

ATTACHMENT 1

LIMERICK GENERATING STATION

UNITS 1 AND 2

Docket Nos. 50-352  
50-353

License Nos. NPF-39  
NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST

No. 93-01-0

"Revise Technical Specification Surveillance Requirement 4.5.1  
to Reduce the Frequency for Venting Emergency Core Cooling System  
(ECCS) Piping From Once Every 31 Days to Once Every Six (6) Months"

Supporting Information for Changes - 4 pages

Philadelphia Electric Company (PECo), Licensee under Facility Operating License Nos. NPF 39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively, requests that the Technical Specifications (TS) contained in Appendix A to the Operating Licenses be amended as proposed herein, to modify TS Surveillance Requirement (SR) 4.5.1 to reduce the frequency for venting Emergency Core Cooling System (ECCS) piping from once every 31 days to once every six (6) months. The proposed changes to the TS are indicated by a vertical bar in the margin of TS page 3/4 5-4. The TS pages showing the proposed changes are contained in Attachment 2.

We request that, if approved, the TS changes proposed herein be effective immediately upon issuance of the amendments.

This TS Change Request provides a discussion and description of the proposed TS changes, a safety assessment of the proposed TS changes, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

#### Discussion and Description of the Proposed Changes

A design requirement of the Emergency Core Cooling System (ECCS) (e.g., Low Pressure Coolant Injection (LPCI), Core Spray (CS), and High Pressure Coolant Injection (HPCI) systems) is that cooling water flow from these systems be rapidly injected into the reactor vessel upon an initiation signal. This injection time can be minimized by maintaining the ECCS pump discharge piping in a full condition. If the discharge piping was empty when the individual systems were called upon to function, the dynamic forces associated with accelerating fluid into a dry pipe could result in damage to the system piping. Therefore, a Safeguard Piping Fill system is provided to maintain the associated ECCS pump discharge piping in a filled condition.

Since the LPCI, CS, and HPCI systems' pump discharge lines are elevated, check or stop-check valves are provided near the pumps to prevent these lines from draining. However, experience has shown that these valves may leak slightly causing the piping to eventually drain introducing air into the system. The Safeguard Piping Fill system provides the necessary makeup water to ensure that the leakage from the discharge lines is replaced and that the piping is constantly filled thereby, limiting air infiltration into the discharge piping of the LPCI, CS, and HPCI systems.

Technical Specifications (TS) Surveillance Requirement (SR) 4.5.1 currently requires that the discharge piping for these ECCS pumps be vented once every 31 days to ensure that any entrained air is vented, thereby eliminating the potential for water hammer. The proposed TS changes involve 1) revising TS SR 4.5.1 to eliminate the requirement to vent the ECCS piping once every 31 days (i.e., SR 4.5.1.a.1a), 2) adding a new requirement to require that the ECCS piping be vented once every six (6) months (i.e., 4.5.1.c), and 3) the resulting editorial change redesignating TS SR 4.5.1.c as SR 4.5.1.d.

In addition, plant procedures will continue to require that the ECCS pump discharge lines be filled and vented following any maintenance activities which affect these systems.

#### Safety Assessment

The pump discharge piping for these Emergency Core Cooling System (ECCS) (e.g., Low Pressure Coolant Injection (LPCI), Core Spray (CS), and High Pressure Coolant Injection (HPCI) systems) are kept full by the Safeguard Piping Fill system. Maintaining this piping in a filled condition reduces injection time to the reactor vessel for these systems, prevents damage to system piping due to water hammer, and ensures adequate pump cooling at earliest moment following a pump start. The current Technical Specifications (TS) Surveillance Requirement (SR) requires that LPCI, CS, and HPCI systems' pump discharge piping be vented once every 31 days, thereby ensuring that entrained air is released and that the piping is completely full. Performing this monthly test is labor intensive and historically has resulted in only insignificant amounts of air being released from the LPCI, CS, and HPCI systems' high point vents. Reducing the frequency of performing this surveillance from once every 31 days to once every six (6) months would still require that the associated ECCS pump discharge lines be vented to release entrained air and that the piping be maintained in a full condition.

