U.S. NUCLEAR REGULATOR COMMISSION

REGION 1

REPORT NOS:	50-387/388-94-01
FACILITY DOCKET NOS:	50-387 & 50-388
FACILITY LICENSE NOS:	NPF-14 & NPF-22
LICENSEE:	Pennsylvania Power and Light Company 2 North Ninth Street Allentown, Pennsylvania 18101
FACILITY:	Susquehanna Steam Electric Station, Units 1 & 2
EXAMINATION DATES:	January 31 to February 4, 1994
EXAMINERS:	Julian H. Williams, Sr. Operations Engineer Carl E. Sisco, Operations Engineer

CHIEF EXAMINER: J. H. Williams 3/25/94

Julian H. Williams, Sr. Operations Engineer — Date
BWR Section, Operations Branch
Division of Reactor Safety

APPROVED BY: Richard J Conte 3/25/94

Richard J. Conte, Chief — Date
BWR Section, Operations Branch
Division of Reactor Safety

SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 & 2

EXAMINATION REPORT NOS. 50-387/388-94-01

Requalification examinations were administered to 6 reactor operators (ROs) and 6 senior reactor operators (SROs). The 12 licensed operators were divided into 3 crews. Eleven of the licensed operators passed all portions of the examination, and all three crews performed satisfactorily in the simulator. One SRO failed the simulator portion of the examination. The results of the requalification examinations and program evaluation were satisfactory in accordance with Examiner Standard 601 criteria.

Overall, operator performance on all parts of the examination was strong. Strengths were noted in the interface between the training and operations departments. The facility prepared examination met NRC standards as defined in NUREG-1021, Revision 7, and required few changes (section 3).

An unresolved item (387/93-06-02 and 388/93-06-02) was reviewed dealing with radiation levels in secondary containment and left open pending completion of licensee action and NRC staff review (section 4).

DETAILS

1.0 INTRODUCTION

During the week of January 31 to February 4, 1994, the NRC staff administered requalification examinations to 12 licensed operators (6 ROs and 6 SROs). The examiners used the process and criteria described in NUREG-1021, "Operator Licensing Examiner Standards," Revision 7.

An entrance meeting was held on January 10, 1994. The examination materials were reviewed and validated during the week of January 10, 1994. An exit meeting was conducted on February 4, 1994. Attachment 1 lists those in attendance at the exit meeting.

2.0 SUMMARY OF EXAMINATION RESULTS AND PROGRAM FINDINGS/CONCLUSIONS

2.1 Requalification Individual Examination Results

NRC GRADING OF REQUALIFICATION EXAMINATION

	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	6/0	6/0	12/0
Simulator	6/0	5/1	11/1
Walk-through	6/0	6/0	12/0
Overall	6/0	5/1	11/1

FACILITY GRADING OF REQUALIFICATION EXAMINATION

	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	6/0	6/0	12/0
Simulator	6/0	5/1	11/1
Walk-through	6/0	6/0	12/0
Overall	6/0	5/1	11/1

Based on both the NRC and facility grading, all three crews passed the simulator portion of the requalification examination. The facility failed one individual for the demonstrated inability to implement the Emergency Plan. In accordance with ES 601D.2.b.6, the NRC also failed the individual.

2.2 Facility Generic Strengths and Weaknesses Based on Requalification Examination Performance

Strengths

- Operations and Training Department personnel worked well together.
- Operator performance on all portions of the examination was strong overall.

Weaknesses

- None observed.

3.0 REQUALIFICATION PROGRAM EVALUATION RESULTS, FINDINGS AND CONCLUSIONS

3.1 Examiner Standards Evaluation Criteria and Results

Using the criteria of ES-601, "Administration of NRC Requalification Program Evaluations," the program evaluation is as follows:

D.2.a(1) At least 75% of the licenses must pass all parts of the examination in which they participate.
The pass rate was 92% (11 out of 12) for all parts of the examination.

