

INITIAL WRITTEN EXAMINATION OUTLINE - ES-401-1

FOR THE DRESDEN INITIAL EXAMINATION - FEBRUARY 2006

Facility Name: Dresden															Date of Exam: 2/6/06			
Tier	Group	RO K/A Category Points											SRO-Only Points					
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total		
1. Emergency & Abnormal Plant Evolutions	1	4	3	3	N/A			4	3	N/A			3	20	4	3	7	
	2	1	2	1	N/A			1	1	N/A			1	7	2	1	3	
	Tier Totals	5	5	4	N/A			5	4	N/A			4	27	6	4	10	
2. Plant Systems	1	2	1	2	3	2	3	3	2	2	3	3	26	3	2	5		
	2	1	1	1	2	1	1	1	1	1	1	1	12	2	1	3		
	Tier Totals	3	2	3	5	3	4	4	3	3	4	4	38	5	3	8		
3. Generic Knowledge and Abilities Categories				1	2		3		4		10			1	2	3	4	7
				2	3		3		2					2	2	2	1	

- Note:
1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
 2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
 3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
 4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
 5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
 6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
 - 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
 8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
 9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

ES-401	BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	A 3	K/A Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4				0 7			Nuclear boiler instrumentation system	3.1	1
295003 Partial or Complete Loss of AC / 6	0 1						Effect of battery discharge rate on capacity	2.7	1
295004 Partial or Total Loss of DC Pwr / 6			0 3				Reactor SCRAM: Plant-Specific	3.1	1
295005 Main Turbine Generator Trip / 3	0 3						Pressure effects on reactor level	3.5	1
295006 SCRAM / 1					0 4		Reactor pressure	4.1	1
295016 Control Room Abandonment / 7							Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4	1
295018 Partial or Total Loss of CCW / 8					0 4		System flow	2.9	1
295019 Partial or Total Loss of Inst. Air / 8							Knowledge of operator responsibilities during all modes of plant operation.	3	1
295021 Loss of Shutdown Cooling / 4				0 1			Reactor water cleanup system	3.4	1
295023 Refueling Acc / 8		0 3					Radiation monitoring equipment	3.4	1
295024 High Drywell Pressure / 5		0 1					HPCI (FWCI): Plant-Specific	3.9	1
295025 High Reactor Pressure / 3	0 6						Pressure effects on reactor water level	3.5	1
295026 Suppression Pool High Water Temp. / 5							Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4	1
295019 Partial or Total Loss of Inst. Air / 8				0 2			Instrument air system valves: Plant-Specific	3.3	1
295028 High Drywell Temperature / 5	0 1						Reactor water level measurement	3.5	1
295030 Low Suppression Pool Wtr Lvl / 5		0 8					SRV discharge submergence	3.5	1
295031 Reactor Low Water Level / 2					0 2		Reactor power	4	1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1			0 3				Lowering reactor water level	4.1	1
295038 High Off-site Release Rate / 9			0 4				Emergency depressurization	3.6	1
600000 Plant Fire On Site / 8				0 9			Plant fire zone panel (including detector location)	2.5	1
K/A Category Totals:	4	3	3	4	3	3	Group Point Total:		20

ES-401	BWR Examination Outline Plant Systems - Tier 2/Group 1 (RO)										Form ES-401-1		
E/APE # / Name / Safety Function	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	K/A Topic(s)	IR	#
203000 RHR/LPCI: Injection Mode	1 3										Drywell pressure	3.9	1
203000 RHR/LPCI: Injection Mode									0 8		System reset following automatic initiations: Plant-Specific	3.9	1
205000 Shutdown Cooling			0 3						3		Reactor temperatures (moderator, vessel, flange)	3.8	1
206000 HPCI	0 6										Suppression chamber: BWR-2, 3, 4	3.7	1
207000 Isolation (Emergency) Condenser							0 9				Valve operations: BWR-2, 3	3.7	1
209001 LPCS					0 4						Heat removal (transfer) mechanisms	2.8	1
211000 SLC							0 6				Flow indication: Plant-Specific	3.8	1
212000 RPS							0 1				RPS motor-generator output voltage	2.8	1
215003 IRM			0 2								Reactor manual control	3.6	1
215004 Source Range Monitor									0 3		RPS status	3.6	1
215005 APRM / LPRM									0 4		LPRM back panel switches, meters and indicating lights	3.2	1
218000 ADS					0 1						ADS logic operation	3.8	1
218000 ADS											Knowledge symptom based EOP mitigation strategies	3.1	1
223002 PCIS/Nuclear Steam Supply Shutoff						0 5					Containment instrumentation	3	1
239002 SRVs						0 3					A.C. power: Plant-Specific	2.7	1
259002 Reactor Water Level Control						0 1					Plant air systems	3.2	1
261000 SGTS									0 4		System temperature	3	1
262001 AC Electrical Distribution				0 6							Redundant power sources to vital buses	3.6	1
262001 AC Electrical Distribution											Knowledge of system purpose and/or function	2.8	1
262002 UPS (AC/DC)											Over voltage	2.5	1
263000 DC Electrical Distribution		0 1									Major D.C. loads	3.1	1
264000 EDGs				0 7							Local operation and control	3.3	1
300000 Instrument Air				0 3							Securing of IAS upon loss of cooling water	2.8	1
400000 Component Cooling Water											High/low surge tank level	2.8	1
400000 Component Cooling Water											Ability to recognize indications for system operating parameters which are entry-level conditions for tech specs	3.4	1
K/A Category Totals:	2	1	2	3	2	3	3	2	3	3	Group Point Total:		26

