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Exelon Nuclear

10 CFR 50.90

June 30, 2010

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

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 – Table 3.3.2-2, Item 4e, HPCI Equipment Room Delta Temperature High Isolation Trip Setpoint and Allowable Value Changes

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

The proposed amendments would revise the Technical Specification (TS) High Pressure Coolant Injection (HPCI) Equipment Room Delta Temperature High Trip Setpoint and Allowable Value listed in Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, Item 4e, for Limerick Generating Station (LGS), Units 1 and 2.

Attachment 1 provides the Evaluation of Proposed Changes. Attachment 2 provides the Proposed Technical Specification Marked-Up Pages. Attachment 3 provides the Calculation - 1001 HPCI Room Maximum Ventilation Differential Temperature Profiles.

The proposed changes have been reviewed by the LGS, Units 1 and 2, Plant Operations Review Committee and approved in accordance with Nuclear Safety Review Board procedures.

Exelon requests approval of the proposed amendments by June 30, 2011. Once approved, the amendments shall be implemented within 60 days.

There are no regulatory commitments contained in this request.

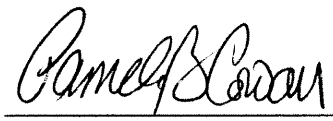
Using the standards in 10 CFR 50.92, "Issuance of amendment," Exelon has concluded that these proposed changes do not constitute a significant hazards consideration as described in the enclosed analysis performed in accordance with 10 CFR 50.91(a)(1).

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," Exelon is notifying the Commonwealth 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.

Should you have any questions concerning this submittal, please contact Frank Mascitelli at (610) 765-5512.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of June 2010.

Respectfully,

90K 

Pamela B. Cowan
Director, Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1) Evaluation of Proposed Technical Specification Changes
2) Proposed Technical Specification Marked-Up Pages
3) Calculation -1001 HPCI Room Maximum Ventilation Differential Temperature Profiles

cc: USNRC Regional Administrator, Region I
USNRC Project Manager, LGS
USNRC Senior Resident Inspector, LGS
Director, Bureau of Radiation Protection – PA Department of Environmental Resources

ATTACHMENT 1

EVALUATION OF PROPOSED TECHNICAL SPECIFICATION CHANGES

SUBJECT: TS Table 3.3.2-2, Item 4e, HPCI Equipment Room Delta Temperature High Isolation Trip Setpoint and Allowable Value Changes

CONTENTS

Attachment 1
Evaluation of Proposed Technical Specification Changes

1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Operating Licenses NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2.

The proposed changes revise the High Pressure Coolant Injection (HPCI) Equipment Room Delta Temperature High Technical Specification (TS) Trip Setpoint and Allowable Value (AV) listed in Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, Item 4e, for LGS, Units 1 and 2. The HPCI Equipment Room Delta Temperature High Trip Setpoint will be lowered from ≤126 degrees F to ≤104 degrees F and the AV will be lowered from ≤130.5 degrees F to ≤108.5 degrees F.

Exelon Generation Company, LLC (Exelon) requests approval of the proposed changes. Once approved, the amendments shall be implemented within 60 days.

2.0 DETAILED DESCRIPTION

The HPCI pump room is protected from a steam leak by three separate leak detection functions. The room is equipped to detect and isolate on a 25 gpm steam leak by detecting either high pump room temperature, ventilation high differential temperature or high pipeway temperature.

A 1995 License Amendment (Reference 1) for the HPCI and Reactor Core Isolation Cooling (RCIC) pump rooms substantially increased both the room high temperature and room ventilation high differential temperature isolation setpoints. The HPCI room ventilation high differential temperature isolation setpoint was increased from ≤80 degrees F to ≤126 degrees F and the AV was increased from ≤ 88 degrees F to ≤130.5 degrees F. The associated modification increased the environmental qualification temperature limit for the HPCI and RCIC pump rooms to a temperature where operability of the HPCI and RCIC room coolers was not required to assure operability of safety-related equipment in the HPCI and RCIC pump rooms. A major objective of the setpoint change was to ensure that the steam leak detection system does not prematurely isolate the HPCI or RCIC systems during required operations post-Loss of Coolant Accident (LOCA).

A subsequent quantitative analysis was performed in September 2009 (Revision 4a) during the revision of LGS Calculation -1001, "Compartment Temperature Transients for Steam and Water Leaks" (Reference 2). The new analysis, using improved modeling tools, supported the existing high temperature setpoints for the HPCI and RCIC pump rooms as well as the Pump Room Ventilation High Differential Temperature Isolation setpoint for the RCIC pump room. However, from this analysis, it was concluded that the HPCI Pump Room Ventilation High Differential Temperature setpoint would not have resulted in a steam line isolation following a 25 gallon per minute (gpm) leak in all plant conditions. This same analysis concluded that the high pump room temperature and high pipeway temperature detection would have caused isolation on a 25 gpm leak and that the other TS setpoint and AV values remained valid.

