INITIAL SUBMITTAL

HARRIS EXAM
50-400/2004-301

FEBRUARY 23 - 27,2004
& MARCH 4,2004 (WRITTEN)

INITIAL SUBMITTAL

INITIAL OUTLINE SUBMITTALS
NRC SUBMITTED/WRITTEN OUTLINES

Facility:	HARRIS	Date of Examination:	2/25 - 2/27/2004
Examination Level:	SRO	Operating Test Number:	1

Administrative Topic (see Note)	Describe Activity to be Performed (KA # - RO Imp / SRO Imp)
Conduct of Operations	Perform a manual Shutdown Margin Calculation per OST-1036 (2.1.25 - NA / 3.1)
Conduct of Operations	Determine Average RCS Boron Concentration per EOP-EPP-002 (2.1.20 - 4.3 / 4.2)
Equipment Control	Determine clearance requirements for a CSIP per OPS-NGGC-1301 (2.2.13 - 3.6 / 3.8)
Radiation Control	Determine entry conditions for a High Radiation Area per AP-504 (2.3.10 - 2.9 / 3.3)
Emergency Plan	Determine Protective Action Recommendations per PEP-110 (2.4.44 - NA / 4.0)

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

Facility: HARRIS	Date of Examination: 2/23 - 2/27/2004
Examination Level: RO	Operating Test Number: 1

Administrative Topic (see Note)	Describe Activity to be Performed (KA # - RO Imp / SRO Imp)
Conduct of Operations	Determine Reactor Vessel Head venting time per EOP-EPP-FRP I.3 (2.1.25 - 2.8 / NA)
Conduct of Operations	Determine Average RCS Boron Concentration per EOP-EPP-002 (2.1.20 - 4.3 / 4.2)
Equipment Control	Determine clearance requirements for a CSIP per OPS-NGGC-1301 (2.2.13 - 3.6 / 3.8)
Radiation Control	Determine entry conditions for a High Radiation Area per AP-504 (2.3.10 - 2.9 13.3)
Emergency Plan	MOP APPLICABLE FOR RO

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.

Facility	HARRIS	Bate of Examination	2/23 - 2/27 /2004
Examination Level	RO	Operating Test Number	1

Control Room Systems (8 for 80.7 for SRO-I, 2 or 3 for SRO-U)

	System/JPM Title	Type Code*	Safety Function (KA# - RO Imp)
a.	Transfer 6.9KV Buses from Unit Auxiliary Transformers to the Startup Auxiliary Transformers per OP-156.02	N / A / S	6 (06284.07 - 3.1)
b.	Perform Containment Cooling System Operability Test per OST-1090	DJS	5 (022A4.01 - 3.6)
c.	Perform an Emergency Boration per WOP-002	D / A / S / L	3 (000024AA2.01 - 3.8)
d.	Transfer SG Level Control to the Main Feedwater Regulating Bypass Valves per OP-134.01	N / S / L	45 (05984.03 - 2.9)
e.	Transfer to Cold beg Recirculation per EOP-EPP-010	M / A / S / L	2 (006A4.05 - 3.9)
f.	Perform Control Rod and Rod Position Indicator Exercise per OST-1005	D / A / S	1 (001A2.11 - 4.4)
g.	Place Audio Count Rate Drawer in Service per OP-105	N / C (or S)	7 (015A4.02 - 3.9)
h.	Align CCW to Support RHR System Operations per OP-145	D / L / C (or S)	8 (008A4.01 - 3.3)

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

i.	Perform Mode 6 Inadvertent Dilution Component Lineup per OQ-107	M / A / R	1 (004A2.06 - 4.2)
j.	Perform local actions for placing an OTAT channel in Test per OWP-RP-01	N	7 (012A4.04 - 3.3)
k.	Locally operate a SG PORV per EOP-EPP-012 and OP-126	D / R	4S (000074EA1.04 - 3.9)

'Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)CA

Facility: HARRIS Date of Examination: 2/23/-2/27/2004

Examination Level, SRO-U Operating Test Number 1

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

	System/JPM Tile	Type Code"	safety Function (KA # - SRO Imp)
a.	Transfer 6.9KV Buses from Unit Auxiliary Transformers to the Startup Auxiliary Transformers per OP-156.02	N / A / S	6 (062A4.07 - 3.1)
b.	NOT APPLICABLE FOR SRO-U		
c.	Perform an Emergency Boration per AOP-002	D / A / S / L	3 (000024AA2.01 - 4.1)
d.	NOT APPLICABLE FOR SRO-U		
e.	NOT APPLICABLE FOR SRO-U		
f.	NOT APPLICABLE FOR SRO-U		
g.	NOT APPLICABLE FOR SRO-U		
h.	NOT APPLICABLE FOR SRO-U		

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

i.	Perform Mode 6 Inadvertent Dilution Component Lineup per OP-107	M / A / R	1 (004A2.06 - 4.3)
j.	Perform local actions for placing an QTAT channel in Test per OWP-RP-01	N	7 (012A4.04 - 3.3)
k.	Locally operate a SG PORV per EOP-EPP-012 and OP-126	D / R	45 (000074EA1.04 - 4.1)

"Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)CA

Facility: HARRIS Scenario Number: 1 Op-Test Number: /

Examiners Operators

Initial Conditions: PC-14; 52% power EOL; AFW Pump A-SA OOS (CFW027 RACK–OUT); Ensure DEH HOLD button is illuminated. Ensure only one Condensate Pump and one Condensate Booster Pump is in service. Ensure a Reactivity Plan is provided.

Turnover: The unit is at 52% power at EOL, 6 hours following a reactor startup from Xenon-free conditions.

Boron concentration is 586 ppm. Bank D rods are at 167 steps.

AFW Pump 'A' was taken out of service 2 hours ago for oil replacement due to contaminants and is expected to be returned to service within the next 2 hours. Technical Specification 3.7.1.2 has been entered.

Shift orders are to place the second Condensate Train in service and continue the power ramp to 90% power and restore AFW Pump 'A' to service when it becomes available. GP-005 is being performed per Step 5.0.133. The CPD Operator has informed you that sufficient CPDs are in service.

Event Number	Malfunction Number	Event Type*	Event Description
1	NA	N (BOP) N (SRO)	Place Second Condensate Train in service
2	RCS06A 650	I (RO) I (SRO)	Median Tavg high failure
3	LT:486 0 0	I (BOP) I (SRO)	SG Level Low Failure
4	LT:459 100 0	I (RO) I (SRO)	Pressurizer Level high failure
5	CND03 18	C (BOP) C (SRO) R (RO)	Partial Loss of Condenser Vacuum
6	MSS01C 8E6 1200	M (ALL)	Steam Break Inside Containment

Event Number	Malfunction Number	Event Type*	Event Description
7	RPS01B 3 3	M (ALL)	Reactor Trip failure
8	CFW1B	C (BOP) C (SRO)	AFW Pump 'B' trip
9	CVC21A 0 K701B FAIL K602B FAIL	C (RO) C (SRO)	1CS-292 (LCV-115B) RWST to CSIPs failed shut AND 1CS-291 (LCV-115D) RWST to CSIPs fail to auto open on SI or lo-lo VCT level
10	NA	(SRO)	Classifies the Event

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

Facility: HARRIS Scenario Number: 2 Op-Test Number: /

Examiners Operators

Initial Conditions: IC-18; 100% power BOL; AFW Pump A-SA OOS (CFW027 RACK–OUT); HDP A OOS (CND065 RACK–OUT)

Turnover: The unit is at 100% power at BOK, with equilibrium xenon conditions.

Boron concentration is 1238 ppm. Bank D rods are at 218 steps.

AFW Pump 'A' was taken out of service 2 hours ago for oil replacement due to contaminants and is expected to be returned to service within the next 2 hours. Technical Specification 3.7.1.2 has been entered.

HDP 'A' is tagged out of service for bearing replacement and is not expected back for the next several days.

