Facility: SONGS Date of Exam: 10/24/2005

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	2	2				6	3			3	18	3	3	6
	2	1	2	1				2	3			0	9	2	2	4
	Tier Totals	3	4	3				8	6			3	27	5	5	10
2. Plant Systems	1	2	3	4	3	2	1	3	1	2	4	3	28	2	3	5
	2	1	0	1	2	2	1	0	2	1	0	0	10	1	2	3
	Tier Totals	3	3	5	5	4	2	3	3	3	4	3	38	3	5	8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1	2	3	4	7
		3			3			2			2			2	1	2	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 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 KAs 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 (IR) 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. 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 10CFR55.43

ES-401	SONGS PWR Written Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1 Group 1	Form ES-401-2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
007 / Reactor Trip - Stabilization - Recovery / 1	X						2.1.30	Conduct of Operations: Ability to locate and operate components, including local controls.	3.4	76
015 / 17 / RCP Malfunctions / 4	X						2.1.30	Conduct of Operations: Ability to locate and operate components, including local controls.	3.4	77
022 / Loss of Rx Coolant Makeup / 2						X	AA2.01	Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Pump Makeup: Whether charging line leak exists	3.8	78
040 / Steam Line Rupture - Excessive Heat Transfer / 4	X						2.4.31	Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.	3.4	79
056 / Loss of Off-site Power / 6						X	AA2.57	Ability to determine and interpret the following as they apply to the Loss of Offsite Power: RCS hot-leg and cold-leg temperatures	4.1	80
057 / Loss of Vital AC Inst. Bus / 6						X	AA2.19	Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: The plant automatic actions that will occur on the loss of a vital ac electrical instrument bus	4.3	81
007 / Reactor Trip - Stabilization - Recovery / 1			X				EK2.02	Knowledge of the interrelations between a reactor trip and the following: Breakers, relays and disconnects	2.6	39
008 / Pressurizer Vapor Space Accident / 3		X					AK1.02	Knowledge of the operational implications of the following concepts as they apply to a Pressurizer Vapor Space Accident: Change in leak rate with change in pressure	3.1	40
009 / Small Break LOCA / 3					X		EA1.17	Ability to operate and monitor the following as they apply to a small break LOCA: PRT	3.4	41
015 / 17 / RCP Malfunctions / 4					X		AA1.20	Ability to operate and / or monitor the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): RCP bearing temperature indicators	2.7	42
025 / Loss of RHR System / 4					X		AA1.08	Ability to operate and / or monitor the following as they apply to the Loss of Residual Heat Removal System: RHR cooler inlet and outlet temperature indicators	2.9	43
026 / Loss of Component Cooling Water / 8					X		AA1.05	Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: The CCWS surge tank, including level control and level alarms, and radiation alarm	3.1	44
027 / Pressurizer Pressure Control System Malfunction / 3						X	AA2.05	Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR Heater setpoints	3.2	45
029 / ATWS / 1				X			EK3.11	Knowledge of the reasons for the following responses as the apply to the ATWS: Initiating emergency boration	4.2	46

ES-401	SONGS PWR Written Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1 Group 1	Form ES-401-2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
038 / Steam Gen. Tube Rupture / 3					X		EA1.15	Ability to operate and monitor the following as they apply to a SGTR: AFW source level and capacity (chart)	3.9	47
040 / Steam Line Rupture - Excessive Heat Transfer / 4					X		AA1.09	Ability to operate and / or monitor the following as they apply to the Steam Line Rupture: Setpoints of main steam safety and PORVs	3.4	48
054 / Loss of Main Feedwater / 4		X					AK1.01	Knowledge of the operational implications of the following concepts as they apply to Loss of Main Feedwater (MFW): MFW line break depressurizes the S/G (similar to a steam line break)	4.1	49
055 / Station Blackout / 6						X	EA2.05	Ability to determine or interpret the following as they apply to a Station Blackout: When battery is approaching fully discharged	3.4	50
056 / Loss of Off-site Power / 6						X	AA2.83	Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Instrument air pressure gauge	2.7	51
057 / Loss of Vital AC Inst. Bus / 6	X						2.4.6	Emergency Procedures / Plan Knowledge symptom based EOP mitigation strategies.	3.1	52
062 / Loss of Nuclear Svc. Water / 4	X						2.4.4	Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.0	53
065 / Loss of Instrument Air / 8	X						2.4.46	Emergency Procedures / Plan Ability to verify that alarms are consistent with plant conditions	4.3	54
E02 / Reactor Trip - Stabilization - Recovery / 1				X			EK3.2	Knowledge of the reasons for the following responses as they apply to the (Reactor Trip Recovery) Normal, abnormal and emergency operating procedures associated with (Reactor Trip Recovery).	2.8	55
E06 / Loss of Main Feedwater / 4			X				EK2.2	Knowledge of the interrelations between the (Loss of Feedwater) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.	3.5	56
K/A Category Point Totals:	3/3	2	2	2	6	3/3	Group Point Total:			18/6