LGS Licensee Event Report (Reference 3) and an Apparent Cause Evaluation (Reference 4) were issued and immediate compensatory actions were taken to temporarily lower the temperature indicating switch setpoints until a license amendment was received. Subsequently, a design change was prepared to install the permanent setpoints included in this submittal.

This license amendment request will lower the current non-conservative TS Table 3.3.2-2, Item 4e, HPCI Equipment Room Delta Temperature High Isolation Trip Setpoint from ≤126 degrees F to ≤104 degrees F. The corresponding AV will be lowered from ≤130.5 degrees F to ≤108.5 degrees F. The proposed setpoints will ensure that a 25 gpm HPCI steam line leak will be isolated on HPCI high room differential (exhaust minus supply) temperature.

3.0 TECHNICAL EVALUATION

The HPCI system steam line is constantly monitored for leaks and breaks by the following types of circuits:

1. Equipment area and pipe chase area ambient and differential temperatures (leaks)
2. HPCI steam flow rate monitoring (pipe break)

Setpoints are predetermined which indicate a possible leak. If a setpoint is attained, a HPCI automatic isolation signal is initiated and an annunciator is activated in the control room. Pairs of temperature elements monitor for HPCI room ventilation air high differential temperature. Both sensors of each delta temperature pair, and the temperature indicating switch (TIS) they feed, form one logic division. A redundant pair of sensors and TIS form a separate logic division. This license amendment request only affects the setpoints of the HPCI equipment area TIS-025-101B/D (Unit 1) and TIS-025-201B/D (Unit 2).

The design basis (Reference 5) of the HPCI isolation systems is to prevent the excessive loss of the reactor coolant and the release of significant amounts of radioactive materials from the reactor coolant pressure boundary by isolating the appropriate steam line. The HPCI Equipment Room Delta Temperature High TISs do not provide any automatic trip function for protection against a violation of a reactor core Safety Limit (SL), or a Reactor Coolant System Pressure Safety Limit, during an anticipated operational occurrence (AOO), a normal operational transient, or steady state operation.

Calculation -1001 contains the detailed design analysis that supports setting the appropriate value for the HPCI Equipment Room Ventilation High Differential Temperature Isolation Setpoint.

The basis for the selection of the HPCI Equipment Room Ventilation High Differential Temperature Isolation Setpoint in the 1995 License Amendment (Reference 1) was to provide at least 35 degrees F margin above the expected maximum post-LOCA room temperature to prevent premature isolation of the HPCI System during post-LOCA operations, while ensuring that leaks greater than 25 gpm would not result in room temperatures greater than the Environmental Qualification (EQ) limits for remaining safety-related equipment within the pump room, or result in a discharge of more than 100,000 lbms of reactor coolant (offsite exposure limit from main steam line break).

Attachment 1
Evaluation of Proposed Technical Specification Changes

Supporting information for the 1995 License Amendment involved performing computations (not calculations) of estimated room temperatures for a 5 gpm leak, a 25 gpm leak, and leaks just below the HPCI steam line differential pressure settings, 550,000 lbm/hr. All of these computations were based on the LOCA model for the HPCI room which considered only summer conditions. All of the computations were run for the six-hour HPCI mission time, but neither the 5 gpm nor 25 gpm computations were run to steady state conditions to verify that room temperatures would eventually reach the chosen high room temperature setpoint, and differential room temperature was not explicitly calculated for any of these scenarios.

The outputs of the computations contained graphs showing the RCIC and HPCI pump room temperatures as a function of time following a 5 gpm leak, a 25 gpm leak, and 550,000 lbm/hr (HPCI) steam leaks. The output documents did not identify the ventilation input temperature associated with the specific output. Therefore, the pump room high differential temperature isolation settings could not have been determined from the output of the computations.

The reanalysis performed in September 2009 for Calculation -1001 (Revision 4a) to lower the instrument setpoints was performed using CFLUD. Design inputs were source verified and conservatively chosen.

