Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

May 31, 1994

Mr. William T. Russell, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

SUBJECT: LaSalle County Nuclear Power Station Units 1 and 2
Supplemental Information to the Application for Amendment Request to Facility Operating Licenses NPF-11 and NPF-18, Appendix A, Technical Specifications Deleting 3/4.6.1.5, "Primary Containment Structural Integrity"
NRC Dockets 50-373 and 50-374

REFERENCES:

(a) P. L. Piet letter to T. E. Murley dated June 9, 1993

(b) G. G. Benes letter to T. E. Murley dated December 27, 1993

(c) A. T. Gody, Jr. letter to D.L. Farrar dated December 2, 1993

(d) G. G. Benes letter to T. E. Murley dated March 22, 1994.

Dear Mr. Russell:

In Reference (a), Commonwealth Edison (CECo) submitted an Application for Amendment to Facility Operating Licenses NPF-11 and NPF-18, Appendix A, Technical Specifications. This proposed Technical Specification amendment deletes Technical Specification 3/4.6.1.5, "Primary Containment Structural Integrity". In Reference (b), CECo submitted a response to a Reference (c), NRC Request for Additional Information (RAI). On February 15, 1994, representatives of CECo met with members of your staff to discuss the proposed Technical Specification amendment. In response to questions asked by members of your staff at the meeting, CECo provided supplemental information in Reference (d). This letter is in response to two questions that resulted from the NRC review of the submittal.

1. QUESTION

Question number 1 concerns whether or not the proposed Inservice Inspection Program for Post Tensioning Tendons or the draft UFSAR changes are being or have been implemented prior to approval of the proposed Technical Specification amendment and whether or not any of the new information provided in Reference (d) as new "minimum required tendon forces" requires evaluation as part of the license amendment under 10 CFR 50.90.

RESPONSE:

The proposed Inservice Inspection Program for Post Tensioning Tendons and any associated UFSAR changes are not currently being used and will not be able to be used until the proposed Technical Specification amendment is approved by the NRC. Any changes to the Program and/or the UFSAR will be made in accordance with 10 CFR 50.59. The information supplied in Reference (d) as new "Minimum Required Tendon Forces" does not change the basis of surveillance test acceptance criteria, but will provide information relative to potential future use in engineering evaluations. Therefore, the information given as the "Minimum Required Tendon Forces" is not part of the license amendment per 10 CFR 50.90.

2. QUESTION

Please provide additional explanation of the average tendon lift-off force values provided in the February 15, 1994 meeting as design basis numbers and then described as "effective tendon end anchor forces at the end of 40 years" in Reference (d). Also, explain the new information regarding "minimum required 40-year tendon end anchor forces of 575 kips in the hoop tendons and 600 kips in the vertical tendons" in Reference (d)

RESPONSE:

Per LaSalle Updated Final Safety Analysis Report (UFSAR) section 3.8.1.5, the tendon tension immediately after anchoring (seating force) was specified to be 168 ksi, which is 0.70 times the ultimate strength of prestressing steel, and is the value used to achieve the required tension on each tendon at the time of initial tensioning. The predicted average tendon surveillance values for 40 years were calculated using the initial seating force of 168 ksi and then reducing this force by prestress losses due to steel stress relaxation, concrete creep and shrinkage, and elastic shortening. The results for a 90 wire tendon were an average predicted effective tendon end anchor force of 620.5 kips for the hoop tendons and 626.18 kips for the vertical tendons.

In the meeting on February 15, 1994, CECo supplied copies of graphs showing a plot of tendon lift-off testing results versus time using linear regression. A line labeled "Design Basis 620 kips" for hoop tendons and "Design Basis 626 kips" for vertical tendons appears on the associated graphs to identify the above values. Based on the preceding paragraph, these values are thus the average predicted effective values for tendon seating force at the end of 40 years due to the losses of concrete creep and shrinkage, steel relaxation, and elastic shortening as stated in Reference (d).

The Bases section for the current Technical Specification 3/4.6.1.5, Primary Containment Structural Integrity, states the following:

> "The tested lift-off force of individual tendon tension shall be greater than or equal to the initial pre-stress minus losses, as predicted in the as-built design, which occur between the initial pre-operational structural integrity test and the time of subsequent surveillance."

The proposed amendment to delete Technical Specification 3/4.6.1.5 does not alter the as-built design or the bases for determining tendon force reduction trends over time. The expanded testing and engineering evaluation requirements will remain based on the individual tendon lift-off test results compared to the predicted results in accordance with Regulatory Guide 1.35, Inservice Inspection of Ungrouted Tendons in Prestressed Concrete Containment Structures. The proposed Inservice Inspection Program for Post Tensioning Tendons includes these requirements for lift-off testing.

The values of 575 kips for hoop tendons and 600 kips for vertical tendons were determined to show the minimum required prestress level at anchorage location for the tendon groups so as to comply with Regulatory Position 7.1.5 of Regulatory Guide 1.35, Revision 3. The values 575/600 kips were calculated based on the structural acceptance criteria as specified in UFSAR section 3.8.1.5 for the governing design condition. This additional information was provided to help show the available conservatism in LaSalle containment structural design relative to potential future use in engineering evaluation for operability. This does not change the design basis post-tensioning forces (620 kips hoop and 626 kips vertical), the tendon forces used in the current Technical Specification that were predicted for the ISIs, the UFSAR acceptance criteria for allowable stresses for containment design, or the structural design margins currently present in the design. The conclusion of the On-site Review was that the original Significant Hazards Consideration evaluation still remains valid. This conclusion was concurred with by Off-Site Review and was reiterated in Reference (d).

SUMMARY

The conclusion of the On-site Review is that the original Significant Hazards Consideration evaluation remains valid for the information contained in this letter. The information in this letter has been reviewed and approved by CECo On-Site and Off-Site Review in accordance with Commonwealth Edison procedures.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects 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 supplemental information pertaining to an application for a license 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.

Very truly yours,

Gary G Benes

Gary G. Benes
Nuclear Licensing Administrator

Subscribed and Sworn to before me
on this 31st day of
May, 1994.

" OFFICIAL SEAL "
SANDRA C. LARA
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 6/25/94

Notary Public

cc: J. B. Martin, Regional Administrator - RIII
D. E. Hills, Senior Resident Inspector - LSCS
A. T. Gody, Jr., Project Manager, NRR
Office of Nuclear Facility Safety - IDNS