

March 28, 2002

Mr. Howard Bergendahl  
Vice President - Nuclear, Davis-Besse  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
5501 North State Route 2  
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION  
INITIAL LICENSE EXAMINATION REPORT 50-346/02-301(DRS)

Dear Mr. Bergendahl:

On March 8, 2002, the NRC completed initial operator licensing examinations at your Davis-Besse Nuclear Power Station. The enclosed report presents the results of the examination.

NRC examiners administered the operating test during the week of March 4, 2002, and the written examination on March 8, 2002. Three Reactor Operator and four Senior Reactor Operator applicants were administered license examinations. The results of the examinations were finalized on March 22, 2002. Four applicants passed all sections of their respective examinations and were issued applicable operator licenses. One senior reactor operator applicant failed the written examination and will not be issued a senior reactor operator license. Two reactor operator applicants passed all sections of their examinations; however, due to their written examination results, they will not be issued their respective operator licenses until possible appeals are resolved. As explained in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1, Section ES-501, paragraph D.3.c, the regional office shall delay issuing licenses for those applicants with a written examination passing grade of 81 percent or below until those applicants who failed the examination have had an opportunity to appeal their license denials.

In accordance with 10 CFR 2.790 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 control system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADQAMS/index.html> (the Public Electronic Reading Room).

H. Bergendahl

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

Sincerely,

David E. Hills, Chief  
Operations Branch  
Division of Reactor Safety

Docket No. 50-346  
License No. NPF-3

Enclosures: 1. Operator Licensing Examination  
Report 50-346/02-301(DRS)  
2. Simulation Facility Report  
3. Written Examination Review  
4. Written Examinations and Answer  
Keys (RO & SRO)

cc w/encls 1, 2 & 3: B. Saunders, President - FENOC  
Plant Manager  
Manager - Regulatory Affairs  
M. O'Reilly, FirstEnergy  
Ohio State Liaison Officer  
R. Owen, Ohio Department of Health  
Public Utilities Commission of Ohio

cc w/encls 2, 2, 3, &4: D. Imlay, Training Department

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

Sincerely,  
**/RA by D. Pelton Acting For/**  
David E. Hills, Chief  
Operations Branch  
Division of Reactor Safety

Docket No. 50-346  
License No. NPF-3

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1. Operator Licensing Examination Report 50-346/02-301(DRS)
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-346  
License No: NPF-3

Report No: 50-346/02-301(DRS)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

Location: 5501 North State Route 2  
Oak Harbor, OH 43449-9760

Dates: March 4 through March 8, 2002

Examiners M. Bielby, Chief Examiner  
D. McNeil, Examiner

Approved by: David E. Hills, Chief  
Operations Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 05000346/02-301, on 03/04-08/2002, FirstEnergy Nuclear Operating Company, Davis-Besse Nuclear Power Station. Initial License Examination Report.

The announced operator licensing initial examination was conducted by regional examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1.

### Examination Summary:

- Three reactor operator and four senior reactor operator applicants were administered written examinations and operating tests for initial operator licensing. Four applicants passed all sections of their respective examinations and were issued applicable operator licenses. One senior reactor operator applicant failed the written examination and will not be issued a senior reactor operator license. Two reactor operator applicants passed all sections of their examinations; however, due to their written examination results being 81 percent or less, they will not be issued their respective operator licenses until possible appeals are resolved (Section 4OA5.1).

## Report Details

### **4. OTHER ACTIVITIES (OA)**

#### 4OA5 Other

##### .1 Initial Licensing Examinations

###### a. Examination Scope:

The NRC examiners conducted announced operator licensing initial examinations during the week of March 4, 2002. The facility's training staff used the guidance established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1, to prepare the examination outline and to develop the written examination and operating test. The NRC examiners administered the operating test during the week of March 4, 2002, and the written examination on March 8, 2002. Three Reactor Operator and four Senior Reactor Operator applicants were examined.

###### b. Findings

###### Written Examination:

The licensee developed the written examination. During their initial review, the examiners determined that the examination, as submitted by the licensee, was within the range of acceptability expected for a proposed examination. During examination validation the week of February 11, 2002, examination changes agreed upon between the NRC and the licensee were incorporated according to the guidance contained in NUREG-1021. The licensee submitted three post examination comments. The specific NRC review and resolution of those comments are included in Enclosure 3 to this report and were incorporated into the final grading of the written examination.

###### Operating Test:

The NRC examiners determined that the operating test, as originally submitted by the licensee, was within the range of acceptability expected for a proposed examination. Examination changes, agreed upon between the NRC and the licensee, were made according to NUREG-1021.

###### Examination Results:

Three Reactor Operator applicants and four Senior Reactor Operator applicants were administered written examinations and operating tests for initial operator licensing. Four applicants passed all sections of their respective examinations and were issued applicable operator licenses. One senior reactor operator applicant failed the written examination and will not be issued a senior reactor operator license. Two reactor operator applicants passed all sections of their examinations; however, due to their written examination results being 81 percent or less, they will not be issued their respective operator licenses until possible appeals are resolved.

.2 Examination Security

a. Inspection Scope:

The examiners reviewed and observed the licensee's implementation of examination security requirements during the examination preparation and administration.

b. Findings:

The NRC examiners determined that the licensee's examination security practices associated with the development and administration of the operator license examinations were satisfactory.