Shift orders are to maintain power at 100% and restore AFW Pump 'A' to service when it becomes available. GP-005 has been completed and the plant has been stable for 3 weeks

Event Number	Malfunction Number	Event Type*	Event Description
1	PT:308A 1300 90 XB1O007B OFF	I (BOP) I (SRO)	S/G A PORV Pressure Transmitter PT-308 fails high with failure of S/G A PORV open indication
2	LT:112 100 0	I (RO) I (SRO)	LT-112, VCT Level, High Failure
3	CRF-3A 2 F2	C (RO) C (SRO)	Dropped Control Rod F2
4	NA	R (RO) N (BOP) N (SRO)	Power Reduction
5	CVC-23A	C (RO) C (SRO)	Boric Acid Pump Trip

Event Number	Malfunction Number	Event Type*	Event Description
6	EPS-5A DSG-1 1	C (ALL)	Loss of Power to an ESF Bus with Failure of EDG to Load
7	CRF-3B 2 K14	M (ALL)	Second Dropped Control Rod K14
8	PRS-1 850 600	M (ALL)	Pressurizer Steam Space Break
9	NIS-6A E9	I (RO) I (SRO)	NIS Intermediate Range Compensating Voltage Low Failure
10	NA	(SRO)	Classifies the Event

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

Facility: HARRIS Scenario Number: 3 Op-Test Number: /

Examiners Operators

Initial Conditions: IC-20; 100% power EOL; AFW Pump A-SA OOS (CFW027 RACK_OUT); HDP A OOS (CND065 RACK_OUT)

Turnover: The unit is at 100% power at EOL, with equilibrium xenon conditions.

Boron concentration is 3M ppm. Bank D rods are at 218 steps.

AFW Pump 'A' was taken out of service 2 hours ago for oil replacement due to contaminants and is expected to he returned to service within the next 2 hours. Technical Specification 3.7.1.2 has been entered.

HDP 'A' is tagged out of service for bearing replacement and is not expected back for the next several days.

Shift orders are to maintain power at 100%, restore AFW Pump 'A' to service when it becomes available, and shift operating CSIPs for inspection of CSIP 'A' bearing. GP-005 has been completed and the plant has been stable for 3 weeks.

Event Number	Malfunction Number	Event Type*	Event Description
1	NA	N (RO) N (SRO)	Shift Operating CSIP
2	CCW01A CCW047 0 0	C (RO) C (SRO)	Operating CCW Pump Trip with failure of standby pump to automatically start
3	FT:477 0 0	I (BOP) I (SRO)	Feed Water Flow Low Failure
4	CFW-12B PS:1006 0	C (BOP) C (SRO) R (RO)	Heater Drain Pump Trip with Failure of Turbine to Automatically Runback
5	PT:444 2500 60	I (RO) I (SRO)	Pressurizer Pressure High Failure

Event Number	Malfunction Number	Event Type*	Event Description
6	SGN-5C 420 600	M (ALL)	SG Tube Rupture
7	MSS-5C 2	C (RO) C (SRO)	Failure of MSIV on Ruptured SG to close — can be closed locally
8	ZRPK622B Deenergize	C (BOP)	Partial failure of Automatic Phase A Isolation signal (Train B Phase A Slave Relay for select CNMT Phase A valves fails to energize when required). 1SI-287, 1CS-11 & 1SW-242
9	NA	(SRO)	Classifies the Event

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

Facility HARRIS Date of Exam 3/04/04

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	K	A	A 2	G *	Total
1 Emergency & Abnormal Plant Evolutions	1	3	3	3				3	3			3	18	0	0	3	4	7
	2	1	1	1				2	2			2	9	0	0	2	3	5
	Tier Totals	4	4	4				5	5			5	27	0	0	5	7	12
2 Plant Systems	1	2	2	3	3	2	2	3	3	2	3	3	28	0	0	2	2	4
	2	1	0	1	1	1	1	1	1	1	1	1	10	0	0	1	1	2
	Tier Totals	3	2	4	4	3	3	4	4	3	4	4	38	0	0	3	3	6
3 Generic Knowledge and Abilities Categories		1		2		3		4					10	1	2	3	4	7
		2		3		2		3						2	2	1	2	

Notes:

1 Ensure that at least two topics from every K/A category are sampled within each tier of the KO outline (i.e., the "Tier Totals" in each K/A category shall not be **less** than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.

