U.S. NUCLEAR REGULATORY COMMISSION
REGION I

PEACH BOTTOM ATOMIC POWER STATION REQUALIFICATION PROGRAM EVALUATION

Combined Report Nos.: 50-277/90-04 (OL) and 50-278/90-04 (OL)

Facility Docket Nos.: 50-277 and 50-278

Facility Licence Nos.: DPR-44 and DPR-56

License: Philadelphia Electric Company
P.O. Box 7520
Philadelphia, Pa. 19101

Facility: Peach Bottom Atomic Power Station Units 2 and 3

Examination Dates: March 5-16, 1990

Examiners: N. Conicella, Sr. Operations Engineer, NRC Region I
T. Bettendorf, PNL
M. Riches, PNL

Requalification Examination Chief Examiner:

N. J. Conicella for
Donald J. Florek, Sr. Operations Engineer — 4/25/90 Date

Reviewed By: Richard J. Conte
Richard J. Conte, Chief, BWR Section
Operations Branch, DRS — 4/26/90 Date

Approved By: Robert M. Gallo
Robert M. Gallo, Chief
Operations Branch
Division of Reactor Safety — 5/2/90 Date

EXECUTIVE SUMMARY

Written and operating requalification examinations were administered to ten Reactor Operators (ROs) and twelve Senior Reactor Operators (SROs). These operators were divided into four crews, which consisted of three operating crews and one staff crew. The examinations were graded concurrently by the NRC and the facility training staff. As graded by the NRC, all the four crews that participated in the examination performed satisfactorily on the simulator portion of the examination. Twenty of the twenty-two operators examined passed all portions of the examination. One reactor operator and one senior reactor failed the written portion of the examination.

The licensee's licensed operator training program was determined to be satisfactory based on the criteria established in section ES-601 of NUREG-1021, Rev. 5. Generic program strengths were identified the most notable being the effective use of the shift technical advisor and an overall operator attitude of attempting to restart failed equipment during simulator scenarios. Knowledge weaknesses were noted as feedback to the licensee's training programs. No significant operator inabilities were identified. However, certain administrative control deficiencies were noted involving two apparent violations as described below.

One violation involved a failure to provide adequate controls to assure that proficient operators licensed pursuant to 10 CFR 55 were assigned licensed duties. This occurred during the time of the extended shutdown order in the period March 1988 - January 1989 when four reactor operators and four senior reactor operators failed either the comprehensive requalification written examination or annual operating test. The operators were assigned licensed duties during the remedial training period and prior to successfully passing the requalification reexamination. As a result, they did not satisfy the requirements of 10 CFR 50.54(k), 10 CFR 55.53(h), and 10 CFR 55.59(a)(2). (Violation 277 and 278/90-04-02). (See paragraph 6.3).

The other violation involved exceeding the time limits specified in 10 CFR 55.59(c) for an annual operating examination and a comprehensive written examination every 24 months. This occurred over the period November 1987 through March 1990 when 4 licensed operator exceeded the 24 month time limit by as much as 4 months on the comprehensive written examination and 14 licensed operators exceeded the annual limit for an operating test by as much as 7 months. (Violation 277 and 278/90-04-01). (See paragraph 6.2).

DETAILS

1. Introduction

During the examination period, the NRC administered requalification examinations to 22 licensed operators (10 ROs and 12 SROs). Three operating crews and one staff crew were evaluated. The examiners used the process and criteria described in NUREG 1021, "Operator Licensing Examiner Standard," Rev. 5, section ES-601, "Administration of NRC Requalification Program Evaluations."

An entrance meeting was held with the facility licensee on January 9, 1990, at the Regional Office. The purpose of the meeting was to brief the facility licensee on the requirements of the requalification program evaluation and to outline a prospective schedule for the examinations.

The personnel contacted during the examination are listed in Attachment 1. The members of the combined NRC/facility examination team, and the facility evaluators are also identified in Attachment 1.

2. Examination Results

2.1 Requalification Individual Results

The following is a summary of the individual examination NRC and facility results:

TYPE OF EXAMINATION: Requalification

NRC Grading	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	9 / 1	11 / 1	20 / 2
Simulator	10 / 0	12 / 0	22 / 0
Walk-through	10 / 0	12 / 0	22 / 0
Overall	9 / 1	11 / 1	20 / 2

FACILITY GRADING

Facility Grading	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	9 / 1	11 / 1	20 / 2
Simulator	10 / 0	11 / 1	21 / 1
Walkthrough	10 / 0	12 / 0	22 / 0
Overall	9 / 1	10 / 2	19 / 3

2.2 Generic Strengths and Weaknesses

The following is a summary of generic strengths and weaknesses noted by the NRC from the results of the individual requalification examinations. This information is being provided to aid the licensee in upgrading the requalification training program. No response to these generic strengths and weaknesses is required.

