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10 CFR 50.90

November 25, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 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
Proposed Change to the Reactor Coolant System
Pressure Isolation Valve Leakage Requirements

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (Exelon), hereby requests a change to the Technical Specifications (TS), Appendix A, of Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively.

The proposed change will revise TS Section 3.4.3.2 and the associated TS Bases to indicate that reactor coolant system (RCS) pressure isolation valve (PIV) leakage is excluded from any other allowable RCS operational leakage specified in TS Section 3.4.3.2. This proposed change will make the treatment of LGS RCS operational leakage and PIV leakage consistent with other Exelon stations and industry Boiling Water Reactors (BWRs), and will facilitate consistent RCS leakage assessment and monitoring for the Reactor Oversight Process (ROP) performance indicator.

The proposed change is consistent with the improved Standard Technical Specifications (STS) described in NUREG-1433, "Standard Technical Specifications, General Electric Plants (BWR/4)," and changes previously approved by the NRC for other BWRs.

Exelon has concluded that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

Exelon requests approval of the proposed amendments by November 25, 2004. Once approved, this amendment shall be implemented within 60 days of issuance. There are no commitments contained within this letter.

A001

The proposed change has been reviewed by the Plant Operations Review Committee and approved by the Nuclear Safety Review Board.

If you have any questions or require additional information, please contact Glenn Stewart at 610-765-5529.

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

Respectfully,

Executed on 11-25-03

Michael P. Gallagher
Director, Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachments:
1. Evaluation of the Proposed Change
2. Technical Specifications and Bases Markup Pages
3. Technical Specifications and Bases Typed Pages

cc: Regional Administrator - NRC Region I w/ attachments
NRC Senior Resident Inspector - Limerick Generating Station "
NRC Project Manager, NRR - Limerick Generating Station "
Director, Bureau of Radiation Protection - Pennsylvania Department of Environmental Protection "

Attachment 1

License Amendment Request

Limerick Generating Station, Units 1 and 2

Docket Nos. 50-352 and 50-353

Proposed Change to Reactor Coolant System
Pressure Isolation Valve Leakage Requirements

EVALUATION OF PROPOSED CHANGE

ATTACHMENT 1

EVALUATION OF THE PROPOSED CHANGE

Subject: Proposed Change to Reactor Coolant System Pressure Isolation Valve Leakage Requirements

Attachment 1

EVALUATION OF PROPOSED CHANGE

1.0 DESCRIPTION

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

The proposed change will revise TS Section 3.4.3.2 and the associated TS Bases to indicate that reactor coolant system (RCS) pressure isolation valve (PIV) leakage is excluded from any allowable RCS operational leakage specified in TS Section 3.4.3.2. This proposed change will make the treatment of LGS RCS operational leakage and PIV leakage consistent with other Exelon stations and industry Boiling Water Reactors, and will facilitate consistent RCS leakage assessment and monitoring for the Reactor Oversight Process (ROP) performance indicator.

The proposed change is consistent with the improved Standard Technical Specifications (STS) described in NUREG-1433, "Standard Technical Specifications, General Electric Plants (BWR/4)," and changes previously approved by the NRC for other boiling water reactors.

A description of the proposed change is provided in Section 2.0, "Proposed Change," of this Attachment. Attachment 2 provides the marked-up TS pages indicating the proposed change. Attachment 3 provides the camera-ready TS pages.

2.0 PROPOSED CHANGE

LGS has separate TS for Unit 1 and Unit 2; however, the proposed change is identical for both units.

TS Section 3/4.4.3.2, "Reactor Coolant System, Operational Leakage" contains the Limiting Conditions for Operation (LCO), Actions, and Surveillance Requirements applicable to RCS operational leakage and includes RCS pressure isolation valve leakage requirements. The current TS Bases Section 3/4.4.3.2 states: "Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit." This is inconsistent with NUREG-1433, Bases Section 3.4.5 which states (referring to the RCS pressure isolation valves): "Leakage through these valves is not included in any allowable LEAKAGE specified in LCO 3.4.4, "RCS Operational LEAKAGE." Therefore, the following changes are proposed to make the LGS RCS leakage requirements consistent with the RCS leakage requirements specified in NUREG-1433:

1. TS Section 3.4.3.2.e will be revised to add a footnote to specifically indicate that pressure isolation valve leakage is not included in any other allowable RCS operational leakage specified in Section 3.4.3.2.

2. TS Bases 3.4.3.2 will be revised to delete the statement that PIV leakage is identified leakage and included as part of the allowable operational leakage limit, and replace it with the statement from the improved STS indicating that PIV leakage is not included in any other allowable operational leakage specified in TS Section 3.4.3.2.

