

**Final Submittal**  
(Blue Paper)

**FINAL OUTLINES**

**FARLEY NOV/DEC 2007-301 EXAM**

**05000348/2007301 AND 05000364/2007301**

**NOVEMBER 5 - 15, 2007  
DECEMBER 21, 2007**

Facility:		Farley 2007 NRC Exam										Date of Exam:		11/5/2007				
Tier	Group	RO K/A Category Points											SRO-Only Points					
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total		
1. Emergency & Abnormal Plant Evolutions	1	3	3	3				3	3			3	18	3	3	6		
	2	1	1	2				2	2			1	9	2	2	4		
	Tier Totals	4	4	5				5	5			4	27	5	5	10		
2. Plant Systems	1	2	2	3	2	2	2	3	3	2	5	3	28	3	2	5		
	2	1	1	1	1	1	1	1	1	1	0	1	10	0	2	3		
	Tier Totals	3	3	4	3	3	3	4	4	3	5	4	38	5	3	8		
3. Generic Knowledge and Abilities Categories				1		2		3		4		10		1	2	3	4	7
				3		2		2		3				2	2	1	2	
Note:	1.	Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).																
	2.	The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by $\pm 1$ 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 (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.																
	9.	For Tier 3, select topics from Section 2 of the K/A Catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10CFR55.43																

Farley 2007 NRC Exam  
Written Examination Outline  
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
009 / Small Break LOCA / 3						X	EA2.01	Ability to determine or interpret the following as they apply to a small break LOCA: Actions to be taken, based on RCS temperature and pressure, saturated and superheated	4.8	76
022 / Loss of Reactor Coolant Makeup / 2	X						2.1.14	Conduct of Operations: Knowledge of system status criteria which require the notification of plant personnel.	3.3	77
025 / Loss of Residual Heat Removal System / 4						X	AA2.04	Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Location and isolability of leaks	3.6	78
029 / Anticipated Transient Without Scram (ATWS) / 1	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	79
040 / Steam Line Rupture / 4						X	AA2.01	Ability to determine and interpret the following as they apply to the Steam Line Rupture: Occurrence and location of a steam line rupture from pressure and flow indications	4.7	80
E04 / LOCA Outside Containment / 3	X						2.2.22	Equipment Control Knowledge of limiting conditions for operations and safety limits	4.1	81
008 / Pressurizer Vapor Space Accident / 3			X				AK2.01	Knowledge of the interrelations between the Pressurizer Vapor Space Accident and the following: Valves	2.7	39
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	40
015 / 17 / Reactor Coolant Pump Malfunctions / 4				X			AK3.01	Knowledge of the reasons for the following responses as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow) : Potential damage from high winding and/or bearing temperatures	2.5	41
022 / Loss of Reactor Coolant Makeup / 2						X	AA2.04	Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Pump Makeup: How long PZR level can be maintained within limits	2.9	42
025 / Loss of Residual Heat Removal System / 4			X				AK2.03	Knowledge of the interrelations between the Loss of Residual Heat Removal System and the following: Service water or closed cooling water pumps	2.7	43

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

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
026 / Loss of Component Cooling Water / 8					X		AA1.02	Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: Loads on the CCWS in the control room	3.2	44
027 / Pressurizer Pressure Control System Malfunction / 3						X	AA2.16	Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: Actions to be taken if PZR pressure instrument fails low	3.6	45
029 / Anticipated Transient Without Scram (ATWS) / 1		X					EK1.01	Knowledge of the operational implications of the following concepts as they apply to the ATWS: Reactor nucleonics and thermo-hydraulics behavior	2.8	46
038 / Steam Generator Tube Rupture / 3		X					EK1.02	Knowledge of the operational implications of the following concepts as they apply to the SGTR: Leak rate vs. pressure drop	3.2	47
054 / Loss of Main Feedwater / 4						X	AA2.05	Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW): Status of MFW pumps, regulating and stop valves	3.5	48
055 / Station Blackout / 6					X		EA1.02	Ability to operate and monitor the following as they apply to a Station Blackout: Manual ED/G start	4.3	49
058 / Loss of DC Power / 6	X						2.1.32	Conduct of Operations: Ability to explain and apply all system limits and precautions.	3.4	50
062 / Loss of Nuclear Service. Water / 4	X						2.1.23	Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	51
065 / Loss of Instrument Air / 8				X			AK3.03	Knowledge of the reasons for the following responses as they apply to the Loss of Instrument Air: Knowing effects on plant operation of isolating certain equipment from instrument air	2.9	52
E04 / LOCA Outside Containment / 3		X					EK1.3	Knowledge of the operational implications of the following concepts as they apply to the (LOCA Outside Containment) Annunciators and conditions indicating signals, and remedial actions associated with the (LOCA Outside Containment).	3.5	53
E05 / Loss of Secondary Heat Sink / 4	X						2.1.27	Conduct of Operations: Knowledge of system purpose and or function.	2.8	54

