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10CFR50.90

November 26, 2002

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: License Amendment Request 02-00782
Revision to Technical Specifications Adding New Required Actions for Scram Discharge Volume Vent and Drain Valve Operability

Dear Sir/Madam:

Pursuant to 10CFR50.90, Exelon Generation Company (Exelon), LLC proposes changes to Appendix A, Technical Specifications (TS), of the Limerick Generating Station (LGS) Units 1 and 2 Facility Operating Licenses. The proposed changes would add required actions for Scram Discharge Volume (SDV) Vent and Drain Valves to LGS TS 3.1.3.1, "Control Rod Operability." The proposed changes will bring the Limerick TS more closely into alignment with NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4," Revision 2. In addition, modifications are proposed to TS 3.6.3, "Primary Containment Isolation Valves", to clarify the relationship between TS 3.1.3.1 and TS 3.6.3 regarding SDV vent and drain valves.

The proposed changes have been reviewed and approved by the Plant Operations Review Committee and the Nuclear Safety Review Board. This information is being submitted under unsworn declaration.

There are no commitments being made as a result of this License Amendment Request.

We are notifying the State of Pennsylvania of this application for changes to the TS and Operating Licenses by transmitting a copy of this letter and its attachments to the designated state official.

Exelon requests approval of the proposed amendment by May 25, 2003.

Once approved, this amendment shall be implemented within 60 days of issuance.

A001

This proposed license amendment request is subdivided as follows.

1. Attachment 1 provides a description of the proposed changes, the evaluation of the proposed changes, and no significant hazards consideration (NSHC) determination.

2. Attachment 2 includes the markup of the current TS pages.

3. Attachment 3 provides the TS pages retyped to include the proposed changes.

4. Attachment 4 provides the markup of the current TS Bases pages to show the proposed changes. The TS Bases changes are provided for information only.

5. Attachment 5 provides the TS Bases pages retyped to include the proposed changes. The TS Bases changes are provided for information only.

If you have any questions or require additional information, please contact me at (610) 765-5664.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Executed on 11-26-02

Michael P. Gallagher
Director, Licensing and Regulatory Affairs
Mid-Atlantic Regional Operating Group

Attachments
Attachment 1: Evaluation of Proposed Changes
Attachment 2: Markup of Technical Specification Pages
Attachment 3: Typed Technical Specification Pages
Attachment 4: Markup of Technical Specification Bases Pages (for information only)
Attachment 5: Typed Technical Specification Bases Pages (for information only)

cc: H. J. Miller, Administrator, Region I, USNRC
A. L. Burritt, USNRC Senior Resident Inspector, LGS
S. Wall, Project Manager, USNRC
R. R. Janati - Commonwealth of Pennsylvania

ATTACHMENT 1
EVALUATION OF PROPOSED CHANGES

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS. 50-352
50-353
LICENSE NOS. NPF-39
NPF-85

LICENSE AMENDMENT REQUEST 02-00782

"Revision to Technical Specifications Adding New Required Actions For Scram Discharge Volume Vent and Drain Valve Operability"

1.0 DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (Exelon), LLC, proposes changes to the Limerick Generating Station Units 1 and 2 (LGS) Technical Specifications (TS), Facility Operating License Nos. NPF-39 and NPF-85.

The proposed changes would add TS requirements for scram discharge volume (SDV) vent and drain valves into existing TS 3.1.3.1 "Control Rod Operability." The existing Limerick TS 3/4.1.3 includes surveillance requirements associated with the scram discharge volume vent and drain valves; however, the existing Limerick TSs do not include specific Action statements associated with these valves. The purpose of this License Amendment Request is to add Action statements into the Limerick TS, similar to the associated Action statements contained in the Improved Standard TS, NUREG-1433, Revision 2, Section 3.1.8 (Reference 1), to address potentially inoperable SDV vent and drain valves.

Currently, TS 3.6.3 requires that a penetration be isolated within 4 hours for an inoperable PCIV; however, under the proposed TS, isolation of the SDV vent or drain line will be required within 8 hours if both valves in the line are inoperable. With one inoperable valve in a line, continued operation would be permitted for up to 7 days. Since the SDV vent and drain valves are considered Primary Containment Isolation Valves, TS 3.6.3, "Primary Containment Isolation Valves," will be clarified to reflect that the action requirements for the SDV vent and drain valves are contained in TS 3.1.3.1.

2.0 PROPOSED CHANGES

2.1 Changes Proposed to TS 3.1.3.1

Exelon proposes the following to modify the Limiting Condition for Operation (LCO) to add operability requirements for the scram discharge volume vent and drain valves:

> All control rods **<u>and scram discharge volume vent and drain valves</u>** shall be OPERABLE.

The TS 3.1.3.1 Applicability will be modified to reflect the addition of OPERATIONAL CONDITION 3 with a note that OPERATIONAL CONDITION 3 is only applicable to the scram discharge volume vent and drain valves. This change is proposed to reflect the current TS 3.6.3 Applicability requirements for the SDV vent and drain valves as a subset of the PCIVs.

Exelon proposes to add the following Action statements and footnotes '***' and '****' to Limerick TS 3.1.3.1:

> d. With one or more scram discharge volume (SDV) vent or drain lines with one valve inoperable, restore the inoperable valve(s) to OPERABLE status within 7

days or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

e. With one or more SDV vent or drain lines with both valves inoperable, isolate the associated line within 8 hours**** or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

*** Separate Action entry is allowed for each SDV vent and drain line.
**** An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

It should be noted that the Surveillance Requirements that appear in the Improved Standard TS 3.1.8 (NUREG-1433, Rev. 2) are already in the existing Limerick TSs. Adding Actions 'd', 'e', and the two footnotes as described above to the Limerick TS will bring the Limerick TS more closely into alignment with the Improved Standard TS in this area.

2.2 Proposed Changes to TS 3.6.3

TS 3.6.3 will be modified to reflect that the action requirements and Allowed Out of Service times for inoperable SDV vent and drain valves are contained in TS 3.1.3.1. TS 3.6.3 Action (a) will be modified by the following "**" note:

**Except for the scram discharge volume vent and drain valves.

In addition, the following new Action (c) will be added:

c. With one or more scram discharge volume vent or drain valves inoperable, perform the applicable actions specified in TS 3.1.3.1.