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 KO exam must total *75* points and the SRO-only exam must total *25* points.

3 Select topics from many systems; avoid selecting more than two **W4** topics from a given system or evolution unless they relate to plant-specific priorities.

4 Systems/evolutions within each group are identified on the associated outline.

5 The shaded areas ore not applicable to the category/tier.

6* The generic (G) K/As in Tiers I and **2** shall he selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. The SRO K/As must also be linked to 10CFR55.43 or an SKO-level learning objective.

7 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; summarize all the SRO-only knowledge and non-A2 ability categories in the column labeled "K" and **"A".** Use duplicate pages for RO and SRO-only exams.

8 For Tier 3. enter the K/A numbers, descriptions, importance ratings. and points totals on Form ES-401-3.

9 Krfer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements

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

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 Reactor Trip - Stabilization - Recovery / 1				X			EA1.10 - Operate / monitor the following: S/G pressure	3.7	1
000008 Pressurizer Vapor Space Accident / 3						X	2.1.28 - Purpose / function of major system components / controls	3.2	1
000009 Small Break LOCA / 3			X				EK3.23 - Reasons for the following: RCP tripping requirements	4.2	1
000011 Large Break LOCA / 3 **(PSA)**			X				EK3.06 - Reasons for the following: Actuation of Phase A and B during LOCA initiation	4.3	1
000015/17 RCP Malfunctions / 4					X		AA2.08 - Determine / interpret the following: When to secure RCPs on high bearing temperature	3.4	1
000022 Loss of Reactor Coolant Makeup / 2						X	2.4.4 - Entry-level conditions for emergency / abnormal operating procedures	4.0	1
000025 Loss of RHR System / 4			X				**AK3.01** - Reasons for the following: Shift to alternate flowpath	**3.1**	1
000026 Loss of Component Cooling Water / 8									
000027 Pressurizer Pressure Control System Malfunction / 3		X					AK2.03 - Interrelations between the Pressurizer Pressure Control Malfunctions and Controllers / positioners	2.6	1
000029 ATWS / 1 **(PSA)**					X		EA2.01 - Determine / interpret the following: Reactor nuclear instrumentation	4.4	1
000038 Steam Gen. Tube Rupture / 3 **(PSA)**				X			EA1.**36**- Operate / monitor the following: Cooldown of RCS to specified temperature	**4.3**	**1**
000040 (W/E12) Steam Line Rupture - Excessive Heat Transfer / 4 **(PSA)**							WE12.EK2.1 - Interrelations between Uncontrolled Depressurization of all SGs and Components / functions of control and safety systems	**3.4**	1
000054 Loss of Main Feedwater / 4 **(PSA)**	X						AK1.02 - Operational implications of the following: Effects of feedwater introduction on dry S/G	3.6	1
000055 Station Blackout / 6				X			EA1.07 - Operate / monitor the following: Restoration of power from offsite	4.3	1
000056 Loss of Off-site Power / 6 **(PSA)**					X		AA2.09 - Determine / interpret the following: Operational status of reactor building cooling unit	2.7	1
000057 Loss of Vital AC Inst. Bus / 6									
000058 Loss of DC Power / 6						X	2.1.33 - Entry-level conditions for technical specifications	3.4	1
000062 Loss of Nuclear Svc Water / 4									
000065 Loss of Instrument Air / 8									
W/E04 LOCA Outside Containment / 3	X						EK1.2 - Operational implications of the following: Normal, abnormal / emergency procedures	3.5	1
W/E11 Loss of Emergency Coolant Recirc. / 4	X						EK1.1 - Operational implications of the following: Components, capacity, / function of emergency systems	3.7	1
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		X					EK2.2 - Interrelations between Loss of Secondary Heat Sink and Facilitys heat removal systems	3.9	1
K/A Category Totals:	3	3	3	3	3	3	Group Point Total:		18

