January 29, 1997

Mr. George A. Hunger, Jr.
Director-Licensing, MC 62A-1
PECO Energy Company
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box No. 195
Wayne, PA 19087-0195

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 (TAC NOS. M95803 AND M95804)

Dear Mr. Hunger:

The Commission has issued the enclosed Amendment No. 120 to Facility Operating License No. NPF-39 and Amendment No. 84 to Facility Operating License No. NPF-85 for the Limerick Generating Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 29, 1996, as supplemented by letters dated December 5, 1996, and January 15, 1997.

These amendments revise TS Surveillance Requirement (SR) 4.5.1.d.2.b to delete the requirement to perform in-situ functional testing of the Automatic Depressurization System (ADS) valves once every 24-months as part of start-up testing activities.

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

Sincerely,

Original Signed by
Frank Rinaldi, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-352/353

Enclosures:
1. Amendment No. 120 to License No. NPF-39
2. Amendment No. 84 to License No. NPF-85
3. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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3. Safety Evaluation

cc w/encls: See next page

Mr. George A. Hunger, Jr.
PECO Energy Company

Limerick Generating Station,
Units 1 & 2

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Philadelphia Electric Company (the licensee) dated March 29, 1996, as supplemented by letters dated December 5, 1996, and January 15, 1997, 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;

   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.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-39 is hereby amended to read as follows:

   Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 120 , are hereby incorporated into this license. Philadelphia Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz

John F. Stolz, Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: January 29, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 120

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove	Insert
3/4 5-5	3/4 5-5

2. For the HPCI system, verifying that:

   a) The system develops a flow of at least 5600 gpm against a test line pressure corresponding to a reactor vessel pressure of ≥ 200 psig plus head and line losses, when steam is being supplied to the turbine at 200 + 15, - 0 psig.**

   b) The suction is automatically transferred from the condensate storage tank to the suppression chamber on a condensate storage tank water level - low signal and on a suppression chamber water level - high signal.

3. Performing a CHANNEL CALIBRATION of the CSS, LPCI, and HPCI system discharge line "keep filled" alarm instrumentation.

4. Performing a CHANNEL CALIBRATION of the CSS header ΔP instrumentation and verifying the setpoint to be ≤ the allowable value of 4.4 psid.

5. Performing a CHANNEL CALIBRATION of the LPCI header ΔP instrumentation and verifying the setpoint to be ≤ the allowable value of 3.0 psid.

d. For the ADS:

1. At least once per 31 days, performing a CHANNEL FUNCTIONAL TEST of the accumulator backup compressed gas system low pressure alarm system.

2. At least once per 24 months:

   a) Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, but excluding actual valve actuation.

   b) Verify that when tested pursuant to Specification 4.0.5 that each ADS valve is capable of being opened.

   c) Performing a CHANNEL CALIBRATION of the accumulator backup compressed gas system low pressure alarm system and verifying an alarm setpoint of 90 ± 2 psig on decreasing pressure.

** The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test. If HPCI OPERABILITY is not successfully demonstrated within the 12-hour period, reduce reactor steam dome pressure to less than 200 psig within the following 72 hours.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 84
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Philadelphia Electric Company (the licensee) dated March 29, 1996, as supplemented by letters dated December 5, 1996, and January 15, 1997, 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;

   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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-85 is hereby amended to read as follows:

   Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 84 , are hereby incorporated in the license. Philadelphia Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: January 29, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 84

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove	Insert
3/4 5-5	3/4 5-5

2. For the HPCI system, verifying that:

   a) The system develops a flow of at least 5600 gpm against a test line pressure corresponding to a reactor vessel pressure of ≥ 200 psig plus head and line losses, when steam is being supplied to the turbine at 200 + 15, - 0 psig.**

   b) The suction is automatically transferred from the condensate storage tank to the suppression chamber on a condensate storage tank water level - low signal and on a suppression chamber water level - high signal.

3. Performing a CHANNEL CALIBRATION of the CSS, LPCI, and HPCI system discharge line "keep filled" alarm instrumentation.

4. Performing a CHANNEL CALIBRATION of the CSS header ΔP instrumentation and verifying the setpoint to be ≤ the allowable value of 4.4 psid.

