

Facility: NMP Unit 2 NRC										Date of Exam: 03/19/2011							
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 Evaluations	1	4	3	4				3	3			3	20	4	3	7	
	2	2	1	1				1	1			1	7	1	2	3	
	Tier Totals	6	4	5				4	4			4	27	5	5	10	
2. Plant Systems	1	2	2	2	2	2	2	2	3	3	3	3	26	2	3	5	
	2	1	1	1	1	1	1	1	1	1	2	1	12	0	1	3	
	Tier Totals	3	3	3	3	3	3	3	4	4	5	4	38	3	5	8	
3. Generic Knowledge & Abilities				1		2		3		4		10	1	2	3	4	
				2		3		2		3			2	1	2	2	
Note	<p>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).</p> <p>2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.</p> <p>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 section D.1.b of ES-401, for guidance regarding elimination of inappropriate K/A statements.</p> <p>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.</p> <p>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.</p> <p>6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.</p> <p>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. Refer to Section D.1.b of ES-401 for the applicable K/A's</p> <p>8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. If fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.</p> <p>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</p>																

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#
295028 High Drywell Temperature / 5					X		EA2.04 - Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE: Drywell pressure	4.2	76
295005 Main Turbine Generator Trip / 3					X		AA2.05 - Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP: Reactor power	3.9	77
700000 Generator Voltage and Electric Grid Disturbances					X		AA2.09 - Ability to determine and/or interpret the following as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES: Operational status of emergency diesel generators.	4.3	78
295003 Partial or Complete Loss of AC / 6						X	2.4.41 - Emergency Procedures / Plan: Knowledge of the emergency action level thresholds and classifications.	4.6	79
295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown / 1						X	2.4.18 - Emergency Procedures / Plan: Knowledge of the specific bases for EOPs.	4.0	80
295016 Control Room Abandonment / 7						X	2.4.11 - Emergency Procedures / Plan: Knowledge of abnormal condition procedures.	4.2	81
295025 High Reactor Pressure / 3					X		EA2.04 - Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE: Suppression pool level	3.9	82

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#
295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown / 1	X						EK1.06 - Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: Cooldown effects on reactor power	4.0	39
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Natural circulation	3.5	40
295006 SCRAM / 1	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to SCRAM: Reactivity control	3.7	41
700000 Generator Voltage and Electric Grid Disturbances		X					AK2.06 - Knowledge of the interrelations between GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES and the following: Reactor power.	3.9	42
295018 Partial or Total 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
295026 Suppression Pool High Water Temp. / 5		X					EK2.02 - Knowledge of the interrelations between SUPPRESSION POOL HIGH WATER TEMPERATURE and the following: Suppression pool spray: Plant Specific	3.6	44

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#
295016 Control Room Abandonment / 7			X				AK3.03 - Knowledge of the reasons for the following responses as they apply to CONTROL ROOM ABANDONMENT: Disabling control room controls	3.5	45
295025 High Reactor Pressure / 3			X				EK3.08 - Knowledge of the reasons for the following responses as they apply to HIGH REACTOR PRESSURE: Reactor/turbine pressure regulating system operation	3.5	46
295019 Partial or Complete Loss of Inst. Air / 8			X				AK3.03 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR : Service air isolations: Plant-Specific	3.2	47
295028 High Drywell Temperature / 5				X			EA1.01 - Ability to operate and/or monitor the following as they apply to HIGH DRYWELL TEMPERATURE: Drywell spray: Mark-I&II	3.8	48
295021 Loss of Shutdown Cooling / 4				X			AA1.03 - Ability to operate and/or monitor the following as they apply to LOSS OF SHUTDOWN COOLING: Component cooling water systems: Plant-Specific	3.1	49
295004 Partial or Complete Loss of DC Pwr / 6				X			AA1.02 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Systems necessary to assure safe plant shutdown	3.8	50
295031 Reactor Low Water Level / 2					X		EA2.01 - Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL: Reactor water level	4.6	51

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295023 Refueling Accidents / 8					X		AA2.01 - Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS: Area radiation levels	3.6	52
295038 High Off-site Release Rate / 9					X		EA2.04 - Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Source of off-site release	4.1	53
295030 Low Suppression Pool Water Level / 5						X	2.4.46 - Emergency Procedures / Plan: Ability to verify that the alarms are consistent with the plant conditions.	4.2	54
295005 Main Turbine Generator Trip / 3						X	2.4.31 - Emergency Procedures / Plan: Knowledge of annunciator alarms, indications, or response procedures	4.2	55
295024 High Drywell Pressure / 5						X	2.1.23 - Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.3	56
600000 Plant Fire On-site / 8			X				AK3.04 - Knowledge of the reasons for the following responses as they apply to PLANT FIRE ON SITE: Actions contained in the abnormal procedure for plant fire on site	2.8	57
295003 Partial or Complete Loss of AC / 6	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Effect of battery discharge rate on capacity	2.7	58
K/A Category Totals	4	3	4	3	3/4	3/3	Group Point Total:	20/7	

