

Facility:		Nine Mile Point Unit 1		Date of Exam:		March 2015												
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 & Plant Evolutions	1	3	3	3				4	3			4	20	4	3	7		
	2	2	1	1				1	1			1	7	1	2	3		
	Tier Totals	5	4	4				5	4			5	27	5	5	10		
2. Plant Systems	1	2	2	2	3	2	3	2	2	2	3	3	26	3	2	5		
	2	1	1	1	1	1	2	1	1	1	1	1	12	0	1	2		
	Tier Totals	3	3	3	4	3	5	3	3	3	4	4	38	4	4	8		
3. Generic Knowledge & Abilities Categories					1		2		3		4		10	1	2	3	4	7
					2		2		3		3			2	2	1	2	

Note:

- 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).
- 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.
- 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 section D.1.b of ES-401, for guidance regarding elimination of inappropriate K/A statements.
- 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.
- 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.
- Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- * 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. Refer to Section D.1.b of ES-401 for the applicable K/A's
- 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 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
- 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

**Nine Mile Point Unit 1
Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1**

EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295023 Refueling Accidents / 8					X		AA2.03 - Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS: Airborne contamination levels	3.8	76
295004 Partial or Complete Loss of DC Power / 6					X		AA2.04 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: System lineups	3.3	77
295005 Main Turbine Generator Trip / 3					X		AA2.06 - Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP: Feedwater temperature	2.7	78
295003 Partial or Complete Loss of AC Power / 6						X	2.2.40 - Equipment Control: Ability to apply technical specifications for a system.	4.7	79
295006 SCRAM / 1						X	2.4.31 - Emergency Procedures / Plan: Knowledge of annunciator alarms, indications, or response procedures.	4.1	80
295026 Suppression Pool High Water Temperature / 5						X	2.1.31 - Conduct of Operations: Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.	4.3	81
295025 High Reactor Pressure / 3					X		EA2.01 - Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE: Reactor pressure	4.3	82
295005 Main Turbine Generator Trip / 3	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to MAIN TURBINE GENERATOR TRIP: Pressure effects on reactor level	3.5	39
295004 Partial or Complete Loss of DC Power / 6	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Electrical bus divisional separation	2.9	40
295024 High Drywell Pressure / 5	X						EK1.01 - Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE: Drywell integrity: Plant-Specific	4.1	41
295038 High Off-site Release Rate / 9		X					EK2.09 - Knowledge of the interrelations between HIGH OFF-SITE RELEASE RATE and the following: Post accident sample system (PASS): Plant-Specific	2.9	42
295018 Partial or Complete Loss of CCW / 8		X					AK2.02 - Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER and the following: Plant operations	3.4	43
295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown / 1		X					EK2.05 - Knowledge of the interrelations between SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN and the following: CRD hydraulic system	4.0	44

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EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295006 SCRAM / 1			X				AK3.06 - Knowledge of the reasons for the following responses as they apply to SCRAM: Recirculation pump speed reduction: Plant-Specific	3.2	45
295031 Reactor Low Water Level / 2			X				EK3.01 - Knowledge of the reasons for the following responses as they apply to REACTOR LOW WATER LEVEL: Automatic depressurization system actuation	3.9	46
295028 High Drywell Temperature / 5			X				EK3.03 - Knowledge of the reasons for the following responses as they apply to HIGH DRYWELL TEMPERATURE: Drywell spray operation: Mark-I&II	3.6	47
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4				X			AA1.07 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Nuclear boiler instrumentation system	3.1	48
295019 Partial or Complete Loss of Instrument Air / 8				X			AA1.03 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Instrument air compressor power supplies	3.0	49
295025 High Reactor Pressure / 3				X			EA1.03 - Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE: Safety/relief valves: Plant-Specific	4.4	50
295021 Loss of Shutdown Cooling / 4					X		AA2.06 - Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING: Reactor pressure	3.2	51
295003 Partial or Complete Loss of AC Power / 6					X		AA2.04 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: System lineups	3.5	52
600000 Plant Fire On-site / 8					X		AA2.16 - Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE: Vital equipment and control systems to be maintained and operated during a fire	3.0	53
295026 Suppression Pool High Water Temperature / 5						X	2.2.37 - Equipment Control: Ability to determine operability and / or availability of safety related equipment.	3.6	54
700000 Generator Voltage and Electric Grid Disturbances						X	2.2.42 - Equipment Control: Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9	55
295016 Control Room Abandonment / 7						X	2.1.20 - Conduct of Operations: Ability to interpret and execute procedure steps.	4.6	56
295030 Low Suppression Pool Water Level / 5				X			EA1.01 - Ability to operate and/or monitor the following as they apply to LOW SUPPRESSION POOL WATER LEVEL: ECCS systems (NPSH considerations): Plant-Specific	3.6	57
295023 Refueling Accidents / 8						X	2.4.6 - Emergency Procedures / Plan: Knowledge of EOP mitigation strategies.	3.7	58
K/A Category Totals:	3	3	3	4	3/4	4/3	Group Point Total:	20/7	

