November 17, 2000

Mr. James A. Hutton
Director-Licensing
PECO Energy Company
Nuclear Group Headquarters
Correspondence Control
P.O. Box 160
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2, GENERIC LETTER 96-06 RE: WATERHAMMER, TWO-PHASE FLOW, AND THERMALLY-INDUCED PRESSURIZATION (TAC NOS. M96827 AND M96828)

Dear Mr. Hutton:

Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," dated September 30, 1996, included a request for licensees to evaluate cooling water systems that serve containment air coolers to assure that they are not vulnerable to waterhammer and two-phase flow conditions. PECO Energy Company (the licensee) provided its assessment of the waterhammer and two-phase flow issues for the Limerick units in letters dated January 28 and February 10, 1997, and additional information was submitted in letters dated July 30, 1998, and October 13, 2000.

Based on our review of the information that was provided, it is our understanding that: (a) the drywell chilled water system (DCWS) is automatically isolated from the primary containment during a loss-of-coolant accident (LOCA) and is not required for accident mitigation; (b) the minimum required level in the DCWS head tank maintains sufficient system overpressure to prevent steam formation during the event scenarios of interest, and any small amounts of steam that might form will be readily evacuated to the DCWS penetrations and condensed by the cooler water that is located there; and (c) even when considering single failure vulnerabilities, waterhammer and two-phase flow conditions will not occur during a LOCA or main steam line break (MSLB). We also understand that as an additional precaution, procedures are being revised to assure that any steam that might be formed in the DCWS following a LOCA or MSLB is properly condensed or evacuated when re-establishing drywell cooling. We are satisfied with the licensee's response and consider the waterhammer and two-phase flow elements of GL 96-06 to be closed.

With respect to thermally-induced pressurization, in its submittal of January 28, 1997, the licensee identified two containment penetrations as potentially vulnerable to a water solid volume that may be subjected to an increase in pressure due to heating of trapped fluid. The licensee determined that all penetrations are operable based on the piping plastic deformation. The licensee committed to submit its plan for long-term corrective action and an implementation schedule by May 31, 1997. In its submittal of May 27, 1997, the licensee committed to install thermal relief valves during the refueling outage in April 1998, and April 1999, for Units 1 and 2,

respectively. The licensee, in its submittal of November 18, 1999, confirmed the completion of its long-term corrective action. The Nuclear Regulatory Commission (NRC) staff finds the licensee's corrective action provides an acceptable resolution for the issue of thermally-induced pressurization of piping runs penetrating the containment.

This completes the NRC staff's review of GL 96-06 and we are closing out TAC Nos. M96827 and M96828.

Sincerely,

/RA/

Bartholomew C. Buckley, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

cc: See next page

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Limerick Generating Station, Units 1 & 2

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