D.2.a(2) At least two thirds of the crews pass the simulator examination.

All three crews passed the simulator examination.

The following factors were also considered in the program evaluation:

D.2.b(1) There was agreement between the facility and NRC on all crew evaluations.

D.2.b(2) All facility evaluators performed satisfactorily.

D.2.b(3) Operators were trained and evaluated in positions permitted by their license.

D.2.b(4) Administrative controls are in place to preclude an inactive licensee from performing licensed duties.

D.2.b(5) The licensee has sufficient quality control of its examination bank. There were no post-examination changes to questions.

D.2.b(6) There were no differences between NRC and licensee failures.

The results of the licensed operator requalification program review were satisfactory in accordance with Examiner Standard 601 criteria.

3.2 Requalification Examination Development and Administration

The Sample Plan that was provided with the examinations materials was detailed and complete. The Test Outline for the examinations adhered to the Sample Plan.

No revisions were made to the proposed written examinations.

The proposed Job Performance Measures (JPMs) required only minor revision.

The dynamic simulator scenarios contained events that challenged the SRO's ability to prioritize actions and effectively direct crew operations. The crew critical tasks required minor revision to meet the Examiners Standards criteria for critical tasks for safety significance and measurable performance standards. The scenarios that were used for the examinations met the guidelines for qualitative attributes defined in the Examiners Standards.

The administration of the examinations went smoothly, and the examination was conducted as planned.

During the dynamic simulator examination, the examiner raised a question over the adequacy of the procedure for electrical bus restoration (Energizing Dead 4 kv ESS bus, ON-004-002). The procedure did not include the final steps for restoring the bus to service. For the steps omitted, licensee representatives considered the restoration steps to be within the skills of the trade. However, this caused some confusion, with respect to bus restoration, on the operators' part. The licensee took prompt action to change the procedure so as to eliminate the confusion. These changes were reviewed by the inspector and found to be satisfactory.

Also during the dynamic simulator examination, one crew allowed the reactor vessel water level to drop lower than (top of active fuel) desired while a crew briefing was being conducted. Discussions with the licensee determined that conducting a briefing before taking a significant action was normal training practice. The briefing should have been done before reactor water level reached the top of the active fuel rather than after it reached this level. This practice was considered a potential weakness in training. The licensee indicated that the training department would assess the generic nature of the problem and make any necessary changes to their training program.

3.3 Conclusions

Operator performance on all portions of the examination was strong overall. The Licensed Operator Requalification Program performance was determined to be satisfactory. The examination materials that were proposed for the examination met the examiner standards and required only minor revisions. Administration of the examinations went smoothly and it was conducted as planned.

4.0 LICENSEE ACTION ON PREVIOUS INSPECTION FINDINGS

(Open) Unresolved Item 387/93-06-02 and 388/93-06-02

With respect to EO-100-104, "Secondary Containment Control (SC-EOP)," this open issue involved the adequacy of licensee's value and use of a single value for "maximum normal radiation levels" (MNRL) in areas of secondary containment. The EOP Generic Technical Guideline defines MNRL as the highest value of the identified parameter expected to occur during normal plant operating conditions with all directly associated support and control systems functioning properly. When the MNRL is exceeded, the EOP action is to isolate the

unnecessary systems and locate the leak, if possible. These levels were entry conditions for the SC-EOP and indicators of worsening conditions that may lead to plant scram and emergency depressurization based on "maximum safe radiation levels."

In Inspection Report Nos. 50-337,338/93-06, the inspector questioned the use (under emergency conditions) of the single radiation value (100 mR/hr) established for MNRLs for all areas of the secondary containment in light of significantly varying normal (general area) radiation levels depending on the area and equipment within the area. This issue was also discussed in telephone conversations between NRC staff and the licensee representatives on March 24 and March 25, 1994.