SONGS
PWR Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
003 / Dropped Control Rod / 1	X						2.1.14	Conduct of Operations: Knowledge of system status criteria which require the notification of plant personnel.	3.3	82
024 / Emergency Boration / 1	X						2.4.4	Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry level conditions for emergency and abnormal operating procedures	4.3	83
068 / Control Room Evac. / 8						X	AA2.09	Ability to determine and interpret the following as they apply to the Control Room Evacuation: Saturation margin	4.3	84
A16 / Excess RCS Leakage / 2						X	AA2.2	Ability to determine and interpret the following as they apply to the (Excess RCS Leakage) Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	3.7	85
024 / Emergency Boration / 1					X		AA1.25	Ability to operate and / or monitor the following as they apply to the Emergency Boration: Boration valve indicators	3.4	57
028 / Pressurizer Level Malfunction / 2						X	AA2.06	Ability to determine and interpret the following as they apply to the Pressurizer Level Control Malfunctions: Letdown flow indicator	2.7	58
036 / Fuel Handling Accident / 8				X			AK3.03	Knowledge of the reasons for the following responses as they apply to the Fuel Handling Incidents: Guidance contained in EOP for fuel handling incident	3.7	59
060 / Accidental Gaseous RadWaste Rel. / 9						X	AA2.06	Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste: Valve lineup for the release of radioactive gases	3.6	60
061 / ARM System Alarms / 7						X	AA2.03	Ability to determine and interpret the following as they apply to the Area Radiation Monitoring (ARM) System Alarms: Setpoints for alert and high alarms	3.0	61
074 / Inad. Core Cooling / 4		X					EK1.08	Knowledge of the operational implications of the following concepts as they apply to the Inadequate Core Cooling : Definition of subcooled liquid	2.8	62
A11 / RCS Overcooling - PTS / 4					X		AA1.3	Ability to operate and / or monitor the following as they apply to the (RCS Overcooling) Desired operating results during abnormal and emergency situations.	3.0	63
A13 / Natural Circ. / 4			X				AK2.1	Knowledge of the interrelations between the (Natural Circulation Operations) and the following: Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.	3.0	64

SONGS
PWR Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
A16 / Excess RCS Leakage / 2			X				AK2.2	Knowledge of the interrelations between the (Excess RCS Leakage) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.	3.0	65
K/A Category Point Total:	0/2	1	2	1	2	3/2	Group Point Total:			**9/4**

ES-401	SONGS PWR Written Examination Outline Plant Systems – Tier 2 Group 1	Form ES-401-2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
008 Component Cooling Water									X			A2.08	Ability to (a) predict the impacts of the following malfunctions or operations on the CCWS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Effects of shutting (automatically or otherwise) the isolation valves of the letdown cooler	2.7	86
013 Engineered Safety Features Actuation									X			A2.01	Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based Ability on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations; LOCA	4.8	87
062 AC Electrical Distribution	X											2.4.50	Emergency Procedures / Plan Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	88
064 Emergency Diesel Generator	X											2.1.14	Conduct of Operations: Knowledge of system status criteria which require the notification of plant personnel.	3.3	89
103 Containment	X											2.1.30	Conduct of Operations: Ability to locate and operate components, including local controls.	3.4	90
003 Reactor Coolant Pump											X	A4.07	Ability to manually operate and/or monitor in the control room: RCP seal bypass	2.6	1
003 Reactor Coolant Pump					X							K4.03	Knowledge of RCPS design feature(s) and/or interlock(s) which provide for the following: Adequate lubrication of the RCP	2.8	2
004 Chemical and Volume Control			X									K2.01	Knowledge of bus power supplies to the following: Boric Acid Makeup Pumps	2.9	3
004 Chemical and Volume Control										X		A3.13	Ability to monitor automatic operation of the CVCS, including: RCS temperature and pressure	3.4	4
005 Residual Heat Removal								X				A1.06	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RHRS controls including: Relationship (dependence) of time available to perform system isolation surveillance test to time for decay heat to reach high limit	2.7	5
005 Residual Heat Removal						X						K5.09	Knowledge of the operational implications of the following concepts as they apply the RHRS: Dilution and boration considerations	3.2	6
006 Emergency Core Cooling								X				A1.16	Ability to predict and/or monitor changes in parameters RCS temperature, including superheat, saturation, and subcooled	4.1	7