Farley 2007 NRC Exam  
Written Examination Outline  
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
E11 / Loss of Emergency Coolant Recirculation / 4			X				EK2.2	Knowledge of the interrelations between the (Loss of Emergency Coolant Recirculation) 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.	3.9	55
057/ Loss of Vital AC Instrument Bus / 6				X			AK3.01	Knowledge of the reasons for the following responses as they apply to the (Loss of Vital AC Instrument Bus) Actions contained in the EOP for loss of vital AC electrical instrument bus.	4.1	56
K/A Category Point Totals:	3/3	3	3	3	3	3/3	Group Point Total:			18/6

Farley 2007 NRC Exam  
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#
037 / Steam generator tube leakage	X						2.4.11	Emergency Procedures / Plan Knowledge of Abnormal Condition procedures.	3.6	82
061 / Area Radiation Monitoring (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	3.3	83
E03 / LOCA Cooldown and Depressurization / 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.	4.3	84
E15 / Containment Flooding / 5						X	EA2.1	Ability to determine and interpret the following as they apply to the (Containment Flooding) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	3.2	85
001 / Continuous Rod Withdrawal / 1			X				AK2.01	Knowledge of the interrelations between the Continuous Rod Withdrawal and the following: Rod bank step counters	2.9	57
033 / Loss of Intermediate Range Nuclear Instrumentation / 7				X			AK3.01	Knowledge of the reasons for the following responses as they apply to the Loss of Intermediate Range Nuclear Instrumentation: Termination of startup following loss of intermediate- range instrumentation	3.2	58
068 / Control Room Evacuation /	X						2.1.20	Conduct of operations: Ability to execute procedure steps.	4.3	65
069 / Loss of Containment Integrity / 5						X	AA2.01	Ability to determine and interpret the following as they apply to the Loss of Containment Integrity: Loss of containment integrity	3.7	59
E02 / SI Termination / 3					X		EA1.3	Ability to operate and / or monitor the following as they apply to the (SI Termination) Desired operating results during abnormal and emergency situations.	3.8	60
E06 / Degraded Core Cooling / 4					X		EA1.2	Ability to operate and/or monitor the following as they apply to the (Degraded Core Cooling) Operating behavior characteristics of the facility.	3.5	61
E08 / Pressurized Thermal Shock / 4						X	EA2.1	Ability to determine and interpret the following as they apply to the (Pressurized Thermal Shock) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	3.4	62

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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#
E10 / Natural Circulation with Steam Void in Vessel with/without RVLIS / 4		X					EK1.1	Knowledge of the operational implications of the following concepts as they apply to the (Natural Circulation with Steam Void in Vessel with/without RVLIS) Components, capacity, and function of emergency systems.	3.3	63
E15 / Containment Flooding / 5				X			EK3.4	Knowledge of the reasons for the following responses as they apply to the (Containment Flooding) RO or SRO function as a within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.	2.9	64
K/A Category Point Total:	1/2	1	1	2	2	2/2	Group Point Total:			9/4

