Submitted Operating Test and Written Examination

Contains the following:

Initial Submittal Cover Letter

ES-301-3 Operating Test Quality Checklist
ES-301-4 Simulator Scenario Quality Checklist (Op Test 1)
ES-301-5 Transient and Event Checklist (test 1)(copy)
ES-301-6 Competencies Checklist (test 1)(copy)
ES-401-1 BWR SRO Examination Outline
ES-401-2 BWR RO Examination Outline
ES-401-7 Written Examination Quality Checklist (SRO)
ES-401-7 Written Examination Quality Checklist (RO)
Five (5) administrative job performance measures (RO)
Four (4) administrative job performance measures and 2 questions (SRO)
Ten (10) operating job performance measures (RO/SRO)
Four (4) dynamic simulator scenario guides (ES-D-1 & ES-D-2 equivalent for each scenario)
Written examination (128 questions are independently marked as RO/Both/SRO)
Written examination question comments. (Only questions with comments are included.)

Operating test comments were retained by facility trainers to prepare final operating test sheets. The operating test comments were inadvertently shredded upon completion of the examination.

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Dresden Generating Station
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An Exelon Company

10 CFR 55.40

December 18, 2000

PSLTR: #00-0165

Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dresden Nuclear Power Station Units 2 and 3
Facility Operating License Nos. DPR-19 and DPR-25
Docket Nos. 50-237 and 50-249

Subject: Submittal of Integrated Initial License Training Examination Materials

Reference: Letter from P. Swafford (ComEd) to USNRC, "Initial License Examination Integrated Examination Outline," dated October 12, 2000

Enclosed are the examination materials that are being submitted by the Dresden Nuclear Power Station (DNPS) in support of the Initial License Examination scheduled for the weeks of February 5 and 12, 2001, at DNPS.

This submittal includes the Senior Reactor Operator and Reactor Operator Written Examinations, Job Performance Measures, and Integrated Plant Operation Scenario Guides.

These examination materials have been developed in accordance with NUREG-1021, "Operator Licensing Examination Standards," Revision 8 Supplement 1. Please note that reference materials are attached to each individual examination question or item.

Some minor modifications have been made to the Integrated Examination Outline transmitted in the referenced letter with regards to the written examinations, administrative walkthroughs, job performance measures and operational scenarios in order to improve balance and content. These changes improve examination quality and are in compliance with Revision 8 Supplement 1 of NUREG-1021.

Some modifications or adjustments to the examination material may be required prior to examination administration due to plant procedure changes that occur after this submittal.

In accordance with NUREG 1021, Revision 8 Supplement 1, Section ES-201, please ensure that these materials are withheld from public disclosure until after the examinations are complete.

Should you have any questions concerning this letter, please contact Mr. D.F. Ambler, Regulatory Assurance Manager, at (815) 942-2920 extension 3800.

Respectfully,

Preston Swafford
Site Vice President
Dresden Nuclear Power Station

Enclosures: Updated RO Written Exam Sample Plan
Updated SRO Written Exam Sample Plan
Updated Operational Scenarios Sample Plan
Updated Administrative Walkthrough
Job Performance Measures Sample Plan
Updated Job Performance Measure Sample Plan
RO/SRO Composite Examination with references attached
Job Performance Measures with references attached
Administrative Walkthrough Job Performance Measures/
Questions with references attached
Integrated Plant Operation Scenario Guides
Completed Checklists: ES-301-3
ES-301-4
ES-301-5
ES-301-6
ES-401-7
Examination Security Agreements (ES-201-3)
Listing of Submitted Sample Plan Changes

cc: NRC Document Control Desk – w/o enclosures
NRC Senior Resident Inspector - Dresden Nuclear Power Station – w/o enclosures

bcc: Project Manager- NRR (Unit 2/3) w/o enclosures
Officer of Nuclear Facility Safety – IDNS w/o enclosures
Senior Reactor Analyst – NRC Region III w/o enclosures
Manager of Energy Practice - Winston and Strawn w/o enclosures
Director, Licensing - Exelon Midwest ROG w/o enclosures
Director Licensing and Compliance - Exelon w/o enclosures
Station Manager – Dresden Nuclear Power Station w/o enclosures
Regulatory Assurance Manager – Dresden Nuclear Power Station w/o enclosures
Training Manager – Dresden Nuclear Power Station w/o enclosures
Operations Manager – Dresden Nuclear Power Station w/o enclosures
Shift Operations Superintendent – Dresden Nuclear Power Station w/o enclosures
Operation Training Supervisor – Dresden Nuclear Power Station w/o enclosures
R. Weidner – Initial License Training Specialist w/o enclosures
J. Schmitz – Initial License Training Specialist w/o enclosures
S. Russell – NGG Operator Licensing w/o enclosures
J. Hansen – NGG Operator Licensing w/o enclosures
R. Wegner - Exelon w/o enclosures
Document Control Desk - Licensing (Hard Copy w/o enclosures)
Document Control Desk - Licensing (Electronic Copy)
Dresden Regulatory Assurance - Subject File w/o enclosures
SVP Numerical File – PSLTR: #00-0165 w/o enclosures

Facility:	Date of Examination:	Operating Test Number:

	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).			
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.			
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).			
d.	Overlap with the written examination and between operating test categories is within acceptable limits.			
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.			
	2. WALK-THROUGH (CATEGORY A & B) CRITERIA	--	--	--
a.	Each JPM includes the following, as applicable: · initial conditions · initiating cues · references and tools, including associated procedures · 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: - 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			
b.	The prescripted questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.			
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.			
d.	At least 20 percent of the JPMs on each test are new or significantly modified.			
	3. SIMULATOR (CATEGORY C) CRITERIA	--	--	--
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.			

