

March 13, 1991

Docket No. 50-354

Mr. Steven E. Miltenberger  
Vice President and Chief Nuclear  
Officer  
Public Service Electric & Gas Company  
Post Office Box 236  
Hancocks Bridge, New Jersey 08038

Dear Mr. Miltenberger:

SUBJECT: LICENSE CONDITION 2.C.(5) HOPE CREEK GENERATING STATION (TAC  
NO. 79330)

The Commission has issued the enclosed Amendment No. 40 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of a change to the license in response to your application dated December 28, 1990.

This amendment removes existing License Condition 2.C.(5), which has been satisfied, and replaces it with a new License Condition.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

Steve Dembek, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 40 to License No. NPF-57
2. Safety Evaluation

cc w/enclosures:  
See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

March 13, 1991

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Sincerely,

A handwritten signature in cursive script, appearing to read "Steve Dembek".

Steve Dembek, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Steven E. Miltenberger Hope Creek Generating Station  
Public Service Electric & Gas Co.

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40  
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for amendment filed by the Public Service Electric & Gas Company (PSE&G) dated December 28, 1990 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

- 2. Accordingly, Facility Operating License No. NPF-57 is hereby amended by changing License Condition 2.C.(5) to read as follows\*:

2.C.(5) Solid State Logic Modules

PSE&G shall continue, for the life of the plant, a reliability program to monitor the performance of the Bailey 862 SSLMs installed at Hope Creek Generating Station. This program should obtain reliability data, failure characteristics, and root cause of failure of both safety-related and non-safety-related Bailey 862 SSLMs. The results of the reliability program shall be maintained on-site and made available to the NRC upon request.

- 3. This license amendment is effective as of its date of issuance and shall be implemented within sixty days of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Walter R. Butler, Director  
 Project Directorate I-2  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Attachment:  
 Page 4 of License

Date of Issuance: March 13, 1991

\*Page 4 of the License is attached, for convenience for the composite License to reflect this change.

OFC	: PDI-2/LA	: PDI-2/BA	: SICB	: OGC	: PDI-2/D
NAME	: M. Bryen	: S. Dembeck	: S. Newberry	: S. Altal	: W. Butler
DATE	: 2/19/91	: 2/19/91	: 2/25/91	: 3/5/91	: 3/13/91

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 Document Name: [TAC NO 79330]]

on condition  
 not held until  
 3/8/91

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FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director  
Project Directorate I-2  
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Attachment:  
Page 4 of License

Date of Issuance: March 13, 1991

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(4) Inservice Inspection (Section 6.6, SER; Sections 5.2.4.3 and 6.6.3, SSER No. 5)

- a. PSE&G shall submit an inservice inspection program in accordance with 10 CFR 50.55a(g)(4) for staff review by October 11, 1986.
- b. Pursuant to 10 CFR 50.55a(a)(3) and for the reasons set forth in Sections 5.2.4.3 and 6.6.3 of SSER No. 5, the relief identified in the PSE&G submittal dated November 18, 1985, as revised by the submittal dated January 20, 1986, requesting relief from certain requirements of 10 CFR 50.55a(g) for the preservice inspection program, is granted.

(5) Solid State Logic Modules

PSE&G shall continue, for the life of the plant, a reliability program to monitor the performance of the Bailey 862 SSLMs installed at Hope Creek Generating Station. This program should obtain reliability data, failure characteristics, and root cause of failure of both safety-related and non-safety-related Bailey 862 SSLMs. The results of the reliability program shall be maintained on-site and made available to the NRC upon request.

(6) Fuel Storage and Handling (Section 9.1, SSER No. 5)

- a. No more than a total of three (3) fuel assemblies shall be out of approved shipping containers or fuel assembly storage racks or the reactor at any one time.
- b. The above three (3) fuel assemblies as a group shall maintain a minimum edge-to-edge spacing of twelve (12) inches from the shipping container array and the storage rack array.
- c. Fresh Fuel assemblies, when stored in their shipping containers, shall be stacked no more than three (3) containers high.

