UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

September 9, 2009

Mr. Preston D. Swafford
Chief Nuclear Officer and Executive Vice President
Tennessee Valley Authority
3R Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT – NRC OPERATOR LICENSE EXAMINATION REPORT 05000259/2009301, 05000260/2009301, AND 05000296/2009301

Dear Mr. Swafford:

During the period July 13 – 17, 2009, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the Browns Ferry Nuclear Plant. At the conclusion of the tests, the examiners discussed preliminary findings related to the operating tests with those members of your staff identified in the enclosed report. The written examination was administered by your staff on July 22, 2009.

Five Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. One RO applicant failed the written examination. There were four administration comments concerning the written examination. These comments and the NRC resolution of these comments are summarized in Enclosure 2. A Simulator Fidelity Report is included in this report as Enclosure 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm.adams.html (the Public Electronic Reading Room). If you have any questions concerning this letter, please contact me at (404) 562-4550.

Sincerely,
/RA/

Malcolm T. Widmann, Chief
Operations Branch
Division of Reactor Safety

Docket Nos.: 50-259, 50-260, 50-296
License Nos.: DPR-33, DPR-52, DPR-68

Enclosures: 1. Report Details
2. NRC Post Examination Comment Resolution
3. Simulator Fidelity Report

cc w/encl: (See page 2)

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NAME	R BALDWIN	P CAPEHART	K SCHAAF	E GUTHRIE	M WIDMANN		
DATE	09/03/2009	09/03/2009	09/03/2009	09/03/2009	09/03/2009		
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Letter to Preston D. Swafford from Malcolm T. Widmann dated September 9, 2009

SUBJECT: BROWNS FERRY NUCLEAR PLANT – NRC OPERATOR LICENSE EXAMINATION REPORT 05000259/2009301, 05000260/2009301, AND 05000296/2009301

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-259, 50-260, 50-296
License No.:	DPR-33, DPR-52, DPR-68
Report Nos.:	05000259/2009301, 05000260/2009301, 05000296/2009301
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Browns Ferry Nuclear Plant, Units 1, 2 & 3
Location:	Corner of Shaw and Nuclear Plant Roads Athens, AL 35611
Dates:	Operating Test – July 13 - 17, 2009 Written Examination – July 22, 2009
Examiners:	Richard S. Baldwin, Chief Examiner, Senior Operations Engineer Phillip G. Capehart, Operations Engineer Kenneth D. Schaaf, Operations Engineer
Approved by:	Malcolm T. Widmann, Chief Operations Branch Division of Reactor Safety

Enclosure 1

SUMMARY OF FINDINGS

ER 05000259/2009301, 05000260/2009301, 05000296/2009301, 07/13-17/2009 & 07/22/2009; Browns Ferry Nuclear Plant; Operator License Examinations.

Nuclear Regulatory Commission (NRC) examiners conducted an initial examination in accordance with the guidelines in Revision 9, Supplement 1, of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." This examination implemented the operator licensing requirements identified in 10 CFR §55.41, §55.43, and §55.45, as applicable.

Members of Browns Ferry Nuclear Plant training staff developed both the operating tests and the written examination.

The NRC administered the operating tests during the period July 13 - 17, 2009. Members of the Browns Ferry Nuclear Plant training staff administered the written examination on July 22, 2009. Five Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. One RO applicant failed the written examination. Five applicants were issued licenses commensurate with the level of examination administered. One RO applicant received a pass letter pending results of any appeals. One SRO applicant and one RO applicant were issued letters stating that they passed both the written and operating examinations and that their licenses will be issues pending receipt of additional information.

There were four post-examination comments.

No findings of significance were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Operator Licensing Examinations

a. Inspection Scope

Members of the Browns Ferry Nuclear Plant developed both the operating tests and the written examination. All examination material was developed in accordance with the guidelines contained in Revision 9, Supplement 1, of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." The NRC examination team reviewed the proposed examination. Examination changes agreed upon between the NRC and the licensee were made per NUREG-1021 and incorporated into the final version of the examination materials.

The NRC reviewed the licensee's examination security measures while preparing and administering the examinations in order to ensure compliance with 10 CFR Part 55.49, "Integrity of examinations and tests."