Additionally, high point vent alarms annunciate in the Main Control Room (MCR) informing Operations personnel that an ECCS pump discharge line may not be completely full. Furthermore, the proposed TS changes will be advantageous in reducing radiation exposure; specifically, as the units age and dose rates in the area of the ECCS high point vents increase, reducing the surveillance frequency from once every 31 days to once every six (6) months will significantly reduce personnel radiation exposure.

#### Information Supporting a Finding of No Significant Hazards Consideration

We have concluded that the proposed changes to the Limerick Generating Station (LGS), Units 1 and 2, Technical Specifications (TS) that revise TS Surveillance Requirement (SR) 4.5.1 to reduce the frequency for venting the Emergency Core Cooling System (ECCS) piping from once every 31 days to once every six (6) months do not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three (3) standards set forth in 10 CFR 50.92 is provided below.

1. The proposed Technical Specifications (TS) changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to the TS Surveillance Requirement (SR) do not involve any physical changes to plant systems or components, nor do they affect the ability of the Low Pressure Coolant Injection (LPCI),

Core Spray (CS), and High Pressure Coolant Injection (HPCI) systems to respond to an accident. These systems do not initiate an accident since their design function is accident mitigation. The Safeguard Piping Fill system will continue to function as designed to maintain these ECCS pump discharge lines completely full. Operating experience has shown that only insignificant amounts of air have ever been vented from the high point vents for the LPCI, CS, and HPCI systems during performance of this TS SR. The proposed TS changes will require that these ECCS pump discharge lines be vented once every six (6) months rather than once every 31 days to remove any entrained air. The frequency of venting these ECCS pump discharge lines has no impact on the types of accidents that have been previously evaluated. Additionally, high point vent alarms annunciate in the Main Control Room (MCR) indicating that an ECCS pump discharge line is not completely full. Therefore, the proposed TS changes do not involve an increase in the probability or consequences of an accident previously evaluated.

2. The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes to the TS SR do not require any physical changes to plant systems or components, nor do they affect the ability of the LPCI, CS, and HPCI systems to mitigate the consequences of an accident. These systems would not contribute to the initiation of an accident since their function is accident mitigation. Reducing the frequency of venting these ECCS pump discharge lines from once every 31 days to once every six (6) months has no impact on the types of accidents that could occur. The Safeguard Piping Fill system will continue to function as designed to maintain these ECCS pump discharge lines in a full condition. Therefore, the proposed TS changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. The proposed TS changes do not involve a significant reduction in a margin of safety.

The proposed changes to the TS SR do not involve any physical changes to the design or functional requirements of the LPCI, CS, and HPCI systems. These systems will continue to function as designed to mitigate the consequences of an accident. The Safeguard Piping Fill system will continue to function as designed to maintain these ECCS pump discharge lines in a full condition. The high point vent alarms which annunciate in the MCR will continue to provide Operations personnel of indication that an ECCS pump discharge pipe is completely full. The operation of the Safeguard Piping Fill system in conjunction with the high point vent alarms will ensure that these ECCS pump discharge lines remain full. Therefore, the proposed TS changes to reduce the frequency of venting the ECCS pump discharge piping from once every 31 days to once every six (6) months do not involve a reduction in a margin of safety.

### Information Supporting an Environmental Assessment

An Environmental Assessment is not required for the changes proposed by this Change Request because the requested changes to the LGS, Units 1 and 2, TS conform to the criteria for "actions eligible for categorical exclusion," as specified in 10 CFR 51.22(c)(9). The requested changes will have no impact on the environment. The proposed changes do not involve a significant hazards consideration as discussed in the preceding section. The proposed changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

### Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed these proposed changes to the LGS, Units 1 and 2, TS and have concluded that they do not involve an unreviewed safety question, and will not endanger the health and safety of the public.

