PECO ENERGY

10 CFR 50.90

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

July 31, 2000

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 and 2
Technical Specifications Change Request No. 00-01-0
Changes to the Automatic Depressurization System Surveillance Requirements

Dear Sir/Madam:

PECO Energy Company (PECO Energy) is submitting Technical Specifications Change Request No. 00-01-0, in accordance with 10 CFR 50.90, requesting a change to Appendix A of Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively.

The proposed changes will revise LGS Technical Specifications (TS) to replace the existing Automatic Depressurization System (ADS) TS Surveillance Requirement (SR) 4.5.1.d.1, a 31 day channel functional test of the accumulator backup compressed gas system low pressure alarm system, with a 31 day verification of the ADS accumulator gas supply header pressure. The existing TS SR 4.5.1.d.1 and SR 4.5.1.d.2.c, a 24 month channel calibration of the accumulator backup compressed gas system low pressure alarm system, will be relocated to the Technical Requirements Manual (TRM).

Attachment 1 to this letter describes the proposed changes and provides justification for the changes, including the basis for PECO Energy's determination that the proposed changes do not involve a significant hazards consideration. Attachments 2 and 3 to this letter provide the "marked-up" and "camera-ready" Technical Specifications pages, respectively. This information is being submitted under affirmation, and the required affidavit is enclosed.

We request that if approved, the changes become effective within 30 days of issuance.

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If you have any questions, please do not hesitate to contact us.

Sincerely,

J. B. Hutton /FOR

James A. Hutton
Director - Licensing
Station Support Department

Attachments

cc: H. J. Miller, Administrator, Region I, USNRC (w/ Attachments)
A. L. Burritt, USNRC Senior Resident Inspector, LGS "
R. R. Janati, PA Bureau of Radiological Protection "

COMMONWEALTH OF PENNSYLVANIA :

: ss

COUNTY OF CHESTER :

J. W. Langenbach, being first duly swom, deposes and says:

That he is Vice President of PECO Energy Company, the Applicant herein; that he has read the enclosed Technical Specifications Change Request No. 00-01-0, "Changes to Automatic Depressurization System Surveillance Requirements," for Limerick Generating Station, Units 1 and 2, Facility Operating License Nos. NPF-39 and NPF-85, respectively, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

James W Langenbach

Vice President

Subscribed and swom to
before me this 31st day
of July , 2000.

Carol A. Walton

Notary Public

Notarial Seal
Carol A. Walton, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires May 28, 2002
Member, Pennsylvania Association of Notaries

**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. 00-01-0

July 31, 2000

"Changes to Automatic Depressurization System Surveillance Requirements"

Information Supporting Changes - 6 Pages

## Introduction

PECO Energy Company (PECO Energy) is requesting Technical Specifications (TS) changes which will revise Limerick Generating Station (LGS) TS to replace the existing Automatic Depressurization System (ADS) TS Surveillance Requirement (SR) 4.5.1.d.1, a 31 day channel functional test of the accumulator backup compressed gas system low pressure alarm system, with a 31 day verification of the ADS accumulator gas supply header pressure. The existing TS SR 4.5.1.d.1 and SR 4.5.1.d.2.c, a 24 month channel calibration of the accumulator backup compressed gas system low pressure alarm system, will be relocated to the Technical Requirements Manual (TRM). Marked-up TS pages indicating the proposed changes are provided in Attachment 2. This Technical Specifications Change Request (TSCR) provides a discussion and description of the proposed changes, a safety assessment, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

## Discussion and Description of the Proposed Changes

The ADS at Limerick requires the operation of five of the fourteen main steam safety relief valves (MSRVs). These five MSRVs are referred to as the ADS valves. All of the pilot operated MSRVs are self-actuated for automatic overpressure protection of the reactor vessel and attached piping, and can also be remotely actuated via main control room hand switches. The five ADS valves can also be remotely actuated automatically or manually via the ADS control logic. The remote actuation of the MSRVs requires the application of an external compressed gas supply to the MSRV actuators. This gas pressure is normally supplied by the primary containment instrument gas (PCIG) system.

