FINAL OUTLINES FOR THE

DRESDEN INITIAL EXAMINATION - APRIL 2007

Facility: Dresden Date of Examination: 4/23/07

Examination Level: RO ☒ SRO ☐ Operating Test Number: 2007-301

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, R	Initiate an Equipment Status Tag Generic.2.1.18
Conduct of Operations	D, R	*Verify Acceptance Criteria met for the Acoustic Monitor Based on Test Results* Generic.2.1.7
Equipment Control	N, R	Verify Reversal of Emergency Diesel Generator Cooling Water Flow Generic.2.2.12
Radiation Control	M, R	Select Personnel for Radiation Work Generic.2.3.4
Emergency Plan		

NOTE: *All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.*

* Type Codes & Criteria:

(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)

Facility: Dresden Date of Examination: 4/23/07

Examination Level: RO ☐ SRO ☒ Operating Test Number: 2007-301

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, R	Reactivation of an SRO License Generic.2.1.5
Conduct of Operations	D, R	Reportability Determination Generic.2.1.1
Equipment Control	D, R	Verify Semi-Annual HRSS AFU Operability Test Generic.2.2.12
Radiation Control	M, R	Select Personnel for Radiation Work Generic.2.3.4
Emergency Plan	N, R	Determine EP Classification and Fill out NARS form Generic.2.4.38

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

* Type Codes & Criteria:
(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)

Facility: Dresden Date of Examination: 4/23/07

Exam Level: RO ☒ SRO-I ☐ SRO-U ☐ Operating Test Number: 2007-301

Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Injection of Standby Liquid Control System (211000.A4.08)	A, D, S	1
b. Perform Core Spray Pump Test With Torus Available (209001.A4.01)	A, P, S	2
c. Unisolating One (1) Main Steam Line (239001.A4.01)	D, S	3
d. Start the SDC System for Cooling Mode of Operation (205000.A4.01)	D, S	4
e. Vent the Torus with level less than 30 feet (295024.EA1.14)	A, D, L, S	5
f. Crosstie Busses 28 and 29 (262001.A4.04)	L, N, S	6
g. Place a Control Rod OOS on the RWM (201006.A2.05)	L, N, S	7
h. SBGT Testing with receipt of an Auto Initiation Signal (261000.A2.10)	A, L, P, S	9
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Vent Scram Air Header for Alternate Insertion of Control Rods (295037.EA1.05)	D, E, R	1
j. Diesel Generator 2 Local Manual Start (264000.A4.04)	A, N, R	6
k. Transfer RPS to the Reserve Power Supply (212000.K4.03)	D	7

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

*Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

Facility: Dresden Date of Examination: 4/23/07

Exam Level: RO ☐ SRO-I ☒ SRO-U ☐ Operating Test Number: 2007-301

Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Injection of Standby Liquid Control System (211000.A4.08)	A, D, S	1
b. Perform Core Spray Pump Test With Torus Available (209001.A4.01)	A, P, S	2
c.		
d. Start the SDC System for Cooling Mode of Operation (205000.A4.01)	D, S	4
e. Vent the Torus with level less than 30 feet (295024.EA1.14)	A, D, L, S	5
f. Crosstie Busses 28 and 29 (262001.A4.04)	L, N, S	6
g. Place a Control Rod OOS on the RWM (201006.A2.05)	L, N, S	7
h. SBGT Testing with receipt of an Auto Initiation Signal (261000.A2.10)	A, L, P, S	9
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Vent Scram Air Header for Alternate Insertion of Control Rods (295037.EA1.05)	D, E, R	1
j. Diesel Generator 2 Local Manual Start (264000.A4.04)	A, N, R	6
k. Transfer RPS to the Reserve Power Supply (212000.K4.03)	D	7

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

*Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

Facility: Dresden Date of Examination: 4/23/07

Exam Level: RO ☐ SRO-I ☐ SRO-U ☒ Operating Test Number: 2007-301

Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a.		
b. Perform Core Spray Pump Test With Torus Available (209001.A4.01) (ESF)	A, P, S	2
c.		
d.		
e. Vent the Torus with level less than 30 feet (295024.EA1.14)	A, D, L, S	5
f.		
g. Place a Control Rod OOS on the RWM (201006.A2.05)	L, N, S	7
h.		

In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Vent Scram Air Header for Alternate Insertion of Control Rods (295037.EA1.05)	D, E, R	1
j. Diesel Generator 2 Local Manual Start (264000.A4.04)	A, N, R	6
k.		