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EVALUATION OF PROPOSED CHANGE

The current RCS PIV leakage requirements themselves, i.e., LCO 3.4.3.2.e, Actions c and d, existing Footnote *, Surveillance Requirements 4.4.3.2.2.a and b and 4.4.3.2.3.a and b, and Table 3.4.3.2-1 will remain unchanged.

3.0 BACKGROUND

The RCS operational leakage section of TS is established to satisfy the criteria for providing operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The detection of significant abnormal degradation of the reactor coolant pressure boundary (RCPB) and the identification of the leakage source is performed by the RCS leak detection systems. The operational leakage limits ensure that plant operation is appropriately limited so that corrective action can be performed before the leaks become significant. The surveillance and leakage limits associated with RCS PIVs that are part of the RCPB provide assurance of valve integrity, thus reducing the probability of valve failure and a possible intersystem loss of coolant accident due to overpressurization of connected low-pressure piping. TS Section 3/4.4.3.2 identifies the operational surveillance requirements for RCS leakage monitoring, and includes the leakage limits and surveillance requirements for RCS PIVs which are located between the RCS and the connecting low pressure systems.

4.0 TECHNICAL ANALYSIS

Regulatory Guide 1.45 provides the following discussion concerning RCPB leakage.

> "The safety significance of leaks from the reactor coolant pressure boundary (RCPB) can vary widely depending on the source of the leak as well as the leakage rate and duration. Therefore, the detection and monitoring of leakage of reactor coolant into the containment area is necessary. In most cases, methods for separating the leakage from an identified source from the leakage from an unidentified source are necessary to provide prompt and quantitative information to the operators to permit them to take immediate corrective action should a leak be detrimental to the safety of the facility. Identified leakage is: (1) leakage into closed systems, such as pump seal or valve packing leaks that are captured, flow metered, and conducted to a sump or collecting tank, or (2) leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of unidentified leakage monitoring systems or not to be from a flaw in the RCPB. Unidentified leakage is all other leakage.
>
> Leakage Separation
>
> A limited amount of leakage is expected from the RCPB and from auxiliary systems within the containment such as from valve stem packing glands, circulating pump shaft seals, and other equipment that cannot practically be made 100% leak tight. The reactor vessel closure seals and safety and relief valves should not leak significantly; however, if leakage occurs via these paths or via pump and valve seals, it should be detectable and collectable and, to the extent practical, isolated from the

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EVALUATION OF PROPOSED CHANGE

> containment atmosphere so as not to mask any potentially serious leak should it occur. These leakages are known as "identified leakage" and should be piped to tanks or sumps so that the flow rate can be established and monitored during plant operation.
>
> Uncollected leakage to the containment atmosphere from sources such as valve stem packing glands and other sources that are not collected increases the humidity of the containment. The moisture removed from the atmosphere by air coolers together with any associated liquid leakage to the containment is known as "unidentified leakage" and should be collected in tanks or sumps where the flow rate can be established and monitored during plant operation. A small amount of unidentified leakage may be impractical to eliminate, but it should be reduced to a small flow rate, preferably less than one gallon per minute (gpm), to permit the leakage detection systems to detect positively and rapidly a small increase in flow rate. Thus a small unidentified leakage rate that is of concern will not be masked by a larger acceptable identified leakage rate.
>
> Substantial intersystem leakage from the RCPB to other systems across passive barriers or valves is not expected. However, should such leakage occur, it may not be detectable through the above-mentioned detection systems, and other alarm and detection methods should be employed."

The LGS TS definitions for identified and unidentified leakage in TS Section 1.0 are consistent with the definitions provided in Regulatory Guide 1.45. LGS TS Section 3.4.3.2 defines limits for total leakage (25 gpm total leakage averaged over any 24-hour period and 30 gpm total leakage) and PIV leakage (1 gpm per valve identified in Table 3.4.3.2-1) but does not provide a specific limit for identified leakage. TS Section 3/4.4.3.2 Bases states, "Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit."

Consistent with Regulatory Guide 1.45, the operational leakage requirements of LGS TS Section 3.4.3.2 for RCPB leakage, unidentified leakage, and total leakage ensure corrective action can be taken to protect the RCPB from degradation and the core from inadequate cooling, in addition to preventing the accident analyses radiation release assumptions from being exceeded. However, as indicated in Regulatory Guide 1.45, PIV leakage is intersystem leakage that is not released to the containment atmosphere, and is not collected in tanks or sumps where the flow rate can be monitored during plant operation. Therefore, contrary to TS Section 3/4.4.3.2 Bases, PIV leakage does not satisfy the TS or Regulatory Guide 1.45 definition of identified leakage.