5. Performing a CHANNEL CALIBRATION of the LPCI header ΔP instrumentation and verifying the setpoint to be ≤ the allowable value of 3.0 psid.

d. For the ADS:

1. At least once per 31 days, performing a CHANNEL FUNCTIONAL TEST of the accumulator backup compressed gas system low pressure alarm system.

2. At least once per 24 months:

   a) Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, but excluding actual valve actuation.

   b) Verify that when tested pursuant to Specification 4.0.5 that each ADS valve is capable of being opened.

   c) Performing a CHANNEL CALIBRATION of the accumulator backup compressed gas system low pressure alarm system and verifying an alarm setpoint of 90 ± 2 psig on decreasing pressure.

** The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test. If HPCI OPERABILITY is not successfully demonstrated within the 12-hour period, reduce reactor steam dome pressure to less than 200 psig within the following 72 hours.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 120 AND 84 TO FACILITY OPERATING

LICENSE NOS. NPF-39 AND NPF-85

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNITS 1 AND 2

DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By letter dated March 29, 1996, as supplemented by letters dated December 5, 1996, and January 15, 1997, the Philadelphia Electric Company (the licensee) submitted a request for changes to the Limerick Generating Station, Units 1 and 2, Technical Specifications (TSs). The requested changes would modify the Automatic Depressurization System (ADS) safety/relief valve (S/RV) Technical Specification (TS) surveillance requirement to perform functional testing once every 24 months as part of start-up testing activities. The specific TS change evaluated herein is for TS Surveillance Requirement (SR) 4.5.1.d.2.b. The December 5, 1996, and January 15, 1997, letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination nor the initial Federal Register notice.

2.0 BACKGROUND

Each plant S/RV is a Target Rock 2-Stage pilot operated S/RV with an attached pneumatic actuator. There are a total of 14 S/RVs installed on each of the Limerick 1 and 2 main steam systems. Five of these valves serve the ADS function which is to reduce reactor pressure during a small break LOCA or after containment isolation, in the event that the High Pressure Coolant Injection (HPCI) system and/or the Reactor Core Isolation Cooling (RCIC) system fail to maintain adequate reactor pressure vessel water level. The ADS function is accomplished by an automatic control circuit that applies electric power to solenoids which provide control air to the pneumatic diaphragm assembly (i.e., auxiliary actuating device) that removes the pilot spring force allowing the pilot disk to open. Once the pilot disk is open, steam pressure provides the necessary force to open the main S/RV disk.

Currently, the Limerick 1 and 2 TS SR 4.5.1.d.2.b requires that, at least once every 24-months, the ADS S/RVs undergo manual in-situ functional exercise testing as part of startup activities following an outage. This testing is typically performed at 500 psig. The licensee considers this testing to impose an unnecessary challenge on the ADS S/RVs and has linked this testing to S/RV leakage of both the pilot and main stages of the valves. The licensee has provided several examples of instances where these S/RVs began to leak after the in-situ stroke testing was performed. The licensee states that, if the pilot stage leakage is severe enough, the S/RV setpoint could drift,

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leading to spurious actuation and/or failure of the valve to reseat. The licensee also states that this scenario has actually occurred at Limerick and at other BWRs having similar S/RVs.

3.0 PROPOSED TECHNICAL SPECIFICATION CHANGES

The licensee proposes to perform the surveillance of the ADS S/RV function without physically stroking the main disks of the valves. The proposed TS change would revise the wording in TS SR 4.5.1.d.2.b to delete the requirement to perform the in-situ testing and would provide a requirement to verify that the valves are tested pursuant to TS Section 4.0.5, which pertains to inservice inspection and testing of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components. The ASME testing verifies that each ADS valve is capable of being opened by performing the following testing:

a. Division 1 and 3 ADS logic system functional testing as required by TS Sections 3.3.3 and 4.5.1.d.2.a which verifies the Emergency Core Cooling System (ECCS) logic for actuating the ADS, not including actual stroking of the instrument gas/accumulator solenoids.

b. A test which verifies proper operation of the ADS solenoid valves, air operator, and pilot assembly each refueling cycle and each time maintenance is performed on the valves.

c. An ADS leak test, also performed each refueling cycle and each time maintenance is performed on the ADS valve, which verifies that ADS instrument gas/accumulator leakage is low enough to ensure adequate pneumatic pressure for design-basis ADS S/RV operation.

d. S/RV setpoint and leakage testing, performed on at least 50% of the S/RV pilot stages each refueling outage, which verifies the pilot setpoints and that leakage is within strict limits.

e. A new main disk exercise test, performed on at least two S/RVs per unit each refueling cycle and on all 14 S/RVs per unit within 7 operating cycles, which ensures that the main disks can freely open.