All of the proposed changes to LGS TS 3.1.3.1 and 3.6.3 are shown in Attachments 2 & 3 of this License Amendment Request (LAR). In addition, associated changes are being made to the TS Bases as shown in Attachments 4 and 5 of this LAR.

3.0 BACKGROUND

As discussed in the LGS, Units 1 and 2 Updated Final Safety Analysis Report (UFSAR), Section 4.6.1.2.4.2.6, "Scram Discharge Volume", the SDV is a volume of header piping that connects to each hydraulic control unit (HCU) and drains into an instrument volume. The header piping is sized to receive and contain all the water discharged by the control rod drives (CRDs) during a scram. There are also two scram discharge instrument volumes (SDIVs), one for each HCU bank. The SDIVs and SDV header piping are connected to a common drain line and vent line, respectively. Both the drain and vent lines are equipped with two valves in series. Redundant scram discharge system vent and drain valves are provided to ensure that no single failure can result in an uncontrolled loss of reactor coolant. Redundant solenoid-operated pilot valves control

the vent and drain valves. In addition, the solenoid-operated pilot valves are fail-safe (i.e., SDV isolates) on loss of power or air supply. The position of the vent and drain valves is continuously indicated in the control room.

During normal plant operation, the SDV is maintained empty and vented through its open vent and drain valves. When a reactor scram occurs, these vent and drain valves are closed to prevent release of reactor water. When the initial scram signal is cleared from the reactor protection system (RPS), the SDV high level signal is overridden, the scram is reset, and then the SDV is drained and returned to atmospheric pressure.

4.0 TECHNICAL ANALYSIS

Exelon has determined that there is a minimal safety consequence of changing TS to allow for operation with inoperable SDV vent and drain valves. This change is consistent with the Allowed Out of Service Time for one or more SDV vent or drain lines with one valve inoperable contained in Improved Standard TS, NUREG-1433, Rev. 2, Section 3.1.8, Condition A. With both sets of vent or drain valves inoperable, the vent or drain lines will be isolated, respectively. Administrative controls consistent with those required by Limerick TS 3.6.3, "Primary Containment Isolation Valves," will be implemented to allow for draining of the SDV, as required. This Action is also consistent with Condition B of NUREG-1433, Rev. 2, Section 3.1.8.

This proposed change is reasonable, given the level of redundancy in the lines and the low probability of a scram occurring while the valve is inoperable. Additionally, each of these changes is consistent with the requirements and assumptions in Improved Standard TS, NUREG-1433, Rev. 2.

The SDV vent and drain valves are classified as Primary Containment Isolation Valves (PCIV), and, as stated previously, are included in TS 3.6.3. The operational requirements for the valves will not be altered as a result of this change. Furthermore, all applicable surveillance and testing requirements for the aforementioned valves will continue to be performed per the requirements specified in TS 3.6.3.

A PRA analysis for the 7-day AOT interval was performed. The PRA analysis yields an Incremental Conditional Core Damage Probability (ICCDP) of 5.2E-8 and an Incremental Conditional Large Early Release Frequency (ICLERP) of 5.7E-10. These values are within the limits of RG 1.177 for AOT changes. The PRA analysis for the 7-day AOT bounds the 8-hour AOT for the valves failed in the closed position. The 8-hour AOT condition with the valves failed in the open position yields negligible impact on Level 2 PRA per the LGS Individual Plant Examination (IPE) Report, based on the small line size.

Design Basis

Redundant scram discharge system vent and drain valves are provided at LGS to ensure that no single failure can result in an uncontrolled loss of reactor coolant. Redundant

solenoid-operated pilot valves control the vent and drain valves. The vent and drain system is therefore sufficiently redundant to avoid a failure to isolate the SDV for all single active failures. In addition, the solenoid-operated pilot valves are fail-safe (i.e., SDV isolates) on a loss of power or air supply. The redundant isolation valves on the vent and drain lines are normally open during power operation. Under the current licensing requirements, maintenance on any of the SDV pilot valves requires isolation of the SDV and the need to perform manual SDV draining under administrative control, resulting in a 12-hour TS Action. This condition has been evaluated by NUREG-1433, Rev. 2, which allows continued operation for a 7-day period to effect repairs. Since the plant design includes redundant vent and drain valves, repair operations on any one valve would not prevent isolation of the vent and drain lines during a scram.

The proposed changes do not impact the design basis of the system, nor do they result in a physical change to the facility. No changes to safety analyses or input assumptions used to develop the design basis are required as a result of the proposed changes.

5.0 REGULATORY SAFETY ANALYSIS

5.1 NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)

Exelon has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The scram discharge volume (SDV) and control rod drive (CRD) system, including the associated SDV vent and drain isolation valves, are not initiators to any accident sequence analyzed in the Updated Final Safety Analysis Report (UFSAR). Operation in accordance with the proposed Technical Specification (TS) ensures that the SDV and control rods are capable of performing their function as described in the UFSAR; therefore, the mitigative functions supported by the SDV and control rods will continue to provide the protection assumed by the analysis. The addition of specific TS actions to be taken for inoperable SDV vent or drain isolation valves will not challenge the ability of the SDV and control rods to perform their design function. Appropriate monitoring and maintenance, consistent with industry standards, will continue to be performed. In addition, the CRD system including the SDV isolation valves is within the scope of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," which will ensure the control of maintenance activities associated with the CRD system and SDV isolation valves.

Under the proposed TS changes, the SDV vent and drain lines may be unisolated under administrative control. This allows any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. This is acceptable since the administrative controls ensure the valve can be closed quickly, by a dedicated operator, if a scram

occurs with the valve open. The 8-hour allowable outage time to isolate the line is based on the low probability of a scram occurring while the line is not isolated and unlikelihood of significant CRD seal leakage.

The proposed changes do not involve any physical change to structures, systems, or components (SSCs) and do not alter the method of operation or control of SSCs. The current assumptions in the safety analysis regarding accident initiators and mitigation of accidents are unaffected by these proposed changes. No additional failure modes or mechanisms are being introduced and the likelihood of previously analyzed failures remains unchanged.

The integrity of fission product barriers, plant configuration, and operating procedures as described in the UFSAR will not be affected by these proposed changes. Therefore, the consequences of previously analyzed accidents will not increase because of these proposed changes.

