u>
7/20/89	Started engineering on PM's 89-074 and 89-075 to replace flow orifices for the RHR Pump Room Coolers to restore the design flow rate.
7/21/89	PM's 89-048 and 89-049 operable.
7/31/89	PM's 89-074 and 89-075 approved for installation.
8/10/89	PM 89-074 operable.
8/16/89	PM 89-075 operable.
9/7/89	Started engineering on PM's 89-088 and 89-089 to add LOOP closure logic to SW-V103 and SW-V106.
9/8/89	EER 89-0253 approved establishing design basis for shutdown modes 4 and 5 for Unit 2.
9/11/89	TSI 84-06, Rev. 6, issued implementing shutdown restrictions consistent with EER 89-0253.
9/14/89	Began replacement for unit 2 cross-tie valves.
9/26/89	EER 89-0263, Rev. 0, Issued evaluated U2 outage operation of NSW header with SW vital header unavailable.
10/1/89	Started preparation of PM's 82-219R and 82-219S to replace the 1A and 1B Conventional Pumps discharge valves.
10/1/89	Started Safety System Functional Inspection (SSFI). approx.
10/9/89	Started engineering for PM's 89-098 and 89-099 for permanent resolution to potential for overload of the Service Water Pump Motor thrust bearings.
11/3/89	Started engineering for PM's 89-100 and 89-101 to resolve problem with RHR SW Pump Suction Pressure Alarms.
12/4/89	EER 89-0333, Rev. 0, issued establishing operating restrictions for supplying the Vital Header from the Conventional Service Water Header.

TABLE 1 (CONT.)

<u>DATE</u>	<u>DESCRIPTION</u>
12/15/89	Enforcement Conference Regarding Service Water Operability
12/15/89	EER 89-0166, Rev, 1 issued.
12/19/89	Instrumentation and controls setpoint review for U1 & U2 complete
12/21/89	EER 89-0334, Rev. 0, Issued evaluating the failure of SW Lube Water discharge check valve.
12/22/89	Single Failure Analysis for U1 & U2 system complete
12/27/89	EER 89-0363, Rev. 0, issued establishing operating restrictions on the Conventional Service Water Header.
12/28/89	Service Water System Hydraulic Analysis Report issued.
12/29/89	EER 89-0363, Rev, 1, issued.
12/29/89	Service Water System Project Report issued.
1/2/90	Start engineering on PM's 90-008 and 90-009, Service Water Valve V3 and V4 Logic Change," to provide automatic closure on low Conventional Header pressure.
2/1/90	PM's 82-218R, S, T implemented, replacing Unit 2 Conventional Pumps discharge valves.

TABLE 2

SERVICE WATER PUMP MOTORS

CHRONOLOGY OF EVENTS BEGINNING APRIL, 1989

<u>DATE</u>	<u>EVENT</u>
4/28/89	2-B NSW FAILS
5/12/89	G.E. WORK AUTHORIZATION ISSUED FOR FAILURE ANALYSIS
5/13&14/89	HIGH TEMPERATURES OBSERVED ON 1A & 1C CSw PUMP MOTORS DURING CROSS-TIE LEAKAGE TESTING
5/15/89	OPERATING DATA COLLECTED FOR ALL SERVICE WATER PUMP MOTORS * 5 MOTORS FOUND TO BE OPERATING ABOVE DESIGN TEMPERATURES: AHJ126014 AHJ119015 BHJ202018 BHJ202017 BHJ202016
5/17/89	SWP MOTORS AHJ126014 & BHJ202019 SWAPPED TO IMPROVE SW SYSTEM RELIABILITY EER 89-0164 ISSUED TO ADDRESS VENTILATION ENHANCEMENTS OF SW MOTORS
5/21/89	OVER-VOLTAGE TEST PERFORMED ON MOTOR AHJ126014 (SP-89-026)
5/24/89	G.E. ISSUES PRELIMINARY FAILURE ANALYSIS. PROVIDES JUSTIFICATION FOR SHORT TERM OPERATION OF MOTORS FOUND OPERATING ABOVE DESIGN TEMPERATURE. RECOMMENDS MOTOR INTERNAL MODIFICATIONS TO RESOLVE OVERHEATING.

TABLE 2 (CONT.)