	Printed Name / Signature	Date
a. Author	JEFFREY A. SCHMITZ /	12/16/00
b. Facility Reviewer(*)	T.S. Pg/cnyt	12-16-00
c. NRC Chief Examiner (*)	Dell R. McNeil	01/03/00
d. NRC Supervisor (*)	David E. Hills	1/29/01

(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.

Facility: DRESDEN Date of Exam: 2/5/01 Scenario Numbers: A / B / C / D Operating Test No.: 1

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.			
2.	The scenarios consist mostly of related events.			
3.	Each event description consists of · 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)			
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.			
5.	The events are valid with regard to physics and thermodynamics.			
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			
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.			
8.	The simulator modeling is not altered.			
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.			
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.4 of ES-301.			
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).			
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).			
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.			

TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes (A*/B/C/B)	--	--	--
1.	Total malfunctions (5-8)	5/6/5/5			
2.	Malfunctions after EOP entry (1-2)	1/1/1/1			
3.	Abnormal events (2-4)	2/2/3/2			
4.	Major transients (1-2)	1/1/2/1			
5.	EOPs entered/requiring substantive actions (1-2)	2/2/2/2			
6.	EOP contingencies requiring substantive actions (0-2)	1/1/1/1			
7.	Critical tasks (2-3)	2/2/2/3			

* SCENARIO A - SPARE

OPERATING TEST NO.: **# 1**

Applicant Type	Evolution Type	Minimum Number	Scenario Number		
			A	***B***	***C***
RO	Reactivity	1	***2 /***	***1 /***	***2 /***
	Normal	1	***/ 1***	***/ 2***	***/ 1***
	Instrument / Component	4	***6/3,4,5***	***3,4 / 5,6***	***3,5,6 / 4***
	Major	1	***7***	***7***	***7***
As RO	Reactivity	1	***2***	***1***	***2***
	Normal	0	***N/A***	***N/A***	***N/A***
	Instrument / Component	2	***6/3***	***0/5,6***	***3,6/0***
	Major	1	***7***	***7***	***7***
SRO-I					
	Reactivity	0	***N/A***	***N/A***	***N/A***
	Normal	1	***1***	***2***	***1***
As SRO	Instrument / Component	2	***6/3,4,5***	***3,4/5,6***	***3,5,6/4***
	Major	1	***7***	***7***	***7***
SRO-U	Reactivity	0	***N/A***	***N/A***	***N/A***
	Normal	1	***1***	***2***	***1***
	Instrument / Component	2	***6/3,4,5***	***3,4/5,6***	***3,5,6/4***
	Major	1	***7***	***7***	***7***

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type. *(NSO / Assist NSO)*

(2) Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3) Whenever practical both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____ 12/16/00

Chief Examiner: _____ 01/03/00

OPERATING TEST NO.: **# 1**

Applicant Type	Evolution Type	Minimum Number	Scenario Number		
			D		
RO	Reactivity	1	***2 /***		
	Normal	1	***/ 1***		
	Instrument / Component	4	***3,5 / 4,6***		
	Major	1	***7***		
As RO	Reactivity	1	***2***		
	Normal	0	***N/A***	***N/A***	***N/A***
	Instrument / Component	2	3/6		
	Major	1	***7***		
SRO-I					
As SRO	Reactivity	0	***N/A***	***N/A***	***N/A***
	Normal	1	***1***		
	Instrument / Component	2	***3,5/4,6***	,	,
	Major	1	***7***		
SRO-U	Reactivity	0	***N/A***	***N/A***	***N/A***
	Normal	1	***1***		
	Instrument / Component	2	***3,5/4,6***	,	,
	Major	1	***7***		

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type. *(NSO / Assist NSO)*

(2) Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3) Whenever practical both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: 12/16/00

Chief Examiner: 01/03/00

OPERATING TEST NO.: 1

Competencies	Applicant #1 RO/SRO-I/SRO-U SRO portion SCENARIO			Applicant #2 RO/SRO-I/SRO-U RO portion SCENARIO			Applicant #3 RO/SRO-I/SRO-U RO portion SCENARIO		
	A	B	C	A	B	C	A	B	C
Understand and Interpret Annunciators and Alarms	3-5,6	3-8	3-8	4,5,6,7	5,6	3,6,7	4,5,6	3,4	1,4,5
Diagnose Events and Conditions	3-8	3-8	3-8	3,6,7	5-8	3,6,7	4-8	3,4,7	4,5,7,8
Understand Plant and System Response	1-8	1-8	1-8	2,3	1,5-8	3,6,7	4-8	3,4,7	4,5,6-8
Comply With and Use Procedures (1)	1-8	1-8	1-8	1-3,6,7	1,2,5,6,8	3,6,7	1,2,4,8	1-4	1,2,4,7,8
Operate Control Boards (2)	2,3,6,7	1,2,5-8	2,3,6,7	2,3,6,7	1,2,5-8	2,3,6,7	1,2,4-8	1-4,6,7	1,2,4,6-8
Communicate and Interact With the Crew	1-8	1-8	1-8	1-4,6,7	1,2,5-8	2-7	1,2,4-8	1-4,6,7	1,2,4-8
Demonstrate Supervisory Ability (3)	1-8	1-8	1-8	N/A	N/A	N/A	N/A	N/A	N/A
Comply With and Use Tech. Specs. (3)	5	5	5	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.
~~Event #s in parenthesis indicate Assist NSO as primary responder.~~ JMS