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
007 Pressurizer Relief/Quench Tank											X	A4.10	Ability to manually operate and/or monitor in the control room: Recognition of a leaking PORV/code safety	3.6	8
008 Component Cooling Water									X			A2.01	Ability to (a) predict the impacts of the following malfunctions or operations on the CCWS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of CCW pump	3.3	9
010 Pressurizer Pressure Control						X						K5.01	Knowledge of the operational implications of the following concepts as the apply to the PZR PCS: Determination of condition of fluid in PZR, using steam tables	3.5	10
010 Pressurizer Pressure Control	X											2.2.22	Equipment Control Knowledge of limiting conditions for operations and safety limits.	3.4	11
010 Pressurizer Pressure Control			X									K2.01	Knowledge of bus power supplies to the following: PZR heaters	3.0	12
012 Reactor Protection			X									K2.01	Knowledge of bus power supplies to the following: RPS channels, components, and interconnections	3.3	13
013 Engineered Safety Features Actuation				X								K3.01	Knowledge of the effect that a loss or malfunction of the ESFAS will have on the following: Fuel	4.4	14
022 Containment Cooling											X	A4.01	Ability to manually operate and/or monitor in the control room: CCS fans	3.6	15
026 Containment Spray								X				A1.02	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CSS controls including: Containment temperature	3.6	16
039 Main and Reheat Steam	X											2.1.30	Conduct of Operations: Ability to locate and operate components, including local controls.	3.9	17
059 Main Feedwater				X								K3.02	Knowledge of the effect that a loss or malfunction of the MFW will have on the following: AFW system	3.6	18
061 Auxillary/Emergency Feedwater							X					K6.01	Knowledge of the effect of a loss or malfunction of the following will have on the AFW components: Controllers and positioners	2.5	19
062 AC Electrical Distribution	X											2.4.6	Emergency Procedures / Plan Knowledge symptom based EOP mitigation strategies.	3.1	20
063 DC Electrical Distribution											X	A4.01	Ability to manually operate and/or monitor in the control room: Major breakers and control power fuses	2.8	21
064 Emergency Diesel Generator		X										K1.03	Knowledge of the physical connections and/or cause-effect relationships between the ED/G system and the following systems: Diesel fuel oil supply system	3.6	22

ES-401	SONGS PWR Written Examination Outline Plant Systems – Tier 2 Group 1	Form ES-401-2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
073 Process Radiation Monitoring		X										K1.01	Knowledge of the physical connections and/or cause-effect relationships between the PRM system and the following systems: Those systems served by PRMs	3.6	23
073 Process Radiation Monitoring					X							K4.01	Knowledge of PRM system design feature(s) and/or interlocks which provide for the following: Release termination when radiation exceeds setpoint	4.0	24
076 Service Water										X		A3.02	Ability to monitor automatic operation of the SWS, including: Emergency heat loads	3.7	25
078 Instrument Air					X							K4.01	Knowledge of IAS design feature(s) and/or interlock(s) which provide for the following: Manual/automatic transfers of control	2.7	26
078 Instrument Air				X								K3.01	Knowledge of the effect that a loss or malfunction of the IAS will have on the following: Containment air system	3.1	27
103 Containment				X								K3.01	Knowledge of the effect that a loss or malfunction of the containment system will have on the following: Loss of containment integrity under shutdown conditions	3.3	28
K/A Category Point Totals:	3/3	2	3	4	3	2	1	3	1/2	2	4	Group Point Total:			**28/5**

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
041 Steam Dump/Turbine Bypass Control	X											2.1.33	Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	91
056 Condensate System	X											2.2.25	Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	92
071 Waste Gas Disposal									X			A2.09	Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of meteorological tower	2.9	93
001 Control Rod Drive							X					K6.13	Knowledge of the effect of a loss or malfunction on the following CRDS components: Location and operation of RPIS	3.6	29
002 Reactor Coolant System										X		A3.03	Ability to monitor automatic operation of the RCS, including: Pressure, temperature, and flows	4.4	38
011 Pressurizer Level Control						X						K5.09	Knowledge of the operational implications of the following concepts as they apply to the PZR LCS Reason for manually controlling PZR level	2.6	30
014 Rod Position Indication									X			A2.04	Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS; and (b) based on those on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Misaligned rod	3.4	31
015 Nuclear Instrumentation					X							K4.06	Knowledge of NIS design feature(s) and/or interlock(s) provide for the following: Reactor trip bypasses	3.9	32
016 Non-Nuclear Instrumentation		X										K1.02	Knowledge of the physical connections and/or cause-effect relationships between the NNIS and the following systems: PZR LCS	3.4	33
029 Containment Purge				X								K3.01	Knowledge of the effect that a loss or malfunction of the Containment Purge System will have on the following: Containment parameters	2.9	34
035 Steam Generator									X			A2.04	Ability to (a) predict the impacts of the following mal-functions or operations on the S/GS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Steam flow/feed mismatch	3.6	35

ES-401	SONGS PWR Written Examination Outline Plant Systems – Tier 2 Group 2	Form ES-401-2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
041 Steam Dump/Turbine Bypass Control						X						K5.01	Knowledge of the operational implications of the following concepts as the apply to the SDS: Relationship of no-load T-ave. to saturation pressure relief setting on valves	2.9	36
045 Main Turbine Generator					X							K4.42	Knowledge of MT/G system design feature(s) and/or inter-lock(s) which provide for the following: Operation of SDS (turbine bypass) in event of load loss or plant trip	2.8	37
K/A Category Point Totals:	0/2	1	0	1	2	2	1	0	2/1	1	0	Group Point Total:			**10/3**