Farley 2007 NRC Exam  
Written Examination Outline  
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
006 Emergency Core Cooling									X			A2.10	Ability to (a) predict the impacts of the following malfunctions or operations on the ECCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Low boron concentration in SIS.	3.9	86
039 Main and Reheat Steam									X			A2.01	Ability to (a) predict the impacts of the following malfunctions or operations on the MRSS; and (b) based on predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Flow paths of steam during a LOCA	3.2	87
062 AC Electrical Distribution	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	88
073 Process Radiation Monitoring									X			A2.01	Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Erratic or failed power supply	2.9	89
076 Service Water	X											2.1.2	Conduct of Operations: Knowledge of operator responsibilities during all modes of plant operation.	4.0	90
003 Reactor Coolant Pump								X				A1.04	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RCPS controls including: RCP oil reservoir levels	2.6	1
003 Reactor Coolant Pump						X						K5.03	Knowledge of the operational implications of the following concepts as they apply to the RCPS: Effects of RCP shutdown on T-ave., including the reason for the unreliability of T-ave. in the shutdown loop	3.1	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	A4.05	Ability to manually operate and/or monitor in the control room: Letdown pressure and temperature control valves	3.6	4
005 Residual Heat Removal							X					K6.03	Knowledge of the effect of a loss or malfunction on the following will have on the RHRS: RHR heat exchanger	2.5	5



Farley 2007 NRC Exam  
Written Examination Outline  
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
006 Emergency Core Cooling				X								K3.01	Knowledge of the effect that a loss or malfunction of the ECCS will have on the following: RCS	4.1	6
006 Emergency Core Cooling											X	A4.01	Ability to manually operate and/or monitor in the control room: Pumps	4.1	7
007 Pressurizer Relief/Quench Tank						X						K5.02	Knowledge of the operational implications of the following concepts as they apply to PRTS: Method of forming a steam bubble in the PZR	3.1	8
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	2.5	9
010 Pressurizer Pressure Control				X								K3.01	Knowledge of the effect that a loss or malfunction of the PZR PCS will have on the following: RCS	3.8	10
012 Reactor Protection											X	A4.01	Ability to manually operate and/or monitor in the control room: Manual trip button	4.5	11
013 Engineered Safety Features Actuation	X											2.4.31	Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	12
013 Engineered Safety Features Actuation											X	A4.02	Ability to manually operate and/or monitor in the control room: Reset of ESFAS channels	4.3	13
022 Containment Cooling		X										K1.01	Knowledge of the physical connections and/or cause-effect relationships between the CCS and the following systems: SWS/cooling system	3.5	14
026 Containment Spray										X		A3.01	Ability to monitor automatic operation of the CSS, including: Pump starts and correct MOV positioning	4.3	15
026 Containment Spray	X											2.1.2	Conduct of Operations: Knowledge of operator responsibilities during all modes of plant operation.	3.0	16
039 Main and Reheat Steam								X				A1.10	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MRSS controls including: Air ejector PRM	2.9	17

Farley 2007 NRC Exam  
Written Examination Outline  
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
059 Main Feedwater								X				A1.03	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MFW controls including: Power level restrictions for operation of MFW pumps and valves.	2.7	18
061 Auxillary/Emergency Feedwater		X										K1.07	Knowledge of the physical connections and/or cause-effect relationships between the AFW and the following systems: Emergency water source	3.6	19
062 AC Electrical Distribution			X									K2.01	Knowledge of bus power supplies to the following: Major system loads	3.3	20
063 DC Electrical Distribution										X		A3.01	Ability to monitor automatic operation of the dc electrical system, including: Meters, annunciators, dials, recorders, and indicating lights	2.7	21
063 DC Electrical Distribution					X							K4.04	Knowledge of dc electrical system design feature(s) and/or interlock(s) which provide for the following: Trips	2.6	22
064 Emergency Diesel Generator							X					K6.08	Knowledge of the effect of a loss or malfunction of the following will have on the ED/G system: Fuel oil storage tanks	3.2	23
073 Process Radiation Monitoring											X	A4.02	Ability to manually operate and/or monitor in the control room Radiation monitoring system control panel	3.7	24
012 Reactor Protection System									X			A2.02	Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of instrument power	3.6	25
076 Service Water				X								K3.01	Knowledge of the effect that a loss or malfunction of the SWS will have on the following: Closed cooling water	3.4	26
078 Instrument Air	X											2.1.32	Conduct of Operations: Ability to explain and apply all system limits and precautions.	3.4	27
103 Containment					X							K4.06	Knowledge of containment system design feature(s) and/or interlock(s) which provide for the following: Containment isolation system	3.1	28
K/A Category Point Totals:	3/2	2	2	3	2	2	2	3	2/3	2	5	Group Point Total:			28/5