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: 12/16/00

Chief Examiner: 01/03/01

OPERATING TEST NO.: # 1

Competencies	Applicant #1 RO/SRO-I/SRO-U SCENARIO			Applicant #2 RO/SRO-I/SRO-U SCENARIO			Applicant #3 RO/SRO-I/SRO-U SCENARIO		
	D	—	—	D	—	—	D	—	—
Understand and Interpret Annunciators and Alarms	3-8	—	—	3,6,7	—	—	4,5,7,8	—	—
Diagnose Events and Conditions	3-8	—	—	3,6,7	—	—	4,5,7,8	—	—
Understand Plant and System Response	1-8	—	—	1-3,6,7	—	—	1,2,4,5,7,8	—	—
Comply With and Use Procedures (1)	1-8	—	—	1-3,6,7	—	—	1,2,4,5,7,8	—	—
Operate Control Boards (2)	2,3,6,7	—	—	2,3,6,7	—	—	1,2,4,5	—	—
Communicate and Interact With the Crew	1-8	—	—	2-7	—	—	1,2,4-8	—	—
Demonstrate Supervisory Ability (3)	1-8	—	—	N/A	—	—	N/A	—	—
Comply With and Use Tech. Specs. (3)	3,5	—	—	N/A	—	—	N/A	—	—

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.
~~Event #s in parenthesis indicate Assist NSO as primary responder.~~

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: 12/16/00

Chief Examiner: 01/03/01

Rev 2

Facility: Dresden

BWR SRO Examination Outline

Printed: 11/27

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-1

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295003	Partial or Complete Loss of A.C. Power / 6	X						AK1.06 - Station blackout: Plant-Specific	4.0*	1
295007	High Reactor Pressure / 3						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
295007	High Reactor Pressure / 3				X			AA1.04 - Safety/relief valve operation: Plant-Specific	4.1*	1
295009	Low Reactor Water Level / 2						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
295010	High Drywell Pressure / 5		X					AK2.01 - Suppression pool level	3.3	1
295010	High Drywell Pressure / 5			X				AK3.03 - Radiation level monitoring	3.5	1
295013	High Suppression Pool Temperature / 5						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
295014	Inadvertent Reactivity Addition / 1		X					AK2.01 - RPS	4.1	1
295015	Incomplete SCRAM / 1			X				AK3.01 - Bypassing rod insertion blocks	3.7	1
295016	Control Room Abandonment / 7				X			AA1.06 - Reactor water level	4.1	1
295017	High Off-Site Release Rate / 9						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
295017	High Off-Site Release Rate / 9	X						AK1.02 - †Protection of the general public	4.3*	1

Facility: Dresden

BWR SRO Examination Outline

Printed: 11/27/00

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-1

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295023	Refueling Accidents / 8				X			AA1.06 - Neutron monitoring	3.4	1
295023	Refueling Accidents / 8			X				AK3.02 - Interlocks associated with fuel handling equipment	3.8*	1
295024	High Drywell Pressure / 5					X		EA2.01 - Drywell pressure	4.4*	1
295024	High Drywell Pressure / 5					X		EA2.06 - Suppression pool temperature	4.1	1
295025	High Reactor Pressure / 3	X						EK1.06 - Pressure effects on reactor water level	3.6	1
295026	Suppression Pool High Water Temperature / 5			X				EK3.02 - Suppression pool cooling	4.0	1
* 295026	Suppression Pool High Water Temperature / 5					X		EA2.01 - Suppression pool water temperature	4.2*	1
295030	Low Suppression Pool Water Level / 5						X	2.4.11 - Knowledge of abnormal condition procedures.	3.6	1
295031	Reactor Low Water Level / 2					X		EA2.04 - Adequate core cooling	4.8*	1
295031	Reactor Low Water Level / 2		X					EK2.03 - Low pressure core spray	4.3*	1
295037	SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1	X						EK1.01 - Reactor pressure effects on reactor power	4.3*	1
295038	High Off-Site Release Rate / 9				X			EA1.06 - Plant ventilation	3.6	1
500000	High Containment Hydrogen Concentration / 5					X		EA2.02 - Oxygen monitoring system availability	3.5	1
500000	High Containment Hydrogen Concentration / 5		X					EK2.08 - Wet Well vent system	3.6	1

* 295026 EA2.01 RANDOMLY SELECTED TO REPLACE 295013 AK3.01. 295013 AK3.01 AND 295026 EK3.02 BOTH TEST SAME KNOWLEDGE (Both RO+SRO) 11/27/00

Facility: Dresden

BWR SRO Examination Outline

Printed: 11/27/[illegible]

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-1

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
	K/A Category Totals:	4	4	4	4	5	5	Group Point Total:		26