**Nine Mile Point Unit 1
Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2**

EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295034 Secondary Containment Ventilation High Radiation / 9					X		EA2.02 - Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT VENTILATION HIGH RADIATION: Cause of high radiation levels	4.2	83
295032 High Secondary Containment Area Temperature / 5						X	2.4.18 - Emergency Procedures / Plan: Knowledge of the specific bases for EOPs.	4.0	84
295017 High Off-site Release Rate / 9						X	2.4.30 - Emergency Procedures / Plan; Knowledge of events related to system operation / status that must be reported to internal organizations or external agencies, such as the state, the NRC, or the transmission system operator.	4.1	85
295015 Incomplete SCRAM / 1	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to INCOMPLETE SCRAM: Shutdown margin	3.6	59
295010 High Drywell Pressure / 5		X					AK2.02 - Knowledge of the interrelations between HIGH DRYWELL PRESSURE and the following: Drywell/suppression chamber differential pressure: Mark-I&II	3.3	60
295008 High Reactor Water Level / 2			X				AK3.04 - Knowledge of the reasons for the following responses as they apply to HIGH REACTOR WATER LEVEL: Reactor feed pump trip: Plant-Specific	3.3	61
295029 High Suppression Pool Water Level / 5				X			EA1.01 - Ability to operate and/or monitor the following as they apply to HIGH SUPPRESSION POOL WATER LEVEL: HPCI: Plant-Specific	3.4	62
295036 Secondary Containment High Sump/Area Water Level / 5					X		EA2.01 - Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL: Operability of components within the affected area	3.0	63
295032 High Secondary Containment Area Temperature / 5						X	2.4.1 - Emergency Procedures / Plan: Knowledge of EOP entry conditions and immediate action steps.	4.6	64
295022 Loss of CRD Pumps / 1	X						AK1.02 - Knowledge of the operational implications of the following concepts as they apply to LOSS OF CRD PUMPS: Reactivity control	3.6	65
K/A Category Totals:	2	1	1	1	1/1	1/2	Group Point Total:	7/3	

Nine Mile Point Unit 1
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G	Imp.	Q#	
205000 Shutdown Cooling		X										K2.01 - Knowledge of electrical power supplies to the following: Pump motors	3.1	3
212000 RPS		X										K2.02 - Knowledge of electrical power supplies to the following: Analog trip system logic cabinets	2.7	4
218000 ADS			X									K3.02 - Knowledge of the effect that a loss or malfunction of the AUTOMATIC DEPRESSURIZATION SYSTEM will have on following: Ability to rapidly depressurize the reactor	4.5	5
215004 Source Range Monitor			X									K3.02 - Knowledge of the effect that a loss or malfunction of the SOURCE RANGE MONITOR (SRM) SYSTEM will have on following: Reactor manual control: Plant-Specific	3.4	6
400000 Component Cooling Water				X								K4.01 - Knowledge of CCWS design feature(s) and or interlocks which provide for the following: Automatic start of standby pump	3.4	7
261000 SGTS				X								K4.02 - Knowledge of STANDBY GAS TREATMENT SYSTEM design feature(s) and/or interlocks which provide for the following: Charcoal bed decay heat removal	2.6	8
215005 APRM / LPRM					X							K5.05 - Knowledge of the operational implications of the following concepts as they apply to AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM: Core flow effects on APRM trip setpoints	3.6	9
215003 IRM					X							K5.03 - Knowledge of the operational implications of the following concepts as they apply to INTERMEDIATE RANGE MONITOR (IRM) SYSTEM: Changing detector position	3.0	10
262001 AC Electrical Distribution						X						K6.02 - Knowledge of the effect that a loss or malfunction of the following will have on the A.C. ELECTRICAL DISTRIBUTION: Off-site power	3.6	11
259002 Reactor Water Level Control						X						K6.04 - Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR WATER LEVEL CONTROL SYSTEM: Reactor feedwater flow input	3.1	12

