U. S. NUCLEAR REGULATORY COMMISSION
REGION 1

PILGRIM REQUALIFICATION EXAMINATIONS

REPORT NO.	50-293/92-05 (OL)
FACILITY DOCKET NO.	50 293
FACILITY LICENSE NO.	DPR-35
LICENSEE:	Boston Edison Company RFD #1 Rocky Hill Road Plymouth, Massachusetts 02360
FACILITY:	Pilgrim Nuclear Power Station
EXAMINATION AT:	Plymouth Massachusetts
EXAMINATION DATES:	May 5 - 15, 1992
EXAMINERS:	D. Odland, Sonalysts C. Carroll, Sonalysts

CHIEF EXAMINER: Donald J. Florek — 6/11/92
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PILGRIM NUCLEAR POWER STATION

REQUALIFICATION EXAMINATION AND PROGRAM EVALUATION SUMMARY

EXAMINATION REPORT NO. 50-219/92-05

Requalification examinations were administered to nine reactor operators (ROs) and six senior reactor operators (SROs) divided into three crews. All crews passed the simulator examination. One RO failed the written examination and one SRO failed the walk-through examination. Thirteen operators passed all portions of the examination.

The results of this program evaluation indicate that the facility's licensed operator requalification program continues to satisfactorily meet the examiner standards criteria. Operator performance in the simulator was strong. The examination materials required improvements to meet the guidelines in the examiner standards. The facility representatives were receptive to the comments of the NRC staff and cooperated in developing a comprehensive examination.

A review of licensed operator medical records identified that the licensee on-site medical personnel were not fully aware of the need to report to the NRC the inability of licensed operators to meet the minimum capacities required for medical qualification per ANSI/ANS-3.4., i.e., the inability to use respiratory devices. While all required reports to the NRC in this area had been performed, the licensee, nonetheless, has taken corrective actions to address this problem.

DETAILS

1.0 INTRODUCTION

The NRC administered requalification examinations to 15 licensed operators (9 ROs and 6 SROs). The examiners used the process and criteria described in NUREG-1021, "Operator Licensing Examiner Standard," Revision 6.

The contents of the examination, as administered, are summarized in Attachment 1. An exit meeting was held at the facility on May 15, 1992. Those in attendance are listed in Attachment 2.

2.0 SUMMARY OF EXAMINATION RESULTS

2.1 Individual Examination Results

The following is a summary of the NRC results:

NRC GRADING

	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	8/1	6/0	14/1
Simulator	9/0	6/0	15/0
Walk-through	9/0	5/1	14/1
Overall	8/1	5/1	13/2

FACILITY GRADING

	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	8/1	6/0	14/1
Simulator	9/0	6/0	15/0
Walk-through	8/1	5/1	13/2
Overall	8/1	5/1	13/2

Facility licensee letter, dated May 28, 1992, provided the final licensee results of the requalification examination given the weeks of May 4 and May 11, 1992. The licensee perspective on the examination preparation, administration and results is consistent with that contained in the NRC report.

2.2 Facility Generic Strengths and Weaknesses Based on Individual Performance

A summary of strengths and weaknesses noted by the NRC as a result of preparation and administration of the examinations is discussed below. This information is being provided to aid the licensee in improving the requalification program.

2.2.1 Strengths

Communication teamwork and command and control during the simulator portion of the examination reflected strong performance.

2.2.2 Weaknesses

Whereas the use of procedures by the majority of the operators was quite good, an apparent contributor to the reason that some individuals failed any Job Performance Measure (JPMs) was that they did not refer to the procedure when complications arose. The individuals that used the procedures did not have difficulties with the JPMs.

2.3 Programmatic Strength and Weaknesses

The facility reference material and sample plan are logically structured to enable easy use in the construction of an examination. Problems with examination material in meeting the examiner standards written exam criteria are discussed in section 3.2.

The results of this program evaluation indicate that the facility's licensed operator requalification program continues to satisfactorily meet the examiner standards criteria.

3.0 REQUALIFICATION PROGRAM EVALUATION RESULTS

3.1 Examiner Standards Evaluation Criteria

The facility's program for licensed operator requalification training was rated as satisfactory in accordance with the criteria established in ES-601 paragraphs C.2.b.(1)(b-c) and C.2.b.(2)(a-f).

- C.2.b(1)(b). At least 75% of all operators pass the examination, not including individuals who participate in the simulator examination only. The pass rate was 86%.

