

PHILADELPHIA ELECTRIC COMPANY

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PHILADELPHIA, PA. 19101

(215) 841-4500

V. S. BOYER
SR. VICE PRESIDENT
NUCLEAR POWER

December 10, 1984

Docket No. 50-352

Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C., 20555

Dear Mr. Eisenhut:

This letter provides follow-up information to my letter dated August 21, 1984 concerning updates on the status of Shift Advisors and Shift SLO personnel participating in the 6 weeks of hot participation experience for the Limerick Generating Station Unit No. 1. In addition, this letter will satisfy the certification requirements of Attachment 3 to Facility Operating License No. NPF-27.

Enclosure 2 of the August 21 letter indicated that written and oral examinations administered to the shift advisors, including test results, would be forwarded when available. Enclosure 1 of this letter includes a copy of the written examination and the oral examination format administered on Sept 21, 1984 for the shift advisors. The oral examination included simulator scenarios and a Plant Control Room walkaround. These oral exams were administered and graded by the LGS Assistant Station Superintendent and the Operations Engineer. The written exam was a 4-hour exam covering plant systems, procedures, and technical specifications and was administered and graded by the LGS Training Coordinator.

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The examination grades for the two Shift Advisor candidates are as follows:

I. ORAL EXAMINATION

	<u>Simulator</u>	<u>Control Room Walkaround</u>
D. H. Sparks	PASS	PASS
F. L. Shanaman	PASS	PASS

II. WRITTEN EXAMINATION

	<u>Section I</u>	<u>Section II</u>	<u>Section III</u>	<u>Overall</u>
D. H. Sparks	77.4	84.5	84.5	82.2
F. L. Shanaman	92.8	83.3	78.9	84.9

Records for this Shift Advisor Training are appropriately documented and kept by the LGS-Nuclear Training Section.

Based upon the foregoing it is hereby certified, in accordance with Attachment 3 to Facility Operating License NPF-27, that D.H. Sparks and F. L. Shanaman are the special assigned advisors and they have been examined and have been determined to be competent to provide advice to the operating shifts.

Enclosure 2 lists SLO personnel who participated in the Hot Participation Experience Training (>20% Rx power) for 6 weeks in order to supplement their cold license due to having no previous "hot" experience. This list does not include Mr. Charles P. Gillespie who is the only Shift Superintendent (SLO) designated to have a Shift Advisor on Shift with him at all times when not in Cold Shutdown condition. Mr. Gillespie did, however, participate in the 6-week program to help improve his "hot plant" awareness.

Records indicating appropriate documentation of the six weeks of hot participation experience training for each SLO participant are kept by the LGS-Nuclear Training Section.

Mr. Darrell G. Eisenhut

December 10, 1984

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If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,

V. S. Boyer

Attachments

cc: Dr. T. E. Murley, Administrator
See Attached Service List

cc: Judge Helen F. Hoyt
Judge Jerry Harbour
Judge Richard F. Cole
Judge Christine N. Kohl
Judge Gary J. Edles
Judge Reginald L. Gotchy
Troy B. Conner, Jr., Esq.
Ann P. Hodgdon, Esq.
Mr. Frank R. Romano
Mr. Robert L. Anthony
Ms. Phyllis Zitzer
Charles W. Elliott, Esq.
Zori G. Ferkin, Esq.
Mr. Thomas Gerusky
Director, Penna. Emergency Management Agency
Angus Love, Esq.
David Wersan, Esq.
Robert J. Sugarman, Esq.
Martha W. Bush, Esq.
Spence W. Perry, Esq.
Jay M. Gutierrez, Esq.
Atomic Safety & Licensing Appeal Board
Atomic Safety & Licensing Board Panel
Docket & Service Section (3 copies)
James Wiggins
Timothy R. S. Campbell

COMMONWEALTH OF PENNSYLVANIA :

: SS.

COUNTY OF PHILADELPHIA :

V. S. Boyer, being first duly sworn, deposes and says:

That he is Senior Vice President of Philadelphia Electric Company; that he has read the foregoing letter with respect to shift staffing for Limerick Generating Station Unit No. 1 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.