Facility:	SONGS	Date of Exam:	10/24/2005

Category	K/A #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.5	Ability to locate and use procedures and directives related to shift staffing and activities.			3.4	94
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.			4.0	95
	2.1.19	Ability to use plant computer to obtain and evaluate parametric information on system or component STATUS	3.0	66		
	2.1.16	Ability to operate plant phone, paging system, and two-way radio.	2.9	67		
	2.1.22	Ability to determine Mode of Operation.	2.8	68		
	Subtotal			3		2
2. Equipment Control	2.2.29	Knowledge of SRO fuel handling responsibilities.			3.8	96
	2.2.13	Knowledge of tagging and clearance procedures.	3.6	69		
	2.2.27	Knowledge of the refueling process.	2.6	70		
	2.2.23	Ability to track limiting conditions for operations.	2.6	71		
	Subtotal			3		1
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.			3.1	97
	2.3.1	Knowledge of 10 CFR: 20 and related facility radiation control requirements			3.0	98
	2.3.2	Knowledge of facility ALARA program.	2.5	72		
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	73		
	Subtotal			2		2
4. Emergency Procedures / Plan	2.4.41	Knowledge of the emergency action level thresholds and classifications.			4.1	99
	2.4.29	Knowledge of the emergency plan.			4.0	100
	2.4.39	Knowledge of the RO's responsibilities in emergency plan implementation.	3.3	74		
	2.4.46	Ability to verify that the alarms are consistent with the plant conditions.	3.5	75		
	Subtotal			2		2
Tier 3 Point Total				10		7

Tier / Group	Randomly Selected K/A	Reason for Rejection
1 / 1	027 AA2.14	Facility does not have RCP Injection flow
1 / 1	029 EK3.05	Facility does not have Centrifugal Charging Pumps
1 / 1	065 G2.2.25	No Technical Specifications associated with Instrument Air
2 / 1	004 K2.07	No Heat Trace associated with CVCS at this facility
2 / 2	055 A3.03	CARS exhaust does not automatically divert at this facility
1 / 1	024 2.4.30	KA did not fit topic for generic. Would be no off-site notifications directly related to the APE
1 / 1	060 AA2.04	Impossible to prepare a psychometrically written sound test item for selected topic.
2 / 1	007 A4.01	Facility does not have a spray valve for the Quench Tank
2 / 2	071 A2.07	Could not develop a psychometrically sound written SRO test item for topic. No supporting procedural information is available for this event
2 / 2	028 K1.01	System abandoned in place, removed from TS and EOIs

Facility: SONGS		Date of Examination:	10/24/2005
Examination Level	RO	Operating Test Number:	NRC

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	2.1.25 Ability to obtain and interpret station reference materials such as graphs, nomographs, and tables which contain performance data (2.8) JPM: Determine time until Shutdown Cooling is required (J053A)
Conduct of Operations	M, R	2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation (3.9) JPM: Calculate a makeup to the RWST (J215A)
Equipment Control	-	
Radiation Control	M, P, R	2.3.10 Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure (3.3) JPM: Determine stay time for work to be performed and take action for change in radiological conditions (J216A)
Emergency Plan	M, C or S	2.4.39 Knowledge of the RO responsibilities in emergency plan implementation (3.3) JPM: Perform the Siren and PA Coordination (J157A)

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

A.1.a Unit 2 has experienced a Loss of Forced Circulation/Loss of Offsite Power. Recovery actions have commenced and SO23-12-7, Loss of Forced Circulation/Loss of Offsite Power, is in progress. Cooldown and Depressurization, Attachment 3 of SO23-12-11, has been started. The candidate will use Attachment 16 of SO23-12-11, EOI Supporting Attachments, to determine the time until Shutdown Cooling is required. The critical tasks include determining amount of water required and net feedwater available for the cooldown. This is a modified bank JPM.

A.1.b The candidate is directed to perform a blended makeup to the RWSTs at a total flow of 100 gpm. The Plant Monitoring System is not available. Determine the required Boric Acid Flow Rate and PMW Flow Rate for the required RWST make up. The critical task is to determine Primary Water and Boric Acid flowrates. This is a modified bank JPM.

A.2 N/A

A.3 The candidate will determine stay time for work to be performed and take action for a change in radiological conditions. The critical task is to select the correct REP for the work to be performed and determine stay time for the operator. This is a modified bank JPM used on the 2003 NRC Exam.

A.4 The candidate will perform the Siren and PA Coordination during the Emergency Plan. The critical tasks include proper form preparation as well as operating the siren and public address system consoles that were recently upgraded. This is a modified bank JPM.

Facility: SONGS		Date of Examination:	10/24/2005
Examination Level	SRO(I) & (U)	Operating Test Number:	NRC

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	2.1.20 Ability to execute procedure steps (4.2) JPM: Review Reactor Power Calculation (J207A)
Conduct of Operations	M, R	2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation (4.0) JPM: Calculate a makeup to the RWST (J215A)
Equipment Control	M, R	2.2.24 Ability to analyze the affect of maintenance activities on LCO status (3.8) JPM: Perform a LCOAR for Containment Spray Pump (J164A)
Radiation Control	M, P, R	2.3.10 Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure (3.3) JPM: Determine stay time for work to be performed and take action for change in radiological conditions (J216A)
Emergency Plan	N, R	2.4.41 Knowledge of emergency action level thresholds and classifications (4.1) JPM: Classify an emergency event (JXXXA)

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

A.1.a Unit 2 has been operating for several days at a steady state power level greater than 20%. A reactor power calculation (Manual Method) has been performed due to COLSS Primary calculation being unavailable. There is no Auxiliary Feedwater Flow indicated. As the Control Room Supervisor, review the Reactor Power Calculation (Manual Method) IAW SO23-3-3.38. The critical task is to locate and correct calculation errors and final power level. This is a modified bank JPM.

