Facility: River Bend Station Date of Exam: xx June 2007

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	2	3	4	N/A			4	4	N/A		3	20	3	4	7
	2	1	2	1				1	1			1	7	2	1	3
	Tier Totals	3	5	5				5	5			4	27	5	5	10
2. Plant Systems	1	3	2	2	2	2	3	2	4	2	2	2	26	3	2	5
	2	1	1	1	1	1	1	1	2	1	1	1	12	A1-1 A2-1	1	3
	Tier Totals	4	3	3	3	3	4	3	6	3	3	3	38	A1-1 A2-4	3	8

3. Generic Knowledge and Abilities Categories	1	2	3	4	10	1	2	3	4	7
	3	2	2	3		2	2	1	2	

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 OutlineForm ES-401-1
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / 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			R				AK3.01 Knowledge of the reasons for reactor water level response as it applies to Partial or Complete Loss of Forced Core Circulation.	3.4	1
295003 Partial or Complete Loss of AC / 6				R			AA1.02 Ability to operate and/or monitor emergency generators as it applies to Partial or Complete Loss of AC Power.	4.2	2
						S	2.4.1 Knowledge of EOP entry conditions or immediate action steps.	4.6	76
295004 Partial or Total Loss of DC Pwr / 6					R		AA2.03 Ability to determine and/or interpret battery voltage as it applies to Partial or Complete Loss of DC Power.	2.8	3
295005 Main Turbine Generator Trip / 3						R	2.1.31 Ability to locate control room switches / controls and indications and to determine that they are correctly reflecting the desired plant lineup.	4.2	4
295006 SCRAM / 1	R						AK1.01 Knowledge of the operational implications of decay heat generation and removal as it applies to SCRAM.	3.7	5
295016 Control Room Abandonment / 7		R					AK2.03 Knowledge of the interrelations between Control Room Abandonment and control room HVAC.	2.9	6
295018 Partial or Total Loss of CCW / 8			R				AK3.02 Knowledge of the reasons for starting standby pump as it applies to Partial or Complete Loss of CCW.	3.3	7
					S		AA2.03 Ability to determine and/or interpret the cause of Partial or Complete loss of CCW.	3.5	77
295019 Partial or Total Loss of Inst. Air / 8				R			AA1.04 Ability to operate and/or monitor service air isolation valves as it applies to Partial or Complete Loss of Instrument Air.	3.3	8
295021 Loss of Shutdown Cooling / 4					R		AA2.05 Ability to determine and/or interpret reactor vessel metal temperature as it apples to Loss of Shutdown Cooling.	3.4	9
						S	2.2.28 Knowledge of new and spent fuel movement procedures.	3.5	78
295023 Refueling Acc / 8						R	2.2.13 Knowledge of tagging and clearance procedures.	3.6	10
295024 High Drywell Pressure / 5					R		EA2.08 Ability to determine and/or interpret drywell radiation levels as it applies to High Drywell Pressure	3.6	11
295025 High Reactor Pressure / 3		R					EK2.10 Knowledge of the interrelations between High Reactor Pressure and SPDS/ERIS/CRIDS/GDS.	2.9	12
						S	2.1.33 Ability to recognize system operating parameters that are entry conditions for technical specifications	4.0	79

ES-401 BWR Examination OutlineForm ES-401-1

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
295026 Suppression Pool High Water Temp. / 5			R				EK3.05 Knowledge of the reasons for reactor SCRAM as it applies to Suppression Pool High Water Temperature.	3.9	13
295027 High Containment Temperature / 5				R			EA1.02 Ability to operate and/or monitor containment ventilation/cooling as it applies to High Containment Temperature.	3.5	14
					S		EA2.01 Ability to determine and/or interpret containment temperature as it applies to High Containment Temperature.	3.7	80
295028 High Drywell Temperature / 5					R		EA2.03 Ability to determine and/or interpret reactor water level as it applies to High Drywell Temperature.	3.7	15
295030 Low Suppression Pool Wtr Lvl / 5						R	2.2.22 Knowledge of limiting conditions for operations and safety limits	3.4	16
295031 Reactor Low Water Level / 2	R						EK1.03 Knowledge of the operational implications of water level effects on reactor power as it applies to Reactor Low Water Level.	3.7	17
					S		EA2.01 Ability to determine and/or interpret reactor water level as it applies to Reactor Low Water Level.	4.6	81
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1		R					EK2.14 Knowledge of the interrelations between Scram Condition Present and Reactor Power Above APRM Downscale or unknown and RPIS.	3.6	18
295038 High Off-site Release Rate / 9			R				EK3.04 Knowledge of the reasons for Emergency Depressurization as it applies to High Off-site Release Rate.	3.6	19
						S	2.4.40 Knowledge of the SRO's responsibilities in emergency plan implementation.	4.0	82
600000 Plant Fire On Site / 8				R			AA1.06 Ability to operate and/or monitor fire alarm systems as it applies to Plant Fire On Site.	3.0	20
K/A Category Totals: R	2	3	4	4	4	3	Group Point Total:		20/7
S	0	0	0	0	3	4			