2.2.1 Generic Strengths

- Recognition of entry conditions into emergency and abnormal procedures (OT,ON,TRIP).

- With the exception of one of the operating crews, crew teamwork, crew communication and crew command and control were good during the simulator portion of the examination. One operating crew was considered to be adequate but a contrast to the other crews examined.

- The shift technical advisors were an asset to each crew evaluated. They assisted shift supervision during the major transient effectively. The one crew that was a contrast to the other three relied more on the STA to successfully mitigate the transient.

- Operators took appropriate action to restore failed equipment during the scenario.

2.2.2 Weaknesses in Written Examination

- Knowledge of actions to remove HPCI from service following an automatic start.

- Knowledge of feedwater system and plant response to opening of the equalizing valve for the narrow range level transmitter.

- Understanding of prevention of a low suction pressure trip of a ESW booster pump following a trip of ESW pumps.

- Knowledge of reactor water level maintenance for adequate core circulation during shutdown cooling.

- Technical specification actions for loss of drywell floor and equipment drain sump pumps due to loss of 480 VAC power.

2.2.3 Weaknesses in Operating Test

- All emergency plan classifications during the simulator portion of the examination were within the acceptable classifications that the scenarios had established. However, some senior reactor operators did not always consider other possible emergency classifications that could be established due to plant conditions contained in the scenario. This occurred during the one scenario when a reactor coolant leak occurred that was relatively small, but could not be determined that it was greater than 50 gpm. Some SROs classified this as an Alert because of leakage considerations, even though specific leakage rates were unknown; whereas, other SROs classified the event as an Unusual Event due to the other more clearly defined scenario events.

- Some SROs and ROs had difficulty with torus spray and HPCI. Three ROs experienced difficulty in spraying the torus properly during the simulator portion of the examination. Four SROs did not perform the torus spray Job Performance Measure (JPM) satisfactorily. The HPCI JPM was not performed satisfactorily by four SROs and one RO. In addition, as described above in the written examination, knowledge of actions to remove HPCI from service was also a weakness.

- Knowledge of when to emergency depressurize due to reactor water level considerations.

- Knowledge of where the ESW pump controls are located when operating from the Emergency Shutdown Panel. Procedure SE-1 does not provide guidance as to where the controls are located.

- Understanding of what is meant by "loss of RBCCW" in ON-113.

- Knowledge of what is meant by symmetrical control rods.

- Knowledge of the technical specification requirements for operable control rods.

- Knowledge of the location for the reset push button for the local diesel generator air start. The procedure did not provide clear guidance as to where the button was located.

2.2.4 Other Observations

During the course of the examination the facility examination team members identified to the NRC team their observations regarding crew performance. The facility consistently identified similar concerns as did the NRC team and in most cases identified additional items.

Another item relating to emergency classification was lack of facility guidance on the proper emergency classification if a parameter has exceeded the threshold for upgrading to a higher emergency classification and subsequently returned to a lower emergency classification level during the time that a emergency classification determination is being made. This condition occurred during one scenario and caused some confusion for the SRO in post scenario discussions. The Operations Superintendent observing the scenario noted the lack of facility guidance for the condition that occurred and independently concluded that additional facility guidance is required.

Subsequent to one individual failing the JPM on establishing control at the emergency shutdown panel, the facility identified that the specified JPM critical step of starting an emergency service water (ESW) pump did not meet the condition of a critical step for the initial conditions specified in the JPM. After providing justification as to why the step was not critical to the accomplishment of the JPM (the pump did not have to be started due to the initial conditions specified in the JPM), the combined NRC/facility examination team agreed that the step was not critical. The review was performed per the guidance of ES-601 D.2.c.1.d. This decision resulted in one individual satisfactorily completing the JPM rather than failing the JPM. The facility agreed that a more thorough review of the JPM critical steps could have identified this condition. As identified in section 2.2.3, ability to locate the ESW pump control on the emergency shutdown panel was a generic weakness.

During the performance of the T-200 procedure series in-plant JPMs, the NRC examiners noted that the control of the procedures and tools in the EOP tool locker and plant labeling made the task steps easy to accomplish. However, the NRC examiners noted that only one set of T-200 series tools and equipment are contained in the EOP tool locker. Following examiner questioning on what would happen if EOP tools were required to be used on both units simultaneously, the facility agreed to evaluate their current practice.

The facility provided sampling plan only addressed the written portion of the examination. The sampling plan had to be augmented by additional facility information to enable the sampling plan to be useable by the NRC examination team. Even with the additional facility information the sampling plan did not identify how the proposed examination satisfied the sampling plan. The facility training representative identified in discussions that future sampling plans will address the entire examination.

The operator action description of the simulator scenarios was adequate for this NRC examination team to assess critical tasks. However, some additional detail could be provided such as specifying which technical specification is being assessed and adding the procedural activities that would occur when ON and OT procedures are entered.