A.1.b The candidate is directed to perform a blended makeup to the RWSTs at a total flow of 100 gpm. The Plant Monitoring System is not available. Determine the required Boric Acid Flow Rate and PMW Flow Rate for the required RWST make up. The critical task is to determine Primary Water and Boric Acid flowrates. This is a modified bank JPM.

A.2 The Station was contacted by the manufacturer of an impeller recently installed in a LPSI Pump. The impeller contains flaws that may cause it to fail prematurely thus preventing the pump from performing its intended function. Station Management has determined the Pump to be *inoperable*. The candidate will complete a LCOAR for the LPSI Pump. The critical task is to choose the correct Technical Specification ACTION(s) and properly complete the paperwork for a LCOAR. This is a modified bank JPM.

A.3 The candidate will determine stay time for work to be performed and take action for a change in radiological conditions. The critical task is to select the correct REP for the work to be performed and determine stay time for the operator. This is a modified bank JPM used on the 2003 NRC Exam.

A.4 A Code Red Security event is in progress. The candidate will perform an EPIP classification with Reportability Requirement determination. The critical tasks include proper classification and time to report using plant procedures. This is a new JPM.

Facility:	SONGS	Date of Examination:	10/24/2005
Exam Level (circle one):	RO / SRO(I) / **SRO (U)**	Operating Test No.:	NRC

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.	041 Steam Bypass Control System Verify correct SG isolated following SGTR	A,D,S	4-S
b.	**005 Shutdown Cooling System** **Place Shutdown Cooling System in service**	**L, M, S**	**4-P**
c.	**013 ESFAS** **Perform Recirculation Actuation Signal actions**	**A, N, S**	**2**
d.	008 Component Cooling Water Place the Train A CCW/SWC Critical Loop in Standby	D, S	8
e.	**EPE 055 Station Blackout** **Perform Control Building Ventilation Emergency Actions**	**A, C, D, E**	**6**
f.	001 Control Rod Drive System Dampen ASI oscillation	A, D, S	1
g.	006 ECCS Raise Safety Injection Tank pressure	D, S	3
h.	026 Containment Spray System (RO only) Terminate Containment Spray	A, D, S	5
In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	**015 Nuclear Instrumentation System** **Align G005 to Essential Plant Parameters Monitoring Panel**	**E, D, R**	**7**
j.	064 Emergency Diesel Generator Locally start the Emergency Diesel Generator	D, E	6
k.	**068 Control Room Evacuation** **Align CVCS from outside the Control Room**	**A, D, E, R**	**1**

@	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	≥ 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	

JPM NRC Examination
Summary Description

a. The candidate will verify the correct SG is isolated following a Steam Generator Tube Rupture. The alternate path requires that the candidate recognize that the wrong SG was isolated and re-aligns for the ruptured SG. This is a Steam Bypass System – Secondary System Heat Removal from Reactor Core safety function.

b. The candidate will perform the actions required to place the Shutdown Cooling System in a single pump/single heat exchanger lineup. This is a modified, low power JPM under the Residual Heat Removal System – Primary System Heat Removal from Reactor Core safety function.

c. The candidate will align for sump recirculation per Emergency Operating Instructions. The alternate path requires manual actions to contend with Containment Sump blockage. This JPM was developed for new Floating Step criteria established by EOI procedure revision. This is a new JPM under the Emergency Core Cooling System – Reactor Inventory Control safety function. This is a PRA significant action.

d. The candidate must place the Component Cooling Water Train A CCW/SWC Critical Loop in standby. This is a Component Cooling Water System– Plant Service Systems safety function.

e. The candidate will perform Control Building Ventilation Emergency Actions. The alternate path is performed when the normal cooling system is not available during a Station Blackout. This is a JPM under the Plant Service Systems safety function. This is a PRA significant action.

f. The candidate will use the Control Rod Drive System to dampen an Axial Shape Index oscillation. The alternate path requires a Reactor trip when two rods fall into the core. This is a Control Rod Drive System – Reactivity Control safety function.

g. The candidate will perform actions to raise Safety Injection Tank pressure using S023-3-2.7.1, Safety Injection Tank Operations. This is a JPM under the Emergency Core Cooling System – Reactor Pressure Control safety function.

h. The candidate will be required to terminate Containment Spray per the EOI Floating Steps. The alternate path requires the candidate to restore spray flow when it is determined that it cannot be secured. This is a Containment Spray System – Containment Integrity safety function.

i. The candidate will align G005 to the Essential Plant Parameters Monitoring Panel (EPPM). This is a Nuclear Instrumentation System – Instrumentation safety function. This is a PRA significant action.

j. The candidate will perform Emergency Diesel Generator duties of the Assistant Control Operator during AOI SO23-13-2. This is an Emergency Diesel Generators – Electrical Systems safety function.

k. The candidate will align Emergency boration and Saltwater Cooling flowpaths from outside the Control Room. The alternate path requires the candidate to align a Saltwater Cooling overboard valve when it is determined that the normal flowpath is not available. This is a Chemical and Volume Control System - Reactivity Control safety function. This is a PRA significant action.