Although limits on allowable PIV leakage rates are assigned in TS, the main purpose of the PIV leakage requirement is to provide an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. Early detection and corrective action can prevent overpressure failure of the low-pressure portions of connecting systems and the possibility of an intersystem loss of coolant accident, outside of containment, that could degrade the ability for low pressure injection, although PIV leakage is not considered in any design basis accident analyses. As indicated in Regulatory Guide 1.45, substantial intersystem leakage from

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the RCPB to other systems through the PIVs is not expected. As such, PIV leakage is an indirect concern that, although it should continue to be monitored and actions taken as appropriate, does not require immediate corrective action by the operators as is the case for RCS operational leakage. Therefore, PIV leakage is not required to be included in any other allowable RCS operational leakage specified in TS Section 3.4.3.2.

In addition, the NRC has implemented a performance indicator for RCS leakage under the Reactor Oversight Process (ROP). The RCS leakage performance indicator falls under the Barrier Integrity cornerstone and monitors the integrity of the RCPB by measuring RCS identified leakage in gpm each month per the TS as a percentage of the TS limit. Since the LGS TS do not have a specific limit for identified RCS leakage, the data is reported as a percentage of the total leakage limit provided in the TS. LGS TS do not provide a specific definition of total leakage; however, TS Section 3/4.4.3.2 Bases indicates that PIV leakage is identified leakage and is included in the allowable limit. Therefore, LGS PIV leakage rates are obtained every refuel outage by performing the 24-month leak rate test for the RCS PIVs listed in TS Table 3/4.4.3.2-1, and are currently added to both the 25 gpm total leakage averaged over any 24-hour period and the 30 gpm total leakage.

As a result, the PIV leakage is included in the ROP RCS leakage performance indicator calculation. LGS is the only Exelon station that includes PIV leakage in this calculation. This makes LGS an outlier for Exelon and other industry Boiling Water Reactors (BWRs) that do not include PIV leakage in the performance indicator calculation, especially those that have implemented the improved STS in NUREG-1433. Continuing to include PIV leakage in the calculation for total RCS operational leakage not only puts LGS above the BWR industry average for RCS operational leakage but conflicts with the improved STS requirements for operational leakage and could give a false indication of RCPB leakage that may mask an increase in actual RCPB leakage should it occur.

Adding a footnote to TS Section 3.4.3.2.e and revising TS Bases Section 3.4.3.2 to indicate that PIV leakage is not included in any other allowable operational leakage will provide clarity and make the treatment of LGS RCS operational leakage and PIV leakage consistent with other Exelon stations and industry BWRs, and will make the station TS consistent with the improved STS in NUREG-1433.

Separation of the RCS PIV leakage from the RCS operational leakage does not affect the plant design, hardware, or system operation and will not affect the ability to perform leakage monitoring and corrective actions. The RCS leak detection system's ability to perform its design function in mitigating the consequences of a postulated design basis accident is unaffected. Therefore, the proposed change does not adversely affect nuclear safety or plant operations.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

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

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EVALUATION OF PROPOSED CHANGE

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No. PIV leakage is not operational leakage. PIV leakage limits are used in conjunction with the system specifications for the PIVs to ensure that plant operation is appropriately limited. The PIV leakage limit provides for monitoring the condition of the RCPB to detect PIV degradation. Although the proposed change will result in a change to the current method of calculating the RCS operational leakage, the proposed change does not affect the actual PIV leakage limit itself, and therefore, does not affect the ability to detect PIV degradation. The proposed change does not affect the basis for the safety analysis used to determine the probability or consequences of an accident since PIV leakage is not considered in any design basis accident.

Although the effect of the proposed change will allow for the potential increase in identified leakage, the total RCS operational leakage is still limited by the Technical Specifications (TS) Limiting Condition for Operation (LCO) which itself is not being changed. In addition, current TS Applicability, Action and Surveillance requirements for detection, monitoring, and appropriately limiting operational leakage are not being changed.

The proposed change does not alter the leakage detection system monitors, design features, operation, or accident analysis assumptions which could affect the ability of the reactor coolant pressure boundary (RCPB) to mitigate the consequences of a previously evaluated accident.

The proposed change will not increase the likelihood of the malfunction of another system, structure or component which has been assumed as an accident initiator or credited in the mitigation of an accident.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No. The operational leakage requirements for the RCPB leakage, unidentified leakage, and total leakage ensures corrective action can be taken to protect the RCPB from degradation. The PIV leakage provides an indication that the PIVs, between the RCS and the connecting systems, are degraded or degrading.

