PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

SEP 06 1984

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket Nos.: 50-352
50-353

Subject: Limerick Generating Station, Units 1 and 2
Information for Equipment Qualification Branch (EQB) Regarding SER Open Issue #6 (Seismic/Dynamic Qualification of Equipment).

Reference: (1) Letter from J. S. Kemper to A. Schwencer, dated August 1, 1984.
(2) Telecon between PECO (Tom Shannon, et al) and NRC (Arnold Lee) on August 31, 1984.

Attachment: Limerick Generating Station, Unit 1:
Justification for Interim Operation

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

The reference (1) letter transmitted our justification for interim operation of Limerick Unit 1, until the first refueling outage, pending confirmation of the dynamic qualification of the residual heat removal service water process radiation monitor (RHRSW PRM) system for safety essential service. Pursuant to the Reference (2) telecon, the attached revision to our justification for interim operation provides additional information for the Equipment Qualification Branch.

Should you require any additional information, please do not hesitate to contact us.

Sincerely,

John S. Kemper

RDC/gra/09048402

cc: See Attached Service List

A001
1/1

cc: Judge Lawrence Brenner (w/enclosure)
Judge Peter A. Morris (w/enclosure)
Judge Richard F. Cole (w/enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
Ann P. Hodgdon, Esq. (w/enclosure)
Mr. Frank R. Romano (w/enclosure)
Mr. Robert L. Anthony (w/enclosure)
Maureen Mulligan (w/enclosure)
Charles W. Elliot, Esq. (w/enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/enclosure)
Director, Penna. Emergency Management Agency (w/enclosure)
Angus R. Love, Esq. (w/enclosure)
David Wersan, Esq. (w/enclosure)
Robert J. Sugarman, Esq. (w/enclosure)
Martha W. Bush, Esq. (w/enclosure)
Spence W. Perry, Esq. (w/enclosure)
Jay M. Gutierrez, Esq. (w/enclosure)
Atomic Safety & Licensing Appeal Board (w/enclosure)
Atomic Safety & Licensing Board Panel (w/enclosure)
Docket & Service Section (w/enclosure)
Mr. James Wiggins (w/enclosure)
Mr. Timothy R. S. Campbell (w/enclosure)

LIMERICK GENERATING STATION, UNIT 1
JUSTIFICATION FOR INTERIM OPERATION

This is the justification for interim operation of the Limerick Generating Station, Unit 1, pending confirmation of the dynamic qualification of the residual heat removal service water process radiation monitor (RHRSW PRM) for safety essential service as currently committed in the Limerick FSAR.

The RHRSW PRM detects high radiation levels in the cooling water effluent (RHRSW) from the RHR heat exchangers, in case of a heat exchanger tube leak of radioactive reactor coolant or suppression pool water to the RHRSW system. The effluent RHRSW is routed to the cooling towers (normal) or the spray pond (accident). A RHRSW PRM high radiation signal actuates an alarm and automatically closes the RHRSW isolation valves and, if sensed at the loop discharge header, shuts off the RHRSW pump.

The RHRSW PRM consists of a remote sampling station (liquid sample rack/scintillation detector) located in the area of the diesel generators and a log count rate meter (LCRM) located in the auxiliary control room, plus alarm and trip instrumentation. Dynamic qualification test records, applicable to Limerick, are available for all of this equipment except for the LCRM. There is strong evidence that the LCRM was qualified by test (seismic bracing was added to the Limerick model LCRM); however, the qualification test records are not readily available.

The justification for operating Unit 1 until the first refueling outage, with the qualification records of the LCRM incomplete, is as follows:

1. Since the RHRSW PRM is not required to be active safety essential (i.e., not required to mitigate the consequences of a Design Basis Accident) the only safety concern is the potential effect of a PRM component failure on either the Class 1E power circuits or on the operation of the safety essential RHRSW system. Items 2, 3, and 4 below address the possible effects of a PRM component failure.

2. All Class 1E power circuits are redundant and separated, hence a single PRM electrical component failure that causes a Class 1E power circuit failure is within the Limerick Design Basis (i.e. failure of a single, active, safety-related component).

3 There are two RHR heat exchangers, each with its own RHRSW supply system. Hence shutdown and isolation of one RHRSW supply system because of a PRM component failure is within t Limerick Design Basis (i.e. failure of a single, active, safety-related component).

4. If the shutdown and isolation of one, or both, RHRSW supply systems results from false high radiation level PRM trip signals, the operator can manually bypass the signals and reopen the RHRSW isolation valves and restart the RHRSW supply pump(s). The operator can determine if the trip is due to a false high radiation level trip signal because there are two PRMs on the RHRSW supply system for each RHR heat exchanger.

5. Both RHR heat exchangers are seismically qualified, therefore, a safe shutdown earthquake would not cause a heat exchanger tube failure. Consequently, the RHRSW PRMs would not be required for safety essential service because there would not be any heat exchanger tube leakage into the RHRSW system.

6. All of the RHRSW PRM components are located in mild environment areas (auxiliary control room and diesel generator areas) where hydrodynamic loads are minor or nonexistent. All of the components have been qualified, except for the LCRM for which there is strong evidence of qualification. Consequently, PRM component failure is not likely.

7 Because of the qualification level of the RHRSW PRM components, the occurrence of multiple failures has a very low probability.

In the event that previous test records do not become available, we will present an acceptable solution for implementation at the first refueling outage. It is believed that, for the reasons outlined above, the probability of a failure associated with the LCRM remains low enough to justify the safe interim operation of Limerick 1.

RDC/gra/09048401