

ATTACHMENT 1

LIMERICK GENERATING STATION  
UNIT 2

Docket No. 50-353

License No. NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST

No. 92-04-2

"One-Time Technical Specifications Change to  
Extend the Allowed Outage Time for Emergency  
Core Cooling Systems Supported by the "B"  
Loop of Emergency Service Water"

Supporting Information for Changes - 12 pages

Philadelphia Electric Company (PECO), Licensee under Facility Operating License No. NPF-85 for Limerick Generating Station (LGS), Unit 2, requests that the Technical Specifications (TS) contained in Appendix A of Operating License NPF-85 be amended as proposed herein to allow for a one-time (i.e., temporary) extension in the allowed outage time (AOT) for Emergency Core Cooling Systems (ECCS) supported by the "B" loop of the Emergency Service Water (ESW) system while repairs are made to the piping for the "B" loop of ESW. This proposed change would involve adding a one-time provision to TS Section 3.7.1.2, "Emergency Service Water System-Common System." We propose that TS Section 3.7.1.2, Action a.3, be changed such that a 72-hour period be authorized for continued operation of Unit 2 although the equipment supported by the "B" loop of ESW will be considered inoperable during this 72-hour period. This one-time TS change is requested to avoid a Unit 2 shutdown, since TS Section 3.0.3 would normally require that the unit be in at least startup within 6 hours when the "B" loop of ESW is determined to be inoperable. The proposed change to the LGS Unit 2 TS is indicated by a vertical bar in the margin of the proposed TS page 3/4 7-3. The proposed TS change page is contained in Attachment 2.

This Change Request for LGS Unit 2 provides a discussion and description of the proposed TS change, a safety assessment of the proposed TS change, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

We request that, if approved, the Amendment to the LGS Unit 2 TS be effective upon issuance.

#### Discussion and Description of the Proposed Change

The ESW system is a safety-related system and is common to Units 1 and 2. The system is designed to supply cooling water to selected equipment during a Loss of Offsite Power (LOOP) condition or Loss of Coolant Accident (LOCA). The system consists of two (2) independent 100% capacity loops (i.e., "A" and "B") which supply the necessary cooling water to heat exchangers and coolers associated with various safety-related and nonsafety-related equipment specified below.

- Residual Heat Removal (RHR) pump motor oil and seal coolers
- RHR pump compartment unit coolers
- Core Spray (CS) pump compartment unit coolers
- Main Control Room (MCR) chillers
- Emergency Diesel Generator (EDG) heat exchangers
- Reactor Core Isolation Cooling (RCIC) pump compartment unit coolers

- High Pressure Coolant Injection (HPCI) pump compartment unit coolers
- Spent fuel pools (i.e., makeup water)
- Reactor Enclosure Cooling Water (RECW) system heat exchangers
- Turbine Enclosure Cooling Water (TECW) system heat exchangers

By letter dated December 19, 1991, we requested relief from the American Society of Mechanical Engineers (ASME) Code repair requirements for Code Class 3 piping as a result of the discovery of a flawed section of ESW system piping. This relief request was submitted in accordance with the guidance specified in NRC Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping." A condition of the relief request is that permanent repairs will be completed at the next outage of more than 30 days duration. Since the flaw exists on the "B" loop of ESW piping from the Unit 1 HPCI room unit coolers, the next such outage will be the Unit 1 fourth refueling outage scheduled to begin on March 21, 1992. The NRC approved this relief request by letter dated February 26, 1992 on the basis that the flawed ESW piping will be repaired or replaced in accordance with the ASME Code no later than the next (i.e., fourth) refueling outage.

This proposed TS change requests a one-time change to the LGS Unit 2 TS to allow continued operation of Unit 2 while repairs are made to the "B" loop of the ESW system. The proposed TS change would involve a one-time (i.e., temporary) change to TS Section 3.7.1.2. We propose that TS Section 3.7.1.2, Action a.3, be temporarily amended such that a 72-hour period is authorized for continued operation of Unit 2 although the equipment supported by the "B" loop of ESW will be considered inoperable during this 72-hour period. This one-time TS change is requested to avoid a Unit 2 shutdown. TS Section 3.0.3 would normally require that the unit be in at least startup within 6 hours when the "B" loop of ESW is determined to be inoperable. This proposed change is necessary in order to complete the repair to the ESW pipe section without being required to shut down Unit 2 since it cannot be isolated from the remainder of the "B" loop of ESW common piping.