4OA6 Meetings

Exit Meeting

The chief examiner presented the examination team's preliminary observations and findings to Mr. Bergendahl and other members of the licensee management on March 8, 2002. The licensee acknowledged the observations and findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

H. Bergendahl, Vice President - Nuclear  
D. Bondy, Sr. Instructor, Nuclear Training  
J. House, Sr. Instructor, Nuclear Training  
W. Mugge, Manager, Nuclear Training  
R. Pell, Manager, Plant Operations  
G. Wolf, Licensing Engineer

NRC

M. Bielby, Chief Examiner

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

## LIST OF ACRONYMS

ADAMS	Agency-Wide Document Access and Management System
DRS	Division of Reactor Safety
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
RO	Reactor Operator
SRO	Senior Reactor Operator
SDM	Shutdown Margin
MDFP	Motor Driven Feedwater Pump
SG	Steam Generator
AFPT	Auxiliary Feedwater Pump Turbine
SFAS	Safety Features Actuation System
SFRCS	Steam Feed Rupture Control System
MFPT	Main Feedwater Pump Turbine
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
CTRM	Control Room
RPS	Reactor Protection System

SIMULATION FACILITY REPORT

Facility Licensee: Davis-Besse Station

Facility Docket No.: 50-346

Operating Tests Administered: March 4 - 7, 2002

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
None	

## Written Examination Review

Written Examination RO and SRO Question Number 1:

Comment: The question asks how the Shutdown Margin (SDM) is affected by xenon and a stuck out control rod following a reactor trip. The facility recommends acceptance of an additional answer ["c."] - xenon will increase the SDM, the stuck control rod has no effect on the SDM. [S]ince the definition of Shutdown Margin in Tech Specs (see attached) assumes that the most reactive control rod is stuck out then by definition the stuck control rod would not affect the SDM.

NRC Resolution: The Davis-Besse Technical Specifications, Definitions, Section 1.13, states, "Shutdown Margin shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: b. All control rod assemblies (safety and regulating) are fully inserted except for the single rod assembly of highest reactivity worth which is assumed to be fully withdrawn."

The question stem asks how SDM is affected by xenon and a stuck out control rod. However, the stem does not clarify whether the Technical Specification definition of SDM, or the general concept of SDM, is to be used to describe the effects of the xenon and stuck out control rod. Therefore, accept both answers "a." and "c." as correct.

Written Examination RO and SRO Question Number 3:

Comment: The question asks for the condition under which an RO [reactor operator] can start the MDFP [motor driven feedwater pump] during a transient that leads to a loss of all feedwater. The facility recommends the acceptance of an additional answer ["a."] - Can start the MDFP immediately, if he/she announces his/her intended action in accordance with Specific Rule 4, SG [steam generator] Level Setpoints. [S]ince per DB-OP-00000, Conduct of Operations, Step 6.10.2, the RO is responsible for taking action in accordance with applicable procedures to stabilize the plant in a known safe condition. Starting the MDFP is a required action for the loss of all feedwater event described in the stem - both AFPTs [auxiliary feedwater pump turbines] are tripped and both MFPTs [main feedwater pump turbines] will be lost when an SFRCS [steam feed rupture control system] isolation trip is generated due to overcooling (secondary steam loads much larger than primary heat production with RCP's [reactor coolant pumps] off). The RO's announcement of intent to start the MDFP prompts the CTRM [control room] SROs [senior reactor operator] to concur with a necessary mitigation action. If the MDFP is not started to maintain SG levels in accordance with Specific Rule 4, RCS [reactor coolant system] overheating will result. When the RO announces his/her intent to start the MDFP, the RO is maintaining compliance with the responsibility to maintain safe plant conditions per step 6.10.2 of DB-OP-00000.

NRC Resolution: Davis-Besse procedure DB-OP-00000, Conduct of Operations, Step 6.10.2, states that the RO is responsible for taking action in accordance with applicable procedures to stabilize the plant in a known safe condition. Procedure DB-OP-02000, RPS [reactor protection system], SFAS [safety features actuation system], SFRCS Trip, or SG Tube Rupture, contains Specific Rule 4 which directs starting the MDFP for a loss of all feedwater event. The question stem stated that the reactor and RCPs were tripped from 100% power and both AFPTs tripped on overspeed. The loss of RCPs results in secondary steam loads being much larger than primary heat production. The RCS overcooling event generates an SFRCS isolation trip that trips both MFPTs. The loss of AFPTs AND MFPTs results in a total loss of feedwater. The Specific Rules and licensee's Conduct of Operations procedures allow the operators to take corrective action by announcing their intended actions. As a result, both answers "a." and "c." are considered correct answers.

Written Examination RO and SRO Question Number 9:

Comment: The question asks for what Abnormal Procedures have priority over DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture. The facility recommends accepting an additional answer ["a."] - DB-OP-02508, Control Room Evacuation, and DB-OP-02519, Serious Control Room Fire. [S]ince the Control Room Evacuation procedure directs the operators to perform the same actions as DB-OP-02000. Also, unlike most other abnormal procedures, the Control Room Evacuation procedure does not direct the procedure user to route DB-OP-02000 when the reactor is tripped. The abnormal procedure discussion for the Control Room Evacuation procedure states that the actions in the abnormal procedure, either in the Control Room or in the plant, are based on the actions in DB-OP-02000.

NRC Resolution: Davis-Besse procedures for DB-OP-02508, Control Room Evacuation, and DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, are equivalent in that they direct operators to perform the same actions. DB-OP-02519, Serious Control Room Fire, clearly takes priority over DB-OP-02000. Therefore, the combination of procedures DB-OP-02508 and DB-OP-02519 are considered to have priority over DB-OP-02000. As a result, both answers "a." and "b." are considered correct answers.

WRITTEN EXAMINATIONS AND ANSWER KEYS (RO/SRO)

RO Initial Examination ADAMS Accession # ML020870768

SRO Initial Examination ADAMS Accession # ML020870772