**Nine Mile Point Unit 1
Written Examination Outline
Plant Systems – Tier 2 Group 1**

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G	Imp.	Q#	
262002 UPS (AC/DC)							X					A1.02 - Ability to predict and/or monitor changes in parameters associated with operating the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) controls including: Motor generator outputs	2.5	13
209001 LPCS							X					A1.04 - Ability to predict and/or monitor changes in parameters associated with operating the LOW PRESSURE CORE SPRAY SYSTEM controls including: Reactor pressure	3.7	14
239002 SRVs								X				A2.03 - Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open SRV	4.1	15
300000 Instrument Air								X				A2.01 - Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Air dryer and filter malfunctions	2.9	16
206000 HPCI									X			A3.03 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: System lineup: BWR-2,3,4	3.9	17
207000 Isolation (Emergency) Condenser									X			A3.02 - Ability to monitor automatic operations of the ISOLATION (EMERGENCY) CONDENSER including: Reactor pressure: BWR-2,3	3.8	18
263000 DC Electrical Distribution										X		A4.04 - Ability to manually operate and/or monitor in the control room: Ground detection circuit: Plant-Specific	3.0	19
223002 PCIS/Nuclear Steam Supply Shutoff										X		A4.02 - Ability to manually operate and/or monitor in the control room: Manually initiate the system	3.9	20
206000 HPCI											X	2.1.23 - Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.3	21

Nine Mile Point Unit 1
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G	Imp.	Q#	
259002 Reactor Water Level Control											X	2.1.7 - Conduct of Operations: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	22
264000 EDGs											X	2.4.21 - Emergency Procedures / Plan: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.0	23
215003 IRM				X								K4.01 - Knowledge of INTERMEDIATE RANGE MONITOR (IRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Rod withdrawal blocks	3.7	24
223002 PCIS/Nuclear Steam Supply Shutoff							X					K6.04 - Knowledge of the effect that a loss or malfunction of the following will have on the PRIMARY CONTAINMENT SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF: Nuclear boiler instrumentation	3.3	25
218000 ADS											X	A4.08 - Ability to manually operate and/or monitor in the control room: Suppression pool level	3.7	26
K/A Category Totals:	2	2	2	3	2	3	2	2/3	2	3	3/2	Group Point Total: 26/5		

Nine Mile Point Unit 1
Written Examination Outline
Plant Systems – Tier 2 Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G	Imp.	Q#
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239001 Main and Reheat Steam								X				A2.01 - Ability to (a) predict the impacts of the following on the MAIN AND REHEAT STEAM SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Malfunction of reactor turbine pressure regulating system	3.9	91
234000 Fuel Handling Equipment										X		2.4.9 - Emergency Procedures / Plan: Knowledge of low power / shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.	4.2	92
271000 Off-gas										X		2.4.11 - Emergency Procedures / Plan: Knowledge of abnormal condition procedures.	4.2	93
202002 Recirculation Flow Control	X											K1.04 - Knowledge of the physical connections and/or cause-effect relationships between RECIRCULATION FLOW CONTROL SYSTEM and the following: Reactor/turbine pressure regulating system: Plant-Specific	3.1	27
239001 Main and Reheat Steam		X										K2.01 - Knowledge of electrical power supplies to the following: Main steam isolation valve solenoids	3.2	28
233000 Fuel Pool Cooling/Cleanup			X									K3.01 - Knowledge of the effect that a loss or malfunction of the FUEL POOL COOLING AND CLEAN-UP will have on following: Fuel pool temperature	3.2	29
201003 Control Rod and Drive Mechanism				X								K4.05 - Knowledge of CONTROL ROD AND DRIVE MECHANISM design feature(s) and/or interlocks which provide for the following: Rod position indication	3.2	30
201006 RWM					X							K5.06 - Knowledge of the operational implications of the following concepts as they apply to ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT SPECIFIC): Rod groups and steps: P-Spec(Not-BWR6)	2.8	31
272000 Radiation Monitoring						X						K6.03 - Knowledge of the effect that a loss or malfunction of the following will have on the RADIATION MONITORING SYSTEM: A.C. power	2.8	32

