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An Exelon/British Energy Company

NUREG 1021

February 21, 2002
2130-02-20065

U. S. NRC Region 1, Administrator
475 Allendale Road
King of Prussia PA 19406

Subject: Submittal of Integrated Initial License Training NRC Examination Outlines
Oyster Creek Generating Station
Docket No. 50-219

In accordance with NUREG 1021, Revision 8, "Operating Licensing Examination Standards for Power Reactors", Oyster Creek Generating Station is submitting the integrated initial license training NRC examination outlines for review and approval. This is in support of the NRC initial license examination scheduled for the week of May 13, 2002.

In accordance with NUREG 1021, Revision 8, Section ES-201, we request that these materials be withheld from public disclosure until after the examinations are complete.

If you should have any questions concerning this letter or the examination outlines, please contact Mr. Greg Young at (609) 971-4196 .

Respectfully,

Robin Brown

Robin Brown
Facility Representative/Manager Operations Support
Oyster Creek Nuclear Generating Station

Enclosures: (Delivered only to Paul Bissett, Chief Examiner, NRC Region 1)
ES-201-2, Examination Outline Quality Checklist
ES-201-3, Examination Security Agreements
ES-301-1, Administrative Topics Outline
ES-301-2, Control Room Systems and Facility Walk-Through Test Outline
ES-401-1, BWR SRO Examination Outlines

ES-401 **BWR SRO Examination Outline** Printed: 02/13/2002

Facility: Oyster Creek Form ES-401-1

Exam Date: 05/13/2002 **Exam Level:** SRO

Tier	Group	K/A Category Points											Point Total
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	
1. Emergency & Abnormal Plant Evolutions	1	4	4	5				4	4			5	26
	2	3	3	3				2	4			2	17
	Tier Totals	7	7	8				6	8			7	43
2. Plant Systems	1	3	2	2	1	2	2	2	2	2	1	4	23
	2	2	1	1	1	1	1	1	1	1	1	2	13
	3	0	0	0	1	0	1	1	0	0	0	1	4
	Tier Totals	5	3	3	3	3	4	4	3	3	2	7	40

3. Generic Knowledge And Abilities	Cat 1	Cat 2	Cat 3	Cat 4	
	5	5	3	4	17

Note:

1. Attempt to distribute topics among all K/A Categories; select at least one topic from every K/A category within each tier.
2. Actual point totals must match those specified in the table
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category tier.

Facility: Oyster Creek

BWR SRO Examination Outline

Printed: 02/13/2002

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-1**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295003	Partial or Complete Loss of A.C. Power / 6						X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
295003	Partial or Complete Loss of A.C. Power / 6			X				AK3.05 - Reactor SCRAM	3.7	1
295006	SCRAM / 1					X		AA2.01 - Reactor power	4.6*	1
295006	SCRAM / 1		X					AK2.04 - Turbine trip logic: Plant-Specific	3.7	1
295007	High Reactor Pressure / 3	X						AK1.04 - Turbine load	2.8	1
295007	High Reactor Pressure / 3			X				AK3.06 - Reactor/turbine pressure regulating system operation	3.8	1
295009	Low Reactor Water Level / 2	X						AK1.05 - Natural circulation	3.4	1
295009	Low Reactor Water Level / 2				X			AA1.02 - Reactor water level control	4.0	1
295010	High Drywell Pressure / 5					X		AA2.06 - Drywell temperature	3.6	1
295010	High Drywell Pressure / 5			X				AK3.04 - Leak investigation	3.8	1
295014	Inadvertent Reactivity Addition / 1	X						AK1.06 - Abnormal reactivity additions.	3.9	1
295015	Incomplete SCRAM / 1						X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
295017	High Off-Site Release Rate / 9					X		AA2.05 - †Meteorological data	3.8	1
295017	High Off-Site Release Rate / 9		X					AK2.03 - Off-gas system	3.5	1