Facility:	San Onofre	Scenario No.:	1	Op Test No.:	NRC
Examiners:		Operators:			

Initial Conditions:	• 100% power - RCS Boron is 891 ppm • Train A Component Cooling Water Pump (P-025) in service • Train A Auxiliary Feedwater Pump (P-141) OOS • Train A High Pressure Safety Injection (P-017) OOS • Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS
Turnover:	Maintain steady-state power conditions.
Critical Tasks:	• Turbine trip failure, manual trip required • Stabilize RCS temperature/pressure following dry out of affected SG

Event No.	Malf. No.	Event Type*	Event Description
1 + 5 min	FW23	C (ACO, CRS)	Partial loss of Condenser vacuum
2 + 10 min		R (CO) N (ACO, CRS)	Downpower for Condenser Backpressure
3 + 20 min	CV17A	C (CO, CRS)	BAMU Pump trip
4 + 30 min		TS (CRS)	Main Steam and Main Feedwater Isolation Valves declared *inoperable*
5 + 35 min	ED08B	C (CO, ACO, CRS) TS (CRS)	Loss of Non-1E Instrument Bus Q0612
6 + 55 min	MS03B	M (ALL)	ESDE on E089 inside Containment
7 +55 min	TU07	C (ACO)	Turbine auto trip failure, manual trip required
8 +55 min	RD0242 RD0248	C (CO)	Two stuck CEAs; Emergency boration required

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

SCENARIO SUMMARY NRC #1

The crew will assume the watch at 100% power and maintain steady-state conditions per SO23-5-1.7, Power Operations.

When turnover is complete, a partial loss of vacuum will occur. The crew will respond per the Annunciator Response Procedures (ARP) and AOI SO23-13-10, Loss of Condenser Vacuum and lower power level until the Turbine Vacuum Limit is in the Area of Unrestricted Operation.

When the CO initiates RCS boration for the power reduction, the in-service Boric Acid Makeup Pump (BAMU) will trip, requiring manual operation to start the standby BAMU Pump.

Once the plant is stabilized, the Main Steam and Main Feedwater Isolation Valves will be declared *inoperable* due to improper hydraulic fluid. The CRS will evaluate Technical Specifications.

This is followed by a Loss of Non-1E Instrument Bus Q0612 and requires crew actions per the ARPs and AOI SO23-13-19, Loss of Non-1E Instrument Buses. The CRS will be required to evaluate Technical Specifications.

The EOP entry point is caused by an ESDE on E089 inside Containment. The crew performs SO23-12-1, Standard Post Trip Actions and diagnoses an ESDE. The crew will transition to SO23-12-5, Excess Steam Demand Event and perform necessary actions to control the cooldown.

During this event the Turbine fails to trip and two rods remain stuck out of the core requiring manual actions on the part of the CO and ACO. The scenario is terminated when the crew stabilizes RCS temperature/pressure following dry out of the affected SG.

Risk Significance:

- Risk important components out of service: HPSI P-017, AFW P-141
- Failure of risk important system prior to trip: Partial Loss of ATWS/DSS
- Risk significant core damage sequence: ESDE with Turbine trip failure
- Risk significant operator actions: Turbine fails to trip

  Emergency boration with stuck CEAs

Facility:	San Onofre		Scenario No.:	2	Op Test No.: NRC
Examiners:			Operators:		

Initial Conditions:	• 70% power – RCS Boron is 975 ppm by Chemistry sample • Train A Component Cooling Water Pump (P-025) in service • Train A Auxiliary Feedwater Pump (P-141) OOS • Train A High Pressure Safety Injection (P-017) OOS • Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS
Turnover:	Dilution and power ascension in progress.
Critical Tasks:	• HPSI Pump start failure, manual start required • Restore feedwater flow to at least one Steam Generator

Event No.	Malf. No.	Event Type*	Event Description
1 +15 min		R (CO) N (ACO, CRS)	Dilution and power ascension in progress at 15%/hr
2 +25 min	RC16B	I (CO, CRS) TS (CRS)	PZR Level Control Channel LT-0110-2 fails high
3 + 35 min	MS12B	I (ACO, CRS)	SG E088 Steam Flow FT-1011 fails to 80%
4 + 45 min	RC03	C (CO, CRS) TS (CRS)	RCS leak < Charging Pump capacity
5 +55 min	SEISMIC OBE w/ FWPT	C (ACO, CRS)	Seismic event with Feedwater Pump trip
6 +65 min	ED03B		Bus 2A06 Overcurrent trip
7 +65 min	RC03	M (ALL)	LOCA @ ~500 gpm
8 +65 min	FW09A/B FW25	M (ALL)	Loss of all Feedwater
9 +65 min	EC08D	C (CO)	HPSI Pump P018 start failure, manual start required

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

SCENARIO SUMMARY NRC #2

The crew will assume the watch with a dilution and power ascension in progress per SO23-5-1.7, Power Operations.

After the crew has demonstrated control of the power change, a Pressurizer Level instrument fails high and will require crew actions per the Annunciator Response Procedures (ARPs) and Abnormal Operating Instruction (AOI) SO23-13-27, Pressurizer Pressure and Level Malfunction. The CRS will evaluate Technical Specifications.