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Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / 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									
295007 High Reactor Pressure / 3									
295008 High Reactor Water Level / 2			R				AK3.06 Knowledge of the reasons for RCIC Turbine Isolation initiation as it applies to High Reactor Water Level.	3.4	21
295009 Low Reactor Water Level / 2									
295010 High Drywell Pressure / 5									
295011 High Containment Temp / 5									
295012 High Drywell Temperature / 5									
295013 High Suppression Pool Temp. / 5		R					AK2.01 Knowledge of the interrelations between High Suppression Pool Temperature and suppression pool cooling.	3.6	22
295014 Inadvertent Reactivity Addition / 1				R			AA1.01 Ability to operate and/or monitor RPS as it applies to Inadvertent Reactivity Addition.	4.0	23
295015 Incomplete SCRAM / 1	R						AK1.02 Knowledge of the operational implications of cooldown effects on reactor power as it applies to Incomplete SCRAM.	3.9	24
295017 High Off-site Release Rate / 9									
295020 Inadvertent Cont. Isolation / 5 & 7					S		AA2.04 Ability to determine and/or interpret reactor pressure as it applies to Inadvertent Containment Isolation.	3.9	83
295022 Loss of CRD Pumps / 1									
295029 High Suppression Pool Wtr Lvl / 5									
295032 High Secondary Containment Area Temperature / 5					R		EA2.02 Ability to determine and/or interpret equipment operability as it applies to High Secondary Containment Area Temperature.	3.3	25
						S	2.2.25 Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	84
295033 High Secondary Containment Area Radiation Levels / 9		R					EK2.01 Knowledge of the interrelations between High Secondary Containment Area Radiation Levels and area radiation monitoring system.	3.8	26
295036 Secondary Containment High Sump/Area Water Level / 5						R	2.4.48 Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.	3.5	27
500000 High CTMT Hydrogen Conc. / 5					S		EA2.03 Ability to determine and/or interpret combustible limits for drywell as it applies to High Primary Containment Hydrogen Concentration.	3.8	85
K/A Category Point Totals:	10	20	10	10	12	11	Group Point Total:		7/3

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Plant Systems - Tier 2/Group 1 (RO / SRO)

System # / Name	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						R						K6.09 Knowledge of the effect that a loss or malfunction of nuclear boiler instrumentation will have on RHR/LPCI: Injection Mode.	3.4	28
										R		A4.04 Ability to operate and/or monitor system flow in the control room.	3.8	29
205000 Shutdown Cooling		R									R	K2.02 Knowledge of electrical power supplies to pump motors.	3.1	30
												2.1.30 Ability to locate and operate components, including local controls.	3.9	31
206000 HPCI														
207000 Isolation (Emergency) Condenser														
209001 LPCS			R									K3.01 Knowledge of the effect that a loss or malfunction of the LPCS will have on reactor water level.	3.8	32
209002 HPCS				R								K4.02 Knowledge of HPCS design features and/or interlocks which prevent overfilling the reactor vessel.	3.4	33
								S				A2.02 Ability to (a) predict the impacts of pump trips on HPCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	3.7	86
211000 SLC					R							K5.06 Knowledge of the [operation implications] of the effects of tank level measurement as it relates to Standby Liquid Control	3.0	34
212000 RPS						R						K6.02 Knowledge of the effect that a loss or malfunction of AC electrical distribution will have on the RPS.	3.6	35
215003 IRM	R						R					K1.03 Knowledge of the physical connections and/or cause-effect relationships between IRM System and rod control and information system.	3.1	36
												A1.05 Ability to predict and/or monitor changes in parameters associated with operating the IRM System controls including SCRAM and rod block trip setpoints.	3.9	37
215004 Source Range Monitor								R				A2.03 Ability to (a) predict the impacts of a stuck detector on the SRM System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	3.0	38
215005 APRM / LPRM									R			A3.08 Ability to monitor automatic operations of the APRM/LPRM System including control rod block status.	3.7	39

