



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

February 11, 2008

Mr. Joseph E. Pollock
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

**SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 - NRC EXAMINATION
REPORT 05000247/2007301**

Dear Mr. Pollock:

On January 14, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an initial operator licensing examination at Indian Point Nuclear Generating Unit 2. The enclosed report documents the examination findings, which were discussed on January 31, 2008, with Mr. Steve Davis of your staff.

The examination included the evaluation of four applicants for reactor operator licenses and four applicants for senior reactor operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The examiners determined that seven of the eight applicants passed all portions of the examination while one reactor operator applicant failed the written portion of the examination.

No findings of significance were identified during this examination.

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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Samuel L. Hansell, Chief
Operations Branch
Division of Reactor Safety

Docket No: 50-247
License No: DPR-26

Enclosure: NRC Examination Report 05000247/2007301

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DRS Master Exam File (C. Bixler) (w/concurrences)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-247

License No.: DPR-26

Report No.: 05000247/2007301

Licensee: Entergy Nuclear Northeast

Facility: Indian Point Nuclear Generating Unit 2

Location: 450 Broadway, GSB
Buchanan, NY

Dates: January 7 - 31, 2008 (start of exam to exit date)

Examiners: D. Silk, Chief Examiner, Operations Branch
B. Haagensen, Operations Engineer
P. Presby, Operations Engineer
J. Sullivan, Operations Engineer

Approved by: Samuel L. Hansell, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000247/2007301; January 7 - 14, 2008; Indian Point Nuclear Generating Unit 2; Initial Operator Licensing Examination Report. Seven of eight applicants (four ROs, two SRO instantants and two SRO upgrades) passed all portions of the examination.

Three NRC examiners evaluated the competency of four applicants for reactor operator licenses and four applicants for senior reactor operator licenses at Indian Point Nuclear Generating Unit 2. The NRC developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The written examination was administered by the facility on January 14, 2008. NRC examiners administered the operating tests on January 7 – 10, 2008. No findings were identified.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Mitigating Systems – Reactor Operator (RO) and Senior Reactor Operator (SRO) Initial License Examination

.1 License Applications

a. Scope

The examiners reviewed all eight license applications submitted by the licensee to ensure the applications reflected that each applicant satisfied relevant license eligibility requirements. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiners also audited two of the license applications to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings of significance were identified.

.2 Operator Knowledge and Performance

a. Examination Scope

On January 14, 2008, the licensee proctored the administration of the written examinations to all eight applicants. The licensee staff graded the written examinations in parallel to the NRC, analyzed the results, and presented their analysis to the NRC on January 18, 2008.

The NRC examination team administered the various portions of the operating examination to all eight applicants January 7 – 10, 2008. The four applicants for reactor operator licenses participated in two dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of 11 system tasks, and an administrative test consisting of four administrative tasks. The two applicants seeking an instant senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of ten system tasks, and an administrative test consisting of five administrative tasks. The two applicants for upgrade senior operator licenses participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

Seven of the eight applicants passed all portions of the examination. One reactor operator applicant failed the written examination. The text of the examination questions and the licensee's post-examination comments with references may be accessed in the ADAMS system under the accession numbers noted in the attachment.

Chapter ES-403 and Form ES-403-1 of NUREG 1021 require the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee conducted this performance analysis for questions that met this criterion and submitted the analysis to the chief examiner. The missed questions were reviewed with the applicants and the associated topical areas will be emphasized in the next initial license training program.

The licensee submitted four comments for consideration in final NRC grading of the written examination. Those comments and the NRC responses follow:

Reactor/Senior Operator Question 19

The stem of the question is not clear regarding which reading is out of specification. There are two possible answers depending on the candidates' interpretation of the stem. Three out of eight candidates asked questions of the proctor as to which reading was out of specification, indicating that the stem of the question is unclear. The stem indicates the reading is out of specification, but it is not clear if the incorrect earlier recorded reading was recorded out of specification and was actually in specification or if the reading was recorded as in specification and actually was out of specification.

Case #1

If the reading was logged incorrectly out of specification, but the actual reading was in specification the operator is required to single line and correct the reading and note in the log of the incorrect observation of the instrument in question on the logs he took. Therefore the correct answer would be B.

Case #2

If the earlier reading was logged incorrectly in specification, but the actual reading was not in specification, the operator is required to single line the entry, red circle the actual reading, and log the explanation. Therefore, the correct answer would be A.

Recommend accepting both answers A and B depending on the candidate's interpretation of the stem of the question.

NRC Response:

The licensee makes a reasonable argument regarding the unintended ambiguity of the question. Several applicants asked clarifying questions during the examination. The licensee supplied references which support either case stated above. Thus, the NRC agreed with the licensee's comment and will accept either A or B as correct answers.

Reactor/Senior Operator Question 57

The stem of the question does not clearly state the time frame between the alarm actuation and the operator observing the Instrument Air pressure indication. The stem also implies that indications will be provided and no indications were given. The instrument that provides the Instrument Air Low pressure alarm, PC-1344S, can reset as high as 100psig (Reference WO IP2-06-00054). PI-1144R (CCR) will be reading differently at the moment of actuation than local indicator PI-1144 due to capillary tubing to the CCR. PT-1144 alarm actuation will occur ahead of a pneumatic signal that is

developed on 15' in 480V room and read on 53' in the CCR. The stem of the question is unclear regarding referenced indications and time specified between alarm actuation and observation of Instrument Air pressure. Additionally, the Instrument Air Low Pressure alarm could still be illuminated up to 100psig. Therefore, the highest expected pressure would be 95psig.

