Tier / Group	Randomly Selected K/A	Reason for Rejection
Tier 1	295019 AK2.14	LGS and Common and PBAPS Outline - Partial or Total Loss of Instrument Air / Plant Air Systems. After reviewing the task list, lesson plan materials taught to the LSROs and discussion with LSRO incumbents, this K/A was rejected. This topic falls outside the scope of LSRO activities and required job knowledge. This K/A was replaced with randomly selected K/A 295034 EK2.01 which has been verified to be contained within the LSRO job scope
Tier 2	223001 G2.1.12	LGS and Common Outline – Loss of Primary Containment. After reviewing the task list, lesson plan materials taught to the LSROs and discussion with LSRO incumbents, this K/A was rejected. This topic falls outside the scope of LSRO activities and required job knowledge. This K/A was replaced with selected K/A 290001 G2.1.12 which has been verified to be pertinent to the LSRO job scope
Tier 2	215005 K2.01	LGS and Common ans PBAPS Outline - APRM / LPRM Power Supply to LPRM Channels. This K/A is beyond the scope of the LSRO (basis for rejection is the same method as described above). K/A was replaced by randomly selected K/A 2040000 A3.04 which is more applicable to LSRO
Tier 3	292003 K1.09	LGS and Common Outline – Randomly selected K/A to Define doubling time and calculate it it using the power equation is beyond the scope of the LSRO (basis for rejection is the same method as described above). This K/A was replaced with randomly selected K/A 292004 K1.14 which is applicable to LSRO's
Tier 2	233000 K6.10	PBAPS Outline - Fuel Pool Cooling / Cleanup / Reactor Cavity Seal Failure. Physical design of the PBAPS refuel seals prevents failure without considering implausible failure mechanisms. Although this K/A can be adequately tested at LGS, it cannot be adequately tested a PBAPS. This K/A was rejected and was replaced with randomly selected K/A 215003 K5.03 which has been verified to be contained within the LSRO job scope
Tier 2	272000 A1.01	LGS and Common Outline – Radiation Monitoring – Lights, alarms, and indications associated with normal operations. After reviewing the task list, lesson plan materials taught to the LSROs and discussion with LSRO incumbents, this K/A was rejected. This not sufficient enough to be tested due to the limited scope of LSROs . This K/A was replaced with selected K/A 272000 A2.12 which has been verified to be pertinent to the LSRO job scope

LGS/PBAPS 2005 Written LSRO Exam Change Summary Sheet

Question #	Initial Comment	Agreed Upon Action	Completed Action
3	hydrolyzing activities, distracters credible	Improve distractor D	Fixed spelling, b accepted, c accepted, changed distractor D
4	c and d distracters credible	Remove Reference	Accepted in c and d. add justification differences on c and d for pb and lgs, removed reference p&id
6	typo in stem being performed answer c appears to be incomplete? a plausible	OK	Typo fixed / c accepted a / accepted
9	A not seem plausible	OK	Accepted
10	A not seem plausible	Change distractor A	Replaced distractor A
12	Level too simple more difficult	Replace Question	Replaced question
14	Turnover, stem cues right answer, a & b not plausible, references for answer and distracters	Replace / Modify	Replaced question
15	Low level cognitive	Change to Low Cognitive	Changed to low cognitive level
16	An reference material	OK	Accepted
17	Plausible distracters	Change distractor A	Replaced distractor A
19	B & C plausible JPM 3049 duplicate	Replace K/A / Question	Replaced, k/A new question
20	Correct answer sticks out why a & c plausible	Change distractor A	Replaced distractor A
21	References	OK	Accepted
23	References	Reformat 2 column	Replaced question
24	Distracters plausible	OK	Accepted
25	References for spelling error activities	OK	Corrected Typo
26	K/A miss match	Modify Question Stem / Distractors	Modified Question Stem / Distractors
28	Direct look up TS, k/a miss match	Modify Stem	Question Stem Modified
29	Similar to jpm 3019	Overlap / Replace Question	Question Replaced
31	c plausible, cue from earlier questions, justification typo a exhausts	OK	Typo corrected
36	References jpm 2053	Overlap / Replace Question	Question Replaced
37	References mode 5? D inconjuction with 60 gpm dump	Add 60 gpm dump flow to justifications	Added 60 gpm dump flow to justifications
38	A implausible on camera interlock	Replace Distractor	Replaced distractor