3. Requalification Program Evaluation Results

The facility program for licensed operator requalification training was rated as SATISFACTORY in accordance with the criteria established in ES-601, paragraph C.3.b.1, C.3.b.2, D.1.c.2.c, D.2.c.2.b, and D.3.c.2.b.

3.1 Examination Results

The overall individual pass rate was 91% which meets the criterion of at least 75% established in ES-601, paragraph C.3.b.1.b. Four crews were evaluated and all were determined to be satisfactory which meets the criterion of no more than one third of the crews may be evaluated as unsatisfactory by the NRC, established in ES-601, paragraph D.1.c.2.c.4.

Twenty-two out of twenty-two individuals (100%) passed the walkthrough portion of the examination which meets the criterion of 75% established in ES-601, paragraph D.2.c.2.b.2.

Twenty out of twenty-two individuals (91%) passed the written portion of the examination which meets the criterion of 75% established in ES-601, paragraph D.3.c.2.b.

The licensee requalification program is INPO accredited and is based on a systems approach to training which meets the criterion established in ES-601, paragraph C.3.b.1.d.

3.2 Analysis of Pass/Fail Agreement

The facility failed one individual in the simulator portion of the examination that the NRC did not. The NRC does not penalize the facility for holding a higher standard of operator performance as stated in ES-601, paragraph D.1.c.2.c.3. Therefore, there was 100% agreement between the NRC and facility in the grading of the written and operating examinations. This meets the criterion of 90% agreement established in ES-601, paragraph C.3.b.1.a.

There was 100% agreement between the NRC and facility in the simulator crew evaluations which meets the criterion of 100% agreement established in ES-601, paragraph D.1.c.2.c.1.

There was 100% agreement between the NRC and the facility on pass/fail decisions on the walk-through and the written examinations. This meets the program criteria for 90% agreement established in ES-601, paragraphs D.2.c.2.b.1, and D.3.c.2.b.

In addition, the facility identified similar weaknesses in the post-scenario critiques as did the NRC examination team.

3.3 Common Job Performance Measures

A review of the results of five common Job Performance Measures (JPMs) performed each week indicate the maximum percentage of operators that missed a common JPM was 27%. Therefore, none of the common JPMs was missed by more than 50% of the operators. Likewise, none of the common questions about the same JPM was missed by more than 50% of the operators. Therefore, the criteria of paragraphs C.3.b.2.a and b of ES-601 are met.

The results indicate that all of the operators evaluated answered greater than 80% of the common JPM questions correctly which meets the criterion of at least 75% of the operators score over 80% of the common JPM questions. Therefore, the criterion of paragraph C.3.b.2.e of ES-601 is met.

The results of the requalification examinations indicate that the facility does train and evaluate their operators in all positions permitted by their individual licenses. The operators were also trained for in-plant JPMs as indicated by the examination results and their familiarity with the walkthrough process. Therefore, the criteria of paragraphs C.3.b.2.c and d of ES-601 are met.

The facility evaluators were found to be satisfactory in accordance with the standards established in Attachment 5 to ES-601. However, one facility evaluator provided leading cues that were questioned by various NRC examiners on more than one occasion. After having identified this to the training supervisor, corrective action was taken and a different evaluator was utilized. The NRC examiners determined that no pass-fail decisions were affected by the cues provided. Therefore, the criterion of paragraph C.3.b.2.f of ES-601 is met.

The above results indicate that criteria established in ES-601 paragraph C.3.b.2 are acceptable.

4. Requalification Examination Preparation

The reference material that was submitted by the licensee met the guidelines of Attachment 4 to ES-601. The material included a sample plan, a

greater than 350 question examination bank for the classroom portion of the written examination and 29 static simulator examinations with 10-18 questions for the static portion of the written examination, 15 dynamic simulator scenarios and 78 job performance measures. However as described in paragraph 2.2.4 the sampling plan was weak.

The facility proposed written examinations were reviewed and were of high quality and acceptable. The written examinations sampled a good cross section of information covered during the requalification year.

The facility proposed scenarios were reviewed during the validation week. One scenario was changed to add additional malfunctions. The other changes that were made to the facility scenarios included the clarification of critical tasks and expected operator actions. The simulator scenarios used by the NRC examination team met the guidelines of ES-601.

The NRC examination team selected eighteen facility job performance measures (JPMs). For the most part the JPMs reflected the required steps in the procedures used to perform the task. Changes to the JPMs included the addition of performance steps which require an operator to obtain the procedure, tools and equipment, when appropriate, clarifying the information to be read to the operator, making the JPM specific to the component or unit on which the JPM was to be accomplished and rewriting or clarifying JPM questions. Overall, the validation week went very smoothly with excellent cooperation by the facility examination team members.

5. Requalification Examination Administration

The examination was conducted without any major problems or delays. To assure examination security, common test material each week was administered the same day with controlled separation maintained between operators. The examination content as administered is summarized in Attachment 2.