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

*Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

Facility Name: Dresden Date of Exam: 4/23/07

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	4	N/A			3	4	N/A		2	20	4		3		7	
	2	1	1	2				1	1			1	7	2		1		3	
	Tier Totals	5	4	6				4	5			3	27	6		4		10	
2. Plant Systems	1	2	3	2	2	2	3	3	2	3	2	2	26	3		2		5	
	2	1	1	1	1	1	1	1	1	1	1	2	12	0	2	1		3	
	Tier Totals	3	4	3	3	3	4	4	3	4	3	4	38	5		3		8	
3. Generic Knowledge and Abilities Categories		1		2		3		4		10				1	2	3	4	7	
		2		3		2		3						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; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). 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	G	K/A Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4					03	01.23	Actual core flow; Ability to perform specific system and integrated plant procedures during different modes of plant operation.	3.3; 3.9	2
295003 Partial or Complete Loss of AC / 6	01						Effect of battery discharge rate on capacity	2.7	1
295004 Partial or Total Loss of DC Pwr / 6		02					Batteries	3	1
295005 Main Turbine Generator Trip / 3		08					A.C. electrical distribution.:	3.2	1
295006 SCRAM / 1	03						Reactivity control	3.7	1
295016 Control Room Abandonment / 7				06			Reactor water level	4	1
295018 Partial or Total Loss of CCW / 8		01					System loads	3.3	1
295019 Partial or Total Loss of Inst. Air / 8				02			Instrument air system valves: Plant-Specific	3.3	1
295021 Loss of Shutdown Cooling / 4				03			Component cooling water systems: Plant-Specific	3.1	1
295023 Refueling Acc / 8	01						Radiation exposure hazards	3.6	1
295024 High Drywell Pressure / 5			06				Reactor SCRAM	4	1
295025 High Reactor Pressure / 3						04.04	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4	1
295026 Suppression Pool High Water Temp. / 5	01						Pump NPSH	3	1
295027 High Containment Temperature / 5							Not Applicable		0
295028 High Drywell Temperature / 5			04				Increased drywell cooling	3.6	1
295030 Low Suppression Pool Wtr Lvl / 5					01		Suppression pool level	4.1	1
295031 Reactor Low Water Level / 2					01		Reactor water level	4.6	1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1			05				Cold shutdown boron weight: Plant-Specific	3.2	1
295038 High Off-site Release Rate / 9			04				Emergency depressurization	3.6	1
600000 Plant Fire On Site / 8					06		Need for pressurizing control room (recirculating mode)	2.5	1
K/A Category Totals:	4	3	4	3	4	2	Group Point Total:		20

ES-401	BWR Examination Outline								Form ES-401-1
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	**A 2**	G	K/A Topic(s)	IR	#
295002 Loss of Main Condenser Vac / 3									0
295007 High Reactor Pressure / 3									0
295008 High Reactor Water Level / 2			05				HPCI turbine trip: Plant-Specific	3.5	1
295009 Low Reactor Water Level / 2									0
295010 High Drywell Pressure / 5					**03**		Drywell radiation levels	3.3	1
295011 High Containment Temp / 5									0
295012 High Drywell Temperature / 5		01					Drywell ventilation	3.4	1
295013 High Suppression Pool Temp. / 5			01				Suppression pool cooling operation	3.6	1
295014 Inadvertent Reactivity Addition / 1									0
295015 Incomplete SCRAM / 1									0
295017 High Off-site Release Rate / 9						**01.14**	Knowledge of system status criteria which require the notification of plant personnel.	2.5	1
295020 Inadvertent Cont. Isolation / 5 & 7	04						Bottom head thermal stratification	2.5	1
295022 Loss of CRD Pumps / 1									0
295029 High Suppression Pool Wtr Lvl / 5									0
295032 High Secondary Containment Area Temperature / 5									0
295033 High Secondary Containment Area Radiation Levels / 9									0
295034 Secondary Containment Ventilation High Radiation / 9									0
295035 Secondary Containment High Differential Pressure / 5									0
295036 Secondary Containment High Sump/Area Water Level / 5									0
500000 High CTMT Hydrogen Conc. / 5				03			Containment Atmosphere Control System	3.4	1
K/A Category Totals:	1	1	2	1	**1**	**1**	Group Point Total:		7

