

Facility:		ILT 13-1 NRC Written Exam										Date of Exam:		05/19/14				
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	3	4	7		
	2	1	1	2				1	1			1	7	2	1	3		
	Tier Totals	4	4	5				5	4			5	27	5	5	10		
2. Plant Systems	1	3	2	2	3	2	3	2	2	3	2	2	26	3	2	5		
	2	1	1	1	1	1	1	1	1	2	1	1	12	0	2	3		
	Tier Totals	4	3	3	4	3	4	3	3	5	3	3	38	5	3	8		
3. Generic Knowledge & Abilities Categories					1		2		3		4		10	1	2	3	4	7
					3		2		3		2			2	2	2	1	
<p>Note</p> <ol style="list-style-type: none"> 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 																		

ILT 13-1 NRC Written Exam
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#
295018 Partial or Total Loss of CCW / 8					X		AA2.02 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : Cooling water temperature	3.2	1
295031 Reactor Low Water Level / 2					X		EA2.02 - Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL : Reactor power	4.2	2
295030 Low Suppression Pool Water Level / 5					X		EA2.04 - Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL : Drywell/ suppression chamber differential pressure: Mark-I&II	3.7	3
295026 Suppression Pool High Water Temp. / 5						X	2.4.41 - Emergency Procedures / Plan: Knowledge of the emergency action level thresholds and classifications.	4.6	4
295028 High Drywell Temperature / 5						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	5
295038 High Off-site Release Rate / 9						X	2.4.45 - Emergency Procedures / Plan: Ability to prioritize and interpret the significance of each annunciator or alarm.	4.3	6
295021 Loss of Shutdown Cooling / 4						X	2.2.44 - Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.	4.4	7
700000 Generator Voltage and Electric Grid Disturbances	X						AK1.02 - Knowledge of the operational implications of the following concepts as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES and the following: Over-excitation.	3.3	39
295031 Reactor Low Water Level / 2	X						EK1.03 - Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL : Water level effects on reactor power	3.7	40
600000 Plant Fire On-site / 8	X						AK1.02 - Knowledge of the operational implications of the following concepts as they apply to Plant Fire On Site: Fire Fighting	2.9	41
295016 Control Room Abandonment / 7		X					AK2.01 - Knowledge of the interrelations between CONTROL ROOM ABANDONMENT and the following: Remote shutdown panel: Plant-Specific	4.4	42
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4		X					AK2.01 - Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION and the following: Recirculation system	3.6	43
295004 Partial or Total Loss of DC Pwr / 6		X					AK2.01 - Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following: Battery charger	3.1	44

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295023 Refueling Acc Cooling Mode / 8			X				AK3.02 - Knowledge of the reasons for the following responses as they apply to REFUELING ACCIDENTS : Interlocks associated with fuel handling equipment	3.4	45
295005 Main Turbine Generator Trip / 3			X				AK3.04 - Knowledge of the reasons for the following responses as they apply to MAIN TURBINE GENERATOR TRIP: Main generator trip	3.2	46
295003 Partial or Complete Loss of AC / 6			X				AK3.01 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Manual and auto bus transfer	3.3	47
295006 SCRAM / 1				X			AA1.03 - Ability to operate and/or monitor the following as they apply to SCRAM : Reactor/turbine pressure regulating system	3.7	48
295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown / 1				X			EA1.01 - Ability to operate and/or monitor the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN : Reactor Protection System	4.6	49
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	50
295025 High Reactor Pressure / 3					X		EA2.06 - Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE: Reactor water level	3.7	51
295019 Partial or Total Loss of Inst. Air / 8					X		AA2.01 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR : Instrument air system pressure	3.5	52
295038 High Off-site Release Rate / 9					X		EA2.01 - Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE : †Off-site	3.3	53
295018 Partial or Total Loss of CCW / 8						X	2.1.23 - Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.3	54
295026 Suppression Pool High Water Temp. / 5						X	2.2.22 - Equipment Control: Knowledge of limiting conditions for operations and safety limits.	4.0	55
295024 High Drywell Pressure / 5						X	2.2.37 - Equipment Control: Ability to determine operability and/or availability of safety related equipment.	3.6	56
295030 Low Suppression Pool Water Level / 5						X	2.4.1 - Emergency Procedures / Plan: Knowledge of EOP entry conditions and immediate action steps.	4.6	57
295021 Loss of Shutdown Cooling / 4				X			AA1.05 - Ability to operate and/or monitor the following as they apply to LOSS OF SHUTDOWN COOLING : Reactor recirculation	3.0	58
K/A Category Totals:	3	3	3	4	3/3	4/4	Group Point Total:	20/7	