Based on the above discussion, the proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve a physical alteration of the plant. No new equipment is being introduced, and installed equipment is not being operated in a new or different manner. There are no setpoints, at which protective or mitigative actions are initiated, affected by these proposed changes. These proposed changes will not alter the manner in which equipment operation is initiated, nor will the function demands on credited equipment be changed. Any alteration in procedures will continue to ensure that the plant remains within analyzed limits, and no change is required to the procedures relied upon to respond to an off-normal event as described in the UFSAR. As such, no new failure modes are being introduced. The changes do not alter assumptions made in the safety analysis and licensing basis.

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

The proposed amendment does not involve a significant reduction in a margin of safety.

The margin of safety is established through equipment design, operating parameters, and the setpoints at which automatic actions are initiated. The proposed changes are acceptable because the operability of the SDV and SDV isolation valves is unaffected, there is no detrimental impact on any equipment design parameter, and the plant will still be required to operate within assumed conditions. Operation in accordance with the proposed TS ensures that the SDV and control rods are capable of performing their functions as described in the UFSAR. Therefore, the support of the SDV and control rods in the plant response to analyzed events will continue to provide the margins of

safety assumed by the analysis. The additions to TS for inoperable SDV vent and drain isolation valves will not challenge the ability of the SDV or control rods to perform their design function. Appropriate monitoring and maintenance, consistent with industry standards, will continue to be performed. In addition, CRD system, including the SDV vent and drain isolation valves, are within the scope of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," which will ensure the control of maintenance activities associated with the CRD system. This provides sufficient management control of the requirements that assure the control rods and CRD system are maintained in a highly reliable condition. Although there is an increase in allowable outage time, this increase was evaluated and determined not to be a significant reduction in a margin of safety.

The proposed TS Actions for inoperable SDV vent and drain isolation valves are reasonable and consistent with approved standards, guidance and regulations.

Based on the above discussion, the proposed TS changes do not involve a significant reduction in a margin of safety.

Conclusion

Based upon the evaluation above, Exelon concludes that the proposed amendment presents no significant hazards under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

As stated in NUREG-0991, "Safety Evaluation related to the operation of LGS Units 1 and 2," Section 4.6, the NRC staff reviewed the extent of conformance of the scram discharge volume (SDV) design with the NRC generic study, "BWR Scram Discharge System Safety Evaluation," dated December 1, 1980. The design provides two separate SDV headers, with an integral instrumented volume (IV) at the end of each header, thus providing close hydraulic coupling. Each IV has redundant and diverse level instrumentation (float sensing and pressure sensing) for the scram function attached directly to the IV. Vent and drain lines are completely separated and contain redundant vent and drain valves equipped with redundant solenoid pilot valves. High point venting is provided. The NRC staff concluded that the design of the SDV fully meets the requirements of the NRC staff's generic report referenced above and is, therefore, acceptable (Reference 6). No changes to these approved SDV design features are proposed. Since no physical changes are being made, and current design bases are not being affected, there is no impact on compliance with 10CFR50 Appendix A General Design Criteria.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

An environmental assessment is not required for the proposed changes since the proposed changes conform to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). In accordance with 10 CFR 51.22(c)(9) a proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amount of any effluents that may be released offsite, or (3) result in a significant increase in individual or cumulative occupational radiation exposure. Exelon has reviewed the proposed license amendment and concludes that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with issuance of the proposed license change.

7.0 PRECEDENT

There are three precedents for the TS changes that Exelon is proposing. The first is from Detroit Edison's Fermi 2 plant. This LAR proposed identical TS changes based on Improved Technical Specifications (Reference 2). This LAR was subsequently approved by the NRC (Reference 3).

The second precedent is from Washington Public Power Supply System's WNP-2 plant (Reference 4). This LAR also incorporated actions for SDV vent and drain valves based on ITS; however, one Action is slightly different. WNP-2 proposed to "isolate the associated line within 7 days" while Limerick is proposing to, "restore the inoperable valve(s) to OPERABLE status within 7 days," when in the condition where one or more SDV vent or drain lines has one valve inoperable. Note that the LGS-proposed wording is consistent with NUREG-1433, Revision 2. The WNP-2 LAR was subsequently approved by the NRC (Reference 5).

The third precedent involves Exelon's Peach Bottom Atomic Power Station, Units 2 and 3. The existing Peach Bottom TS Section 3.6.1.3 "Primary Containment Isolation Valves" LCO includes an exception involving the scram discharge volume vent and drain valves. The LGS-proposed wording adopts a similar exception in TS 3.6.3.a.

8.0 REFERENCES

1. NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4," Revision 2, dated June 2001.
2. Letter from D. R. Gipson (Detroit Edison) to US NRC, dated 5/20/98.
3. Letter from US NRC to D. R. Gipson (Detroit Edison), dated 6/12/98.
4. Letter from J. V. Parrish (Washington Public Power Supply System) to USNRC, dated 10/31/94.
5. Letter from US NRC to J. V. Parrish (Washington Public Power Supply System), dated 2/27/95.
6. NUREG-0991 (Safety Evaluation related to the operation of LGS Units 1 and 2)

ATTACHMENT 2
MARKUP OF TECHNICAL SPECIFICATIONS PAGES

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS. 50-352
50-353
LICENSE NOS. NPF-39
NPF-85

LICENSE AMENDMENT REQUEST 02-00782

"Revision to Technical Specifications Adding New Required Actions for Scram Discharge Volume Vent and Drain Valve Operability"

MARKED-UP TS PAGES

UNIT 1	UNIT 2
3/4 1-3	3/4 1-3
3/4 1-4	3/4 1-4
3/4 6-17	3/4 6-17

Insert 1

d. With one or more scram discharge volume (SDV) vent or drain lines with one valve inoperable, restore the inoperable valve(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

e. With one or more SDV vent or drain lines with both valves inoperable, isolate the associated line within 8 hours**** or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

Insert 2

*** Separate Action entry is allowed for each SDV vent and drain line.
**** An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