The strategy for the ESW pipe repair is to establish freeze seals at the appropriate locations in the "B" loop of ESW piping such that work can be accomplished while the "B" loop remains available for use (i.e., after the freeze seals are established). Although freeze seals do not provide an ASME Code approved pressure boundary such that the "B" loop of ESW can be considered operable, a level of confidence exists from experience that the loop would be available if required to support ECCS or EDG operation since the "B" loop of ESW pumps will remain in standby after the freeze seals are established. If this proposed change is approved, the "B" loop of ESW will be declared inoperable once the freeze seal process is initiated.

The systems relied upon for accident mitigation during the proposed AOT shall be operable at the start of and during the 72-hour period. If any of the operable Unit 2 ECCS or EDGs are rendered inoperable during the proposed 72-hour AOT, then the action statement in TS Section 3.0.3 shall be implemented, i.e., immediate plant shutdown will be started.

#### Safety Assessment

This proposed TS change requests a one-time (i.e., temporary) change to the LGS Unit 2 TS to allow continued operation of Unit 2 while repairs are made on the "B" loop of the ESW system. This one-time TS change is requested to avoid a Unit 2 shutdown. TS Section 3.0.3 would normally require the unit to be in at least startup within 6 hours when the "B" loop of ESW is determined to be inoperable.

During the proposed 72-hour AOT, Unit 1 will be shut down for its fourth refueling outage. Two (2) Unit 1 EDGs and other Unit 1 equipment cooled by the "B" loop of ESW will be rendered inoperable. Although this does not present a problem with respect to system operability requirements during an outage period, inoperability of additional TS equipment would require that the applicable Unit 1 TS restrictions be adhered to during the proposed 72-hour AOT.

During the proposed 72-hour AOT, at least two (2) Unit 2 EDGs that are normally aligned to the "A" loop of ESW will remain operable. However, the capability to align a third Unit 2 EDG to the "A" loop of ESW instead of its normal alignment to the "B" loop of ESW, may be accomplished according to approved procedures. If this action is taken, a third Unit 1 EDG will be required to be aligned to the "B" loop of ESW. Should this alignment be made, applicable Unit 1 TS requirements for three inoperable EDGs will be met.

Therefore, the following discussion provides the necessary justification to ensure safe operation of LGS Unit 2 during the proposed 72-hour AOT needed to re-establish an ASME Code boundary repair on the "B" loop of ESW.

The minimum requirements for long-term accident response are: one ECCS pump (CS or Low Pressure Coolant Injection (LPCI)) for reactor vessel level control and one decay heat removal loop, consisting of an RHR pump, an RHR Service Water (RHRSW) pump and one RHR heat exchanger. These requirements are met by equipment serviced by the operable "A" loop of ESW.

The ESW system does have other functions which support ECCS and post accident response systems such as indirectly cooling emergency switchgear rooms via the room chillers. One loop of ESW is sufficient to provide enough room cooling for half of the ECCS, by design. The availability of the RHR "B" and "D" and CS pumps is still maintained short term (i.e., several hours) without ESW cooling. The rooms have temperature instrumentation that will give Operations personnel indication of a room cooling problem. Actions specified in approved



procedures would then be taken to lessen the temperature in the rooms in which cooling capability was lost.