A final revision to Calculation -1001 was completed in October 2009 (Revision 4b). This revision was completed using the CFLUD program which is the same computer program used for the computation performed to support the 1995 License Amendment. CFLUD is a version of the PCFLUD computer code used to perform all of the High Energy Line Break analyses for Limerick. The only differences between CFLUD and PCFLUD are that CFLUD contains options to directly model hot piping and room cooler performance and allows for a greater number of flow paths to be modeled simultaneously. CFLUD uses the same computational methodology as PCFLUD. The differences between the current HPCI room steam leak analyses included in Calculation -1001 and the computation performed to support the 1995 License Amendment are as follows:

Ventilation is modeled directly in Calculation -1001. Cooling provided by ventilation was modeled as a temperature-dependent heat load in the 1995 computation. Modeling ventilation flows as a temperature dependant heat load vs. modeling directly as air exchanged between compartments is conservative for LOCA analysis, but is non-conservative for steam leak detection calculations. Allowing for air exchange between compartments removes steam from the compartment where the break occurs and replaces it with cool air. This results in lower predicted compartment temperatures than modeling the ventilation as merely a heat exchange, without mass exchange.

Calculation -1001 calculates the ventilation differential temperature based on both winter and summer ventilation inlet temperatures. The computation performed in 1995 did not calculate the ventilation differential temperature.

Calculation -1001 directly modeled the HPCI and RCIC room coolers using the CFLUD room cooler model, considering both summer and winter Emergency Service Water (ESW) temperatures. The 1995 analysis modeled the room coolers as temperature dependant heat loads. This is conservative for the LOCA analysis but non-conservative for steam leak detection because direct modeling of the room cooler also removes mass as condensation which modeling cooler performance as a negative heat load does not accomplish.

The results of Calculation -1001 (Attachment 3) specify 113.0 degrees F as Maximum Ventilation Differential Temperature. This value was used as the Analytical Limit (AL). This AL of 113.0 degrees F was the design basis input into the Loop Uncertainty (LU) Calculation TE-055-1N028B (Reference 6) that was performed in accordance with Exelon Procedure CC-MA-103-2001 (Reference 7). The program is based on the General Electric Company Instrument Setpoint Methodology (References 8, 9). This calculation determined the AV and Actual Trip Setpoint (ATSP) for the instrument loop consisting of temperature elements TE-055-1N028B and TE-055-1N029B and temperature indicating switch TIS-025-101B (GE NUMAC). This LU Calculation is directly applicable to the redundant instrument loop consisting of temperature elements TE-055-1N028D and TE-055-1N029D and temperature indicating switch TIS-025-101D as well as the corresponding Unit 2 instrument loops.

The results of the LU Calculation TE-055-1N028B established an AV of ≤108.5 degrees F and an ATSP of ≤104 degrees F. The following discussion summarizes the setpoint methodology calculations used and the instrument loop uncertainties assigned.

Analytical Limit (AL): 113.0 degrees F

AL = Maximum Ventilation Differential Temperature Limit for Steam Leak Isolation of the High Pressure Coolant Injection (HPCI) Compartment. This limit is determined by Calculation -1001, "Compartment Temperature Transients for Steam and Water Leaks," Revision 4a.

Allowable Value (AV): 108.5 degrees F

$$AV = AL - 0.8225\sqrt{\sum CA^2 + \sum CL^2 + PC^2} * Span$$

Where:

1) 0.8225 = 1.645/(2 sigma);
   (convert from 2 sigma to 1.645 sigma for one sided normal distribution for 95% probability)

2) CA = Device Accuracy/ Reference Accuracy:

   a) CA of temperature elements = 0.75% x 0.66 = 0.00495
      (0.66 = conversion from 3 sigma to 2 sigma uncertainty spec)
   b) CA of trip unit (GE NUMAC) = 1.0% x Span x 0.66 = 0.0066
   c) $\sum CA^2$ = 0.00009

3) CL = Loop Calibration Allowance = Test Equipment Uncertainty (MTE) or Setting Tolerance (ST), whichever is greater
   a) MTE for temperature elements = 0.00495
   b) MTE for trip unit = 0.0066
   c) ST for instrument loop = 0.007
   b) $\sum CL^2$ = 0.00014

4) PC = Process Consideration (margin for conservatively rounded down AV)
   a) PC = 0.00992
   b) PC^2 = 0.0000984

5) Instrument Span = 300 degrees F

Nominal Trip Setpoint (NTSP): 108.05 degrees F

$$NTSP = LTSP = AL - 0.8225\sqrt{\sum CA^2 + \sum CL^2 + \sum D^2 + PC^2} * Span$$

Where D = Device Drift adjusted for calibration frequency
1) Drift of temperature elements = 0
2) Drift of trip unit = 0.00835
3) $D^2 = 0.00007$

