

2011 DAVIS-BESSE NUCLEAR POWER STATION

INITIAL EXAMINATION

PROPOSED EXAM FILES

Barry S. Allen
Vice President - Nuclear

- OPERATOR LICENSE EXAMINATION MATERIAL -
- WHEN SEPARATED FROM ENCLOSURE, HANDLE THIS
DOCUMENT AS UNRESTRICTED -

419-321-7676
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October 20, 2011

10 CFR 55

L-11-290

Mr. Dave Reeser
Chief Examiner, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Subject:

Davis-Besse Nuclear Power Station, Unit 1
Docket Number 50-346, License Number NPF-3
Submittal of Written Operator License Examinations, Operating Tests, and
Supporting Reference Material

Dear Mr. Reeser:

Enclosed are the written examinations, operating tests, and supporting reference material prepared by the Davis-Besse Nuclear Power Station (DBNPS) staff for the licensed operator examinations to be administered during the weeks of December 5 and December 12, 2011.

The enclosed items and supporting reference material, which are considered confidential, are being submitted to the NRC for review and approval in accordance with 10 CFR 55.40, "Written Examinations and Operating Tests – Implementation" and NUREG 1021, Operator Licensing Examination Standards for Power Reactors (Revision 9, Supplement 1).

Modifications to the previous submitted outlines were made as a result of feedback received from the chief examiner and the validation process. These modifications to the scenario outlines are identified in bold italic print.

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OCT 21 2011

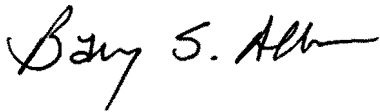
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Davis-Besse Nuclear Power Station, Unit 1
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The materials enclosed shall be withheld from public disclosure until after the scheduled examinations are complete.

There are no regulatory commitments included in the submittal. If there are any questions or if additional information is required, please contact Mr. Anthony Stallard, Superintendent – Nuclear Operations, at (419) 321-7161.

Sincerely,



Barry S. Allen

vaw

Enclosure: NUREG 1021 Forms and Operator License Examination Outline

cc: Regional Administrator, NRC Region III (w/o Enclosure)
Chief, Operations Branch, NRC Region III (w/o Enclosure)
DB-1 NRC/NRR Senior Project Manager (w/o Enclosure)
DB-1 Senior Resident Inspector (w/o Enclosure)
USNRC Document Control Desk (w/o Enclosure)
Utility radiological Safety Board (w/o Enclosure)

- OPERATOR LICENSE EXAMINATION MATERIAL -
- SHALL BE WITHHELD FROM PUBLIC DISCLOSURE UNTIL AFTER THE
SCHEDULED EXAMINATIONS ARE COMPLETE -

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Enclosure
L-11-290

NUREG 1021 Forms and Operator License Examination Outline

List of Enclosed NUREG Forms

Form ES-201-3, Examination Security Agreement (Up-to-date Copies)
Form ES-301-1, Administrative Topics Outline RO (Rev. 1)
Form ES-301-1, Administrative Topics Outline SRO (Rev. 1)
Form ES-301-2, Control Room/In-Plant Systems Outline RO (Rev. 1)
Form ES-301-2, Control Room/In-Plant Systems Outline SRO-I (Rev. 1)
Form ES-301-2, Control Room/In-Plant Systems Outline SRO-U (Rev. 1)
Form ES-301-3, Operating Test Quality Checklist (Rev. 1)
Form ES-301-4, Simulator Scenario Quality Checklist (Rev. 1)
Form ES-301-5, Transient and Event Checklist (Rev. 1)
Form ES-301-6, Competencies Checklist (Rev. 1)
RO Written Outline
Form ES-401-2, PWR Examination Outline RO (Rev. 1)
Form ES-401-3, Generic Knowledge and Abilities Outline Tier 3 RO (Rev. 1)
SRO Written Outline
Form ES-401-2, PWR Examination Outline SRO (Rev. 1)
Form ES-401-3, Generic Knowledge and Abilities Outline Tier 3 SRO (Rev. 1)
Form ES-401-4, Record of Rejected K/As (Rev. 1)
Form ES-401-6, Written Examination Quality Checklist (Rev. 1)
Form ES-D-1, Scenario Outline (Rev. 1)

List of Enclosed Exam Materials

6 Administrative Topics JPMs with applicable procedures
12 Control Room/In-Plant Systems JPMs with applicable procedures
4 simulator Scenarios
100 Written Examination Questions, answers, and reference pages for each
question's correct answer
References provided to the candidates for the written examination

Facility: <u>Davis-Besse</u>		Date of Exam <u>12/5 thru 12/15 2011</u>	Operating Test No.: <u>2011 NRC exam</u>
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1. GENERAL CRITERIA	Initials		
	a	b*	c#
a. The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	173	178	172
b. There is no day-to-day repetition between this and other operating tests to be administered during this examination.	177	178	172
c. The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	173	178	172
d. Overlap with the written examination and between different parts of the operating test is within acceptable limits.	172	178	172
e. It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	173	178	172

