

U. S. NUCLEAR REGULATORY COMMISSION REGION I
OPERATOR LICENSING EXAMINATION REPORT

COMBINED EXAMINATION REPORT NOS. 50-352/84-15 AND 50-352/84-23

FACILITY DOCKET NO. 50-352

FACILITY LICENSE NO. DPR-106

LICENSEE: Philadelphia Electric Company
2301 Market Street
Philadelphia, PA 19101

FACILITY: Limerick Generating Station

DATES: February 27 - March 7, 1984
May 7 - 18, 1984

CHIEF EXAMINER:

A. J. Lang. for John Berry.
John Berry
Reactor Engineer Examiner

9/20/84
Date

APPROVED BY:

[Signature]
Chief, Project Section ID

9/28/84
Date

SUMMARY: This combined examination report contains the results of the Operator Licensing examinations given at the Limerick Facility the weeks of February 27, 1984 and May 7, 1984.

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REPORT DETAILS

TYPE OF EXAMS: Initial X Replacement Requalification

EXAM RESULTS:

	RO Pass/Fail	SRO Pass/Fail	Inst. Cert Pass/Fail	Fuel Handler Pass/Fail
Written Exam	14/11	20/12	6/0	0/0
Oral Exam	23/2	29/3	6/0	0/0
Simulator Exam	23/2	28/4	5/1	0/0
Overall	13/12	19/13	5/1	0/0

1. CHIEF EXAMINER AT SITE:

FEBRUARY EXAMINATIONMAY EXAMINATION

D. Johnson, NRC

J. Berry, NRC

2. OTHER EXAMINERS:

K. Henry, ORNL
K. McCormack, ORNL
W. Thomas, ORNL

T. Hamrick, ORNL
W. Cliff, PNL
G. Sly, PNL
C. Henager, PNL
K. Henry, ORNL
W. Thomas, ORNL

3. PERSONS EXAMINEDFEBRUARY EXAMINATION:

<u>SRO</u>	<u>RO</u>	<u>INSTRUCTOR CERTIFICATION</u>
W. N. Barnshaw, Jr.	K. A. Berry	J. B. Geary
T. V. Crosier	R. W. Deppi	R. B. Helt
V. J. Cwietniewicz	R. A. Forst	M. J. Martin
J. Doering	S. T. Gamble	
J. F. Franz	N. J. Kinyon - Samec	
M. P. Gallagher	J. T. Klenk	
C. P. Gillespie	J. N. Koelle	
J. T. Monaghan	R. L. Landis	
J. A. Muntz	R. W. Monaco	
G. E. Paptzun	T. A. O'Malley	
A. F. Romano	C. E. Rich	
W. N. Russell	D. F. Robertshaw	
G. M. Schiendelmann	T. J. Tragermann	
W. R. Truax	T. J. Tragemann	
	M. Westermann	

MAY EXAMINATION:

<u>SRO</u>	<u>RO</u>	<u>INSTRUCTOR CERTIFICATION</u>
R. P. Alejnikov	R. E. Abruzzese	R. G. Andrews
J. M. Armstrong	H. J. Bender	E. C. Brohl
E. W. Callan	K. N. Brennan	J. R. Goodbred
G. F. Collins	R. J. Centrella	R. L. Rhode
M. H. Cory	T. T. Conolly	
E. D. Cosgrove	J. R. Coyle	
J. B. Cotton	R. A. Faulkner	
R. C. Delaney	L. H. Hertzog	
G. W. Dietrich	E. V. McAvoy	
P. J. Duca	J. F. Pettacio	
R. B. Hampton	J. A. Tucker	
K. S. Kemper		
G. J. Madsin		
R. D. Mandik		
G. A. Paton		
W. J. Stanley		
R. A. Tindall		
R. W. Valitski		

1. Summary of generic strengths or deficiencies noted on oral exams:

The examiners noted no generic strengths on the oral exams administered to the LGS candidates.

The examiners noted a generic weakness among the candidates in event diagnosis and communications.

2. Summary of generic strengths or deficiencies noted from grading of written exams:

From the grading of the written exam, a generic strength was noted in the areas of hydraulics and heat transfer.

A generic weakness was noted in the candidates' ability to recognize indications and consequences of improper instrument performance.

3. Comments on availability and candidate familiarization with plant reference material:

The examiners felt that several candidates did not use the plant reference material adequately.

4. Comments on availability and candidate familiarization with plant design, procedure, T. S. changes and LERs:

The high degree of construction at Limerick inhibited the examiners and many areas relevant to the oral examinations were inaccessible.

5. Comments on interface effectiveness with plant training staff and plant operations staff during exam period.

Both the plant training staff and the plant operations staff were extremely cooperative during the examination periods.

6. Improvements noted in training programs as a result of prior operator licensing examinations/suggestions, etc:

No suggestions were made by the examiners.