REACTIVITY CONTROL SYSTEMS

3/4.1.3 CONTROL RODS

CONTROL ROD OPERABILITY

LIMITING CONDITION FOR OPERATION

and scram discharge volume vent and drain valves

3.1.3.1 All control rods shall be OPERABLE

APPLICABILITY: OPERATIONAL CONDITIONS 1, ~~and~~ 2, and 3 ***

ACTION:

a. With one control rod inoperable due to being immovable, as a result of excessive friction or mechanical interference, or known to be untrippable:

1. Within 1 hour:

a) Verify that the inoperable control rod, if withdrawn, is separated from all other inoperable control rods by at least two control cells in all directions.

b) Disarm the associated directional control valves** either:

1) Electrically, or

2) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

2. Restore the inoperable control rod to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

b. With one or more control rods trippable but inoperable for causes other than addressed in ACTION a, above:

1. If the inoperable control rod(s) is withdrawn, within 1 hour:

a) Verify that the inoperable withdrawn control rod(s) is separated from all other inoperable withdrawn control rods by at least two control cells in all directions, and

b) Demonstrate the insertion capability of the inoperable withdrawn control rod(s) by inserting the control rod(s) at least one notch by drive water pressure within the normal operating range*.

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

*The inoperable control rod may then be withdrawn to a position no further withdrawn than its position when found to be inoperable.

**May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

*** OPERATIONAL CONDITION 3 is only applicable to the scram discharge volume vent and drain valves.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

2. If the inoperable control rod(s) is inserted, within 1 hour disarm the associated directional control valves** either:

   a) Electrically, or

   b) Hydraulically by closing the drive water and exhaust water isolation valves.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

3. The provisions of Specification 3.0.4 are not applicable.

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

INSERT 1

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

4.1.3.1.2 When above the preset power level of the RWM, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6, and 4.1.3.7.

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*These valves may be closed intermittently for testing under administrative controls.

**May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

INSERT 2

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each primary containment isolation valve and each instrumentation line excess flow check valve shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valves inoperable,** maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

1. Restore the inoperable valve(s) to OPERABLE status, or

2. Isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolated position,* or

3. Isolate each affected penetration by use of at least one closed manual valve or blind flange.*

4. The provisions of Specification 3.0.4 are not applicable provided that within 4 hours the affected penetration is isolated in accordance with ACTION a.2. or a.3. above, and provided that the associated system, if applicable, is declared inoperable and the appropriate ACTION statements for that system are performed.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the instrumentation line excess flow check valves inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 4 hours either:

1. The inoperable valve is returned to OPERABLE status, or

2. The instrument line is isolated and the associated instrument is declared inoperable.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one or more scram discharge volume vent or drain valves inoperable, perform the applicable actions specified in Specification 3.1.3.1.

*Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.

** Except for the scram discharge volume vent and drain valves

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3/4.1.3 CONTROL RODS

CONTROL ROD OPERABILITY

LIMITING CONDITION FOR OPERATION

3.1.3.1 All control rods and scram discharge volume vent and drain valves shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, ~~and~~ 2, and 3 ***

ACTION:

a. With one control rod inoperable due to being immovable, as a result of excessive friction or mechanical interference, or known to be untrippable:

1. Within 1 hour:

a) Verify that the inoperable control rod, if withdrawn, is separated from all other inoperable control rods by at least two control cells in all directions.

b) Disarm the associated directional control valves** either:

1) Electrically, or

2) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

2. Restore the inoperable control rod to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

b. With one or more control rods trippable but inoperable for causes other than addressed in ACTION a, above:

1. If the inoperable control rod(s) is withdrawn, within 1 hour:

a) Verify that the inoperable withdrawn control rod(s) is separated from all other inoperable withdrawn control rods by at least two control cells in all directions, and

b) Demonstrate the insertion capability of the inoperable withdrawn control rod(s) by inserting the control rod(s) at least one notch by drive water pressure within the normal operating range*.

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

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*The inoperable control rod may then be withdrawn to a position no further withdrawn than its position when found to be inoperable.

**May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

*** OPERATIONAL CONDITION 3 is only applicable to the scram discharge volume vent and drain valves.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

2. If the inoperable control rod(s) is inserted, within 1 hour disarm the associated directional control valves** either:

   a) Electrically, or

   b) Hydraulically by closing the drive water and exhaust water isolation valves.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

3. The provisions of Specification 3.0.4 are not applicable.

INSERT 1

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

4.1.3.1.2 When above the preset power level of the RWM, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6, and 4.1.3.7.

---

*These valves may be closed intermittently for testing under administrative controls.

**May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

INSERT 2

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each primary containment isolation valve and each instrumentation line excess flow check valve shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valves inoperable,** maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

1. Restore the inoperable valve(s) to OPERABLE status, or

2. Isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolated position,* or

3. Isolate each affected penetration by use of at least one closed manual valve or blind flange.*

4. The provisions of Specification 3.0.4 are not applicable provided that within 4 hours the affected penetration is isolated in accordance with ACTION a.2. or a.3. above, and provided that the associated system, if applicable, is declared inoperable and the appropriate ACTION statements for that system are performed.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the instrumentation line excess flow check valves inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 4 hours either:

1. The inoperable valve is returned to OPERABLE status, or

2. The instrument line is isolated and the associated instrument is declared inoperable.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one or more scram discharge volume vent or drain valves inoperable, perform the applicable actions specified in Specification 3.1.3.1.

*Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.

** Except for the scram discharge volume vent and drain valves.

OCT 18 2000

ATTACHMENT 3
TYPED TECHNICAL SPECIFICATION PAGES

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS. 50-352
50-353
LICENSE NOS. NPF-39
NPF-85

LICENSE AMENDMENT REQUEST 02-00782

"Revision to Technical Specifications Adding New Required Actions for Scram Discharge Volume Vent and Drain Valve Operability"

REVISED TS PAGES

UNIT 1	UNIT 2
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3/4.1.3 CONTROL RODS

CONTROL ROD OPERABILITY

LIMITING CONDITION FOR OPERATION

3.1.3.1 All control rods and scram discharge volume vent and drain valves shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3***

ACTION:

a. With one control rod inoperable due to being immovable, as a result of excessive friction or mechanical interference, or known to be untrippable:

   1. Within 1 hour:

      a) Verify that the inoperable control rod, if withdrawn, is separated from all other inoperable control rods by at least two control cells in all directions.

      b) Disarm the associated directional control valves** either:

         1) Electrically, or

         2) Hydraulically by closing the drive water and exhaust water isolation valves.

      Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

   2. Restore the inoperable control rod to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

b. With one or more control rods trippable but inoperable for causes other than addressed in ACTION a, above:

   1. If the inoperable control rod(s) is withdrawn, within 1 hour:

      a) Verify that the inoperable withdrawn control rod(s) is separated from all other inoperable withdrawn control rods by at least two control cells in all directions, and

      b) Demonstrate the insertion capability of the inoperable withdrawn control rod(s) by inserting the control rod(s) at least one notch by drive water pressure within the normal operating range*.

---

* The inoperable control rod may then be withdrawn to a position no further withdrawn than its position when found to be inoperable.

** May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

*** OPERATIONAL CONDITION 3 is only applicable to the scram discharge volume vent and drain valves.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

2. If the inoperable control rod(s) is inserted, within 1 hour disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

3. The provisions of Specification 3.0.4 are not applicable.

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

d. With one or more scram discharge volume (SDV) vent or drain lines with one valve inoperable, restore the inoperable valve(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

e. With one or more SDV vent or drain lines with both valves inoperable, isolate the associated line within 8 hours **** or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

---

* These valves may be closed intermittently for testing under administrative controls.

** May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

*** Separate Action entry is allowed for each SDV vent and drain line.

**** An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

SURVEILLANCE REQUIREMENTS (Continued)

4.1.3.1.2 When above the preset power level of the RWM, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6, and 4.1.3.7.

4.1.3.1.4 The scram discharge volume shall be determined OPERABLE by demonstrating:

a. The scram discharge volume drain and vent valves OPERABLE at least once per 24 months, by verifying that the drain and vent valves;

   1. Close within 30 seconds after receipt of a signal for control rods to scram, and

   2. Open when the scram signal is reset.

b. Proper level sensor response by performance of a CHANNEL FUNCTIONAL TEST of the scram discharge volume scram and control rod block level instrumentation at least once per 92 days.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each primary containment isolation valves and the instrumentation line excess flow check valves shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valves inoperable,** maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

   1. Restore the inoperable valve(s) to OPERABLE status, or

   2. Isolate each affected penetration by use of at least one de-activated automatic valve secured in the isolated position,* or

   3. Isolate each affected penetration by use of at least one closed manual valve or blind flange.*

   4. The provisions of Specification 3.0.4 are not applicable provided that within 4 hours the affected penetration is isolated in accordance with ACTION a.2. or a.3. above, and provided that the associated system, if applicable, is declared inoperable and the appropriate ACTION statements for that system are performed.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the instrumentation line excess flow check valves inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 4 hours either:

   1. The inoperable valve is returned to OPERABLE status, or

   2. The instrument line is isolated and the associated instrument is declared inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one or more scram discharge volume vent or drain valves inoperable, perform the applicable actions specified in Specification 3.1.3.1.

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* Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.

** Except for the scram discharge volume vent and drain valves.

3/4.1.3 CONTROL RODS

CONTROL ROD OPERABILITY

LIMITING CONDITION FOR OPERATION

3.1.3.1 All control rods and scram discharge volume vent and drain valves shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3***

ACTION:

a. With one control rod inoperable due to being immovable, as a result of excessive friction or mechanical interference, or known to be untrippable:

   1. Within 1 hour:

      a) Verify that the inoperable control rod, if withdrawn, is separated from all other inoperable control rods by at least two control cells in all directions.

      b) Disarm the associated directional control valves** either:

         1) Electrically, or

         2) Hydraulically by closing the drive water and exhaust water isolation valves.

      Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

   2. Restore the inoperable control rod to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

b. With one or more control rods trippable but inoperable for causes other than addressed in ACTION a, above:

   1. If the inoperable control rod(s) is withdrawn, within 1 hour:

      a) Verify that the inoperable withdrawn control rod(s) is separated from all other inoperable withdrawn control rods by at least two control cells in all directions, and

      b) Demonstrate the insertion capability of the inoperable withdrawn control rod(s) by inserting the control rod(s) at least one notch by drive water pressure within the normal operating range*.

---

*The inoperable control rod may then be withdrawn to a position no further withdrawn than its position when found to be inoperable.

**May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

***OPERATIONAL CONDITION 3 is only applicable to the scram discharge volume vent and drain valves.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

2. If the inoperable control rod(s) is inserted, within 1 hour disarm the associated directional control valves** either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

3. The provisions of Specification 3.0.4 are not applicable.

c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.

d. With one or more scram discharge volume (SDV) vent or drain lines with one valve inoperable, restore the inoperable valve(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

e. With one or more SDV vent or drain lines with both valves inoperable, isolate the associated line within 8 hours **** or be in at least HOT SHUTDOWN within the next 12 hours*** and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

a. At least once per 31 days verifying each valve to be open,* and

b. At least once per 92 days cycling each valve through at least one complete cycle of full travel.

---

* These valves may be closed intermittently for testing under administrative controls.

** May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

***Separate Action entry is allowed for each SDV vent and drain line.

****An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

SURVEILLANCE REQUIREMENTS (Continued)

4.1.3.1.2 When above the preset power level of the RWM, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

a. At least once per 7 days, and

b. At least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.4, 4.1.3.5, 4.1.3.6, and 4.1.3.7.

4.1.3.1.4 The scram discharge volume shall be determined OPERABLE by demonstrating:

a. The scram discharge volume drain and vent valves OPERABLE at least once per 24 months, by verifying that the drain and vent valves:

   1. Close within 30 seconds after receipt of a signal for control rods to scram, and

   2. Open when the scram signal is reset.

b. Proper level sensor response by performance of a CHANNEL FUNCTIONAL TEST of the scram discharge volume scram and control rod block level instrumentation at least once per 92 days.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each primary containment isolation valves and the instrumentation line excess flow check valve shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valves inoperable,** maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

   1. Restore the inoperable valve(s) to OPERABLE status, or

   2. Isolate each affected penetration by use of at least one de-activated automatic valve secured in the isolated position,* or

   3. Isolate each affected penetration by use of at least one closed manual valve or blind flange.*

   4. The provisions of Specification 3.0.4 are not applicable provided that within 4 hours the affected penetration is isolated in accordance with ACTION a.2. or a.3. above, and provided that the associated system, if applicable, is declared inoperable and the appropriate ACTION statements for that system are performed.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the instrumentation line excess flow check valves inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 4 hours either:

   1. The inoperable valve is returned to OPERABLE status, or

   2. The instrument line is isolated and the associated instrument is declared inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one or more scram discharge volume vent or drain valves inoperable, perform the applicable actions specified in Specification 3.1.3.1.