(7) Fire Protection (Section 9.5.1.8, SSER No. 5; Section 9.5.1, SSER No. 6)

PSE&G shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility through Amendment No. 15 and as described in its submittal dated May 13, 1986, and as approved in the SER dated October 1984 (and Supplements 1 through 6) subject to the following provision:

PSE&G may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. NPF-57

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated December 28, 1990, Public Service Electric & Gas Company requested an amendment to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. The proposed amendment would replace the existing license condition 2.C.(5), regarding Bailey Solid State Logic Modules (SSLMs), with a new license condition 2.C.(5). The existing license condition 2.C.(5) requires that the licensee implement a SSLM reliability program and submit the results of the reliability program prior to the end of the first refueling outage. The new license condition 2.C.(5) requires that the SSLM reliability program be continued for the life of the plant.

2.0 BACKGROUND

During the review of the Final Safety Analysis Report (FSAR) issued for the Hope Creek Generating Station, Public Service Electric and Gas Company (PSE&G) identified the Bailey 862 System as providing an interface between the engineered safety features (ESF) systems and the main control room. This system contained solid state logic modules (SSLMs) which until now had not been used in a safety related system and had not been reviewed or approved by the staff for use in a safety related system. The staff expressed several concerns regarding the extensive use of the Bailey SSLMs within numerous safety systems. These concerns were resolved with the exception of the at-power testability concern.

The testability concern centered on the fact that 1) with such an extensive use of the SSLMs, including a common SSLM actuation path for both automatic and manual initiation circuitry, a failure of a SSLM could render multiple safety systems inoperable, which would prevent a safe shutdown of the plant, 2) the logic for the manual initiation of a number of safety systems was interlocked with the logic for the automatic initiation of the same systems with the interlocking occurring through the SSLMs and 3) the reliability of the SSLMs had not been demonstrated to be acceptable.

Because of these concerns, the staff requested additional information from the licensee regarding the Bailey 862 SSLM design, their reliability and availability factors, and their EMI rejection capability.

The licensee responded to the staff concerns by letters dated July 25, 1985 (Ref. 1), October 17, 1985 (Ref. 2), and November 20, 1985 (Ref. 3). In general, the letters described the seismic and environmental qualification tests, the EMI/RFI tests that were conducted, and the modifications made to the SSLM's input circuit as a result of the EMI/RFI tests. The letters further stated that one module had failed a common mode test and a transverse mode test, and that two modules had failed the seismic and environmental qualification tests by malfunctioning at a low relative humidity of 60%. The staff reviewed the tests and the supporting data submitted by the licensee and stated that by incorporating this new technology (Bailey SSLMs) into safety systems at Hope Creek, the licensee was introducing both the potential for improving system performance and the potential for introducing new failure modes within the safety systems. To further aid in resolving their concern with respect to the reliability of the SSLMs, the staff requested that the licensee provide:

- (1) Adequate justification for the two test failures that were noted in the above references.
- (2) Verification that the single failure criterion can be satisfied for each case where the minimum number of operable channel requirements that will be proposed is less than the total number of channels provided for each safety-related system that uses the SSLMs.
- (3) A qualitative assessment of the Bailey 862 SSLM channel behavior that was observed during the channel check procedure.
- (4) Verification that the channel functional tests as discussed in the Hope Creek Technical Specifications will include a verification of the in-situ operability of each of the safety-related SSLMs.