Farley 2007 NRC Exam  
Written Examination Outline  
Plant Systems – Tier 2 Group 2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
011 Pressurizer Level Control									X			A2.12	Ability to (a) predict the impacts of the following malfunctions or operations on the PZR LCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of Operation of auxiliary spray	3.3	91
016 Non-Nuclear Instrumentation System (NNIS)	X											2.4.31	Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.	3.4	92
035 Steam Generator									X			A2.06	Ability to (a) predict the impacts of the following mal-functions or operations on the GS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Small break LOCA	4.6	93
001 Control Rod Drive						X						K5.36	Knowledge of the following operational implications as they apply to the CRDS: Significance of sign (always minus) of a calculated power defect	3.1	29
002 Reactor Coolant				X								K3.02	Knowledge of the effect that a loss or malfunction of the RCS will have on the following: Fuel	4.2	30
011 Pressurizer Level Control										X		A3.03	Ability to monitor automatic operation of the PZR LCS, including: Charging and letdown	3.2	31
015 Nuclear Instrumentation							X					K6.02	Knowledge of the effect of a loss or malfunction on the following will have on the NIS: Discriminator/compensation circuits	2.6	32
017 In-core Temperature Monitor		X										K1.02	Knowledge of the physical connections and/or cause effect relationships between the ITM system and the following systems: RCS	3.3	33
028 Hydrogen Recombiner and Purge Control System			X									K2.01	Knowledge of bus power supplies to the following: Hydrogen Recombiners	2.5	34
035 Steam Generator					X							K4.06	Knowledge of S/GS design feature(s) and/or interlock(s) which provide for the following: S/G System	3.1	35
041 Steam Dump/Turbine Bypass Control								X				A1.02	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the SDS controls including: Steam pressure	3.1	36

Farley 2007 NRC Exam  
Written Examination Outline  
Plant Systems – Tier 2 Group 2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
056 Condensate System									X			A2.04	Ability to (a) predict the impacts of the following malfunctions or operations on the Condensate System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those mal-functions or operations: Loss of condensate pumps	2.6	37
072 Area Radiation Monitoring	X											2.1.2	Conduct of Operations: Knowledge of operator responsibilities during all modes of plant operation.	3.0	38
K/A Category Point Totals:	1/1	1	1	1	1	1	1	1	1/2	1	0	Group Point Total:			10/2

Facility:	Farley 2007 NRC Exam		Date of Exam:	10/29/2007			
Category	K/A #	Topic	RO		SRO-Only		
			IR	Q#	IR	Q#	
1. Conduct of Operations	2.1.25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.			3.1	94	
	2.1.6	Ability to supervise and assume a management role during plant transients and upset conditions.			4.3	95	
	2.1.12	Ability to apply technical specifications for a system.	2.9	66			
	2.1.10	Knowledge of conditions and limitations in the facility license.	2.7	67			
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.8	68			
	Subtotal			3		2	
2. Equipment Control	2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.			3.7	96	
	2.2.17	Knowledge of the process for managing maintenance activities during power operations.			3.5	97	
	2.2.22	Knowledge of limiting conditions for operations and safety limits.	3.4	69			
	2.2.34	Knowledge of the process for determining the internal and external effects on core reactivity.	2.8	70			
	Subtotal			2		2	
3. Radiation Control	2.3.8	Knowledge of the process for performing a planned gaseous radioactive release.			3.2	98	
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	71			
	2.3.9	Knowledge of the process for performing a containment purge.	2.5	72			
	Subtotal			2		1	
4. Emergency Procedures / Plan	2.4.27	Knowledge of fire in the plant procedure.			3.5	99	
	2.4.44	Knowledge of emergency plan protective action recommendations.			4.0	100	
	2.4.49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4.0	73			
	2.4.34	Knowledge of RO tasks performed outside the main control room during emergency operations including system geography and system implications.	3.8	74			
	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	3.0	75			
	Subtotal			3		2	
Tier 3 Point Total				10		7	