As justification for not performing the current TS-required in-situ S/RV main stage disk exercising, the licensee emphasized that there has never been an inservice occurrence where a Target Rock S/RV stage main disk did not stroke after the pilot stage was actuated. The few times that the main disk did not stroke have occurred during limited flow testing on a test stand, which does not reflect the conditions of actual in-situ operation. Also, the licensee stated that, in addition to the required surveillance tests described above, the S/RVs are routinely inspected as recommended by General Electric Company's Service Information Letter (SIL) No. 196, "Summary of Recommendations for Target Rock Steam Safety/Relief Valves." This involves refurbishing and setpoint testing of the entire S/RV assembly on a sampling basis during each fuel cycle as part of routine S/RV preventive maintenance. In the submittal dated December 5, 1996, the licensee described in more detail the preventive

maintenance program for these components. Currently, the licensee maintains all 14 plant S/RV main bodies (for each unit) over approximately three refueling cycles. This maintenance includes disassembly, inspection, and occasional replacement of necessary parts, followed by stroking of the main disk with steam and a test for leakage.

4.0 EVALUATION

The staff has reviewed the licensee's proposed TS changes and agrees that the current TS requirement to perform the in-situ stroke testing of the ADS S/RVs may contribute to undesirable valve seat leakage in either the pilot or main valve stages and could result in spurious actuation of the valves during power operation and/or failure to reseat. The testing proposed by the licensee provides periodic verification of the individual ADS S/RV components and includes: testing of the ADS logic, solenoid valves, air operator, and pilot assembly; leak testing of the ADS instrument gas/accumulator; setpoint testing of 50% of the pilot stages each refueling; main disk exercising of two S/RVs each refueling outage; and routine preventive maintenance, inspection, refurbishment, and stroking of the main stages. The staff agrees that the proposed surveillance and testing of the ADS S/RVs and associated components provide adequate assurance of proper valve operation.

One difference between the current TS required stroking of the ADS S/RV main stages during plant startup and the licensee's proposal is that, with the proposed testing, there would be less frequent stroking of the S/RV main stages. The staff notes that the preventive maintenance schedule currently performed would ensure that the main stages are capable of operating by actually moving the disks at a frequency of approximately every 6 years (or three refueling cycles). If the licensee should determine that less frequent maintenance is necessary in the future (e.g., because the valve leakage improves), the time period between main disk stroke verifications could be extended. However, because the main stage disks of these valves are very reliable, as demonstrated by the good performance history of the main stages of Target Rock S/RVs at BWR plants, the staff agrees that the proposed verification of a minimum of two main stage disks each refueling is adequate.

Another difference between the current TS-required stroking and the licensee's proposal is that, when performing the testing in-situ as required by the current TSs, the testing verifies that the S/RV discharge line is not blocked. However, the licensee stated that there is a Foreign Material Exclusion (FME) Program in place at the plant which minimizes the potential of debris blocking the discharge lines such that the possibility of blockage is extremely remote. The staff agrees that there is a very small possibility of blockage of an S/RV discharge line as demonstrated by operational history and agrees that the licensee has acceptably addressed this concern.

5.0 SUMMARY

Based on the above evaluation, the staff concludes that the licensee has adequately demonstrated the adequacy of the proposed changes to the Limerick Units 1 and 2 TSs. The proposed changes provide for testing of the ADS S/RVs to demonstrate proper operation without the need for in-situ stroking of the main disk stages of the valves. Therefore, the proposed changes to TS SR 4.5.1.d.2.b for Limerick, Units 1 and 2, are acceptable.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

7.0 ENVIRONMENTAL CONSIDERATION

The amendments change the surveillance requirements. The NRC staff has determined that the amendments involve 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (61 FR 57488). Accordingly, the amendments meet 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 the amendments.

8.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: G. Hammer

Date: Janaury 29, 1997