Facility: Dresden

BWR SRO Examination Outline

Printed: 11/27/00

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

Form ES-401-1

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295002	Loss of Main Condenser Vacuum / 3			X				AK3.01 - Reactor SCRAM: Plant-Specific	3.8	1
295004	Partial or Complete Loss of D.C. Power / 6				X			AA1.03 - A.C. electrical distribution	3.6	1
295005	Main Turbine Generator Trip / 3		X					AK2.05 - Extraction steam system	2.7	1
295008	High Reactor Water Level / 2	X						AK1.03 - Feed flow/steam flow mismatch	3.2	1
295012	High Drywell Temperature / 5					X		AA2.02 - Drywell pressure	4.1	1
* 295019	Partial or Complete Loss of Instrument Air / 8					X		AA2.02 - Status of safety-related instrument air system loads (see AK2.1-AK2.19)	3.7	1
295020	Inadvertent Containment Isolation / 5			X				AK3.08 - Suppression chamber pressure response	3.5	1
295021	Loss of Shutdown Cooling / 4		X					AK2.03 - RHR/shutdown cooling	3.6	1
295021	Loss of Shutdown Cooling / 4			X				AK3.04 - Maximizing reactor water cleanup flow	3.4	1
295022	Loss of CRD Pumps / 1					X		AA2.01 - Accumulator pressure	3.6	1
295022	Loss of CRD Pumps / 1		X					AK2.07 - Reactor pressure (SCRAM assist): Plant-Specific	3.6	1
295028	High Drywell Temperature / 5				X			EA1.03 - Drywell cooling system	3.9	1
295028	High Drywell Temperature / 5					X		EA2.03 - Reactor water level	3.9	1
295033	High Secondary Containment Area Radiation Levels / 9						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1

* Randomly selected to replace 600000 2.2.22. (SRO only) (11/09/00)

Facility: Dresden

BWR SRO Examination Outline

Printed: 11/27/

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-1**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295034	Secondary Containment Ventilation High Radiation / 9	X						EK1.01 - Personnel protection	4.1	1
295036	Secondary Containment High Sump/Area Water Level / 5						X	2.4.11 - Knowledge of abnormal condition procedures.	3.6	1
600000	Plant Fire On Site / 8	X						AK1.01 - Fire Classifications by type	2.8	1

K/A Category Totals: 3 3 3 2 4 2 **Group Point Total:** 17

BWR SRO E[illegible]amination Outline Printed: 11/2[illegible]/00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
202002	Recirculation Flow Control System / 1			X									K3.01 - Core flow	3.5	1
203000	RHR/LPCI: Injection Mode (Plant Specific) / 2				X								K4.07 - Emergency generator load sequencing	3.9	1
206000	High Pressure Coolant Injection System / 2			X									K3.01 - Reactor water level control: BWR-2, 3, 4	4.0	1
207000	Isolation (Emergency) Condenser / 4		X										K2.02 - Initiation logic: BWR-2, 3	3.7	1
207000	Isolation (Emergency) Condenser / 4				X								K4.08 - Protection against incomplete steam condensation (condensate outlet valve does not fully open): BWR-2,3,(P-Spec)	3.6	1
209001	Low Pressure Core Spray System / 2											X	2.1.7 - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1
209001	Low Pressure Core Spray System / 2	X											K1.03 - Keep fill system	3.0	1
211000	Standby Liquid Control System / 1							X					A1.02 - Explosive valve indication	3.9	1
* 215005	Average Power Range Monitor/Local Power Range Monitor System / 7						X						K6.07 - Flow converter/comparator network: Plant-Specific	3.3	1
218000	Automatic Depressurization System / 3	X											K1.05 - Remote shutdown system: Plant-Specific	3.9	1

* 215005 K6.07 WAS RANDOMLY SELECTED TO REPLACE 216000 K6.03. 216000 K6.03 IS NOT APPLICABLE AT DRESDEN AS LEVEL (REACTOR WATER) INSTRUMENTS ARE NOT TEMPERATURE COMPENSATED. (Both RO + SRO) 11/27/00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
218000	Automatic Depressurization System / 3										X		A4.08 - Suppression pool level	3.8	1
223001	Primary Containment System and Auxiliaries / 5											X	2.2.22 - Knowledge of limiting conditions for operations and safety limits.	4.1	1
223001	Primary Containment System and Auxiliaries / 5							X					A1.05 - Hydrogen concentration	3.3	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5											X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5								X				A2.08 - †Surveillance testing	3.1	1
226001	RHR/LPCI: Containment Spray System Mode / 5		X										K2.02 - Pumps	2.9*	1
226001	RHR/LPCI: Containment Spray System Mode / 5					X							K5.06 - Vacuum breaker operation	2.8	1
239002	Relief/Safety Valves / 3						X						K6.03 - A.C. power: Plant-Specific	2.9*	1
241000	Reactor/Turbine Pressure Regulating System / 3					X							K5.03 - Reactor power vs. reactor pressure	3.6	1
259002	Reactor Water Level Control System / 2								X				A2.06 - Loss of controller signal output	3.4	1

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
261000	Standby Gas Treatment System / 9									X			A3.02 - Fan start	3.1	1
264000	Emergency Generators (Diesel/Jet) / 6	X											K1.05 - Emergency generator fuel oil supply system	3.3	1
264000	Emergency Generators (Diesel/Jet) / 6									X			A3.03 - Indicating lights, meters, and recorders	3.4	1