In the event of a LOCA on Unit 2 with a temporarily degraded ECCS (i.e., a reduction in the redundancy of operable ECCS due to the inoperability of the "B" loop of ESW), the conclusion that the unit can be safely shutdown, the vessel reflooded, and adequate core cooling provided is obtained from NEDO-24708A, "Additional Information Required for NRC Staff Generic Report on Boiling Water Reactors" - August 1979, Revision No. 1, December 1980 and NEDC-30936P-A, "BWR Owner's Group Technical Specification Improvement Methodology (with Demonstration for BWR ECCS Activation Instrumentation - Part 1)," December 1988. NEDO-24708A states that for postulated recirculation suction line breaks, one low-pressure ECCS (and Automatic Depressurization System (ADS) to depressurize, if necessary) is sufficient to reflood the reactor vessel and provide adequate core cooling. NEDCO-30936P-A was written to support revising TS to minimize unnecessary and excessively restrictive out-of-service times. It concludes, through the use of realistic analyses, that one low-pressure ECCS injecting is sufficient to provide adequate core cooling for all break sizes up to and including the double-ended guillotine break of the recirculation suction piping. Provided the "A" loop of ESW and all equipment aligned to it remain operable, one (1) loop of CS and two (2) LPCI pumps are operable to provide more than adequate core cooling.

Furthermore, our calculations show that the Unit 2 HPCI pump can operate for 15 minutes with a HPCI barometric condenser failure occurring simultaneously with loss of HPCI pump room cooling. Therefore, HPCI system injection would occur for a short initial period of a LOCA on Unit 2.

However, the remaining systems relied upon for accident mitigation during the proposed 72-hour AOT shall be operable at the start of and during the 72-hour period. If any of the operable Unit 2 ECCS or EDGs are rendered inoperable during the proposed 72-hour AOT, then the action statement in TS Section 3.0.3 shall be implemented.

In addition, based on our review, during the repair activity the unavailability of any system that is affected by the ESW repair will result in less risk of an accident for a 72-hour period than that associated with a plant shutdown and startup transient. Although the current Probabilistic Risk Assessment (PRA) model has not explicitly calculated the cumulative risk caused by shutdown and startup, this cumulative risk is estimated to be higher than the cumulative risk during the AOT for the ESW system repair. The primary reason for this is the small cumulative risk that any transient or accident would occur during the period of the AOT.

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

The proposed change does not involve a significant hazards consideration because the margin of safety is not significantly

reduced by the inoperability of the "B" loop of ESW during the proposed 72-hour period. A single active failure occurring in one of the remaining operable ECCS subsystems does not increase the consequences of a previously evaluated accident. Since one CS and two RHR pumps will remain operable and only one low pressure injection pump and one decay heat removal pump are necessary to safely shutdown and maintain Unit 2 in safe shutdown. 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 change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed one-time TS change does not increase the consequences of an accident from any previously evaluated. The accidents that were considered are the full range of LOCAs with and without a concurrent LOOP. Unit 2 will remain in operation during the repair on the "B" loop of ESW. Unit 1 will not be operating at this time but will be in a refueling outage and will be maintained in compliance with appropriate TS requirements.

The inoperability of HPCI and half of the ECCS for Unit 2 does not cause an increase in the probability of an accident since all the systems affected are not accident initiators as defined in Chapter 15 of the LGS Updated Final Safety Analysis Report (UFSAR). However, based on the probability of occurrence of a seismic event of any severity, and assuming this would cause failure of the freeze seals and the complete loss of the "B" loop of ESW, a small increase of approximately  $4 \times 10^{-8}$  (i.e., 0.1%) in the annual Core Damage Frequency (CDF) would result. This increase is judged not to be significant, since the cumulative risk caused by shutdown and startup is estimated to be higher than the cumulative risk during the AOT for the ESW system repair. Maintaining the remaining ECCS equipment operable during the 72-hour period ensures that the consequences of the accidents previously evaluated will remain bounded by the UFSAR safety analysis. Therefore, there is no increase in the consequences of an accident. This conclusion is based on the following considerations.

- a. All ECCS will be available for short term mitigation of the consequences of an accident. For long term accident response (i.e., greater than 10 minutes), sufficient ECCS and components will remain available to mitigate the consequences of an accident, even considering a single active failure.
- b. For long term response to an accident occurring during the proposed 72-hour AOT, sufficient time exists so that plant operators could take appropriate action to realign equipment and establish cooling flow to ECCS. Operator actions beyond those assumed in the UFSAR are not required for the short term response to an accident for the consequences to be

maintained within those evaluated in the UFSAR. ECCS equipment has been analyzed for a variety of conditions involving loss of room cooling, and we have determined that several hours are available for operators to take corrective action to maintain certain ECCS equipment operable before environmental qualification temperature limits are exceeded.