The dynamic simulator portion of the examination was administered on Monday and Tuesday of the first week and Monday of the second week. Due to better examination administration efficiency only one day was required to administer the dynamic simulator examination on the second week. The four NRC examiners were usually assigned to one individual, while one facility evaluator was assigned to evaluate the SROs, one facility evaluator was assigned to evaluate the ROs and two facility evaluators were utilized assessing overall crew performance. This did not result in any problems since there was 100% agreement on pass/fail decisions. The facility evaluators critiqued the crew performance with the NRC examiners after each set of scenarios, rather than after each scenario. This saved a considerable amount of time. The dynamic simulator examination was not video taped due to lack of installed video cameras at the time of the requalification examination. There were no problems identified with the simulator or simulator instructor/operators during the requalification examination.

During one scenario the NRC examiners noted that a new procedure was issued between the NRC validation week and the examination which affected the operator actions. This did not cause any specific difficulty for the examiners. However, it did cause some slight confusion for the operators since a procedure referenced in the new ON-121 procedure, RT-19.6, was not issued at the same time. This was adequately handled by the facility during the examination. However, a subsequent check in the plant also identified that the referenced procedure had not been issued. During the course of the examination the new procedure was issued.

The JPM portion of the examination was administered on Thursday and Friday of the first week and Tuesday and Thursday of the second week. Eighteen JPMs were selected by the examination team for use. Five JPMs were identified as common JPMs for the first week and a different five were identified for the second week. The remainder of the 13 JPMs each week were randomly distributed over the operators. The common JPMs for each week were performed on the same day for all operators with controlled separation maintained between operators. One JPM on resetting a group 2 and 3 PCIS isolation required considerably more time to complete than originally planned. This was characterized as a JPM time validation problem not an operator performance problem. As a result, after the first JPM performance, the JPM was eliminated from the examination and other JPMs were substituted from the list of prior validated JPMs. There were also two JPMs that identified the wrong panel to perform the task and referred to a label that did not exist in the plant. These were identified by the facility evaluators and did not cause problems during the examination.

The operators performance on JPM and JPM questions resulted in completing the JPM portion of the examination in less time than the facility had scheduled. Security, health physics, and operations support in the plant were very effective in allowing the plant portion of the examination to proceed as smoothly as it did.

The written portions of the examination were conducted on Wednesday for both weeks without major problems. Security was maintained for the written examinations by controlled separation of the operators. The only problems that occurred were that one static simulator examination could not reproduce the reactor water level condition band specified and one written question had no correct answer. The static scenario was accepted as is because it only affected one distractor of one question, still required the same type of knowledge and did not affect the overall answer. The one question was deleted from the first examination given and then corrected for the remainder of the operators. The time validation of the written examinations was adequate as evidenced by all operators completing the examination in the allotted time. The NRC and facility began grading of the written examination immediately after each operator had finished the examination. As a result, the NRC and facility grades were available on the next day.

The entire examination process went very smoothly. Good cooperation between the examination teams allowed any problems that arose to be immediately resolved and prevented them from impacting the examination.

6. Requalification Program Administrative Findings

6.1 Written and Operating Examination Program Frequency

As a result of the rule change issued in May 1987, in accordance with 10 CFR 50.54(i-1) a requalification program must meet the requirements of 55.59(c) and not decrease the scope of its current approved operator requalification program without Commission authorization. The current approved operator requalification program as defined in the FSAR, dated January 1987, requires an annual written examination and an annual oral examination, which may be accomplished on a simulator.

The examiner reviewed TP-140 "Licensed Operator Requalification Program Plan" Revision 0 dated May 11, 1989, which requires an annual walkthrough and simulator evaluation and a biennial comprehensive requalification examination consisting of a written examination, walkthrough evaluation and simulator evaluation. 10 CFR 55.59(c) requires an annual operating test and a comprehensive requalification written test every 24 months. The inspector was concerned that the Peach Bottom requalification program decreased the scope of the current approved operator requalification program without Commission authorization since they were not performing annual written examinations as their FSAR indicated.

The inspector reviewed question/response 347 in NUREG-1262 which indicated that if the facility has an accredited program then a change can be made to go from an annual to a biennial written examination. Since Peach Bottom is an accredited program the inspector was satisfied that the requalification program examination frequency was acceptable. In addition, the licensee is revising the FSAR to agree with TP-140 in its next FSAR update.

6.2 Written and Operating Examination Schedule

During the preparation for the examination the NRC examiner noted that the facility program TP-140 "Licensed Operator Requalification Program Plan", Revision 0, dated May 11, 1989, allowed exemptions from the requalification examination for newly licensed operators. As a result, two operators licensed in October 1989 who originally were not scheduled to take a requalification examination until 1991, were added to the list of operators to receive an NRC administered requalification examination.