Nine Mile Point Unit 1
Written Examination Outline
Plant Systems – Tier 2 Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G	Imp.	Q#	
219000 RHR/LPCI: Torus/Pool Cooling Mode							X					A1.07 - Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE controls including: Emergency generator loading	3.2	33
245000 Main Turbine Generator and Auxiliary Systems								X				A2.01 - Ability to (a) predict the impacts of the following on the MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Turbine trip	3.7	34
286000 Fire Protection									X			A3.06 - Ability to monitor automatic operations of the FIRE PROTECTION SYSTEM including: Fire dampers	3.0	35
226001 RHR/LPCI: Containment Spray Mode										X		A4.12 - Ability to manually operate and/or monitor in the control room: Containment/drywell pressure	3.8	36
259001 Reactor Feedwater											X	2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.	4.2	37
201001 CRD Hydraulic						X						K6.03 - Knowledge of the effect that a loss or malfunction of the following will have on the CONTROL ROD DRIVE HYDRAULIC System: Plant air systems	3.0	38
K/A Category Totals:	1	1	1	1	1	2	1	1/1	1	1	1/2	Group Point Total:		12/3

Facility:		Nine Mile Point Unit 1		Date:		March 2015	
Category	K/A #	Topic	RO		SRO-Only		
			IR	Q#	IR	Q#	
1. Conduct of Operations	2.1.35	Knowledge of the fuel-handling responsibilities of SROs.			3.9	94	
	2.1.39	Knowledge of conservative decision making practices.			4.3	100	
	2.1.28	Knowledge of the purpose and function of major system components and controls.	4.1	66			
	2.1.6	Ability to manage the control room crew during plant transients.	3.8	67			
	Subtotal				2		2
2. Equipment Control	2.2.1	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.			4.4	95	
	2.2.14	Knowledge of the process for controlling equipment configuration or status.			4.3	98	
	2.2.35	Ability to determine Technical Specification Mode of Operation.	3.6	68			
	2.2.12	Knowledge of surveillance procedures.	3.7	69			
Subtotal				2		2	
3. Radiation Control	2.3.11	Ability to control radiation releases.			4.3	96	
	2.3.11	Ability to control radiation releases.	3.8	70			
	2.3.13	Knowledge of Radiological Safety Procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high radiation areas, aligning filters, etc.	3.4	71			
	2.3.7	Ability to comply with radiation work permit requirements during normal or abnormal conditions.	3.5	75			
Subtotal				3		1	

4. Emergency Procedures / Plan	2.4.41	Knowledge of the emergency action level thresholds and classifications.			4.6	97
	2.4.38	Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator if required.			4.4	99
	2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1	72		
	2.4.35	Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects.	3.8	73		
	2.4.13	Knowledge of crew roles and responsibilities during EOP usage.	4.0	74		
		Subtotal			3	2
Tier 3 Point Total				10		7

Tier / Group	Randomly Selected K/A	Reason for Rejection
The systematic and random sampling process utilized the pre-approved Nine Mile Point Unit 1 K/A suppression list.		
The following K/As were rejected following the systematic and random sampling process:		
1 / 1	Question 41 295024 High Drywell Pressure EK1.02 - Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE: Containment building integrity: Mark-III	The facility has a Mark-I containment, not a Mar-III containment. Randomly re-selected K/A 295024 High Drywell Pressure EK1.01 - Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE: Drywell integrity: Plant-Specific.
2 / 2	Question 37 259001 Reactor Feedwater 2.4.1 - Emergency Procedures / Plan: Knowledge of EOP entry conditions and immediate action steps.	The randomly selected generic K/A overlaps with those selected for Questions 64 and 74 and has the least applicability with this question. Randomly re-selected K/A 259001 Reactor Feedwater 2.4.46 – Ability to verify that the alarms are consistent with the plant conditions.
2 / 2	Question 29 233000 Fuel Pool Cooling/Cleanup K3.05 - Knowledge of the effect that a loss or malfunction of the FUEL POOL COOLING AND CLEAN-UP will have on following: Fuel pool water fission product concentration	A discriminating question could not be developed without testing generic fundamentals knowledge. Randomly re-selected K/A 233000 Fuel Pool Cooling/Cleanup K3.01 - Knowledge of the effect that a loss or malfunction of the FUEL POOL COOLING AND CLEAN-UP will have on following: Fuel pool temperature.