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

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 Reactor Trip - Stabilization - Recovery / 1									
000008 Pressurizer Vapor Space Accident / 3					X		AA2.30 - Determine / interpret the following: Inadequate core cooling	4.7	1
000009 Small Break LOCA / 3									
000011 Large Break LOCA / 3 **(PSA)**						X	2.4.6 - EOP mitigation strategies	4.0	1
000015/17 RCP Malfunctions / 4									
000022 Loss of Reactor Coolant Makeup / 2									
000025 Loss of RHR System / 4									
000026 Loss of Component Cooling Water / 8									
000027 Pressurizer Pressure Control System Malfunction / 3									
000029 ATWS / 1 **(PSA)**									
000038 Steam Gen. Tube Rupture / 3 **(PSA)**					X		EA2.08 - Determine / interpret the following: Viable alternatives for placing plant in safe condition when condenser is not available	4.4	1
000040 (W/E12) Steam Line Rupture - Excessive Heat Transfer / 4 **(PSA)**						X	000040.G.2.1.32 - Explain / apply system limits and precautions	3.8	1
000054 Loss of Main Feedwater / 4 **(PSA)**									
000055 Station Blackout / 6									
000056 Loss of Off-site Power / 6 **(PSA)**					X		AA2.14 - Determine / interpret the following: Operational status of ED/Gs (A and B)	4.6	1
000057 Loss of Vital AC Inst. Bus / 6						X	2.2.22 - Limiting conditions for operations and safety limits	4.1	1
000058 Loss of DC Power / 6						X	2.2.25 - Bases in technical specifications for limiting conditions for operations and safety limits	3.7	1
000062 Loss of Nuclear Svc Water / 4									
000065 Loss of Instrument Air / 8									
W/E04 LOCA Outside Containment / 3									
W/E11 Loss of Emergency Coolant Recirc. / 4									
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4									
K/A Category Totals:	0	0	0	0	3	4	Group Point Total:		7

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO/SRO)

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1									
000003 Dropped Control Rod / 1				X			AA1.02 - Operate / monitor the following: Controls / components necessary to recover rod	3.6	1
000005 Inoperable/Stuck Control Rod / 1		X					AK2.02 - Interrelations between the Inoperable / Stuck Control Rod and Breakers, relays, disconnects, / control room switches	2.5	1
000024 Emergency Boration / 1									
000028 Pressurizer Level Malfunction / 2									
000032 Loss of Source Range NI / 7									
000033 Loss of Intermediate Range NI / 7									
000036 Fuel Handling Accident / 8									
000037 Steam Generator Tube Leak / 3					X		AA2.10 - Determine / interpret the following: Tech-Spec limits for RCS leakage	3.2	1
000051 Loss of Condenser Vacuum / 4									
000059 Accidental Liquid RadWaste Rel. / 9						X	2.4.4 - Entry-level conditions for emergency and abnormal operating procedures	4.0	1
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7									
000067 Plant Fire On-site / 8									
000068 Control Room Evac. / 8			X				AK3.13 - Reasons for the following: Performing a shutdown margin calculation, including boron needed / boration time	3.3	1
000069 (W/E14) Loss of CTMT Integrity / 5				X			WE14.EA1.2 - Operate / monitor the following: Operating behavior characteristics of the facility	3.3	1
000074 (W/E06&E07) Inad. Core Cooling 4 **(PSA)**					X		000074.EA2.01 - Determine / interpret the following: Subcooling margin	4.6	1
000076 High Reactor **Coolant** Activity / 9									
W/E01 & E02 Rediagnosis & SI Termination / 3									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5	X						EK1.2 - Operational implications of the following: Normal, abnormal / emergency operating procedures	2.7	1
W/E16 High Containment Radiation / 9									
W/E03 LOCA Cooldown/Depress. / 4									
W/E09&E10 Natural Circ. / 4									
W/E08 RCS Overcooling - PTS / 4						X	2.1.30 - Locate / operate components, including local controls	3.9	1
	1	1	1	2	2	2	Group Point Total:		9

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO Only)