K/A Category Totals: 3 2 2 2 2 2 2 2 2 1 3 **Group Point Total:** 23

BWR SRO E[illegible]ination Outline Printed: 11/2[illegible]00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201001	Control Rod Drive Hydraulic System / 1			X									K3.03 - Control rod drive mechanisms	3.2	1
201001	Control Rod Drive Hydraulic System / 1					X							K5.02 - Flow indication	2.6	1
202001	Recirculation System / 1		X										K2.01 - Recirculation pumps: Plant-Specific	3.2	1
204000	Reactor Water Cleanup System / 2								X				A2.08 - RWCU pump seal failure	3.1	1
214000	Rod Position Information System / 7						X						K6.02 - Position indication probe	2.7	1
215002	Rod Block Monitor System / 7	X											K1.06 - Control rod selection: BWR-3, 4, 5	3.1	1
215002	Rod Block Monitor System / 7					X							K5.01 - Trip reference selection: Plant-Specific	2.8	1
215003	Intermediate Range Monitor (IRM) System / 7											X	2.1.7 - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1
215003	Intermediate Range Monitor (IRM) System / 7				X								K4.05 - Changing detector position	3.0	1
234000	Fuel Handling Equipment / 8										X		A4.01 - †Neutron monitoring system	3.9	1
245000	Main Turbine Generator and Auxiliary Systems / 4									X			A3.05 - Control valve operation	3.1	1

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
262002	Uninterruptable Power Supply (A.C./D.C.) / 6							X					A1.02 - Motor generator outputs	2.9	1
263000	D.C. Electrical Distribution / 6											X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	1
K/A Category Totals:		**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**Group Point Total:**		**13**

BWR SRO E[illegible]ination Outline Printed: 11/2[illegible]00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 3** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201003	Control Rod and Drive Mechanism / 1							X					A1.03 - CRD drive water flow	2.9	1
256000	Reactor Condensate System / 2						X						K6.01 - Plant air systems	2.8	1
288000	Plant Ventilation Systems / 9											X	2.1.12 - Ability to apply technical specifications for a system.	4.0	1
288000	Plant Ventilation Systems / 9				X								K4.03 - Automatic starting and stopping of fans	2.9	1
K/A Category Totals:		**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**		**Group Point Total:**	**4**

Generic Knowledge a(Abilities Outline (Tier 3)

Printed: 11/27/2000

BWR SRO Examination Outline

Form ES-401-5

Facility: Dresden

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.12	Ability to apply technical specifications for a system.	4.0	1
	2.1.14	Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
	2.1.11	Knowledge of less than one hour technical specification action statements for systems.	3.8	1
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.	4.0	1
			Category Total:	**4**
Equipment Control	2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
	2.2.14	Knowledge of the process for making configuration changes.	3.0	1
	2.2.24	Ability to analyze the affect of maintenance activities on LCO status.	3.8	1
	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	3.5	1
			Category Total:	**4**
Radiation Control	2.3.3	Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).	2.9	1
	2.3.6	Knowledge of the requirements for reviewing and approving release permits.	3.1	1
	2.3.9	Knowledge of the process for performing a containment purge.	3.4	1
	2.3.1	Knowledge of 10 CFR 20 and related facility radiation control requirements.	3.0	1
	2.3.2	Knowledge of facility ALARA program.	2.9	1
			Category Total:	**5**

Generic Knowledge a(Abilities Outline (Tier 3)

BWR SRO Examination Outline

Printed: 11/27/2000

Form ES-401-5

Facility: Dresden

Generic Category	KA	KA Topic	Imp.	Points
Emergency Plan	2.4.32	Knowledge of operator response to loss of all annunciators.	3.5	1
	2.4.49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4.0	1
	2.4.50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	1
	2.4.13	Knowledge of crew roles and responsibilities during EOP flowchart use.	3.9	1
			Category Total:	**4**
			Generic Total:	**17**

Facility: Dresden Form ES-401-1

Exam Date: 02/05/2001 **Exam Level:** SRO

Tier	Group	K/A Category Points											Point Total
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	
1. Emergency & Abnormal Plant Evolutions	1	4	4	4				4	5			5	26
	2	3	3	3				2	4			2	17
	Tier Totals	7	7	7				6	9			7	43
2. Plant Systems	1	3	2	2	2	2	2	2	2	2	1	3	23
	2	1	1	1	1	2	1	1	1	1	1	2	13
	3	0	0	0	1	0	1	1	0	0	0	1	4
	Tier Totals	4	3	3	4	4	4	4	3	3	2	6	40
3. Generic Knowledge And Abilities		Cat 1			Cat 2			Cat 3			Cat 4		
		4			4			5			4		17

Note:

1. Attempt to distribute topics among all K/A Categories; select at least one topic from every K/A category within each tier.
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category tier.