2. WALK-THROUGH CRITERIA			
a. Each JPM includes the following, as applicable: <ul style="list-style-type: none"> • initial conditions • initiating cues • references and tools, including associated procedures • reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee • specific performance criteria that include: <ul style="list-style-type: none"> - detailed expected actions with exact criteria and nomenclature - system response and other examiner cues - statements describing important observations to be made by the applicant - criteria for successful completion of the task - identification of critical steps and their associated performance standards - restrictions on the sequence of steps, if applicable 	173	178	172
b. Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.	173	178	172

3. SIMULATOR CRITERIA			
a. The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	173	178	172

Printed Name / Signature	Date
a. Author <u>Richard J. Brookes / [Signature]</u>	<u>11/23/11</u>
b. Facility Reviewer (*) <u>Anthony Stallard / [Signature]</u>	<u>11/23/11</u>
c. NRC Chief Examiner (#) <u>David W. Reeser / [Signature]</u>	<u>11/29/11</u>
d. NRC Supervisor <u>Raymond K. Walton / [Signature]</u>	<u>11/30/2011</u>

NOTE: * The facility signature is not applicable for NRC-developed tests.
Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.

Facility: Davis-BesseDate of Exam 12/5 thru 12/15 2011Operating Test No.: 2011 NRC Exam

QUALITATIVE ATTRIBUTES					Initials			
					a	b*	c#	
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.				RJZ	MS	SZ	
2.	The scenarios consist mostly of related events.				RJZ	MS	SZ	
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 				RJZ	MS	SZ	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.				RJZ	MS	SZ	
5.	The events are valid with regard to physics and thermodynamics.				RJZ	MS	SZ	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.				RJZ	MS	SZ	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.				RJZ	MS	SZ	
8.	The simulator modeling is not altered.				RJZ	MS	SZ	
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.				RJZ	MS	SZ	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.5 of ES-301.				RJZ	MS	SZ	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).				RJZ	MS	SZ	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).				RJZ	MS	SZ	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.				RJZ	MS	SZ	
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.5.d)					Actual Attributes			
1.	Total malfunctions (5-8)	7	8	8	6	RJZ	MS	SZ
2.	Malfunctions after EOP entry (1-2)	2	2	3	2	RJZ	MS	SZ
3.	Abnormal events (2-4)	3	4	3	2	RJZ	MS	SZ
4.	Major transients (1-2)	1	2	1	2	RJZ	MS	SZ
5.	EOPs entered/requiring substantive actions (1-2)	1	2	1	1	RJZ	MS	SZ
6.	EOP contingencies requiring substantive actions (0-2)	1	0	1	1	RJZ	MS	SZ
7.	Critical tasks (2-3)	3	2	2	3	RJZ	MS	SZ

Facility: Davis-BesseDate of Exam 12/5 thru 12/15 2011Exam Level: RO ☒ SRO ☒

Item Description	Initial		
	a	b*	c#
1. Questions and answers technically accurate and applicable to facility	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
2. a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
3. SRO questions are appropriate per Section D.2.d of ES-401	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
4. The sampling process was random and systematic (If more than 4 RO or 2 SRO questions are repeated from the last two NRC licensing exams, consult the NRR OL program office.)			<i>ryg</i>
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: X_ the audit exam was systematically and randomly developed; or X_ the audit exam was completed before the license exam was started; or ___ the examinations were developed independently; or ___ the licensee certifies that there is no duplication; or ___ other (explain)	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank <u>29/4</u> (28/4)	Modified <u>1/0</u> (2/0)	New <u>45/21</u>
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/analysis level; the SRO exam may exceed 60 percent If the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory <u>30/6</u> (40%/(24%)) <u>28/6</u> (37.3/24%)	C/A <u>45/19</u> (60%/(76%)) <u>47/19</u> (62.1/76%)	<i>ryg</i>
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
9. Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the Tier to which they are assigned; deviations are justified	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with value on cover sheet	<i>ryg</i>	<i>ryg</i>	<i>ryg</i>

	Printed Name / Signature	Date
a. Author	<u>Richard J. Brooks / <i>ryg</i></u>	<u>11/23/11</u>
b. Facility Reviewer (*)	<u>Anthony Stallard / <i>ryg</i></u>	<u>11/23/11</u>
c. NRC Chief Examiner (#)	<u>Dan W. Reiser / <i>ryg</i></u>	<u>11/29/11</u>
d. NRC Supervisor	<u>Raymond K. Watson / <i>ryg</i></u>	<u>11/30/2011</u>

Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations.

Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.