No change in the ability to perform the design function of the leak detection system, the protection afforded by the operational leakage requirements, or PIV leakage requirements is involved. No change in the operation of the leak detection system or PIVs is required. Instrumentation setpoints, monitoring frequencies and leakage limitations associated with RCS operational leakage and PIV leakage are not affected by the proposed change. No modifications to the PIVs or RCS leak detection system or

associated components are required to implement the proposed change. Therefore, no new failure mechanism, malfunction, or accident initiator is considered credible.

Additionally, the proposed change does not affect other plant design, hardware, or system operation. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No. The proposed change does not involve a relaxation of the criteria used to establish safety limits, a relaxation of the bases for the limiting safety system settings, or a relaxation of the bases for the limiting conditions for operation, other than excluding PIV leakage from the other RCS operational leakage.

Controlling values for the RCS operational leakage and PIV leakage are included in current TS testing measurements, monitors, detection methods and procedures. The proposed change will not modify these requirements or the accident analysis assumptions regarding the performance of the RCS operational leakage and PIV leakage monitoring which could potentially challenge safety margins established to ensure fuel cladding integrity, as well as reactor coolant and containment system integrity.

The safety analyses of the RCPB integrity and the ability to mitigate accidents do not require revision in order to implement the proposed change. Modification of the existing margins is not required.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Exelon concludes that the proposed change presents no significant hazards consideration 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

General Design Criterion (GDC) 30, "Quality of Reactor Coolant Pressure Boundary," of Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," requires that means be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage. As previously noted, the proposed change involves adding a footnote to TS Section 3.4.3.2.e and revising TS Bases Section 3.4.3.2 to indicate that PIV leakage is not included in any other allowable operational leakage specified in Section 3.4.3.2. The proposed change does not involve a change in the design or operation of the RCS leakage detection system which will continue to meet the requirements of GDC 30.

The RCS operational leakage limits and PIV leakage limits protect the RCPB described in 10 CFR 50.2, 10 CFR 50.55a(c), and GDC 55 of 10 CFR 50, Appendix A. The current RCS

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EVALUATION OF PROPOSED CHANGE

operational leakage LCOs, Applicability, Actions, and Surveillance Requirements for RCPB leakage; unidentified leakage and total leakage will remain unaltered in TS Section 3/4.4.3.2. The current LCO, Applicability, Actions, and Surveillance Requirements for RCS PIV Leakage will also remain unaltered in TS Section 3/4.4.3.2. Any future changes to either RCS operational leakage requirements or RCS PIV leakage requirements will require prior NRC approval pursuant to 10CFR50.90.

The separation of PIV leakage from allowable RCS operational leakage was generically approved by the NRC in NUREG-1433, "Standard Technical Specifications, General Electric Plants (BWR/4)," which is consistent with the NRC Final Policy Statement and the revised 10 CFR 50.36 rule. The proposed change is consistent with TS changes previously approved by the NRC for other Exelon stations. The proposed change furthers the commonality of operating practices throughout Exelon.

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted are, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement, or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

1. 10 CFR 50.36, "Technical Specifications"

2. NUREG-1433, "Standard Technical Specifications, General Electric Plants (BWR/4)"

3. Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems"

Attachment 2

License Amendment Request

Limerick Generating Station, Units 1 and 2

Docket Nos. 50-352 and 50-353

Proposed Change to Reactor Coolant System Pressure Isolation Valve Leakage Requirements

Marked-up Technical Specifications and Bases Pages for the Proposed Change

Unit 1 TS Page

3/4 4-9
B 3/4 4-3e

Unit 2 TS Page

3/4 4-9
B 3/4 4-3e

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. 5 gpm UNIDENTIFIED LEAKAGE.

c. 30 gpm total leakage.

d. 25 gpm total leakage averaged over any 24-hour period.

e. 1 gpm leakage at a reactor coolant system pressure of 950 ±10 psig from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1.**

f. 2 gpm increase in UNIDENTIFIED LEAKAGE over a 24-hour period.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With any reactor coolant system leakage greater than the limits in b, c and/or d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one other closed manual, deactivated automatic, or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With one or more of the high/low pressure interface valve leakage pressure monitors shown in Table 3.4.3.2-1 inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or verify the pressure to be less than the alarm setpoint at least once per 12 hours; restore the inoperable monitor(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

e. With any reactor coolant system leakage greater than the limit in f above, identify the source of leakage within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

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* Which have been verified not to exceed the allowable leakage limit at the last refueling outage or after the last time the valve was disturbed, whichever is more recent.