ES-401	BWR Examination Outline													Form ES-401-1		
Plant Systems - Tier 2/Group 2 (RO)																
E/APE # / Name / Safety Function	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	A 5	A 6	A 7	K/A Topic(s)	IR	#
201006 RWM													03	Latched group indication:	3	1
202001 Recirculation													07	Pump trips: Plant-Specific	3.3	1
204000 RWCU	05													Plant air systems	2.7	1
214000 RPIS			03											RMCS: Plant-Specific	3.1	1
223001 Primary CTMT and Aux.					11									Temperature measurement	2.7	1
230000 RHR/LPCI: Torus/Pool Spray Mode							09							Emergency generator loading	3.3	1
233000 Fuel Pool Cooling/Cleanup		02												RHR pumps	2.8	1
234000 Fuel Handling Equipment			02											Prevention of control rod movement during core alterations	3.3	1
239001 Main and Reheat Steam			01											Automatic isolation of steam lines	3.8	1
245000 Main Turbine Gen. / Aux.						05								Stator water cooling	2.9	1
259001 Reactor Feedwater														Loss of condensate pump	3.6	1
286000 Fire Protection														Ability to locate and operate components, including local controls	3.9	1
K/A Category Totals:	1	1	1	2	1	1	1		1	1				Group Point Total:		12

ES-401		BWR Examination Outline					Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (SRO)								
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	K/A Topic(s)	IR	#
295004 Partial or Total Loss of DC Pwr / 6					0	Battery voltage	2.9	1
295005 Main Turbine Generator Trip / 3					0	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4	1
295018 Partial or Total Loss of CCW / 8					0	Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
295023 Refueling Acc / 8					0	Entry conditions of emergency plan	4.6	1
295025 High Reactor Pressure / 3					0	Suppression pool level	3.9	1
295028 High Drywell Temperature / 5					0	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits	3.7	1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1					0	Containment conditions/isolations	4.2	1
K/A Category Totals:	0	0	0	0	0	Group Point Total:		7

ES-401		BWR Examination Outline						Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	A 3	K/A Topic(s)	IR	#
295007 High Reactor Pressure / 3					0	2	Reactor power	4.1	1
295022 Loss of CRD Pumps / 1					0	0	Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
295036 Secondary Containment High Sump/Area Water Level / 5					0	3	Cause of the high water level	3.8	1
K/A Category Totals:	0	0	0	0	0	2	Group Point Total:		3

Facility Name: Dresden Date of Exam: 2/6/06						
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1. 01	Knowledge of conduct of operations requirements.	3.7	1		
	2.1. 07	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	3.7	1		
	2.1.					
	2.1.					
	2.1. 04				3.4	1
	2.1. 22	Ability to determine Mode of Operation.			3.3	1
	Subtotal				2	
2. Equipment Control	2.2. 02	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4	1		
	2.2. 13	Knowledge of tagging and clearance procedures.	3.6	1		
	2.2. 34	Knowledge of the process for determining the internal and external effects on core reactivity.	2.8	1		
	2.2.					
	2.2. 15	Ability to identify and utilize as-built design and configuration change documentation to ascertain expected current plant configuration and operate the plant.			2.9	1
	2.2. 22	Knowledge of limiting conditions for operations and safety limits.			4.1	1
	Subtotal				3	
3. Radiation Control	2.3. 04	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	1		
	2.3. 10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure	2.9	1		
	2.3. 11	Ability to control radiation releases.	2.7	1		
	2.3.					
	2.3. 02	Knowledge of facility ALARA program.			2.9	1
	2.3. 03	Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).			2.9	1
	Subtotal				3	
4. Emergency Procedures / Plan	2.4. 06	Knowledge symptom based EOP mitigation strategies.	3.1	1		
	2.4. 23	Knowledge of the bases for prioritizing emergency procedure implementation during emergency operations.	2.8	1		
	2.4.					
	2.4. 35	Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.			3.5	1
	2.4.					
	2.4.					
	Subtotal				2	
Tier 3 Point Total				10		7