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Plant Systems - Tier 2/Group 1 (RO / SRO)

System # / Name	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	#
217000 RCIC					R							K5.01 Knowledge of the operational implications of indications of pump cavitation as it applies to RCIC System.	2.6	40
											S	2.1.32 Ability to apply system limits and precautions	3.8	87
218000 ADS						R						K6.07 Knowledge of the effect that a loss or malfunction of primary containment instrumentation will have on ADS.	3.4	41
								S				A2.04 Ability to (a) predict the impacts of ADS failure to initiate on the ADS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	4.2	88
223002 PCIS/Nuclear Steam Supply Shutoff							R					A1.02 Ability to predict and/or monitor changes in parameters associated with operating the PCIS/NSSSS controls including valve closures.	3.7	42
239002 SRVs								R				A2.03 Ability to (a) predict the impacts of a stuck open SRV; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	4.1	43
259002 Reactor Water Level Control									R			A3.04 Ability to monitor operations of the RWLCS including changes in reactor feedwater flow.	3.2	44
261000 SGTS										R		A4.09 Ability to manually operate and/or monitor ventilation valves/dampers in the control room.	2.7	45
											S	2.3.9 Knowledge of the process for performing a containment purge.	3.4	89
262001 AC Electrical Distribution								S				A2.10 Ability to (a) predict the impacts of exceeding current limitations on the AC Electrical Distribution; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	3.4	90
											R	2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	3.7	46
262002 UPS (AC/DC)	R											K1.08 Knowledge of the physical connections and/or cause-effect relationship between UPS (AC/DC) and containment isolation system.	2.9	47
								R				A2.01 Ability to (a) predict the impacts of under voltage on the UPS (AC/DC); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	2.6	48

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Plant Systems - Tier 2/Group 1 (RO / SRO)

System # / Name	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	#
263000 DC Electrical Distribution		R										K2.01 Knowledge of electrical power supplies to major DC loads.	3.1	49
264000 EDGs			R									K3.02 Knowledge of the effect that a loss or malfunction of the EDG will have on AC electrical distribution.	3.9	50
300000 Instrument Air	R											K1.03 Knowledge of the connections and/or cause/effect relationship between Instrument Air System and containment air.	2.8	51
				R								K4.01 Knowledge of Instrument Air System design features and/or interlocks which provide for Auto/manual swapover.	2.8	52
400000 Component Cooling Water								R				A2.01 Ability to (a) predict the impacts of loss of CCW pump on the CCWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	3.3	53
K/A Category Point Totals: R	3	2	2	2	2	3	2	4	2	2	2	Group Point Total:		26/5
S	0	0	0	0	0	0	0	3	0	0	2			

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Plant Systems - Tier 2/Group 2 (RO / SRO)

