UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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August 10, 2010

Mr. Mark Bezilla
Site Vice President
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
P. O. Box 97, 10 Center Road, A-PY-A290
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1
NRC INITIAL LICENSE EXAMINATION REPORT 05000440/2010301(DRS)

Dear Mr. Bezilla:

On June 30, 2010, U. S. Nuclear Regulatory Commission (NRC) examiners completed initial operator licensing examinations at your Perry Nuclear Power Plant. The enclosed report documents the results of the examination which were discussed on June 18, 2010, with Mr. K. Krueger, Plant General Manger, and other members of your staff. An exit meeting was conducted by telephone on July 12, 2010, between Mr. A. Mueller, Jr., of your staff and Mr. D. McNeil, Senior Operations Engineer, to review the resolution of the station's post examination comments and the proposed final grading of the written examination for the license applicants.

The NRC examiners administered an initial license examination operating test during the week of June 14 – 18, 2010. The written examination was administered by Perry Nuclear Power Plant training department personnel on June 21, 2010. License examinations were administered to ten Senior Reactor Operator (SRO) applicants and to one Reactor Operator (RO) applicant. The NRC received the facility's written post-examination comments on June 30, 2010. The results of the examinations were finalized on July 23, 2010. One SRO applicant failed the written examination and one SRO applicant failed the operating test. Each was issued a proposed license denial letter. Eight SRO applicants passed all sections of their examinations and were issued SRO licenses. One RO applicant passed all portions of his examination and was issued an RO license.

Nineteen questions in the proposed examination were determined to be unsatisfactory and required re-work or replacement. Nine of the unsatisfactory questions were contained in the SRO portion of the examination. This means that 36 percent of the questions submitted for the SRO portion of the written examination did not meet NRC expectations. The NRC expects less than 20 percent of the proposed questions be categorized as unsatisfactory. Therefore, additional attention in the area of the development of SRO-level questions is warranted. The remainder of the written examination and the operating test met NRC expectations.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room, or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at **http://www.nrc.gov/reading-rm/adams.html** (the Public Electronic Reading Room).

We will gladly discuss any questions you have concerning this examination.

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-440
License Nos. NPF-58

Enclosures:
1. Operator Licensing Examination Report 05000440/2010301(DRS) w/Attachment: Supplemental Information
2. Simulation Facility Report
3. Post Examination Comments w/NRC Resolution
4. Written Examinations and Answer Keys (RO/SRO)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	05000440/2010301(DRS)
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Perry Nuclear Power Plant, Unit 1
Location:	Perry, OH
Dates:	June 14 - 30, 2010
Examiners:	D. McNeil, Senior Operations Engineer M. Bielby, Senior Operations Engineer C. Zoia, Operations Engineer
Approved by:	Hironori Peterson, Chief Operations Branch Division of Reactor Safety

Enclosure 1

SUMMARY OF FINDINGS

ER 05000440/2010301(DRS); 06/14/2010 - 06/30/2010; FirstEnergy Nuclear Operating Company (FENOC), Perry Nuclear Power Plant, Unit 1. Initial License Examination Report.

The announced initial operator licensing examination was conducted by regional Nuclear Regulatory Commission examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1.

A. Examination Summary:

- One applicant failed the written examination and was issued a proposed license denial. One applicant failed the operating test and was issued a proposed license denial. Nine of 11 applicants passed all sections of their respective examinations. Eight applicants were issued Senior Reactor Operator licenses and one applicant was issued a Reactor Operator license. The number of licenses issued may change pending the outcome of any written examination or operating test appeal. (Section 4OA5.1).