The NRC examiners evaluated six Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. The examiners administered the operating tests during the period July 13 - 17, 2009. Members of the Browns Ferry Nuclear Plant training staff administered the written examination on July 22, 2009. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the Browns Ferry Nuclear Plant, met the requirements specified in 10 CFR Part 55, "Operators' Licenses."

b. Findings

No findings of significance were identified. The NRC determined, using NUREG-1021, the licensee's examination submittal was within the range of acceptability expected for a proposed examination.

Five RO applicants and three SRO applicants passed both the operating test and written examination. One RO applicant applicants passed the operating test but did not pass the written examination. Three RO applicants and two SRO applicants were issued licenses.

One RO applicant passed the operating test, but passed the written examination with overall scores between 80% and 82%. This applicant was issued a letter stating that they passed the examination and issuance of their license has been delayed pending any written examination appeals that may impact the licensing decision for their application. Additionally, issuance of two licenses has been delayed for one RO applicant and one SRO applicant pending receipt of additional information. Details concerning the need for additional information have been sent to the individual applicants and the facility licensee.

Copies of all individual examination reports were sent to the facility Training Manager for evaluation of weaknesses and determination of appropriate remedial training.

The final RO and SRO written examinations with knowledge and abilities (K/As) question references/answers and examination references, and licensee's post examination comments may be accessed in the ADAMS system (ADAMS Accession Numbers, ML092530684, ML092530691 and ML092390396).

4OA6 Meetings, Including Exit

Exit Meeting Summary

On July 17, 2009, the NRC examination team discussed generic issues associated with the operating test with Mr. R. West, Browns Ferry Nuclear Plant, Site Vice President, and members of the Browns Ferry Nuclear Plant staff. The examiners asked the licensee if any of the examination material was proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee personnel

R. West, Site Vice President BFN
C. Beasley, TVA Communications
D. Binkley, Operations Training, Instructor
R. Conner, Manager, Work Control
J. Davenport, Licensing Engineer
S. Dover, Program Manger, Nuclear Assurance
R. Glissen, Manager, Maintenance and Modifications
D. Grissette, Director, Site Technical Support/Acting Training Manager
L. Hughes, Superintendent, Nuclear Operations
J. Lewis, TVA Operations
J. McCarthy, Director, Safety/Licensing/Turnaround
M. Mitchell, Manager, Rad Ops
B. Stetson, Acting Operations Training Manager
D. Webster, Manager, Engineering Support

NRC personnel

P. Capehart, DRS
L. Castelli, DCI
H. Christensen, DRS, Deputy Director
P. Higgins, DRS
T. Ross, SRI
K. Schaaf, DRS

NRC Post Examination Comment Resolution

A complete Text of the licensee's post examination comments can be found in ADAMS under Accession Number ML092390396.

RO QUESTION # 18

LICENSEE COMMENT:

The question concerns itself with a declared General Emergency with a valid radiation monitor (wide range gaseous radiation monitor [WRGERMS]) with wind direction from two different heights and two different wind directions one for each height. The applicant was expected to identify the appropriate wind direction as well as the appropriate height that should be used for the release as presented in this situation.

The licensee contends, in their post examination comment, this question asks for information that is not part of a Reactor Operators (RO's) normal job responsibility. They state (without providing justification as to this statement) that this information is normally collected by Radiation Protection (RP) per EPIP-13, "Dose Assessment." The reference provided does not identify who is to retrieve the data. The licensee further states that the RO's do normally collect and record meteorological data per 1-SR-2, "Instrument Checks and Observations," at the three levels however, without requirements to emergency assessments.

The licensee identifies, in their discussion, if the Safety Parameter Display System (SPDS), is unavailable, which is a condition described in that EPIP-13, operations could be asked by RP as to the specific parameters that need to be monitored. This condition was not described in the stem of the question and is irrelevant to the argument as to the applicability for the RO job function.

The licensee further asserts that "… the need for this information during emergency conditions is the responsibility/function of RP or an SRO (Senior Reactor Operator) if requested by RP." In their argument, the licensee uses the reference "Guidance for SRO-only Question," Rev. 0, to justify deletion based on the RO's use of the Technical Requirements Manual

Furthermore, the licensee states that the question has no correct answers because the question is not within the scope of the RO job.