Assigned Margin (supports Leave Alone Zone): 4.05 degrees F

Actual Trip Setpoint (ATSP): NTSP – Assigned Margin = 104.0 degrees F

Setting Tolerances:
The delta between the Allowable Value and the Actual Trip Setpoint within this calculation is 4.5 degrees F which meets or exceeds the program guidance (Reference 7) of greater than one times the Leave Alone Zone (LAZ). The LAZ is a range of acceptable values around a nominal value established by adding or subtracting the required accuracy from the nominal value. When an instrument reading (cardinal point of calibration or trip setpoint) is found within this band during Surveillance Testing or calibration checks, no calibration adjustment is required. In special cases, the LAZ can be established as a non-uniform band around the nominal value. The LAZ for this instrument calibration is +0 / -1.0 degree F based on a review of the quarterly and two-year surveillance tests (Reference 10).

Bases for Loop Uncertainty Calculation:
This setpoint methodology complies with the intent of the following industry standards and guidelines:
- NEDC-31336, Class 3, October 1986, GE Instrument Setpoint Methodology
- NEDC-31336P-A, Class 3, September 1996, GE Instrument Setpoint Methodology
- ANSI/ISA-67.04.01-1987, Setpoints for Nuclear Safety-Related Instrumentation (Reference 11)

Instrument Channel Operability:
With respect to instrument channel operability, the following actions are taken based on the As-Found value:

If the As-Found value falls outside the LAZ (i.e., Lower & Upper Acceptable Limits of 103 to 104 degrees F) but below the Required Limit (AV) of 108.5 degrees F, the following actions are taken:
1) The work group supervisor is notified.
2) Recalibration of the device is attempted.
3) The test is repeated.
4) If the results are within the LAZ, then the test is Passed and no further action is taken.
5) If the results are still outside the LAZ, then the test is Failed and the device is entered into the corrective action program for repair/replacement.

If the As-Found value exceeds the Required Limit (AV) of 108.5 degrees F, then the following actions are taken:

1) The Shift Supervisor is notified.
2) The work group supervisor is notified.
3) The channel is declared inoperable.
4) The issue is entered into the corrective action program.
5) Recalibration of the device is attempted.
6) The test is repeated.
7) If the results are within the LAZ, then the test is Passed/Failed,
8) If the results are still outside the LAZ, then the test is Failed and the device is entered into the corrective action program for repair/replacement

4.0 REGULATORY EVALUATION

4.1 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met. Exelon Generation Company, LLC (Exelon) has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TSs. The following applicable regulations and regulatory requirements were reviewed in making this determination:

Codes:

10 CFR 50.55a(h), "Protection and Safety Systems," requires compliance with IEEE Std. 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations," and the correction sheet dated January 30, 1995. For nuclear plants with construction permits issued before January 1, 1971, the applicant/licensee may elect to comply instead with the plant-specific licensing basis. For nuclear power plants with construction permits issued between January 1, 1971, and May 13, 1999, the applicant/licensee may elect to comply with the requirements stated in IEEE Std. 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations." Clause 4.4 of IEEE Std. 603-1991 requires identification of the analytical limit associated with each variable. Clause 6.8.1 requires that allowances for uncertainties between the analytical limit and device setpoint be determined using a documented methodology. Clause 3(6) of IEEE 279-1971 requires identification of the levels that, when reached, will necessitate protective action.

10 CFR 50 Appendix A, General Design Criterion (GDC) 13, "Instrumentation and control," requires, in part, that instrumentation be provided to monitor variables and systems, and that controls are provided to maintain these variables and systems within prescribed operating ranges.

10 CFR 50 Appendix A, GDC 20, "Protection system functions," requires, in part, that the protection system be designed to initiate automatically the operation of appropriate systems, including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences.

10 CFR 50 Appendix A, GDC 30, "Quality of reactor coolant pressure boundary," requires, in part, that means shall be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage.

Relevant Guidance:

Regulatory Guide 1.105, Revision 3, "Setpoints for Safety-Related Instrumentation," describes a method acceptable to the NRC staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits.

The LGS design complies with the intent of this regulatory guide. LGS UFSAR Section 1.8 states:

"Although this guide [RG 1.105, Revision 1, November 1976] does not apply to LGS except for the RRCS [Redundant Reactivity Control System] (being for plants whose construction permit applications are docketed after Dec. 15, 1976), LGS will be in conformance during operation as discussed in LGS UFSAR Section 7.1.2.5 and Chapter 16."

LGS Section 7.1.2.5 states:

"The nominal trip setpoint and allowable value for Limiting Safety System Settings are contained in the Technical Specifications. These parameters are determined based on the appropriate combination of engineering judgment, historical practice, and allowances for instrument performance. The setpoints are within the operating capability of the associated instruments. The established setpoints provide sufficient margin to satisfy both safety requirements, and plant availability objectives."