Tier / Group	Randomly Selected K/A	Reason for Rejection
2 / 1	012 A2.02	076 A2.02 rejected due to overlap with K/A 062 G2.1.23. NRC supplied replacement K/A 012 A2.02
1 / 1	057 AK3.01	Selected item is Replacement for E12 EK3.1 which is being removed to delete exam material which was inadvertently communicated to a person not on the exam security agreement. NRC supplied replacement K/A.
2 / 2	016 G2.4.31	Selected item 029 G2.4.31 would not yield SRO level question. NRC supplied replacement K/A.
2 / 2	028 K2.01	Selected item is a replacement for 27 K2.01 since system doesn't exist at FNP
1 / 2	037G2.4.11	059G2.4.30 is a narrow KA for an SRO level question. We have spent many hours trying to write a question that will test this KA to an appropriate level for an SRO. With FJE approval, this KA was deleted and a new KA randomly selected.
2 / 1	022K1.01	022K1.02 has the abbreviation SEC/remote monitoring systems. We could not establish what an SEC was and there is no remote monitoring associated with the CCS. With FJE approval, this KA was deleted and a new KA selected from the same grouping.
1 / 2	APE068 G2.1.20	E16G2.1.32 does not fit the KA in that there are precautions and limitations for this yellow path FRP. Changed to one of the few Generic KAs that a question could be written to for this KA. This KA was selected by the NRC chief examiner.

Facility: <u>Farley Nuclear Plant</u>		Date of Examination: <u>Nov. 5, 2007</u>
Examination Level: <b>SRO + RO</b>		Operating Test Number: <u>2007301</u>
Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations <b>RO</b>	R/ M	A.1.1 Perform a QPTR calculation per STP-7.0 and identify that the current value does not meet acceptance criteria G2.1.20 (4.3)
Conduct of Operations <b>SRO</b>	R/ N	A.1.1 Determine while completing a mode change checklist that mode 4 entry is prohibited by two unsat STPs, STP-10.4 & STP-15, and an inoperable 1B DG G2.1.10 (3.9)
Conduct of Operations <b>SRO + RO</b>	R/ N	A.1.2 Determine the minimum emergency boration and duration required by AOP-27 for an inadvertent cooldown. G2.1.7 (3.7/4.4)
Equipment Control <b>RO</b>	R/ N	A.2 Complete selected sections of STP-1.0, OPERATIONS DAILY AND SHIFT SURVEILLANCE REQUIREMENTS, Appendix 1, and identify conditions that do not meet acceptance criteria. G2.2.12 (3.0)
Equipment Control <b>SRO</b>	R/ N	A.2 Review selected sections of STP-1.0, OPERATIONS DAILY AND SHIFT SURVEILLANCE REQUIREMENTS & identify any Tech Spec actions required due to inoperable components which do not meet acceptance criteria. G2.2.12 (3.4)
Radiation Control <b>RO</b>	S/ M	A.3 Perform Control Room portion of liquid waste release and set R-18 alarm setpoint greater than background but less than max allowed for a liquid waste release.  [similar to task on HLT-30A exam, but this is modified to result in discovery of High background which requires the setpoint to be raised higher than normal, but less than max allowed for release.] G2.3.11 (2.7)

Radiation Control <b>SRO</b>	S/ M	A.3 Perform Control Room portion of liquid waste release and identify that R-18 automatic function is inoperable. Identify the ODCM actions that will allow a release with R-18 automatic isolation function inoperable.  [similar to task on HLT-30A exam, but this is modified to result in discovery of an inoperable auto closure of the liquid release valve. The release then must not be allowed to occur] G2.3.11 (3.2)
Emergency Plan – <b>SRO ONLY</b>	R/ D	A.4 Classify an emergency event for which the fission product barrier evaluation must take place, and fill out forms for emergency notification within the time allowed. G2.4.41 (4.1)
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes) <b>[0/1]</b> (N)ew or (M)odified from bank ( $\geq 1$ ) <b>[4/5]</b> (P)revious 2 exams ( $\leq 1$ ; randomly selected) <b>[0/0]</b>		



