PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

OCT 5 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
Request for Additional Information (RAI)
Procedures and Test Review Branch (PTRB)

References:
(1) V. S. Boyer to A. Schwencer letter dated September 27, 1984.
(2) J. S. Kemper to A. Schwencer letter dated September 28, 1984.
(3) R. J. Stipcevich (PECO) and R. Becker (NRC) telecons dated 10/2 and 10/5/84.

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

In the reference telephone calls the PTRB reviewer requested that we revise our draft responses to FSAR Table 14.2-3, Startup Test Procedure (STP)-10, FSAR Figure 14.2-5, Startup Test Sequence and RAI 460.13 recently transmitted to you in reference letters 1 and 2.

The attached draft responses have been changed to incorporate a reference source to the acceptance criteria in STP-10, the non-deletion of STP-37 and a brief description of the DC voltage verification test in RAI 460.13 to be completed prior to exceeding five percent power.

The attached revised FSAR draft page changes will be incorporated into the FSAR, exactly as they appear in the attachments in the revision scheduled for November, 1984.

Sincerely,

V. S. Boyer
for J.S.K.

RJS/gra/10038403

cc: See Attached Service List

B001
1/1

cc: Judge Helen F. Foyt (w/o enclosure)
Judge Jerry Harbour (w/o enclosure)
Judge Richard F. Cole (w/o enclosure)
Judge Christine N. Kohl (w/o enclosure)
Judge Gary J. Edles (w/o enclosure)
Judge Reginald L. Gotchy (w/o enclosure)
Troy B. Conner, Jr., Esq. (w/o enclosure)
Ann P. Hodgdon, Esq. (w/o enclosure)
Mr. Frank R. Romano (w/o enclosure)
Mr. Robert L. Anthony (w/o enclosure)
Ms. Phyllis Zitzer (w/o enclosure)
Charles W. Elliott, Esq. (w/o enclosure)
Zori G. Ferkin, Esq. (w/o enclosure)
Mr. Thomas Gerusky (w/o enclosure)
Director, Penna. Emergency Management Agency (w/o enclosure)
Angus Love, Esq. (w/o enclosure)
David Wersan, Esq. (w/o enclosure)
Robert J. Sugarman, Esq. (w/o enclosure)
Martha W. Bush, Esq. (w/o enclosure)
Spence W. Perry, Esq. (w/o enclosure)
Jay M. Gutierrez, Esq. (w/o enclosure)
Atomic Safety & Licensing Appeal Board (w/o enclosure)
Atomic Safety & Licensing Board Panel (w/o enclosure)
Docket & Service Section (w/o enclosure)
James Wiggins (w/o enclosure)
Timothy R. S. Campbell (w/o enclosure)

Acceptance Criteria - SRMs are ~~calibrated~~ OPERATIONAL and read onscale within the designed range for a cold clean core. ~~SRMs sufficiently overlap with IRMs to ensure that design requirements are met.~~

(STP-9) Water Level Reference Leg Temperature (Formerly SUT-7)

Test Objective - The test objective is to demonstrate the calibration and agreement of the installed reactor vessel water level instrumentation ~~under various hot standby and full power conditions~~ AT NORMAL OPERATING PRESSURE AND TEMPERATURE.

Prerequisites - The following are determined and recorded: elevations of instrument taps, condensing chambers, head chambers indicating zero water level, and instrument ranges. The reactor is in a steady-state condition during each stage of testing. Air temperature in the vicinity of the level columns is stabilized.

Test Method - The test will be done at rated temperature and pressure and under steady-state conditions; the reference leg temperature will be measured and compared to the value assumed during initial calibration. If the difference exceeds operating tolerances, the instruments will be recalibrated using the measured value.

Acceptance Criteria - The installed reactor water level indication and controls provide accurate information and sufficient operating tolerances under normal operating conditions.

(STP-10) IRM Performance (Formerly SUT-8)

Test Objective - The test objective is to demonstrate IRM system response to neutron flux and IRM overlap with the SRM, AND APRM systems.

Prerequisites - Fuel loading is completed, and the reactor is just critical. IRM gains are set at maximum for conservatism.