V. S. Boyer

Subscribed and sworn to
before me this 10th day
of DECEMBER, 1984

Judith Y. Franklin
Notary Public

JUDITH Y. FRANKLIN
Notary Public, Phila., Phila. Co.
My Commission Expires July 28, 1987

**SHIFT ADVISOR
EXAMINATION REPORT**

CURRENTLY A LICENSED OPERATOR HERE?
 YES NO

APPLICANT'S NAME

REACTOR

LOCATION

WRITTEN EXAMINATION

SHIFT ADVISOR	ADMINISTERED BY:	DATE	EVALUATION PASSED <input type="checkbox"/> FAILED <input type="checkbox"/>
	GRADED BY:	GRADE	
	CATEGORY GRADES 1 2 3 4		

ORAL EXAMINATION

SHIFT ADVISOR	ADMINISTERED BY:	DATE	PASSED <input type="checkbox"/> FAILED <input type="checkbox"/>
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SIMULATOR EXAMINATION

SHIFT ADVISOR	ADMINISTERED BY:	DATE	PASSED <input type="checkbox"/> FAILED <input type="checkbox"/>
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COMMENTS

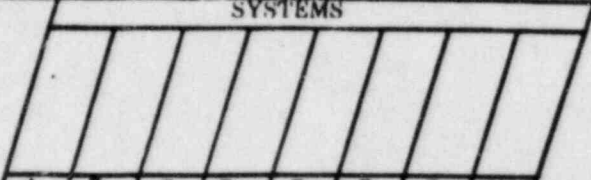
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RECOMMENDATION	MARGINAL <input type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
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COMMENTS:

SYSTEMS

B. CONTROL ROOM
(Major, Auxiliary and Engineered Safeguards Systems)



2.0 EQUIPMENT

2.1 Purpose

2.2 Flow Path

2.3 Normal Parameters

2.4 Components

2.5 System Behavior and Response

3.0 INSTRUMENTATION

3.1 Detector

3.2 Malfunction

3.3 Control Room Indication

4.0 REACTOR PROTECTION

4.1 Alarms/Setpoints

4.2 Safety System Input

4.3 Interlocks

5.0 PROCEDURES

5.1 Normal Procedures

5.2 Abnormal Procedures

5.3 Emergency Procedures

6.0 REACTIVITY EFFECTS

7.0 ADMINISTRATIVE REQUIREMENTS

7.1 Technical Specifications

7.2 Facility Requirements

COMMENTS: (Required for "U")

	A	B	C	D	E	F	G	H
2.0 EQUIPMENT								
2.1 Purpose								
2.2 Flow Path								
2.3 Normal Parameters								
2.4 Components								
2.5 System Behavior and Response								
3.0 INSTRUMENTATION								
3.1 Detector								
3.2 Malfunction								
3.3 Control Room Indication								
4.0 REACTOR PROTECTION								
4.1 Alarms/Setpoints								
4.2 Safety System Input								
4.3 Interlocks								
5.0 PROCEDURES								
5.1 Normal Procedures								
5.2 Abnormal Procedures								
5.3 Emergency Procedures								
6.0 REACTIVITY EFFECTS								
7.0 ADMINISTRATIVE REQUIREMENTS								
7.1 Technical Specifications								
7.2 Facility Requirements								

