

EXAMINATION OUTLINE COVER LETTER

AND WRITTEN EXAMINATION OUTLINE SUBMITTAL

FOR THE CLINTON INITIAL EXAMINATION - JULY 2005

AmerGen

An Exelon Company

Clinton Power Station
R. R. 3, Box 228
Clinton, IL 61727

U-603722
April 7, 2005

Mr. James L. Caldwell
Regional Administrator
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Submittal of Initial License Training Examination Outline

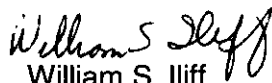
Enclosed are the examination outlines which Amergen Energy Company (AmerGen), LLC is submitting in support of the Initial License Examination scheduled for the weeks of 7/11/2005 and 7/18/2005 at Clinton Power Station.

This submittal includes the all appropriate Examination Standard forms and outlines in accordance with NUREG-1021, "Operator Licensing Examination Standards," Revision 9.

In accordance with NUREG-1021, Section ES-201, "Initial Operator Licensing Examination Process", please ensure that these materials are withheld from public disclosure until after the examinations are complete.

Should you have any questions related to this information, please contact Mr. Gary Setser at (217) 937-4122.

Respectfully,



William S. Iliff
Regulatory Assurance Manager
Clinton Power Station

EET/bf

APR 11 2005

Attachments: (Hand delivered to NRC Region III Chief Examiner/or Designee)
Examination Security Agreement (Form ES-201-3),
Administrative Topics Outline (Form ES-301-1),
Control Room/In-Plant Systems Outline (Form ES-301-2),
BWR Examination Outline (Form ES-401-1),
Record of Rejected K/As (Form ES-401-4),
Operational Scenarios Outline (Form ES-D-1),
Examination Outline Quality Checklist (Form ES-201-2), and
Transient and Event Checklist (Form ES-301-5).
Outline Methodology for 2004 Clinton Power Station Written NRC Exam
Clinton Power Station Suppressed K/As

cc: R. S. Bement, V-275 (w/o Attachments)
M. D. McDowell, T-31A (w/o Attachments)
T. J. Shortell, V-922 (w/o Attachments)
A. D. Bailey, V-922 (w/o Attachments)
G. D. Setser, V-922 (w/o Attachments)

INITIAL RO WRITTEN EXAMINATION OUTLINE SUBMITTAL

FOR THE CLINTON INITIAL EXAMINATION - JULY 2005

Facility: Clinton Power Station

Printed: 04/07/2005

Date Of Exam: 01/31/2005

Tier	Group	RO K/A Category Points											SRO-Only Points						
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total	
1. Emergency & Abnormal Plant Evolutions	1	3	4	3	N/A			3	4	N/A			3	20	0	0	0	0	0
	2	2	1	1				1	1				1	7	0	0	0	0	0
	Tier Totals	5	5	4				4	5				4	27	0	0	0	0	0
2. Plant Systems	1	3	2	2	3	2	2	3	3	2	2	2	26	0	0	0	0	0	
	2	1	1	2	1	1	1	1	1	1	1	1	12	0	0	0	0	0	
	Tier Totals	4	3	4	4	3	3	4	4	3	3	3	38	0	0	0	0	0	
3. Generic Knowledge And Abilities Categories				1		2		3		4		10		1	2	3	4	0	
				3		2		2		3				0	0	0	0		

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

Note: This form deviates from the NUREG-1021 Form ES-401-1 by the addition of the K and A column under the SRO Only Points. This allows sampling all Fuel Handling System KAs as required by ES-401.