The PCIG system consists of two non-safety related compressor packages with separate receiver tanks and two separate supply loops. Each of these loops split into two separate headers outside of containment and each header has a separate containment penetration. One header from each loop is designed as a separate safety-related and seismic Category 1 supply to the appropriate ADS valves (three ADS valves are supplied from the A loop header and two ADS valves are supplied from the B loop header). The other two headers are non-safety related and non-seismic Category 1 and both of these headers are each hard piped inside of containment to the nine non-ADS MSRVs. These headers are also hard piped to the ADS valves such that either the 'A' PCIG loop or the 'B' PCIG loop can provide the gas supply to each of the five ADS valves when either of the PCIG compressors and/or receiver tanks are adequately pressurized. The instrument air system and the station compressed air system can also be aligned to the PCIG system as backup pneumatic sources.

The PCIG system also includes a backup compressed gas system that consists of two additional safety-related backup headers in the reactor enclosure, with each header connected to three standard 2200 psi nitrogen bottles with regulators. Each backup header is connected to one of the two safety-related PCIG supply headers outside of containment and is normally isolated from the PCIG supply header by a normally closed solenoid valve (fail open). When the normal PCIG supply header pressure drops to 85 psig, the solenoid valve on the backup header opens and another solenoid valve on the PCIG supply header closes and isolates the safety-related portion of the PCIG supply header and the safety-related backup header from the non-safety related portion of the PCIG supply header. This re-alignment connects the backup supply bottles to the ADS valves and accumulators inside containment. Each set of

three bottles provides sufficient gas volume to assure up to 100 actuations of the ADS valves on that header. This satisfies the short term need for ADS control (i.e., six hours through day seven of an accident) without any operator action outside of the control room. During this time period, additional bottles or a compressor can be connected to the safety-related external connection (outside of the reactor enclosure) which is provided at the end of one backup supply header. This external connection will allow for long term safety-related makeup for up to 100 days if required.

The backup compressed gas system includes a low pressure alarm system. This alarm function is provided by pressure switches installed on the 'A' and 'B' ADS accumulator backup compressed gas supply headers. These switches initiate the low pressure alarms in the main control room when the gas pressure in either of the backup supply headers decreases to below 90 psig. These alarms are for indication only and do not impact the operation, capability or operability of the ADS accumulators since a loss of pressure in the backup header does not indicate a loss of pressure in the ADS accumulator supply header or the ADS accumulators due to the normally closed solenoid valve in the backup header.

The ADS valves are required to operate in the three cases described below.

1. Automatically or manually to rapidly depressurize the reactor vessel following a small break Loss of Coolant Accident (LOCA) with an assumed failure of the High Pressure Coolant Injection (HPCI) system to maintain vessel level. This Emergency Core Cooling System (ECCS) function allows for the injection of makeup water and core cooling by the motor driven low pressure ECCS pumps.

   This first case is the function described in the ECCS TS Bases 3/4.5.1 for the ADS. In order to assure that the ADS valves can perform reliably and for the required duration, each ADS valve has a separate gas accumulator with inlet check valves in the safety-related gas supply line. This safety-related accumulator is continually pressurized by the various PCIG system flow paths described above and contains sufficient volume in order to fulfill the ADS design basis following a failure of the normal PCIG supply. The accumulator is sized to provide for at least two ADS valve actuations with the drywell at 70% of its design pressure. The ECCS safety analysis assumes that only one actuation is required to achieve the depressurization required for the operation of the low pressure ECCS. The sizing of the accumulator also considers the maximum design leakage rates for a duration of six hours. The depressurization is completed while the plant is under hot shutdown conditions and is completed within six hours of the LOCA.

2. Following the depressurization of the reactor vessel following a LOCA, the ADS valves must be maintained open or reopened as needed to maintain the vessel pressure well below the low pressure ECCS pumps shutoff head. This allows for continued long-term cooling by the ECCS.