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#
295008 High Reactor Water Level / 2					X		AA2.02 - Ability to determine and/or interpret the following as they apply to HIGH REACTOR WATER LEVEL: Steam flow/feedflow mismatch	3.4	83
295020 Inadvertent Cont. Isolation / 5 & 7						X	2.1.20 - Conduct of Operations: Ability to interpret and execute procedure steps.	4.6	84
295009 Low Reactor Water Level / 2						X	2.1.23 - Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.4	85
295022 Loss of CRD Pumps / 1	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to LOSS OF CRD PUMPS: Reactor pressure vs. rod insertion capability	3.3	59
295012 High Drywell Temperature / 5		X					AK2.01 - Knowledge of the interrelations between HIGH DRYWELL TEMPERATURE and the following: Drywell ventilation	3.4	60
295009 Low Reactor Water Level / 2			X				AK3.02, Knowledge of the reasons for the following responses as they apply to LOW REACTOR WATER LEVEL: Reactor feedpump runout flow control: Plant-Specific.	2.7	61
295035 Secondary Containment High Differential Pressure / 5				X			EA1.01 - Ability to operate and/or monitor the following as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE: Secondary containment ventilation system	3.6	62

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#
295033 High Secondary Containment Area Radiation Levels / 9					X		EA2.01 - Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS: Area radiation levels	3.8	63
295008 High Reactor Water Level / 2						X	2.4.34 - Emergency Procedures / Plan: Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.2	64
295002 Loss of Main Condenser Vac / 3	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to LOSS OF MAIN CONDENSER VACUUM: Loss of heat sink	3.6	65
K/A Category Totals	2	1	1	1	1/1	1/2	Group Point Total:	7/3	

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
209001 LPCS								X				A2.04 - Ability to (a) predict the impacts of the following on the LOW PRESSURE CORE SPRAY SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: D.C. failures	3.0	86
261000 SGTS								X				A2.05 - Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Fan trips	3.1	87
209002 HPCS											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.	4.7	88
262001 AC Electrical Distribution											X	2.2.44 - Equipment Control: Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives effect plant and system conditions.	4.4	89

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
239002 SRVs											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	90
400000 Component Cooling Water	X											K1.01 - Knowledge of the physical connections and / or cause-effect relationships between CCWS and the following: Service water system	3.2	1
215003 IRM	X											K1.05 - Knowledge of the physical connections and/or cause- effect relationships between INTERMEDIATE RANGE MONITOR (IRM) SYSTEM and the following: Display control system: Plant-Specific	3.3	2
203000 RHR/LPCI: Injection Mode		X										K2.03 - Knowledge of electrical power supplies to the following: Initiation logic	2.7	3
262001 AC Electrical Distribution		X										K2.01 - Knowledge of electrical power supplies to the following: Off-site sources of power	3.3	4
211000 SLC			X									K3.01, Ability to shutdown the reactor in certain conditions	4.3	5
223002 PCIS/Nuclear Steam Supply Shutoff			X									K3.20 - Knowledge of the effect that a loss or malfunction of the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF will have on following: Standby gas treatment system	3.3	6

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
264000 EDGs				X								K4.02 - Knowledge of EMERGENCY GENERATORS (DIESEL/JET) design feature(s) and/or interlocks which provide for the following: Emergency generator trips (emergency/LOCA)	4.0	7
217000 RCIC				X								K4.06 - Knowledge of REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) design feature(s) and/or interlocks which provide for the following: Manual initiation	3.5	8
205000 Shutdown Cooling					X							K5.02 - Knowledge of the operational implications of the following concepts as they apply to SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE): Valve operation	2.8	9
209001 LPCS					X							K5.05 - Knowledge of the operational implications of the following concepts as they apply to LOW PRESSURE CORE SPRAY SYSTEM: System venting	2.5	10
300000 Instrument Air						X						K6.13 - Knowledge of the effect that a loss or malfunction of the following will have on the INSTRUMENT AIR SYSTEM: Filters	2.8	11

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
263000 DC Electrical Distribution						X						K6.02 - Knowledge of the effect that a loss or malfunction of the following will have on the D.C. ELECTRICAL DISTRIBUTION: Battery ventilation	2.5	12
261000 SGTS							X					A1.02 - Ability to predict and/or monitor changes in parameters associated with operating the STANDBY GAS TREATMENT SYSTEM controls including: Primary containment pressure	3.1	13
262002 UPS (AC/DC)									X			A3.01, Ability to monitor automatic operations of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) including: Transfer from preferred to alternate source.	2.8	14
209002 HPCS								X				A2.11 - Ability to (a) predict the impacts of the following on the HIGH PRESSURE CORE SPRAY SYSTEM (HPCS) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low suppression pool level: BWR-5,6	3.3	15