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	G	K/A Topic(s)	IR	#
203000 RHR/LPCI: Injection Mode					02					06		Core cooling methods; System reset following automatic initiation: Plant-Specific	3.5; 3.9	2
205000 Shutdown Cooling	03											Recirculation loop temperature	3.4	1
206000 HPCI			02									Reactor pressure control: BWR-2, 3, 4	3.8	1
207000 Isolation (Emergency) Condenser			02									Reactor water level (EPG's address the isolation condenser as a water source): BWR-2, 3	3.8	1
209001 LPCS								02				Valve closures	3.2	1
209002 HPCS												Not Applicable		0
211000 SLC							01		01			Tank level ; Pump discharge pressure: Plant-Specific	3.6; 3.5	2
212000 RPS		01							07			RPS motor-generator sets; SCRAM air header pressure	3.2; 3.6	2
215003 IRM		01										IRM channels/detectors	2.5	1
215004 Source Range Monitor										04		SRM drive control switches	3.2	1
215005 APRM / LPRM		02										APRM channels	2.6	1
217000 RCIC												Not Applicable		0
218000 ADS					01						02, 22	ADS logic operation; Knowledge of limiting conditions for operations and safety limits.	3.8; 3.4	2
223002 PCIS/Nuclear Steam Supply Shutoff						05					01, 23	Containment instrumentation; Ability to perform specific system and integrated plant procedures during different modes of plant operation.	3; 3.9	2
239002 SRVs				04								Ensures even distribution of heat load to suppression pool, and adequate steam condensing	3.4	1
259002 Reactor Water Level Control						04						Reactor feedwater flow input	3.1	1
261000 SGTS							02					Primary containment pressure	3.1	1
262001 AC Electrical Distribution								10				Exceeding current limitations	2.9	1
262002 UPS (AC/DC)				01								Transfer from preferred power to alternate power supplies	3.1	1
263000 DC Electrical Distribution	01											A.C. electrical distribution	3.3	1
264000 EDGs							09					Maintaining minimum load on emergency generator (to prevent reverse power)	3	1
300000 Instrument Air									02			Air temperature	2.9	1
400000 Component Cooling Water						01						Valves	2.7	1
														0
K/A Category Totals:	2	3	2	2	2	3	3	2	3	2	2	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	G	K/A Topic(s)	IR	#
201001 CRD Hydraulic		03										Backup SCRAM valve solenoids	3.5	1
201002 RMCS														0
201003 Control Rod and Drive Mechanism								01				Stuck rod	3.4	1
201004 RSCS														0
201005 RCIS														0
201006 RWM														0
202001 Recirculation							03					Core flow	3.6	1
202002 Recirculation Flow Control										08		Recirculation system flow	3.3	1
204000 RWCU														0
214000 RPIS														0
215001 Traversing In-core Probe									03			Valve operation: Not-BWR1	2.5	1
215002 RBM											04, 06	Knowledge symptom based EOP mitigation strategies.	3.1	1
216000 Nuclear Boiler Inst.														0
219000 RHR/LPCI: Torus/Pool Cooling Mode														0
223001 Primary CTMT and Aux.														0
226001 RHR/LPCI: CTMT Spray Mode														0
230000 RHR/LPCI: Torus/Pool Spray Mode														0
233000 Fuel Pool Cooling/Cleanup						07						Component cooling water systems	2.7	1
234000 Fuel Handling Equipment														0
239001 Main and Reheat Steam														0
239003 MSIV Leakage Control														0
241000 Reactor/Turbine Pressure Regulator														0
245000 Main Turbine Gen. / Aux.				06								Generator protection	2.7	1
256000 Reactor Condensate	09											Offgas condenser: Plant-Specific	2.9	1
259001 Reactor Feedwater														0
268000 Radwaste														0
271000 Offgas					06							Catalytic recombination	2.7	1
272000 Radiation Monitoring														0
286000 Fire Protection														0
288000 Plant Ventilation														0
290001 Secondary CTMT														0
290003 Control Room HVAC											01, 32	Ability to explain and apply system limits and precautions.	3.4	1
290002 Reactor Vessel Internals			05									Off-site radiation levels	2.9	1
K/A Category Totals:	1	1	1	1	1	1	1	1	1	1	2	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	G	K/A Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4									0
295003 Partial or Complete Loss of AC / 6						02. 25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
295004 Partial or Total Loss of DC Pwr / 6					03		Battery voltage	2.9	1
295005 Main Turbine Generator Trip / 3									0
295006 SCRAM / 1									0
295016 Control Room Abandonment / 7									0
295018 Partial or Total Loss of CCW / 8					02		Cooling water temperature	3.2	1
295019 Partial or Total Loss of Inst. Air / 8									0
295021 Loss of Shutdown Cooling / 4						04. 31	Knowledge of annunciators alarms and indications, and use of the response instructions.	3.4	1
295023 Refueling Acc / 8									0
295024 High Drywell Pressure / 5									0
295025 High Reactor Pressure / 3					04		Suppression pool level	3.9	1
295026 Suppression Pool High Water Temp. / 5									0
295027 High Containment Temperature / 5									0
295028 High Drywell Temperature / 5						02. 25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
295030 Low Suppression Pool Wtr Lvl / 5									0
295031 Reactor Low Water Level / 2									0
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1					07		Containment conditions/isolations	4.2	1
295038 High Off-site Release Rate / 9									0
600000 Plant Fire On Site / 8									0
K/A Category Totals:	0	0	0	0	4	3	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	G	K/A Topic(s)	IR	#
295002 Loss of Main Condenser Vac / 3									0
295007 High Reactor Pressure / 3									0
295008 High Reactor Water Level / 2									0
295009 Low Reactor Water Level / 2									0
295010 High Drywell Pressure / 5									0
295011 High Containment Temp / 5									0
295012 High Drywell Temperature / 5									0
295013 High Suppression Pool Temp. / 5									0
295014 Inadvertent Reactivity Addition / 1									0
295015 Incomplete SCRAM / 1									0
295017 High Off-site Release Rate / 9									0
295020 Inadvertent Cont. Isolation / 5 & 7									0
295022 Loss of CRD Pumps / 1						04.04	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
295029 High Suppression Pool Wtr Lvl / 5									0
295032 High Secondary Containment Area Temperature / 5					02		Equipment operability	3.5	1
295033 High Secondary Containment Area Radiation Levels / 9									0
295034 Secondary Containment Ventilation High Radiation / 9									0
295035 Secondary Containment High Differential Pressure / 5									0
295036 Secondary Containment High Sump/Area Water Level / 5					03		Cause of the high water level	3.8	1
500000 High CTMT Hydrogen Conc. / 5									0
K/A Category Totals:	0	0	0	0	2	1	Group Point Total:		3