10 CFR 50.54(i-1) requires that the facility have a requalification program that meets the requirements of 10 CFR 55.59(c). 10 CFR 55.59(c) requires that the requalification program include an annual operating test and a comprehensive written examination within the continuous requalification period not to exceed 24 months in duration. As a result of the above observation, the examiner requested the facility licensee to review the actual dates of examinations for newly licensed operators since May

1987 to determine if the requirements of an annual operating test and comprehensive written examination every 24 months were satisfied. The licensee provided the results in a letter dated March 2, 1990, which concluded that some operators exceeded the 12 month operating and 24 month comprehensive written examination limits.

The inspector also held additional discussions with facility training representatives and determined that the same conclusion could be made for other than newly licensed operators. The results of the licensee response and examiner followup in the time period November 1987 - March 1990 are summarized in Attachment 3. Out of the 19 operator files evaluated, 3 SROs and 1 RO exceeded the limits for both the operating and written examination, 2 SROs and 8 ROs exceeded the limit for the operating examination and 2 SROs and 3 ROs did not exceed limits. These limits were exceeded from 6 weeks up to 7 months. The inspector concluded that the licensee program did not assure compliance with the CFR 55.59(c) requirements for an annual operating test and comprehensive written examination every 24 months, and the licensee did not meet the requirements in 14 out of 19 licensed operator files evaluated. This is an apparent violation of 10 CFR 50.54(i-1) and 10 CFR 55.59(c). (Violation 277 and 278/90-04-01).

The inspector concluded that the exemption for newly licensed operators caused most of the time limits to be exceeded. The accelerated scheduled use of the simulator for requalification examinations to support Peach Bottom restart following the extended shutdown while still at the factory in Columbia, Maryland in late fall of 1988 was the other major cause. The inspector determined that the operators that exceeded the time limits for annual operating test did receive simulator evaluations as part of their normal requalification program training between required operating tests. For the operators that exceeded the time limit for a comprehensive written examination, two performed satisfactory on all weekly quizzes, one failed one of the weekly quizzes and successfully passed after additional training and one operator failed multiple weekly quizzes, but successfully passed each quiz after additional training. In addition, one of the four operators that exceeded the time limit for the written examination by approximately three months (11/11/89 - 2/9/90) failed the comprehensive written requalification examination when administered by the facility in February 1990. Had the comprehensive written examination been administered within the time limits required, the facility could have prevented the licensed operator with less than satisfactory qualifications from performing licensed duties for the three month period.

The licensee took immediate corrective action to revise the TP-140 (Revision 1 dated March 1, 1990) to eliminate the exemption for newly licensed operators. In addition, the licensee instituted a computer tracking system to monitor the scheduled examinations and when the next examination is due. As described by the inspector to the facility, the NRC's Operator Licensing Branch position is that "annual" is 12 months plus 10% (approximately 6 weeks). This allows an operator to take the examination on the first week of the requalification cycle and then the last week week one

year later to accommodate personnel reassignment among the operating crews. The operators who took the requalification examination this February-March 1990 will receive annual operating examinations and comprehensive biennial written examinations based on the date of their last examinations. Those newly licensed operators will receive annual operating examinations and biennial written examinations based on the date of their license until they are absorbed into the normal requalification examination schedule and still not exceed the time limits. Based on the review of licensee commitments, the inspector was satisfied that the licensee actions would prevent recurrence.

6.3 Performance of Licensed Duties After Failure of Requalification Examination

TP-140 "Licensed Operator Requalification Program Plan," Revision 1, dated March 1, 1990, identified that an operator who fails a requalification examination may be returned to licensed duties if an oral interview is conducted by a License Review Board and the board determines that the operator can return to licensed shift duties during an accelerated review period. The current FSAR description dated January 1987 has similar wording.

The regulations, issued in May 1987, in:

- 10 CFR 50.54(i-1) requires, in part, that the licensee have a requalification program that meets the requirements of 55.59(c),

- 10 CFR 55.59(c) requires, in part, that an annual operating test and comprehensive written examination be administered,

- 10 CFR 50.54(k) requires, in part, that a reactor operator or senior operator licensed pursuant to Part 55 be present at the controls.

- 10 CFR 55.53(h) requires, in part, as a condition of the individual operator license, an operator to complete a requalification program as described by 55.59.

- 10 CFR 55.59(a)(2) requires, in part, a licensed operator to successfully pass a comprehensive requalification written examination and an annual operating test.

Therefore, it follows that an operator who does not pass a requalification examination does not fulfill a condition of the part 55 license and should not be present at the controls. The facility requalification program permits individuals who do not pass a requalification examination to be present at the controls performing licensed duties.

The examiner inquired if the facility had in the past permitted individuals to perform licensed duties while in an accelerated review program after failing a requalification examination. The licensee identified 8

individuals that performed licensed duties during the time they failed a requalification examination, were being retrained and then subsequently reexamined satisfactorily. The results of the licensee's review are indicated in Attachment 4. The 8 operators averaged 22 days (2 days minimum - 44 days maximum) performing licensed duties in the intervening period between failing and passing a requalification examination. The inspector notes that this occurred during the time that the facility was shut down under an extended shutdown order. This program allowance and actual use of operators that failed their requalification examination for licensed duties is an apparent violation of 10 CFR 50.54(k), 10 CFR 55.53(h) and 10 CFR 55.59(a)(2). (Violation 277 and 278/90-04-02).