ATTACHMENT 2

LIMERICK GENERATING STATION

UNITS 1 AND 2

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TECHNICAL SPECIFICATIONS CHANGE REQUEST

No. 93-01-0

LIST OF AFFECTED PAGES

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## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS

4.5.1 The emergency core cooling systems shall be demonstrated OPERABLE by:

- a. At least once per 31 days:
  1. For the CSS, the LPCI system, and the HPCI system, verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct\* position.
  2. For the LPCI system, verifying that both LPCI system subsystem cross-tie valves (HV-51-182 A, B) are closed with power removed from the valve operators.
  3. For the HPCI system, verifying that the HPCI pump flow controller is in the correct position.
  4. For the CSS and LPCI system, performance of a CHANNEL FUNCTIONAL TEST of the injection header  $\Delta P$  instrumentation.
- b. Verifying that, when tested pursuant to Specification 4.0.5:
  1. Each CSS pump in each subsystem develops a flow of at least 3175 gpm against a test line pressure corresponding to a reactor vessel to primary containment differential pressure of  $\geq 105$  psid plus head and line losses.
  2. Each LPCI pump in each subsystem develops a flow of at least 10,000 gpm against a test line pressure corresponding to a reactor vessel to primary containment differential pressure of  $\geq 20$  psid plus head and line losses.
  3. The HPCI pump develops a flow of at least 5600 gpm against a test line pressure which corresponds to a reactor vessel pressure of 1000 psig plus head and line losses when steam is being supplied to the turbine at 1000, +20, -80 psig.\*\*
- c. At least once per 6 months:
  1. For the CSS, the LPCI system, and the HPCI system, verifying by venting at the high point vents that the system piping from the pump discharge valve to the system isolation valve is filled with water.
- d. At least once per 18 months:
  1. For the CSS, the LPCI system, and the HPCI system, performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence and verifying that each automatic valve in the flow path actuates to its correct position. Actual injection of coolant into the reactor vessel may be excluded from this test.

\*Except that an automatic valve capable of automatic return to its ECCS position when an ECCS signal is present may be in position for another mode of operation.

\*\*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 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.



## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS

4.5.1 The emergency core cooling systems shall be demonstrated OPERABLE by:

- a. At least once per 31 days:
  1. For the CSS, the LPCI system, and the HPCI system, verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct\* position.
  2. For the LPCI system, verifying that both LPCI system subsystem cross-tie valves (HV-51-282 A, B) are closed with power removed from the valve operators.
  3. For the HPCI system, verifying that the HPCI pump flow controller is in the correct position.
  4. For the CSS and LPCI system, performance of a CHANNEL FUNCTIONAL TEST of the injection header  $\Delta P$  instrumentation.
- b. Verifying that, when tested pursuant to Specification 4.0.5:
  1. Each CSS pump in each subsystem develops a flow of at least 3175 gpm against a test line pressure corresponding to a reactor vessel to primary containment differential pressure of  $\geq 105$  psid plus head and line losses.
  2. Each LPCI pump in each subsystem develops a flow of at least 10,000 gpm against a test line pressure corresponding to a reactor vessel to primary containment differential pressure of  $\geq 20$  psid plus head and line losses.
  3. The HPCI pump develops a flow of at least 5600 gpm against a test line pressure which corresponds to a reactor vessel pressure of 1000 psig plus head and line losses when steam is being supplied to the turbine at 1000, +20, -80 psig.\*\*
- c. At least once per 6 months:
  1. For the CSS, the LPCI system, and the HPCI system, verifying by venting at the high point vents that the system piping from the pump discharge valve to the system isolation valve is filled with water.
- d. At least once per 18 months:
  1. For the CSS, the LPCI system, and the HPCI system, performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence and verifying that each automatic valve in the flow path actuates to its correct position. Actual injection of coolant into the reactor vessel may be excluded from this test.

\*Except that an automatic valve capable of automatic return to its ECCS position when an ECCS signal is present may be in position for another mode of operation.

\*\*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 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.