SYSTEMS

B. CONTROL ROOM
(Nuclear and Radiation Instruments)

A B C D E

3.0 INSTRUMENTS

3.1 Detectors

3.2 Malfunctions

3.3 Control Room Indications

3.4 Channel Components

3.5 Compensation/Discriminator

3.6 Input to Control System

4.0 REACTOR PROTECTION

4.1 Alarms/Setpoints

4.2 Safety System Input

4.3 Interlocks

5.0 PROCEDURES

5.1 Normal Procedures

5.2 Abnormal Procedures

5.3 Emergency Procedures

7.0 ADMINISTRATIVE REQUIREMENTS

7.1 Technical Specifications

7.2 Facility Requirements

COMMENTS: *(Required for "U")*

B. CONTROL ROOM (Electrical)	SYSTEMS			
	A	B	C	D
	2.0	EQUIPMENT		
	2.1 Purpose			
	2.2 Flow Path			
	2.3 Normal Parameters			
	2.4 Components			
	2.5 System Behavior or Response			
3.0	INSTRUMENTS			
	3.2 Interlocks			
	3.4 Control Room Indication			
5.0	PROCEDURES			
	5.1 Normal Procedures			
	5.2 Abnormal Procedures			
	5.3 Emergency Procedures			
7.0	ADMINISTRATIVE REQUIREMENTS			
	7.1 Technical Specifications			
	7.2 Facility Requirements			
COMMENTS: (Required for "U")				

LIMERICK GENERATING STATION
Shift Advisor

Facility: Limerick Generating Station
 Reactor Type: BWR
 Date Administered: _____
 Examiner: _____
 Applicant: _____

INSTRUCTIONS TO APPLICANT:

Use separate paper for the answers. Write answers on one side only. Staple question sheet on top of the answer sheets. Points for each question are indicated in parentheses before the question. Examination papers will be picked up four (4) hours after the examination starts.

Category Value	% of Total	Applicant's Score	% of Category Value	Category
<u>18</u>	<u>33</u>	_____	_____	1. Plant Systems
<u>18</u>	<u>33</u>	_____	_____	2. Procedures - Normal and Emergency
<u>19</u>	<u>34</u>	_____	_____	3. Administrative Controls and Technical Specifications
<u>55</u>	<u>100</u>	_____	_____	TOTALS
		Final Grade	_____%	

All work done on this exam is on my own, I have neither given nor received aid.

Applicant's Signature

SECTION 1: PLANT SYSTEMS

- (1.0) 1.1 What precautions should be observed prior to draining the Scram Discharge Volume after a scram?
- (1.0) 1.2 What systems/requirements would you advise the shift superintendent as being required prior to start-up of a recirculation pump? (Assume plant in Cold Shutdown and plant start-up COL in progress in accordance with GP-2).
- (.75) 1.3 a. Why are drywell and suppression chamber inerted?
- (.75) b. What are the consequences to the plant if the suppression chamber to drywell vacuum breakers do not properly operate during a LOCA?
- (2.0) 1.4 Explain the plant response in the event the on-line EHC pressure regulator fails to high output. (Assume plant operating at 100% Rx power.)
- (1.5) 1.5 Following the automatic initiation of the "A" Standby Liquid Control Pump, the "A" explosive valve fails to open. Explain how this would or would not hamper SLCS operation.
- (2.0) 1.6 List four modes of the RHR system and briefly discuss the flowpath of each one from discharge of RHR pump to return.
- (2.0) 1.7 Certain reactor fuels require fuel preconditioning, while others do not. Is preconditioning necessary or unnecessary at the LGS? Explain your choice of answers.
- (2.0) 1.8 What signals are required to automatically initiate the following systems:
- a. LPCI
 - b. Emergency Diesel Generators
 - c. ADS
 - d. HPCI
- (2.0) 1.9 Assume the following initial conditions:
- 100% power
 - Feedwater in 3-element control
- One steam flow transmitter's output signal fails low. Assuming no operator action, how will this failure effect RFPT operation and what will be the final reactor level?

1.10 With regard to the Redundant Reactivity Control Systems:

(2.0)

a. What will cause on Alternate Rod Insertion?

(1.0)

b. How will operation of the ARI valves effect speed of control rod insertion on scram?