System # / Name	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										R		A4.03 Ability to manually operate and/or monitor in the control room: CRD flow control valve.	2.9	54
201002 RMCS														
201003 Control Rod and Drive Mechanism														
201004 RSCS														
201005 RCIS														
201006 RWM														
202001 Recirculation														
202002 Recirculation Flow Control											S	2.2.6 Knowledge of the process of making changes in procedures described in the safety analysis report.	3.3	91
204000 RWCU								R				A2.05 Ability to (a) predict the impacts of valve openings on RWCU; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations.	2.7	55
214000 RPIS														
215002 RBM														
216000 Nuclear Boiler Inst.														
219000 RHR/LPCI: Torus/Pool Cooling Mode						R						K6.01 Knowledge of the effect that a loss or malfunction of ac electrical distribution will have on RHR/LPCI suppression pool cooling	3.2	57
223001 Primary CTMT and Aux.														
230000 RHR/LPCI: Torus/Pool Spray Mode														
233000 Fuel Pool Cooling/Cleanup	R											K1.15 Knowledge of the physical connections and/or cause-effect relationship between Fuel Pool Cooling and Cleanup and storage pools..	2.9	59
234000 Fuel Handling Equipment							S					A1.03 Ability to predict and/or monitor changes in parameters associated with operating the Fuel Handling Equipment controls including: core reactivity level.	3.9	92
239001 Main and Reheat Steam									R			A3.01 Ability to monitor automatic operation of the Main and MSR system including isolation of the main steam system	4.2	56
239003 MSIV Leakage Control							R					A1.05 Ability to predict and/or monitor changes in parameters associated with operating the MSIV Leakage Control System controls including: system line-up.	3.0	58

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Plant Systems - Tier 2/Group 2 (RO / SRO)

System # / Name	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	#
241000 Reactor/Turbine Pressure Regulator			R									K3.04 Knowledge of the effect that a loss or malfunction of the Reactor/Turbine Pressure Regulating System will have on reactor steam flow.	3.8	60
245000 Main Turbine Gen. / Aux.														
256000 Reactor Condensate														
259001 Reactor Feedwater		R										K2.01 Knowledge of the power supplies to the reactor feedwater pumps	3.3	61
268000 Radwaste														
271000 Offgas								S				A2.15 Ability to (a) predict the impacts of reactor power changes to the Offgas system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations	3.1	93
272000 Radiation Monitoring					R							K5.01 Knowledge of the operational implications of hydrogen injection operation's effect on process radiation indications as it applies to Radiation Monitoring System.	3.2	62
286000 Fire Protection				R								K4.02 Knowledge of Fire Protection System design features and/or interlocks which provide for automatic system initiation.	3.3	63
288000 Plant Ventilation														
290001 Secondary CTMT														
290003 Control Room HVAC											R	2.1.32 Ability to explain and apply system limits and precautions.	3.4	64
290002 Reactor Vessel Internals								R				A2.03 Ability to (a) predict the impacts of control rod drop accident to the Reactor Vessel Internals; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of these abnormal conditions or operations	3.6	65
K/A Category Point Totals:	1	1	1	1	1	1	1	2	1	1	1	Group Point Total:		12/3
	0	0	0	0	0	0	1	1	0	0	1			

Facility: River Bend Station Date of Exam: 11 June 2007

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements.	3.7	66		
	2.1.20	Ability to execute procedure steps.	4.3	67		
	2.1.28	Knowledge of the purpose and function of major system components and controls.	3.2	68		
	2.1.10	Knowledge of conditions and limitations in the facility license			3.4	94
	2.1.22	Ability to determine mode of operation			3.3	95
	Subtotal			3		2
2. Equipment Control	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4.0	69		
	2.2.22	Knowledge of limiting conditions for operations and safety limits.	3.4	70		
	2.2.12	Knowledge of surveillance procedures			3.4	96
	2.2.39	Knowledge of SRO fuel handling responsibilities			3.8	97
	Subtotal			2		2
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	71		
	2.3.11	Ability to control radiation releases.	2.7	72		
	2.3.3	Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (liquid radwaste).			2.9	98
	Subtotal			2		1
4. Emergency Procedures / Plan	2.4.6	Knowledge of symptom-based EOP mitigation strategies	3.1	73		
	2.4.9	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.	3.3	74		
	2.4.32	Knowledge of operator response to loss of all annunciators	3.3	75		
	2.4.11	Knowledge of abnormal condition procedures			3.6	99
	2.4.44	Knowledge of emergency plan protective action recommendations			4.0	100
	Subtotal			3		2
Tier 3 Point Total				10		7

Facility: River Bend Station Examination Level: RO			Date of Exam: Operating Test Number:
Administrative Topic (See Note)	Type Code*	Describe activity to be performed	
Conduct of Operations	N	2.1.25	Perform a Jet Pump Operability Test
Conduct of Operations	N	2.1.21	Verify the lastest revision of SOP-0045 13.8 KV SYSTEM
Equipment Control	N	2.2.13	Determine tagout for Turbine Lube Oil Suction Header Strainer LOS-STR1 to submit to the tagging official.
Radiation Control	N	2.3.4	Perform a dose assessment for performing an evolution in the RWCU pump room.
Emergency Plan		Not Applicable	

NOTE: All 5 items are required for SRO. Only 4 items are required for RO unless only the administrative portion of the test is being retaken, then all 5 are required.