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

VAPE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	X						AK1.01 - Natural circulation	3.5	1
295003 Partial or Complete Loss of AC Pwr / 6					X		AA2.02 - Reactor power, pressure, and level	4.2*	1
295004 Partial or Complete Loss of DC Pwr / 6						X	2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.	2.5	1
295005 Main Turbine Generator Trip / 3				X			AA1.01 - Recirculation system: Plant-Specific	3.1	1
295006 SCRAM / 1		X					AK2.07 - Reactor pressure control	4.0	1
295016 Control Room Abandonment / 7						X	2.1.32 - Ability to explain and apply system limits and precautions.	3.4	1
295018 Partial or Total Loss of CCW / 8				X			AA1.03 - Affected systems so as to isolate damaged portions	3.3	1
295019 Partial or Total Loss of Instrument Air / 8		X					AK2.11 - Radwaste	2.5	1
295021 Loss of Shutdown Cooling / 4			X				AK3.01 - Raising reactor water level	3.3	1
295023 Refueling Acc / 8		X					AK2.02 - Fuel pool cooling and cleanup system	2.9	1
295024 High Drywell Pressure / 5		X					EK2.05 - RPS	3.9	1
295025 High Reactor Pressure / 3			X				EK3.09 - Low-low set initiation: Plant-Specific	3.7	1
295026 Suppression Pool High Water Temp. / 5			X				EK3.02 - Suppression pool cooling	3.9	1
295027 High Containment Temperature / 5					X		EA2.01 - Containment temperature: Mark-III	3.7	1
295028 High Drywell Temperature / 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.	4.0	1
295030 Low Suppression Pool Wtr Lvl / 5				X			EA1.04 - Suppression pool make-up system: Mark-III	4.0	1
295031 Reactor Low Water Level / 2	X						EK1.03 - Water level effects on reactor power	3.7	1
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1					X		EA2.02 - Reactor water level	4.1*	1
295038 High Off-Site Release Rate / 9					X		EA2.03 - †Radiation levels	3.5*	1
2950000 Plant Fire On Site / 8	X						AK1.01 - Fire Classifications by type	2.5	1

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
K/A Category Totals:	3	4	3	3	4	3		Group Point Total:	20

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 (RO / SRO)

Form ES-401-1

EAPE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295008 High Reactor Water Level / 2	X						AK1.01 - Moisture carryover	3.0	1
295012 High Drywell Temperature / 5	X						AK1.02 - Reactor power level control	3.1	1
295017 High Off-Site Release Rate / 9						X	AA2.03 - †Radiation levels: Plant-Specific	3.1	1
295022 Loss of CRD Pumps / 1				X			AA1.04 - Reactor water cleanup system: Plant-Specific	2.5	1
295029 High Suppression Pool Wtr Lvl / 5						X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1
295032 High Secondary Containment Area Temperature / 5			X				EK3.02 - Reactor SCRAM	3.6	1
500000 High CTMT Hydrogen Conc. / 5		X					EK2.01 - Containment hydrogen monitoring systems	3.1	1
K/A Category Totals:	2	1	1	1	1	1	Group Point Total:	7	

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
203000 RHR/LPCI: Injection Mode		X										K2.02 - Valves	2.5*	1
205000 Shutdown Cooling							X					A1.04 - SDC/RHR pump suction pressure	2.7	1
209001 LPCS		X										K2.01 - Pump power	3.0*	1
209002 HPCS			X									K3.03 - Adequate core cooling: BWR-5, 6	3.9	1
209002 HPCS									X			A3.01 - Valve operation: BWR-5, 6	3.3	1
211000 SLC	X											K1.03 - Plant air systems: Plant-Specific	2.5	1
212000 RPS							X					A1.07 - Rod position information	3.4	1
215003 IRM	X											K1.04 - Process computer/performance monitoring system (SPDS/ERIS/CRIDS/GDS): Plant-Specific	2.5	1
215004 Source Range Monitor						X						K6.01 - RPS	3.2	1
215005 APRM/LPRM	X											K1.07 - Process computer, performance monitoring system	2.6	1
217000 RCIC				X								K4.06 - Manual initiation	3.5	1
218000 ADS									X			A3.08 - Reactor pressure	4.2*	1
218000 ADS										X		2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
223002 PCIS/Nuclear Steam Supply Shutoff			X									K3.22 - Containment drainage system	2.5	1
223002 PCIS/Nuclear Steam Supply Shutoff										X		2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
239002 SRVs							X					A1.06 - Reactor power	3.7	1
259002 Reactor Water Level Control					X							K5.07 - Turbine speed control mechanisms: TDRFP	2.7	1
261000 SGTS				X								K4.01 - Automatic system initiation	3.7	1
262001 AC Electrical Distribution								X				A2.09 - Exceeding voltage limitations	3.1	1