- C.2.b(1)(c). No more than one-third of the crews evaluated fail the simulator exam. There were no crew failures.

- C.2.b(2). If three of more of the following apply, then the program is unsatisfactory. However, one or more could result in an unsatisfactory program.

  (a) Facility evaluators do not concur with NRC evaluators on all unsatisfactory crew evaluations. There were no unsatisfactory crew evaluations.

  (b) Facility failed to train and evaluate operators in all positions permitted by their license No problem was found in this area.

  (c) More than one facility evaluator is unsatisfactory. There were no unsatisfactory evaluators.

  (d) There is a lack of administrative controls to preclude licensed operators with "inactive" licenses from performing licensed duties. No problem was identified in this area.

  (e) There is a lack of quality control on the examination bank in that significant post examination changes were made to more than 10% of the questions on the written examination. One question required a a post examination change.

(f) Facility failure rate is excessive relative to NRC failure rate. The facility failed one RO in the walkthrough examination for inappropriate procedure use even though the operator obtained a passing grade of 80%. The facility assessment was appropriate.

3.2 Examination Material

The facility submitted a proposed examination as part of the reference material as requested by the Chief Examiner. Based on a review of the reference and proposed examination, substantive changes were made to examination prior to the examination preparation visit the week of April 20, 1992. As a result of the changes, an examination was developed that was comprehensive, consistent with the sampling plan, challenging and fair. A summary of the changes follows.

3.2.1 Scenarios

The original scenarios were not sufficiently challenging to the operators and as a result, had limited critical tasks. Changes were made to the scenarios to assure that at least two of the three ROs on a crew would perform a critical task during the scenario. This was accomplished by adding malfunctions which would result in the crew concurrently executing multiple EOPs paths. The facility accepted the Chief Examiner's comments on the scenarios reviewed and provided revised scenarios to the examiners prior to the preparation visit. As a result, very minor adjustments had to be made to the scenarios during the preparation visit.

3.2.2 JPMs

During the examination development, the examiners noted that some of the JPM performance standards were not sufficiently specific. The examiner standards indicate the performance standards shall be specific in that exact control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedure step. As a result of the examiners' comments during the examiner preparation activities, the facility provided additional detail to most of the JPMs. It was later determined, following individual performance of the revised JPMs, that the licensee, had in many cases provided too much detail. This resulted in some of the JPMs being difficult to use as an evaluation tool. The facility recognized the deficiencies in the original JPMs and also realized that they may have provided too much detail during their subsequent revision. Further, the NRC/facility examination team created two new JPMs for this examination involving an approach to criticality and an EOP related task on the use of firewater with RHR. Three JPMs were modified to utilize alternate procedure paths to accomplish the assigned task. Four JPMs were established as time critical JPMs. The above changes were easily accommodated by the licensee and were made to the examination to add diversity.

3.2.3 Written

Although the licensee had the examiner standard number of questions in their "B" examination bank, this bank lacked a sufficient number of questions which were related to the use of procedures. A majority of questions in the "B" examination bank were questions that were more appropriate for the static or "A" portion of the examination. As a result, the licensee created approximately 25 new questions principally to be used in the "B" classroom portion of the examination. The licensee is planning future modifications to the "B" bank.

3.3 Conclusions

The results of this program evaluation indicate that the facility's licensed operator requalification program continues to satisfactorily meet the examiner standards criteria. Operator performance in the simulator was strong. The examination materials required improvements to meet the guidelines in the examiner standards. The facility representatives were receptive to the comments of the NRC staff and cooperated during the development of a comprehensive examination.

4.0 OTHER FINDINGS

4.1 Reactor Pressure Vessel (RPV) Level Instrument Overlap

During the scenario portion of the examination, the examiner observed that at high reactor pressure, when RPV actual water level drops below the wide range level instrument range (-60 inches), the next operable instrument is the fuel zone instrument which indicates that the water is near the top of active fuel (-125 inches). The reason for the level difference is the calibration basis (hot versus cold) for the level instruments. The effect on operator performance is that they will take the action specified in the EOPs when level is at the top of active fuel. In many instances, the resultant operator action, based upon the EOP guidance for the indicated water level, may not be in the conservative direction for the given scenario conditions.

The facility has been aware of this concern and is developing the capability of the Safety Parameter Display System (SPDS) to assist in providing a corrected reactor water level indication when they are below the wide range indication and at high pressure. The licensee is also working on a manual correction method to be used when SPDS is not available, but have yet to complete these activities. When the licensee completes these activities they will be able to more precisely monitor RPV water level over the range of reactor pressure and level and as a result, more precisely, take the action needed to implement the EOP guidance.

