U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-354/86-17

Docket No. 50-354

License No. CPPR-120

Licensee: Public Service Electric and Gas Company

80 Park Plaza - 27C

Newark, New Jersey 07101

Facility Name: Hope Creek Generating Station

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: February 24 - 28, 1986

Inspectors: C Petrone 4/3/86
C. Petrone, Lead Reactor Engineer date

Approved by: for J. Johnson, Chief, Operations Program Section, OB, DRS 4/3/86
date

Inspection Summary: Inspection on February 24-28, 1986 (Report No. 50-354/86-17)

Areas Inspected: Routine announced inspection by a region based inspector of maintenance and I&C surveillance procedures and the implementation of Technical Specification Surveillance requirements in these procedures.

Results: No Violations were identified. One open item was identified regarding the addition of permanent labels on control room and relay room indicators, gages, meters and controls.

1.0 Person Contacted

*R. Salvesen	General Manager - Hope Creek Operations (HCO)
*R. Griffith	Principal QA Engineer
*R. Donges	Lead QA Engineer
*P. Kudless	Maintenance Manager-HCO
*S. LaBruna	Assistant General Manager - HCO
*J. Duffy	Site Engineering
*A. Klein	Startup Coordinator
*J. Fisher	Quality Assurance
*S. Funsten	I&C Engineer
*T. Robbins	Sr. I&C Supervisor
*L. Rice	Senior Staff Engineer
*J. Rucki	Maintenance Engineer

NRC

*R. Borchardt	Senior Resident Inspector

*Denotes those present at exit meeting on February 28, 1986.

2.0 Instrumentation and Controls Department

2.1 References and Requirements

1. 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants.

2. Regulatory Guide 1.33, February 1978, Quality Assurance Program Requirements.

3. ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants.

4. Technical Specifications Sections 3 and 4.

2.2 Program Review

The following administrative and I&C procedures were reviewed to determine if the applicant had established an I&C program consistent with the requirements and reference identified in the previous paragraph. [It should be noted that the applicants plant procedures and maintenance procedures were reviewed during inspection 50-354/86-02. The program for control of Measuring and Test Equipment was reviewed during inspection 50-354/85-33].

IC - AP.77-001(Q) Preparation and Approval of I&C Procedures, Rev. 2, January 30, 1986. This procedure was comprehensive and well written. It contains instructions for the preparation, review, approval and revision of all types of I&C procedures including: Device/equipment calibration; channel calibration; functional tests; senior calibration; generic procedures, and others. It includes specific, detailed controls and requirements for including post test/calibration return to service instructions in all I&C procedures.

IC - AP.77-002(Q), I&C Organization and Responsibilities, Rev. D, October 1, 1984. This procedure defines the organization and responsibilities of the I&C Engineer, the Senior I&C Supervisor, the I&C Supervisor, the Computer Supervisor, and others. The inspector noted this revision still indicates the I&C Division is part of Technical Department, which is no longer true. The I&C Division is now part of the Maintenance Department. The I&C Engineer stated that this, and other I&C procedures, are being revised to reflect this organizational change. However, I&C is still responsible for the inspection, calibration, maintenance, rework, and repair of station instrumentation and control equipment and station computers using approved procedures.

IC - AP.77-003(Q), I&C Document Control and Procedure Review Program, Rev. 1, April 25, 1985, describes I&C document distribution and maintenance, procedure review, and the interface with the Hope Creek master cross reference index. It requires that all I&C procedures be reviewed at an interval not to exceed 24 months.

IC - AP.77-009(Q), Control of I&C Maintenance, Rev. 2, January 26, 1986, describes the preparation, processing, and completion of station work orders for the I&C department.

SA - AP.77-010(Q), Station Preventive Maintenance Program, Rev. 4, January 6, 1986, defines the criteria to be used in determining preventive maintenance requirements for all plant equipment. The preventive maintenance (PM) program shall be implemented using the Inspection Order (IO) system which will inform the responsible department of the details of tasks to be performed. The operability of systems will be maintained by the performance of PM and surveillance tests.

2.3 Results: Based on this review the inspector concluded that the licensee has established an effective program for the preparation, review, approval, issue and control of I&C procedures.