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
262001 AC Electrical Distribution										X		A4.05 - Voltage, current, power, and frequency on A.C. buses	3.3	1
262002 UPS (AC/DC)				X								K4.01 - Transfer from preferred power to alternate power supplies	3.1	1
263000 DC Electrical Distribution								X				A2.02 - Loss of ventilation during charging	2.6	1
264000 EDGs								X				A2.01 - Parallel operation of emergency generator	3.5	1
300000 Instrument Air					X							K5.13 - Filters	2.9	1
300000 Instrument Air										X		A4.01 - Pressure gauges	2.6	1
400000 Component Cooling Water						X						K6.06 - Heat exchangers and condensers	2.9	1
K/A Category Totals:	3	2	2	3	2	2	3	3	2	2	2	Group Point Total:	26	

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
201003 Control Rod and Drive Mechanism					X							K5.06 - How control rod worth varies with moderator temperature and voids	2.7	1
202001 Recirculation											X	A4.06 - Oil pumps	2.7	1
204000 RWCU			X									K3.06 - Area radiation levels	2.6	1
214000 RPIS									X			A3.01 - Full core display	3.4	1
223001 Primary CTMT and Aux.											X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	3.1	1
233000 Fuel Pool Cooling/Clean-up								X				A2.07 - High fuel pool temperature	3.0	1
234000 Fuel Handling Equipment							X					A1.03 - †core reactivity level	3.4	1
241000 Reactor/Turbine Pressure Regulator						X						K6.01 - A.C. electrical power	2.8	1
259001 Reactor Feedwater		X										K2.01 - Reactor feedwater pump(s): Motor-Driven-Only	3.3	1
272000 Radiation Monitoring			X									K3.10 - Control room ventilation: Plant-Specific	2.9	1
286000 Fire Protection				X								K4.07 - Diesel engine protection	3.3	1
288000 Plant Ventilation	X											K1.05 - Process radiation monitoring system	3.3	1
K/A Category Totals:	1	1	2	1	1	1	1	1	1	1	1		Group Point Total: 12	

Generic Knowledge and Abilities Outline (Tier 3)

BWR RO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

Form ES-401-3

<u>Category</u>	<u>KA #</u>	<u>Topic</u>	<u>IR</u>	<u>#</u>
Conduct of Operations	2.1.3	Knowledge of shift turnover practices.	3.0	1
	2.1.17	Ability to make accurate, clear and concise verbal reports.	3.5	1
	2.1.25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.	2.8	1
	Category Total:			3
Equipment Control	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4.0	1
	2.2.28	Knowledge of new and spent fuel movement procedures.	2.6	1
	Category Total:			2
Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	1
	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1
	Category Total:			2
Emergency Plan	2.4.7	Knowledge of event based EOP mitigation strategies.	3.1	1
	2.4.24	Knowledge of loss of cooling water procedures.	3.3	1
	2.4.48	Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.	3.5	1
	Category Total:			3

Generic Total: 10

INITIAL SRO WRITTEN EXAMINATION OUTLINE SUBMITTAL

FOR THE CLINTON INITIAL EXAMINATION - JULY 2005

Facility: Clinton Power Station

Printed: 04/07/2005

Date Of Exam: 01/31/2005

Tier	Group	RO K/A Category Points												SRO-Only Points									
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total					
1. Emergency & Abnormal Plant Evolutions	1	0	0	0	N/A			0	0	N/A			0	0	0	0	4	3	7				
	2	0	0	0				0	0				0	0	0	0	0	0	0	0	2	1	3
	Tier Totals	0	0	0				0	0				0	0	0	0	0	0	0	0	0	6	4
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5					
	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3					
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	3	8					
3. Generic Knowledge And Abilities Categories				1		2		3		4		0		1	2	3	4	7					
				0		0		0		0				2	2	2	1						

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

Note: This form deviates from the NUREG-1021 Form ES-401-1 by the addition of the K and A column under the SRO Only Points. This allows sampling all Fuel Handling System KAs as required by ES-401.