   This second case requires an additional backup supply of compressed gas to replenish the ADS accumulators because the ADS valves may be required to remain open or be reopened for a period of time after the initial six hours. If the Residual Heat Removal (RHR) shutdown cooling mode is unavailable for direct decay heat removal from the core, due to an assumed failure in the common RHR shutdown cooling suction line, then an alternate method of decay removal would be required to keep the vessel from re-

pressurizing. In addition, an adequately sized return flow path from the vessel to the suppression pool must be maintained in order to support the operation of the ECCS pumps. Both of these functions can be provided by opening up to two ADS valves. The gas supply required for this extended operation is provided by the ADS accumulator backup compressed gas system.

3. During a plant shutdown, if a failure occurs which makes the common RHR shutdown cooling suction path unavailable, then TS Limiting Condition for Operation (LCO) 3.9.11.1 requires the use of alternate methods of decay heat removal and coolant circulation. As described in Updated Final Safety Analysis (UFSAR) Sections 5.4.7 and 15.2.9, by raising vessel water level and flooding the main steam lines, a flow path from the vessel to the suppression pool can be established by opening ADS valves. Decay heat removal can be established by cooling the suppression pool water and using core spray or RHR pumps to return flow to the vessel.

   This third case involves the loss of RHR shutdown cooling during a normal plant shutdown (including Loss of Offsite Power events and other isolation events) or following an accident. If RHR shutdown cooling can not be put in service, the water level in the vessel can be raised up and the main steam lines flooded. Then one or two ADS valves can be opened to establish flow to the suppression pool. The suppression pool water is then cooled while the water is returned to the vessel by core spray or by RHR. The gas supply required for this operation is provided by the ADS accumulator backup compressed gas system as described above. In the non-accident cases, the long term backup supply via the external connection does not have to be used because the reactor enclosure will be accessible and the short term backup supply bottles can simply be replaced as needed.

The current ECCS TS surveillance requirements link a channel functional test and calibration of the ADS accumulator backup compressed gas low pressure alarm system to the TS operability of the ADS (first case described above). Since there is no TS allowed out-of-service time for the alarm system, a failure of the alarm test requires entering a 12 hour shutdown ACTION statement for two or more ADS valves inoperable (TS LCO 3.5.1.d.2). However, a plant shutdown based on a failure of this alarm is not appropriate. As indicated previously, the alarm is for indication only and does not impact the operation, capability or operability of the ADS accumulators. The design basis for ADS, as described in the ECCS TS Bases 3/4.5.1, is to depressurize the reactor vessel so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. A loss of pressure in the backup header does not indicate a loss of pressure in the ADS accumulator supply header or the ADS accumulators due to the normally closed solenoid valve in the backup header. Without a loss of pressure in the ADS accumulators, the ADS valves are fully capable of meeting the ADS depressurization function described in the TS Bases. Therefore, the appropriate parameter to monitor is the ADS accumulator gas supply header pressure.

Accordingly, the proposed changes are described below.

1. Replace ECCS ADS TS SR 4.5.1.d.1, performing a Channel Functional Test at least once per 31 days of the accumulator backup compressed gas system low pressure alarm system, with a new TS SR 4.5.1.d.1, verifying at least once per 31 days that the ADS accumulator gas supply header pressure is $\geq$ 90 psig. This new surveillance requirement

ensures that the ADS valves are capable of performing the ADS depressurization function described in ECCS TS Bases 3/4.5.1.

2. Delete ECCS ADS TS SR 4.5.1.d.2.c), performing a Channel Calibration at least once per 24 months of the accumulator backup compressed gas system low pressure alarm system.
3. Add to TS Bases 3/4.5.1 and 3/4.5.2, the bases for the new SR verification of the ADS accumulator gas supply header pressure.
4. Relocate the existing SR 4.5.1.d.1 (Channel Functional Test) and SR 4.5.1.d.2.c (Channel Calibration) to the TRM.

These changes are consistent with the requirements in the NRC's Improved Technical Specifications (NUREG-1433).