*Type Codes and Criteria:
(C)ontrol Room
(D)irect from Bank (≤3 RO; ≤4 SRO & RO retake)
(N)ew or (M)odified (≥1)
(P)revious 2 exams (≤1; randomly selected)
(S)imulator

Facility: River Bend Station Examination Level: SRO			Date of Exam: Operating Test Number:
Administrative Topic (See Note)	Type Code*	Describe activity to be performed	
Conduct of Operations	N	2.1.25	Review Jet Pump Operability Surveillance **with 2 Errors**
Conduct of Operations	N	2.1.4	Determine if Shift Staffing Requirements are Met
Equipment Control	N	2.2.13	Review the tagout to support cleaning and inspecting the Turbine Lube Oil Suction Header Strainer LOS-STR1 for approval.
Radiation Control	N	2.3.6	Review a liquid radwaste release permit issued by chemistry.
Emergency Plan	S	2.4.41	Classify an Emergency Condition

NOTE: All 5 items are required for SRO. Only 4 items are required for RO unless only the administrative portion of the test is being retaken, then all 5 are required.

*Type Codes and Criteria:
(C)ontrol Room
(D)irect from Bank (≤3 RO; ≤4 SRO & RO retake)
(N)ew or (M)odified (≥1)
(P)revious 2 exams (≤1; randomly selected)
(S)imulator

Facility: River Bend Station Examination Level: RO and SRO-I&U	Date of Exam: Operating Test Number:

Control Room Systems** (RO = 8; SRO-I = 7; SRO-U = 2 or 3)			
	System / JPM Title	Type Code*	Safety Function
a.	202001 Recirculation System – Startup second recirculation pump	S,D	1
b.	204000 RWCU – Lineup for Blowdown to the Condenser	S	2
c.	241000 Reactor / Turbine Pressure Regulating system – Establish 75^0F/hr C/D rate using the bypass valves	S	3
d.	239001 Main and Reheat Steam System – Perform MSIV stroke time testing	A,S	4
e.	264000 Standby Diesel Generator – Start and Parallel and EDG B to the Respective Standby Bus	A,S,P	6
f.	201005 RC&IS – Bypass A Control Rod in RC&IS	C,P	7
g.	400000 Supply RPCCW Header with Service Water	S	8
h.	239003 MS-PLCS – Place MS-PLCS in Service	C,A	9
In-Plant Systems (RO = 3; SRO-I = 3; SRO-U = 3 or 2)**			
i.	295013 Add Water to the Suppression Pool From the CST by Gravity Drain Through HPCS	D, R	5
j.	Line Up Fire Water System for RPV Injection (Station Blackout)	R	2
k.	262002 UPS – Place and Inverter in Service	A	6

** All control room (in-plant) systems must be different and serve different safety functions; In-plant systems and functions may overlap those tested in the control room.

*Type Code	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	≥1 / ≥1 / ≥1
(N)ew or (M)odified from bank including 1(A)	≥2 / ≥2 / ≥1
(P)revious 2 exams	≤3 / ≤3 / ≤2 (Randomly sampled)
(R)CA	≥1 / ≥1 / ≥1
(S)imulator	

Facility: River Bend Station Scenario No.: 1 Ops-Test No.: _____

Examiners: (Chief) _____ Operators: (CRS) _____
(E1) _____ (ATC) _____
(E2) _____ (UO) _____

Initial Conditions: Plant startup is in progress currently at 50 percent power. (End of Cycle)
3 Circulating water pumps are running P1A, P1B and P1C
Div II EDG declared INOPERABLE and tagged out due to cracked fuel line.
RCIC is inoperable and tagged out due to failed flow controller.
Suppression pool temperature is 90°F due to leaking SRV B21-RVF051D Leaking