NRC RESOLUTION:

In the licensee's first contention they stated that obtaining this data is not in the RO's normal job responsibility. Obtaining this data is considered to be a normal task during an emergency situation and is obtained using the SPDS computer. The licensee stated that this task is not done by the RO's but do not provide evidence that RO's unequivocally never perform this function. It was identified that in the Integrated Computer System (ICS) lesson plan, OPL171.099, Rev. 8, Appendix B, identifies RO task, #U-100-NO-01, "Obtain Meteorological Data from the Radiological Release Rate Monitoring System (ICS)." Additionally an Enabling Objective, V.B.2, provides information in the lesson plan (page 14 of 29) specifically related to the computer display called "METDATA" and identifies how it functions and how it is linked to the Emergency Plan response.

This information is basic system knowledge and allows the RO to identify the appropriate answer as the 91 meter level release point. The information, provided in the stem, identifies that the Wide Range Gaseous Rad Monitor (WRGERMS) (the Stack Noble Gas monitor) is a valid alarm which would indicate that a gaseous release is happening and is measured at the 91 meter level.

The licensee contends that if the SPDS computer is out of service the RP division would direct the control room as to which information would be necessary. This question's stem is silent concerning the SPDS and based on convention, is considered operable. This information has no bearing on the question and therefore is irrelevant to the question.

The licensee contends that there is no correct answer because this question is not at the RO level and should be deleted from the examination. The NRC disagrees, in that, this question tests the knowledge of an RO with the basic system knowledge. RO's normally collect and record meteorological data in accordance with SR, "Instrument Checks and Observations," and these are collected at all three elevations. Additionally, the NRC agrees with the original examination answer key, in that, it states "making this portion not specifically a function of an RO but within the knowledge range of an RO."

Based on the above discussion, the licensee's recommendation was not accepted. Answer A was the only technically correct answer. No changes to the answer key are warranted.

RO QUESTION # 26

LICENSEE COMMENT:

The question concerns itself with a reactor start up and the ability of the operator applicant to correctly predict the appropriate Reactor Core Isolation Cooling (RCIC) flow path and the appropriate operator action, in accordance with 2-EOI-1, "RPV Control," when suppression pool subsequently increases to +7 inches.

The licensee contends that the applicant can follow two different procedural paths: 1). 2-EOI-1 Flow chart Step RC/L-4 (which directs the use of RCIC "with CST suction if possible.") 2). the RCIC procedure which allows the operator to operate RCIC in 2-EOI-1, Appendix 5C at Step 11. Step 11 states that "If … it is desired to align RCIC suction to the suppression pool…" Additionally, the reference of the suppression pool reaching +7 inches further is explained with OI-71, "Reactor Core Isolation Cooling," Precaution and Limitation knowledge. This calls for the swap to the suppression pool suction and therefore allowing for two potential correct answers.

The licensee contends that both answers A and B should be given as credit for this question.

NRC RESOLUTION:

After reviewing the licensee's contention and supporting information (the ability to use either procedure, 2-EOI-1 Flow chart Step RC/L-4 or RCIC in 2-EOI-1, Appendix 5C at Step 11) it appears to support that either action would be allowed in accordance with either procedure. Since the applicant's could use either procedure to answer the question and both answers were listed in two distractors, the comment appears to be a valid.

Base on the above discussion, the licensee's recommendation was accepted; answer choices A and B will be considered as correct answers. The answer key was changed to reflect this change.

RO QUESTION # 59

LICENSEE COMMENT:

The question concerns itself with Unit 3 at a power level of 93% when a turbine control valve fails open, what happens to the EHC pressure set at and how would reactor pressure react to this perturbation either lower or remain the same.

The licensee identifies that during the initial written examination submittal, the correct answer was initially C which was based on theoretical documented system response. During examination validation, operators indicated that there was operating experience (OE) that showed that pressure would lower a small amount for the conditions presented in the question. This was run on the simulator and it was seen that pressure lowered a small amount (approximately 0.5%). Based on validation and the use of the simulator the answer was changed to A.