**Safety Assessment**

The current LGS ECCS TS Surveillance Requirements for the ADS includes the performance of a Channel Functional Test at least once per 31 days and a Channel Calibration at least once per 24 months of the ADS accumulator backup compressed gas system low pressure alarm system. This alarm function is provided by pressure switches installed on the 'A' and 'B' ADS accumulator backup compressed gas supply headers. These switches initiate the low pressure alarms in the main control room when the gas pressure in either of the backup supply headers decreases to below 90 psig. These alarms are for indication only and do not impact the operation, capability or operability of the ADS accumulators in supporting the TS required ADS depressurization function. A loss of pressure in the backup header does not indicate a loss of pressure in the ADS accumulator supply header or the ADS accumulators due to the normally closed solenoid valve. Without a loss of pressure in the ADS accumulators, the ADS valves are fully capable of meeting the ADS depressurization function described in the ECCS TS Bases 3/4.5.1. The proposed TS verification that the pressure in the ADS accumulator compressed gas header is at least equal to the ADS accumulator's minimum required charging pressure of 90 psig, is a direct indication that the pressure in the ADS accumulators meets the design basis and that the ADS valves are fully capable of performing the TS required ADS depressurization function for the initial six hours of an event. The proposed surveillance frequency is in accordance with NUREG-1433, Rev. 1, Surveillance Requirement 3.5.1.3.

Including the channel functional test and channel calibration requirements for the ADS long term backup gas supply system alarm system in the TRM will ensure that the long term gas supply system continues to meet its design requirements specified in the UFSAR. In addition, this will help to eliminate potential confusion regarding TS operability of the ADS valves if the long term gas supply system is unavailable. Allowed outage times and appropriate actions for when portions of the long term gas supply to the ADS valves become unavailable are also being included in the TRM.

When the proposed change was evaluated in relation to the LGS Probabilistic Safety Assessment (PSA), it was concluded that the change has no impact on core damage frequency since the ADS depressurization function is not impacted by the proposed change.

Information Supporting a Finding of No Significant Hazards Consideration

We have concluded that the proposed changes to the Limerick Generating Station (LGS), Unit 1 and Unit 2, Technical Specifications (TS), which will revise TS to replace the channel functional test of the Automatic Depressurization System (ADS) accumulator backup compressed gas low pressure alarm system with a verification of the ADS accumulator gas supply header pressure to verify ADS operability, 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 TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed TS changes have no physical impact on plant equipment or the normal operation of plant systems. The ADS and the ADS accumulator backup compressed gas system affected by the proposed testing changes are normally in a standby mode and there are no existing credible system failures that are accident initiators. The ability of the ADS to depressurize the vessel following a small break Loss of Coolant Accident (LOCA) so that flow from low pressure Emergency Core Cooling Systems (ECCS) can enter the core in time to limit fuel cladding temperatures is maintained by the operability of the ADS accumulators and their inlet check valves. The ADS accumulator backup compressed gas low pressure alarm system has no impact on the ability of the ADS accumulators and associated check valves to maintain an adequate gas supply required to mitigate an accident. Therefore, the removal of the alarm system testing from the TS has no impact on the ability of the ADS to cope with the small break LOCA as previously evaluated. The replacement of the monthly alarm channel functional test with the monthly verification of the ADS accumulator gas supply header pressure will assure that the ADS accumulators are pressurized as required to support ADS operability and the ability of ADS to mitigate the accident as previously analyzed is maintained. Therefore, the proposed changes do not involve a significant 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 have no physical impact on plant equipment or the normal operation of plant systems. The changes are limited to changes in administrative testing requirements for the existing ADS and ADS accumulator backup compressed gas low pressure alarm systems, and the long term gas supply to the ADS valves. The changes do not impact the methods of operation or manipulation of these systems or components. The impact of these changes has been evaluated to assure that the changes are in conformance with the required design and licensing basis, and that system performance is not degraded. The changes do not affect the operation of the ADS or the ADS accumulator backup gas system and do not create any new system failure modes or accident initiators not previously considered. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed changes maintain the safety design basis of the ADS and the ADS accumulator backup gas systems. The ADS accumulator backup compressed gas low pressure alarm system does not support the operability of the ADS accumulators which are required to maintain an adequate gas supply for ADS vessel depressurization. Therefore, the Channel Functional Test and Channel Calibration of backup gas system alarms can be removed from TS and have no impact on the ability of the ADS to depressurize the reactor and maintain current safety margins defined in the design basis for this TS. The availability of the ADS accumulator backup gas system to perform its long term cooling function after an accident or other event is not addressed in any TS or Bases. The proposed changes in testing also do not impact any of the Inservice Inspections or Tests currently performed on the ADS or ADS accumulator backup gas system components. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

