10CFR50.90

PECO Energy Company Nuclear Group Headquarters 965 Chesterbrook Boulevard Wayne, PA 19087-5691

December 2, 1994

Docket Nos. 50-352 50-353

License Nos. NPF-39 NPF-85

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

PECO ENERGY

SIJBJECT: Limerick Generating Station, Units 1 and 2 Response to Request for Additional Information Regarding Power Rerate Program (RAI-5)

Gentlemen:

Attached is our response to your Request for Additional Information (RAI), discussed in our telephone conversation on November 17, 1994, regarding the planned implementation of the Power Rerate Program at Limerick Generating Station (LGS), Units 1 and 2. The Power Rerate Program is the subject of Operating License Change Request No. 93-24-0 which was forwarded to you by letter dated December 9, 1993.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

G. A. Hunger Jr.

Director - Licensing

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC w/ attachment N. S. Perry, USNRC Senior Resident Inspector, LGS w/attachment R. R. Janati, Director, PA Bureau of Radiological Protection w/attachment 0.900 9412080267 941202 PDR ADDCK 05000352 PDR ADDCK 05000352 PDR

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF CHESTER

W. H. Smith, III, being first duly sworn, deposes and says:

That he is Vice President of PECO Energy Company, the Applicant herein; that he has read the enclosed response to the NRC Request for Additional Information involving Power Rerate discussed on November 17, 1994, concerning Operating License Change Request No. 93-24-0 for Limerick Generating Station Facility Operating License Nos. NPF-39 and NPF-85, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

SS.

1

President

Subscribed and sworn to before me this Includay of Meember 1994.

Notary Public

Notarial Seal Erica A. Santori, Notary Public Tredyffrin Twp., Chaster County My Commission Expires July 10, 1995

Docket Nos. 50-352 50-353 License Nos. NPF-39 NPF-85

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI-5) LIMERICK GENERATING STATION, UNITS 1 AND 2 (Per Telecon dated November 17, 1994)

OPERATING LICENSE CHANGE REQUEST NO. 93-24-0

Reference: "Power Rerate Safety Analysis Report for Limerick Generating Station, Units 1 & 2," General Electric Company, NEDC-32225P, Class III, September 1993 (proprietary)

Question 1:

Section 4.1.1.1.1, "Bulk Pool Temperature". Are the key input parameters used for the long-term bulk suppression pool temperature analysis at rerate conditions the same as in the original analysis.?

Response 1:

Yes, the key input parameters used for determining the long-term bulk suppression pool temperature at rerate conditions are the same as in the original analysis.

Question 2:

Section 4.1.1.2, "Containment Gas Temperature Response". Explain the change in temperature by "a few degrees" for a small break LOCA.

Response 2:

Section 4.1.1.2 of the reference report states that: "The changes in the reactor vessel conditions with power rerate will increase the calculated long-term peak drywell gas temperature during a small break LOCA by a maximum of a few degrees." This statement is based on the fact that a small steamline break LOCA has been analyzed for another BWR/4 to show the effect of power rerate on the drywell temperature response. This analysis showed that the peak drywell temperature increased by a few degrees, but remained below 340°F.

For the analysis described in Section 6.2.1.1 of the Limerick Updated Final Safety Analysis Report (UFSAR), the initial reactor operating conditions were not used in determining the 340°F design temperature. Therefore, power rerate will have no effect on this drywell design temperature calculation.

Docket Nos. 50-352 50-353 License Nos. NPF-39 NPF-85

The drywell design temperature of 340°F for Limerick is conservatively based on the thermodynamic properties of steam, the containment dimensions and the initial containment operating conditions. The maximum containment temperature occurs when the reactor pressure is at approximately 450 psia (maximum steam enthalpy), and the drywell pressure is assumed to be at its maximum value. The assumed maximum drywell pressure is based on the sum of the wetwell noncondensables pressures (including all of the noncondensables from the drywell), the vapor pressure of the suppression pool, and the hydrostatic pressure due to the downcomer submergence. These conditions result in a calculated bounding value of 340°F for the drywell temperature.

The summary table presented in Section 6.2.1.1.3.1 of the Limerick UFSAR, indicates a calculated accident value of 340°F for the drywell temperature. However, no Limerick specific small break analysis was performed for the UFSAR. As described in Section 6.2.1.1.3.3.5.4, the 340°F design temperature was conservatively assumed in the design calculations and this design value was listed in the summary table as the "calculated accident value".

Question 3:

Section 4.1.1.1.3, "Steam Bypass Case". Explain "sufficient time" for operator action.

Response 3:

The bounding steam bypass analysis presented in Section 6.2.1.1.5 of the Limerick UFSAR was based only on the containment dimensions and initial containment conditions. The reactor operating conditions were not used in the steam bypass analysis. Therefore, the analysis presented in the UFSAR is not affected by power rerate and remains valid for the new reactor operating conditions.

The UFSAR steam bypass analysis conservatively maximized the containment pressurization rate and minimized the time available for operator action. The results of this bounding analysis indicate that the operator has about 31 minutes from the time that the drywell pressure reaches 30 psig, to complete an action that will terminate the pressure increase before the containment design pressure is exceeded. Since this analysis was not based on the initial reactor operating conditions, the results are still valid for power rerate operation and the operator has sufficient time to respond to the event.

Docket Nos. 50-352 50-353 License Nos. NPF-39 NPF-85

A more realistic analysis was performed using the SHEX containment code in order to determine ine actual effect of power rerate on the steam bypass scenario. This analysis assumes steam condensation on the surface of the suppression pool but does not take credit for any other heat sinks in the containment. Assuming the reactor operating conditions used in the current UFSAR containment analyses (105% steam flow), this analysis shows that the operator has almost three hours from the time that the drywell pressure reaches 30 psig to complete an action that will terminate the pressure increase before the containment design pressure is exceeded. Using the reactor power assumed in the power rerate analyses (3694 MWt or 102% of 110% original rated power), the operator has about 20 minutes less, or approximately 21/2 hours to complete the necessary actions. Therefore, the operator has sufficient time to respond to the event.