The examiner also inquired if any operators in the current requalification examination cycle had failed their examination and were performing licensed duties. One RO and one SRO had failed the written portion of the current requalification examination. The one RO failed on 2/16/90 was retrained and reexamined on 2/23/90 prior to returning to licensed duties. A review of the control room logs for the intervening period identified that the RO did not perform licensed duties. The SRO had failed on 2/9/90 and was scheduled to be reexamined on 3/30/90. The SRO was not excluded from performance of licensed duties at the time of the NRC administered requalification examination by senior operations management but was assigned to non-license required duties by his Shift Manager.

After NRC inquiry, the licensee operations management took positive steps to assure that the SRO would not perform licensed duties pending satisfactory completion of his reexamination. In addition, the licensee revised TP-140 revision 2 dated March 16,1990 to administratively assure that an individual failing the annual operating test or comprehensive written requalification examination would not be returned to licensed duties until successfully passing the requalification examination. This involves signed correspondence by the Superintendent - Operations and formal acknowledgement from the affected operator. The inspector was satisfied that the licensee program modifications, if implemented properly, will preclude recurrence.

7. Exit Meeting

At the end of the first week, the NRC informed the facility of the preliminary NRC results of the first week. The NRC team informed the facility to identify those individuals who were required to be removed from licensed duties for remediation and reexamination. The facility agreed to limit the knowledge of the preliminary NRC results to the facility personnel present at the meeting until the end of the two week examination. This was a moot point, however, since the facility results and the NRC results at the end of the first week were identical. The facility did provide their examination results to the appropriate facility personnel. The individuals in attendance at the meeting are listed in Attachment 1.

An exit meeting was held at the conclusion of the examination on March 16, 1990. The personnel in attendance are listed in Attachment 1. The NRC results of the examinations were presented. The facility provided a summary of their results. Requalification Examination preparation and administration were discussed along with generic strengths and weaknesses of the program as indicated in this report.

ATTACHMENTS

1. Persons Contacted
2. Requalification Examination Test Items
3. Facility Administered Requalification Examinations Since May 1987
4. Licensed Operators Who Failed Requalification and Performed Licensed Duties
5. Simulator Fidelity Report

ATTACHMENT 1

PERSONS CONTACTED

Philadelphia Electric Company

R. Andrews, Supervisor Operations Training (1,4,6)
R. Artus, Requalification Instructor (3,6)
J. Cotton, Superintendent of Operations (1,3,4,6)
J. Felice, Requalification Instructor (3,6)
J. Franz, Plant Manager (4)
R. Helt, Supervisor NTD, PECO Corporate (3,4,6)
D. McClellan, Senior Instructor for Requalification (1,3)
K. Patek, Simulator Instructor (2,3,6)
D. Rein, Requalification Instructor (3,6)
D. Smith, Vice President Peach Bottom (4)
E. Till, Superintendent of Training (4,6)
A. Wasong, Operations Support Engineer (1,2,3,4,6)
R. Watkins, Requalification Instructor (1,2,3,6)

Nuclear Regulatory Commission/NRC Contractors

T. Bettendorf, PNL (2,4,6)
N. Conicella, Senior Operations Engineer (1,2,4,6)
D. Florek, Senior Operations Engineer (1,2,4,6)
J. Lyash, Senior Resident Inspector (4)
M. Riches, PNL (2,4,6)

Other

S. Maingi, Nuclear Engineer, State of Pa. (4,5)

Notes:

(1) Attended Entrance Meeting, January 9, 1990
(2) Member - Combined Facility/NRC Examination Team
(3) Facility evaluator
(4) Attended Exit Meeting March 16, 1990
(5) Observed portions of the examination process
(6) Attended March 9, 1990 NRC/facility preliminary results meeting

ATTACHMENT 2

REQUALIFICATION EXAMINATION TEST ITEMS

Written Examination - Part B Open Reference Examination Nos. LOR88-SB-N01, LOR88-RB-N01, LOR88-SB-N02, LOR88-RN-N02

