Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

October 28, 1993

Dr. Thomas E. Murley
U.S. Nuclear Regulatory Commission
Director, Nuclear Reactor Regulation
Washington, D.C. 20555

Attn: Document Control Desk

SUBJECT: LaSalle County Nuclear Power Station Units 1 and 2
Application for Amendment of Facility Operating Licenses NPF-11 and NPF-18 Technical Specifications
NRC Docket Nos. 50-373 and 50-374

Dr. Murley:

Pursuant to 10 CFR 50.90, Commonwealth Edison (CECo) proposes to amend Appendix A, Technical Specifications, of Facility Operating Licenses NPF-11 and NPF-18 to revise the ECCS injection valve stroke times and ECCS response times due to MOV modifications (resulting from GL 89-10 testing) that slow down injection valve stroke times. This will not affect plant operations and has been justified by a limited break spectrum Loss-Of-Coolant Accident Analysis performed by General Electric. Acceptance of this analysis will establish a new LOCA analysis of record for LaSalle, upon which any future changes will be based. In addition a review of the sensitivity of previous analyses has been performed for Anticipated Transients Without Scram, containment response, the limiting offsite dose event, and HPCS-related transients.

This proposed amendment request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes in this amendment.

2. Attachment B includes a summary of the proposed changes and the marked-up Technical Specifications pages for LaSalle Units 1 and 2 with the requested changes indicated.

3. Attachment C describes CECo's evaluation performed in accordance with 10 CFR 50.92 (c), which confirms that no significant hazard consideration is involved.

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4. Attachment D provides an Environmental Assessment Applicability Review per 10 CFR 51.21.

5. Attachment E is the General Electric Loss-Of-Coolant Accident Analysis Report for LaSalle Units 1 and 2.

6. Attachment F is a withholding affidavit for the GE LOCA Analysis Report.

This proposed amendment has been reviewed and approved by CECo On-Site and Off-Site Review in accordance with Commonwealth Edison procedures.

Commonwealth Edison requests that NRC review of the Technical Specification changes be completed by LaSalle Unit 1 Cycle 6 shutdown, which is scheduled to occur March 7, 1994, so that the valve modifications can proceed with assurance that this licensing amendment is acceptable to your staff.

The attached General Electric LOCA Analysis Report contains information proprietary to General Electric Company. In accordance with the requirements of 10CFR 2.79(b), an affidavit for this letter is enclosed as Attachment F to support the withholding of this report from public disclosure.

To the best of my knowledge and belief, the statements contained above are true and correct. In some respect these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contractor employees, and consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Commonwealth Edison is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

Please direct any questions you may have concerning this submittal to this office.

State of Ill., County of DuPage
Subscribed before me on this 28th day
of October, 1993 by G.G.B.
Notary Public

Very truly yours,

Gary G. Benes
Nuclear Licensing Administrator

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Subscribed and Sworn to before me
on this 28th day of
October, 1993.

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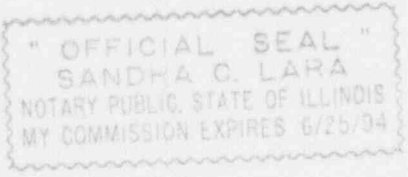
Notary Public

Attachments:

A. Description of Safety Analysis of the Proposed Changes
B. Marked-Up Technical Specification Pages
C. Evaluation of Significant Hazards Considerations
D. Environmental Assessment Applicability Review
E. General Electric Loss-Of-Coolant Accident Analysis
F. Withholding Affidavit for General Electric LOCA Analysis Report

cc: J. B. Martin, Regional Administrator - RIII
D. L. Hills, Senior Resident Inspector - LSCS
J. L. Kennedy, Project Manager, NRR
Office of Nuclear Facility Safety - IDNS



ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF PROPOSED CHANGES TO APPENDIX A, TECHNICAL SPECIFICATIONS OF FACILITY OPERATING LICENSES NPF-11 and NPF-18

I. DESCRIPTION OF THE CURRENT REQUIREMENT

The LaSalle Units 1 and 2 Technical Specifications provide required response times for several ECCS systems in Table 3.3.3-3 (See Attachment B). The Low Pressure Core Spray System (LPCS) and the Low Pressure Coolant Injection (LPCI) Mode of the Residual Heat Removal System required response times are both given as less than or equal to 40 seconds. In addition, the LPCS and LPCI injection valves are required to be open within 20 seconds after receipt of the reactor vessel pressure and ECCS injection line pressure interlock signal concurrently with power source availability and receipt of an accident initiation signal. The High Pressure Core Spray System (HPCS) required response time is given as 27 seconds.