2 / 2	<p>Question 32 272000 Radiation Monitoring K6.02 - Knowledge of the effect that a loss or malfunction of the following will have on the RADIATION MONITORING SYSTEM: D.C. power</p>	<p>Due to limited interrelation between Radiation Monitoring and DC power at the facility, an acceptable question could not be developed without testing minutia.</p> <p>Randomly re-selected K/A 272000 Radiation Monitoring K6.03 - Knowledge of the effect that a loss or malfunction of the following will have on the RADIATION MONITORING SYSTEM: A.C. power.</p>
1 / 1	<p>Question 45 295006 SCRAM AK3.03 - Knowledge of the reasons for the following responses as they apply to SCRAM: Reactor pressure response</p>	<p>A question could not be developed without testing Generic Fundamentals knowledge or overlapping aspects of Questions 27 and 39.</p> <p>Randomly re-selected K/A 295006 SCRAM AK3.06 - Knowledge of the reasons for the following responses as they apply to SCRAM: Recirculation pump speed reduction: Plant-Specific.</p>
3	<p>Question 69 2.2.15 - Ability to determine the expected plant configuration using design and configuration control documentation, such as drawings, line-ups, tag-outs, etc.</p>	<p>An acceptable RO level question could not be developed for the randomly selected K/A.</p> <p>Randomly re-selected K/A 2.2.12 – Knowledge of surveillance procedures.</p>
3	<p>Question 74 2.4.1 - Knowledge of EOP entry conditions and immediate action steps.</p>	<p>The randomly selected K/A overlaps with the K/A for Question 64.</p> <p>Randomly re-selected K/A 2.3.13 - Knowledge of crew roles and responsibilities during EOP usage.</p>
1 / 2	<p>Question 84 295032 High Secondary Containment Area Temperature 2.4.3 - Ability to identify post-accident instrumentation.</p>	<p>An acceptable question could not be developed for the randomly selected K/A due to limited Secondary Containment area temperature instrumentation installed at the facility.</p> <p>Randomly re-selected K/A 295032 High Secondary Containment Area Temperature 2.4.18 - Knowledge of the specific bases for EOPs.</p>

2 / 1	Question 89 211000 SLC 2.4.34 - Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	There are no RO-specific tasks performed outside of the control room during an emergency related to SLC at the facility. Randomly re-selected K/A 211000 SLC 2.4.47 - Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.
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Facility: Nine Mile Point Unit 1Date of Examination: March 2015Examination Level: ROOperating Test Number: LC1 13-01

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, D, S 2013 NRC	Perform Reactor Water Level Instrument Checks N1-ST-DO, K/A 2.1.7 (4.4)
Conduct of Operations	M, R	Determine Personnel Overtime Availability CNG-SE-1.01.1002, K/A 2.1.5 (2.9)
Equipment Control	D, R	Perform Daily Thermal Limit Surveillance N1-RESP-1A, K/A 2.2.12 (3.7)
Radiation Control		
Emergency Procedures/Plan	N, S	Perform CRO Firefighting Checklist EPIP-EPP-28, K/A 2.4.27 (3.4)

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

* Type Codes & Criteria:
 (C)ontrol room, (S)imulator, or Class(R)oom
 (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
 (N)ew or (M)odified from bank (≥ 1)
 (P)revious 2 exams (≤ 1 ; randomly selected)

Facility: Nine Mile Point Unit 1
 Examination Level: SRO

Date of Examination: March 2015
 Operating Test Number: LC1 13-01

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, D, R 2013 NRC	Review Reactor Water Level Instrument Checks and Determine Technical Specification Impact N1-ST-DO, K/A 2.1.7 (4.7)
Conduct of Operations	M, R	Determine Personnel Overtime Availability CNG-SE-1.01.1002, K/A 2.1.5 (3.9)
Equipment Control	D, R	Perform Daily Thermal Limit Surveillance N1-RESP-1A, K/A 2.2.12 (4.1)
Radiation Control	D, R	Determine Radiation Controls – Emergency Exposure for Local MSIV Closure GAP-RPP-07, CNG-EP-1.01-1014, K/A 2.3.4 (3.7)
Emergency Procedures/Plan	M, R	Classify an Emergency Event and Perform Initial Notifications CNG-EP-1.01-1013, K/A 2.4.41 (4.6)