ES-401	BWR Examination Outline												Form ES-401-1	
	Plant Systems - Tier 2/Group 1 (SRO)													
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	G	K/A Topic(s)	IR	#
203000 RHR/LPCI: Injection														0
205000 Shutdown Cooling Mode														0
206000 HPCI														0
207000 Isolation (Emergency) Condenser											04. 06	Knowledge symptom based EOP mitigation strategies.	4	1
209001 LPCS								0 9				Low suppression pool level	3.3	1
209002 HPCS														0
211000 SLC														0
212000 RPS														0
215003 IRM														0
215004 Source Range Monitor														0
215005 APRM / LPRM								0 7				Recirculation flow channels flow mismatch	3.4	1
217000 RCIC														0
218000 ADS														0
223002 PCIS/Nuclear Steam Supply Shutoff														0
239002 SRVs														0
259002 Reactor Water Level Control														0
261000 SGTS														0
262001 AC Electrical Distribution								0 3				Loss of off-site power	4.3	1
262002 UPS (AC/DC)														0
263000 DC Electrical Distribution														0
264000 EDGs														0
300000 Instrument Air											04. 30	Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
400000 Component Cooling Water														0
K/A Category Totals:	0	0	0	0	0	0	0	3	0	0	2	Group Point Total:		5

ES-401	BWR Examination Outline											Form ES-401-1		
	Plant Systems - Tier 2/Group 2 (SRO)													
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	G	K/A Topic(s)	IR	#
201001 CRD Hydraulic														0
201002 RMCS														0
201003 Control Rod and Drive Mechanism														0
201004 RSCS														0
201005 RCIS														0
201006 RWM														0
202001 Recirculation														0
202002 Recirculation Flow Control														0
204000 RWCU								03				Flow control valve failure	2.9	1
214000 RPIS														0
215001 Traversing In-core Probe														0
215002 RBM														0
216000 Nuclear Boiler Inst.														0
219000 RHR/LPCI: Torus/Pool Cooling Mode														0
223001 Primary CTMT and Aux.														0
226001 RHR/LPCI: CTMT Spray Mode														0
230000 RHR/LPCI: Torus/Pool Spray Mode								10				Loss of coolant accident	4.1	1
233000 Fuel Pool Cooling/Cleanup														0
234000 Fuel Handling Equipment														0
239001 Main and Reheat Steam														0
239003 MSIV Leakage Control														0
241000 Reactor/Turbine Pressure Regulator														0
245000 Main Turbine Gen. / Aux.														0
256000 Reactor Condensate														0
259001 Reactor Feedwater														0
268000 Radwaste														0
271000 Offgas														0
272000 Radiation Monitoring														0
286000 *Fire Protection*														0
288000 Plant Ventilation											04, 49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4	1
290001 Secondary CTMT														0
290003 Control Room HVAC														0
290002 Reactor Vessel Internals														0
K/A Category Totals:	0	0	0	0	0	0	0	2	0	0	1	Group Point Total:		3