- The SRO portion of the written examination did not meet NRC expectations. Thirty-six percent of the proposed questions were considered unsatisfactory. (Section 4OA5.1.b)

B. Licensee-Identified Violations

None

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other

.1 Initial Licensing Examinations

a. Examination Scope

The Perry Nuclear Power Station trainers prepared the examination outline and developed the written examination and operating test. The U. S. Nuclear Regulatory Commission (NRC) examiners validated the proposed examination during the week of May 24, 2010, at the Perry Nuclear Power Plant Training Building with the assistance of embers of the licensee training staff. During the on-site validation week on May 25, 2010, the examiners audited two license applications for accuracy. The NRC examiners conducted the operating portion of the initial license examination during the week of June 14, 2010. The Perry Nuclear Power Plant training department staff administered the written examination on June 21, 2010. The NRC examiners used the guidance established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, to prepare, validate, revise, administer, and grade the examination.

b. Findings

Written Examination

During the review and validation of the written examination several questions were modified or replaced. Nineteen questions in the proposed examination were determined to be unsatisfactory and required re-work or replacement. Nine of the unsatisfactory questions were contained in the Senior Reactor Operator (SRO) portion of the examination. This means that 36 percent of the SRO questions submitted for the SRO examination did not meet the expectations of the NRC. The current expectation of the NRC is that the submitted examinations contain less than 20 percent unsatisfactory submitted questions. Therefore, additional attention in this area is warranted. The remainder of the written examination and the operating test met NRC expectations. Changes made to the written examination were documented on Form ES-401-9, "Written Examination Review Worksheet" which is available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). The licensee submitted two written examination post-examination comments for consideration by the NRC examiners when grading the written examination. The written examination post-examination comments were received by the NRC on June 30, 2010. The post-examination comments and the NRC resolution for the post-examination comments are contained in Enclosure 3, "Post Examination Comments and Resolutions." The NRC examiners graded the written examination on July 12, 2010, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

Operating Test

In general, the operating test submitted by the faculty met the NRC expectations; however, one Job Performance Measure (JPM) was replaced prior to examination validation. The JPM would have duplicated a task that might have been performed during Scenario 3 in the major transient. During the validation of the operating test, one JPM test item was changed from alternate path to a normal JPM. The JPM did not meet the definition of an alternate path JPM. Several minor modifications were made to the dynamic simulator scenarios; mostly correction of typographical errors. One dynamic simulator scenario was removed from the examination when it was discovered that a loud speaker was operating in a telephone equipment room adjacent to the simulator. Scenario specific information could be heard in the rest rooms adjacent to the telephone equipment room via the speaker during validation of the scenario. This was considered to be an examination security issue.

Examination Results

Ten applicants at the SRO level and one applicant at the Reactor Operator (RO) level were administered written and operating tests. One of the SRO applicants was currently licensed as an RO at Perry Nuclear Power Plant and took an SRO Upgrade examination. One SRO applicant failed the written examination and was issued a proposed license denial. One SRO applicant failed the operating test (dynamic simulator scenario portion) and was issued a proposed license denial. Nine applicants passed all portions of their examinations and were issued appropriate operating licenses.

.2 Examination Security

a. Scope

The NRC examiners reviewed and observed the licensee's implementation of examination security requirements during the examination validation and administration to assure compliance with 10 CFR 55.49, “Integrity of Examinations and Tests.” The examiners used the guidelines provided in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors,” Revision 1, Supplement 2, to determine acceptability of the licensee’s examination security activities.

b. Findings

Two examples of exam security concerns were discovered during the process of validating and administering the examination. The first example occurred when an uncontrolled speaker in a communications room adjacent to the simulator was discovered broadcasting simulator radio transmissions during validation of the operating test. The radio transmissions from the speaker could be heard in an adjacent restroom and in the hallway outside the communications room. The chief examiner determined that no examination compromise occurred for this event because the scenario material that was broadcast and that would have revealed the major transient was replaced with

the spare scenario. The other scenarios had only minor non-specific information broadcast on the simulated radio that would not have revealed specific events or the major transient.