## Information Supporting an Environmental Assessment

An Environmental Assessment is not required for the TS changes proposed by this TS Change Request because the requested changes to the Limerick Generating Station, Unit 1 and Unit 2, TS conform to the criteria for "actions eligible for categorical exclusion," as specified in 10CFR51.22(c)(9). The proposed changes will have no impact on the environment. The proposed TS 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 effluent that may be released offsite. In addition, the proposed TS 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 Limerick Generating Station, Unit 1 and Unit 2, Technical Specifications, and have concluded that they do not involve an unreviewed safety question and they will not endanger the health and safety of the public.

**ATTACHMENT 2**

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS.
50-352
50-353

LICENSE NOS.
NPF-39
NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST
NO. 00-01-0

July 31, 2000

"Changes to Automatic Depressurization System Surveillance Requirements"

AFFECTED PAGES
(Mark-ups)

| UNIT 1 | UNIT 2 |
|---|---|
| 3/4 5-5 | 3/4 5-5 |
| B 3/4 5-2 | B 3/4 5-2 |

SURVEILLANCE REQUIREMENTS (Continued)

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 $\Delta P$ instrumentation and verifying the setpoint to be ≤ the allowable value of 4.4 psid.

5. Performing a CHANNEL CALIBRATION of the LPCI header $\Delta P$ 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) DELETED

   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.

Replace

** 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.

1. At least once per 31 days, verify ADS accumulator gas supply header pressure is ≥90 psig.

FEB 3 199

ECCS - OPERATING and SHUTDOWN (Continued)

With the HPCI system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the CS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the safety analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCI out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems and the RCIC system. The HPCI system, and one LPCI subsystem, and/or one CSS subsystem out-of-service period of 8 hours ensures that sufficient ECCS, comprised of a minimum of one CSS subsystem, three LPCI subsystems, and all of the ADS will be available to 1) provide for safe shutdown of the facility, and 2) mitigate and control accident conditions within the facility.

The surveillance requirements provide adequate assurance that the HPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment.

Upon failure of the HPCI system to function properly after a small break loss-of-coolant accident, the automatic depressurization system (ADS) automatically causes selected safety/relief valves to open, depressurizing the reactor so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. ADS is conservatively required to be OPERABLE whenever reactor vessel pressure exceeds 100 psig. This pressure is substantially below that for which the low pressure core cooling systems can provide adequate core cooling for events requiring ADS.

ADS automatically controls five selected safety-relief valves. The safety analysis assumes all five are operable. The allowed out-of-service time for one valve for up to fourteen days is determined in a similar manner to other ECCS sub-system out-of-service time allowances.

3/4.5.3 SUPPRESSION CHAMBER

< add Insert

Verification every 31 days that ADS accumulator gas supply header pressure is ≥ 90 psig ensures adequate gas pressure for reliable ADS operation. The accumulator on each ADS valve provides pneumatic pressure for valve actuation. The design pneumatic supply pressure requirements for the accumulator are such that, following a failure of the pneumatic supply to the accumulator at least two valve actuations can occur with the drywell at 70% of design pressure. The ECCS safety analysis assumes only one actuation to achieve the depressurization required for operation of the low pressure ECCS. This minimum required pressure of ≥ 90 psig is provided by the PCIG supply. The 31 day Frequency takes into consideration administrative controls over operation of the gas system and alarms for low gas pressure.

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SURVEILLANCE REQUIREMENTS (Continued)

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 $\Delta P$ instrumentation and verifying the setpoint to be ≤ the allowable value of 4.4 psid.