TEST ITEM*	SRO WEEK 1*	RO WEEK 1*	SRO WEEK 2*	RO WEEK 2*
2	-	1.0	1.0	1.0
3	1.0	-	1.0	1.0
4	-	1.0	-	1.0
6	1.0	-	-	-
8	1.0	-	1.0	-
9	1.0	1.0	-	-
10	-	-	1.0	1.0
12	-	-	1.0	1.0
13	-	-	-	1.0
14	1.0	-	-	-
15	-	1.0	1.0	-
16	-	1.0	-	1.0
17	-	1.0	1.0	1.0
18	1.0	-	-	-
19	1.0	1.0	1.0	-
20	-	1.0	1.0	1.0
21	1.0	1.0	-	1.0
22	-	1.0	1.0	1.0
23	1.0	-	1.0	-
24	1.0	-	1.0	-
25	1.0	-	1.0	-
27	1.0	-	-	-
29	-	2.0	2.0	2.0
31	1.0	1.0	1.0	-
32	-	-	1.0	1.0
33	-	1.0	-	-
34	1.5	1.5	-	1.5
35	1.5	1.5	-	1.5
36	1.0	-	-	-
TOTAL	17.0	17.0	17.0	17.0

* Point Value of Test Item Number

Written Examination - Part A (QVAL - Question Value)

Week 1

Static Simulator Examination No.04 Failure of a recir flow unit, main turbine bearing failure, loss of 480 VAC load center

TEST ITEM	SRO QVAL	RO QVAL
37	1.0	1.0
38	1.0	1.0
39	1.0	1.0
40	1.0	1.0
41	1.0	1.0
42	-	1.0
43	1.0	1.0
44	1.0	1.0
45	1.0	-
	1.0	1.0
TOTAL	8.0	8.0

Static Simulator Examination No.03 Main steamline break inside containment

TEST ITEM	SRO QVAL	RO QVAL
46	1.0	1.0
47	-	1.0
48	1.0	1.0
49	1.0	1.0
50	1.0	1.0
51	1.0	1.0
52	1.0	1.0
53	1.0	-
54	1.0	1.0
TOTAL	8.0	8.0

Week 2

Static Simulator Examination No.05 Feedwater heater tube leak, containment nitrogen makeup supply fails open

TEST ITEM	SRO QVAL	RO QVAL
75	1.0	1.0
76	1.0	1.0
77	1.0	1.0
78	1.0	1.0
79	1.0	1.0
80	1.0	1.0
81	1.0	1.0
82	1.0	1.0
	1.0	1.0
TOTAL	8.0	8.0

Week 2 continued

Static Simulator Examination No.02 Drywell steam leak, RHR pump discharge rupture, diesel generator and ESW malfunctions

TEST ITEM	SRO QVAL	RO QVAL
65	1.0	1.0
66	1.0	1.0
67	1.0	1.0
68	1.0	1.0
69	1.0	1.0
70	1.0	1.0
72	1.0	1.0
73	-	1.0
74	1.0	-
TOTAL	8.0	8.0

Job Performance Measures (JPM)

LP No.	Job Performance Measure	Location
2C	Load the Diesel Generator to 1600 KW	Simulator-Common-2
8C	Reset a recirc motor generator lockup	Simulator-Common-1
10C	Manually initiate torus spray	Simulator-Common-1
13C	Place a reactor feed pump on the hydraulic jack	Simulator-Common-2
15P	Plant shutdown from the emergency shutdown panel	Plant-Common-1
18C	Manually place SBGT on equipment cell exhaust	Simulator
24C	Perform a Group 1 isolation reset	Simulator
34C	CAD system nitrogen addition to containment	Simulator
43C	Perform a Group 2 and 3 PCIS isolation reset	Simulator
49P	Local manual start of the diesel generator	Plant-Common-1
55P	Maximizing CRD Flow to the RPV	Plant
56P	Reset RCIC mechanical overspeed trip	Plant
58P	Filling the fuel pool	Plant
60P	Torus filter pump isolation bypass	Plant-Common-2
62P	Restore CR ventilation following high radiation trip	Plant
74P	Isolate and vent the scram air header	Plant-Common-2
77C	HPCI operation in CST to CST mode	Simulator-Common-1
78C	Manual startup of RCIC	Simulator-Common-2

Dynamic Simulator Examination

Scen No. Scenarios

NRCEVAL-01 - RBCCW blockage with unisolable recirc pump seal failure
NRCEVAL-02 - ATWS with stuck open SRV
NRCEVAL-03 - Fuel failure with unisolable leak in RWCU outside of containment
NRCEVAL-04 - Loss of high pressure feed
NRCEVAL-05 - RPV reference leg instrument line break with break in RHR pipe outside of containment

ATTACHMENT 3

FACILITY ADMINISTERED REQUALIFICATION EXAMINATIONS SINCE MAY 1987*

* Based on Facility letter CCN-90-14039 dated March 2, 1990, and additional discussion with licensee training representatives