BWR SRO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295004 Partial or Complete Loss of DC Pwr / 6						X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
295016 Control Room Abandonment / 7						X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
295019 Partial or Total Loss of Instrument Air / 8					X		AA2.02 - Status of safety-related instrument air system loads (see AK2.1-AK2.19)	3.7	1
295021 Loss of Shutdown Cooling / 4					X		AA2.01 - Reactor water heatup/cooldown rate	3.6	1
295025 High Reactor Pressure / 3					X		EA2.01 - Reactor pressure	4.3*	1
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1						X	2.1.20 - Ability to execute procedure steps.	4.2	1
600000 Plant Fire On Site / 8					X		AA2.09 - That a failed fire alarm detector exists	2.8	1
K/A Category Totals:	0	0	0	0	4	3		Group Point Total: 7	

BWR SRO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 (RO / SRO)

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295010 High Drywell Pressure / 5					X		AA2.02 - Drywell pressure	3.9	1
295011 High Containment Temp / 5						X	2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
500000 High CTMT Hydrogen Conc. / 5					X		EA2.03 - Combustible limits for drywell	3.8	1
K/A Category Totals:	0	0	0	0	2	1	Group Point Total:	3	

BWR SRO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
209002 HPCS											X	2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
211000 SLC								X				A2.04 - Inadequate system flow	3.4*	1
215005 APRM/LPRM											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
259002 Reactor Water Level Control								X				A2.06 - Loss of controller signal output	3.4	1
400000 Component Cooling Water								X				A2.03 - High/low CCW temperature	3.0	1
K/A Category Totals:	0	0	0	0	0	0	0	3	0	0	2	Group Point Total:		5

BWR SRO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
202001 Recirculation								X				A2.03 - Single recirculation pump trip	3.7	1
219000 RHR/LPCI:Torus/Pool Cooling Mode											X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
234000 Fuel Handling Equipment					X							K5.05 - †Fuel orientation	3.7	1
K/A Category Totals:	0	0	0	0	1	0	0	1	0	0	1	Group Point Total:	3	

Generic Knowledge and Abilities Outline (Tier 3)

BWR SRO Examination Outline

Printed: 04/07/2005

Facility: Clinton Power Station

Form ES-401-3

<u>Category</u>	<u>KA #</u>	<u>Topic</u>	<u>IR</u>	<u>#</u>
Conduct of Operations	2.1.4	Knowledge of shift staffing requirements.	3.4	1
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
	Category Total:			2
Equipment Control	2.2.23	Ability to track limiting conditions for operations.	3.8	1
	2.2.29	Knowledge of SRO fuel handling responsibilities.	3.8	1
	Category Total:			2
Radiation Control	2.3.1	Knowledge of 10 CFR 20 and related facility radiation control requirements.	3.0	1
	2.3.2	Knowledge of facility ALARA program.	2.9	1
	Category Total:			2
Emergency Plan	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	4.0	1
	Category Total:			1

Generic Total: 7

FINAL RO WRITTEN EXAMINATION OUTLINE SUBMITTAL

FOR THE CLINTON INITIAL EXAMINATION - JULY 2005

Facility: Clinton Power Station

Printed: 06/20/2005

Date Of Exam: 07/11/2005

Tier	Group	RO K/A Category Points											SRO-Only Points						
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total	
1. Emergency & Abnormal Plant Evolutions	1	3	4	3	N/A			3	4	N/A			3	20	0	0	0	0	0
	2	1	2	1	N/A			1	1	N/A			1	7	0	0	0	0	0
	Tier Totals	4	6	4	N/A			4	5	N/A			4	27	0	0	0	0	0
2. Plant Systems	1	3	2	2	3	2	2	3	3	2	2	2	26	0	0	0	0	0	
	2	1	1	2	1	1	1	1	1	1	1	1	12	0	0	0	0	0	
	Tier Totals	4	3	4	4	3	3	4	4	3	3	3	38	0	0	0	0	0	
3. Generic Knowledge And Abilities Categories				1		2		3		4		10		1	2	3	4	0	
				3		2		2		3				0	0	0	0		

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

Note: This form deviates from the NUREG-1021 Form ES-401-1 by the addition of the K and A column under the SRO Only Points. This allows sampling all Fuel Handling System KAs as required by ES-401.