The licensee responded to these concerns by letters dated December 23, 1985 (Ref. 4), December 26, 1985 (Ref. 5) and February 3, 1986 (Ref. 6). The staff reviewed this additional information provided by the licensee and concluded that the information submitted was acceptable to resolve Items 1, 2, and 3. However, the staff was not able to resolve Item 4 - the verification, through testing, of in-situ operability. In their letter dated February 3, 1986 (Ref. 6), the licensee indicated that monthly functional testing would not be performed on any of the safety related SSLM channels however, the licensee proposed to conduct logic functional tests on the SSLMs on an 18-month frequency as is required by the Standard Technical Specifications. The licensee in an effort to further demonstrate the reliability of the SSLMs by a letter dated February 14, 1986 (Ref. 7) as supplemented by a letter dated February 24, 1986 (Ref. 8), committed to implement a surveillance test program for a test population of 557 SSLMs (the number of modules performing a safety related function). The staff stated an opinion that reliability data should be achieved by in-situ testing and not through physical removal of the SSLMs from the system as was being proposed by the licensee. The staff noted that the initial review and acceptance of the SSLM design by the staff was based, in part, on its understanding that the SSLM design contained enhanced testability features which the staff concluded was a major design advantage of the SSLM concept.

In view of the licensee's position, the staff recommended that the licensee examine the existing test procedures which will be performed under cold conditions every 18 months, to determine if the logic functional tests, with or without modifications, can be used at-power without challenging the plant safety systems. Additionally, the licensee was asked to investigate other methods by which an increase in the frequency of testing could be achieved. In a letter dated April 8, 1986 (Ref. 9), the licensee committed to provide the staff with a description of the options available to perform in-situ surveillance testing, at-power, of the SSLMs that come under the surveillance of the Technical Specifications, ie, the safety related modules.

The licensee followed up on this commitment by letter dated May 23, 1986 (Ref. 10) which contained, among other items, a description of four options to perform in-situ, at-power surveillance testing of the safety related SSLMs that were covered by the Hope Creek Technical Specifications and a proposal to develop a program by which reliability data associated with the Bailey 862 SSLMs would be gathered, from other users, to demonstrate the reliability of the Bailey units. In reviewing the four options presented by the licensee, the staff had determined that selecting Options 1, 2 or 3 would result in disabling equipment required to be available to operate or would possibly inhibit safety functions or permissives on equipment already in operation. The staff concluded that the licensee should adopt Option 4 - maintain the current Hope Creek configuration and testing in accordance with current Technical Specification requirements - and initiate a reliability program.

In letters dated June 13, 1986 (Ref. 11) and June 24, 1986 (Ref. 12), the licensee provided details of the proposed reliability program intended to demonstrate the reliability of the Bailey 862 SSLM modules. The program would consist of three major tasks as follows:

1. An in-plant reliability program to monitor the performance of the Bailey 862 SSLMs installed at Hope Creek. This task would obtain reliability data, failure characteristic information, and the root cause of any failure of either a safety related or nonsafety related SSLM.
2. Contract an accredited laboratory to perform physical testing of a statistical sample of the Bailey 862 SSLMs. The tests would simulate plant service conditions and would include the effects of aging.
3. Bailey Controls Company (BCCo) would collect reliability data over a period of at least 18 months from other industrial users of the Bailey 862 SSLMs.

The staff recommended that the reliability program be made a license condition to be added to the Hope Creek full power license, with the results of the program submitted to the staff prior to the end of the first refueling outage.

### 3.0 EVALUATION

By letter dated April 4, 1988 (Ref. 13), the licensee satisfied License Condition 2.C.(5) of the Hope Creek Operating Licensee NPF-57. The letter closed out previous commitments made by the licensee as well as transmitted the results of the program which was designed to demonstrate the reliability of the Bailey 862 SSLM modules. The letter contained eight (8) attachments which are listed below:

1. Reliability Summary Report for the Bailey 862 Solid State Logic Module, March 31, 1988.
- 2a. Component Failure Analysis Report, 862 Logic Module, P/N 6631291A1, Report No. QR-5106-E93-75-ADD1, Rev "0", January 12, 1988.
- 2b. Functional Verification Report, 862 Logic Module, P/N 6631291A1, Report No. QR-5106-E93-75, Rev "A", March 14, 1988.
3. Site Related Module Reliability Improvements.
4. Bailey Reliability Data.
5. Modification of Existing Test Equipment.
6. Verification of Safety Related Functions.
7. In-Situ Testing Feasibility Study, Report No. MPR-1056, "Hope Creek Nuclear Generating Station Feasibility Study for In-Situ Testing of Bailey 862 Solid State Logic System for Class 1E Equipment," March 1988.
8. Accelerated Aging and Cycling, Report No. 48815, "Reliability Test Program," March 25, 1988

Attachment No. 1, the executive summary report, written by the licensee, closes out all outstanding commitments and addresses the results of the reliability program. This attachment will be addressed as it applies to the remaining individual attachments.