When the plant is stable, a Steam Flow signal will fail to 80%. The crew will regain control of feedwater per Annunciator Response Procedures and/or AOI SO23-13-24, Feedwater Malfunctions.

The next event is an RCS leak. The SRO will be required to evaluate Technical Specifications and enter AOI SO23-13-14, Reactor Coolant System Leak. The SRO will determine that a plant shutdown per the AOI is required.

After the determination to shutdown is reached a seismic event will occur. This will result in a Main Feedwater Pump trip. The crew will stabilize feedwater flow and perform actions in AOI SO23-13-3, Earthquake. Shortly thereafter a Loss of Bus 2A06 (set up for loss of feed only) will coincide with a Loss of Coolant Accident, and Loss of all Feedwater will occur. The crew performs SO23-12-1, Standard Post Trip Actions and diagnoses a LOCA and a LOFW and transitions to SO23-12-9, Functional Recovery.

Following the trip, a HPSI Pump fails to start and the CO will be required to manually start the pump. The scenario is terminated when the Steam Driven AFW Pump overspeed trip is reset and RCS temperature and pressure are stabilized while in the Functional Recovery procedure and associated Floating Steps.

Risk Significance:

- Risk important components out of service: HPSI P-017, AFW P-141
- Failure of risk important system prior to trip: MFW Pump trip
- Risk significant core damage sequence: LOCA and LOFW
- Risk significant operator actions: Failure to manually start HPSI

  Failure to supply feedwater

Facility:	San Onofre		Scenario No.:	3	Op Test No.: NRC
Examiners:			Operators:		

Initial Conditions:
- 30% power – RCS Boron is 1100 pm
- Train A Component Cooling Water Pump (P-025) in service
- Train A Auxiliary Feedwater Pump (P-141) OOS
- Train A High Pressure Safety Injection (P-017) OOS
- Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS

Turnover: Boration and downpower required to take the Turbine offline.

Critical Tasks:
- Energize at least one Vital 4160V & 480V AC bus
- Restore flow to the Non-Critical Loop

Event No.	Malf. No.	Event Type*	Event Description
1 + 15 min		R (CO) N (ACO, CRS)	Boration and downpower at 5%/hr
2 + 20 min	NI02B	I (CO, CRS) TS (CRS)	NI Channel B Upper Detector failure
3 +30 min	PG22 PG23	C (ACO, CRS) TS (CRS)	Degraded grid voltage to Sustained Degraded Voltage Setpoint
4 +45 min	CV18	I (CO, CRS)	Letdown Pressure instrument fails low
5 +50 min	FW18A	C (ACO, CRS)	SG E089 Feed Flow Transmitter fails high
6 + 60 min	PG24 TU08	M (ALL)	Loss of Offsite Power Turbine trip
7 + 60 min	EG08A		EDG G002 mechanical failure
8 +65 min	EG07B	C (ACO)	EDG G003 AVR failure

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

SCENARIO SUMMARY NRC #3

The crew will assume the watch with a boration required to remove the Turbine from service per SO23-5-1.7, Power Operations.

After the crew has demonstrated control of the power change, a Nuclear Instrument upper detector failure will occur. The crew will respond per the Annunciator Response Procedures (ARP) and AOI SO23-13-18, Reactor Protection System Failure. The CRS will evaluate Technical Specifications.

This is followed by a frequency drop and grid voltage decrease to the Sustained Degraded Voltage Signal (SDVS) for 110 seconds that will require crew response and entry into AOI SO23-13-4, Operation during Major System Disturbances. The ACO will be required to adjust Main Generator MVARs and restart a CCW Pump. The CRS will evaluate Technical Specifications.

With the plant stable, the crew will respond to a Letdown Pressure Instrument failure. This will require action per the Annunciator Response Procedures and SO23-3-2.1, CVCS Charging and Letdown Operations.

Once Letdown is restored, a feed flow transmitter will fail high on SG E089. The crew will regain control of feedwater flow per Annunciator Response Procedures and AOI SO23-13-24, Feedwater Malfunctions.

When the crew has stabilized feedwater flow, a Loss of Offsite Power will occur along with a mechanical failure of G002 and a G003 Output Breaker low voltage setting. The crew will perform SO23-12-1, Standard Post Trip Actions and during the SPTAs the ACO will take action to raise EDG 2G003 Voltage to close the breaker. The crew will then transition to SO23-12-7, LOOP/LOFC to attempt to restore offsite power.

Event termination will occur once an offsite line is restored and aligned to Bus A03 or A07 with plant conditions stable.