ILT 13-1 NRC Written Exam
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	2.1.20 – Conduct of Operations: Ability to interpret and execute procedure steps.	4.6	8
295009 Low Reactor Water Level / 2					X		AA2.02 - Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL : Steam flow/feed flow mismatch	3.7	9
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	3.2	10
295017 High Off-site Release Rate / 9	X						AK1.02 - Knowledge of the operational implications of the following concepts as they apply to HIGH OFF-SITE RELEASE RATE : Protection of the general public	3.8	59
295034 Secondary Containment Ventilation High Radiation / 9		X					EK2.06 - Knowledge of the interrelations between SECONDARY CONTAINMENT VENTILATION HIGH RADIATION and the following: PCIS/NSSSS: Plant-Specific	3.9	60
295032 High Secondary Containment Area Temperature / 5			X				EK3.01 - Knowledge of the reasons for the following responses as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE : Emergency/normal depressurization	3.5	61
295010 High Drywell Pressure / 5				X			AA1.01 - Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE : Drywell ventilation/cooling	3.4	62
295007 High Reactor Pressure / 3					X		AA2.02 - Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE : Reactor power	4.1	63
295033 Secondary Containment Area Radiation Levels / 9						X	2.4.2 - Emergency Procedures/Plan: Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.	4.5	64
295002 Loss of Main Condenser Vac / 3			X				AK3.04- Knowledge of the reasons for the following responses as they apply to LOSS OF MAIN CONDENSER VACUUM: Bypass valve closure	3.4	65
K/A Category Totals:	1	1	2	1	1/2	1/1	Group Point Total:		7/3

ILT 13-1 NRC Written Exam
 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#
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212000 RPS								X				A2.01 - Ability to (a) predict the impacts of the following on the REACTOR PROTECTION SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: RPS motor-generator set failure	3.9	11
259002 Reactor Water Level Control								X				A2.04 - Ability to (a) predict the impacts of the following on the REACTOR WATER LEVEL CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: RFP runout condition: Plant-Specific	3.1	12
209001 LPCS										X		2.4.47 - Emergency Procedures / Plan: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	4.2	13
262001 AC Electrical Distribution										X		2.2.40 – Equipment Control: Ability to apply Technical Specifications for a system.	4.7	14
261000 SGTS								X				A2.07 - 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: A.C. electrical failure	2.8	15
212000 RPS	X											K1.05 - Knowledge of the physical connections and/or cause- effect relationships between REACTOR PROTECTION SYSTEM and the following: Process radiation monitoring system	3.3	1
215005 APRM / LPRM	X											K1.02 - Knowledge of the physical connections and/or cause- effect relationships between AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM and the following: IRM	3.7	2
209001 LPCS		X										K2.01 - Knowledge of electrical power supplies to the following: Pump power	3.0	3
239002 SRVs		X										K2.01 - Knowledge of electrical power supplies to the following: SRV solenoids	2.8	21

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 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	A 2	A 3	A 4	G	Imp	Q#
215005 APRM/LPRM			X									3.8	5
215003 IRM			X									3.6	6
300000 Instrument Air				X								3.0	7
223002 PCIS/Nuclear Steam Supply Shutoff				X								3.5	17
263000 DC Electrical Distribution					X							2.6	9
262001 AC Electrical Distribution					X							2.6	10
205000 Shutdown Cooling						X						3.3	11
264000 EDGs						X						3.5	12
211000 SLC							X					3.6	13