** Pressure isolation valve leakage is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.3.2 OPERATIONAL LEAKAGE (Continued)

The ACTION requirements for pressure isolation valves (PIVs) are used in conjunction with the system specifications for which PIVs are listed in Table 3.4.3.2-1 and with primary containment isolation valve requirements to ensure that plant operation is appropriately limited.

The Surveillance Requirements for the RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is ~~IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.~~ not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. 5 gpm UNIDENTIFIED LEAKAGE.

c. 30 gpm total leakage.

d. 25 gpm total leakage averaged over any 24-hour period.

e. 1 gpm leakage at a reactor coolant system pressure of 950 ±10 psig from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1.**

f. 2 gpm increase in UNIDENTIFIED LEAKAGE over a 24-hour period.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With any reactor coolant system leakage greater than the limits in b, c and/or d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one other closed manual, deactivated automatic, or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With one or more of the high/low pressure interface valve leakage pressure monitors shown in Table 3.4.3.2-1 inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or verify the pressure to be less than the alarm setpoint at least once per 12 hours; restore the inoperable monitor(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

e. With any reactor coolant system leakage greater than the limit in f above, identify the source of leakage within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

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* Which have been verified not to exceed the allowable leakage limit at the last refueling outage or after the last time the valve was disturbed, whichever is more recent.

** Pressure isolation valve leakage is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.3.2 OPERATIONAL LEAKAGE (Continued)

The ACTION requirements for pressure isolation valves (PIVs) are used in conjunction with the system specifications for which PIVs are listed in Table 3.4.3.2-1 and with primary containment isolation valve requirements to ensure that plant operation is appropriately limited.

The Surveillance Requirements for the RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is ~~IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.~~ not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

Attachment 3

License Amendment Request

Limerick Generating Station, Units 1 and 2

Docket Nos. 50-352 and 50-353

Proposed Change to Reactor Coolant System Pressure Isolation Valve Leakage Requirements

Typed Technical Specifications and Bases Pages for the Proposed Change

Unit 1 TS Page

3/4 4-9
B 3/4 4-3e

Unit 2 TS Page

3/4 4-9
B 3/4 4-3e

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. 5 gpm UNIDENTIFIED LEAKAGE.

c. 30 gpm total leakage.

d. 25 gpm total leakage averaged over any 24-hour period.

e. 1 gpm leakage at a reactor coolant system pressure of 950 ±10 psig from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1.**

f. 2 gpm increase in UNIDENTIFIED LEAKAGE over a 24-hour period.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With any reactor coolant system leakage greater than the limits in b, c and/or d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one other closed manual, deactivated automatic, or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With one or more of the high/low pressure interface valve leakage pressure monitors shown in Table 3.4.3.2-1 inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or verify the pressure to be less than the alarm setpoint at least once per 12 hours; restore the inoperable monitor(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

e. With any reactor coolant system leakage greater than the limit in f above, identify the source of leakage within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

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* Which have been verified not to exceed the allowable leakage limit at the last refueling outage or after the last time the valve was disturbed, whichever is more recent.

** Pressure isolation valve leakage is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.3.2 OPERATIONAL LEAKAGE (Continued)

The ACTION requirements for pressure isolation valves (PIVs) are used in conjunction with the system specifications for which PIVs are listed in Table 3.4.3.2-1 and with primary containment isolation valve requirements to ensure that plant operation is appropriately limited.

The Surveillance Requirements for the RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. 5 gpm UNIDENTIFIED LEAKAGE.

c. 30 gpm total leakage.

d. 25 gpm total leakage averaged over any 24-hour period.

e. 1 gpm leakage at a reactor coolant system pressure of 950 ±10 psig from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1.**

f. 2 gpm increase in UNIDENTIFIED LEAKAGE over a 24-hour period.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With any reactor coolant system leakage greater than the limits in b, c and/or d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one other closed manual, deactivated automatic, or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With one or more of the high/low pressure interface valve leakage pressure monitors shown in Table 3.4.3.2-1 inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or verify the pressure to be less than the alarm setpoint at least once per 12 hours; restore the inoperable monitor(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

e. With any reactor coolant system leakage greater than the limit in f above, identify the source of leakage within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

* Which have been verified not to exceed the allowable leakage limit at the last refueling outage or after the last time the valve was disturbed, whichever is more recent.

** Pressure isolation valve leakage is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.3.2 OPERATIONAL LEAKAGE (Continued)

The ACTION requirements for pressure isolation valves (PIVs) are used in conjunction with the system specifications for which PIVs are listed in Table 3.4.3.2-1 and with primary containment isolation valve requirements to ensure that plant operation is appropriately limited.

The Surveillance Requirements for the RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is not included in any other allowable operational leakage specified in Section 3.4.3.2.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.