Test Method - After criticality and when flux level is sufficient, IRM response to neutron flux and ~~the~~ the IRM-SRM overlap is verified. The SRMs and IRMs may then be taken out of non-coincident scram. Following average power range monitor (APRM) calibration in accordance with another procedure, the IRM gains may be adjusted ~~if necessary. If any adjustments are made, the SRM-IRM overlap is verified at the first opportunity.~~ TO OPTIMIZE THE IRM OVERLAP WITH THE SRMs AND APRMs.

Acceptance Criteria - Pesulting IRM ~~performance satisfies applicable design criteria~~ OVERLAP WITH THE SRMs AND APRMs IS ESTABLISHED WITHIN ACCEPTABLE LIMITS (Vendor Test Specifications).

(STP-11) Local Power Range Monitoring(LPRM) Calibration (Formerly SUT-9)

Test Objective - The test objective is to calibrate the LPRM system.

Prerequisites - Reactor power and LPRM gains are sufficient to observe chamber response to the adjacent control rod during calibration of any LPRMs. The ability of the APRM system to provide input to the reactor protection system is maintained during this test. The process computer or offline computer is available.

Test Method - The core is operated in a specified test condition, for a period sufficient to obtain short-term equilibrium conditions. LPRMs are calibrated in accordance with the calibration procedure. The meter reading of each LPRM chamber is proportional to the average heat flux in the four adjacent fuel rods at the height of the chamber.

Acceptance Criteria - LPRM calibration, in accordance with the procedure, is satisfactorily completed.

(STP-12) APRM Calibration (Formerly SUT-10)

Test Objective - The test objective is to calibrate the APRM system.

Prerequisites - The core is at steady-state condition at the desired power level and core flow rate. Control rod positions and core flow are not changed during the time data are taken for these calibrations.

Test Method - With the core in a steady-state condition, calculations are made of the percent of rated power ~~indicated~~ by ~~the~~ heat balance, ~~on the core performance~~ The APRMs are calibrated to agree with the calculated power value.

Acceptance Criteria - The APRMs are calibrated to read equal to or greater than the calculated core thermal power.

DRAFT

TEST NO.	PROCEDURE DESCRIPTION	TEST CONDITION (1)									
		OPEN VESSEL	HEAT UP	1	2	3	4	5	6	WAR RANT	
1	CHEMICAL AND RADIOCHEMICAL	X	X	X	X	X		X(6)	X	~~X~~	
2	RADIATION MEASUREMENTS	X	X	~~X~~	X	X			X		
3	FUEL LOADING	X									
4	FULL CORE SHUTDOWN MARGIN		X(4)								
5	CONTROL ROD DRIVE SYSTEM	X	X		X	X			X		
6	SRM PERFORMANCE AND CONTROL ROD SEQUENCE		X(4)								
9	WATER LEVEL REFERENCE LEG TEMPERATURE		X	X	X	X	X	X	X		
10	IRM PERFORMANCE		X(4)	X							
11	LPRM CALIBRATION		X	X		X			X		
12	APRM CALIBRATION		X	X	X	X		X	X	X	
13	PROCESS COMPUTER PERFORMANCE VERIFICATION	X	X	X	X	X			X(5)		
14	RCIC SYSTEM PERFORMANCE VERIFICATION		X	X	X(5,8)						
14.1	RCIC SYSTEM STARTUP AFTER LOSS OF AC POWER TO THE SYSTEM			X(8)							
14.2	RCIC SYSTEM OPERATION WITH A SUSTAINED LOSS OF AC POWER TO THE SYSTEM			X(8)							
15	HPCI SYSTEM PERFORMANCE VERIFICATION		X			X		~~X~~			
16	SELECTED PROCESS TEMPERATURES VERIFICATION		X			X	X		X		
17	SYSTEM EXPANSION	X	X		X(6)				X(6,8)		
18	TIP UNCERTAINTY					X			X		
19	CORE PERFORMANCE			X	X	X	X	X	X	X	
20	STEAM PRODUCTION									X	
21	CORE POWER–VOID MODE RESPONSE						X	X			
22	PRESSURE REGULATOR RESPONSE			X	M	M	~~X~~	M	M		
23	FEEDWATER CONTROL SYSTEM DEMONSTRATION			X	X	X	X	X	X(5)		
24	MAIN TURBINE VALVES SURVEILLANCE TEST					X			X(5,9)		
25	MAIN STEAM ISOLATION VALVES PERFORMANCE VERIFICATION		X	X		X(3)		X(3)	X,SD(2,5,9)		
26	MAIN STEAM RELIEF VALVES PERFORMANCE		X		X						
27	TURBINE TRIP AND GENERATOR LOAD REJECTION DEMONSTRATION				X(7)	M,SD(2,5)			M,SD(2)		
28	SHUTDOWN FROM OUTSIDE THE MAIN CONTROL ROOM DEMONSTRATION				X,SD(2)						
29	RECIRCULATION FLOW CONTROL DEMONSTRATION				~~X~~	M(4)		~~X~~	M(5)		
30	RECIRCULATION SYSTEM				X	M	X		M		
31	LOSS OF TURBINE–GENERATOR AND OFFSITE POWER				X,SD						
32	ESSENTIAL HVAC SYSTEM OPERATION AND CONTAINMENT HOT PENETRATION TEMPERATURE VERIFICATION		X		~~X~~	X			X		
33	PIPING STEADY STATE VIBRATION		X		X	X(5)		X	X(5,8,8)		
34	OFFGAS SYSTEM PERFORMANCE VERIFICATION		X	X		X		~~X~~	X(5)	~~X~~	
35	RECIRCULATION FLOW CALIBRATION				~~X~~	X(5)			X		
36	PIPING DYNAMIC TRANSIENT		X		X	X			X		
37	~~MAIN STEAM SYSTEM AND TURBINE PERFORMANCE AND PLANT DYNAMIC RESPONSE VERIFICATION~~ DELETED				~~X~~	~~X~~		~~X~~	~~X~~		
38	DELETED										
70	REACTOR WATER CLEANUP SYSTEM PERFORMANCE VERIFICATION		X								
71	RESIDUAL HEAT REMOVAL SYSTEM PERFORMANCE VERIFICATION				X(6)				X(6,8)		