4.2 PRECEDENT

In addition to Reference 1, a similar license amendment involving main steam line tunnel delta temperature isolation trip setpoints was approved for LaSalle County Station, Units 1 and 2 (Reference 12). A recent non-conservative Emergency Core Cooling System TS instrumentation setpoint change was approved for Susquehanna Steam Electric Station Units 1 and 2 (Reference 13).

4.3 NO SIGNIFICANT HAZARDS CONSIDERATION

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:

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

   Response: No.

The proposed changes to lower the Technical Specification (TS) High Pressure Coolant Injection (HPCI) Equipment Room Delta Temperature High Isolation Trip Setpoint from ≤126 degrees F to ≤104 degrees F and lower the corresponding Allowable Value (AV) from ≤130.5 degrees F to ≤108.5 degrees F do not significantly increase the probability or consequences of an accident previously evaluated. A reanalysis of the steam leak model for the HPCI equipment room has identified that a 25 gallons per minute (gpm) steam leak may not have been isolated on HPCI equipment room high differential temperature with the existing temperature indicating switch setpoints in all plant conditions. Lowering the non-conservative TS Trip Setpoint to 104 degrees F will decrease the consequence of a 25 gpm HPCI steam line leak outside primary containment within the HPCI room by ensuring it is isolated. The value of 104 degrees F is set high enough to ensure that a premature isolation of the HPCI System following a Loss of Coolant Accident does not occur. The environmental qualification of required equipment in the HPCI rooms is not affected by the proposed lowered isolation trip setpoint. The proposed setpoint change affecting the HPCI steam line leak detection is bounded by the accident analysis described in the Limerick Updated Final Safety Analysis report (UFSAR) Section 15.6.4, "Steam System Piping Break Outside Primary Containment."

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

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

Response: No.

The proposed changes to lower the TS HPCI Equipment Room Delta Temperature High Isolation Trip Setpoint from ≤126 degrees F to ≤104 degrees F and lower the corresponding AV from ≤130.5 degrees F to ≤108.5 degrees F do not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes do not add or remove equipment. The proposed changes are limited to an instrument setpoint change to an existing temperature indicating switch within the Steam Leak Detection System. The Steam Leak Detection System is a mitigating system; changes to its instrumentation setpoints do not introduce any new accident initiators, nor do they reduce or adversely affect the capabilities of any plant structure, system, or component to perform their safety function. The physical establishment and setting of the proposed setpoint of the accident mitigation instruments will have no direct impact on the plant's normal operating conditions. The instrumentation is normally in a monitoring mode and does not actively support normal plant operation. No new failure modes are being introduced by the proposed changes and the Steam Leak Detection System will continue to be operated in the same manner.

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

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

   Response: No.

   The proposed changes to lower the TS HPCI Equipment Room Delta Temperature High Isolation Trip Setpoint from ≤126 degrees F to ≤104 degrees F and lower the corresponding AV from ≤130.5 degrees F to ≤108.5 degrees F do not involve a significant reduction in a margin of safety. The lower trip setpoint will ensure that a 25 gpm leak in the HPCI steam line will be isolated on HPCI equipment room high differential temperature. The proposed system isolation TS trip setpoint was selected to provide equivalent margins that ensure the effectiveness of the Steam Leak Detection System isolation system to mitigate the consequences of an accident without compromising the operability of the HPCI System. The proposed trip setpoint and proposed allowable value range maintain adequate margins between these new values and the operating range of the HPCI System in order to prevent the inadvertent actuation of the Steam Leak Detection System isolation system and the loss of the HPCI System. The same difference of 4.5 degrees F between the existing trip setpoint and AV values and the proposed trip setpoint and AV values is being maintained as an allowance for instrument drift. The trip setpoint and the AV range is within the specified range of the instruments and therefore, the accuracy and drift provides the same margin of safety as previously assumed.

   Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, Exelon concludes that the proposed amendment does not involve a 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.

4.4 CONCLUSIONS

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.

5.0 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 area, 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 effluent that may be released offsite, or (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.