Rev 2

Facility: Dresden

BWR RO Examination Outline

Printed: 11/27/00

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295005	Main Turbine Generator Trip / 3		X					AK2.05 - Extraction steam system	2.6	1
295007	High Reactor Pressure / 3				X			AA1.04 - Safety/relief valve operation: Plant-Specific	3.9	1
295009	Low Reactor Water Level / 2						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.3	1
295010	High Drywell Pressure / 5		X					AK2.01 - Suppression pool level	3.2	1
295010	High Drywell Pressure / 5			X				AK3.03 - Radiation level monitoring	3.2	1
295014	Inadvertent Reactivity Addition / 1		X					AK2.01 - RPS	3.9	1
295014	Inadvertent Reactivity Addition / 1			X				AK3.01 - Reactor SCRAM	4.1*	1
295015	Incomplete SCRAM / 1			X				AK3.01 - Bypassing rod insertion blocks	3.4	1
295024	High Drywell Pressure / 5					X		EA2.06 - Suppression pool temperature	4.1	1
295025	High Reactor Pressure / 3	X						EK1.06 - Pressure effects on reactor water level	3.5	1
295031	Reactor Low Water Level / 2		X					EK2.03 - Low pressure core spray	4.2	1
295037	SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1	X						EK1.01 - Reactor pressure effects on reactor power	4.1*	1
500000	High Containment Hydrogen Concentration / 5		X					EK2.08 - Wet Well vent system	3.2	1

K/A Category Totals: 2 5 3 1 1 1 **Group Point Total:** 13

See SRO outline for comments

Facility: Dresden

BWR RO Examination Outline

Printed: 11/27/0

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295002	Loss of Main Condenser Vacuum / 3			X				AK3.01 - Reactor SCRAM: Plant-Specific	3.7	1
295003	Partial or Complete Loss of A.C. Power / 6	X						AK1.06 - Station blackout: Plant-Specific	3.8	1
295004	Partial or Complete Loss of D.C. Power / 6				X			AA1.03 - A.C. electrical distribution	3.4	1
295008	High Reactor Water Level / 2	X						AK1.03 - Feed flow/steam flow mismatch	3.2	1
295008	High Reactor Water Level / 2				X			AA1.09 - Ability to drain: Plant-Specific	3.3	1
295016	Control Room Abandonment / 7				X			AA1.06 - Reactor water level	4.0	1
295017	High Off-Site Release Rate / 9	X						AK1.02 - †Protection of the general public	3.8*	1
295017	High Off-Site Release Rate / 9		X					AK2.05 - Stack-gas monitoring system: Plant-Specific	3.4	1
295020	Inadvertent Containment Isolation / 5			X				AK3.08 - Suppression chamber pressure response	3.3	1
295020	Inadvertent Containment Isolation / 5					X		AA2.03 - Reactor power	3.7	1
295022	Loss of CRD Pumps / 1		X					AK2.07 - Reactor pressure (SCRAM assist): Plant-Specific	3.4	1
295026	Suppression Pool High Water Temperature / 5			X				EK3.02 - Suppression pool cooling	3.9	1
295026	Suppression Pool High Water Temperature / 5					X		EA2.01 - Suppression pool water temperature	4.1*	1
295028	High Drywell Temperature / 5				X			EA1.03 - Drywell cooling system	3.9	1
295030	Low Suppression Pool Water Level / 5						X	2.4.11 - Knowledge of abnormal condition procedures.	3.4	1

Facility: Dresden

BWR RO Examination Outline

Printed: 11/27/20

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295034	Secondary Containment Ventilation High Radiation / 9	X						EK1.01 - Personnel protection	3.8	1
295038	High Off-Site Release Rate / 9				X			EA1.06 - Plant ventilation	3.5	1
295038	High Off-Site Release Rate / 9		X					EK2.01 - Radwaste	3.1	1
600000	Plant Fire On Site / 8	X						AK1.01 - Fire Classifications by type	2.5	1

K/A Category Totals: 5 3 3 5 2 1 **Group Point Total:** 19

Facility: Dresden

BWR RO Examination Outline

Printed: 11/27/.0

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 3

Form ES-401-2

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295021	Loss of Shutdown Cooling / 4		X					AK2.03 - RHR/shutdown cooling	3.6	1
295021	Loss of Shutdown Cooling / 4			X				AK3.04 - Maximizing reactor water cleanup flow	3.3	1
295023	Refueling Accidents / 8			X				AK3.02 - Interlocks associated with fuel handling equipment	3.4	1
295023	Refueling Accidents / 8				X			AA1.06 - Neutron monitoring	3.3	1

K/A Category Totals: 0 1 2 1 0 0 **Group Point Total:** 4

BWR RO E[illegible]ination Outline Printed: 11/2[illegible]00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201001	Control Rod Drive Hydraulic System / 1			X									K3.03 - Control rod drive mechanisms	3.1	1
201001	Control Rod Drive Hydraulic System / 1					X							K5.02 - Flow indication	2.6	1
202002	Recirculation Flow Control System / 1			X									K3.01 - Core flow	3.5	1
203000	RHR/LPCI: Injection Mode (Plant Specific) / 2				X								K4.07 - Emergency generator load sequencing	3.7	1
203000	RHR/LPCI: Injection Mode (Plant Specific) / 2											X	2.2.12 - Knowledge of surveillance procedures.	3.0	1
206000	High Pressure Coolant Injection System / 2			X									K3.01 - Reactor water level control: BWR-2, 3, 4	4.0	1
206000	High Pressure Coolant Injection System / 2		X										K2.03 - Initiation logic: BWR-2, 3, 4	2.8*	1
207000	Isolation (Emergency) Condenser / 4		X										K2.02 - Initiation logic: BWR-2, 3	3.5	1
207000	Isolation (Emergency) Condenser / 4				X								K4.08 - Protection against incomplete steam condensation (condensate outlet valve does not fully open): BWR-2,3,(P-Spec)	3.4	1
209001	Low Pressure Core Spray System / 2	X											K1.03 - Keep fill system	2.9	1
209001	Low Pressure Core Spray System / 2											X	2.1.10 - Knowledge of conditions and limitations in the facility license.	2.7	1