Attachment No. 2 reports on the testing of the logic modules which had failed in-service at the Hope Creek site. PSE&G contracted BCCo to perform a failure analysis on the 34 SSLMs which had malfunctioned as of November 1986. Bailey tested the failed modules and compiled a list of 45 failed components of which 38 were then subjected to individual component analysis. Outside of identifying the failed components, the Bailey module tests were inconclusive in that the tests were not able to determine the root cause of the module failure other than a component had failed. The 38 components selected for detailed microscopy analysis consisted of 19 - 4N36 Optical Couplers, 7 - ULN2001A Buffer Outputs, and 12 - 4050B CMOS Gates. These three components comprised 84% of the total component failures.

In its summary on the SSLM Failure Analysis Program, Attachment No. 1 concluded that BCCo was unsure of the root cause of the optical isolator failures, that the devices may not have been properly screened (QC) upon receipt, and that "many of the failures were externally induced." Overall, the data contained in this Attachment did not appear to support the reliability claim for the modules.

Attachment No. 3 details the results of a Hope Creek site inspection conducted by a team from the Bailey Controls Company which consisted of personnel from Quality Assurance, Engineering, and Field Service. The team inspected the licensee's techniques for the storage, shipping, and trouble-shooting of the 862 system at the Hope Creek site. The BCCo team identified what they considered to be deficiencies in seven (7) areas of interest and forwarded the list to the licensee accompanied by a recommendation for correcting each deficiency. The licensee then either incorporated the recommendation or submitted supporting data for not incorporating the recommendation. This attachment satisfied a requirement to have BCCo review the Hope Creek handling of the Bailey 862 logic modules as documented in PSE&G letter dated October 5, 1986 (Ref. 14).

Attachment No. 4 addresses Task No. 3 of the Reliability Program and satisfied a commitment documented by References 11 and 12. An analysis of the data, forwarded by Bailey showed the 862 system to have a failure rate ranging from a low of 0.8 to a high of 1.4 failures per million hours of operation. This set of data was supplied to Bailey by other commercial users of the 862 system. The 862 System failure rate will be addressed again in this report.

Attachment No. 5 documents the fulfillment of a commitment made by the licensee to modify the SSLM test equipment and procedures to permit testing of the modules without manipulating the voltage selection jumpers (staple jumpers). The existing SSLM bench tester was modified and is now capable of testing the modules in their field configured state. Station procedure 1C-GP.ZZ-031Q, "General Procedure-Bailey Logic Module, Type 862," was revised to allow functional tests of the modules without manipulation of the staple jumpers. It should be noted that the use of the SSLM bench tester still requires that the modules be removed from the equipment cabinets in order to be tested. The bench tester, as modified, does not support in-situ testing.

Attachment No. 6 documents the fulfillment of a commitment made by the licensee to retest and verify all safety related functions of a Bailey SSLM by procedure whenever a logic change is made to a module. Station procedures SA-AP.ZZ-050, "Station Retest Program" and 1C-GP.ZZ-031(Q), "General Procedure - Bailey Logic Module, Type 862" require the retest of the safety features designed into a logic module.

Attachment No. 7 reports on a comprehensive study of the in-situ testing possibilities of the Bailey 862 system. The study was performed by MPR Associates, Inc. (MPR) for PSE&G. In the study MPR identified three objectives that the in-situ testing of the modules should meet and they are:

1. The in-situ tests should fully exercise as much as possible the logic and the input/output components of the logic module.

2. The tests should be performed without decreasing the overall system reliability.
3. The testing should be accomplished on-line (at-power) without adversely affecting the plant equipment alignment.