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 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					3.8	14
215004 Source Range Monitor								X				2.7	15
400000 Component Cooling Water								X				2.8	16
207000 Isolation (Emergency) Condenser									X			3.5	8
218000 ADS									X			4.1	18
262002 UPS (AC/DC)										X		2.8	19
239002 SRVs										X		4.3	20
264000 EDGs											X	3.4	4
261000 SGTS											X	3.9	22
259002 Reactor Water Level Control	X											3.5	23

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 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#
300000 Instrument Air				X								2.8	24
263000 DC Electrical Distribution									X			3.2	25
400000 Component Cooling Water						X						3.0	26
K/A Category Totals:	3	2	2	3	2	3	2	2/3	3	2	2/2	Group Point Total: 26/5	

ILT 13-1 NRC Written Exam
 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 #	
223001 Primary CTMT and Aux.								X				A2.07 - Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High drywell pressure	4.3	16
201003 Control Rod and Drive Mechanism											X	2.4.11 - Emergency Procedures / Plan: Knowledge of abnormal condition procedures.	4.2	17
202001 Recirculation System								X				A2.02 - Ability to (a) predict the impacts of the following on the RECIRCULATION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation system leak	3.9	18
256000 Reactor Condensate	X											K1.22 - Knowledge of the physical connections and/or cause- effect relationships between REACTOR CONDENSATE SYSTEM and the following: Offgas system	2.8	27
201001 CRD Hydraulic		X										K2.02 - Knowledge of electrical power supplies to the following: Scram valve solenoids	3.6	28
288000 Plant Ventilation			X									K3.05 - Knowledge of the effect that a loss or malfunction of the PLANT VENTILATION SYSTEMS will have on following: Reactor building pressure: Plant-Specific	3.1	29
245000 Main Turbine Gen. / Aux.				X								K4.05 - Knowledge of MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS design feature(s) and/or interlocks which provide for the following: Turbine protection	2.9	30
204000 RWCU					X							K5.05 - Knowledge of the operational implications of the following concepts as they apply to REACTOR WATER CLEANUP SYSTEM : Flow controllers	2.6	31
290003 Control Room HVAC						X						K6.01 - Knowledge of the effect that a loss or malfunction of the following will have on the CONTROL ROOM HVAC : Electrical power	2.7	32

ILT 13-1 NRC Written Exam
 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 #		
233000 Fuel Pool Cooling/Cleanup							X						A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the FUEL POOL COOLING AND CLEAN-UP controls including: Surge tank level	2.6	33
202001 Recirculation System								X					A2.17 - Ability to (a) predict the impacts of the following on the RECIRCULATION SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of seal cooling water	3.1	34
271000 Off-gas									X				A3.05 - Ability to monitor automatic operations of the OFFGAS SYSTEM including: System indicating lights and alarms	2.9	35
201002 RMCS										X			A4.01 - Ability to manually operate and/or monitor in the control room: Rod movement control switch	3.5	36
290002 Reactor Vessel Internals											X		2.2.22 - Equipment Control: Knowledge of limiting conditions for operations and safety limits.	4.0	37
202002 Recirculation Flow Control									X				A3.03 - Ability to monitor automatic operations of the RECIRCULATION FLOW CONTROL SYSTEM including: Scoop tube operation: BWR-2,3,4	3.1	38
K/A Category Totals:	1	1	1	1	1	1	1	1/2	2	1	1/1	Group Point Total:		12/3	