5. Performing a CHANNEL CALIBRATION of the LPCI header $\Delta P$ 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.

DELETE

   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.

REPLACE

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** 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.

1. At least once per 31 days, verify ADS accumulator gas supply header pressure is ≥90 psig.

FEB 3 1997

ECCS - OPERATING and SHUTDOWN (Continued)

With the HPCI system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the CS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the safety analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCI out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems and the RCIC system. The HPCI system, and one LPCI subsystem, and/or one CSS subsystem out-of-service period of 8 hours ensures that sufficient ECCS, comprised of a minimum of one CSS subsystem, three LPCI subsystems, and all of the ADS will be available to 1) provide for safe shutdown of the facility, and 2) mitigate and control accident conditions within the facility.

The surveillance requirements provide adequate assurance that the HPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment.

Upon failure of the HPCI system to function properly after a small break loss-of-coolant accident, the automatic depressurization system (ADS) automatically causes selected safety/relief valves to open, depressurizing the reactor so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. ADS is conservatively required to be OPERABLE whenever reactor vessel pressure exceeds 100 psig. This pressure is substantially below that for which the low pressure core cooling systems can provide adequate core cooling for events requiring ADS.

ADS automatically controls five selected safety-relief valves. The safety analysis assumes all five are operable. The allowed out-of-service time for one valve for up to fourteen days is determined in a similar manner to other ECCS sub-system out-of-service time allowances.

INSERT

Verification every 31 days that ADS accumulator gas supply header pressure is ≥ 90 psig ensures adequate gas pressure for reliable ADS operation. The accumulator on each ADS valve provides pneumatic pressure for valve actuation. The design pneumatic supply pressure requirements for the accumulator are such that, following a failure of the pneumatic supply to the accumulator at least two valve actuations can occur with the drywell at 70% of design pressure. The ECCS safety analysis assumes only one actuation to achieve the depressurization required for operation of the low pressure ECCS. This minimum required pressure of ≥ 90 psig is provided by the PCIG supply. The 31 day Frequency takes into consideration administrative controls over operation of the gas system and alarms for low gas pressure.

**ATTACHMENT 3**

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS.
50-352
50-353

LICENSE NOS.
NPF-39
NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST
NO. 00-01-0

July 31, 2000

"Changes to Automatic Depressurization System Surveillance Requirements"

AFFECTED PAGES
(Camera-ready)

| UNIT 1 | UNIT 2 |
|---|---|
| 3/4 5-5 | 3/4 5-5 |
| B 3/4 5-2 | B 3/4 5-2 |
| B 3/4 5-2a (new) | B 3/4 5-2a (new) |

SURVEILLANCE REQUIREMENTS (Continued)

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, verify ADS accumulator gas supply header pressure is ≥90 psig.

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) DELETED

** 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.

ECCS - OPERATING and SHUTDOWN (Continued)

With the HPCI system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the CS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the safety analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCI out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems and the RCIC system. The HPCI system, and one LPCI subsystem, and/or one CSS subsystem out-of-service period of 8 hours ensures that sufficient ECCS, comprised of a minimum of one CSS subsystem, three LPCI subsystems, and all of the ADS will be available to 1) provide for safe shutdown of the facility, and 2) mitigate and control accident conditions within the facility.

The surveillance requirements provide adequate assurance that the HPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment.

Upon failure of the HPCI system to function properly after a small break loss-of-coolant accident, the automatic depressurization system (ADS) automatically causes selected safety/relief valves to open, depressurizing the reactor so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. ADS is conservatively required to be OPERABLE whenever reactor vessel pressure exceeds 100 psig. This pressure is substantially below that for which the low pressure core cooling systems can provide adequate core cooling for events requiring ADS.

ADS automatically controls five selected safety-relief valves. The safety analysis assumes all five are operable. The allowed out-of-service time for one valve for up to fourteen days is determined in a similar manner to other ECCS sub-system out-of-service time allowances.