Turnover: Power Ascension in progress.
Place RHR 'B' in suppression pool cooling per ODMI CR-RBS-2006-4168

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R (ATC)	Raise power to 55 percent
2	N/A	N (UO)	Align RHR 'B' for suppression pool cooling
3	N/A	N (ATC)	Adjust VARs on the Main Generator
4	CCP001B CCP004C	C (UO,CRS)	Running RPCCW pump trips and standby fails to auto start will manually start
5	CRDM0841	C, TS (ATC, CRS)	Rod drifts out
6	CWS002 CNM001	C,R,M (All)	Failed expansion joint in circulating water system. Loss of vacuum leading to a manual or automatic scram (momentary ATWS condition).
7	RPS0001 ED002A CNM004B	M,C (ATC,CRS)	Loss of NPS-SWG1A and all feedwater. (The only scram function that will insert rods is the ARI level 2 initiation ~-43").
8	HPCS002	C (All)	Failure of HPCS injection valve to open.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total Malfunctions	= 6	RPCCW Pump, Rod Drift, Loss of Circ Water, LOP, ATWS, HPCS Inj Valve Fails to Open
Malfunctions after EOP	= 1	HPCS Inj Valve Fails to Open
Abnormal Events	= 4	AOP-1 (Scram); AOP-0002 (Turbine Main Gen Trip); AOP-4 (LOP); AOP-5 (loss of Vacuum); AOP-61 (Control Rods Mispositioned);
Major Transients	= 2	Loss of vacuum; LOP (only SLC for high pressure injection)
EOP entered	= 3	EOP-1; EOP-1A; EOP-2; EOP-4
EOP Contingencies	= 1	EOP-4 Alternate Level Control; Emergency Depressurization
Critical Tasks	= 2	Inserting drifting control rod; Emergency depressurization

Appendix D **Scenario Outline** **Form ES-D-1**

Facility: River Bend Station Scenario No.: 2 Ops-Test No.: _____

Examiners: (Chief) _____ Operators: (CRS) _____
(E1) _____ (ATC) _____
(E2) _____ (UO) _____

Initial Conditions: Plant is operating at 63% power.
Operating per GOP-1, Section G complete through step 35.

Turnover: Start the third condensate pump.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R (ATC,CRS)	Pull Rods to 65% power
2	N/A	N (ATC)	Startup third condensate pump P1A
3	N/A	N (UOl)	Rotate TPCCW Pumps (start P1B and secure P1C)
4	NMS011A	I,TS (ATC,CRS)	APRM 'F' fails upscale
5	MSS005()	C, TS (UO, CRS)	Stuck open SRV F051C
6	SWP001B	C (UO)	Trip of 'B' normal service water pump
7	ED003D	C,M (All)	Loss of NNS-SWG2A • Loss of 2 circulating water pumps • Loss of 2 normal service water pumps (Complete loss of normal service water)
8	CRD014	M,C (All)	ATWS (Hydraulic Lock) / Turbine Trip
9	SLC002A/B	C (UO,CRS)	SLC Pump A/B will experience a shaft shear 10 seconds following initiation

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total Malfunctions	= 5	APRM F; SRV 51C Fails Open; Loss of NNS-SWG2A; ATWS; SLC Pump
Malfunctions after EOP	= 1	SLC Pump Fails
Abnormal Events	= 4	AOP-1 (Scram); AOP-0002 (Turbine Main Gen Trip); AOP-9 Loss of Normal Service Water; AOP-0035 Open SRV
Major Transients	= 2	Loss of Normal Service Water; ATWS
EOP entered	= 3	EOP-1; EOP-1A; EOP-2
EOP Contingencies	= 1	EOP-1A ATWS
Critical Tasks	= 2	Lower Reactor Water Level and Initiate SLC for power control

Appendix D **Scenario Outline** **Form ES-D-1**

Facility: River Bend Station Scenario No.: 3 Ops-Test No.: _____

Examiners: (Chief) _____ Operators: (CRS) _____
(E1) _____ (ATC) _____
(E2) _____ (UO) _____

Initial Conditions: Plant is operating at 100% power.
CRD pump 'B' is tagged out for motor replacement.