The second example of an exam security issue occurred when the written examination was being copied by the examination author on Saturday, June 19, 2010, prior to examination administration on Monday, June 21, 2010. A paper jam occurred while the written examination was being copied. The examination author cleared the paper jam and the copier instrument panel indicated the copier was ready to copy. The examination author successfully copied the remainder of the examination (approximately 500 more pages) and performed post-copying activities to delete any photo memory in the copier. This entailed running additional papers through the copier. At no time was another paper jam indicated on the control panel, nor were any pages missing from the copies made by the exam author. However, it was later discovered that a copy of one page of the examination was stuck in a concealed location within the copier. On Monday, June 21, 2010, after the initial license written examination had commenced, station chemistry trainers tried to copy some of their training material and another copier jam occurred. While clearing the copier jam, the chemistry trainers discovered the initial license training examination page stuck in the copier along with their training material. The page was immediately identified as examination material because the question page was on pink paper and was controlled by an operations trainer on the station's examination security agreement and who was in the copy room when the examination page was discovered. The licensee's investigation into these events is documented in a letter dated July 10, 2010 (L-10-224). The examination author contacted the copy machine manufacturer who verified that paper can get into a position where it is not "seen" by the copier and may have to be removed by a technician. The chief examiner believes there was no exam compromise in this case because there was no indication of a paper jam on the copier control panel when the chemists began their copying, and the pink exam paper was mixed in with the chemists' papers, indicating it was in the machine when the copying started and became mixed in with the chemists' papers resulting in a paper jam. Because the unblocking of the paper jam released the exam "pink" page while the exam was being administered, none of the applicants had an opportunity to view the page; therefore the chief examiner concluded that no compromise to the examination occurred, and no changes were made to the written examination.

4OA6 Meetings

Debrief

The chief examiner presented the examination team's preliminary observations and findings on June 18, 2010, to Mr. K. Krueger, Plant General Manager, and other members of the Perry Nuclear Power Plant Operations and Training Department staff.

Exit Meeting

The chief examiner conducted an exit meeting on July 12, 2010, with Mr. A. Mueller, Jr., Perry Nuclear Power Plant Training Manager, by telephone. The NRC's final disposition of the station's post-examination comments were disclosed and revised preliminary written examination results were provided to Mr. Mueller during the telephone discussion.

The examiners asked the licensee whether any of the material used to develop or administer the examination should be considered proprietary. No proprietary or sensitive information was identified during the examination or debrief/exit meetings.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
K. Krueger, Plant General Manager
R. Brooks, Fleet Lead Exam Developer
R. Coad, Regulatory Compliance Manager
H. Hanson, Performance Improvement Director
A. Jardine, Operations Manager
D. Johnson, Training
J. Kelly, Initial License Training Supervisor
T. Morse, Operations Superintendent
A. Mueller, Jr., Training Manager
D. O'Donnell, Operations/Training
R. Torres, Examination Author
R. Strohl, Operations Training Supervisor

NRC
D. McNeil, Senior Operations Engineer
M. Bielby, Senior Operations Engineer
C. Zoia, Operations Engineer

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF DOCUMENTS REVIEWED

None

LIST OF ACRONYMS USED

ADAMS	Agency-Wide Document Access and Management System
DRS	Division of Reactor Safety
ER	Examination Report
JPM	Job Performance Measure
NRC	Nuclear Regulatory Commission
RO	Reactor Operator
SRO	Senior Reactor Operator

SIMULATION FACILITY REPORT

Facility Licensee: Perry Nuclear Power Plant

Facility Docket No: 50-440

Operating Tests Administered: June 14 – 18, 2010

The following documents observations made by the NRC examination team during the initial operator license examination. 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
Simulator Freeze	At the end of the major transient during one scenario, the simulator computer halted. The computer calculated reactor core temperatures at -1600°F and halted as required by code. Simulator Work Request 10-0044 was issued to document this simulator problem.
Simulator Indications	During a containment isolation, the simulator provided conflicting indications concerning a containment isolation. The only way the simulator driver could simulate one malfunction was to override the lights providing valve position indication such that open indication was provided. Because the valves were shut in the computer program, the simulator's SPDS indicated the valves were shut. This provided conflicting information to the operators. This was corrected verbally by the NRC chief examiner. Perry simulator staff will review this condition to determine if a fixed malfunction is necessary.
SRM 'B' Period Meter	During one scenario SRM 'B' period meter stuck at the downscale position. This was not detected until the scenario was nearly complete. Simulator Work Request 10-0045 was written to address this simulator problem.