The MNRLs were also used in the licensee's emergency action level (EAL) definitions. In a letter of June 9, 1993, the NRC staff questioned the change in facility EALs. The licensee's response of January 5, 1994, was under review by the Office of Nuclear Reactor Regulation staff. The licensees submittal indicated the maximum normal levels were 200 mR/hr); but, by telephone conversation on March 24, 1994, Mr. Peale confirmed that this submittal was in error because of an oversight. Licensee representatives also confirmed that this correspondence does not address the adequacy for the established MNRL in the SC-EOP.

During this inspection, the inspector determined that EOPs still reflect the single value for all areas of 100 mR/hr. However, a licensee multi-disciplinary group reevaluated this item, and they found that, during normal operations/surveillance testing, three areas exceed the MNRL and this was not indicative of a primary system leak to secondary containment. These areas were: High Pressure Coolant Injection Room, Reactor Core Isolation Cooling Room, and Residual Heat Removal Room. Subsequently, the licensee representatives provided an evaluation for a higher single point value for the EOP use (500mR/hr).

Several shortcomings with the licensee's evaluation were noted. The evaluation doesn't specifically address the potential problem of masking real, primary-to-secondary containment leakage for areas with normally-low radiation levels ($<$100 mR/hr) and with the relatively high MNRL action level. There may be an excessive delay in isolating the leak if the general area radiation level has to build up to 500 mR/hr in any area. The licensee representatives reported that similar EOP-type actions are taken as a result of high alarms on area radiation monitor in accordance with alarm response or abnormal procedures. The justification for the single value throughout the SC appears to be a reliance on non-EOP type procedures to complete the EOP strategy. However, these facility procedures may not be under the same level of control as the EOPs. Further, if the leak becomes unisolable, this delay may be a factor in shutting down the reactor (2 or more areas exceeding maximum safe level or for a worsening condition necessitating emergency blowdown of the reactor in order to isolate or remove the source of the leak). Also, the single value also poses operational problems in which an EOP entry would be needed as a result normal testing of equipment.

As a result of these concerns, licensee representatives committed to not implement the change in the EOP's MNRL to a higher value until additional information on their evaluation was received and reviewed by NRC staff.

This area remained open pending completion of licensee and NRC staff action as noted above.

5.0 EXIT MEETING

An exit meeting was conducted on February 4, 1994. Personnel attending are listed in Attachment 1. The NRC presented preliminary results of the examinations and discussed examination-related findings.

An unresolved item is an area in which more information is needed to determine if the item is acceptable, a deviation or a violation. The status of an open unresolved item was addressed in section 4.

Attachments:
1. Persons Contacted
2. Simulator Facility Report

ATTACHMENT 1

PERSONS CONTACTED

Pennsylvania Power and Light

Gene Stanley, Vice President, Nuclear Operations
Howard Palmer, Manager, Nuclear Operations
Art Fitch, Manager, Operator Training
T. C. Dalpiaz, Manager, Nuclear Maintenance
Bruce Stitt, Nuclear Operations Training Supervisor
Rick Wehny, Compliance Engineer
Carl Fedako, Nuclear Operations Training Supervisor
T. R. Markowski, Dayshift Supervisor
Kevin Chambliss, Maintenance Outage/Production Supervisor
Terry Logsdon, Operator Training Instructor
Dave Walsh, Operations
Ira Kaplan, Public Information
Bob Prego, Nuclear Quality Assurance

U. S. Nuclear Regulatory Commission

Herb Williams, Sr. Operations Engineer
Carl Sisco, Operations Engineer

All of the above personnel attended the exit meeting.

ATTACHMENT 2

SIMULATOR FACILITY REPORT

Facility Licensee: Susquehanna Steam Electric Station

Facility Docket No: 50-387/388

Operating Tests Administered from January 31 to February 4, 1994

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

While conducting the simulator portion of the operating tests, the following items were observed (if none, so state):

ITEM	DESCRIPTION
None	