- c. Unit 1 will be shutdown during this 72-hour period. This reduces the demand on the remaining operable ESW loop and other common safety-related equipment such that additional margin exists in the "A" loop of ESW for heat removal from Unit 2 should an accident occur.
- d. The "B" loop of ESW could still be considered to be functionally available to support equipment cooling needs even though it will be considered inoperable. The pressure boundary of the "B" ESW piping will be maintained through the use of freeze seals in the areas where repair and maintenance activities are in progress. PECO experience with freeze seals indicates that they are a reliable method of maintaining a pressure boundary intact, and therefore, the "B" loop of ESW is expected to be capable of supporting loop operations should the need arise. Nevertheless, a freeze seal is not "qualified" as a pressure boundary in accordance with ASME Code requirements and the "B" loop of ESW will be considered inoperable.

Since loss of the Unit 2 ECCS room unit coolers, RHR pump seal cooling, and RHR pump motor oil cooling cooled by the "B" loop of ESW will not cause an immediate failure of these components upon initiation of the RHR pumps, operability for short term automatic response (i.e., less than 10 minutes) under the postulated accident conditions will be maintained. Beyond this 10 minute period, there would be two (2) RHR pumps and one (1) loop of CS operable to provide the necessary long term accident mitigation. The availability of the ADS, which itself is single failure proof and is unaffected by this activity, assures that the remaining RHR and/or CS pumps can maintain adequate core cooling. NEDO-24708A, provides the analysis that supports the conclusion that either one (1) RHR pump (operating in the LPCI mode) or one (1) CS loop in conjunction with ADS, will provide adequate core cooling.

Therefore, even if a single failure were to occur, adequate core cooling capability would be maintained since two (2) RHR pumps and one (1) loop of CS will be operable during the proposed 72-hour AOT. Based on the accident mitigating capabilities of the ECCS equipment that remains operable with the "B" loop of ESW inoperable, the consequences of accidents previously evaluated will not be increased by this activity. Additional system specific details are provided below to support this conclusion.

- a. RHR System - Even with a single failure of additional low pressure ECCS equipment that will not be rendered inoperable

due to the loss of the "B" loop of ESW, the RHR system has enough redundancy that this system in conjunction with ADS could operate properly and mitigate an accident. Therefore, the consequences of accidents previously evaluated are not increased.

- b. CS System - One of the two (2) loops of the CS system will be rendered inoperable due to the loss of the "B" loop of ESW. The analysis in NEDO-24708A has shown that one (1) CS loop is adequate to provide the required core cooling. Therefore, the consequences of an accident previously evaluated are not increased by the impact of this change on the CS system.
- c. EDGs - The EDGs (i.e., D12 and D14 for Unit 1, and D22 and D24 for Unit 2) will be rendered inoperable. The EDGs that will remain operable provide the necessary emergency electrical power to assure that Unit 2 (assumed to be in power operation) and Unit 1 (assumed to be shutdown) have the equipment and systems operable to mitigate the accidents previously analyzed. The number of EDGs operable meets or exceeds the minimum required by TS without requiring an immediate Unit 2 shutdown. TS requirements for emergency power for primary containment isolation valves will be verified as part of the Surveillance Tests which are performed when EDGs become or are made inoperable. Also, the inoperable EDGs will still remain functionally available assuming that the freeze seals maintain an adequate pressure boundary. Approved procedures exist which provide the ability to assess the applicable TS requirements relative to the specific inoperable EDGs. Therefore, the consequences of an accident previously evaluated are not increased by the inoperability of the EDGs cooled by the "B" loop of ESW.
- d. HPCI System - This proposed change does remove room cooling capability from the Unit 2 HPCI compartment. This will eliminate the long term response of the HPCI pump for water injection capability in response to a small break LOCA, but the capability to use HPCI to inject into the reactor vessel for at least 15 minutes still exists. Despite this impact on HPCI, the remaining operable subsystems of RHR and CS in conjunction with ADS assures that adequate core cooling will remain available long term and that the consequences of an accident previously evaluated are not increased.
- e. RCIC System - This proposed change, which renders the "B" loop of ESW inoperable for 72-hours, does not remove room cooling capability from the RCIC compartment. This is due to the fact that the "A" loop of ESW supplies the room unit coolers for this pump. This change has no effect on the alignment, configuration, or operation of the RCIC system. Therefore, with respect to the RCIC system, the consequences of an accident previously evaluated are not increased.