II. BASES FOR THE CURRENT REQUIREMENT

Per the design basis of the systems one purpose is to mitigate the effects of a Loss-Of-Coolant Accident (LOCA), and to a lesser extent, the mitigation of several other events. The current Technical Specification required response times for these systems were used by General Electric as input assumptions in the current LaSalle LOCA analysis (Reference 1, approved in References 2 and 3), which demonstrates that the limiting LOCA would result in a Peak Cladding Temperature (PCT) of 1138°F, which is less than the acceptance limit of 2200°F. The stroke times are also input assumptions to several other analyses performed by GE for other less severe events.

III. NEED FOR REVISION OF THE REQUIREMENT

Modifications to the ECCS injection valves are scheduled to be performed during refueling outages which begin in March, 1994 for Unit 1 and March, 1995 for Unit 2. The modifications are the result of GL 89-10 testing and will improve MOV performance. They are based on gear changes which will slow down the valves' stroke times, and consequently, system response times to values greater than currently permitted by LaSalle Technical Specifications.

IV. DESCRIPTION OF THE REVISED REQUIREMENT

The requested change would increase the injection valve stroke times for LPCS and LPCI from 20 seconds to 40 seconds. This would result in required response times for these systems of less than or equal to 60 seconds (currently, 40 seconds). Because of the increase in the HPCS injection valve stroke time from 14 seconds to 28 seconds, the response time for this system would become 41 seconds instead of the current requirement of 27 seconds.

V. BASES FOR THE REVISED REQUIREMENT

Because the increased valve stroke times result in delayed coolant injection from the affected ECCS systems, the LOCA PCT will increase. To justify that this increased severity does not result in a PCT exceeding the allowable limit of 2200°F, and to verify that the other four LOCA licensing criteria in 10CFR 50.46 continue to be met, GE has performed a limited break spectrum LOCA analysis which reflects the increased response times for LPCS, LPCI and HPCS (Attachment E).

A. LOCA Analysis Method

The four GE computer models used in this analysis are: LAMB (short-term blowdown phenomena for large breaks), SCAT (transient short-term thermohydraulic calculations for large breaks), SAFER (long-term system response for all breaks) and GESTR-LOCA (fuel stored energy and fission gas inventory). All methods used for this analysis have been previously reviewed and approved by the NRC.

The limiting fuel type and limiting single failure were determined by comparison of case results which used nominal input assumptions. Cases were then run using Appendix K to 10CFR Part 50 input assumptions for a more limited number of combinations. This analytical approach is part of the SAFER/GESTR-LOCA licensing methodology that was approved by the NRC.

Nominal analyses were performed for the Design Basis Accident (DBA), which is a 3.10 ft^2 double ended guillotine break of the recirculation suction line, the 80% DBA, the 60% DBA, a 1.0 ft^2 break, a 1.4 ft^2 break, a 0.5 ft^2 break, a 0.1 ft^2 break, and a 0.05 ft^2 break. The non-recirculation line break that was performed was for the Main Steamline Break Outside Containment. Results were obtained for the P8x8R (GE7), GE8x8EB (GE8) and GE8x8NB (GE9) fuel types for all nominal cases, except the 80% and 60% DBA cases, which were performed only for the limiting fuel type (GE7). Appendix K results were determined for the limiting fuel type (and, in some cases, for all three fuel types) for all cases except the 0.5 ft^2 and 0.05 ft^2 cases. Results were obtained for the HPCS D/G failure, the LPCS D/G failure, and the LPCI D/G failure, although not all cases were run for all failures. The limiting single failure was determined to be the HPCS D/G failure, and this failure was analyzed for all of the cases described above. A listing of the PCTs obtained for the different cases is given in Attachment E, Tables 5-1 and 5-2.