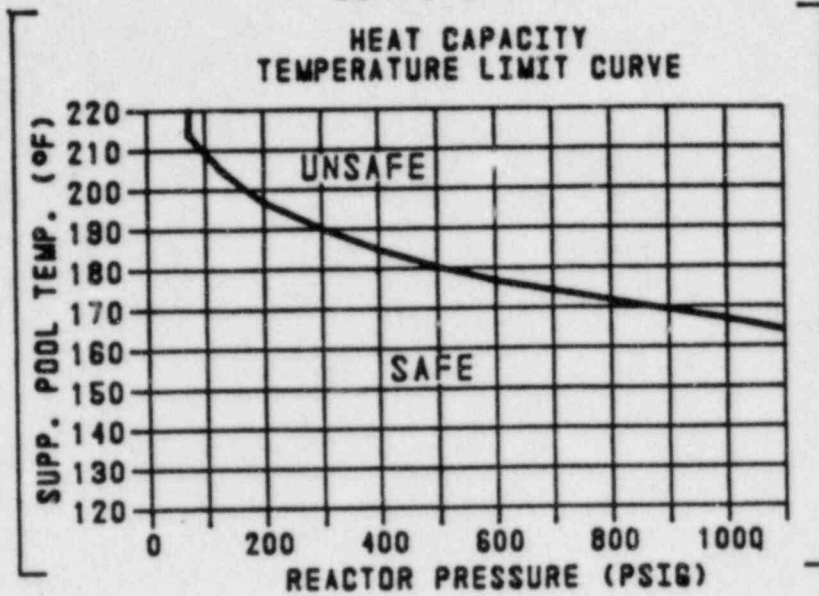
SECTION 2: PROCEDURES - NORMAL
AND EMERGENCY

- 2.1 List the entry conditions for the following:
- (1.0) a. T-101, Reactor Control
- (1.0) b. T-102, Containment Control
- (1.5) 2.2 A fire occurs in the Control Room which requires evacuation and plant shutdown at the Remote Shutdown Panel. As a shift advisor, what immediate operator actions would you advise the Shift Superintendent to check for completion prior to control evacuation as per SE-1 (Plant Shutdown from Outside Control Room)?
- (1.5) 2.3 As a shift advisor you are making rounds of the control panels with your Shift Superintendent (SST) after shift relief. The ACO informs the SST that he suspects a failed jet pump due to an unexplained decrease in core flow indication. What other symptoms might you suggest the SST check on prior to confirming a failure of a jet pump in accordance with ON-100? (Three others required).
- (2.0) 2.4 Briefly discuss the purpose behind use of GP-18 (Scram Review Procedure) checkoff list after automatic or manual scram condition.
- (2.0) 2.5 As per GP-4, Rapid Plant Shutdown, guidance is provided to take the reactor from at power condition to hot shutdown condition. As a shift advisor, what three procedural steps would you recommend to the SST to check on being completed to ensure an orderly progression to hot shutdown?
- (1.0) 2.6 GP-2, Plant Startup, states that with EHC pressure setpoint at 150 psig, verify proper operation of the turbine bypass valves and then raise the pressure setpoint to 600 psig. Other than to close the BPV's, why is the setpoint increased and held at 600 psig?
- (2.0) 2.7 Given the following conditions, use the attached graphs from T-102, Containment Control, to determine the minimum suppression pool level required to safely absorb an automatic vessel depressurization:
- Reactor pressure = 650 psig
Suppression pool temperature = 160°F
- (2.0) 2.8 As a shift advisor, what symptoms would indicate to you that a SRV had, in fact, inadvertently opened as per OT-114 (four required).
- (2.0) 2.9 As a shift advisor observing a reactor startup from hot shutdown on Unit 1, the SST cautions the ACO to ensure he watches closely for any high notch rod worths which may occur. What conditions might the reactor exhibit high rod notch worths and how would it be possible to get into these situations?

- (2.0) 2.10 As a shift advisor, under what types of plant conditions might you recommend a rapid plant depressurization (via manual ADS initiation) to the Shift Superintendent?