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
239002 SRVs								X				A2.05 - 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: Low reactor pressure	3.2	16
215004 Source Range Monitor									X			A3.02 - Ability to monitor automatic operations of the SOURCE RANGE MONITOR (SRM) SYSTEM including: Annunciator and alarm signals	3.4	17
218000 ADS									X			A3.01 - Ability to monitor automatic operations of the AUTOMATIC DEPRESSURIZATION SYSTEM including: ADS valve operation	4.2	18
215005 APRM / LPRM										X		A4.03 - Ability to manually operate and/or monitor in the control room: APRM back panel switches, meters and indicating lights	3.2	19
212000 RPS										X		A4.08 - Ability to manually operate and/or monitor in the control room: Individual system relay status: Plant-Specific	3.4	20
259002 Reactor Water Level Control											X	2.4.4, Ability to recognize abnormal indications for system operating parameters that are entry level conditions for emergency and abnormal procedures.	4.5	21

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
262002 UPS (AC/DC)											X	2.4.49 - Emergency Procedures / Plan: Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4.6	22
215004 Source Range Monitor								X				A2.04 - Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Up scale and downscale trips	3.5	23
215003 IRM							X					A1.02 - Ability to predict and/or monitor changes in parameters associated with operating the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM controls including: Reactor power indication response to rod position changes	3.7	24
239002 SRVs										X		A4.05 - Ability to manually operate and/or monitor in the control room: Reactor pressure	4.3	25

Written Examination Outline
Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
211000 SLC											X	2.1.7 – Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	26
K/A Category Totals	2	2	2	2	2	2	2	3/2	3	3	3/3	Group Point Total:	26/5	

Written Examination Outline
Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
201006 RWM								X				A2.04 - Ability to (a) predict the impacts of the following on the ROD WORTH MINIMIZER SYSTEM (RWH) (PLANT SPECIFIC) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck rod: P-Spec(Not-BWR6)	3.3	91
202001 Recirculation											X	2.4.6 - Emergency Procedures / Plan: Knowledge of EOP mitigation strategies.	4.7	92
290002 Reactor Vessel Internals											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	93
201003 Control Rod and Drive Mechanism		X										K1.02 - Knowledge of the physical connections and/or cause-effect relationships between CONTROL ROD AND DRIVE MECHANISM and the following: Reactor water	2.9	27
215002 RBM		X										K2.03 - Knowledge of electrical power supplies to the following: APRM channels: BWR-3,4,5	2.8	28

Written Examination Outline
Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
230000 RHR/LPCI: Torus/Pool Spray Mode			X									K3.01 - Knowledge of the effect that a loss or malfunction of the RHR/LPCI: TORUS/SUPPRESSION POOL SPRAY MODE will have on following: Suppression chamber pressure	3.7	29
201001 CRD Hydraulic				X								K4.10 - Knowledge of CONTROL ROD DRIVE HYDRAULIC SYSTEM design feature(s) and/or interlocks which provide for the following: Control of rod movement (HCU directional control valves)	3.1	30
290002 Reactor Vessel Internals					X							K5.01 - Knowledge of the operational implications of the following concepts as they apply to REACTOR VESSEL INTERNALS: Thermal limits	3.5	31
219000 RHR/LPCI: Torus/Pool Cooling Mode						X						K6.08 - Knowledge of the effect that a loss or malfunction of the following will have on the RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE: ECCS room cooling	2.7	32
233000 Fuel Pool Cooling/Cleanup							X					A1.06 - Ability to predict and/or monitor changes in parameters associated with operating the FUEL POOL COOLING AND CLEAN-UP controls including: System flow	2.5	33

Written Examination Outline
Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
286000 Fire Protection								X				A2.08 - Ability to (a) predict the impacts of the following on the FIRE PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to actuate when required	3.2	34
216000 Nuclear Boiler Inst.									X			A3.01 - Ability to monitor automatic operations of the NUCLEAR BOILER Instrumentation including: Relationship between meter/recorder readings and actual parameter values: Plant-Specific	3.4	35
204000 RWCU										X		A4.08 - Ability to manually operate and/or monitor in the control room: Reactor water level	3.4	36
256000 Reactor Condensate											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	37
215001 Traversing In-core Probe										X		A4.03 - Ability to manually operate and/or monitor in the control room: Isolation valves: Mark-I&II(Not-BWR1)	3.0	38
K/A Category Totals	1	1	1	1	1	1	1	1/1	1	2	1/2	Group Point Total:	12/3	

Facility:		Date:				
Category	KA #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.42	Knowledge of new and spent fuel movement procedures.	2.5	66		
	2.1.4	Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.	3.3	67		
	2.1.13	Knowledge of facility requirements for controlling vital / controlled access.			3.2	94
	2.1.14	Knowledge of criteria or conditions that require plant-wide announcements, such as pump starts, reactor trips, mode changes, etc.			3.1	99
Subtotal			2		2	
2. Equipment Control	2.2.7	Knowledge of the process for conducting special or infrequent tests.	2.9	68		
	2.2.40	Ability to apply technical specifications for a system.	3.4	69		
	2.2.37	Ability to determine operability and / or availability of safety related equipment.	3.6	75		
	2.2.22	Knowledge of limiting conditions for operations and safety limits.			4.7	95
Subtotal			3		1	