6.0 REFERENCES

1. LGS Technical Specification Amendment Nos. 85 and 46, Steam Leakage Detection System Setpoints, Limerick Generating Station, Units 1 and 2, dated January 20, 1995 (ML011560074)

2. LGS Calculation -1001, "Compartment Temperature Transients for Steam and Water Leaks," Revision 4a

3. LGS LER 1-09-003, "Both Isolation Actuation Instrument Channels Inoperable," submitted on October 26, 2009

4. Apparent Cause Evaluation (ACE) 958587-12, "Potentially Non-Conservative HPCI Ventilation High Differential Temperature Isolation Leak Detection Set-point"

5. Limerick Generating Station Updated Final Safety Analysis Report (UFSAR) Sections 1.8, Conformance to NRC Regulatory Guidelines; 3.6.1.2.1.7, HPCI Steam Supply Line; 5.2.5.2.2.4, RCIC and HPCI Systems Leak Detection; 7.1.2.5, Conformance to Regulatory Guides; 7.6.1.3.3.5.3, HPCI Equipment Area and Pipe Chase Area Temperature Monitoring; 7.6.1.3.3.3, HPCI System Leak Detection System-Instrumentation and Controls; 7.3.1.1.1.1.7, HPCI Actuated Devices; and 15.6.4, Steam System Piping Break Outside Primary Containment

6. Loop Uncertainty Calculation TE-055-1N028B, Configuration 01, Revision 1

7. Exelon Procedure CC-MA-103-2001, Revision 0, "Setpoint Methodology for Peach Bottom Atomic Power Station and Limerick Generating Station"

8. NEDC-31336, Class 3, October 1986, General Electric Company Instrument Setpoint Methodology

9. NEDC-31336P-A, Class 3, September 1996, GE Instrument Setpoint Methodology

10. ST-2-025-405-1 [2], NSSSS-NUMAC Steam Leak Detection-Turb Enc Amb T, Outbrd MSIV Amb T, HPCI Amb T, and HPCI dT-Division 2 Calibration/Functional Test (TIS-025-101B) [TIS-025-201B]

    ST-2-025-407-1 [2], NSSSS-NUMAC Steam Leak Detection- Turb Enc Amb T, Turbine Encl dT, Outbrd MSIV Amb T, RWCU Amb T, RWCU dT, HPCI Amb T, and HPCI dT-Division 4 Calibration/Functional Test (TIS-025-101D) [TIS-025-201D]

11. ANSI/ISA-67.04.01-1987, Setpoints for Nuclear Safety-Related Instrumentation

12. Amendment No. 17 to Facility Operating License No. NPF-11 and Amendment No. 2 to Facility Operating License No. NPF-18-LaSalle County Station, Units 1 and 2, dated July 3, 1984 (ML021120161)

13. Susquehanna Steam Electric Station, Units 1 and 2 – Issuance of Amendment Re: Emergency Core Cooling System Instrumentation – Technical Specification (TS) Table 3.3.5.1-1 and Editorial Change to TS 3.10.8.f (TAC NOS. ME0933 and ME0934), dated November 9, 2009 (ML092950110)

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION MARKED-UP PAGES

(Units 1 and 2)

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TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. RWCS Δ Flow - High	≤ 54.9 gpm	≤ 65.2 gpm
b. RWCS Area Temperature - High	≤ 155°F or ≤ 132°F**	≤ 160°F or ≤ 137°F** |
c. RWCS Area Ventilation Δ Temperature - High	≤ 52°F or ≤ 32°F**	≤ 60°F or ≤ 40°F** |
d. SLCS Initiation	N.A.	N.A.
e. Reactor Vessel Water Level - Low, Low, - Level 2	≥ -38 inches *	≥ -45 inches
f. Manual Initiation	N.A.	N.A.
4. HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION		
a. HPCI Steam Line Δ Pressure - High	≤ 974" H_2O	≤ 984" H_2O
b. HPCI Steam Supply Pressure - Low	≥ 100 psig	≥ 90 psig
c. HPCI Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	≤ 20 psig
d. HPCI Equipment Room Temperature - High	225°F	≥ 218°F, ≤ 247°F
e. HPCI Equipment Room Δ Temperature - High	≤ ~~126~~ 104°F	≤ ~~130.5~~ 108.5°F
f. HPCI Pipe Routing Area Temperature - High	175°F	≥ 165°F, ≤ 200°F
g. Manual Initiation	N.A.	N.A.
h. HPCI Steam Line Δ Pressure - Timer	3 ≤ τ ≤ 12.5 seconds	2.5 ≤ τ ≤ 13 seconds

TABLE 3.3.2-2 (Continued)