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* Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.

** Except for the scram discharge volume vent and drain valves.

ATTACHMENT 4
MARKUP OF TECHNICAL SPECIFICATION BASES PAGES
(for information only)

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS. 50-352
50-353
LICENSE NOS. NPF-39
NPF-85

LICENSE AMENDMENT REQUEST 02-00782

"Revision to Technical Specifications Adding New Required Actions for Scram Discharge Volume Vent and Drain Valve Operability"

MARKED-UP TS BASES PAGES

UNIT 1	UNIT 2
B 3/4 1-2	B 3/4 1-2
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Insert 3

The OPERABILITY of all SDV vent and drain valves ensures that the SDV vent and drain valves will close during a scram to contain reactor water discharged to the SDV piping. The SDV has one common drain line and one common vent line. Since the vent and drain lines are provided with two valves in series, the single failure of one valve in the open position will not impair the isolation function of the system. Additionally, the valves are required to open on scram reset to ensure that a path is available for the SDV piping to drain freely at other times.

When one SDV vent or drain valve is inoperable in one or more lines, the valves must be restored to OPERABLE status within 7 days. The allowable outage time is reasonable, given the level of redundancy in the lines and the low probability of a scram occurring while the valve(s) are inoperable. The SDV is still isolable since the redundant valve in the affected line is OPERABLE. During these periods, the single failure criterion may not be preserved, and a higher risk exists to allow reactor water out of the primary system during a scram.

If both valves in a line are inoperable, the line must be isolated to contain the reactor coolant during a scram. When a line is isolated, the potential for an inadvertent scram due to high SDV level is increased. ACTION "e" is modified by a note ("****") that allows periodic draining and venting of the SDV when a line is isolated. During these periods, the line may be unisolated under administrative control. This allows any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. This is acceptable since the administrative controls ensure the valve can be closed quickly, by a dedicated operator, if a scram occurs with the valve open. The 8 hour allowable outage time to isolate the line is based on the low probability of a scram occurring while the line is not isolated and unlikelihood of significant CRD seal leakage.

3/4.1.3 CONTROL RODS

The specification of this section ensure that (1) the minimum SHUTDOWN MARGIN is maintained, (2) the control rod insertion times are consistent with those used in the accident analysis, and (3) the potential effects of the rod drop accident are limited. The ACTION statements permit variations from the basic requirements but at the same time impose more restrictive criteria for continued operation. A limitation on inoperable rods is set such that the resultant effect on total rod worth and scram shape will be kept to a minimum. The requirements for the various scram time measurements ensure that any indication of systematic problems with rod drives will be investigated on a timely basis.

Damage within the control rod drive mechanism could be a generic problem, therefore with a control rod immovable because of excessive friction or mechanical interference, operation of the reactor is limited to a time period which is reasonable to determine the cause of the inoperability and at the same time prevent operation with a large number of inoperable control rods.

Control rods that are inoperable for other reasons are permitted to be taken out of service provided that those in the nonfully-inserted position are consistent with the SHUTDOWN MARGIN requirements.

The number of control rods permitted to be inoperable could be more than the eight allowed by the specification, but the occurrence of eight inoperable rods could be indicative of a generic problem and the reactor must be shutdown for investigation and resolution of the problem.

The control rod system is designed to bring the reactor subcritical at a rate fast enough to prevent the MCPR from becoming less than the fuel cladding safety limit during the limiting power transient analyzed in Section 15.2 of the FSAR. This analysis shows that the negative reactivity rates resulting from the scram with the average response of all the drives as given in the specifications, provided the required protection and MCPR remains greater than the fuel cladding safety limit. The occurrence of scram times longer then those specified should be viewed as an indication of a systemic problem with the rod drives and therefore the surveillance interval is reduced in order to prevent operation of the reactor for long periods of time with a potentially serious problem.

Scram time testing at zero psig reactor coolant pressure is adequate to ensure that the control rod will perform its intended scram function during startup of the plant until scram time testing at 950 psig reactor coolant pressure is performed prior to exceeding 40% rated core thermal power.

The scram discharge volume is required to be OPERABLE so that it will be available when needed to accept discharge water from the control rods during a reactor scram and will isolate the reactor coolant system from the containment when required.

INSERT 3

Control rods with inoperable accumulators are declared inoperable and Specification 3.1.3.1 then applies. This prevents a pattern of inoperable accumulators that would result in less reactivity insertion on a scram than has been analyzed even though control rods with inoperable accumulators may still be inserted with normal drive water pressure. Operability of the accumulator ensures that there is a means available to insert the control rods even under the most unfavorable depressurization of the reactor.

AUG 0 8 1995

Amendment No. 30, 99

3/4.1.3 CONTROL RODS

The specification of this section ensure that (1) the minimum SHUTDOWN MARGIN is maintained, (2) the control rod insertion times are consistent with those used in the accident analysis, and (3) the potential effects of the rod drop accident are limited. The ACTION statements permit variations from the basic requirements but at the same time impose more restrictive criteria for continued operation. A limitation on inoperable rods is set such that the resultant effect on total rod worth and scram shape will be kept to a minimum. The requirements for the various scram time measurements ensure that any indication of systematic problems with rod drives will be investigated on a timely basis.

Damage within the control rod drive mechanism could be a generic problem, therefore with a control rod immovable because of excessive friction or mechanical interference, operation of the reactor is limited to a time period which is reasonable to determine the cause of the inoperability and at the same time prevent operation with a large number of inoperable control rods.

Control rods that are inoperable for other reasons are permitted to be taken out of service provided that those in the nonfully-inserted position are consistent with the SHUTDOWN MARGIN requirements.

The number of control rods permitted to be inoperable could be more than the eight allowed by the specification, but the occurrence of eight inoperable rods could be indicative of a generic problem and the reactor must be shutdown for investigation and resolution of the problem.