Facility:		ILT 13-1 NRC Written Exam		Date:		05/19/14	
Category	K/A #	Topic	RO		SRO-Only		
			IR	Q#	IR	Q#	
1. Conduct of Operations	2.1.20	Ability to interpret and execute procedure steps.			4.6	19	
	2.1.5	Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.			3.9	25	
	2.1.1	Knowledge of conduct of operations requirements.	3.8	66			
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.4	67			
	2.1.19	Ability to use plant computers to evaluate system or component status.	3.9	75			
	Subtotal				3		2
2. Equipment Control	2.2.21	Knowledge of pre- and post-maintenance operability requirements.			4.1	20	
	2.2.37	Ability to determine operability and / or availability of safety related equipment.			4.6	23	
	2.2.38	Knowledge of conditions and limitations in the facility license.	3.6	68			
	2.2.22	Knowledge of limiting conditions for operations and safety limits.	4.0	69			
Subtotal				2		2	
3. Radiation Control	2.3.14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.			3.8	21	
	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.			3.1	24	
	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	70			

	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.	3.2	71		
	2.3.11	Ability to control radiation releases.	3.8	74		
	Subtotal			3		2
4. Emergency Procedures / Plan	2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm.			4.3	22
	2.4.17	Knowledge of EOP terms and definitions.	3.9	72		
	2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1	73		
	Subtotal				2	
Tier 3 Point Total				10		7

Tier / Group	Randomly Selected K/A	Reason for Rejection
1 / 1 SRO	295038 2.4.45	K/A 295038 2.4.4 supports testing at the RO level, but not the SRO-Only level due to job responsibilities. K/A was rejected and a new K/A was randomly selected.
3 SRO	2.1.4	K/A 2.1.44 supports testing at the RO level, but not the SRO-Only level due to job responsibilities. K/A was rejected and a new K/A was randomly selected.
3 SRO	2.4.45	K/A 2.4.35 supports testing at the RO level, but not the SRO-Only level due to job responsibilities. K/A was rejected and a new K/A was randomly selected.
1 / 1 RO	295023 AK3.02	K/A 295023 AK3.05 applies to a BWR-1. Oyster Creek is a BWR-2. K/A was rejected and a new K/A was randomly selected.
3 RO	2.2.22	K/A 2.2.3 applies to a multi-unit site. Oyster Creek is a single unit site. K/A was rejected and a new K/A was randomly selected.
1 / 1 RO	295028 EA1.01	K/A 295028 EA1.02 was rejected due to overlap with RO question #62, K/A 295010 AA1.01. A new K/A was randomly selected.
1 / 2 RO	295002 AK3.04	K/A 295022 AK3.02 was rejected due not being able to develop three credible distractors at the RO level. A new K/A was randomly selected.
2 / 2 RO	256000 K1.22	K/A 290001 K1.02 was rejected due not being able to develop three credible distractors at the RO level. A new K/A was randomly selected.
1 / 2 RO	295033 2.4.2	K/A 295035 2.1.27 was rejected due to not being able to develop three credible distractors at the RO level. A new K/A was randomly selected at the RO level. A new K/A was randomly selected.
3 SRO	2.3.15	K/A 2.3.13 supports testing at the RO level, but not the SRO-Only level due to job responsibilities. K/A was rejected and a new K/A was randomly selected.
2 / 2 SRO	201003 2.4.11	K/A 201003 2.4.50 supports testing at the RO level, but not the SRO-Only level due to job responsibilities. K/A was rejected and a new K/A was randomly selected.
1 / 1 RO	295003 AK3.01	K/A 295003 AK3.07 was rejected due to not being able to develop three credible distractors at the RO level. A new K/A was randomly selected at the RO level. A new K/A was randomly selected.
1 / 2 RO	295033 2.4.2	K/A 295033 2.1.27 was rejected due to not being able to develop three credible distractors at the RO level. A new K/A was randomly selected at the RO level. A new K/A was randomly selected.
2 / 1 RO	215005 K3.05	K/A 261000 K3.05 was rejected due to system being oversampled. A new K/A was randomly selected and a new question written.
2 / 1 RO	300000 K4.01	K/A 218000 K4.01 was rejected due to overlap with question #18. A new K/A was randomly selected and a new question written..
2 / 2 RO	201002 A4.01	K/A 241000 A4.11 was rejected due to being generic fundamentals knowledge. A new K/A was randomly selected and a new question written..