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

V/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	X						AK1.01 - Natural circulation	3.5	1
295003 Partial or Complete Loss of AC Pwr / 6					X		AA2.02 - Reactor power, pressure, and level	4.2*	1
295004 Partial or Complete Loss of DC Pwr / 6						X	2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.	2.5	1
295005 Main Turbine Generator Trip / 3				X			AA1.01 - Recirculation system: Plant-Specific	3.1	1
295006 SCRAM / 1		X					AK2.07 - Reactor pressure control	4.0	1
295016 Control Room Abandonment / 7						X	2.1.32 - Ability to explain and apply system limits and precautions.	3.4	1
295018 Partial or Total Loss of CCW / 8				X			AA1.03 - Affected systems so as to isolate damaged portions	3.3	1
295019 Partial or Total Loss of Instrument Air / 8		X					AK2.11 - Radwaste	2.5	1
295021 Loss of Shutdown Cooling / 4			X				AK3.04 - Maximizing reactor water cleanup flow	3.3	1
295023 Refueling Acc / 8		X					AK2.02 - Fuel pool cooling and cleanup system	2.9	1
295024 High Drywell Pressure / 5		X					EK2.08 - ADS: Plant-Specific	4.0	1
295025 High Reactor Pressure / 3			X				EK3.09 - Low-low set initiation: Plant-Specific	3.7	1
295026 Suppression Pool High Water Temp. / 5			X				EK3.02 - Suppression pool cooling	3.9	1
295027 High Containment Temperature / 5					X		EA2.01 - Containment temperature: Mark-III	3.7	1
295028 High Drywell Temperature / 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.	4.0	1
295030 Low Suppression Pool Wtr Lvl / 5				X			EA1.06 - Condensate storage and transfer (make-up to the suppression pool): Plant-Specific	3.4	1
295031 Reactor Low Water Level / 2	X						EK1.03 - Water level effects on reactor power	3.7	1
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1					X		EA2.06 - Reactor pressure	4.0	1
295038 High Off-Site Release Rate / 9					X		EA2.01 - †Off-site	3.3*	1

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

EAPE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
600000 Plant Fire On Site / 8	X						AK1.02 - Fire Fighting	2.9	1
K/A Category Totals:	3	4	3	3	4	3	Group Point Total:	20	

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 (RO / SRO)

Form ES-401-1

√/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295002 Loss of Main Condenser Vac / 3		X					AK2.02 - Main turbine	3.1	1
295008 High Reactor Water Level / 2	X						AK1.01 - Moisture carryover	3.0	1
295017 High Off-Site Release Rate / 9					X		AA2.03 - †Radiation levels: Plant-Specific	3.1	1
295022 Loss of CRD Pumps / 1				X			AA1.04 - Reactor water cleanup system: Plant-Specific	2.5	1
295029 High Suppression Pool Wtr Lvl / 5						X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1
295032 High Secondary Containment Area Temperature / 5			X				EK3.03 - Isolating affected systems	3.8	1
500000 High CTMT Hydrogen Conc. / 5		X					EK2.01 - Containment hydrogen monitoring systems	3.1	1
K/A Category Totals:	1	2	1	1	1	1	Group Point Total:	7	