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1									
000003 Dropped Control Rod / 1									
000005 Inoperable/Stuck Control Rod / 1									
000024 Emergency Boration / 1						X	2.2.25 - Bases in technical specifications for limiting conditions for operations and safety limits	3.7	1
000028 Pressurizer Level Malfunction / 2									
000032 Loss of Source Range NI / 7					X		AA2.09 - Determine / interpret the following: Effect of improper HV setting	2.9	1
000033 Loss of Intermediate Range NI / 7									
000036 Fuel Handling Accident / 8									
000037 Steam Generator Tube Leak / 3									
000051 Loss of Condenser Vacuum / 4									
000059 Accidental Liquid RadWaste Rel. / 9									
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7									
000067 Plant Fire On-site / 8									
000068 Control Room Evac. / 8									
000069 (W/E14) Loss of CTMT Integrity / 5					X		WE14.EA2.2 - Determine / interpret the following: Adherence to appropriate procedures / operation	3.8	1
000074 (W/E06&E07) Inad. Core Cooling / 4 **(PSA)**						X	WE06.G.2.1.32 - Explain / apply system limits and precautions	3.8	1
000076 High Reactor Coolant Activity / 9									
W/E01 & E02 Rediagnosis & SI Termination / 3									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
W/E16 High Containment Radiation / 9									
W/E03 LOCA Cooldown/Depress. / 4									
W/E09&E10 Natural Circ. / 4						X	WE09.G.2.1.32 - Explain / apply system limits and precautions	3.8	1
W/E08 RCS Overcooling - PTS / 4									
K/A Category Totals:	0	0	0	0	2	3	Group Point Total:		5

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

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
Reactor Coolant Pump										X		A4.01 - Operate / monitor: Seal injection	3.3	2
							X					A1.01 - Predict / monitor changes in parameters including: RCP vibration	2.9	
004 Chemical and Volume Control							X					A1.06 - Predict! monitor changes in parameters including: VCT level	3.0	2
								X				**A2.06** - Control / mitigate Inadvertent boration/dilution	**4.2**	
005 Residual Heat Removal					X							K5.09 - Operational implications of Dilution and boration considerations	3.2	1
006 Emergency Core Cooling				X								K4.11 - Design feature(s) / interlock(s) which provide Reset of SIS	3.9	1
007 Pressurizer Relief/Quench Tank				X								K4.01 - Design feature(s) / interlock(s) which provide Quench tank cooling	2.6	1
008 Component Cooling Water									X			A3.08 - CCWS actions that occur as a result of a safety injection signal	3.6	1
010 Pressurizer Pressure Control	X											K1.06 - Cause-effect relationships between PZR PCS and CVCS	2.9	1
012 Reactor Protection		X										K2.01 - Power supplies to RPS channels / components / interconnections	3.3	1
013 Engineered Safety Features Actuation			X									K3.03 - Effect of loss / malfunction on the following: Containment	4.3	2
						X						K6.01 - Effect of loss / malfunction on ESFAS: Sensors and detectors	2.4	
022 Containment Cooling											X	2.1.28 - Purpose / function of major system components / controls	3.2	2
			X									K3.02 - Effect of loss / malfunction on Containment instrumentation readings	3.0	
026 Containment Spray								X				A2.08 - Consequences of Safe securing of containment spray	3.2	1
039 Main and Reheat Steam								X				A2.05 - Consequences of increasing steam demand, its relationship to increases in reactor power	3.3	1
056 Condensate											X	2.1.28 - Purpose / function of major system components / controls	3.2	1
059 Main Feedwater										X		A4.08 - Operate / monitor: F e d regulating valve controller	3.0	2
				X								K4.19 - Design feature(s) / interlock(s) which feedwater isolation of MFW	**3.2**	
061 Auxiliary/Emergency Feedwater **(PSA)**						X						K6.01 - Effect of loss / malfunction on AFW: Controllers / positioners	2.5	1
062 AC Electrical Distribution										X		A4.04 - Operate / monitor: Local operation of breakers	2.6	1
063 DC Electrical Distribution							X					A1.01 - Predict / monitor changes in parameters including: Battery capacity	2.5	1
064 Emergency Diesel									X			A3.07 - Operation of Load sequencing	3.6	2
		X										K2.03 - Supplies for Control power	3.2	
073 Process Radiation Monitoring					X							K5.02 - Implications of Radiation intensity changes with source distance	2.5	1
076 Service Water	X											K1.15 - Connections / cause-effect relationships between SWS and FPS	2.5	1
Instrument Air			X									K3.02 - Effect of loss / malfunction on pneumatic valves / controls	3.4	1
103 Containment											X	2.4.6 - EOP mitigation strategies	3.1	1
K/A Category Totals:	2	2	3	3	2	2	3	3	2	3	3	Group Point Total:		28