3. Radiation Control	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	2.9	70		
	2.3.7	Ability to comply with radiation work permit requirements during normal or abnormal requirements.	3.5	71		
	2.3.11	Ability to control radiation releases.			4.3	96
	2.3.12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.			3.7	100
Subtotal				2		2
4. Emergency Procedures / Plan	2.4.21	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	72		
	2.4.20	Knowledge of the operational implications of EOP warnings, cautions, and notes.	3.8	73		
	2.4.6	Knowledge of EOP mitigation strategies.	3.7	74		
	2.4.1	Knowledge of EOP entry conditions and immediate action steps.			4.8	97
	2.4.9	Knowledge of low power / shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.			4.2	98
Subtotal				3		2
Tier 3 Point Total:				10		7

Tier / Group	Randomly Selected KA	Reason for Rejection
Tier 1 / Group 1	295016 / 2.4.31 replaced with 295016 / 2.4.11	Question 81, 2.4.31 - Emergency Procedures / Plan: Knowledge of annunciator alarms, indications, or response procedures. There is no link to 50.43 because control room abandonment is an SOP and there are no annunciators associated with it. Randomly selected 2.4.11, Knowledge of abnormal condition procedures.
Tier 1 / Group 1	295037 / EK1.04 replaced with 295037 / EK1.06	Question 39, EK1.04 - Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: Hot shutdown boron weight: Plant-Specific. NMP 2 does not use Hot shutdown boron weight. Randomly selected EK1.06, Cooldown effects on reactor power.
Tier 1 / Group 1	295026 / EK2.05 replaced with 295026 / EK2.02	Question 44, EK2.05 - Knowledge of the interrelations between SUPPRESSION POOL HIGH WATER TEMPERATURE and the following: Containment pressure: Mark-III. This K/A does not apply to NMP 2 which has a Mark II Containment. Randomly selected EK2.02, Suppression pool spray: Plant Specific
Tier 1 / Group 1	295038 / EA2.02 replaced with 295038 / EA2.04	Question 53, EA2.02 - Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Total number of curies released. This is not a function of the RO licensed position at NMP 2. Randomly selected EA2.04, Source of off-site release.
Tier 1 / Group 1	295005 / 2.4.3 replaced with 295005 / 2.4.31	Question 55, 2.4.3 - Emergency Procedures / Plan: Ability to identify post-accident instrumentation. There are no post accident instruments associated with a main turbine generator trip at NMP 2. Randomly selected 2.4.31, Knowledge of annunciator alarms, indications, or response procedures.
Tier 1 / Group 2	295020 / 2.1.30 replaced with 295020 / 2.1.20	Question 84, 2.1.30 - Conduct of Operations: Ability to locate and operate components, including local controls. There is an SOP 83 for primary containment isolations but there are no local operations for an SRO to direct. Additionally there are no local operations in response to inadvertent isolations in the EOPs. Unable to write an effective question, randomly selected 2.1.20, Ability to interpret and execute procedure steps.
Tier 1 / Group 2	295009 / 2.1.28 replaced with 295020 / 2.1.23	Question 85, 2.1.28 - Conduct of Operations: Knowledge of the purpose and function of major system components and controls. Could not write an SRO question to meet 10CFR50.43 requirements. Randomly replaced with 2.1.23, Ability to perform specific system and integrated plant procedures during all modes of plant operation.
Tier 2 / Group 1	209001 / A2.11 replaced with 209001 / A2.04	Question 86, A2.11 - Ability to (a) predict the impacts of the following on the LOW PRESSURE CORE SPRAY SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of fire protection: BWR-1. NMP 2 is not a BWR-1 this K/A does not apply, randomly selected A2.04, D.C. failures