Facility: <u>Oyster Creek</u>		Date of Examination: <u>05/19/14</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <u>13-1 NRC</u>
Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	Determine Bulk Drywell Temperature; 2.1.20 (4.6) [RO Admin JPM 1]
Conduct of Operations	D, R	Plot RPV Heatup Rate During a Startup; 2.1.25 (3.9) [RO Admin JPM 2]
Equipment Control	D, R	Perform a Manual Core Heat Balance Calculation IAW 1001.6; 2.2.12 (3.7) [RO Admin JPM 3]
Radiation Control		
Emergency Procedures/Plan	M, R	Review a Completed State/Local Notification Form; 2.4.39 (3.9) [NRC RO Admin JPM 4]
<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 5 are required.</p>		
<p>* Type Codes & Criteria:</p> <ul style="list-style-type: none"> (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) 		

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Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		Operating Test Number: <u>13-1 NRC</u>
Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	D, R	Determine Operator Qualifications Using LMS; 2.1.8 (4.1) [SRO Admin JPM 1]
Conduct of Operations	M, R	Apply Work Hour Rules; 2.1.5 (3.9) [SRO Admin JPM 2]
Equipment Control	N, R	Review Completed Surveillance Test 619.3.016, RPS I High Drywell Pressure Scram Test And Calibration; 2.2.12 (4.1) [SRO Admin JPM 3]
Radiation Control	D, R	Determine Recommendation of KI Issuance During an Emergency; 2.3.14 (3.8) [SRO Admin JPM 4]
Emergency Procedures/Plan	D, R	Classify an Emergency Event and Initiate a State/Local Notification Form; 2.4.41 (4.6) [SRO Admin JPM 5]
<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 5 are required.</p>		
<p>* Type Codes & Criteria:</p> <ul style="list-style-type: none"> (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: <u>Oyster Creek</u>		Date of Examination: <u>05/19/14</u>
Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>		Operating Test Number: <u>13-1 NRC</u>
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. Shutdown the Second RWCU Pump with a high NRHX temperature alarm and isolation failure (Alternate Path); 204000 A4.01 (3.1/3.0) [NRC Sim JPM 1]	M, A, S	2
b. Secure a Reactor Recirc Pump and Respond to a Recirc Pump Trip (Alternate Path); 202001 A4.01 (3.7/3.7) [NRC Sim JPM 2]	N, A, S	1
c. Add Makeup to the Isolation Condenser System (Alternate Path); 207000 A3.05 (3.6/3.8) [NRC Sim JPM 3]	D, A, S	4
d. Purge the Primary Containment; 223001 A4.07 (4.2/4.1) [NRC Sim JPM 4]	M, EN, S	5
e. De-energize 1A1 Transformer by Cross-tying USS 1A1 to USS 1B1; 262001 A1.05 (3.2/3.5) [NRC Sim JPM 5]	D, S, L	6
f. Perform the Anticipatory Scram Turbine Stop Valve Closure Test (Alternate Path); 212000 A2.19 (3.8/3.9) [NRC Sim JPM 6]	D, A, S	7
g. Swap Instrument Air Compressors with a loss of Instrument Air (Alternate Path); 300000 K4.04 (2.8/2.9) [NRC Sim JPM 7]	N, A, S	8
h. Swap Control Room Ventillation Fans (Alternate Path); 290003 A4.02 (2.8/2.8) [NRC Sim JPM 8]	D, A, S	9
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Vent the Control Rod Drive Over Piston Volume; 295037 EA1.05 (3.9/4.0) [NRC Plant JPM 1]	N, L, R, E	1
j. Align Core Spray System to the Condensate Storage Tank for Emergency Operations; 295030 EA1.06 (3.4/3.4) [NRC Plant JPM 2]	D, R, L, E	2
k. Swap Static Chargers from C1 to C2; 263000 K1.02 (3.2/3.3) [NRC Plant JPM 3]	D	6