39	Not LSRO? JTA list	OK	Accepted
42	K/A mismatch	Replace Question	Question replaced-
43	Direct look up TS. Typo a close mov	OK	Accepted
47	Low cognitive	Change to Low Cognitive	Changed to Low Cognitive
48	C credible	Change distractor C	C distractor replaced
50	k/a mismatch, low cognitive, why distracters credible, not discriminate	Replace Question	Question Replaced

Written By: ___Jeff Stimpy_____

Unit ___Peach Bottom Unit 2_____ Date ____6/13/05_____ Reviewed By: __**For Training Only**_____

Title P2R20 Core Shuffle Part II in "B" Quadrant – REV. 01 SPOTTER COPY Authorized By: _**For Training Only**_____

STEP NO.	COMPONENT SERIAL NO.	MOVE FROM	ORIENT	MOVE TO	ORIENT	FHD	RPO	CRO	WRNM COUNTRATE								DATE	TIME
									A	B	C	D	E	F	G	H		
1	PYN521	P2CORE 01-44	SE	P2SPENT C-22	NW													
2	PYG651	P2CORE 03-42	NW	P2SPENT N-46	SW													
3	DBL B/G	P2SPENT B-31/C-32	NONE	P2CORE 01-44/03-42	NONE													
4	PYN463	P2CORE 01-42	NE	P2SPENT C-21	SW													
5	PYG764	P2CORE 03-44	SW	P2SPENT P-46	SW													
6	PJ1407	P2CORE 19-52	SW	P2SPENT C-20	SW													
7	PJ1447	P2CORE 17-50	NE	P2SPENT C-18	SW													

Attachment 4
NLSRO3051 REV000

Facility:	LGS (Revision 2)										Date of Exam: JUNE 13 2005	
Tier	K/A Category Points											
	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total
1. Emergency & Abnormal Plant Evolutions	2	2	2				1	2			1	10
2. Plant Systems	2	1	2	2	2	2	1	3	2	2	1	20
3. Generic Knowledge and Abilities Categories		1		2		3		4		GFE		10
		2		2		2		2		2		

Note: 1. Ensure that at least one topic from every K/A category is sampled within each tier.
2. The point total for each tier in the proposed outline must match that specified in the table. The final point total for each tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final exam must total 40 points.
3. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system (except fuel handling equipment) or evolution (except fuel handling accident).
4. The shaded areas are not applicable to the category/tier.
5. * 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.
6. If the applicants have not previously taken the GFE, Tier 3 shall include basic reactor theory, component, and thermodynamic topics that apply to fuel handling operations.
7. Systems/evolutions within each tier are identified on the associated outline. Enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the SRO license level, and the point totals (#) for each system and category. Enter the tier totals for each category in the table above.
8. For Tier 3, select topics from Setion 2 of the K/A catalog, and enter the K/A numbers, descriptions, importance ratings, and point totals (#) on Form ES-701-3.
9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements. The facility licensee's JTA for fuel handlers should be used as the basis for eliminating or adding testable topics.

ES-701	LSRO BWR Written Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1							Form ES-701-1			
	K 1	K 2	K 3	A 1	A 2	G	K/A Topics(s)	IR	#	S	Q
295003 Partial or Complete Loss of AC		X					AK2.02, Emergency generators	4.2	1	P	39
295004 Partial of Total Loss of DC											
295014 Inadvertent Reactivity Addition					X		AA2.03, Cause of reactivity addition	4.3	1	P	50
295018 Partial or Total Loss of CCW	X						AK1.01, Effects on component/system operation	3.6	1	L	27
295021 Loss of Shutdown Cooling	X						AK1.03, Adequate core cooling	3.9	1	L	28
295023 Refueling Accidents				X			AA1.03, Fuel handling equipment	3.6	1	L	23
295033 High Secondary Containment Area Radiation Levels						X	G2.3.10, Ability to perform procedures to reduce excessive lev of rad and guard against personnel exp	3.3	1	L	3
295034 Secondary Containment Ventilation High Radiation		X					EK2.01, Process Radiation Monitoring System	4.2	1	L	24
295006 SCRAM											
295008 High Reactor Water Level					X		AA2.01, Reactor water level	3.9	1	L	2
295009 / 295031 Reactor Low Water Level			X				EK3.02, Core coverage	4.7	1	L	1
295017 / 295038 High Offsite Release Rate			X				AK3.01, System isolations	3.9	1	P	49
295019 Partial or Total Loss of Inst. Air											
295020 Inadvertent Cont. Isolation											
295030 Low Suppression Pool Wtr Lvl											
295035 Secondary Containment High Differential Pressure											
600000 Plant Fire On Site											
K/A Category Totals:	2	2	2	1	2	1	Tier Point Total:		10		