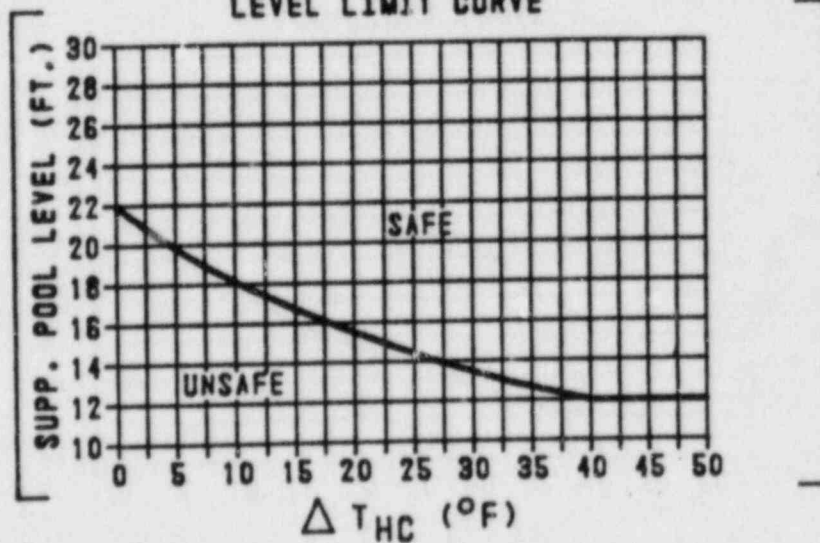
CURVE SP/T-1

**HEAT CAPACITY
TEMPERATURE LIMIT CURVE**



CURVE SP/L-1

**HEAT CAPACITY
LEVEL LIMIT CURVE**



ΔT_{HC} IN °F

— °F HEAT CAPACITY TEMP. LIMIT FROM CURVE SP/T-1

MINUS (-) — °F SUPP. POOL TEMP.

EQUALS (=) — °F ΔT_{HC}

SECTION 3: ADMINISTRATIVE CONTROLS AND
TECHNICAL SPECIFICATIONS

- 3.1 Describe the actions that must be taken if the following occur during a reactor startup:
- (1.0) a. RWM fails
 - (1.0) b. RSCS fails
- (2.0) 3.2 What topics are required in the verbal report that takes place at shift turnover?
- 3.3 During operation at 100% Rx power, the ACO on Unit 1 informs the SST that the process computer indicates that MAPRAT is equal to 1.01. Indicate your recommendations to the SST in the following areas:
- (1.0) a. Is a thermal limit being exceeded? Explain.
 - (1.0) b. What is the thermal limit consideration associated with MAPRAT.
- (3.0) 3.4 The attached portion of Technical Specifications should be used to answer the following question:
- Scenario: Plant at 100% Rx power. The D-12 has been out of service due to a faulty blower for three days. Estimated time of repair is five days. About two hours into the shift the P.O. reports to control room that the "C" ESW pump has shutdown during a surveillance test due to motor overcurrent and he has noticed the smell of light electrical smoke in the Spray Pond Pump House.
- As the Shift Advisor, what would be your recommendation to the Shift Superintendent in how long plant operation could continue?
- (2.0) 3.5 With the plant operations at 100% power, the oncoming shift arrives for relief of the 3:30-11:30 p.m. shift. The relieving shift consists of the following:
- a. Shift Superintendent (SLO) with accompanying Shift Advisor
 - b. Shift Supervisor (SLO) - absent
 - c. Control Operator (LO)
 - d. Unit 1 Assistant Control Operator (LO) - absent
 - e. Plant Operator - absent
 - f. Assistant Plant Operator
 - g. Inside Auxiliary Operator
 - h. Outside Auxiliary Operator

i. Helpers (2)

The operating shift being relieved has the following compliment with each just completing a double shift because of a major winter storm:

- a. Shift Superintendent (SLO)
- b. Shift Supervisor (SLO)
- c. Control Operator (LO)
- d. Unit 1 Assistant Control Operator (LO)
- e. Plant Operator
- f. Assistant Plant Operator
- g. Inside Auxiliary Operator
- h. Outside Auxiliary Operator
- i. Helpers (2)

By use of the attached Technical Specification state what your recommendation to the on-coming Shift Superintendent would be concerning maintaining continued, safe plant operations.