Facility: <u>Oyster Creek</u>		Date of Examination: <u>05/19/14</u>	
Exam Level: RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>		Operating Test Number: <u>13-1 NRC</u>	
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.			
b. Secure a Reactor Recirc Pump and Respond to a Recirc Pump Trip (Alternate Path); 202001 A4.01 (3.7/3.7) [NRC Sim JPM 2]	N, A, S	1	
c. Add Makeup to the Isolation Condenser System (Alternate Path); 207000 A3.05 (3.6/3.8) [NRC Sim JPM 3]	D, A, S	4	
d. Purge the Primary Containment; 223001 A4.07 (4.2/4.1) [NRC Sim JPM 4]	M, EN, S	5	
e. De-energize 1A1 Transformer by Cross-tying USS 1A1 to USS 1B1; 262001 A1.05 (3.2/3.5) [NRC Sim JPM 5]	D, S, L	6	
f. Perform the Anticipatory Scram Turbine Stop Valve Closure Test (Alternate Path); 212000 A2.19 (3.8/3.9) [NRC Sim JPM 6]	D, A, S	7	
g. Swap Instrument Air Compressors with a loss of Instrument Air (Alternate Path); 300000 K4.04 (2.8/2.9) [NRC Sim JPM 7]	N, A, S	8	
h. Swap Control Room Ventillation Fans (Alternate Path); 290003 A4.02 (2.8/2.8) [NRC Sim JPM 8]	D, A, S	9	
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. Vent the Control Rod Drive Over Piston Volume; 295037 EA1.05 (3.9/4.0) [NRC Plant JPM 1]	N, L, R, E	1	
j. Align Core Spray System to the Condensate Storage Tank for Emergency Operations; 295030 EA1.06 (3.4/3.4) [NRC Plant JPM 2]	D, R, L, E	2	
k. Swap Static Chargers from C1 to C2; 263000 K1.02 (3.2/3.3) [NRC Plant JPM 3]	D	6	
<p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety</p>			

Facility: Oyster Creek

Date of Examination: 05/19/14

Exam Level: RO SRO-I SRO-U

Operating Test Number: 13-1 NRC

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.		
b. Secure a Reactor Recirc Pump and Respond to a Recirc Pump Trip (Alternate Path); 202001 A4.01 (3.7/3.7) [NRC Sim JPM 2]	N, A, S	1
c. Add Makeup to the Isolation Condenser System (Alternate Path); 207000 A3.05 (3.6/3.8) [NRC Sim JPM 3]	D, A, S	4
d. Purge the Primary Containment; 223001 A4.07 (4.2/4.1) [NRC Sim JPM 4]	M, EN, S	5
e.		
f.		
g.		
h.		

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

i.		
j. Align Core Spray System to the Condensate Storage Tank for Emergency Operations; 295030 EA1.06 (3.4/3.4) [NRC Plant JPM 2]	D, R, L, E	2
k. Swap Static Chargers from C1 to C2; 263000 K1.02 (3.2/3.3) [NRC Plant JPM 3]	D	6

@ 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
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ILT 13-1 NRC Scenario 1 (New)

