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50-352  
MAY 14 1982

Mr. Ronald C. Haynes, Director  
United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement, Region I  
631 Park Avenue  
King of Prussia, PA 19406

Subject: Significant Deficiency Report #45  
Final Report of Containment Box  
Beam Design Deficiencies  
Limerick Generating Station, Units 1 & 2  
NRC Construction Permit Nos. CPPR 106 & 107

References: 1.) PECO. Interim Report on Containment Box  
Beam Design Deficiencies dated August 7, 1981  
2.) PECO. Second Interim Report on Containment  
Box Beam Design Deficiencies dated  
October 28, 1981

File: QUAL 2-10-2 (SDR #45)

Dear Mr. Haynes:

This is our final report regarding our evaluation of reportability of the calculational deficiency originally identified in Reference 1. It was previously reported in Reference 1 that during the original design of the containment box beams, shear stresses were not appropriately combined for most of these box beams. Investigation by our Architect/Engineer found that the design engineer had properly performed the appropriate combination of shear stresses on the first several beams and found the stresses to be low. Beam shear stresses were not combined for the remaining beams because it was incorrectly assumed that the stresses would also be low.

In Reference 2, it was reported that the box beams are being reanalyzed to higher loading criteria than had been originally considered, and the effects of deflection of the box beams on other commodities were also being assessed.

The reanalysis found that none of the box beams would have failed under the postulated faulted conditions, and it has been determined that deflections due to pipe whip loads will not adversely affect safety related commodities, such as ducts and conduits, fastened to or installed near the box beams.

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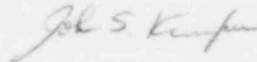
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It is our conclusion, therefore, that the calculational deficiency reported in Reference 1. is not reportable under 10CFR50.55(e) since safety of plant operations would not have been adversely affected had the postulated event occurred. Extensive redesign or repair of the box beams is not required, and the extensive reanalysis that has been performed was required by imposition of more severe loading and revised design criteria.

Reanalysis has been extended to assess the adequacy of the beam connections to the containment wall and the bioshield. Preliminary indications are that ten of the seventy-seven connections at the containment wall are overstressed and some modifications may be required. The safety significance has not been determined, and, therefore, the reportability of this issue has not been resolved. Our investigations are continuing, and we will provide a report to you by June 11, 1982, to advise you of the status.

If there are any questions on the matter, we would be pleased to discuss them with you.

Sincerely,



Copy to: Director of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Washington, DC 20555

J. P. Durr, Resident NRC Inspector