- f. RECW System - The "A" loop of ESW provides backup cooling to the RECW heat exchangers. Therefore, the loss of the "B" loop of ESW cooling water to the RECW heat exchange does not increase the consequences of an accident previously evaluated.
- g. TECW System - TECW is provided with a backup cooling water supply from the "B" loop of ESW. The TECW heat exchangers are not safety-related and do not require ESW as a cooling water supply. Therefore, there is no increase in the consequences of an accident previously evaluated because of the temporary loss of the back-up cooling water to the TECW heat exchangers from the "B" loop of ESW.
- h. Reactor Recirculation (RR) Pumps - ESW provides a backup source of cooling water to the RR pumps should normal cooling be unavailable. The RR pumps form a portion of the primary coolant pressure boundary, and are therefore, safety-related in the passive sense. However, even if normal and backup cooling were lost to the pump seals, the potential leakage is within the makeup capability of the operable ECCS equipment. Therefore, with respect to the RR pumps, the consequences of an accident previously evaluated are not increased.
- i. Fuel Pool Cooling System - The fuel pool cooling system does not perform a safety function to mitigate the consequences of an accident. Therefore, the loss of the ESW as a potential backup cooling (i.e., make-up) source to the Unit 2 fuel pool does not increase the consequences of an accident previously evaluated.
- j. RHRSW System - The RHRSW system TS Section 3.7.1.1 provides a 30-day AOT with two (2) RHRSW pump/EDG pairs inoperable. Therefore, the impact of the one-time TS change on RHRSW system capability does not increase the consequences of an accident previously evaluated.
- k. Spray Pond - The proposed TS change does not impact the spray pond operation as the ultimate heat sink. The Spray pond was sized to be able to handle both units' decay heat removal requirements from 100% power operating conditions. Since Unit 1 will not be in operation, minimal decay heat removal will be required for that unit. Also, the motor operated valves needed to align the operable ESW and RHRSW loops to the spray networks are still operable. Therefore, with respect to the Spray Pond, this one-time TS change does not increase the consequences of an accident previously evaluated.
- l. Control Room Emergency Fresh Air Supply (CREFAS) system - The TS change does impact the CREFAS system since only one of the EDGs which supplies emergency power to the CREFAS

system is affected. The emergency power supply to the "A" CREFAS subsystem is provided by Unit 1 D11 and D13 EDGs, whereas the "B" subsystem is powered by the Unit 1 D12 and D14 EDGs. The Unit 2 TS allow the CREFAS to be considered operable when the "B" loop of ESW is out-of-service for a period not to exceed 30 days. This envelopes the AOT that this TS change is requesting. Therefore, with respect to the CREFAS system this one-time TS change does not increase the consequences of an accident previously evaluated.

- m. MCR Chillers - These are safety-related components and are required to be available in the event of an accident. The chillers are common plant equipment; however, only one (1) of the two (2) chillers is required to be available to support the design heat loads. Therefore, by taking the "B" loop of ESW out of service, only one of the chillers will be unavailable. If the available chiller would subsequently be lost and the MCR temperature exceeds the TS limit, appropriate action would be taken in accordance with TS. Therefore, with respect to the MCR chillers, the consequences of an accident previously evaluated are not increased.
- n. Standby Gas Treatment System (SGTS) - This proposed change makes the emergency power supply for one of the SGTS subsystems inoperable, but does not make either subsystem inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected SGTS emergency power supply be less than 72-hours, which is consistent with the requested AOT for this activity. Therefore, with respect to the SGTS, this one-time TS change does not increase the consequences of an accident previously evaluated.
- o. Reactor Enclosure Recirculation System (RERS) - This change makes the emergency power supply for one (1) of two (2) RERS subsystems inoperable, but does not make either subsystem inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected power supply be less than 72-hours. Therefore, the 72-hour AOT requested for this activity falls within the bounds of the TS AOT for the RERS, and does not increase the consequences of an accident previously evaluated with respect to the RERS.
- p. Standby Liquid Control (SLC) System - This change makes the emergency power supply to one (1) of the three (3) SLC pumps and one (1) of the two (2) SLC subsystems inoperable, but does not make any pump or either subsystem inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected SLC