In conjunction with the three objectives, MPR studied three possible locations for the insertion and extraction of the test signals. Under consideration were the field wire termination cabinets, the module backplanes, and the logic modules themselves.

MPR examined the field wire termination cabinets and the module backplanes and determined that the required rewiring would be too extensive. Also the modifications would not meet the three in-situ test objectives. The third alternative, modifying the logic cards and modules, was determined by MPR to meet all of the in-situ testing objectives and subsequently was given a detailed evaluation.

The evaluation concluded that all logic phases of the modules could be tested in-situ, however, this alternative would require extensive circuit board modifications as well as extensive modifications to the front panel of the logic modules and also some modifications to the Bailey bench tester. The evaluation also showed that in certain cases during the in-situ testing non-disabled logic signals could result in actuation of field equipment and alarms. A study showed that this spurious actuation would not adversely affect plant alignment. MPR reasoned that appropriate guidance for the operators to deal with this problem during in-situ testing could be developed which would result in only minor added burden for the operators.

The summary report discounted the recommendation made by MPR for several reasons, two of which are 1) the testable SSLMs (result of the proposed modifications) would have no previous operating history to justify them as an improvement to system reliability, and 2) PSE&G does not consider in-situ testing as a viable or cost effective method of improving plant reliability.

Attachment 8 contains the details of the Accelerated Aging Program conducted on the Bailey modules which simulated a 2-year, a 5-year, and a 10-year plant life. The program contained a test sequence which started with a baseline functional test at ambient conditions, followed by thermal aging, environmental functional tests, and ending with another ambient conditions baseline functional test. The environmental functional tests included tests such as temperature (low humidity), logic cycling and humidity tests (high temp, high humidity). The thermal aging consisted of soaking the devices at a high temperature for a prolonged period of time. The 2-year plant life was simulated by soaking the devices at 85 C (185 F) for a time period of 179 hours, for the 5-year life simulation, a soak temperature of 95 C (203 F) for a period of 210 hours was selected, and the 10-year plant life was simulated by soaking the devices at 95 C (203 F) for 420 hours.

The tests, at an elevated humidity, performed after each thermal aging cycle, involved raising the devices' environment to 110 F @ 80% RH for 96 hours and performing the functional tests under these conditions, then changing the environment to 140 F @ 90-95% RH for 24 hours and retesting the devices. These tests proved to be more than the SSLMs could handle as the majority of them suffered from an "out of spec" condition during the tests. Of the 29 modules tested in the accelerated aging program, only six of them did not exhibit some sort of an anomaly. The failure modes were determined by the testing organization to be non-time dependent or else indeterminate and no failures were credited to the aging process. Three modules were removed from the test program as a result of component failure.

In the Accelerated Aging Program, modules consistently failed during the tests which were performed at an elevated humidity and temperature of 110 F and 80% RH and 140 F and 90% RH. These test limits were extracted from Bailey's Product Information for the SSLMs and incorporated into the Test Specification by the licensee. The licensee discussed this test with Bailey and the Bailey representative stated that the upper limits of temperature and relative humidity were not intended to occur simultaneously. The licensee then attempted to modify the test procedures before the aging program was completed, but was not successful. Consequently, the modules were not tested under the conditions of low temperature coupled with high relative humidity or with high temperature coupled with low relative humidity.

As mentioned earlier, Attachment No. 1 is the Reliability Summary Report in which the licensee provides a discussion on the Bailey 862 SSLM reliability program as described by the other 11 Attachments. Of particular interest is the apparent agreement of the failure modes noted in the licensee's "In-House Data Assessment Program" and the Accelerated Aging Program. The data assessment program included tracking in-service module failures on a monthly basis. The period of time covered by this program was from March 1986 through February 1988. In the data assessment program, the licensee concluded that the "increase in failures experienced through the summer months is a result of higher average Relative Humidity in the Lower Equipment Control Room (LECR) which houses the 862 system." The relative humidity would go from 35% RH in the winter months to 65% RH during the summer months (high temperature, high humidity). The results of this program conducted by the licensee is contradictory to the previous conclusions reached during the licensing review that the Bailey 862 SSLMs were qualified for both high temperature and high humidity ranges.