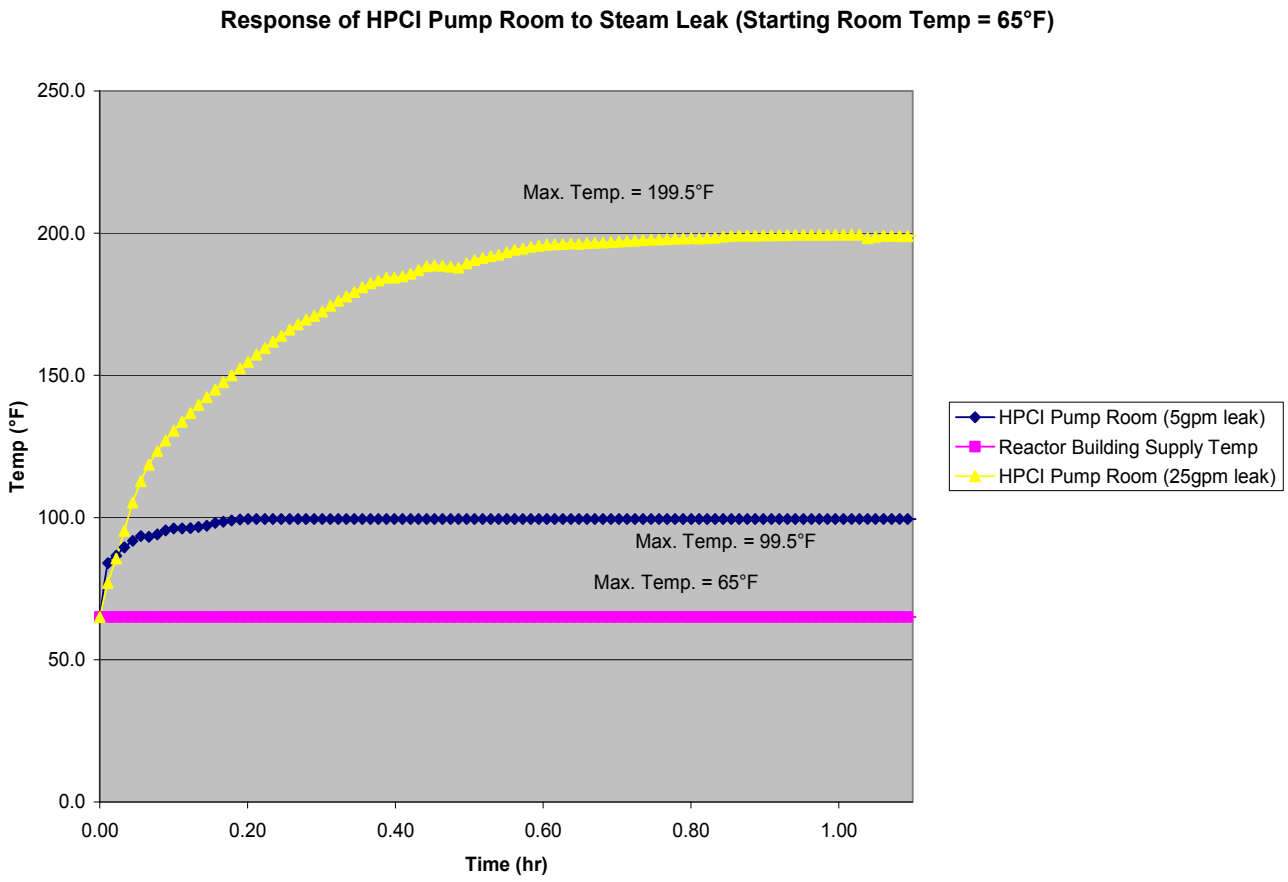
ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. RWCS Δ Flow - High	≤ 54.9 gpm	≤ 65.2 gpm
b. RWCS Area Temperature - High	≤ 155°F or ≤ 132°F**	≤ 160°F or ≤ 137°F** |
c. RWCS Area Ventilation Δ Temperature - High	≤ 52°F or ≤ 32°F**	≤ 60°F or ≤ 40°F** |
d. SLCS Initiation	N.A.	N.A.
e. Reactor Vessel Water Level - Low, Low, - Level 2	≥ -38 inches *	≥ -45 inches
f. Manual Initiation	N.A.	N.A.
4. HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION		
a. HPCI Steam Line Δ Pressure - High	≤ 974" H_2O	≤ 984" H_2O
b. HPCI Steam Supply Pressure - Low	≥ 100 psig	≥ 90 psig
c. HPCI Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	≤ 20 psig
d. HPCI Equipment Room Temperature - High	225°F	≥ 218°F, ≤ 247°F
e. HPCI Equipment Room Δ Temperature - High	≤ ~~126°F~~ 104°F	≤ ~~130.5°F~~ 108.5°F
f. HPCI Pipe Routing Area Temperature - High	175°F	≥ 165°F, ≤ 200°F
g. Manual Initiation	N.A.	N.A.
h. HPCI Steam Line Δ Pressure - Timer	3 ≤ τ ≤ 12.5 seconds	2.5 ≤ τ ≤ 13 seconds