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

* Type Codes & Criteria:
 (C)ontrol room, (S)imulator, or Class(R)oom
 (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
 (N)ew or (M)odified from bank (≥ 1)
 (P)revious 2 exams (≤ 1 ; randomly selected)

Facility: Nine Mile Point Unit 1
Exam Level: RO/SRO-I/SRO-U

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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. Place SDC in service, Pump trips K/A 205000 A4.01 (3.7/3.7), N1-OP-4	D, A, S, L	4
b. Vent the Drywell Prior to Personnel Entry <212 K/A 223001 A4.03 (3.4/3.4), N1-OP-9	N, S, L	5
c. Partial MSIV Stroke test K/A 239001 A4.01 (4.2/4.0), N1-ST-Q26	P, S, D NRC 2010	3
d. Transfer House Loads from Reserve to Normal K/A 262001 A4.04 (3.6/3.7) N1-OP-30	N, S	6
e. Swap RBV Fans 11 to 12, Fan 12 low amps K/A 288000 A4.01 (3.1/2.9), N1-OP-10	D, S, A	9
f. Half Scram, Bypass LPRM to APRM, Reset half scram K/A 215005 A4.04 (3.2/3.2), N1-OP-38C	M, S	7
g. Place Second RWCU Pump in Service (RO Only) K/A 204000 A4.01 (3.1/3.0), N1-OP-3	D, S	2
h. Inject LP, RWCU Fails to Isolate K/A 211000 A1.08 (3.7/3.8), N1-EOP-HC	A, D, EN, S	1

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

i. DFP Start with No Control Power K/A 286000 A3.01 (3.4/3.4)	D, R	8
j. Perform OATC Actions for Control Room Evacuation-Hot EDG K/A 295003 AA1.02 (4.2/4.3)	M,A,R	6
k. Initiate ECs from the RSP, Level Control Fails K/A 295016 AA1.09 (4.0/4.0) N1-SOP-21.2	D, A, E, R, EN	7

@ 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	$\leq 9 / \leq 8 / \leq 4$
(E)mergency or abnormal in-plant	$\geq 1 / \geq 1 / \geq 1$
(EN)gineered safety feature	- / - / ≥ 1 (control room system)
(L)ow-Power / Shutdown	$\geq 1 / \geq 1 / \geq 1$
(N)ew or (M)odified from bank including 1(A)	$\geq 2 / \geq 2 / \geq 1$
(P)revious 2 exams	$\leq 3 / \leq 3 / \leq 2$ (randomly selected)
(R)CA	$\geq 1 / \geq 1 / \geq 1$
(S)imulator	

Pairings:

- A then B. Start with SRO-U on B.
- C and D
- E then F End with SRO-U on E
- G alone
- H alone

Facility: Nine Mile Point Unit 1Scenario No.: NRC-2Op-Test No.: LC1 13-01

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 50-55% power. Reactor Building Exhaust fan 12 is out of service for maintenance. Containment Spray Pump 112 is out of service for maintenance.

Turnover: Start Circulating Water pump 11. Raise Reactor power with Recirculation flow.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Start Circulating Water Pump 11 N1-OP-19
2	N/A	R – ATC, SRO	Raise Reactor Power with Recirculation Flow N1-OP-1, N1-OP-43B
3	NM36A	I – SRO	Recirculation Flow Unit Fails Upscale ARP F2-2-6, Technical Specifications
4	EC03B	I – BOP, SRO	Emergency Condenser 12 Inadvertent Initiation ARP K1-1-5, N1-OP-13, Technical Specifications
5	RX01	C – All	Fuel Failure N1-SOP-25.2, N1-SOP-1.1, N1-SOP-1
6	MS01	M – All	Main Steam Line Break in Turbine Building N1-EOP-2, N1-EOP-6
7	ED27 FW03A	C – BOP	Powerboard 12 Fails to Fast Transfer and Feedwater Pump 11 Trips N1-SOP-30.2, N1-SOP-1
8	MS13A MS13C	C – All	Two MSIVs Fail to Close N1-EOP-6, N1-EOP-8
9	Override	C – ATC	Turbine Building Ventilation Exhaust Fan Trips N1-EOP-6, N1-EOP-8