ES-401	Generic Knowledge and Abilities Outline (Tier 3)	Form ES-401-3

Facility Name:Dresden Date of Exam:4/23/07

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	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. 01	Knowledge of conduct of operations requirements.	3.7	1		
	2.1.					
	2.1.					
	2.1. 33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.			4	1
	2.1. 34	Ability to maintain primary and secondary plant chemistry within allowable limits.			2.9	1
	Subtotal			2		2
2. Equipment Control	2.2. 03	(multi-unit) Knowledge of the design, procedural, and operational differences between units.	3.1	1		
	2.2. 28	Knowledge of new and spent fuel movement procedures.	2.6	1		
	2.2. 04	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.	2.8	1		
	2.2.					
	2.2. 08	Knowledge of the process for determining if the proposed change, test, or experiment involves an unreviewed safety question.			3.3	1
	2.2. 23	Ability to track limiting conditions for operations.			3.8	1
	Subtotal			3		2
3. Radiation Control	2.3. 09	Knowledge of the process for performing a containment purge.	2.5	1		
	2.3. 11	Ability to control radiation releases.	2.7	1		
	2.3.					
	2.3.					
	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
	2.3. 08	Knowledge of the process for performing a planned gaseous radioactive release.			3.2	1
	Subtotal			2		2
4. Emergency Procedures / Plan	2.4. 27	Knowledge of fire in the plant procedure.	3	1		
	2.4. 24	Knowledge of loss of cooling water procedures.	3.3	1		
	2.4. 39	Knowledge of the RO's responsibilities in emergency plan implementation.	3.3	1		
	2.4.					
	2.4.					
	2.4. 26	Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.			3.3	1
	Subtotal			3		1
Tier 3 Point Total				10		7

Facility: Dresden | Scenario No: ILT-N-1 | Op-Test No: 2007-301

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Reactor power ~15%, C RFP and IRM 11 OOS.

Turnover: Continue with startup per DGP 1-1

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	R	NSO SRO	Raise Reactor power by withdrawing control rods
2	RDFAILF5	I	NSO SRO	RPIS failure for rod F5 [T]
3	RDFCFLO	I	NSO SRO	CRD Flow Controller Fails Low
4	ADS3ABF	C	ANSO SRO	Target Rock Bellows Failure [T]
5	HP6 HP7	C	ANSO SRO	Trip of 2A circ water pump and 2B fails to start
6	HP5	M	TEAM	Loss of Main Condenser Vacuum due to increased air leakage
7	ICSTMRB	M	TEAM	Iso cond steam inlet line leak into the Reactor Building and it will not isolate

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)ech Spec call

Facility: Dresden | Scenario No: ILT-N-2 | Op-Test No: 2007-301

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Reactor power ~15%, C RFP and IRM 11 OOS.

Turnover: Continue with startup per DGP 1-1.

Event No.	Malf. No.	Event Type*		Event Description
1	NONE	R	NSO SRO	Raise power by withdrawing control rods
2	RODG07ST	C	NSO SRO	Stuck Control Rod [T]
3	NIA1POT	I	NSO SRO	APRM 1 Fails Downscale with failure of half scram [T]
4	Q22	C	ANSO SRO	Service Water Pump Trip
5	HPINIT	I	ANSO SRO	Spurious HPCI Initiation [T]
6	I21	M	TEAM	Small steam leak inside the Drywell
7	K23 K40	M	TEAM	Overcurrent on Busses 23-1 & 28 / Inability to Spray DW / Emergency Depressurization

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)ech Spec call

Facility: Dresden | Scenario No: ILT-N-3 | Op-Test No: 2007-301

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Reactor power ~79%, C RFP and IRM 11 OOS.

Turnover: Reduce power with Recirc, to remove 'B' FWRV from service for maintenance

Event No.	Malf. No.	Event Type*		Event Description
1	NONE	R	NSO SRO	Reduce power with Recirc flow
2	NONE	N	NSO SRO	Remove 'A' FWRV from service
3	SER1589 SER0710 T18	C	ANSO SRO	U2 Emergency Diesel Generator Inoperable due to cooling water pump failure [T]
4	None	C	NSO	2B RFP develops an oil leak, requiring it to be secured.
5	H33/H34	M	TEAM	Loss of Feedwater / Manual scram, with a partial ATWS resulting
6	NVM100AP NVM100BP NVML29AP NVML29BP	M	TEAM	Loss of RPV water level indication, requires entry into DEOP 400-1 RPV FLOODING

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)ech Spec call