B. LOCA Analysis Results

GE found the limiting LOCA case to be the DBA with the HPCS D/G failure. For the limiting fuel type, GE7, the licensing basis PCT for LaSalle Station was calculated to be 1260°F, which is well below the 2200°F licensing basis limit established by the NRC. This value may be found in Table 6-1 of Attachment E, along with values for the PCTs of the two non-limiting fuel types. The licensing basis PCTs were determined consistent with the NRC-approved methodology described in the GE analysis report.

The maximum local oxidation was found to be less than 0.1%, and the core-wide metal-water reaction was found to be less than 0.3%, which satisfies the applicable licensing constraints. These parameters were verified for all three fuel types. Compliance with requirements for coolable geometry and long-term cooling were previously met in the Reference 4 analysis listed in Attachment E and are not adversely affected by the changes associated with this amendment.

Single Loop Operation (SLO) analyses were performed for the same limiting break and single failure scenario (DBA with HPCS DG failure) as determined for two-loop operation. Without a MAPLHGR reduction, the resulting PCTs are somewhat higher than those for their corresponding two-loop cases. However, since these PCTs are still well below the 10CFR 50.46 limit, no MAPLHGR reduction is required under SLO.

As with the previous analysis of record, the new LOCA analysis is also valid for operation in the Extended Load Line Limit (ELLLA) region, as described in Attachment E.

The MAPLHGR limits currently in the LaSalle 1 and 2 Core Operating Limits Reports (COLRs) were found to remain valid, since the values used in the GE analysis were equal to, or larger than, those contained in the current COLRs.

C. Justification for Continued Applicability of Other Previous GE Analyses

Appendix A of Attachment E provides a discussion of sensitivity studies performed by GE to demonstrate that results from the Anticipated Transient Without Scram (ATWS) analyses, containment analyses, off-site dose analyses (Main Steamline Break Outside Containment) and HPCS-related transient analyses would not be impacted by the increased injection valve stroke times.

VI. SCHEDULE REQUIREMENTS

Commonwealth Edison requests that this amendment be processed by March 7, 1994, which is the scheduled shutdown date for LaSalle Unit 1 Cycle 6. Otherwise the injection valve modifications would have to be initiated without assurance of the acceptability of this proposed amendment. The valves are not required to be operable until the core is begun to be reloaded during the refueling outage, however.

VII. CONCLUSION

The LPCS, LPCI, and HPCS injection valve stroke times and ECCS response times will be increased for LaSalle Units 1 and 2 as a result of gear changes resulting from ECCS injection valve modifications. These increased stroke times have been used as the input assumptions for a limited break spectrum LOCA analysis, which has been performed for both units by GE. The calculated licensing basis PCT remains well below the 2200°F licensing basis acceptance limit. The four other 10CFR 50.46 LOCA criteria also continue to be within their associated acceptance limits. GE has also provided adequate justification for the continued applicability of other related analyses with the increased stroke times.

REFERENCES

1. GE document, NEDC 31510P, "LaSalle County Station Units 1 and 2 SAFER/GESTR-LOCA Loss-Of-Coolant Accident Analysis", December 1987.

2. P. C. Shemanski (NRC) to H. E. Bliss (CECo), "Issuance of Amendment No. 58 to Facility Operating License NPF-11, LaSalle County Station, Unit 1 (TAC No. 66969)" containing "Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to License Amendment for Cycle 3 Reload, License No. NPF-11, Commonwealth Edison Company, LaSalle County Station, Unit 1, Docket No. 50-373", June 23, 1988.

3. P. C. Shemanski (NRC) to H. E. Bliss (CECo), "Issuance of Amendment No. 41 to Facility Operating License NPF-18, LaSalle County Station, Unit 2 (TAC No. 69368)" containing "Safety Evaluation by the Office of Nuclear Reactor Regulation, Amendment No. 41 to Facility Operating License No. NPF-18, Commonwealth Edison Company, LaSalle County Station, Unit 2, Docket No. 50-374", January 6, 1989.