Scenario Outline

Facility: <u>Oyster Creek</u>	Scenario No.: <u>1</u>	Op Test No.: <u>13-1 NRC</u>	
Examiners: _____	Operators: _____		
_____	_____		
_____	_____		
<u>Initial Conditions:</u>			
<ul style="list-style-type: none"> • 2% power with mode switch in STARTUP • Control rod withdrawal is in progress • Air Compressor #3 is tagged OOS • RWM is tagged OOS • Inerting the Primary Containment is on hold for a nitrogen delivery • Steam chest warming is in progress 			
<u>Turnover:</u>			
<ul style="list-style-type: none"> • Continue with rod withdrawal. Complete step 10 Group 3-1 starting at rod 34-39. When rod pulls are complete wait for further direction from Reactor Engineering. Timing of rod position 00-02 is not required and Continuous Rod Withdrawal is authorized per Reactor Engineering. 			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R ATC	Raise reactor power with control rods IAW the ReMA
2	MAL-CRD007_2623	C ATC	Stuck control rod (26-23)
3	ICH-ICS003A	C TS	BOP SRO Leak in Isolation Condenser Shell B
4	MAL-EDS004B	C TS	ATC BOP SRO Loss of VMCC 1B2
5	MAL-RBC001A	C	BOP The in-service RBCCW pump trips
6	MAL-RBC001B	C	ATC The standby RBCCW pump also trips resulting in a loss of all RBCCW flow which requires the ATC to scram the reactor; eight rods fail to insert
7	MAL-NSS017A	M	Crew Steam leak in Drywell
8	MAL-CRD001A	C	Crew CRD Flow Control Valve fails closed

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor Transient, (TS) Tech Specs

ILT 13-1 NRC Scenario 2 (New)

Scenario Outline

Facility: <u>Oyster Creek</u>	Scenario No.: <u>2</u>	Op Test No.: <u>13-1 NRC</u>
Examiners: _____	Operators: _____	_____
_____	_____	_____
_____	_____	_____

Initial Conditions:

- 97% power
- Main Generator voltage control is in Manual

Turnover:

- Place the AVR in automatic service IAW 336.1, section 8, starting at Step 8.2

Event No.	Malfunction No.	Event Type*		Event Description
1	N/A	N	BOP	Return the AVR to service IAW 336.1.
2	MAL-MSS005A	C	BOP	Trip of Steam Packing Exhauster 1.
3	MAL-NIS020F RLY-RPS003B, 004B	I TS	ATC SRO	APRM 6 fails upscale with a failure of ½ scram on RPS 2.
4	MAL-EDS003C	C TS	BOP SRO	Trip of USS 1A3.
5	ICH-TSI15A, TSI014A	C R	ATC	Turbine high vibration requiring a manual scram.
6	MAL-CFW012B SRV-CFW002B SRV-CFW003B	M	Crew	Feedwater line break with failure of Feedwater check valves and loss of all Feedwater and Condensate Pumps.
7	VLV-CSS004, 006, 011, 012	C	Crew	Failure of Core Spray Isolation Valves to auto open.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor Transient, (TS) Tech Specs

ILT 13-1 NRC Scenario 3 (Modified)

Scenario Outline

Facility: <u>Oyster Creek</u>	Scenario No.: <u>3</u>	Op Test No.: <u>13-1 NRC</u>
Examiners: _____	Operators: _____	
_____	_____	
_____	_____	

Initial Conditions:

- 95% power
- EDG-2 is OOS for maintenance
- Surveillance 636.4.003, Diesel Generator Load Test, is in progress on EDG-1
- An operator is stationed at EDG-1 for the surveillance
- All EDG-1 diesel alarms are in their normal state

Turnover:

- Complete surveillance 636.4.003, Diesel Generator Load Test, starting at step 6.7, due to a question of operability (oil sight glass was low on the last shift)

Event No.	Mal. No.	Event Type*	Event Description
1	MAL-DGN004A	C TS	Trip of EDG-1 during performance of surveillance 636.4.003.
2	MAL-NIS019_018A	I TS	LPRM 28-25A upscale failure (input to APRM 4).
3	MAL-CRD005_18-11	C TS	Outward drifting control rod (rod 18-11).
4	MAL-RXS001	R	Fuel failure requiring power reduction with recirc flow
5	MAL-RXS001	M	Fuel failure will increase requiring a reactor scram and reactor isolation
6	MAL-ICS002B VLV-ICS007,008	M C	Isolation Condenser B tube leak with steam valves failing to close leads to RPV Emergency Depressurization

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor Transient, (TS) Tech Specs