system emergency power supply be less than 72-hours. Since the proposed 72-hour AOT is bounded by the SLC system AOT, the consequences of an accident previously evaluated are not increased with respect to the SLC system.

- q. Post LOCA Hydrogen Recombiner - This change makes the emergency power supply for one (1) of two (2) subsystems of the Post-LOCA Hydrogen Recombiner inoperable, but does not make either subsystem inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected Post-LOCA Hydrogen Recombiner emergency power supply be less than 72-hours. Since the proposed 72-hour AOT requested for this activity is bounded by the Post-LOCA Hydrogen Recombiner TS AOT, this activity does not increase the consequences of an accident previously evaluated with respect to the Post-LOCA Hydrogen Recombiner.
- r. Main Steam Isolation Valve (MSIV) Leakage Control System - This change makes the emergency power supply to one (1) of the two (2) MSIV leakage control subsystems inoperable, but does not make either subsystem inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected MSIV Leakage Control System emergency power supply be less than 72-hours. The 72-hour AOT requested for this activity falls within the bounds of the TS AOT for the MSIV Leakage Control System. Therefore, the consequences of an accident previously evaluated are not increased with respect to the MSIV Leakage Control System.
- s. Drywell Hydrogen Mixing System - As a result of this activity, the emergency power supply for two (2) of the four (4) subsystems associated with the Drywell Hydrogen Mixing system will be inoperable, but none of the hydrogen mixing subsystems are made inoperable. TS Section 3.8.1.1.e imposes the appropriate actions when less than the full complement of emergency power supplies are operable. In no case will the AOT for the affected Drywell Hydrogen Mixing system emergency power supply be less than 72-hours. Therefore, since the 72-hour AOT requested for this activity is bounded by the Drywell Hydrogen Mixing system TS AOT, there is no increase in the consequences of an accident previously evaluated with respect to the Drywell Hydrogen Mixing system.

For the proposed 72-hour period in which the "B" loop of ESW will be inoperable, two (2) RHR pumps, one (1) CS subsystem, ADS, and RCIC remain operable for accident mitigation. Because this configuration remains single-failure-proof, a malfunction of any of these systems will not remove the ability to provide adequate core cooling. All other affected components, taken individually,

are currently evaluated for allowable out-of-service times of at least 72-hours.

Therefore, implementation of the proposed 72-hour AOT will not result in an increase in the probability or consequences of an accident previously evaluated.

- 2) The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Since there are no changes in the configuration, alignment, or operational procedures, the possibility of a new or different kind of accident is not created. The systems affected are not accident initiators. The systems that will remain operable are capable of mitigating an accident.

The following compensatory measures will be taken to offset the fact that the "B" loop of ESW will be inoperable but available due to this planned activity. Proper position of ESW system flow path valves will be verified prior to (i.e., within 24 hours of) initiation of this activity to reduce the possibility of valve misalignments.

The proposed change will not cause the components important to safety that have been discussed above to be challenged by a different type of malfunction, since no new type of malfunction will be created by any operation associated with this activity. Therefore, this proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

- 3) The proposed change does not involve a significant reduction in a margin of safety.