Recommend accepting both answers A and B, as both answers are possible.

NRC Response:

As written, the question does not allow the reader to imply that the system is responding abnormally. Furthermore, the question implies that a very short time frame and that instrument air pressure is decreasing as indicated by the alarm actuation. The question is essentially asking for the alarm actuation set point. The licensee's comment is not accepted. Only B will be accepted as a correct answer.

Reactor/Senior Operator Question 72

The stem of the question states that the plant is in MODE 1 at 90 % power. Answers A and B would be violations of the Unit 2 Core Operating Limit Report (COLR) and Technical Specification for Control Bank Overlap Limits and Control and Shutdown Bank Insertion Limit. Answers A and B would not be permitted for the conditions stated in the stem of the question. In AUTO (with conditions provided), the demand would be 8 steps/min. answer C. With operator action in MANUAL the rods will step in at 66 steps/min, leading the candidate to select answer D.

Change the answer to this question from B to D.

NRC Response:

The question was intended to elicit B as the correct choice if one considered each choice independent of the conditions provided in the stem. However, the licensee points out that the question as worded – that the conditions provided in the stem would apply to all of the choices - actually supports D as the correct answer. Therefore, the answer key will be changed to accept only D as a correct response.

Senior Operator Question 86

FSAR Section 6.2 states, at IP2, the emergency core cooling function is performed by the safety injection system. Therefore, whenever the term “emergency core cooling system” or ECCS is referred to in the document it is synonymous with the safety injection system. The words “all ECCS pumps” in answer A, refers to the Safety Injection (SI) and Residual Heat Removal (RHR) pumps RNO step 5.a.2.c and RNO step 7.b.3 direct the blackstart of the Gas Turbines. The direction to blackstart the Gas Turbines is dependent on offsite power not being readily available. The direction to blackstart the Gas Turbines in step 5 RNO would only be done if offsite power is not readily available. Regardless of when the direction to blackstart the Gas Turbines is provided, step 6 would be completed prior to power restoration via the Gas Turbines. Step 6 of ECA-0.0 places all components, except Service Water Pumps, that could

automatically start in pullout. The SI and RHR pumps are a subset of the components placed in pullout. Therefore answer A is also correct.

Recommend accepting both A and C as correct answers.

NRC Response:

The intended answer was developed assuming that power would be restored prior to step 6 of ECA-0.0. If power is restored after step 6 then the licensee's recommendation of choice A is supported by ECA-0.0. Therefore, the NRC will accept either A or C as correct answers.

.3 Initial Licensing Examination Development

a. Examination Scope

The NRC developed the examinations in accordance with NUREG-1021, Revision 9. All licensee facility training and operations staff involved in examination preparation, validation, and administration were on a security agreement. The NRC submitted both the written and operating examination outlines on August 23, 2007, to the licensee to review for applicability. The NRC submitted the proposed operating and written examination material on September 21 and 26, 2007, respectively, to the licensee to verify technical accuracy and for validation purposes. The NRC reviewed and incorporated valid licensee comments for inclusion in the final revision of the examination material. The NRC also conducted an onsite validation of the operating examinations during the week of October 8, 2007.

This examination was originally scheduled for the week of November 5, 2007. It was delayed at the request of the licensee due to applicant weaknesses identified by their written audit examination.

b. Findings

No findings of significance were identified.

.4 Simulation Facility Performance

a. Examination Scope

The examiners observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed examination security for examination during both the onsite preparation week and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

The chief examiner presented preliminary examination observations to Mr. R. Christman, Training Manager, and other members of the licensee's management staff on January 10, 2008. Final examination comments, examination results, and license numbers were provided by a telephone exit with Mr. S. Davis, Training Superintendent, on January 31, 2008. License numbers were provided for five of the seven applicants who passed all portions of the examination. Two applicants passed the written portion of the examination with scores less than 82 percent. These applicants will have their licenses held for review until the one individual who failed the written portion of the examination has had an opportunity to appeal his proposed denial (as explained in NUREG-1021, Operator Licensing Examination Standards for Power Reactors, Revision 9, paragraph D.3.c of Examination Standard ES-501).

The licensee did not identify any information or materials used during the examination as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

ATTACHMENT
SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

R. Christman, Operations Training Manager
S. Davis, Training Superintendent
D. Huntington, Training Instructor
W. Altic, Training Instructor

NRC Personnel

S. Hansell, Chief Operations Branch
D. Silk, Chief Examiner
P. Presby, Operations Engineer
B. Haagensen, Operations Engineer
J. Sullivan, Operations Engineer.

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed/Discussed

NONE

ADAMS DOCUMENTS REFERENCED

Accession No. ML080370545 – FINAL-Written Exam
Accession No. ML080370553 – FINAL-Section A Operating Exam
Accession No. ML080370559 – FINAL-Section B Operating Exam
Accession No. ML080370562 – FINAL-Section C Operating Exam
Accession No. ML080370565 – FINAL-Post Exam Comments