POST EXAMINATION COMMENTS W/NRC RESOLUTION

Question 51:

An isolation signal was generated that resulted in the following light indications on panel H13-P622, Div 2 Aux Relay Panel Inboard Valves:

- NS4 MSL DRN ISOL INBD LOGIC TEST B21H-DS1B light on
- NS4 BOP ISOL INBD LOGIC TEST B21H-DS3B light on
- RX WTR SMPL VLV B33-F019 LOGIC TEST B21H-DS7B light off
- RHR ISOLATION INBD LOGIC TEST B21H-DS5B light off

Based on these indications, select the isolation that occurred.

Reference Provided: Picture of panel H13-P622

a. BOP isolation

b. RWCU isolation

c. RHR LOCA isolation

d. RHR Radwaste Valve isolation

Answer: d. - the RHR Radwaste Valve isolation is Level 3 and 1.68 psig. The light goes out if isolation signal present. The candidate needs to know if the lights are on or off for the isolation.

Candidate Comment:

The question asks what isolation signal would cause a combination of lights to be lit on panel 1H13-P622. No single isolation will result in the indications provided in the stem of the question.

a. incorrect answer – BOP isolation - A BOP isloation signal (L2/1.68psig) would result in lights DS5 (1.68), DS7B (L2), and DS1B (L2& 1.68 psig) to be extinguished. The question states that DS1B is still lit making this incorrect indications for a BOP isolation signal.

b. Incorrect answer - RWCU isolation – A RWCU isolation signal (L2 and Leak Detection signals) would result in lights DS1B and DS7B to be extinguished. The question states that DS1B is still lit making this incorrect indications for a L2 isolation signal.

c. Incorrect answer – RHR LOCA isolation signal (L1/1.68psig) would result in lights DS3B (L1), DS1B and DS5B (1.68psig) to be extinguished. The question states that DS1B is still lit making this incorrect indications for a 1.68 psig Drywell pressure signal.

d. Incorrect answer – RHR Radwaste Valve isolation (L3/1.68psig) would not result in RX WTR SMPL VLV B33-F019 LOGIC TEST B21H-DS7B light to be extinguished. DS7B is extinguished from a L2/Hi radiation signal.

The table below shows there is no isolation signal that would result in both lights DS5B and DS7B being extinguished.

	Lamp extinguished			
Signal	DS1B	DS3B	DS5B	DS7B
L1		X		
L2	X			X
L3			X	
DW press 1.68psig	X		X	
Stm Line Hi Rad				X
Low cond vac		X		
Hi stm flow		X		
Low RPV press		X		
Stm tunnel hi temp		X		
Turb bldg hi temp		X		

Recommendation: Delete question from exam, there is no correct answer.

References: Drawings 208-0013-007,008,012,0015 (see attached)

Facility Comment:

Operations and Training Management agree with the above Comments, Justifications and Recommendation.

NRC Resolution:

The NRC agrees with the applicant's comment. The question states that an isolation signal has occurred, indicating a single event has occurred. Because there is no single isolation event that will cause the light combinations provided in the question stem, there is no correct answer provided for this question. The NRC modified the answer key to delete Question # 51 from the answer key.