4.2 Emergency Classification for ATWS Conditions

The examiner discussed with the Operations Section Manager the proper emergency classification for the condition in which the reactor protection system has been required to

operate but has failed both automatically and manually; however the alternate rod insertion method was successful in inserting the control rods. The Operations Section Manager indicated that he did not consider the condition to warrant an Alert classification based on how he interpreted the words specified for the Alert classification, "A reactor scram has been initiated and the reactor is not shutdown." The examiner was informed that the Operations Section Manager interpretation was how the licensed SROs were trained. The examiner indicated that the he did not believe that the interpretation was consistent with the guidance identified in NUREG-0654. This issue, further discussed with licensee representatives during an emergency drill conducted during the week of May 25, 1992, is currently under review by the licensee.

5.0 REVIEW OF MEDICAL RECORDS

The examiner reviewed the licensee medical records of licensed operators to determine if medical examinations are conducted biennially; and that, if medical problems are identified, they are reported as required by 10 CFR 55.

Pilgrim licensed operators are given medical examinations annually. There are good working policies and procedures between the Medical department, Operations section and the Compliance organization. When an operator has a medical problem which affects his performance of licensed duties, Operations is notified to make the required adjustments in the shift schedule. Every two weeks the Compliance organization requests Operations and the Medical department to identify any items that may be reportable to the NRC.

Eleven licensed operator medical records were reviewed. During a review of the medical records, an issue was identified regarding the reporting to the NRC if an individual's condition was not being able to wear a respirator. The ANSI/ANS-3.4 standard contains medical requirements under Section 5.3 "Disqualifying Conditions" and Section 5.4 "Specific Minimum Capacities Required for Medical Qualification." The medical requirement of being able to wear a respirator is contained in Section 5.4.

There was a different interpretation between the station medical department and the corporate physician on reporting to the NRC regarding items identified under Section 5.4 as it related to respirators. The station medical department normally performs the physical examination and the corporate physician reviews and makes the official medical determination. The station medical department is also involved in the initial determination of reportability to the NRC. The corporate physician clearly understood the need to report the inability to wear a respirator, but the station medical department initially did not consider this condition reportable.

The station medical department has since changed their interpretation to be consistent with that of the corporate physician. The examiner also informed the licensee's medical department of the need to report the minimum capacity requirement deficiencies of

ANSI/ANS 3.4-1983, in addition to any disqualifying conditions. This was the basis of the issue relating to the inability to use a respirator. A licensee review of their medical records indicated that the NRC has been informed of all operators not able to medically wear a respirator because of other related medical problems and no new reports are required.

In the process of addressing the above issue, the licensee identified that they need to more closely monitor those operators that require additional medical data in order to finalize a determination that the medical requirements are met. In two cases, an unacceptable long time period had transpired between the initial medical examination and additional medical data from the operator. In both cases, no medical problems were identified but the system needed to be strengthened to assure that the data was timely. The licensee medical department has taken corrective actions to address this problem.

6.0 EXIT MEETING

An exit meeting was conducted on May 15, 1992. Personnel attending are listed in Attachment 2. The NRC presented results of the examinations and discussed examination related findings. The examiner discussed the actions that would be required for an individual that fails an NRC administered requalification examination when the facility requalification program is considered to be satisfactory.

Attachments:
1. Requalification Examination Test Items
2. Persons Contacted
3. Simulation Facility Report

ATTACHMENT 1

REQUALIFICATION EXAMINATION TEST ITEMS

JOB PERFORMANCE MEASURES

2B Suppression Pool Cooling Fast Start
8 Manual Start of the EDG on the Bus
11 Start of an Idle Recirc Pump
16B HPCI Start from the Alternate Shutdown Panels
17B RCIC Start from the Alternate Shutdown Panels
25 RHR in Shutdown Cooling
26 Spraying the Drywell Following a LOCA
35 Align H2/O2 Analyzer on C904 with an Isolation Signal
36 Startup of the Blackout Diesel Generator
37 Resetting Secondary Containment Following an Isolation
39 Recover from a Recirc Pump Scoop Tube Lockup
41 EDG Operation Outside the Control Room
44 Transfer of RPS Bus A to Alternate Power
57 Cross-tie RBCCW Cooling Loops
59 Depressurize the Scram Pilot Valve Air Header
71 Local Control of Recirc Motor Generator Sets
72B Manually Start SBGT and Vent the Torus
111 Equalize Around MSIV's Following Isolation
120 Firewater Cross-tied to RHR
121 Reactor Startup - Criticality