Tier 2 / Group 1	211000 / K3.03 replaced with 211000 / K3.01	Question 5, K3.03 - Knowledge of the effect that a loss or malfunction of the STANDBY LIQUID CONTROL SYSTEM will have on following: Core plate differential pressure indication. NMP 2 SLC discharges into the HPCS spray ring in the top of the core there is no relationship between a loss or malfunction of SLC and Core plate differential measurement. Randomly selected K3.01, Ability to shutdown the reactor in certain conditions
Tier 2 / Group 1	223002 / K3.13 replaced with 223002 / K3.20	Question 6, K3.13 - Knowledge of the effect that a loss or malfunction of the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF will have on following: Isolation Condenser: Plant-Specific. NMP2 does not have isolation condensers, randomly selected K3.20 Standby gas treatment system
Tier 2 / Group 1	300000 / K6.04 replaced with 300000 / K6.13	Question 11, K6.04 - Knowledge of the effect that a loss or malfunction of the following will have on the INSTRUMENT AIR SYSTEM: Service air refusal valve. NMP 2 does not have a refusal valve, additionally if this K/A was used to write a question on an isolation valve it would be very similar to another K/A on the NRC exam. Randomly selected K6.13, Filters
Tier 2 / Group 1	262002 / A1.02 replaced with 262002 / A3.01	Question 14, 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. NMP 2 does not have any motor generators that are UPS. All NMP 2s UPS units have inverters. Could not select another A1 K/A because the remaining importance was less than 2.5. Randomly selected A3.01, Ability to monitor automatic operations of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) including: Transfer from preferred to alternate source.
Tier 2 / Group 1	259002 / 2.4.30 replaced with 259002 / 2.4.4	Question 21, 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. There are no RO responsibilities regarding Reactor Water Level Control and reporting to internal organizations or external agencies. Randomly selected 2.4.4, Ability to recognize abnormal indications for system operating parameters that are entry level conditions for emergency and abnormal procedures.
Tier 3 / Category 3	2.3.11 replaced with 2.3.7	Question 71, 2.3.11 - Ability to control radiation releases. This same K/A is used for Question 96. To prevent a double jeopardy question randomly selected 2.3.7, Ability to comply with radiation work permit requirements during normal or abnormal requirements.
Tier 3 / Category 4	2.4.9 replaced with 2.4.20	Question 73, 2.4.9 - Knowledge of low power / shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies. This same K/A is used for Question 98. To prevent a double jeopardy question randomly selected 2.4.20, Knowledge of the operational implications of EOP warnings, cautions, and notes.

Tier 3 / Category 3	2.3.15 replaced with 2.3.12	Question 100, 2.3.15 - Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc. This same K/A is used for Question 70. To prevent a double jeopardy question randomly selected 2.3.12, Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.
Tier 2 / Group 1	209002 / 2.4.3 replaced with 209002 / 2.1.7	Question 88, 2.4.3 - Emergency Procedures / Plan: Ability to identify post-accident instrumentation. There is no HPCS post accident instrumentation. Randomly replaced with 2.1.7, Conduct of Operations: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.
Tier 2 / Group 1	211000 / 2.2.42 replaced with 211000 / 2.1.7	2.2.42 - Equipment Control: Ability to recognize system parameters that are entry-level conditions for Technical Specifications. Had difficulty writing an appropriate RO question, randomly replaced with 2.1.7 - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

Facility: <u>NMP2 - NRC</u>		Date of Examination: <u>March 2012</u>
Examination Level: RO		Operating Test Number: <u>NRC</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	<p>Perform Jet Pump Flow Mismatch Checks IAW N2-OSP-LOG-D001 Attachment 10</p> <p>The candidate will calculate Jet Pump loop flow mismatch and identify a Jet Pump DP out-of-spec.</p> <p>2.1.18 (3.6) Ability to make accurate, clear, and concise logs, records, status boards and reports.</p> <p>N2-OSP-LOG-D001, Attachment 4</p>
Conduct of Operations	N, R	<p>Determine Heatup Rate During Startup</p> <p>Given turnover conditions during a plant startup, the candidate will interpret heatup data, calculate the heatup rate and take the appropriate actions.</p> <p>2.1.43 (4.1) Ability to use procedures to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc.</p> <p>N2-OSP-RCS-@001</p>
Equipment Control	M, R	<p>Determine Adequacy of Clearance for SLC</p> <p>The candidate will review a proposed clearance for SLC and determine the adequacy of the clearance boundaries.</p> <p>2.2.14 (3.9) Knowledge of the process for controlling equipment configuration or status.</p> <p>CNG-OP-1.01-1007</p>

Emergency Plan	D, S	<p>Perform RO Actions for an Injured and Contaminated Person</p> <p>The candidate will perform EPIP-EPP-04 actions for a contaminated and injured person to be transported offsite.</p> <p>2.4.12 (4.0) Knowledge of general operating crew responsibilities during emergency operations.</p> <p>EPIP-EPP-04</p>
<p>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.</p>		
<p>* Type Codes & Criteria:</p> <p>(C)ontrol room, (S)imulator, or Class(R)oom</p> <p>(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)</p> <p>(N)ew or (M)odified from bank (≥ 1)</p> <p>(P)revious 2 exams (≤ 1; randomly selected)</p>		

Facility: <u>NMP2-NRC</u>		Date of Examination: <u>March 2012</u>
Examination Level: SRO		Operating Test Number: <u>NRC</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, R	<p>Determine Plant Impact for Inoperable Unit Cooler</p> <p>Given a failed closed service water inlet valve to 2HVC*UC107, determine the effect on the unit cooler and UPS2D operability per N2-OP-53E and Tech Specs.</p> <p>2.1.32 (4.0) Ability to explain and apply system limits and precautions.</p> <p>N2-OP-53E and Technical Specifications</p>
Conduct of Operations	D, R	<p>Determine Personnel Overtime Availability</p> <p>Given a list of personnel and their previous work hours, determine who is available for overtime and why others are not available, then complete a waiver for an individual to perform work beyond administrative work requirements based on administrative requirements.</p> <p>2.1.5 (3.9) Ability to use procedures related to shift staffing, such as minimum crew requirements, overtime limitations, etc.</p> <p>CNG-SE-1.01-1002</p>
Equipment Control	D, R	<p>Offsite Dose Calculation Manual (ODCM) Assessment for Inoperable Equipment</p> <p>Given conditions requiring removing Offgas radiation monitors OFG*RE13A and OFG*RE13B from service, the candidate will determine the actions required by N2-OP-42, Offgas System and the ODCM.</p> <p>2.2.38 (4.5) Knowledge of conditions and limitations in the facility license.</p>