- (3.0) 3.6 The following question should be answered utilizing the attached portion of Technical Specifications:

Scenario: With the reactor operating at 45% power during power ascension tests following a "rod swap" (as per Rx Engineer Instructions) and the completion of control rod scram testing to satisfy Tech. Spec. surveillance test 4.1.3.2.C., it is determined that the average scram insertion time to notch 39 of all operable control rods is .87 seconds.

The Shift Superintendent, after receiving this information, takes action in accordance with LGS Technical Specifications. As a Shift Advisor, what action should he take? Why?

- (1.0) 3.7 a. What is the relationship between a Safety Limit (SL) and a Limiting Safety System Setting (LSSS)?
- (1.0) b. What are the LGS Safety Limits?
- (1.0) c. What actions would you expect the Shift Superintendent to take in the event a safety limit is exceeded?
- (1.0) 3.8 Under what plant conditions could you recommend a manual plant shutdown to the Shift Superintendent?
- (1.0) 3.9 As a Shift Advisor just relieving the shift you are making a check of the ACO turnover sheet (attached). What might you recommend to the Shift Superintendent as a result of this review?

ASSISTANT CONTROL OPERATOR SHIFT TURNOVER CHECKLIST

Unit 1 Date 2/3/85 Shift Y Off-going ACO Centrella
Oncoming ACO Landis SST Gillespie SSV Stanley

1. RX MODE Run GMWE 1105 CMWT 3297
2. a. Restrictions on Reactor Parameters: U/1 100% U/2 N/A
b. Remarks: Conducting Warranty Run for another 48 hours.
3. Primary Containment Established: U/1 Yes U/2 N/A
4. Secondary Containment Established: U/1 Yes U/2 N/A
5. SURVEILLANCE LOG OUT-OF-SPECIFICATION READINGS (Explain):

6. INSTRUMENTATION BYPASSED OR OUT OF SPECIFICATION-S/U & RUN MODE ONLY-(Explain):

RBM A bypassed - nulling sequence problem ; being investigated by ITE techs.

7. SYSTEM OR COMPONENT WHICH IS INOP. AS PERMITTED BY TECH. SPEC'S:

<u>Item</u>	<u>Reason</u>	<u>Date/Time Inop.</u>	<u>Return Deadline</u>
<u>HPCI</u>	<u>Aux. oil pump repair</u>	<u>2/1/85 / 1600</u>	<u>2/16/85 / 2400</u>

8. Log Book Reviewed: RJC (Offgoing ACO) RL (Oncoming ACO)
9. Walkaround Completed for Control Panels: RJC (Offgoing ACO)
RL (Oncoming ACO)
10. Control Panels Required Line-up Verified: RJC (Offgoing ACO)
RL (Oncoming ACO)
11. Comments or Information to be Passed On:

Run P-1 and OD-6, option 4 hourly for Rx Engineer database during warranty run.

ENCLOSURE 2

- Senior Licensed Operators at LGS Unit 1 who participated in a minimum 6-week Hot Participation Training (>20% Rx power) program at Peach Bottom Atomic Power Station:

<u>Name</u>	<u>Position</u>	<u>Dates Participated</u>
Collins, Greg	Shift Supervisor	08/06/84 thru 09/28/84
Crosier, Thomas V.	Shift Supervisor	08/28/84 thru 10/09/84
Paton, Glenn A.	Shift Supervisor	08/06/84 thru 10/03/84
Romano, Anthony	Shift Supervisor	08/28/84 thru 10/09/84
Russell, William N.	Shift Supervisor	09/03/84 thru 10/12/84
Stanley, William	Shift Supervisor	08/06/84 thru 09/20/84
Tindall, Ronald	Shift Supervisor	08/06/84 thru 09/19/84

Note: Charles P. Gillespie (Shift Superintendent) also attended 6 weeks of training, 08/06/84 thru 09/24/84, but he is the lone Shift Superintendent who has a Shift Advisor on his Shift.