SCENARIOS

SES-23B
SES-8B
SES-10B
SES-26

WRITTEN

WEEK 1 STATICS		WEEK 2 STATICS	
SRO	RO	SRO	RO
1A-1	1A-1	12A-1	12A-1
1A-2	1A-5	12A-2	12A-2
1A-7	1A-7	12A-5	12A-5
1A-9	1A-9	12A-A	12A-A
1A-13	1A-13	12A-7	12A-7
1A-16	1A-16	12A-10	12A-10
TYPA-27	DC-4	RMCS-7	AOG-4
DC-4	RCIC-15	FWLC-4	FWLC-4
CRDH-3	PSU-5	IA-02	IA-02
PSU-5	PSU-20	RHR/DW-2	MHC-6
PSU-20	CF-5	HPCI-M	RHR/LPCI-2
CF-5	CRDH-1	RR-11	RR-11
2B-3	2B-3	11A-2	11A-2
2B-6	2B-6	11A-4	11A-4
2B-9	2B-9	11A-6	11A-6
2B-10	2B-10	11A-9	11A-9
2B-11	2B-11	11A-11	11A-11
2B-12	2B-12	11A-12	11A-12
HPCI-4	HPCI-4	120VAC-9	120VAC-9
RWM-3	AC-7	AC-7	AC-7
CS-04	CS-04	HPCI-7	HPCI-7
HWC-5	RHR/LPCI-1	AOG-1	AOG-1
PSU-23	PSU-23	FWLC-5	FWLC-5
PSU-28B	PSU-28B	RHR/SDC-1	RHR/SDC-1

WRITTEN

WEEK 1 CLASSROOM		WEEK 2 CLASSROOM	
SRO	RO	SRO	RO
TS-4	RHR/SDC-6	RHR/SDC-2	RHR/SDC-2
SBGT-8	K	TS-11	PCIS-4
RR-10	RR-10	TS-6	CRDH-2
TS-6	H	NBI-5	IRM-10
TS-12	I	RWM-6	RWM-6
IRM-13	J	TS-2	Q
1.3.12-1	IRM-13	TS-1	RWCU-4
M	G	IA-8	IA-8
L	RWCU-4	REFUEL-6	REFUEL-6
IA-1	A	SSW-3	SSW-5
SSW-4	IA-1	120VAC-5	120VAC-5
EOP01-1	SSW-4	AC480-1	AC480-1
120VAC-1	SW-2	1.3.12-2	T
AC480-1	120VAC-1	V	X
B	AC-480-1	U	S
D	B	IST-2	TH-10
E	D	R	R
EOP02-3	E	EOP03-14	EOP03-1
5.3.26-1	TH-10	EOP04-3	RHR/DW-4
EOP03-2	5.3.26-2	EOP09-4	RCIC-10
EPIP-1	EOP03-1	DC-3	DC-3
EPIP-2	C	EPIP-3	P
CRDM-5	F	PSU-25	SU-25
RR-15	CRDM-5	EPIP-4	AC-6
EOP06-5	RR-15	APRM-1	APRM-1
TS-10	120VAC-6	W	W

ATTACHMENT 2

PERSONS CONTACTED

BOSTON EDISON

J. Alexander, Training Manager
R. Anderson, Sr. Vice President Nuclear
H. Balfour, Operations Training Section Manager
T. Beneduci, Simulator Division Manager
E. Boulette, Vice President Operations/Station Director
R. Cannon, Sr. Compliance Engineer
N. Desmond, Compliance Division Manager
C. Frampton, Supervisor Nuclear Health Services
P. Gallant, Nuclear Training Specialist
T. Sullivan, Operations Section Manager
T. Swan, Operations Training Supervisor

NUCLEAR REGULATORY COMMISSION

E. Kelly, Section Chief, DRP
J. MacDonald, Senior Resident Inspector

ATTACHMENT 3

SIMULATION FACILITY REPORT

Facility Licensee: Pilgrim Nuclear Power Station

Facility Docket No.: 50-293

Requalification Examination Administered: May 5-15., 1992

This form is to be used only 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 operating tests, the following items were observed:

ITEM	DESCRIPTION
NONE	