7A. Personnel Present at Exit Meeting March 8, 1984:NRC Personnel

John A. Berry, BWR Chief Examiner, Region I
 Donald F. Johnson, Chief Examiner, Region I
 Robert M. Keller, Chief, Reactor Projects Section 1D, Region I
 Walter Baunack, Project Engineer, Region I
 R. W. Borchardt, Reactor Engineer, Region I

NRC Contractor Personnel

K. M. Henry, ORNL
 W. E. Thomas, ORNL
 K. E. McCormack, ORNL

Facility Personnel

M. J. Cooney, Manager, Nuclear Production, Philadelphia Electric Co.
 G. M. Leitch, Plant Superintendent, Limerick, Philadelphia Electric Co.
 E. G. Firth, Limerick Training Coordinator, Philadelphia Electric Co.
 R. B. Helt, Simulator Training Coordinator, Philadelphia Electric Co.
 J. B. Geary, Manager, Limerick Simulator, General Physics
 F. C. Grames, Director, Limerick Training Center, General Physics
 E. C. Brohl, Manager, Limerick Training Services, General Physics
 C. R. Endriss, Philadelphia Electric Co.

7B. Personnel Present at Exit Meeting May 17, 1984:NRC Personnel

John A. Berry, BWR Chief Examiner, Region I
 Robert M. Keller, Chief, Reactor Projects Section 1D, Region I
 Jim Wiggins, Senior Resident Inspector, Limerick

NRC Contractor Personnel

Thomas P. Hamrick, ORNL
 W. E. Thomas, ORNL

Facility Personnel

R. W. Bulmer, Superintendent of Training, Philadelphia Electric Co.
 John Doering, Operations Manager, Limerick, Philadelphia Electric Co.
 E. G. Firth, Limerick Training Coordinator, Philadelphia Electric Co.
 R. B. Helt, Simulator Training Coordinator, Philadelphia Electric Co.
 David L. Thomas, Vice President, General Physics
 F. C. Grames, Director, Limerick Training Center, General Physics
 E. C. Brohl, Manager, Limerick Training Services, General Physics
 Michael Martin, General Physics
 C. R. Endriss, Philadelphia Electric Co.

8A. Summary of NRC Comments made at exit interview held March 8, 1984:

The examiners acknowledged the receipt of facility's comments on the written examination conducted February 27, 1984. The examiners indicated those personnel who clearly passed the oral/simulator exams.

The examiners noted a generic weakness among all Peactor Operator candidates on refueling equipment and use of portable radiation equipment. The examiners noted a generic weakness among all candidates on fire fighting. The examiners noted that there needs to be a clarification on specific responsibilities for what operators and senior operators are required to operate in auxiliary equipment rooms. The examiners noted a generic weakness among all candidates during the simulator examinations regarding the acknowledgement of annunciators prior to a comprehensive scan of the alarm panels. The examiners noted generic weaknesses among all candidates on the simulator examinations regarding the use of control room logs and the use of operation transient procedures for follow-up action after immediate actions are complete.

The examiners expressed their appreciation for the extremely high cooperation and help received from the training and plant staffs.

The examiners also expressed their concern that the facility is in such an extreme state of construction activity that it was very difficult to adequately evaluate candidates on the plant walk through portion of the examination due to inaccessibility of equipment.

8B. Summary of NRC Comments made at exit interview held May 17, 1984:

The Chief Examiner indicated the names of those individuals who would be clearly recommended to pass the oral/simulator examination.

The examiners expressed their concern that some facility material that was provided for examination preparation was outdated or contained errors. The examiners also felt that the depth of the material, in some cases, was too shallow to give the candidates an adequate understanding of system response and operation. This caused problems for both the examiners and the candidates due to the confusion over which material was correct. The examiners noted a generic weakness in the use of , and familiarity with procedures and logic prints in the control room. The examiners noted a generic weakness in knowledge level regarding scrams from outside the Control Room.

The examiners expressed their appreciation for the helpfulness, cooperation and corrigibility of the plant staff and training staffs of both PECO and General Physics. The NRC and Philadelphia Electric Company finalized the week of August 13, 1984 as the dates for reexamination of those candidates who failed the licensing examinations in March.

9A. Summary of facility comments and commitments made at exit interview March 8, 1984:

The facility expressed concern over the written examinations.

The Philadelphia Electric Company training personnel explained that fire fighting training would be conducted in the near future for all facility personnel. A certification of the completion of this training would be sent to NRC, Region I to clear the deficiency noted during these exams.

The facility promised to investigate and correct the concern regarding annunciator acknowledgement.

The facility asked when they could expect results of the examinations. The NRC examiners stated that with a group this large, it would be difficult to estimate a time.

9B. Summary of facility comments and commitments made at exit interview May 17, 1984:

The facility expressed concerns about the written examinations which was conducted February 27, 1984. They felt that the candidates had come out of that examination "beaten". They stated that the exam conducted May 7, 1984 was "straightforward and fair". They felt the SRO exam was not easy, but they didn't feel it should be easy.

The General Physics training personnel responded to the NRC's concerns regarding the training material. They stated that the Simulator Text will generally lag the plant by six months or one year, and that it is important that the Design Lecture Series be used to update the information, as it is more current.

Philadelphia Electric strongly disagreed with the examiner's comments regarding depth of training material. They felt that many of the system operational characteristics that are not covered in written material, are more than adequately learned during Simulator Training.

10. CHANGES MADE TO WRITTEN EXAM

The following attachment addresses the NRC Resolution of Philadelphia Electric Comments on the LGS Examinations given February 27, 1984 and May 7, 1984.

Attachments:

Written Examination(s) and Answer Key(s) (SRO/RO)
NRC resolution of PECO comments 2/2784 and 5/7/84