Facility: Oyster Creek

BWR SRO Examination Outline

Printed: 02/13/2002

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-1**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295023	Refueling Accidents / 8						X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	1
295024	High Drywell Pressure / 5		X					EK2.11 - Drywell spray (RHR) logic: Mark-I&II	4.2*	1
295024	High Drywell Pressure / 5			X				EK3.07 - Drywell venting	4.0	1
295030	Low Suppression Pool Water Level / 5				X			EA1.01 - ECCS systems (NPSH considerations): Plant-Specific	3.8	1
295030	Low Suppression Pool Water Level / 5					X		EA2.04 - Drywell/ suppression chamber differential pressure: Mark-I&II	3.7	1
295031	Reactor Low Water Level / 2		X					EK2.09 - Recirculation system: Plant-Specific	3.4	1
295031	Reactor Low Water Level / 2						X	2.1.30 - Ability to locate and operate components, including local controls.	3.4	1
295037	SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1				X			EA1.07 - RMCS: Plant-Specific	4.0	1
295038	High Off-Site Release Rate / 9			X				EK3.02 - System isolations	4.2	1
295038	High Off-Site Release Rate / 9				X			EA1.06 - Plant ventilation	3.6	1
500000	High Containment Hydrogen Concentration / 5						X	2.1.12 - Ability to apply technical specifications for a system.	4.0	1
500000	High Containment Hydrogen Concentration / 5	X						EK1.01 - Containment integrity	3.9	1

K/A Category Totals: 4 4 5 4 4 5 **Group Point Total:** 26

Facility: Oyster Creek

BWR SRO Examination Outline

Printed: 02/13/2002

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-1**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295001	Partial or Complete Loss of Forced Core Flow Circulation / 1			X				AK3.04 - Reactor SCRAM	3.6	1
295004	Partial or Complete Loss of D.C. Power / 6					X		AA2.03 - Battery voltage	2.9	1
295005	Main Turbine Generator Trip / 3			X				AK3.05 - Extraction steam/moisture separator isolations	2.6	1
295008	High Reactor Water Level / 2					X		AA2.02 - Steam flow/feedflow mismatch	3.4	1
295018	Partial or Complete Loss of Component Cooling Water / 8			X				AK3.06 - Increasing cooling water flow to heat exchangers	3.3	1
295019	Partial or Complete Loss of Instrument Air / 8						X	2.4.48 - Ability to interpret control room indications to verify the status and operation of system, and understand how operator action s and directives affect plant and system conditions.	3.8	1
295019	Partial or Complete Loss of Instrument Air / 8				X			AA1.02 - Instrument air system valves: Plant-Specific	3.1	1
295021	Loss of Shutdown Cooling / 4					X		AA2.07 - Reactor recirculation flow	3.1	1
295021	Loss of Shutdown Cooling / 4	X						AK1.04 - Natural circulation	3.7	1
295022	Loss of CRD Pumps / 1	X						AK1.02 - Reactivity control	3.7	1
295022	Loss of CRD Pumps / 1		X					AK2.07 - Reactor pressure (SCRAM assist): Plant-Specific	3.6	1
295034	Secondary Containment Ventilation High Radiation / 9	X						EK1.02 - †Radiation releases	4.4*	1

Facility: Oyster Creek

BWR SRO Examination Outline

Printed: 02/13/2012

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-1**

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295035	Secondary Containment High Differential Pressure / 5		X					EK2.02 - SBGT/FRVS	3.8	1
295036	Secondary Containment High Sump/Area Water Level / 5					X		EA2.01 - Operability of components within the affected area	3.2	1
295036	Secondary Containment High Sump/Area Water Level / 5						X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
600000	Plant Fire On Site / 8		X					AK2.04 - Breakers, relays, and disconnects	2.6	1
600000	Plant Fire On Site / 8				X			AA1.08 - Fire fighting equipment used on each class of fire	2.9	1

K/A Category Totals: 3 3 3 2 4 2 **Group Point Total:** 17

BWR SRO Examination Outline Printed: 02/13/02

Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
202002	Recirculation Flow Control System / 1							X					A1.04 - Reactor water level	2.9	1
202002	Recirculation Flow Control System / 1									X			A3.02 - Lights and alarms	3.4	1
207000	Isolation (Emergency) Condenser / 4											X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
211000	Standby Liquid Control System / 1								X				A2.04 - Inadequate system flow	3.4*	1
212000	Reactor Protection System / 7				X								K4.10 - Individual rod SCRAM testing	3.6	1
212000	Reactor Protection System / 7	X											K1.04 - A.C. electrical distribution	3.6	1
215004	Source Range Monitor (SRM) System / 7											X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	1
215004	Source Range Monitor (SRM) System / 7					X							K5.03 - Changing detector position	2.8	1
215005	Average Power Range Monitor/Local Power Range Monitor System / 7		X										K2.02 - APRM channels	2.8	1
215005	Average Power Range Monitor/Local Power Range Monitor System / 7								X				A2.06 - Recirculation flow channels upscale	3.5	1

Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
216000	Nuclear Boiler Instrumentation / 7											X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
218000	Automatic Depressurization System / 3						X						K6.07 - Primary containment instrumentation	3.5	1
218000	Automatic Depressurization System / 3							X					A1.02 - ADS valve acoustical monitor noise: Plant-Specific	4.0	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5											X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5			X									K3.22 - Containment drainage system	2.6	1
226001	RHR/LPCI: Containment Spray System Mode / 5	X											K1.01 - Suppression pool	3.6	1
226001	RHR/LPCI: Containment Spray System Mode / 5		X										K2.02 - Pumps	2.9*	1
239002	Relief/Safety Valves / 3										X		A4.02 - Tail pipe temperatures	3.7	1
241000	Reactor/Turbine Pressure Regulating System / 3					X							K5.05 - Turbine inlet pressure vs. turbine load	2.9	1
259002	Reactor Water Level Control System / 2	X											K1.03 - Reactor water level	3.9	1

Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
262001	A.C. Electrical Distribution / 6									X			A3.02 - Automatic bus transfer	3.3	1
264000	Emergency Generators (Diesel/Jet) / 6			X									K3.03 - Major loads powered from electrical buses fed by the emergency generator(s)	4.2*	1
264000	Emergency Generators (Diesel/Jet) / 6						X						K6.03 - Lube oil pumps	3.7	1

K/A Category Totals: 3 2 2 1 2 2 2 2 2 1 4 **Group Point Total:** 23

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Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201001	Control Rod Drive Hydraulic System / 1										X		A4.05 - Cooling water header pressure control valve	2.8	1
201006	Rod Worth Minimizer System (RWM) (Plant Specific) / 7								X				A2.07 - RWM hardware/software failure: P-Spec(Not-BWR6)	2.8	1
202001	Recirculation System / 1									X			A3.09 - MG set trip: Plant-Specific	3.3	1
204000	Reactor Water Cleanup System / 2					X							K5.04 - Heat exchanger operation	2.7	1
205000	Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4	X											K1.03 - Recirculation loop temperature	3.5	1
219000	RHR/LPCI: Torus/Suppression Pool Cooling Mode / 5						X						K6.01 - A.C. electrical power	3.3	1
245000	Main Turbine Generator and Auxiliary Systems / 4				X								K4.06 - Generator protection	2.8	1
259001	Reactor Feedwater System / 2							X					A1.02 - Feedwater inlet temperature	3.3	1
262002	Uninterruptable Power Supply (A.C./D.C.) / 6											X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
262002	Uninterruptable Power Supply (A.C./D.C.) / 6			X									K3.14 - Rx power: Plant-Specific	3.1	1
263000	D.C. Electrical Distribution / 6		X										K2.01 - Major D.C. loads	3.4	1

Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
271000	Offgas System / 9											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
400000	Component Cooling Water System (CCWS) / 8	X											K1.04 - Reactor coolant system, in order to determine source (s) of RCS leakage into CCWS	3.1	1
K/A Category Totals:		**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**		**Group Point Total:**	**13**

BWR SRO Examination Outline

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Facility: Oyster Creek

ES - 401 **Plant Systems - Tier 2 / Group 3** **Form ES-401-1**

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201003	Control Rod and Drive Mechanism / 1				X								K4.05 - Rod position indication	3.3	1
215001	Traversing In-Core Probe / 7						X						K6.04 - Primary containment isolation system: Mark-I&II(Not-BWR1)	3.4	1
239001	Main and Reheat Steam System / 3							X					A1.08 - Reactor pressure	3.8	1
290002	Reactor Vessel Internals / 5											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
K/A Category Totals:		**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**Group Point Total:**		**4**

Generic Knowledge ar Abilities Outline (Tier 3)

Printed: 02/13/2002

BWR SRO Examination Outline

Form ES-401-5

Facility: Oyster Creek

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.32	Ability to explain and apply system limits and precautions.	3.8	1
	2.1.34	Ability to maintain primary and secondary plant chemistry within allowable limits.	2.9	1
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.6	1
	2.1.23	Ability to perform specific system and integrated plant procedures during different modes of plant operation.	4.0	1
	2.1.6	Ability to supervise and assume a management role during plant transients and upset conditions.	4.3	1
		Category Total:		**5**
Equipment Control	2.2.24	Ability to analyze the affect of maintenance activities on LCO status.	3.8	1
	2.2.10	Knowledge of the process for determining if the margin of safety, as defined in the basis of any technical specification is reduced by a proposed change, test or experiment.	3.3	1
	2.2.34	Knowledge of the process for determining the internal and external effects on core reactivity.	3.2*	1
	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	3.5	1
	2.2.13	Knowledge of tagging and clearance procedures.	3.8	1
		Category Total:		**5**
Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	3.1	1
	2.3.2	Knowledge of facility ALARA program.	2.9	1
	2.3.9	Knowledge of the process for performing a containment purge.	3.4	1
		Category Total:		**3**