ES-701	LSRO BWR Examination Outline Plant Systems – Tier 2												Form ES-701-1			
	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topics(s)	IR	#	S	Q
205000 Shutdown Cooling							X					A1.08, Heat exchanger temperatures	2.9	1	L	4
215004 Source Range Monitor		X										K2.01, SRM channels/detectors	2.8	1	L	17
233000 Fuel Pool Cooling/Cleanup						X						K6.10, Reactor cavity seal failure	3.3	1	L	5
234000 Fuel Handling Equipment			X									K3.03, Fuel handling problems	3.8	1	L	29
262001 AC Electrical Dist.																
263000 DC Electrical Dist.																
290002 Reactor Vessel Internals				X								K4.05, Natural circulation	3.5	1	P	47
201002 RMCS										X		A4.03, Rod drift test switch	2.8	1	L	6
201003 Control Rod and Drive Mechanism						X						K6.01, Control rod drive hydraulic system	3.3	1	L	34
203000 RHR/LPCI: Injection Mode					X							K5.02, Core cooling methods	3.7	1	P	45
204000 RWCU									X			A3.04, Response to interlocks and trips designed to protect system components	3.4	1	P	21
211000 SLC				X								K4.07, RWCU isolation	3.9	1	L	30
212000 RPS									X			A3.04, System status lights and alarms	3.8	1	P	40
214000 RPIS	X											K1.05, Full core display	3.3	1	L	7
215001 Traversing In-Core Probe																
215003 IRM					X							K5.03, Changing detector position	3.1	1	L	8
215005 APRM / LPRM																
223001 Primary CTMT and Aux.																
223002 PCIS/Nuclear Steam Supply Shutoff			X									K3.16, Shutdown cooling system/RHR	3.3	1	P	44
261000 SGTS										X		A4.02, Suction valves	3.1	1	L	25
264000 EDGs	X											K1.01, AC electrical systems	4.1	1	L	18
272000 Radiation Monitoring								X				A2.12, Refuel Floor handling accidents/operations	4.0	1	L	19
286000 Fire Protection																
288000 Plant Ventilation																
290001 Secondary CTMT								X			X	A2.03, High area radiation G2.1.12, Ability to Apply Tech Spec	3.6 4.0	1 1	L P	20 43
300000 Instrument Air																
400000 Component Cooling Water								X				A2.02, High/low surge tank level	3.0	1	P	42
K/A Category Totals:	2	1	2	2	2	2	1	3	2	2	1	Tier Point Total:		20		

ES-701 LSRO Generic Knowledge and Abilities Outline (Tier 3)				Form ES-701-3		
Facility: LGS			Date of Exam: JUN 13 2005			
Category	K/A #	Topic	IR	#	S	Q
1. Conduct of Operations	2.1.22	Ability to determine mode of operation	3.3	1	C	15
	2.1.32	Ability to explain and apply system limits and precautions	3.8	1	C	13
	2.1					
	2.1					
	Subtotal			2		
2. Equipment Control	2.2.26	Knowledge of refueling administrative requirements	3.7	1	C	9
	2.2.29	Knowledge of SRO fuel handling responsibilities	3.8	1	C	14
	2.2					
	2.2					
	Subtotal			2		
3. Radiation Control	2.3.1	Knowledge of 10CFR20 and related facility radiation control requirements	3.0	1	C	11
	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized	3.1	1	C	10
	2.3					
	2.3					
	Subtotal			2		
4. Emergency Procedures / Plan	2.4.29	Knowledge of the emergency plan	4.0	1	C	12
	2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm	3.6	1	C	16
	2.4					
	2.4					
	Subtotal			2		
5. Generic Fundamentals	K1.08	291006, Relationship between flow rates and temperature	3.0	1	C	22
	K1.14`	292004, Evaluate change in Shutdown Margin due to changes in plant parameters	2.9	1	C	26
	Subtotal			2		
Tier 3 Point Total				10		

Facility:	PBAPS (Revision 2)									Date of Exam: JUNE 13 2005		
Tier	K/A Category Points											
	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total
1. Emergency & Abnormal Plant Evolutions	2	1	1				1	0			0	5
2. Plant Systems	1	0	1	0	1	0	1	0	1	0	0	5
3. Generic Knowledge and Abilities Categories		1		2		3		4		GFE		0
		0		0		0		0		0		