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

Facility: Nine Mile Point Unit 1	Scenario No.: NRC-2	Op-Test No.: LC1 13-01
1. Total malfunctions (5-8) Events 3, 4, 5, 6, 7, 8, 9	7	
2. Malfunctions after EOP entry (1-2) Events 7, 8, 9	3	
3. Abnormal events (2-4) Events 3, 4, 5	3	
4. Major transients (1-2) Event 6	1	
5. EOPs entered/requiring substantive actions (1-2) N1-EOP-2, N1-EOP-6	2	
6. EOP contingencies requiring substantive actions (0-2) N1-EOP-8	1	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: CT-1 – Given fuel failure causing Main Steam Line radiation levels to approach and/or exceed 3.75 times normal full power background, scram the Reactor, in accordance with N1-SOP-25.2. CT-2 – Given an un-isolable primary system discharging outside of primary and secondary containments and off-site release rate approaching the General Emergency level, perform an RPV Blowdown, in accordance with N1-EOP-6.		

Facility: Nine Mile Point Unit 1Scenario No.: NRC-3Op-Test No.: LC1 13-01

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 85% power. Reactor Building Exhaust fan 12 is out of service for maintenance. Containment Spray Pump 112 is out of service for maintenance.

Turnover: Shutdown Condensate Pump 11 for maintenance due to a motor oil leak and place in Pull-To-Lock. Then Perform a Rod Sequence Exchange.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N –BOP, SRO	Condensate Pump 11 shutdown N1-OP-15A, Tech Spec 3.1.8
2	N/A	R –ATC, SRO	Rod Sequence Exchange N1-OP-5, RMI
3	RM51A	I –BOP, SRO	Main Steam Line Radiation Monitor Failure ARP F1-2-7, Tech Spec 3.6.2.h
4	CW19	I –BOP, SRO	RBCLC Temperature Controller fails to minimum cooling N1-SOP-11.1
5	RP01B	C –ATC, SRO	RPS MG Set trip N1-OP-48, N1-SOP-16.1, Tech Spec 3.6.12
6	RD34 IA01	C –All	Instrument air leak, Reactor scram required N1-SOP-20.1, N1-SOP-1
7	RD33	M –All	ATWS N1-EOP-2, N1-EOP-3
8	Overrides	C –All	Feedwater Isolation Valves 11 and 12 fail to isolate N1-EOP-3

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

Facility: Nine Mile Point Unit 1	Scenario No.: NRC-3	Op-Test No.: LC1 13-01
1. Total malfunctions (5-8) Events 3, 4, 5, 6, 7, 8	6	
2. Malfunctions after EOP entry (1-2) Events 7, 8	2	
3. Abnormal events (2-4) Events 3, 4, 5, 6	4	
4. Major transients (1-2) Event 7	1	
5. EOPs entered/requiring substantive actions (1-2) N1-EOP-2	1	
6. EOP contingencies requiring substantive actions (0-2) N1-EOP-3	1	
7. Critical tasks (2-3)	3	
<p>CRITICAL TASK DESCRIPTIONS:</p> <p>CT-1.0 Given lowering CRD system air pressure, the crew will insert a manual reactor scram before control rods begin drifting, in accordance with N1-ARP-F3 and/or N1-SOP-20.1.</p> <p>CT-2.0 Given a failure of the reactor to scram with power above 6% and RPV water level above -41 inches, the crew will terminate and prevent all injection except boron and CRD, in accordance with N1-EOP-3.</p> <p>CT-3.0 Given a failure of the reactor to scram with power above 6%, the crew will lower reactor power by inserting control rods or injecting boron, in accordance with N1-EOP-3.</p>		

Facility: Nine Mile Point Unit 1Scenario No.: NRC-4Op-Test No.: LC1 13-01

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 90% Reactor Building Exhaust fan 12 is out of service for maintenance. Containment Spray Pump 112 is out of service for maintenance.

Turnover: Recirc Pump 11 MG set has been repaired and is ready to be returned to service. Lower reactor power per the RMI and restore 11 recirc pump to service.