LEGEND

X TEST INDEPENDENT OF FLOW CONTROLLER MODE

M MASTER MANUAL FLOW CONTROLLER MODE

SD SCRAM DEFINITE

NOTES

(1) SEE FIGURE 14.2-8 TEST CONDITION REGION MAP
(2) PERFORM TEST 5, TIMING OF 4 SLOWEST CONTROL RODS IN CONJUNCTION WITH THESE SCRAMS
(3) FULL CLOSURE OF ONE VALVE ONLY
(4) MAY BE DONE DURING TEST CONDITION OPEN VESSEL
(5) SOME TESTS DONE DURING APPROACH TO TEST CONDITION
(6) MAY BE DONE DURING AN EARLIER TEST CONDITION IF CONDITIONS WARRANT
(7) DONE WITH STEAM BYPASS CAPACITY
(8) SOME TESTS DONE AFTER PLANNED TRIPS FROM POWER
(9) DETERMINE MAXIMUM POWER LEVEL TEST CAN BE PERFORMED WITHOUT CAUSING REACTOR SCRAM

STET - DO NOT DELETE TEST NO. 37

LIMERICK GENERATING STATIC
UNITS 1 AND 2
FINAL SAFETY ANALYSIS REPO

STARTUP TEST SEQUENC
(UNITS 1 & 2)

FIGURE 14.2-6 REV. 3

DRAFT

QUESTION 640.13 (Section 14.2.12)

For DC Power System tests (P-2.1, P-88.1), state your plans to verify that individual cell limits are not exceed during the design discharge test and to demonstrate that the DC loads will function as necessary to assure plant safety at a battery terminal voltage equal to the acceptance criterion that has been established for minimum battery terminal voltage for the discharge load test. Assure that each battery charger is capable of floating the battery on the bus or recharging the completely discharged battery within 24 hours while supplying the largest combined demands of the various steady-state loads under all plant operating conditions.

RESPONSE

The procedure abstract for preoperational test P-2.1 has been changed to include these requirements.

and a DC voltage verification test is performed and completed during the startup test program prior to exceeding 5% power

The voltage verification test will measure voltage at all Class 1E dc distribution busses and at that Class 1E dc equipment which must be operational when the battery is at minimum Terminal voltage.