3.0 Surveillance Implementing Procedures

3.1 The inspector selected a sample of surveillance requirements from the "Final Draft" of the proposed Hope Creek Technical Specifications and performed a review to verify that Technical Specification surveillance requirements had been implemented in the licensees procedures. TS Table 4.3.1.1-1, Reactor Protection System Instrumentation Surveillance Requirements was selected for review. This table specifies the functional test and channel calibration requirements for the following functional units:

1. Intermediate Range Monitors:
   a. Neutron Flux - High
   b. Inoperative
2. Average Power Range Monitor
   a. Neutron Flux - Upscale, Setdown
   b. Flow Biased Simulated Thermal Power - Upscale
   c. Fixed Neutron Flux - Upscale
   d. Inoperative
   e. Downscale
3. Reactor Vessel Steam Dome Pressure - High
4. Reactor Vessel Water Level - Low, Level 3
5. Main Steam Line Isolation Valve - Closure
6. Main Steam Line Radiation - High
7. Drywell Pressure - High

8. Scram Discharge Volume Water Level - High

   a. Float Switch
   b. Level Transmitter/Trip Unit

9. Turbine Stop Valve - Closure

10. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low

11. Reactor Mode Switch Shutdown Position

12. Manual Scram

Based on review of the licensees procedure status lists and discussions with cognizant licensee personnel, the inspector determined that the licensee had identified and written surveillance procedures (I&C, Maintenance, and Operations) to address each Channel Functional Test and Channel Calibration contained in TS Table 4.3.11-1. The inspector also reviewed a printout of the licensees' Inspection Order system which is used to schedule the licensee's surveillance procedures. This review confirmed that all surveillance tests, except one, had been scheduled at a frequency which agreed with the interval specified in TS Table 4.3.1.1-1. The one exception was the Channel Function Test for the Scram Discharge Volume Water Level-High float switch. The TS specified a frequency of monthly while the licensees ID status had scheduled the test Quarterly. The licensee's representative stated that the discrepancy was due to a change in the Final Draft of TS. This final draft had been issued the previous week and was still undergoing review by the licensee for other changes. The inspector reviewed the previous revisions of TS and confirmed that the surveillance frequency had been revised from quarterly to monthly. The inspector also reviewed the licensee's program for the identification of other T.S. changes and noted that, although there was a substantial effort yet to be completed, the effort appeared to be well controlled.

3.2 The inspector selected a sample of ten procedures identified above for detailed review. The adequacy of precautions, prerequisites, procedure steps, and data tables were evaluated. In addition, the inspector confirmed that the Trip Setpoints and Allowable Values specified in TS Table 2.2.1-1 Reactor Protection System Instrumentation Setpoints, had been accurately incorporated in the applicable surveillance procedure. The following procedures were reviewed.

--IC-FT.SE-006(Q) Functional Test: Nuclear Instrumentation System - Channel B, IRM C51-K601B, Rev. 0.

--IC-CC.SE-005(Q), Channel Calibration: Nuclear Instrumentation System - Channel A, IRM C51-K601B, Rev. 0, October 15, 1985.

--IC-FT.AB - 010(Q), Functional Test: Main Steam-Div. 2, Channel B1, B21-F022A, F022C, F028A, F028C, MSIV Closure Trip Rev. 0, August 26, 1985.

--MD-ST.AB-001(Q), Calibration MSIV Closure Trip, Rev. 0, February 8, 1986.

--IC-FT.BF-001(Q), Functional Test: Control Rod Drive Hydraulic - Division 1, Channel A1A, CH-N601A, Scram Discharge Volume High Water Level, Rev. 0, October 22, 1985.

--IC-FT.SE-016(Q) Functional Test: NIS - Average Power Range Monitor, Channel D, Rev. 0, November 15, 1985.

--IC-CC.BB-035(Q) Channel Calibration: Nuclear Boiler - Division I, Channel A1, B21-N678A, High Reactor Pressure, Rev. 0, October 15, 1985.

--IC-FT.BB-023(Q), Functional Test: Nuclear Boiler, Division I, Channel A1, B21-N678A, High Reactor Pressure, Rev. 0, October 24, 1985.

--OP-ST.SF-003(Q), RPS Manual Scram Test-Monthly Rev. 0, January 9, 1986.

--IC-CC.BF-001(Q), Channel Calibration: CRD Hydraulic - Division I Channel C11-N601A, Scram Discharge Volume High Water Level.

Results:

In general, the procedures were well written and technically accurate. Detailed "removal from service" and "return to service instructions" instructions, including check-off lists and second party verification signatures were provided, were appropriate. Seven of the Ten procedures reviewed contained data blanks marked "LATER". The cover sheet on these procedures state that the procedure was approved with the exception of information to be provided and that the procedure is not to be used for actual startup, test, or plant operation until it is

revised to replace all items marked "LATER" with appropriate information. These procedures will be used to validate the content and intent of the procedure until controlled transmittals of Instrument Calibration Data (ICD) cards are received from PS Site Engineering with the needed "LATER" data.