Facility: Farley Nuclear Plant      Date of Examination: November 5, 2007		
Exam Level (both): RO & SRO-i    Operating Test No.: 2007301		
Control Room Systems (8 for RO; 7 for SRO-i; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. CRO-033B PERFORM THE RECOVERY ACTIONS IN RESPONSE OF THE ROD CONTROL SYSTEM FOR A MISALIGNED ROD 001A2.03      RO-3.5      SRO-4.2	S/ D	1
b. CRO-333D, ALIGN ECCS FOR COLD LEG RECIRC ON A TRAIN ONLY (B TRAIN POWER IS NOT AVAILABLE) STARTING AT STEP 7 OF ESP-1.3. 011EA1.11      RO-4.2      SRO-4.2	S/ D/ A/ L	3
c. CRO-NEW, RESTORE OFF -SITE POWER TO 1F BUS AND REMOVE THE 1/2A DG FROM THE BUS 064A4.01      RO-4.0      SRO-4.3	S/ N/ L	6
d. CRO-MOD 43A STARTUP THE 1A RCP PER SOP-1.1, STARTING AT STEP 4.1.10, RECOGNIZE INDICATIONS OF A RCP HIGH BEARING TEMP WITH TRIP CRITERIA BEING EXCEEDED AND TRIP THE RCP. 003A4.06      RO 2.9      SRO 2.9	S/ M/ A/ L	4P
e. CRO-133A START UP THE CONTAINMENT COOLING SYSTEM 022A4.05      RO-3.8      SRO-3.8	S/ D/ L	5
f. CRO- 406B VERIFY PHASE B CONTAINMENT ISOLATION AND CONTAINMENT SPRAY INITIATION 013A4.01      RO-4.5      SRO-4.8	S/ A/ M/ L/	2
g. CRO-NEW: REDUCE REACTOR POWER FROM 13% TO STABILIZE AT 8% PER UOP-2.1 STEP 5.4, WITH N-35 IN LEVEL TRIP BYPASS PRIOR TO REDUCING POWER LESS THAN 10%. 015A4.03      RO-3.8      SRO-3.9	S/ A/ N	7
h. RO ONLY CRO-328B RESTORE INSTRUMENT AIR TO CONTAINMENT This JPM requires EPB Bkr operation which is not required to restore Instrument Air in any scenario. In this JPM, 1C A/C Bkr won't close by sequencer or handswitch. 1A A/C is powered from vital power to regain IA to ctm.  [similar to Scen. 1, 2, & Spare in which Phase B occurs with IA isolating. The difference is that in the scenarios 1C A/C will operate normally with no EPB operations. Scen 4 loses IA because of LOSP, but does not have A train power to restore any A/C] 065AA-1.03      RO-2.9      SRO-3.1	S/ A/ D/ L	8

Facility: Farley Nuclear Plant      Date of Examination: November 5, 2007		
Exam Level (both): RO & SRO-i    Operating Test No.: 2007301		
In-Plant Systems (3 for RO; 3 for SRO-i; 3 or 2 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
i. SO – 052 Fill 'C' accumulator in accordance with SOP-8.0, section 4.1. 006A1.13      RO 3.5      SRO 3.7	D/ R/ P	2
j. SO-607A PERFORM THE REQUIRED ACTIONS TO MINIMIZE DC LOADS (NRAB) 055EA1.04      RO-3.5      SRO-3.9	D/ E/ L	6
k. SO-368A PUMP THE UNIT 1 RCDT TO THE UNIT 1 WHT PER FNP-1-SOP-50.0, STEP 4.1.4, TO DECREASE RCDT LEVEL TO APPROXIMATELY 10% AND COMPLETE 4.1.4. 068K1.07      RO-2.7      SRO-2.9	D/ R	9
All control room (and in-plant) systems must be different and serve different safety functions; in plant systems and functions may overlap those tested in the control room.		
*Type Codes	Criteria for RO/ SRO-i/ SRO-U [ACTUAL]	
(A)lternate path	4-6 / 4-6 / 2-3    [5]	
(C)ontrol room		
(D)irect from bank	$\leq 9 / \leq 8 / \leq 4$ [7/6]	
(E)mergency or abnormal in-plant	$\geq 1 / \geq 1 / \geq 1$ [1]	
(L)ow-Power / Shutdown	$\geq 1 / \geq 1 / \geq 1$ [7]	
(N)ew or (M)odified from bank including 1(A)	$\geq 2 / \geq 2 / \geq 1$ [4]	
(P)revious 2 exams	$\leq 3 / \leq 3 / \leq 2$ (randomly selected) [1]	
(R)CA	$\geq 1 / \geq 1 / \geq 1$ [2]	
(S)imulator		