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
203000 RHR/LPCI: Injection Mode		X										K2.02 - Valves	2.5*	1
205000 Shutdown Cooling							X					A1.05 - Reactor water level	3.4	1
209001 LPCS		X										K2.01 - Pump power	3.0*	1
209002 HPCS									X			A3.01 - Valve operation: BWR-5, 6	3.3	1
209002 HPCS			X									K3.02 - Standby liquid control system: Plant-Specific	3.3	1
211000 SLC	X											K1.03 - Plant air systems: Plant-Specific	2.5	1
212000 RPS							X					A1.07 - Rod position information	3.4	1
215003 IRM	X											K1.06 - APRM SCRAM signals: Plant-Specific	3.9	1
215004 Source Range Monitor						X						K6.01 - RPS	3.2	1
215005 APRM/LPRM	X											K1.07 - Process computer, performance monitoring system	2.6	1
217000 RCIC				X								K4.06 - Manual initiation	3.5	1
218000 ADS									X			A3.08 - Reactor pressure	4.2*	1
218000 ADS											X	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
223002 PCIS/Nuclear Steam Supply Shutoff			X									K3.22 - Containment drainage system	2.5	1
223002 PCIS/Nuclear Steam Supply Shutoff											X	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
239002 SRVs							X					A1.06 - Reactor power	3.7	1
259002 Reactor Water Level Control					X							K5.07 - Turbine speed control mechanisms: TDRFP	2.7	1
261000 SGTS				X								K4.01 - Automatic system initiation	3.7	1
262001 AC Electrical Distribution								X				A2.01 - Turbine/generator trip	3.4	1
262001 AC Electrical Distribution										X		A4.05 - Voltage, current, power, and frequency on A.C. buses	3.3	1

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
262002 UPS (AC/DC)				X								K4.01 - Transfer from preferred power to alternate power supplies	3.1	1
263000 DC Electrical Distribution								X				A2.02 - Loss of ventilation during charging	2.6	1
264000 EDGs								X				A2.01 - Parallel operation of emergency generator	3.5	1
300000 Instrument Air										X		A4.01 - Pressure gauges	2.6	1
300000 Instrument Air					X							K5.01 - Air compressors	2.5	1
400000 Component Cooling Water						X						K6.06 - Heat exchangers and condensers	2.9	1
K/A Category Totals:	3	2	2	3	2	2	3	3	2	2	2	Group Point Total:		26

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
201005 RCIS					X							K5.10 - Rod withdrawal limiter: BWR-6	3.2	1
202001 Recirculation										X		A4.01 - Recirculation pumps	3.7	1
204000 RWCU			X									K3.06 - Area radiation levels	2.6	1
214000 RPIS									X			A3.01 - Full core display	3.4	1
223001 Primary CTMT and Aux.											X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	3.1	1
233000 Fuel Pool Cooling/Clean-up								X				A2.07 - High fuel pool temperature	3.0	1
234000 Fuel Handling Equipment							X					A1.03 - †core reactivity level	3.4	1
241000 Reactor/Turbine Pressure Regulator						X						K6.01 - A.C. electrical power	2.8	1
259001 Reactor Feedwater		X										K2.01 - Reactor feedwater pump(s): Motor-Driven-Only	3.3	1
272000 Radiation Monitoring			X									K3.10 - Control room ventilation: Plant-Specific	2.9	1
286000 Fire Protection				X								K4.07 - Diesel engine protection	3.3	1
288000 Plant Ventilation	X											K1.05 - Process radiation monitoring system	3.3	1
K/A Category Totals:	1	1	2	1	1	1	1	1	1	1	1		Group Point Total: 12	

Generic Knowledge and Abilities Outline (Tier 3)

BWR RO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

Form ES-401-3

<u>Category</u>	<u>KA #</u>	<u>Topic</u>	<u>IR</u>	<u>#</u>
Conduct of Operations	2.1.3	Knowledge of shift turnover practices.	3.0	1
	2.1.25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.	2.8	1
	2.1.30	Ability to locate and operate components, including local controls.	3.9	1
	Category Total:			3
Equipment Control	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4.0	1
	2.2.28	Knowledge of new and spent fuel movement procedures.	2.6	1
	Category Total:			2
Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	1
	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1
	Category Total:			2
Emergency Plan	2.4.7	Knowledge of event based EOP mitigation strategies.	3.1	1
	2.4.24	Knowledge of loss of cooling water procedures.	3.3	1
	2.4.43	Knowledge of emergency communications systems and techniques.	2.8	1
	Category Total:			3