ATTACHMENT 3

CALCULATION -1001 HPCI ROOM MAXIMUM VENTILATION
DIFFERENTIAL TEMPERATURE PROFILES

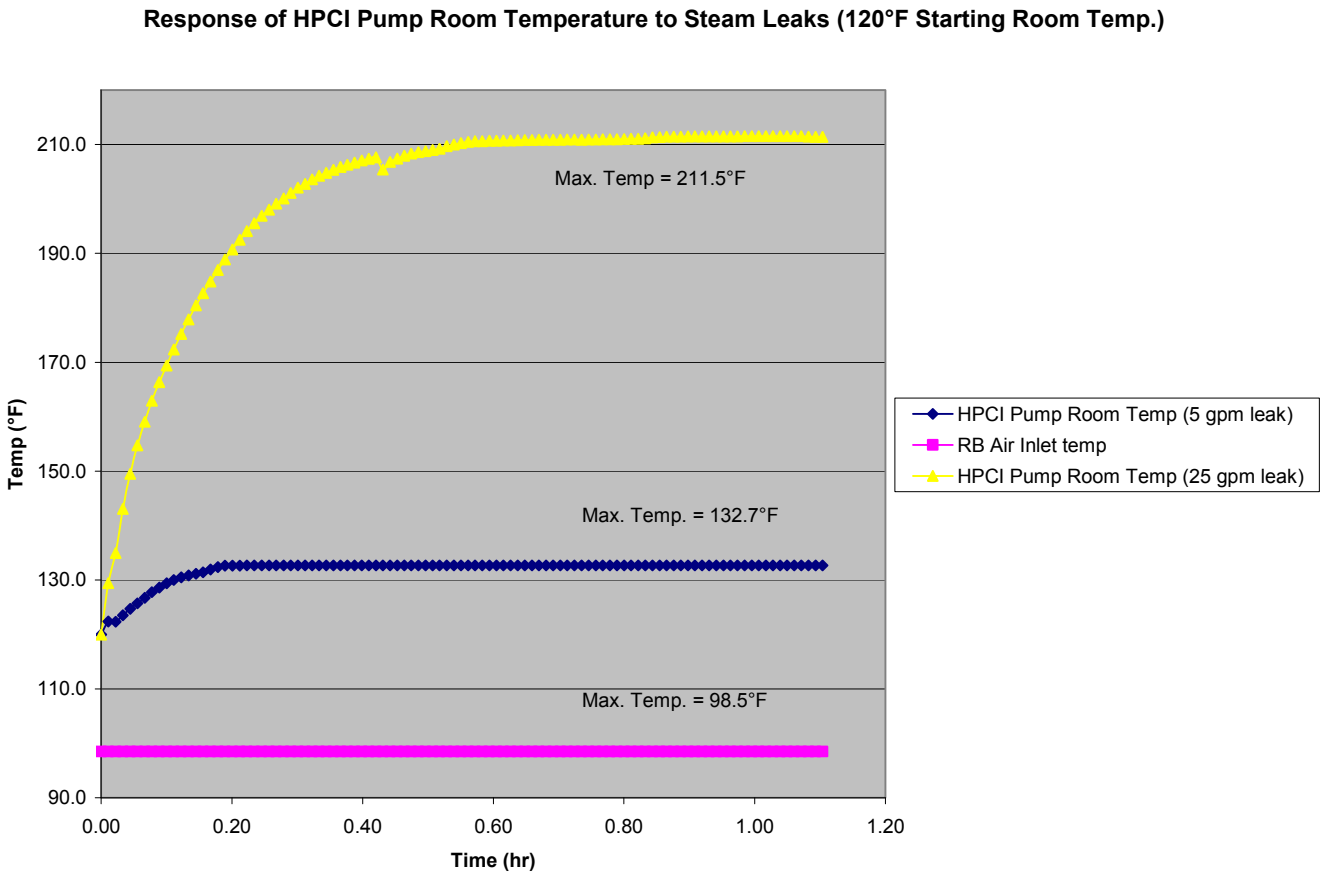
7.9 HPCI Pump Room Starting at 65°F



Maximum Ventilation Differential Temperature:

dT = 199.5 °F – 65°F = 134.5°F

7.10 HPCI Pump Room Starting at 120°F



Maximum Ventilation Differential Temperature:

dT = 211.5 °F – 98.5°F =113.0°F