The licensee's management stated that they plan to complete the incorporation of all "LATER" data in the required procedures prior to licensing. At the inspectors request, the licensee reviewed the status of all I&C and maintenance procedures and provided the following status to the inspector:

I&C Department Procedures

Mode Required	Total Procedures	Approved Procedures	Approved W/ Laters	Not Yet Approved
1, 2, 3	588	542	251	46
4, 5	282	232	95	50
No Mode Impact	330	318	14	12
Totals	1200	1092	360	108

Maintenance Department Procedures

Mode Required	Total Procedures	Approved Procedures	Approved W/ Laters	Not Yet Approved
1, 2, 3	16	15	0	1
4, 5	38	38	0	0
No Mode Impact	366	356	5	10
Totals	420	409	5	11

The inspector noted that approximately one third of the 282 I&C procedures required for fuel load still contained data to be provided LATER. While the addition of this data is only a small percentage of the work involved in preparing the procedure, it will require a substantial effort to complete prior to licensing. The licensee does, however, have good control of the status of procedure issue.

4.0 Observations of Surveillance Testing Activities

On February 26, 1986 the inspector observed the performance of portions of a surveillance functional test IC-FT.BE-00(Q), ADS-Division 2, Logic B, E21-N655F, E11-N655F, E11-N 656F, by two I&C Technicians. The inspector verified that:

--All prerequisites were completed satisfactory;

--MT&E was calibrated;

--Required permission was obtained from the licensed Senior Nuclear Shift Supervisor;

--I&C technicians were well briefed, knowledgeable, and very professional;

--Procedure steps were followed and signed off as required; and,

--Results obtained met acceptance criteria.

The inspector witnessed the functional testing of the E21-N655F trip unit and verified that the functional test had been performed successfully. The technicians were able to explain in detail the reasons for the procedure steps and were aware of the importance of procedure compliance. The procedure was well written, complete, and did not require any temporary changes. However, during performance of step 5.1.9 the inspector noted the indicator light on the front of the control cabinet in the relay room was not labeled. To identify the indication light the technicians had to open up the door on the back of the relay cabinet and read the label on the backside of the front panel. This same information from the backside of the panel was handwritten in pencil on the front panel. While it is possible to rely on the labels on the backside of the panel it is clear it would be more convenient to add these labels to the front panel. In this case, replace the handwritten label with a permanent, controlled label.

The inspector discussed these concerns with the I&C Engineer and made a walk through tour of the relay room and control room. During this tour it was noted that numerous panels and meters had handwritten labels added to the front panels as an identification aid during performance of surveillance tests. The inspector requested that the licensee review the labeling on instrument panels meters, and gages in the control room and relay room to determine if the labels are adequate to identify switched, gaged, meters, and indicator lights used during surveillance activities. Handwritten labels should be replaced by permanent labels and agree with the designation used in the surveillance and operations procedures.

At the exit meeting the licensee's management agreed to implement a program to review and install adequate permanent labels on switches, gages, meters, and indicator lights in the control room and relay room. Since these missing labels are generally on back panels and normally used only during the performance of routine surveillance activities; not for plant operation, the inspector agreed with the licensee it would be better to systematically identify these labels during the performance of the surveillance tests rather than attempt to institute a crash labeling program. The licensee agreed to complete this re-labeling by completion of power ascension testing. This is unresolved item 50-354/86-17-01.

5.0 Quality Assurance

The inspector reviewed the licensee's Quality Assurance Department involvement in the review of I&C surveillance activities. The inspector reviewed the following Station QA Surveillance Reports:

No. 85-04, March 4 - August 1985, I&C Dept.-Balance of Plant, I&C Device Calibration in the Shop and Field;

No. 85-122, September 24-30 1985, Calibration Control-M&TE, Compliance with Requirements for Controlling Calibration and Issue of Equipment Primarily For Testing;

No. 86-030, January 6, 1986, Calibration Control, Calibration of Drywell Pressure Transmitter; and

No. 86-033, February 1, 1986, Calibration of CRD Hydraulic Control Unit Scram Accumulator Pressure Detectors.

Based on this review, and discussions with QA personnel about the scheduling of surveillance activities, the inspector concluded that the licensee had an active QA program that routinely reviewed I&C department activities. No discrepancies were identified.

6.0 Management Meetings

The inspector discussed the scope of the inspection and presented his findings to the licensee's management personnel at a meeting on February 28, 1986.

The inspector did not give any written material to the licensee during this inspection.