Risk Significance:

- Risk important components out of service: HPSI P-017, AFW P-141
- Failure of risk important system prior to trip: Loss of CCW Pump
- Risk significant core damage sequence: LOOP with loss of EDGs
- Risk significant operator actions: Restore Non-Critical Loop

  Close EDG output breaker

Facility:	San Onofre	Scenario No.: 4	Op Test No.: NRC
Examiners:		Operators:	
Initial Conditions:	• Reactor Critical at ~2x10^{-4}% power – RCS Boron is 1400 ppm • Train A Component Cooling Water Pump (P-025) in service • Train A High Pressure Safety Injection (P-017) OOS • Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS		
Turnover:	Power increase in progress at 1% per hour.		
Critical Tasks:	• Restore flow to the Non-Critical Loop • Perform HPSI Throttle/Stop to control RCS pressure		

Event No.	Malf. No.	Event Type*	Event Description
1 +15 min		R (CO) N (ACO, CRS)	Rod withdrawal and power increase in progress
2 + 25 min	FW02A/B	C (ACO, CRS) TS (CRS)	AFW Pump trip
3 + 35 min	CV16A	C (CO, CRS)	VCT Level Transmitter LT-0226 fails low
4 + 45 min	CC06B	C (ACO, CRS) TS (CRS)	CCW Pump overcurrent trip
5 + 55 min	CV02C CV03C CV04C	C (CO, CRS) TS (CRS)	RCP P-003 lower, middle, & upper seal failures
6 +65 min	MS01A MS01B	M (ALL)	ESDE on E088 outside Containment (2 MSSVs open on trip)
7 +65 min	SG06B	M (ALL)	LOCA @ 500 gpm due to vapor seal failure
8 + 70 min	MS06B	C (ACO)	MSIV fails to close, manual valve alignment required

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

SCENARIO SUMMARY NRC #4

The crew will assume the watch at approximately with the Reactor critical at ~$2x10^{-4}$% power. The crew will raise power using rod withdrawal per SO23-5-1.3.1, Plant Startup from Hot Standby to Minimum Load.

During the power increase an Auxiliary Feedwater Pump will trip. The crew will restore feedwater per Annunciator Response Procedures and/or AOI SO23-13-24, Feedwater Malfunctions. The CRS will evaluate Technical Specifications.

When the plant is stable, the VCT Level Transmitter will fail low. The crew will secure VCT makeup per the Annunciator Response Procedures and SO23-3-2.1, CVCS Charging and Letdown Operations.

When the plant is stable, a CCW Pump will trip. The crew may respond per AOI SO23-13-7, Loss of Component Cooking Water (CCW) / Saltwater Cooling (SWC). The crew will align SWC & CCW Trains per pump configuration requirements. The SRO will review Technical Specifications for applicability.

The next event is a loss of three (3) RCP seals. The crew will enter AOI SO23-13-6, Reactor Coolant Pump Seal Failure and determine that a plant trip is required and the crew will perform SO23-12-1, Standard Post Trip Actions.

Shortly after the plant trip, a LOCA will occur due to loss of the vapor seal on RCP P-003. Additionally, an ESDE will occur when two Main Steam Safety Valves open on the trip. The CRS will evaluate a LOCA and an ESDE and transition to SO23-12-9, Functional Recovery.

Following the trip, a MSIV fails to close and the ACO will be required to manually reposition the valve. The scenario is terminated when RCS temperature and pressure are stabilized while in the Functional Recovery procedure and associated Floating Steps.

Risk Significance:

- Risk important components out of service: HPSI P-017, AFW P-141
- Failure of risk important system prior to trip: Loss of AFW and CCW Pumps
- Risk significant core damage sequence: LOCA and ESDE
- Risk significant operator actions: Feedwater restoration

  Close MSIVs on ESDE

San Onofre Units 2 and 3
2005 NRC Initial License Written Examination
Written Examination Outline Methodology

The written examination outline was developed using a proprietary electronic random outline generator developed by Western Technical Services, Inc.

The software was designed to provide a written examination outline in accordance with the criteria contained in NUREG 1021, Revision 9.

The application was developed using Visual Basic code, relying on a true random function based on the PC system clock. The random generator selects topics in a Microsoft Access Database containing Revision 2 of the PWR K&A catalogue. The selected data is then written to a separate data table. The process for selection of topics is similar to the guidance in ES-401, Attachment 1.

The attached outline report and plant specific suppression profile (not used for SONGS) report are written directly from the data tables created by the software. Electronic copies of the data tables are on file.

The process used to develop the outlines is as follows:

- For Tier 1 and Tier 2 generic items, only the items required to be included in accordance with ES-401, Attachment 2 are included in the generation process.

- The SONGS plant suppression profile lists all suppressed topics, either at the Topic level (System/EPE) or at the statement level. These items were suppressed prior to the electronic generation process. *Items suppressed for the SONGS exam only included system 025 (Ice Condenser). This document is intended to serve as plant suppression profile due to the small number of suppressed items.*

- Outline is generated for all topics with KA importance ≥2.5.

- 25 SRO topics are randomly selected from Tier 1 AA2 and required generic items, Tier 2 A2 and required generic items, and Tier 3 generic items (All with ties to 10CFR55.43). 75 RO topics are randomly selected to complete the outline, 100 topics total.

- The exam report generated lists the topic (Question) number in the far right column. RO topics are numbered 1-75, and SRO topics are numbered 76–100. The SRO topics are written in red ink for ease of identification.

- Items that are rejected after the initial generation process are automatically placed on the rejected items page. The software tracks whether items are added manually or by random generation, and a report of outline modification may be generated.

- Disposition of any item randomly selected but not included in the outline is documented and included.