Generic Total: 10

FINAL SRO WRITTEN EXAMINATION OUTLINE SUBMITTAL

FOR THE CLINTON INITIAL EXAMINATION - JULY 2005

Facility: Clinton Power Station

Printed: 06/20/2005

Date Of Exam: 01/31/2005

Tier	Group	RO K/A Category Points											SRO-Only Points											
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total						
1. Emergency & Abnormal Plant Evolutions	1	0	0	0	N/A			0	0	N/A			0	0	0	0	4	3	7					
	2	0	0	0				0	0				0	0	0	0	0	0	0	0	0	2	1	3
	Tier Totals	0	0	0				0	0				0	0	0	0	0	0	0	0	0	6	4	10
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5					
	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3						
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	3	8						
3. Generic Knowledge And Abilities Categories				1		2		3		4		0		1	2	3	4	7						
				0		0		0		0				2	2	2	1							

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

Note: This form deviates from the NUREG-1021 Form ES-401-1 by the addition of the K and A column under the SRO Only Points. This allows sampling all Fuel Handling System KAs as required by ES-401.

BWR SRO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (RO / SRO)

Form ES-401-1

V/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295004 Partial or Complete Loss of DC Pwr / 6						X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
295016 Control Room Abandonment / 7						X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
295019 Partial or Total Loss of Instrument Air / 8					X		AA2.02 - Status of safety-related instrument air system loads (see AK2.1-AK2.19)	3.7	1
295021 Loss of Shutdown Cooling / 4					X		AA2.01 - Reactor water heatup/cooldown rate	3.6	1
295025 High Reactor Pressure / 3					X		EA2.01 - Reactor pressure	4.3*	1
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1						X	2.1.20 - Ability to execute procedure steps.	4.2	1
600000 Plant Fire On Site / 8					X		AA2.09 - That a failed fire alarm detector exists	2.8	1
K/A Category Totals:	0	0	0	0	4	3	Group Point Total:	7	

BWR SRO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 (RO / SRO)

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic(s)	IR	#
295010 High Drywell Pressure / 5					X		AA2.02 - Drywell pressure	3.9	1
295011 High Containment Temp / 5						X	2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
500000 High CTMT Hydrogen Conc. / 5					X		EA2.03 - Combustible limits for drywell	3.8	1
K/A Category Totals:	0	0	0	0	2	1	Group Point Total:	3	

BWR SRO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
209002 HPCS											X	2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
211000 SLC								X				A2.04 - Inadequate system flow	3.4*	1
215005 APRM/LPRM											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
259002 Reactor Water Level Control								X				A2.06 - Loss of controller signal output	3.4	1
400000 Component Cooling Water								X				A2.03 - High/low CCW temperature	3.0	1
K/A Category Totals:	0	0	0	0	0	0	0	3	0	0	2	Group Point Total:		5

BWR SRO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2 (RO / SRO)

Form ES-401-1

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	IR	#
202001 Recirculation								X				A2.03 - Single recirculation pump trip	3.7	1
219000 RHR/LPCI:Torus/Pool Cooling Mode											X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
234000 Fuel Handling Equipment					X							K5.05 - †Fuel orientation	3.7	1
K/A Category Totals:	0	0	0	0	1	0	0	1	0	0	1	Group Point Total:	3	

Generic Knowledge and Abilities Outline (Tier 3)

BWR SRO Examination Outline

Printed: 06/20/2005

Facility: Clinton Power Station

Form ES-401-3

<u>Category</u>	<u>KA #</u>	<u>Topic</u>	<u>IR</u>	<u>#</u>
Conduct of Operations	2.1.4	Knowledge of shift staffing requirements.	3.4	1
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
	Category Total:			2
Equipment Control	2.2.23	Ability to track limiting conditions for operations.	3.8	1
	2.2.29	Knowledge of SRO fuel handling responsibilities.	3.8	1
	Category Total:			2
Radiation Control	2.3.1	Knowledge of 10 CFR 20 and related facility radiation control requirements.	3.0	1
	2.3.2	Knowledge of facility ALARA program.	2.9	1
	Category Total:			2
Emergency Plan	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	4.0	1
	Category Total:			1

Generic Total: 7