Radiation Control	D, R	<p>Radiological Requirements Related to Operator Inspection of High Radiation Areas</p> <p>Given radiological conditions related to an area where work is to be performed as shown on a survey map, and other applicable conditions such as the RWP, ensure the appropriate radiological aspects of the job are met prior to sending the operator into the area.</p> <p>2.3.12 (3.7) Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc</p> <p>GAP-RPP-01, 02, 07 and 08; S-RAP-RPP-0703</p>
Emergency Plan	M, R	<p>Classify Emergency Event and Determine Protective Action Recommendations</p> <p>The candidate will classify an emergency event and notify offsite agencies with Protective Action Recommendations.</p> <p>2.4.44 (4.4) Knowledge of emergency plan protective action recommendations</p>
<p>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.</p>		
<p>* Type Codes & Criteria:</p> <p>(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)</p>		

Facility:	Nine Mile Point Unit 2 NRC	Date of Examination:	March 2012
Exam Level:	RO/SRO	Operating Test No.:	NRC
Control Room Systems® (8 for RO; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
S-1	Align SBGTS Train "A" to reduce Drywell pressure The candidate will place Standby Gas Train "A" on the Drywell in accordance with N2-OP-61A, Section H.1.0. K/A 295024 EA1.20 3.5/3.6 N2-OP-61A, H.1.0	D,S	5 CONTAINMENT INTEGRITY
S-2	Start RCIC in Reject to CST Mode (Tank to Tank) The candidate will start RCIC and place it in tank to tank mode for RPV pressure control IAW N2-EOP-HC. After RCIC is in service a high RCIC turbine exhaust pressure condition will occur and RCIC will fail to trip. The candidate will take manual action to trip the RCIC turbine. K/A 217000, A4.04, 3.6/3.6 N2-EOP-HC	M,A,L,S	4 HEAT REMOVAL FROM RX CORE
S-3	Swap Instrument Air Compressors The candidate will perform a swap of the Instrument Air Compressors per N2-OP-19. After the compressors are swapped, the lead air compressor will trip requiring the operator to realign the system per N2-SOP-19. K/A 295019 AA2.01 3.5/3.6 N2-OP-19 F.2.0; N2-SOP-19	D,A,S	8 PLANT SERVICE SYSTEMS
S-4	Startup a Feedwater Pump following a Scram The candidate will restart Reactor Feed Pump A and raise RPV water level above 159 inches following a plant scram IAW N2-SOP-101C. K/A 259001 A4.02 3.9/3.7 N2-SOP-101C	D,L,S	2 REACTOR WATER INVENTORY CONTROL
S-5	Energizing 2ENS*SWG103 from Division II EDG & Energize NNS-SWG15 from SWG 103 The candidate will energize SWG 103 from the Div II EDG and SWG 15 from SWG 103 IAW N2-SOP-3 Sections 8.4 & 9.3 K/A 262001 A4.01 3.4/3.7 N2-SOP-3 Sects. 8.4 & 9.3	D,S	6 ELECTRICAL

S-6 RO ONLY	Place the Standby Loop of SFC in Service. The candidate will respond to a loss of fuel pool cooling by starting the standby train IAW N2-SOP-38. K/A 233000 A2.04 2.6/2.7 N2-SOP-38	N,E,S	9 RADIOACTIVITY RELEASE
S-7	Transfer Recirculation Pump from Low Speed to High Speed The candidate will transfer RCS pump A from low to high speed operation IAW N2-OP-29. When the pump is shifted to high speed the FCV will slowly drift open requiring the candidate to lock up the FCV IAW N2-SOP-08 K/A 202002 A4.08, 3.3/3.3 N2-OP-29, N2-SOP-08	N,A,S	1 REACTIVITY CONTROL
S-8	Venting the RPV to the Condenser The candidate will line up to vent the Reactor to the Main Condenser through the MSIVs however the MSIVs will fail to open and they must lineup the MSIV Drains IAW N2-EOP-6, Attachment 18. K/A 239001 A4.01 4.2/4.0, 239001, A4.02, 3.2/3.2 N2-EOP-6 Attachment 18	D,A,L,S	3 REACTOR PRESSURE CONTROL
In-Plant Systems® (3 for RO; 3 or 2 for SRO-U)			
P-1	Aligning Service Water to SFC Heat Exchanger 1A The candidate will align Service Water to Spent Fuel Pool Heat Exchanger 1A, IAW N2-SOP-38 Attachment 5. K/A 233000 2.1.30 4.4/4.0 N2-SOP-38 Attachment 5	D,E,R	8 PLANT SERVICE SYSTEMS
P-2	Vent the Control Rod Overpiston Volume The candidate will insert control rod 26-59 to notch 00 by locally venting its overpiston area IAW N2-EOP-6 Attachment 14 KA: 295015 AA1.01 3.8/3.9 N2-EOP-6, Attachment 14	D,E,L,R	1 REACTIVITY CONTROL
P-3	Place Battery Charger 2BYS-CHGR1A1 in service. The candidate will place battery charger 2BYS-CHGR1C1 into service IAW N2-OP-73A. K/A 263000 A1.01 2.5/2.8 N2-OP-73A	D	6 ELECTRICAL