Plant Syster - Tier 2/Group 1 (SRO Only)

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
[illegible] Reactor Coolant Pump														
004 Chemical and Volume Control														
005 Residual Heat Removal														
006 Emergency Core Cooling								X				A2.04 - Control / mitigate Improper discharge pressure	3.8	1
007 Pressurizer Relief/Quench Tank														
008 Component Cooling Water														
010 Pressurizer Pressure Control														
012 Reactor Protection											X	2.4.6 - Knowledge of symptom based EOP mitigation strategies. (Reactor Protection)	4.0	1
013 Engineered Safety Features Actuation								X				A2.01 - Control / mitigate LOCA	4.6	1
022 Containment Cooling														
025 Ice Condenser														
026 Containment Spray														
039 Main and Reheat Steam														
056 Condensate														
059 Main Feedwater														
[illegible] Auxiliary/Emergency Feedwater (PSA)														
062 AC Electrical Distribution											X	2.2.22 - Limiting conditions for operations and safety limits	4.1	1
063 DC Electrical Distribution														
064 Emergency Diesel Generator														
073 Process Radiation														
076 Service Water														
078 Instrument Air														
103 Containment														
K/A Category Totals:	0	0	0	0	0	0	0	2	0	0	2	Group Point Total:		4

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

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
Control Rod Drive				X								K4.07 - Design feature(s) / interlock(s) which provide Rod stops	3.7	1
002 Reactor Coolant					X							K5.10 - Relationship between reactor power and RCS differential temperature	3.6	1
011 Pressurizer Level Control						X						K6.04 - Effect of loss / malfunction on PZR LCS: PZR level controllers	3.1	1
014 Rod Position Indication														
015 Nuclear Instrumentation								X				A2.05 - Control / mitigate Core void formation	3.3	1
016 Non-nuclear Instrumentation														
017 In-core Temperature Monitor			X									K3.01 - Effect of loss / malfunction on Natural circulation indications	3.5	1
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control											X	2.2.22 - Limiting conditions for operations and safety limits	3.4	1
029 Containment Purge							X					A1.03 - Predict / monitor changes in Containment pressure, temperature, humidity	3.0	1
033 Spent Fuel Pool Cooling														
034 Fuel Handling Equipment														
Steam Generator	X											K1.01 - Cause-effect relationships between S/GS and MFW/AFW	4.2	1
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator										X		A4.06 - Operate / monitor: Turbine stop valves	2.8	1
055 Condenser Air Removal														
068 Liquid Radwaste									X			A3.02 - Automatic isolation of Liquid Radwaste	3.6	1
071 Waste Gas Disposal														
072 Area Radiation Monitoring														
075 Circulating Water														
079 Station Air														
086 Fire Protection														
K/A Category Totals:	1	0	1	1	1	1	1	1	1	1	1	Group Point Total:		10

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

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
[illegible] Control Rod Drive											X	2.4.6 - EOP mitigation strategies	4.0	1
002 Reactor Coolant														
011 Pressurizer Level Control														
014 Rod Position Indication								X				A2.02 - Control / mitigate Loss of power to the RPIS	3.6	1
015 Nuclear Instrumentation														
016 Non-nuclear Instrumentation														
017 In-core Temperature Monitor														
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control														
029 Containment Purge														
033 Spent Fuel Pool Cooling														
034 Fuel Handling Equipment														
035 Steam Generator														
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine [illegible]rator														
055 Condenser Air Removal														
068 Liquid Radwaste														
071 Waste Gas Disposal														
072 Area Radiation Monitoring														
075 Circulating Water														
079 Station Air														
086 Fire Protection														
K/A Category Totals:	0	0	0	0	0	0	0	1	0	0	1	Group Point Total:		2