Note: 1. Ensure that at least one topic from every K/A category is sampled within each tier.
2. The point total for each tier in the proposed outline must match that specified in the table. The final point total for each tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final exam must total 40 points.
3. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system (except fuel handling equipment) or evolution (except fuel handling accident).
4. The shaded areas are not applicable to the category/tier.
5. • 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.
6. If the applicants have not previously taken the GFE, Tier 3 shall include basic reactor theory, component, and thermodynamic topics that apply to fuel handling operations.
7. Systems/evolutions within each tier are identified on the associated outline. Enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the SRO license level, and the point totals (#) for each system and category. Enter the tier totals for each category in the table above.
8. For Tier 3, select topics from Setion 2 of the K/A catalog, and enter the K/A numbers, descriptions, importance ratings, and point totals (#) on Form ES-701-3.
9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements. The facility licensee's JTA for fuel handlers should be used as the basis for eliminating or adding testable topics.

ES-701	LSRO BWR Written Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1										Form ES-701-1
	K 1	K 2	K 3	A 1	A 2	G	K/A Topics(s)	IR	#	S	Q
295003 Partial or Complete Loss of AC											
295004 Partial of Total Loss of DC											
295014 Inadvertent Reactivity Addition											
295018 Partial or Total Loss of CCW	X						AK1.01, Effects on component/system operation	3.6	1	P	37
295021 Loss of Shutdown Cooling	X						AK1.03, Adequate core cooling	3.9	1	P	35
295023 Refueling Accidents				X			AA1.03, Fuel handling equipment	3.6	1	P	36
295033 High Secondary Containment Area Radiation Levels											
295034 Secondary Containment Ventilation High Radiation		X					EK2.01, Process Radiation Monitoring System	4.2	1	P	31
295006 SCRAM											
295008 High Reactor Water Level											
295009 / 295031 Reactor Low Water Level			X				EK3.02, Core coverage	4.7	1	P	48
295017 / 295038 High Offsite Release Rate											
295019 Partial or Total Loss of Inst. Air											
295020 Inadvertent Cont. Isolation											
295030 Low Suppression Pool Wtr Lvl											
295035 Secondary Containment High Differential Pressure											
600000 Plant Fire On Site											
K/A Category Totals:	2	1	1	1	0	0	Tier Point Total:		5		

ES-701	LSRO BWR Examination Outline Plant Systems – Tier 2	Form ES-701-1

	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topics(s)	IR	#	S	Q
205000 Shutdown Cooling							X					A1.08, Heat exchanger temperatures	2.9	1	P	46
215004 Source Range Monitor																
233000 Fuel Pool Cooling/Cleanup																
234000 Fuel Handling Equipment			X									K3.03, Fuel handling problems	3.8	1	P	38
262001 AC Electrical Dist.																
263000 DC Electrical Dist.																
290002 Reactor Vessel Internals																
201002 RMCS																
201003 Control Rod and Drive Mechanism																
203000 RHR/LPCI: Injection Mode																
204000 RWCU									X			A3.04, Response to interlocks and Trips	3.4	1	P	32
211000 SLC																
212000 RPS																
214000 RPIS	X											K1.05, Full core display	3.3	1	P	41
215001 Traversing In-Core Probe																
215003 IRM					X							K5.03, Changing Detector Position	3.1	1	P	33
215005 APRM / LPRM																
223001 Primary CTMT and Aux.																
223002 PCIS/Nuclear Steam Supply Shutoff																
261000 SGTS																
264000 EDGs																
272000 Radiation Monitoring																
286000 Fire Protection																
288000 Plant Ventilation																
290001 Secondary CTMT																
300000 Instrument Air																
400000 Component Cooling Water																
K/A Category Totals:	1	0	1	0	1	0	1	0	1	0	0	Tier Point Total:		5		

ES-701 LSRO Generic Knowledge and Abilities Outline (Tier 3) Form ES-701-3				
Facility: PBAPS			Date of Exam: JUN 13 2005	
Category	K/A #	Topic	IR	#
1. Conduct of Operations	2.1			
	2.1			
	2.1			
	2.1			
	Subtotal			0
2. Equipment Control	2.2			
	2.2			
	2.2			
	2.2			
	Subtotal			0
3. Radiation Control	2.3			
	2.3			
	2.3			
	2.3			
	Subtotal			0
4. Emergency Procedures / Plan	2.4			
	2.4			
	2.4			
	2.4			
	Subtotal			0
5. Generic Fundamentals				
	Subtotal			
Tier 3 Point Total				0