POST EXAMINATION COMMENTS W/NRC RESOLUTION

Question # 84 (SRO 09):

Given the following conditions:

- D-1-A Voltage 125 VDC
- D-1-B Voltage 100 VDC
- ED-1-A Voltage 100 VDC
- ED-1-B Voltage 0 VDC
- ED-1-C Voltage 90 VDC
- Reactor Coolant Temperature 180°F
- All control rods are inserted

Entry into Off-normal instruction(s) __(1)__ is(are) required and, the Emergency Plan classification will be __(2)__.

Reference Provided: EPI-A1 Attachments 1 and 2

	(1)	(2)
a.	ONI-R42-2, LOSS OF DC BUS ED-1-B and ONI-R42-3, LOSS OF DC BUS ED-1-C	ES-1
b.	ONI-R42-2, LOSS OF DC BUS ED-1-B and ONI-R42-3, LOSS OF DC BUS ED-1-C	EU-1
c.	ONI-R42-2, LOSS OF DC BUS ED-1-B	ES-1
d.	ONI-R42-2, LOSS OF DC BUS ED-1-B	EU-1

Answer: d. – the Entry Condition for all R42 ONIs is Bus Voltage zero. The other entry conditions in the ONI describe the effects of the loss of the DC bus. Therefore, only ONI-R42-2 should be entered. Additionally, Since the Plant is in Mode 4, EU-1 is the correct E-plan classification. With only Rx coolant temperature given, TS Table 1.1-1 indicates the Plant is in Mode 4.

Candidate Comment:

The questions asks the Entry Condition for R42 ONIs and the correct E-plan classification for the prescribed conditions. The candidate believes the Control Room Operator would enter ONI-R42-3 due to the low voltage (90vdc) on bus ED-1-C.

POST EXAMINATION COMMENTS W/NRC RESOLUTION

Candidate Justifications for answers:

a. Incorrect answer – ES-1 would be correct if plant was in Mode 1, 2, or 3.
b. Correct answer - Voltage on ED-1-B is 0 vdc and voltage on ED-1-C is degraded so the Control Room Operator would enter both ONI-R42-2 and ONI-R42-3. Since the Plant is in Mode 4, EU-1 is the correct E-plan classification.
c. Incorrect answer – ES-1 would be correct if plant was in Mode 1, 2, or 3.
d. Incorrect answer – the Control Room Operator would enter both ONI-R42-2 and ONI-R42-3

Candidate Recommendation: Amend the Answer Key to list 'Answer b.' as the correct answer.

References: ARI-H13-P601-0016-H1, ONI-R42-3

Facility Recommendation:

Operations and Training Management do not agree with the above Comments, Justifications and Recommendation. ARI-H13-P601-0016-H1, DC BUS ED-1-C UNDERVOLTAGE cause of alarm is Bus ED-1-C voltage <110 volts as sensed by 1R42-Q201. The ARI SUBSEQUENT OPERATOR ACTION is to refer to Loss of DC Bus ED-1-C, ONI-R42-3. An entry condition parameter for LOSS OF DC BUS ED-1-C, ONI-R42-3, is ED-1-C Bus voltage zero. The plant staff does not expect the Control Room Operator to enter ONI-R42-3 for a bus voltage of 90 vdc and answer b. is not the correct answer.

NRC Resolution:

The NRC disagreed with the candidate's contention that distractor b. is the correct answer. The parameters reviewed in ONI-R42-3, LOSS OF DC BUS ED-1-C, state: "ED-1-C Bus Voltage zero." Since the initial conditions of the question stated that bus ED-1-C voltage was at 90VDC, an entry into ONI-R42-3, Loss of DC Bus ED-1-C, is not required. Because entry into ONI-R42-3 is not required, distractor b. is an incorrect answer. The NRC did not modify the answer key. Distractor d. was retained as the only correct answer.

WRITTEN EXAMINATIONS AND ANSWER KEYS (RO/SRO)

RO/SRO Initial Examination ADAMS Accession # ML102170197

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We will gladly discuss any questions you have concerning this examination.

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-440
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