Facility: **HARRIS** Date of Exam: 3/04/04

Category	K/A #	Topic	RO IR	RO #	SRO-Only IR	SRO-Only #
1 Conduct of Operations	2.1.23	Perform specific system and integrated plant procedures during all modes of plant operation.	3.9	1		
	2.1.25	Obtain / interpret station reference materials such as graphs, monographs, and tables.	2.8	1		
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.			4.0	1
	2.1.1	Knowledge of conduct of operations requirements.			3.8	1
	Subtotal			2		2
2 Equipment Control	12.2.1	Ability to perform pre-startup procedures, including operating those controls that could affect reactivity.	***3.1***	1		
	2.2.24	Ability to analyze the affect of maintenance activities on LCO status.	2.6	1		
	2.2.13	Knowledge of tagging and clearance procedures.	3.6	1		
	2.2.19	Knowledge of maintenance work order requirements.			3.1	1
	2.2.10	Process for determining if the margin of safety is reduced by a proposed change, test or experiment.			3.3	1
	Subtotal			3		2
3 Radiation Control	2.3.2	Knowledge of facility ALARA program.	2.5	1		
	2.3.11	Ability to control radiation releases.	2.7	1		
	2.3.7	Knowledge of the process for preparing a radiation work permit.			3.3	1
	Subtotal			2		1
4 Emergency Procedures/ Plan	2.4.31	Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1		
	2.4.3	Ability to identify post-accident instrumentation.	3.5	1		
	2.4.1	Knowledge of EOP entry conditions and immediate action steps.	4.3	1		
	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.			4.0	1
	2.4.14	Knowledge of general guidelines for EOP flowchart use.			3.9	1
	Subtotal			3		2
Tier 3 Point Total				10		7

Tier/Group	Randomly Selected K/A	Reason for Rejection
1 / 2	000005AK2.03	Selected – Replaced due to SHNPP not having a metroscope. Replaced by next randomly ordered 000005AK2 item (000005AK2.02)
2 / 1	076K1.08	NOT Selected -- Same system & category previously selected (076K1.15)
2 1 1	076K1.21	NOT Selected -- Same system & category previously selected (076K1.15)
2 / 1	059.44.01	Selected - Replaced due to SHNPP not having turbine driven feed pumps. Replaced by next randomly ordered 059.44 item (059A4.08)
2 / 1	026A2.02	Selected - Replaced due to SHNPP not having auto transfer of CS. Replaced by next randomly ordered 026.42 item (026A2.08)
2 / 2	028G2.4.49	Selected - Replaced due to no immediate actions associated with this system. Replaced by next randomly ordered 028G item (02862.2.22)
3	G 2.1.2	Selected - Replaced due to NO 43(b) tie to this K/A for SRO only Replaced by Random Selection by NRC with G2.1.7
3	G 2.3.7	Selected. Replaced due to NO 43(b) tie, and SRO Population does NOT Perform this task. Replaced randomly by NRC with G2.3.10
~~3~~ 1/1	058AG 2.2.25	Selected - Replaced due to NO INFORMATION IN TECHNICAL SPECIFICATIONS OR BASIS Related to Loss of DC - Randomly Replaced by NRC with 058AG2.1.33

HARRIS 2004 INITIAL LICENSE NRC EXAM

To Jerry Laska and Lee Miller:

The following table describes the question number on the SRO Written **Exam** and the reason that three (3) SRO K/A's that were chosen randomly on the Sample Plan need to be replaced.

Question # on Exam	Current K/A	Basis for needed replacement
5	Generic 2.1.2	There is no 43(b) tie to this K/A
21	Generic 2.3.7	The SRO population does not prepare nor approve RWP's. There is no 43(b) tie to this K/A
24	000058G2.2.25	No information is in our Technical Specifications or bases related to the loss of DC

Per our discussion on 1/27/04 you will he providing the replacement K/A's.

Thank you,

Harner Carter
Supervisor Operator Initial Programs