Turnover: Completion of HPCS Surveillance STP-203-6305 "HPCS QUARTERLY PUMP AND VALVE OPERABILITY TEST" has been completed through step 7.6.3

Event No.	Malf. No.	Event Type*	Event Description
1		N,C (UO)	Perform HPCS Surveillance STP-203-6305 "HPCS QUARTERLY PUMP AND VALVE OPERABILITY TEST", trip of the HPCS pump
2		C,R,N (ATC,UO)	Reactor Feedpump 'B' oil leak leads to securing pump or pump trip. Reduce reactor power to support securing reactor feedpump 'B'
3		C (UO,ATC)	Recirc loop 'B' seal failure / small drywell steam leak
4		M (All)	Reactor scram due to seal failure / securing recirculation pump and failure of loop 'B' to isolate.
5		M (All)	Rupture of reactor recirculation loop 'B'
6		C (UO)	RHR A Injection valve E12-F042A, RHR PUMP A LPCI INJECT ISOL VALVE fails to open.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total Malfunctions	= 5	HPCS Pump Trip, Reactor Feedpump B oil leak; Recirc Loop 'B' seal failure, Recirc Loop 'B' rupture, LPCI 'A' injection valve fails to open
Malfunctions after EOP	= 2	Recirc Loop 'B' rupture, LPCI 'A' injection valve fails to open
Abnormal Events	= 4	AOP-1 (Scram); AOP-0002 (Turbine Main Gen Trip); AOP-0003 Automatic Isolations; AOP-0006 Condensate Feedwater Failures
Major Transients	= 2	Manual Reactor Scram; Recirculation Loop Rupture
EOP entered	= 3	EOP-1; EOP-2; EOP-4
EOP Contingencies	= 2	EOP-4 Alternate Level Control, RPV Flooding
Critical Tasks	= 1	Core Re-flooding (opening E12-MOV053A)

Appendix D **Scenario Outline** **Form ES-D-1**

Facility: River Bend Station Scenario No.: 4 Ops-Test No.: _____

Examiners: (Chief) _____ Operators: (CRS) _____
(E1) _____ (ATC) _____
(E2) _____ (UO) _____

Initial Conditions:
- Plant is operating at 100% power.

Turnover:
- Plant is operating at 100% power.
- SBGT 'B' is tagged out due to fan high vibration during previous shift STP run.

Event No.	Malf. No.	Event Type*	Event Description
1		N (UO)	Shift operating CRD pumps
2		N (ATC)	Perform Rod Coupling Check STP-052-0101 FULLY WITHDRAWN CONTROL ROD INSERTION OPERABILITY CHECK
3		C (TS) (CRS,UO)	Trip of Div 2 line fill pump
4		C (UO)	SJAE PCV-144 fails closed
5		C,R (ATC)	Isolation of extraction steam to the 'A' First Point Heater causes a loss of feedwater heating and requires a power reduction
6		M,C (All)	Grid Perturbations, Loss of Offsite Power (Main Generator Trip, Reactor Scram), RCIC fails to Automatically Initiate
7		M,C (UO)	Un-isolable Main Steam and RCIC Room Steam Leak causing > Max Safe in two areas leading to emergency depressurization.
8		C (UO)	Three SRVs F041B, F047A and F041F (ADS/SRVs) fail to open.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total Malfunctions	6	(1) Trip of RHR B line fill pump, (2) SJAE PCV-144 fails closed, (3) Isolation of extraction steam to the first point heater, (4) RCIC fails to auto initiate (5) Main Steam Tunnel and RCIC steam lines fail to isolate, (6) ADS SRVs fail to open
Malfunctions after EOP	1	Three SRVs fail to open
Abnormal Events	2	Loss of Feed Water Heating, Loss of Offsite Power
Major Transients	2	Loss of All Loss of Offsite Power, Main Steam Tunnel and RCIC Room Steam Leak (Emergency Depressurization)
EOP entered	4	EOP-0001, RPV Control; EOP-004, Emergency Depressurization, EOP-0002 Primary Containment Control, EOP-003 Secondary Containment and Radioactive Release Control
EOP Contingencies	1	EOP-004 Emergency Depressurization
Critical Tasks	3	1) Lower Reactor Power to within Licensing Limit 2) RCIC Manual Initiation 3) Emergency Depressurization