After starting Recirc Pump 11 MG set and placing in service, operate it for one hour while maintenance takes readings before returning to 100% power.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-ATC, SRO	Lower power to permit returning Recirc Pump 11 to service
2	N/A	N-BOP, SRO	Restore Recirc Pump 11 to service
3	HV01A	C-BOP, SRO	Reactor Building Exhaust Fan 11 trips. Requires RBEVS initiation. L1-3-4, L1-1-5, N1-EOP-5, N1-OP-10, Technical Specifications
4	RR65E RR09E	I-All	RR pump 15 Blind Controller failure and delayed pump trip N1-SOP-1.3, Tech Spec 3.1.7
5	EC01	M-All	Steam leak inside Drywell N1-EOP-2, N1-EOP-4
6	PC10	C-All	Failed open vacuum breaker N1-EOP-4
7	FW28A FW28B CS07	C-BOP, SRO	HPCI fails to initiate, Core Spray fails to auto-inject N1-EOP-2
8	CT01A	C-ATC, SRO	Containment Spray pump 111 trips N1-EOP-8

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

Facility: Nine Mile Point Unit 1	Scenario No.: NRC-4	Op-Test No.: LC1 13-01
1. Total malfunctions (5-8) Events 3, 4, 5, 6, 7, 8	6	
2. Malfunctions after EOP entry (1-2) Events 6, 7, 8	3	
3. Abnormal events (2-4) Events 3 & 4	2	
4. Major transients (1-2) Event 5	1	
5. EOPs entered/requiring substantive actions (1-2) N1-EOP-2, N1-EOP-4	2	
6. EOP contingencies requiring substantive actions (0-2) N1-EOP-8	1	
7. Critical tasks (2-3)	2	
<p>CRITICAL TASK DESCRIPTIONS:</p> <p>CT-1 - Given a LOCA in the Drywell and a failure of HPCI to initiate, the crew will inject with preferred and alternate injection systems to restore and maintain RPV water level above -84 inches, in accordance with N1-EOP-2.</p> <p>CT-2 - Given a LOCA in the Drywell and degraded Containment Spray capability, the crew will execute N1-EOP-8, RPV Blowdown, when it is determined Torus pressure cannot be maintained below the Pressure Suppression Pressure limit, in accordance with N1-EOP-4.</p>		

Facility: Nine Mile Point Unit 1Scenario No.: NRC-5Op-Test No.: LC1 13-01

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 100% power. Reactor Building Exhaust fan 12 is out of service for maintenance. Containment Spray Pump 112 is out of service for maintenance.

Turnover: Remove Line 4 from service.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Remove Line 4 from Service N1-OP-33A, Technical Specifications
2	AD05	C – BOP, SRO R – ATC	ERV Inadvertently Opens N1-SOP-1.4, N1-SOP-1.1, Technical Specifications
3	ED12A	C – BOP, SRO	Powerboard 16A Electrical Fault ARP L4-3-6, N1-EOP-4
4	CW04A CW04B CW04C	C – All	All RBCLC Pumps Trip N1-SOP-11.1, N1-SOP-1, N1-EOP-2
5	FW03A FW03B FW06	C – All	Feedwater Pumps Fail to Operate N1-EOP-2
6	CU01 EC01	M – All	Coolant Leak Inside Primary Containment N1-EOP-2, N1-EOP-4
7	VICP201 68/69	I – All	Fuel Zone Level Instrument Sporadic Indication N1-EOP-2, N1-EOP-7

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

Facility: Nine Mile Point Unit 1	Scenario No.: NRC-5	Op-Test No.: LC1 13-01
1. Total malfunctions (5-8) Events 2, 3, 4, 5, 6, 7	6	
2. Malfunctions after EOP entry (1-2) Events 5, 6, 7	3	
3. Abnormal events (2-4) Events 2, 3, 4	3	
4. Major transients (1-2) Event 6	1	
5. EOPs entered/requiring substantive actions (1-2) N1-EOP-2, N1-EOP-4	2	
6. EOP contingencies requiring substantive actions (0-2) N1-EOP-7	1	
7. Critical tasks (2-3)	3	
CRITICAL TASK DESCRIPTIONS: CT-1 – Given an inadvertently open ERV at power, close the ERV or insert a manual scram prior to Torus temperature exceeding 110°F, in accordance with N1-SOP-1.4. CT-2 – Given a LOCA in the Drywell, initiate Containment Sprays prior to exceeding the Pressure Suppression Pressure limit, in accordance with N1-EOP-4. CT-3 – Given the plant with RPV water level unknown, execute N1-EOP-7, RPV Flooding, in accordance with N1-EOP-2.		