Verification every 31 days that ADS accumulator gas supply header pressure is ≥90 psig ensures adequate gas pressure for reliable ADS operation. The accumulator on each ADS valve provides pneumatic pressure for valve actuation. The design pneumatic supply pressure requirements for the accumulator are such that, following a failure of the pneumatic supply to the accumulator at least two valve actuations can occur with the drywell at 70% of design pressure. The ECCS safety analysis assumes only one actuation to achieve the depressurization required for operation of the low pressure ECCS. This minimum required pressure of ≥90 psig is provided by the PCIG supply. The 31 day Frequency takes into consideration administrative controls over operation of the gas system and alarms for low gas pressure.

ECCS - OPERATING and SHUTDOWN (Continued)

3/4.5.3 SUPPRESSION CHAMBER

The suppression chamber is required to be OPERABLE as part of the ECCS to ensure that a sufficient supply of water is available to the HPCI, CS and LPCI systems in the event of a LOCA. This limit on suppression chamber minimum water volume ensures that sufficient water is available to permit recirculation cooling flow to the core. The OPERABILITY of the suppression chamber in OPERATIONAL CONDITION 1, 2, or 3 is also required by Specification 3.6.2.1.

Repair work might require making the suppression chamber inoperable. This specification will permit those repairs to be made and at the same time give assurance that the irradiated fuel has an adequate cooling water supply when the suppression chamber must be made inoperable, including draining, in OPERATIONAL CONDITION 4 or 5.

In OPERATIONAL CONDITION 4 and 5 the suppression chamber minimum required water volume is reduced because the reactor coolant is maintained at or below 200°F. Since pressure suppression is not required below 212°F, the minimum water volume is based on NPSH, recirculation volume and vortex prevention plus a safety margin for conservatism.

SURVEILLANCE REQUIREMENTS (Continued)

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 $\Delta P$ instrumentation and verifying the setpoint to be ≤ the allowable value of 4.4 psid.

5. Performing a CHANNEL CALIBRATION of the LPCI header $\Delta P$ 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, verify ADS accumulator gas supply header pressure is ≥90 psig.

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) DELETED

** 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.

ECCS - OPERATING and SHUTDOWN (Continued)

With the HPCI system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the CS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the safety analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCI out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems and the RCIC system. The HPCI system, and one LPCI subsystem, and/or one CSS subsystem out-of-service period of 8 hours ensures that sufficient ECCS, comprised of a minimum of one CSS subsystem, three LPCI subsystems, and all of the ADS will be available to 1) provide for safe shutdown of the facility, and 2) mitigate and control accident conditions within the facility.

The surveillance requirements provide adequate assurance that the HPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment.

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ADS automatically controls five selected safety-relief valves. The safety analysis assumes all five are operable. The allowed out-of-service time for one valve for up to fourteen days is determined in a similar manner to other ECCS sub-system out-of-service time allowances.

Verification every 31 days that ADS accumulator gas supply header pressure is ≥90 psig ensures adequate gas pressure for reliable ADS operation. The accumulator on each ADS valve provides pneumatic pressure for valve actuation. The design pneumatic supply pressure requirements for the accumulator are such that, following a failure of the pneumatic supply to the accumulator at least two valve actuations can occur with the drywell at 70% of design pressure. The ECCS safety analysis assumes only one actuation to achieve the depressurization required for operation of the low pressure ECCS. This minimum required pressure of ≥90 psig is provided by the PCIG supply. The 31 day Frequency takes into consideration administrative controls over operation of the gas system and alarms for low gas pressure.

ECCS - OPERATING and SHUTDOWN (Continued)

3/4.5.3 SUPPRESSION CHAMBER

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Repair work might require making the suppression chamber inoperable. This specification will permit those repairs to be made and at the same time give assurance that the irradiated fuel has an adequate cooling water supply when the suppression chamber must be made inoperable, including draining, in OPERATIONAL CONDITION 4 or 5.

In OPERATIONAL CONDITION 4 and 5 the suppression chamber minimum required water volume is reduced because the reactor coolant is maintained at or below 200°F. Since pressure suppression is not required below 212°F, the minimum water volume is based on NPSH, recirculation volume and vortex prevention plus a safety margin for conservatism.