The licensee identifies four reference documents (2 FSAR sections, the EHC lesson plan and the Unit 3 Simulator Malfunction Cause and Effects Manual) that provide the rationalization for answer C.

The licensee contends that both answers A and C should be given as credit for this question.

NRC RESOLUTION:

The NRC disagreed with this argument. While there were four plant documents that identified that the system will work as described in answer C, there were no documented references that were presented that state that system pressure would lower a small amount as stated in answer A. The licensee stated that there was Operating Experience (OE) associated with the system's response; however, the licensee only provided anecdotal evidence and justification based on simulator operations and not of the actual plant. The licensee failed to prove that the actual plant responds in this manner nor has it justified the validity of the simulators performance as described by the OE (lowers a small amount). The licensee makes the assumption that the simulator would respond in the correct manner and did not justify why this should be considered correct.

Based on the above discussion, the NRC partially agrees with the licensee's comments. Based on the information provided, the correct answer will be changed from A to C as originally submitted in the draft examination submittal. Answer C will be considered the only technically correct answer. The answer key will be changed to reflect this change.

RO QUESTION # 68

LICENSEE COMMENT:

The question concerns itself with the application of a freeze seal and the requirements of thawing the freeze seal in accordance with SPP-10.2, Appendix E, "Special Requirements for Mechanical Clearances." The question requires the applicants to identify how the procedure deals with the clearance and the position of the vent and drain valves during the thawing process.

The licensee contends that this question was "unintentionally" written at the wrong license level and not linked to the job requirements of an RO. The licensee contends that the SRO would direct the requirements for releasing a clearance and briefing associated with freeze seals.

The licensee states that the "…question evaluates the knowledge and abilities at a level that is unique to the SRO job position. Therefore, in accordance with NUREG 1021, ES-401, this is an SRO-Only question." Additionally, the licensee contends that "there are no objectives" in OPL171.086, "TVAN Clearance Program," lesson plan specific to the requirements of Freeze Seals."

The licensee proposes the question be deleted from the examination.

NRC RESOLUTION:

The NRC disagrees with the above arguments, in that:

While OPL171.086 does not have specific learning objectives associated with the freeze seal, in learning objective, V.B.9 covers "State the special requirements for mechanical and electrical clearances." And learning objective V.B.19 covers "Describe the various appendices that apply to the TVAN clearance procedure." On page 11 of 26 of lesson plan OPL171.086 the outline on line S. identifies the requirements for Appendix D, "Requirements for Mechanical Clearances," and the outline further identifies on outline line S.3 where "Freeze plugs," are discussed. In the Instructor Notes column on this page, there is reference for this area that is associated with Objectives V.b.9 & 19. This clearly identifies the link between the learning objective and the material that is to be covered. Additionally, in OPL171.086 there are not any objectives as designated as "SRO-only" learning objectives, in that, there are no learning objectives that are "unique to the SRO only position."

Additionally, the BWR K/A Catalog, NUREG 1023, "Knowledge and Abilities Catalog for Nuclear Power Plant Operators, Boiling Water Reactors," K/A G 2.2.13, Knowledge of tagging and clearance procedures," has an importance rating of 4.1. It is the NRCs understanding that auxiliary operators, as well as, RO's are normally involved in placing and removing clearances from plant equipment with or without freeze seals in place. The knowledge being tested in this question concerns itself with the generic knowledge of freeze seals and would be expected of an operator to know the basic requirements associated with these types of seals and how they are administratively handled.

Based on the above discussion, the NRC disagrees with the licensee's proposed resolution. The question will not be deleted from the examination and the answer key will remain "as is" with answer B being the only technically correct answer.

SIMULATOR FIDELITY REPORT

Facility Licensee: Browns Ferry Nuclear Plant

Facility Docket No.: 05000259, 05000260, 05000296

Operating Test Administered: July 13 - 17, 2009

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and, without further verification and review in accordance with Inspection Procedure 71111.11 are not indicative of noncompliance with 10 CFR 55.46. No licensee action is required in response to these observations.

No simulator fidelity or configuration issues were identified.