Operator	License	Operating	Written	Comments
RO	11/11/87	12/14/88 3/15/90	3/14/90	Written overdue 4 months Operating overdue 3 months
SRO	12/11/87	12/13/88 3/8/90	3/7/90	Written overdue 3 months Operating overdue 3 months
SRO	11/11/87	12/16/88 3/29/90(S)	2/9/90(F) 3/30/90(S)	Written overdue 3 months Operating overdue 3 months
SRO	8/19/88	1/12/89 2/20/90	2/23/90	Operating overdue <6 weeks (Considered satisfactory)
SRO	12/30/87	12/15/88 2/23/90	2/23/90	Written overdue 2 months Operating overdue 2 months
SRO	7/8/88	3/24/89 2/26/90	3/2/90	None
RO	3/24/89	2/21/90	2/21/90	None
RO	8/19/88	3/22/90(S)	3/23/90(S)	Operating overdue 7 months
RO	8/19/88	3/9/90	3/7/90	Operating overdue 7 months
RO	8/19/88	12/16/88 10/12/89 2/14/90	2/17/90	None
RO	11/28/88	10/12/89 2/13/90	2/23/90	None
RO	4/4/88	12/13/88 3/15/90	3/14/90	Operating overdue 3 months
RO	4/4/88	12/16/88 3/15/90	3/14/90	Operating overdue 3 months
RO	8/19/88	3/15/90	3/14/90	Operating overdue 7 months
RO	8/19/88	3/8/90	3/7/90	Operating overdue 7 months

Operator	License	Operating	Written	Comments
RO	8/19/88	2/21/90	2/23/90	Operating overdue 6 months
SRO	1983	4/22/88 12/15/88 3/14/90	3/11/88 3/15/90	Operating overdue 3 months
SRO	1982	4/8/88 12/13/88 3/19/90(S)	2/26/88 3/23/90(S)	Operating overdue 3 months Written overdue <6 weeks (Considered satisfactory)
RO	1984	4/8/88 12/13/88 3/19/90(S)	2/26/88(F) 5/19/88(P) 3/23/90(S)	Operating overdue 3 months

Notes

(S) - Scheduled
(F) - Failed
(P) - Passed

ATTACHMENT 4

LICENSED OPERATORS WHO FAILED REQUALIFICATION AND PERFORMED LICENSED DUTIES

Operator	Failed exam/Type		Passed exam	Number of intervening days performing licensed duties
RO	3/11/88	Written	4/28/88	21
RO	3/11/88	Written	4/28/88	23
RO	3/4/88	Written	6/6/88	44
RO	2/26/88	Written	5/19/88	38
SRO	12/16/88	Operating	1/6/89	8
SRO	3/25/88	Written	5/12/88	21
SRO	3/18/88	Written	5/6/88	15
SRO	4/1/88	Written	5/19/88	2

ATTACHMENT 5

SIMULATION FACILITY REPORT

Facility Licensee: Philadelphia Electric Company
Peach Bottom Atomic Power Station

Facility Docket Nos: 50-277 and 50-278

Requalification Examination Administered on March 5-16, 1990

This form is to used to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the requalification examinations, no items were observed.

POST-INSPECTION SALP DATA SHEET

1. Facility: Peach Bottom Units 2 and 3
2. Inspectors: D. Florek, N. Conicella
3. Docket/Report Nos: 50-277 and 278/90-04 (OL)
4. Inspection Dates: March 5-16, 1990
5. Functional Area: Operations
6. Category Rating (1,2 of 3): 1
7. SALP Input:

Written and operating examinations were administered to ten Reactor Operators (ROs) and twelve Senior Reactor Operators (SROs). These operators were divided into four crews, which consisted of three operating crews and one staff crew. The examinations were graded concurrently by the NRC and the facility training staff. As graded by the NRC, all the four crews that participated in the examination performed satisfactorily on the simulator portion of the examination. Twenty of the twenty two operators examined passed all portions of the examination. One reactor operator and one senior reactor failed the written portion of the examination.

The licensee's licensed operator training program was determined to be satisfactory based on the criteria established in section ES-601 of NUREG-1021, Rev. 5. The licensee provided a comprehensive, well written examination to the NRC for the requalification examination.

Two violations are identified. One violation involves exceeding the time limits specified in 10 CFR 55.59(c) for an annual operating examination and a comprehensive written examination every 24 months. This occurred over the period November 1987 through March 1990 when 4 licensed operator exceeded the 24 month time limit by as much as 4 months on the comprehensive written examination and 14 licensed operators exceeded the annual limit for an operating test by as much as 7 months.

The other violation involves a failure to provide adequate controls to assure that proficient operators licensed pursuant to 10 CFR 55 were assigned licensed duties. This occurred during the time of the extended shutdown order in the period March 1988 - January 1989 when four reactor operators and four senior reactor operators failed either the comprehensive requalification written examination or annual operating test. The operators were assigned licensed duties during the remedial training period and prior to successfully passing the requalification reexamination. As a result, they did not satisfy license conditions per 10 CFR 55.53(h) and 10 CFR 55.59(a)(2).

9. Submitted by (Sign/date): _____

10. Approved by Section Chief: _____

DISTRIBUTION:
DRS Files (4)
DRP Section Chief for Reactor Inspected
Sr. Resident Inspector
R. Conte, DRS