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
211000	Standby Liquid Control System / 1							X					A1.02 - Explosive valve indication	3.8	1
215003	Intermediate Range Monitor (IRM) System / 7				X								K4.05 - Changing detector position	2.9	1
215004	Source Range Monitor (SRM) System / 7						X						K6.05 - Trip units	2.6	1
215005	Average Power Range Monitor/Local Power Range Monitor System / 7										X		A4.04 - LPRM back panel switches, meters and indicating lights	3.2	1
215005	Average Power Range Monitor/Local Power Range Monitor System / 7						X						K6.07 - Flow converter/comparator network: Plant-Specific	3.2	1
218000	Automatic Depressurization System / 3	X											K1.05 - Remote shutdown system: Plant-Specific	3.9	1
218000	Automatic Depressurization System / 3										X		A4.08 - Suppression pool level	3.7	1
223001	Primary Containment System and Auxiliaries / 5							X					A1.05 - Hydrogen concentration	3.1	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5								X				A2.08 - †Surveillance testing	2.7	1
239002	Relief/Safety Valves / 3						X						K6.03 - A.C. power: Plant-Specific	2.7*	1

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
241000	Reactor/Turbine Pressure Regulating System / 3					X							K5.03 - Reactor power vs. reactor pressure	3.5	1
241000	Reactor/Turbine Pressure Regulating System / 3							X					A1.24 - Main turbine eccentricity	2.6	1
259002	Reactor Water Level Control System / 2								X				A2.06 - Loss of controller signal output	3.3	1
259002	Reactor Water Level Control System / 2									X			A3.01 - Runout flow control: Plant-Specific	3.0*	1
261000	Standby Gas Treatment System / 9									X			A3.02 - Fan start	3.2	1
264000	Emergency Generators (Diesel/Jet) / 6	X											K1.05 - Emergency generator fuel oil supply system	3.2	1
264000	Emergency Generators (Diesel/Jet) / 6									X			A3.03 - Indicating lights, meters, and recorders	3.4	1
K/A Category Totals:		3	2	3	3	2	3	3	2	3	2	2	**Group Point Total:**		28

BWR RO E[illegible]ination Outline Printed: 11/2[illegible]00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201003	Control Rod and Drive Mechanism / 1							X					A1.03 - CRD drive water flow	2.9	1
202001	Recirculation System / 1		X										K2.01 - Recirculation pumps: Plant-Specific	3.2*	1
204000	Reactor Water Cleanup System / 2								X				A2.08 - RWCU pump seal failure	2.9	1
214000	Rod Position Information System / 7						X						K6.02 - Position indication probe	2.7	1
215002	Rod Block Monitor System / 7	X											K1.06 - Control rod selection: BWR-3, 4, 5	3.0	1
215002	Rod Block Monitor System / 7					X							K5.01 - Trip reference selection: Plant-Specific	2.6	1
219000	RHR/LPCI: Torus/Suppression Pool Cooling Mode / 5								X				A2.12 - Valve logic failure: Plant-Specific	3.0	1
226001	RHR/LPCI: Containment Spray System Mode / 5		X										K2.02 - Pumps	2.9*	1
226001	RHR/LPCI: Containment Spray System Mode / 5					X							K5.06 - Vacuum breaker operation	2.6	1
230000	RHR/LPCI: Torus/Suppression Pool Spray Mode / 5									X			A3.01 - Valve operation	3.4	1
245000	Main Turbine Generator and Auxiliary Systems / 4									X			A3.05 - Control valve operation	3.0	1
245000	Main Turbine Generator and Auxiliary Systems / 4				X								K4.10 - Extraction steam	2.6	1

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
256000	Reactor Condensate System / 2						X						K6.01 - Plant air systems	2.8	1
256000	Reactor Condensate System / 2			X									K3.02 - CRD hydraulics system	3.2	1
262002	Uninterruptable Power Supply (A.C./D.C.) / 6							X					A1.02 - Motor generator outputs	2.5	1
263000	D.C. Electrical Distribution / 6			X									K3.02 - Components using D.C. control power (i.e. breakers)	3.5	1
290001	Secondary Containment / 5				X								K4.03 - Fluid leakage collection	2.8	1
290001	Secondary Containment / 5										X		A4.09 - System status lights and alarms: Plant-Specific	3.2	1
290003	Control Room HVAC / 9										X		A4.04 - Environmental conditions	2.8	1

K/A Category Totals: 1 2 2 2 2 2 2 2 2 2 0 **Group Point Total:** 19

BWR RO E[illegible]ination Outline Printed: 11/2[illegible]00

Facility: Dresden

ES - 401 **Plant Systems - Tier 2 / Group 3** **Form ES-401-2**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
215001	Traversing In-Core Probe / 7						X						K6.04 - Primary containment isolation system: Mark-I&II(Not-BWR1)	3.1	1
215001	Traversing In-Core Probe / 7							X					A1.06 - Radiation alarms: (Not-BWR1)	2.9	1
234000	Fuel Handling Equipment / 8										X		A4.01 - †Neutron monitoring system	3.7	1
288000	Plant Ventilation Systems / 9				X								K4.03 - Automatic starting and stopping of fans	2.8	1
K/A Category Totals:		**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**1**	**0**		**Group Point Total:**	**4**