@ 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	

Facility: **Nine Mile Point 2**Scenario No.: **NRC-1**Op-Test No: **March 2012**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-153

1. Reactor Power ~100%
2. RHR B and LPCI C OOS for Division II Workweek

Turnover:

1. Swap Recirc Pump HPU Subloops

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP) N (SRO)	Swap Recirc Pump HPU subloops N2-OP-29, Sect. F.2.0
2	RR15B RR16B	R(RO) R (SRO) C (BOP) TS (SRO)	RRP B seal lower and upper seal leak requires shutting down and isolation of the pump. N2-SOP-29, N2-SOP-29.1, N2-SOP-101D, T.S. 3.4.1 and T.S. 3.4.5
3	NM19A	I (BOP) I (SRO) TS (SRO)	RBM "A" Inop requires bypassing ARPs, N2-OP-92, Tech Spec 3.3.2.1
4	TC15A TC15B TC06	C (RO) C (SRO)	Loss of EHC pumps results in Turbine and Bypass Valves failing closed requires reactor scram. N2-SOP-23, N2-SOP-101C
5	AD03B Overrides	C (BOP) C (SRO)	One Non-ADS SRV fails open N2-SOP-34
6	PC12	M (All)	Suppression Pool rupture results in loss of inventory in the suppression pool, requires blowdown. N2-EOP-RC N2-EOP-PC
7	AD08A AD08C	C (RO) C (SRO)	Failure of the ADS pushbutton or key lock switches to actuate 7 ADS valves N2-EOP-C2

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

Facility: Nine Mile Point 2		Scenario No: NRC-1	Op-Test No: March 2012
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.5.d)		ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) Events 2,3,4,5,6,7		6	
2. Malfunctions after EOP entry (1-2) Event 7		1	
3. Abnormal events (2-4) Events 2, 4		2	
4. Major transients (1-2) Event 6		1	
5. EOPs entered/requiring substantive actions (1-2) Events 4, 6 EOP-RPV, EOP-PC		2	
6. EOP contingencies requiring substantive actions (0-2) Event 7 EOP-C2		1	
7. Critical tasks (2-3)		2	
CRITICAL TASK DESCRIPTIONS:		CRITICAL TASK JUSTIFICATION:	
CT-1.0 Given a failure of 2RCS*P1B pump seals, the crew will take action to trip and isolate 2RCS*P1B IAW N2-SOP-29.1		<i>This task is identified as critical because without operator action to trip and isolate the Recirc pump, Drywell pressure would continue to rise until the reactor automatically scrams.</i>	
CT- 2.0 Given a lowering suppression pool level, the crew will open 7 SRVs per N2-EOP-C2 prior to suppression pool level reaching 192 feet		<i>This task is identified as critical because without operator action to blowdown the RPV prior level reaching 192 feet, the primary containment pressure limit could be exceeded due to a loss of pressure suppression capability concurrent with pressure control via SRVs.</i>	

Facility: **Nine Mile Point 2** Scenario No: **NRC-2** Op-Test No: **March 2012**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-154

1. Reactor Power ~92%
2. RCIC is out of service
3. A momentary loss of power signal caused lockup of LV-10A last shift.

Turnover:

1. Reset LV-10A Lockup IAW N2-SOP-06, Attachment 1.
2. After the valve has been reset and back in automatic, restore power to 100%.