Realizing that the Bailey modules would not operate under adverse environmental conditions of high temperature and high humidity occurring simultaneously, the licensee then embarked upon a program to modify the HVAC system servicing the LECR. The system was modified to maintain the relative humidity between 20% and 60% year round. The tests that were performed on the Bailey system indicate that the modules cannot operate within their published specifications as contained in Attachment No. 7.

Finally, the licensee compared the latest Hope Creek failure rates of 1.15, 1.20 and 1.25 (References 15, 16 and 17 respectively), failures per million hours of service with the recommended failure rate contained in IEEE Std 500-1984, "IEEE Guide to the Collection and Presentation of Electrical Reliability Data for Nuclear Power Generating Stations." This standard states a recommended failure rate of 1.19 failures per million hours of service for "Solid State Computation Modules" and with a composite failure rate of 1.15 for "Computation Modules." Also, of particular interest, the IEEE standard states a recommended failure rate (composite) rate for Protective Relays of 0.85 and for Control Relays of 0.07 failures per million hours of operation.

This effort on the part of the licensee was intended to demonstrate that the Bailey SSLMs have an operational reliability as good as or better than mechanical relays performing the same safety related functions. The licensee has not been able to demonstrate that the SSLMs are as reliable or more reliable than relays performing the same safety function.

Because of this, we conclude that the licensee should make all reasonable and practical efforts to continue improving the reliability of the Bailey 862, System. As part of this effort, the licensee should continue tracking the performance of the Bailey 862 SSLMs and correcting the root causes of failures that occur. The licensee committed by letter dated September 10, 1990 (Ref. 15) to continue (for the life of the plant) the reliability tracking program as originally implemented by HCGS.

This program will continue to obtain the reliability data, failure characteristic information, and note the cause and corrective action of failure of both safety-related and non-safety-related Bailey 862 SSLMs failures on a continuous basis. This program will continue to indicate the actual in-plant performance of the Bailey 862 SSLMs. The results of this program will be made available to NRC upon request. In addition, the licensee stated that the improvements made in temperature and humidity control have been incorporated as permanent changes to the appropriate HVAC systems. This should contribute towards improving SSLM performance.

The staff concludes that this approach is acceptable and that the current license condition has been satisfied. However, the commitment to continue the SSLM reliability program for the life of the plant should be retained as a condition in the Hope Creek operating license. Therefore, the staff concluded that the following license condition, proposed by the licensee, be added to the full-power license:

(5) Solid State Logic Modules

PSE&G shall continue for the life of the plant, a reliability program to monitor the performance of the Bailey 862 SSLMs installed at Hope Creek Generating Station. This program should obtain reliability data, failure characteristics information, and root cause of failure of both safety-related and non-safety-related Bailey 862 SSLMs. The results of the reliability program shall be maintained on-site and made available to the NRC upon request.

As noted in Hope Creek SSER No. 6, the staff has categorized the on-line testability of protection systems at power as Generic Issue 120. Any requirements that emanate from the resolution of this generic issue will be applied to the protection systems at Hope Creek.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted, area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (56 FR 4870) on February 6, 1991 and consulted with the State of New Jersey. No public comments were received and the State of New Jersey did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Dated: March 13, 1991

Principal Contributor:

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6. Letter, C. A. McNeill (PSE&G) to E. Adensam (NRC), "Bailey 862 Solid State Logic Module," February 3, 1986.
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15. Letter, S. LaBruna (PSE&G) to U.S. NRC, "Bailey Solid State Logic Modules Reliability Program," September 10, 1990.
16. Letter, S. LaBruna (PSE&G) to U.S. NRC, "Bailey Solid State Logic Modules Reliability Program," October 26, 1990.
17. Letter, S. LaBruna (PSE&G) to U.S. NRC, "Bailey Solid State Logic Modules Reliability Program," February 1, 1991.