<u>DATE</u>	<u>EVENT</u>
5/31/89	EER 89-0169 ISSUED TO JUSTIFY CONTINUED OPERATION & MANDATE ACTION ITEMS: ACTION ITEM DESCRIPTION: 1A:PERFORM COOLING MODS FOR AHJ126014 (2C-CSW) 1B:PERFORM COOLING MODS FOR AHJ119015 (1C-CSW) 1C:PERFORM COOLING MODS FOR BHJ202016 (2A-CSW) 1D:PERFORM COOLING MODS FOR BHJ202174 (2A-NSW) 2:UPDATE RECOMMENDATIONS FOR MOTOR OPERATIONS 3:REVIEW & APPROVE G.E.MOTOR MODIFICATIONS 4:INSTITUTE LONG RANGE MOTOR MONITORING PROGRAM 5:VISUALLY INSPECT MOTOR POWER CABLES 6:INSTITUTE MONITORING PROGRAM FOR MOTOR BHJ20218
6/26/89	EER 89-0169 A.I. 3 COMPLETE- REVIEW G.E. MOTOR MODS.
6/30/89	EER 89-0212 ISSUED TO DOCUMENT STRUCTURAL REVIEW OF G.E. MOTOR MODS.
7/17/89	EER 89-0169 A.I.1A COMPLETED (2C-CSW MOTOR CHANGE)
7/6/90	EER 89-0213 ISSUED TO DOCUMENT ELECTRICAL REVIEW OF G.E. MOTOR MODS.
7/19/90	G.E. ISSUES ANALYSIS OF SWP THRUST BEARING CAPABILITY UNDER LOW FLOW CONDITIONS. ANALYSIS USED TO ESTABLISH MINIMUM FLOW LIMITS .RECOMMENDED BEARING PERFORMANCE TEST. G.E. WAS REQUESTED TO MODIFY MOTOR BHJ20216 TO FACILITATE BEARING TEST
7/19/89	EER 89-0169 A.I.1B COMPLETED (1C-CSW MOTOR CHANGE)
7/27/89	NONCONFORMANCE REPORT (NCR) A-89-043 ISSUED CONCERNING: *MOTOR OVERHEATING *FAN ROTOR CRACKING *SHAFT CORROSION
8/11/89	EER 89-0169 A.I.1C COMPLETED (2A-CSW MOTOR CHANGE)
9/29/89	EER 89-0169 A.I.1D COMPLETED (2A NSW MOTOR CHANGE) MOTOR BHJ20216 MODIFIED TO ACCEPT THERMOCOUPLE FOR BEARING PERFORMANCE TEST
10/13/89	LER 1-89-019 ISSUED REGARDING SERVICE WATER CONCERNS. 3 ACTION ITEMS ISSUED AGAINST MOTORS. (89B0827,829,830)

TABLE 2 (CONT.)

<u>DATE</u>	<u>EVENT</u>
10/20/89	EER 89-0169 A.I.2 COMPLETED. (STANDING INSTRUCTION TO OPERATIONS FOR MOTOR OPERATION)
11/10/89	EER 89-0169 A.I.6 COMPLETED (INSTITUTE MONITORING PROGRAM FOR MOTOR BHJ20218)
	EER 89-297 ISSUED TO IMPLEMENT MONITORING PROGRAM FOR MOTOR BHJ202018
11/13/89	EER 89-0169 A.I.5 COMPLETED (VISUALLY INSPECT MOTOR POWER CABLES)
11/17/89	EER 89-0169 A.I.4 COMPLETED (INSTITUTE LONG RANGE MOTOR MONITORING PROGRAM)

INTEGRATED ACTION PLAN RESPONSE
TABLE 3

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>TARGET DATE</u>
D9	IMPLEMENT CORRECTIVE ACTION PROGRAM IMPROVEMENTS, INCLUDING:	
D9.A.	DEVELOPMENT OF A POLICY STATEMENT FOR BRUNSWICK.	COMPLETE
D9.B.	ESTABLISH INCENTIVES FOR SELF-IDENTIFICATION OF NONCONFORMANCES.	COMPLETE
D9.C.	ISSUE REVISIONS TO PLP-04 TO LOWER THRESHOLD LEVELS AND IMPROVE TRENDING AND TRAINING.	3/31/90
D9.D.	COMPLETE ADDITIONAL TRAINING ON PLP-04 TO LOWER THRESHOLD LEVELS AND IMPROVE TRENDING AND TRAINING	4/30/90
D9.E	IDENTIFY A BRUNSWICK CORRECTIVE ACTION PROGRAM COORDINATOR.	COMPLETE
D9.F	IDENTIFY A SENIOR HUMAN PERFORMANCE EVALUATION SYSTEM (HPES) COORDINATOR AT BRUNSWICK.	COMPLETE
D9.G	ISSUE PLP-06, SYSTEM ENGINEER PROGRAM.	COMPLETE
D10	FURTHER DEVELOP AND EFFECTIVELY INSTITUTIONALIZE THE CORPORATE CORRECTIVE ACTION PROGRAM THROUGHOUT THE NUCLEAR PROGRAM.	12/31/90
D11	COMPLETE DEVELOPMENT OF A CONSISTENT METHOD FOR PERFORMING SAFETY REVIEWS (10CFR50.59), INCORPORATING THE BEST FEATURES FROM CP&L'S THREE NUCLEAR SITES AND SUPPORTING ORGANIZATIONS, AND NUMARC GUIDANCE.	COMPLETE
D12	COMPLETE NECESSARY TRAINING AND IMPLEMENT CORPORATE 10CFR50.59 PROGRAM.	1990