The control rod system is designed to bring the reactor subcritical at a rate fast enough to prevent the MCPR from becoming less than the fuel cladding safety limit during the limiting power transient analyzed in Section 15.2 of the FSAR. This analysis shows that the negative reactivity rates resulting from the scram with the average response of all the drives as given in the specifications, provided the required protection and MCPR remains greater than the fuel cladding safety limit. The occurrence of scram times longer then those specified should be viewed as an indication of a systemic problem with the rod drives and therefore the surveillance interval is reduced in order to prevent operation of the reactor for long periods of time with a potentially serious problem.

Scram time testing at zero psig reactor coolant pressure is adequate to ensure that the control rod will perform its intended scram function during startup of the plant until scram time testing at 950 psig reactor coolant pressure is performed prior to exceeding 40% rated core thermal power.

The scram discharge volume is required to be OPERABLE so that it will be available when needed to accept discharge water from the control rods during a reactor scram and will isolate the reactor coolant system from the containment when required.

INSERT 3

Control rods with inoperable accumulators are declared inoperable and Specification 3.1.3.1 then applies. This prevents a pattern of inoperable accumulators that would result in less reactivity insertion on a scram than has been analyzed even though control rods with inoperable accumulators may still be inserted with normal drive water pressure. Operability of the accumulator ensures that there is a means available to insert the control rods even under the most unfavorable depressurization of the reactor.

AUG 0 8 1995

Insert 4

The scram discharge volume vent and drain valves serve a dual function, one of which is primary containment isolation. Since the other safety functions of the scram discharge volume vent and drain valves would not be available if the normal PCIV actions were taken, actions are provided to direct the user to the scram discharge volume vent and drain operability requirements contained in Specification 3.1.3.1. However, since the scram discharge volume vent and drain valves are PCIVs, the Surveillance Requirements of Specification 4.6.3 still apply to these valves.

DEPRESSURIZATION SYSTEMS (Continued)

The drywell-to-suppression chamber bypass test at a differential pressure of at least 4.0 psi verifies the overall bypass leakage area for simulated LOCA conditions is less than the specified limit. For those outages where the drywell-to-suppression chamber bypass leakage test in not conducted, the VB leakage test verifies that the VB leakage area is less than the bypass limit, with a 76% margin to the bypass limit to accommodate the remaining potential leakage area through the passive structural components. Previous drywell-to-suppression chamber bypass test data indicates that the bypass leakage through the passive structural components will be much less than the 76% margin. The VB leakage limit, combined with the negligible passive structural leakage area, ensures that the drywell-to-suppression chamber bypass leakage limit is met for those outages for which the drywell-to-suppression chamber bypass test is not scheduled.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

The OPERABILITY of the primary containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through 57 of Appendix A of 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

INSERT 4

The opening of a containment isolation valve that was locked or sealed closed to satisfy Technical Specification 3.6.3 Action statements, may be reopened on an intermittent basis under administrative controls. These controls consist of stationing a dedicated individual at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

Primary containment isolation valves governed by this Technical Specification are identified in Table 3.6.3-1 of the TRM.

This Surveillance Requirement requires a demonstration that a representative sample of reactor instrument line excess flow check valves (EFCVs) is OPERABLE by verifying that the valve actuates to the isolation position on a simulated instrument line break signal. The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years. In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes, and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time. This Surveillance Requirement provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during a postulated instrument line break event. The 10 year interval is based on other performance-based testing programs. Furthermore, any EFCV failures will be evaluated to determine if additional testing in the test interval is warranted to ensure overall reliability is maintained. Operating experience has demonstrated that these components are highly reliable and that failures to isolate are very infrequent. Therefore, testing of a representative sample was concluded to be acceptable from a reliability standpoint. For some EFCVs, this Surveillance can be performed with the reactor at power.

DEPRESSURIZATION SYSTEMS (Continued)

The drywell-to-suppression chamber bypass test at a differential pressure of at least 4.0 psi verifies the overall bypass leakage area for simulated LOCA conditions is less than the specified limit. For those outages where the drywell-to-suppression chamber bypass leakage test in not conducted, the VB leakage test verifies that the VB leakage area is less than the bypass limit, with a 76% margin to the bypass limit to accommodate the remaining potential leakage area through the passive structural components. Previous drywell-to-suppression chamber bypass test data indicates that the bypass leakage through the passive structural components will be much less than the 76% margin. The VB leakage limit, combined with the negligible passive structural leakage area, ensures that the drywell-to-suppression chamber bypass leakage limit is met for those outages for which the drywell-to-suppression chamber bypass test is not scheduled.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

The OPERABILITY of the primary containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through 57 of Appendix A of 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. INSERT 4

The opening of a containment isolation valve that was locked or sealed closed to satisfy Technical Specification 3.6.3 Action statements, may be reopened on an intermittent basis under administrative controls. These controls consists of stationing a dedicated individual at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

Primary containment isolation valves governed by this Technical Specification are identified in Table 3.6.3-1 of the TRM.

This Surveillance Requirement requires a demonstration that a representative sample of reactor instrument line excess flow check valves (EFCVs) is OPERABLE by verifying that the valve actuates to the isolation position on a simulated instrument line break signal. The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years. In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes, and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time. This Surveillance Requirement provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during a postulated instrument line break event. The 10 year interval is based on other performance-based testing programs. Furthermore, any EFCV failures will be evaluated to determine if additional testing in the test interval is warranted to ensure overall reliability is maintained. Operating experience has demonstrated that these components are highly reliable and that failures to isolate are very infrequent. Therefore, testing of a representative sample was concluded to be acceptable from a reliability standpoint. For some EFCVs, this Surveillance can be performed with the reactor at power.

ATTACHMENT 5
TYPED TECHNICAL SPECIFICATION BASES PAGES
(for information only)

LIMERICK GENERATING STATION
UNITS 1 and 2

DOCKET NOS. 50-352
50-353
LICENSE NOS. NPF-39
NPF-85

LICENSE AMENDMENT REQUEST 02-00782

"Revision to Technical Specifications Adding New Required Actions for Scram Discharge Volume Vent and Drain Valve Operability"

REVISED TS BASES PAGES

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B 3/4 6-4	B 3/4 6-4

3/4.1.3 CONTROL RODS

The specification of this section ensure that (1) the minimum SHUTDOWN MARGIN is maintained, (2) the control rod insertion times are consistent with those used in the accident analysis, and (3) the potential effects of the rod drop accident are limited. The ACTION statements permit variations from the basic requirements but at the same time impose more restrictive criteria for continued operation. A limitation on inoperable rods is set such that the resultant effect on total rod worth and scram shape will be kept to a minimum. The requirements for the various scram time measurements ensure that any indication of systematic problems with rod drives will be investigated on a timely basis.