Event No.	Malif. No.	Event Type*	Event Description
1	N/A	N (BOP) N (SRO)	Reset a LV-10A Lockup and place the valve back in automatic N2-SOP-6
2	N/A	R (SRO) R (RO)	Raise reactor power to 100% N2-OP-101D
3	CU08	I (BOP) I (SRO) TS (SRO)	RWCU fails to automatically isolate on RWCU flow mismatch caused by cleanup RWCU non-regen heat exchanger tube leak. ARPs, T.S. 3.3.6.1
4	RD18	C (RO) C (SRO) TS (SRO)	CRD P1A suction filter clog causes pump trip. After the pump is restarted, a Control Rod Drive Accumulator will fail to recharge. N2-SOP-30, T.S. 3.1.5
5	CW26 CW09	C (BOP) C (SRO)	Lowering service water intake bay level with failure of 2SWP*MOV77A/B to automatically open on the lowering level. Crew will be required to manually open MOV77A/B to restore level. N2-SOP-11
6	FW01A, B, and C	C (All)	Loss of all Condensate pumps results in loss of Feed and manual scram. N2-SOP-101C, N2-EOP-RPV, N2-EOP-PC
7	RR20	M (All)	Small Primary System leak inside the drywell EOP-PC
8	ED05B SL03B RD12	C (BOP) C (RO) C (SRO)	Bus fault when HPCS starts, CRD pump P1A electrical fault, Liquid Poison pump fails to start. Loss of adequate high pressure injection sources requires RPV blow down to restore adequate core cooling. N2-EOP-C2

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

Facility: Nine Mile Point 2		Scenario No.: NRC-2	Op-Test No.: March 2012
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.5.d)		ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) Events 3,4,5,6,7,8		6	
2. Malfunctions after EOP entry (1-2) Events 8		1	
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) Events 7, 8 EOP-RPV, EOP-PC		2	
6. EOP contingencies requiring substantive actions (0-2) Event 8 EOP-C2		1	
7. Critical tasks (2-3)		2	
CRITICAL TASK DESCRIPTIONS:		CRITICAL TASK JUSTIFICATION:	
CT-1.0 Given service water intake bay level less than 234 ft and a failure of 2SWP*MOV77A & 77B to automatically open, the crew will take action to manually open 2SWP*MOV77A & 77B per N2-SOP-11		<i>This task is identified as critical because without operator action the plant will lose its ultimate heat sink.</i>	
CT-2.0 Given RPV level at or below the TAF but above the MSCWL, the crew will open 7 ADS valves IAW N2-EOP-C2		<i>This task is identified as critical because without operator action, RPV level will continue to lower until the fuel is no longer adequately cooled.</i>	

Facility: **Nine Mile Point 2** Scenario No.: **NRC-3** Op-Test No.: **March 2012**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-155

1. Reactor Power ~63%
2. Reactor shutdown is in progress

Turnover:

1. Place the "C" heater drain pump in recirculation mode IAW N2-OP-8, Section G.1.
2. Lower power using recirculation flow to 58%.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP) N (SRO)	Place heater drain pumps in recirculation mode. N2-OP-101D, N2-OP-8 G.1.0
2	N/A	R (BOP) R (SRO)	Continue shutdown using Recirc flow N2-OP-101C
3	N/A	C (SRO) C (RO) TS (SRO)	Control Rod drift. ARPs, N2-SOP-8, T.S. 3.1.3
4	CS01B	C (BOP) C (SRO) TS (SRO)	Inadvertent initiation of HPCS due to high drywell pressure. N2-OP-33, T.S. 3.5.1
5	RP06A	C (BOP) C (SRO)	Loss of normal power to RPS Bus B, after initial actions RPS is recovered N2-SOP-97
6	FW31	C (All)	Loss of instrument air requires a scram N2-SOP-19, N2-SOP-101C
7	RD17 RP02 RP14A, B	M (All)	Hydraulic ATWS N2-EOP-RPV, N2-EOP-C5,
8	RP12A RP12B	I (RO) I (SRO)	RRCS fails to automatically initiate requiring manual initiation and manual insertion of Control Rods. N2-EOP-6, Att 14

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

Facility: Nine Mile Point 2		Scenario No.: NRC-3	Op-Test No.: March 2012
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.5.d)		ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) Events 3,4,5,6,7,8		6	
2. Malfunctions after EOP entry (1-2) Events 8		1	
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) Events 7 EOP-RPV		1	
6. EOP contingencies requiring substantive actions (0-2) Event 7 EOP-C5		1	
7. Critical tasks (2-3)		3	
CRITICAL TASK DESCRIPTIONS:		CRITICAL TASK JUSTIFICATION:	
CT-1.0 Given a failure of the reactor to SCRAM the crew will inhibit ADS per N2-EOP-C5		<i>This task is identified as critical because without operator action to inhibit ADS prior to manually lowering RPV level, the reactor could experience a rapid and uncontrolled cooldown and subsequent injection of cold water which will dilute boron concentrations and add positive reactivity to the reactor if level were lowered below Level 1.</i>	
CT-2.0 Given a failure of the reactor to SCRAM, power above 4%, and RPV water level above 100 inches, the crew will terminate and prevent all injection except SLS, CRD and RCIC per N2-EOP-C5		<i>This task is identified as critical because without operator action to terminate and prevent injection, the reactor could experience large irregular neutron flux oscillations induced by neutronic/thermal-hydraulic instabilities.</i>	
CT-3.0 Given a failure of the reactor to SCRAM, the crew will insert control rods per N2-EOP-6, Attachment 14		<i>This task is identified as critical because without operator action to insert control rods, the reactor will remain susceptible to inadvertent power generation due to potential boron dilution or displacement</i>	