TABLE 4
FINAL PROJECT REPORT RECOMMENDATIONS

<u>SOURCE</u>	<u>NO.</u>	<u>DESCRIPTION</u>	<u>TARGET COMPLETION DATE</u>	<u>RESP.</u>
PROJECT REPORT 90B0082	PR-1	DEVELOP AND IMPLEMENT AN ENGINEERING SOLUTION FOR CONVENTIONAL PUMP RUNOUT	TO BE DETERMINED	NED
PROJECT REPORT 90B0079-U1 90B0080-U2	PR-2 [EF-7]	COMPLETE MODIFICATIONS 89-088 AND 89-089 TO ADD LOOP CLOSURE TO SW-V103 & SW-V106	U-1 '90 OUTAGE: U-2 '91 OUTAGE	NED
PROJECT REPORT 90B0078	PR-3 [EF-6]	DEVELOP A PERMANENT SOLUTION FOR SW PUMP MINIMUM FLOW REQUIREMENTS	DEC., 90 FOR SOLUTION	NED
PROJECT REPORT	PR-4	INSTALL AN ENGINEERING SOLUTION FOR CONVENTIONAL SW PUMP RUNOUT	TO BE DETERMINED	NED
PROJECT REPORT 89B0822-U1 89B0823-U2	PR-5	INSTALL UNIT 1 CROSSTIE VALVE UPGRADE MODIFICATIONS 82-219R,S & T AND 82-221A	U-2 CURRENT OUTAGE: U-1 '91 OUTAGE:	NED
PROJECT REPORT 90B0075-U2 90B0076-U1	PR-6	DEVELOP AND IMPLEMENT A REFUELING OUTAGE FREQUENCY SYSTEM HYDRAULIC TEST	U-2 CURRENT OUTAGE: U-1 '90 OUTAGE	NED
PROJECT REPORT 90B0074	PR-7 [EF-5]	PROVIDE REVISED SERVICE WATER TECHNICAL SPECIFICATIONS TO THE NRC.	FEB. '90	NED

TABLE 4
FINAL PROJECT REPORT RECOMMENDATIONS

<u>SOURCE</u>	<u>NO.</u>	<u>DESCRIPTION</u>	<u>TARGET COMPLETION DATE</u>	<u>RESP.</u>
PROJECT REPORT	PR-8	COMPLETE PNSC ACTION ITEMS ASSOCIATED WITH THE HYDRAULIC REPORT DATED DEC. 28, 1989.	AS ASSIGNED	NED
PROJECT REPORT 90B0085-U1 90B0086-U2	PR-9	SCHEDULE IMPLEMENTATION OF PLANT MODIFICATIONS 89-100 & 101 TO CORRECT ANNUNCIATOR DEFICIENCY ON PUMP SUCTION	TO BE DETERMINED	NED
PROJECT REPORT	PR-10	COMPLETE PRELIMINARY ENGINEERING ON SYSTEM ENHANCEMENT FOR REDUCTION OF WATER HAMMER POTENTIAL	COMPLETE	NED
PROJECT REPORT 89B0829	PR-11	COMPLETE REWIND AND MODIFICATION OF TWO ADDITIONAL SW PUMP MOTORS IN 1990 AS COMMITTED IN DET RESPONSE	DEC. '90	TECH SUPP
PROJECT REPORT	PR-12	CONTINUE IMPLEMENTATION OF MOTOR TEMPERATURE MONITORING	N/A - PROCEDURES IN PLACE	NED
PROJECT REPORT 90B0083	PR-13	PERFORM MOTOR THRUST BEARING TEST	PRIOR TO THE END OF THE CURRENT UNIT-2 OUTAGE	NED

TABLE 4
FINAL PROJECT REPORT RECOMMENDATIONS

<u>SOURCE</u>	<u>NO.</u>	<u>DESCRIPTION</u>	<u>TARGET COMPLETION DATE</u>	<u>RESP.</u>
PROJECT REPORT 90B0089	PR-14	INCORPORATE MOTOR SHAFT CORROSION MONITORING INTO THE SW PUMP MOTOR MONITORING PROGRAM	TO BE DETERMINED	NED
PROJECT REPORT 90B0077	PR-15	UPDATE DESIGN BASIS DOCUMENT SDCD-43 TO INCORPORATE PROJECT RESULTS	END OF 1991	NED
PROJECT REPORT	PR-16	RESOLVE OPEN COMMENTS & QUESTIONS GENERATED BY THE SW SYSTEM SSFI.	ACTION PLAN TO BE ESTABLISHED BY APRIL, 1990	TECH. SUPP.
PROJECT REPORT 90B0098	PR-17	EVALUATE SW MODIFICATION REVIEW WITH HPCI, CORE SPRAY, & SW SYSTEM SSFIs FOR GENERIC ISSUES	JUNE, 1990	NED
PROJECT REPORT EER 89-0166	PR-18	RESOLVE DESIGN BASIS ISSUE WITH REGARD TO COMPLIANCE WITH SAFETY GUIDE 1, ADDRESSING NPSH REQUIREMENTS FOR ECCS PUMPS. REVISE FSAR AT NEXT REVISION	NEXT FSAR UPDATE	NED