Damage within the control rod drive mechanism could be a generic problem, therefore with a control rod immovable because of excessive friction or mechanical interference, operation of the reactor is limited to a time period which is reasonable to determine the cause of the inoperability and at the same time prevent operation with a large number of inoperable control rods.

Control rods that are inoperable for other reasons are permitted to be taken out of service provided that those in the nonfully-inserted position are consistent with the SHUTDOWN MARGIN requirements.

The number of control rods permitted to be inoperable could be more than the eight allowed by the specification, but the occurrence of eight inoperable rods could be indicative of a generic problem and the reactor must be shutdown for investigation and resolution of the problem.

The control rod system is designed to bring the reactor subcritical at a rate fast enough to prevent the MCPR from becoming less than the fuel cladding safety limit during the limiting power transient analyzed in Section 15.2 of the FSAR. This analysis shows that the negative reactivity rates resulting from the scram with the average response of all the drives as given in the specifications, provided the required protection and MCPR remains greater than the fuel cladding safety limit. The occurrence of scram times longer then those specified should be viewed as an indication of a systemic problem with the rod drives and therefore the surveillance interval is reduced in order to prevent operation of the reactor for long periods of time with a potentially serious problem.

Scram time testing at zero psig reactor coolant pressure is adequate to ensure that the control rod will perform its intended scram function during startup of the plant until scram time testing at 950 psig reactor coolant pressure is performed prior to exceeding 40% rated core thermal power.

The scram discharge volume is required to be OPERABLE so that it will be available when needed to accept discharge water from the control rods during a reactor scram and will isolate the reactor coolant system from the containment when required.

The OPERABILITY of all SDV vent and drain valves ensures that the SDV vent and drain valves will close during a scram to contain reactor water discharged to the SDV piping. The SDV has one common drain line and one common vent line. Since the vent and drain lines are provided with two valves in series, the single failure of one valve in

CONTROL RODS (Continued)

the open position will not impair the isolation function of the system. Additionally, the valves are required to open on scram reset to ensure that a path is available for the SDV piping to drain freely at other times.

When one SDV vent or drain valve is inoperable in one or more lines, the valves must be restored to OPERABLE status within 7 days. The allowable outage time is reasonable, given the level of redundancy in the lines and the low probability of a scram occurring while the valve(s) are inoperable. The SDV is still isolable since the redundant valve in the affected line is OPERABLE. During these periods, the single failure criterion may not be preserved, and a higher risk exists to allow reactor water out of the primary system during a scram.

If both valves in a line are inoperable, the line must be isolated to contain the reactor coolant during a scram. When a line is isolated, the potential for an inadvertent scram due to high SDV level is increased. ACTION "e" is modified by a note ("****") that allows periodic draining and venting of the SDV when a line is isolated. During these periods, the line may be unisolated under administrative control. This allows any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. This is acceptable since the administrative controls ensure the valve can be closed quickly, by a dedicated operator, if a scram occurs with the valve open. The 8 hour allowable outage time to isolate the line is based on the low probability of a scram occurring while the line is not isolated and the unlikelihood of significant CRD seal leakage.

Control rods with inoperable accumulators are declared inoperable and Specification 3.1.3.1 then applies. This prevents a pattern of inoperable accumulators that would result in less reactivity insertion on a scram than has been analyzed even though control rods with inoperable accumulators may still be inserted with normal drive water pressure. Operability of the accumulator ensures that there is a means available to insert the control rods even under the most unfavorable depressurization of the reactor.

DEPRESSURIZATION SYSTEMS (Continued)

The drywell-to-suppression chamber bypass test at a differential pressure of at least 4.0 psi verifies the overall bypass leakage area for simulated LOCA conditions is less than the specified limit. For those outages where the drywell-to-suppression chamber bypass leakage test in not conducted, the VB leakage test verifies that the VB leakage area is less than the bypass limit, with a 76% margin to the bypass limit to accommodate the remaining potential leakage area through the passive structural components. Previous drywell-to-suppression chamber bypass test data indicates that the bypass leakage through the passive structural components will be much less than the 76% margin. The VB leakage limit, combined with the negligible passive structural leakage area, ensures that the drywell-to-suppression chamber bypass leakage limit is met for those outages for which the drywell-to-suppression chamber bypass test is not scheduled.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

The OPERABILITY of the primary containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through 57 of Appendix A of 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The scram discharge volume vent and drain valves serve a dual function, one of which is primary containment isolation. Since the other safety functions of the scram discharge volume vent and drain valves would not be available if the normal PCIV actions were taken, actions are provided to direct the user to the scram discharge volume vent and drain operability requirements contained in Specification 3.1.3.1. However, since the scram discharge volume vent and drain valves are PCIVs, the Surveillance Requirements of Specification 4.6.3 still apply to these valves.

The opening of a containment isolation valve that was locked or sealed closed to satisfy Technical Specification 3.6.3 Action statements, may be reopened on an intermittent basis under administrative controls. These controls consist of stationing a dedicated individual at the controls of the valve, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for primary containment isolation is indicated.

Primary containment isolation valves governed by this Technical Specification are identified in Table 3.6.3-1 of the TRM.

This Surveillance Requirement requires a demonstration that a representative sample of reactor instrument line excess flow check valves (EFCVs) is OPERABLE by verifying that the valve actuates to the isolation position on a simulated instrument line break signal. The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years. In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes, and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time. This Surveillance Requirement provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during a postulated instrument line break event. The 10 year interval is based on other performance-based testing programs. Furthermore, any EFCV failures will be evaluated to determine if additional testing in the test interval is warranted to ensure overall reliability is maintained. Operating experience has demonstrated that these components are highly reliable and that failures to isolate are very infrequent. Therefore, testing of a representative sample was concluded to be acceptable from a reliability standpoint. For some EFCVs, this Surveillance can be performed with the reactor at power.

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CONTROL RODS (Continued)

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