Generic Knowledge ar Abilities Outline (Tier 3)

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BWR SRO Examination Outline

Form ES-401-5

Facility: Oyster Creek

Generic Category	KA	KA Topic	Imp.	Points
Emergency Plan	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.	3.5	1
	2.4.7	Knowledge of event based EOP mitigation strategies.	3.8	1
	2.4.25	Knowledge of fire protection procedures.	3.4	1
	2.4.29	Knowledge of the emergency plan.	4.0	1

Category Total: 4

Generic Total: 17

Tier / Group	Randomly Selected K/A	Reason for Rejection
1 / 1	295038 EA1.04	QUESTION ON ABILITY TO OPERATE SPDS DURING OFF-SITE RELEASE DOES NOT DESCRIMINATE
2/2	219000 K6.08	TORUS COOLING OPERATION DOES NOT REQUIRE PUMP ROOM COOLING
2/2	286000 2.4.49	FIRE PROTECTION PROCEDURES DO NOT HAVE "FROM MEMORY" IMMEDIATE OPERATOR ACTIONS

Facility: Oyster Creek NRC Date of Examination: Week of May 13, 2002
Examination Level (circle one): RO / (SRO) Operating Test Number: SRO

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Temporary Procedure Change JPM	Temporary Procedure Change - Alternate Path (JPM) Change of intent – be obvious
	Plant Parameter Verification JPM	Verification of Identified Leakage (JPM)
A.2	Technical Specification Equipment Control JPM	Tech Spec interpretation and log entry (JPM)
A.3	Control of Radiation Releases JPM	Review and approve a Liquid Radwaste Discharge – Alternate Path (JPM) Authorize pumping 1-5 sump overboard, SW rad monitor
A.4	Emergency Classification JPM	Make an Emergency Classification (JPM) Security based

Facility: Oyster Creek NRC Date of Examination: Week of May 13, 2002
Exam Level (circle one): RO / (SRO(I)) / SRO(U) Operating Test No.: SRO

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. Reactor Manual Controls (RMC) / Perform rod coupling check (Alternate Path – Rod Uncoupled)	201.01 M, S, A, L	1
b. Reactor Feedwater System / Place third feedwater pump in service	N, S	2
c. Main Steam / Bypass a MSIV low-low isolation signal	239.01 D, S	3
d. Recirculation system / Respond to a tripped recirc pump with 5 operating (Alternate Path – Discharge Valve will not close)	202.10 D, S, A	4
e. Containment Spray / Manually initiate Containment Spray (Alternate Path – Containment Spray Pump Trips)	226.01 M, S, A	5
f. Emergency Generators / Normal start of EDG from control room	264.01 D, S	6
g. Standby Gas Treatment system (SGTS) / Confirm Secondary Containment Initiations and Isolations (Alternate Path – SGTS fails to start)	N, S, A	9

B.2 Facility Walk-Through

a. Shutdown Cooling / Transfer control to LSP 1A2 (shutdown cooling pump)	308.04 D,R	4 Abnormal
b. Primary Containment / Line-up to vent the Torus through the hardened vent	223.03 D	5 Emergency
c. Instrument Air / Manually scram the reactor by venting the Scram Air Header	279.06 D, R	8 Emergency

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

Scenario Outline

ES-D-1

Simulation Facility Oyster Creek **Scenario No.** SRO #1 **Op Test No.**

Examiners _____ **Operators** _____ CRS

_____ _____ PRO

_____ _____ URO

Scenario Summary The scenario begins with the reactor at 80% power with the 'A' Isolation Condenser and the 'A' CRD Pump out of service. The crew will begin by swapping the RBCCW Pumps. APRM 4 will then fail upscale requiring the crew to evaluate Tech Specs, bypass the APRM, and reset the half scram. The 'A' Feedwater Pump trips requiring the crew to reduce power to maintain reactor level. A loss of power to Bus 1B will result in the crew manually scramming due to a loss of all feedwater. The diesel generator will auto start and restore power to Bus 1D but, the 1B CRD pump will fail to restart due to a logic malfunction. The 1B CRD pump can be manually restarted. The 'B' Isolation Condenser fails to initiate resulting in a complete loss of high pressure feedwater. The 'B' EMRV fails to reclose following manual actuation. This causes a loss of RPV level, which will result in the need to Emergency Depressurize.