Implementation of this proposed TS change will result in a reduction in the margin of safety due to the loss of system redundancy. However, this reduction in the margin is not significant since the remaining operable ECCS equipment is adequate to mitigate the consequences of an accident, even assuming a single failure. This is based on the analysis in NEDO-24708A and NEDC-30936P-A. These documents describe the minimum requirements to successfully terminate a transient or LOCA initiating event (assuming reactor trip), assuming multiple failures with realistic conditions. The minimum requirements for short term response to an accident would be one (1) low pressure ECCS in conjunction with ADS operation. For long term response, which would include decay heat removal through one (1) RHR loop along with another low pressure ECCS (e.g., CS or LPCI) is required. Implementation of the proposed TS change will require that operability of two (2) RHR subsystems and one (1) CS loop be maintained during the 72-hour period. In addition, the RCIC system will remain operable during the 72-hour period although credit is not taken for it in the UFSAR safety analysis.



The bases for TS section 3/4.5.1 for ECCS during plant operation state that with the HPCI system inoperable, adequate core cooling is assured by the operability of ADS, both the CS and LPCI systems, and RCIC (although no credit is taken for RCIC in the UFSAR safety analysis). For the duration of the ESW pipe repair activity, a period not to exceed 72-hours, two (2) RHR LPCI pumps and one (1) Loop of CS will not be operable due to the loss of cooling from the "B" loop of ESW. However, the ability to provide adequate core cooling and decay heat removal is maintained, even assuming a single failure, by the remaining two (2) RHR pumps and one (1) loop of CS. Therefore, implementation of the proposed 72-hour AOT will not involve a significant reduction in a margin at safety.

#### Information Supporting an Environmental Assessment

An environmental assessment is not required for the change proposed by this Change Request because the requested change to the LGS Unit 2 TS conforms to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The requested change will have no impact on the environment. The proposed change does not involve a significant hazards consideration as discussed in the preceding section. The proposed change does 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 change does not involve an increase in individual or cumulative occupational radiation exposure.

#### Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed this proposed change to the LGS Unit 2 TS and have concluded that it does involve an unreveiwed safety question, but that it does not involve significant hazards consideration, and will not endanger the health and safety of the public.

ATTACHMENT 2

LIMERICK GENERATING STATION  
UNIT 2

Docket No. 50-353

License No. NPF-85

PROPOSED TECHNICAL SPECIFICATION CHANGE

No. 92-04-2

List of Attached Page Changes

Unit 2

3/4 7-3

EMERGENCY SERVICE WATER SYSTEM - COMMON SYSTEMLIMITING CONDITION FOR OPERATION

3.7.1.2 At least the following independent emergency service water system loops, with each loop comprised of:

- a. Two OPERABLE emergency service water pumps, and
- b. An OPERABLE flow path capable of taking suction from the emergency service water pumps wet pits which are supplied from the spray pond or the cooling tower basin and transferring the water to the associated Unit 2 and common safety-related equipment,

shall be OPERABLE:

- a. In OPERATIONAL CONDITIONS 1, 2, and 3, two loops.
- b. In OPERATIONAL CONDITIONS 4, 5, and \*, one loop.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5, and \*.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2, or 3:
  1. With one emergency service water pump inoperable, restore the inoperable pump to OPERABLE status within 45 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  2. With one emergency service water pump in each loop inoperable, restore at least one inoperable pump to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  3. With one emergency service water system loop otherwise inoperable, declare all equipment aligned to the inoperable loop inoperable\*\*#, restore the inoperable loop to OPERABLE status with at least one OPERABLE pump within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

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\*When handling irradiated fuel in the secondary containment.

\*\*The diesel generators may be aligned to the OPERABLE emergency service water system loop provided corfirmatory flow testing has been performed. Those diesel generators not aligned to the OPERABLE emergency service water system loop shall be declared inoperable and the actions of 3.8.1.1 taken.

# - The performance of a repair on the common ESW system during the Unit 1 Fourth Refueling Outage will require that the "B" Loop of ESW be inoperable for a period of time no longer than 72 hours to facilitate completion of the repair. During the time that the "B" Loop is inoperable, the associated equipment aligned to the "B" Loop will also be declared inoperable. However, the required TS ACTIONS associated with the affected inoperable ECCS equipment will not be required to be taken for 72 hours. Otherwise, the TS ACTIONS associated with the affected inoperable equipment aligned to the "B" Loop will be followed.