Generic Knowledge a(Abilities Outline (Tier 3)

Printed: 11/27/2000

BWR RO Examination Outline

Form ES-401-5

Facility: Dresden

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.11	Knowledge of less than one hour technical specification action statements for systems.	3.0	1
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.	3.0	1
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.8	1
			Category Total:	3
Equipment Control	2.2.24	Ability to analyze the affect of maintenance activities on LCO status.	2.6	1
	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4.0	1
	2.2.33	Knowledge of control rod programming.	2.5	1
			Category Total:	3
Radiation Control	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1
	2.3.1	Knowledge of 10 CFR 20 and related facility radiation control requirements.	2.6	1
	2.3.2	Knowledge of facility ALARA program.	2.5	1
			Category Total:	3
Emergency Plan	2.4.49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4.0	1
	2.4.50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	1
	2.4.13	Knowledge of crew roles and responsibilities during EOP flowchart use.	3.3	1
	2.4.9	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.	3.3	1
			Category Total:	4
			Generic Total:	13

ES-401 **BWR RO Examination Outline** Printed: 11/27/2000

Facility: Dresden Form ES-401-2

Exam Date: 02/05/2001 **Exam Level:** RO

Tier	Group	K/A Category Points											Point Total
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	
1. Emergency & Abnormal Plant Evolutions	1	2	5	3				1	1			1	13
	2	5	3	3				5	2			1	19
	3	0	1	2				1	0			0	4
	Totals Tier	7	9	8				7	3			2	36
2. Plant Systems	1	3	2	3	3	2	3	3	2	3	2	2	28
	2	1	2	2	2	2	2	2	2	2	2	0	19
	3	0	0	0	1	0	1	1	0	0	1	0	4
	Tier Totals	4	4	5	6	4	6	6	4	5	5	2	51

3. Generic Knowledge And Abilities	Cat 1	Cat 2	Cat 3	Cat 4	
	3	3	3	4	13

Note:

1. Attempt to distribute topics among all K/A Categories; select at least one topic from every K/A category within each tier.
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category tier.

Facility: DRESDEN Date of Exam: 2/5/01 Exam Level: RO/SRO

Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility				TSP	
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				TSP	
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				TSP	
~~4.~~	~~No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right~~	~~NRC~~	~~Other~~	—	—	
4.	~~[No (Less than 5 percent)~~ Question duplication from the license screening/audit exam ~~(if independently written)]~~ was controlled as indicated below (check the item that applies) and appears appropriate: __ the audit exam was systematically and randomly developed; or X the audit exam was completed before the license exam was started; or __ the licensee certifies that there is no duplication; or __ the license exam was prepared by the NRC				TSP	
5.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank: 27	Modified: 2	New: 71	TSP	
6.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory: 42	C/A: 58		TSP	
7.	References/handouts provided do not give away answers				TSP	
8.	Question content conforms with specific K/A statements in the ~~distribution meets~~ previously approved examination outline; deviations are justified				TSP	
9.	Question psychometric quality and format meet ES, Appendix B, guidelines				TSP	
10.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				TSP	

	Printed Name / Signature	Date
a. Author	JEFFREY A. SCHMITZ /	12/15/00
b. Facility Reviewer(*)	T.S. Ralph / T.S. Ralph	12-15-00
c. NRC Chief Examiner(*)	Dell R. McNeil / Dell R. McNeil	01/03/01
d. NRC Regional Supervisor(*)	David E. Hills / David Hills	1/29/01

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, ~~4,~~ 5, and ~~6~~8.
~~[] The items in brackets do not apply to NRC-prepared examinations.~~

Facility: DRESDEN Date of Exam: 2/5/01 Exam Level: RO/SRO

Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility					
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available					
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401					
4.	~~No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right~~	~~NRC~~	~~Other~~	—	—	
4.	~~[No (Less than 5 percent)~~ Question duplication from the license screening/audit exam ~~(if independently written)]~~ was controlled as indicated below (check the item that applies) and appears appropriate: __ the audit exam was systematically and randomly developed; or X the audit exam was completed before the license exam was started; or __ the licensee certifies that there is no duplication; or __ the license exam was prepared by the NRC					
5.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank: 30	Modified: 4	New: 66		
6.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory: 40	C/A: 60			
7.	References/handouts provided do not give away answers					
8.	Question content conforms with specific K/A statements in the ~~distribution meets~~ previously approved examination outline; deviations are justified					
9.	Question psychometric quality and format meet ES, Appendix B, guidelines					
10.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet					

	Printed Name / Signature	Date
a. Author	JEFFREY A. SCHMITZ /	12/15/00
b. Facility Reviewer(*)	T. S. O'Connor / T. S. Polanyi	12-15-00
c. NRC Chief Examiner(*)	DAVID R. MCNEIL /	01/03/01
d. NRC Regional Supervisor(*)	David E. Hills /	1/29/01

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, ~~4,~~ 5, and 6~~8~~.
~~[] The items in brackets do not apply to NRC-prepared examinations.~~