Initial Condition 80% power

Turnover: See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*		Event Description
1		N	SRO BOP	Swap Reactor Water Closed Cooling Water (RBCCW) Pumps
2		I	SRO RO	APRM 4 Fails Upscale (Tech Spec)
3		C	SRO RO BOP	'A' Feedwater Pump Trips
4		R	SRO RO BOP	Power Reduction to Control Level
5		M	SRO RO BOP	Loss of Power to 4160V Bus 1B – Results in Plant Scram
6		I	SRO RO BOP	'B' CRD Pump Fails to Auto Restart due to a Logic Malfunction on Power Restoration
7		C	SRO RO BOP	'B' Isolation Condenser fails to initiate due to a Valve Failure
8		C	SRO RO BOP	'B' EMRV Fails to Reclose After Manual Actuation

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

Simulation Facility Oyster Creek **Scenario No.** SRO #2 **Op Test No.**

Examiners _____ **Operators** _____ CRS

_____ _____ PRO

_____ _____ URO

Scenario Summary The scenario begins with the reactor at 90% power with 4 recirc pumps operating. One recirc pump has been secured due to emergent maintenance. The crew will begin by raising MVAR loading on the main generator. The crew will remove a recirc pump from service due to MG set malfunctions requiring the crew to reduce power to comply with pump and system limitations. A loss of power to a vital bus will occur requiring the crew to restore vital loads. This will require a Tech Spec evaluation. A steam leak in the drywell will result in the crew manually scramming due to an increase in drywell pressure. Auto and manual scram functions will be disabled, but Alternate Rod Insertion will insert the rods. Drywell pressure will increase requiring Drywell Sprays using the Containment Spray system. The drywell spray valve fails to automatically realign and must operated manually to permit sprays to function.

Initial Condition 90% power

Turnover: See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*	Event Description
1		N SRO BOP	Raise MVAR Loading on the Main Generator
2		C SRO RO BOP	Recirc MG Set Malfunctions requiring Recirc Pump Shutdown
3		R SRO RO BOP	Reduce Power during Recirc Pump Shutdown
4		C SRO RO BOP	Loss of Power to the Vital Bus (Tech Spec)
5		M SRO RO BOP	Steam Leak in the Drywell
6		I SRO RO	Failure of the Auto and Manual Scram Logic
7		C SRO BOP	Containment Spray Valve fails to realign automatically when sprays are required

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

Simulation Facility Oyster Creek **Scenario No.** SRO #3 **Op Test No.**

Examiners _____ **Operators** _____ CRS

_____ _____ PRO

_____ _____ URO

Scenario Summary The scenario begins with the reactor at 100% power with the 'A' Isolation Condenser out of service. Following turnover, the crew will swap Main Air Ejectors. A SLC Tank Hi/Lo Temperature alarm will be received. Investigation will show that actual SLC tank temperatures are low due to a failed heater control circuit and a Tech Spec evaluation will be required. A small Main Condenser vacuum leak requires a power reduction and investigation of the vacuum leak. A RWCU leak will occur in the Reactor Building requiring entry into the Primary Containment Control EOP. A RWCU valve will fail preventing the isolation of the leak. Reactor Building Ventilation will fail to automatically isolate requiring manual action to stop the radioactive release. Emergency Depressurization will be required to mitigate the primary leak into the Reactor Building.

Initial Condition 100% power

Turnover: See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*		Event Description
1		N	SRO RO BOP	Swap Main Steam Air Ejectors
2		I	SRO RO BOP	SLC Tank Low Temperature due to Failed Heater Control Circuit (Tech Spec)
3		C	SRO RO BOP	Main Condenser Vacuum Leak
4		R	SRO RO BOP	Lower Power to Control Vacuum
5		M	SRO RO BOP	Reactor Water Clean-Up Leak into the Reactor Building
6		C	SRO RO BOP	Reactor Water Clean-Up Isolation Valve Failure
7		I	SRO RO BOP	Reactor Building Ventilation Fails to Automatically Isolate

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