

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



MAR 8 2006

Mr. Richard J. Conte, Chief
Operational Safety Branch, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Serial No. 05-904C
MPS Lic/BAK R0
Docket No. 50-336
License No. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2
REACTOR OPERATOR RETAKE EXAMINATION – EXAMINATION MATERIALS

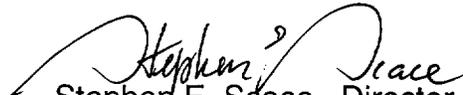
In a letter dated December 21, 2005,⁽¹⁾ the U.S. Nuclear Regulatory Commission (NRC) requested that Dominion Nuclear Connecticut, Inc. submit the written examination and examination reference materials for the Reactor Operator Retake Examination – Millstone Power Station Unit 2, in advance of the examination originally scheduled for the week of February 6, 2006. Having worked closely with the NRC Chief Examiner, Mr. Gil Johnson, who is currently on site, the examination will be administered after March 9, 2006.

Attachment 1, Written Examination and Examination Reference Material, is being submitted to the NRC for review and approval. Pursuant to 10 CFR 55.40(b)(3), an authorized representative of the facility has approved the “complete and ready-to-use” examination contained in Attachment 1.

Consistent with the guidance contained in NUREG-1021 Examiners Standard (ES) 201, Attachment 1, Examination Security and Integrity Consideration, the examination outline contained in Attachment 1 to this letter should be withheld from public disclosure until after the examination has been completed. No redacted versions are being supplied.

Should you have any questions regarding this matter, please contact Mr. Jeff Spence at (860) 437-2540.

Very truly yours,


Stephen E. Scace, Director
Nuclear Station Safety and Licensing

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⁽¹⁾ Richard J. Conte letter from U.S. NRC, to David A. Christian, “Reactor Operator Retake Examination – Millstone Power Station, Unit 2,” dated December 21, 2005.

Attachments: None

Commitments made in this letter: None.

cc: (w/o attachments)
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
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Mr. S. M. Schneider
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Millstone Power Station

Attachment 1

Written Examination and Examination Reference Materials

**Millstone Power Station Unit 2
Dominion Nuclear Connecticut, Inc. (DNC)**

OPERATIONS ENGINEER
Mr. Richard Conte
U.S. NUCLEAR REGULATORY COMMISSION
475 ALLENDALE ROAD
REGION 1 OPERATIONAL SAFETY BRANCH
KING OF PRUSSIA PA 19406-1431

Mr. Richard Conte
“FOR OFFICIAL USE ONLY”
TO BE OPENED BY ADDRESSEE ONLY”

Please note: All applicable reference material has already been sent electronically to King of Prussia, Region One office. Also, as Lead Examiner is presently the Millstone Unit Two Resident Inspector, exam reference material has been made available to him on an “as needed” basis.

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



JAN 4 2006

Mr. Richard J. Conte, Chief
Operational Safety Branch, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Serial No. 05-904
MPS Lic/BAK R0
Docket No. 50-336
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DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2
REACTOR OPERATOR RETAKE EXAMINATION - OUTLINE

In a letter dated December 21, 2005,⁽¹⁾ the U.S. Nuclear Regulatory Commission (NRC) requested that Dominion Nuclear Connecticut, Inc. submit the examination outline for the Reactor Operator Retake Examination – Millstone Power Station Unit 2, by January 6, 2006.

Attachment 1, Examination Outline, is being submitted to the NRC for review and approval. Pursuant to 10 CFR 55.40(b)(3), an authorized representative of the facility has approved the “complete and ready-to-use” examination outline contained in Attachment 1.

Consistent with the guidance contained in NUREG-1021 Examiners Standard (ES) 201, Attachment 1, Examination Security and Integrity Consideration, the examination outline contained in Attachment 1 to this letter should be withheld from public disclosure until after the examination has been completed. No redacted versions are being supplied.

Should you have any questions regarding this matter, please contact Mr. Jeff Spence at (860) 437-2540.

Very truly yours,


J. Alan Price
Site Vice President - Millstone

⁽¹⁾ Richard J. Conte letter from U.S. NRC, to David A. Christian, “Reactor Operator Retake Examination – Millstone Power Station, Unit 2,” dated December 21, 2005.

Facility: Millstone Unit 2		Date of Exam:																
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	K	A	A 2	G *	Total
1. Emergency & Abnormal Plant Evolutions	1	5	1	2				3	3			4	18					7
	2	2	2	2				0	2			1	9					5
	Tier Totals	7	3	4				3	5			5	27					12
2. Plant Systems	1	3	2	3	1	3	2	6	2	3	1	2	28					4
	2	2	1	0	2	2	1	1	0	0	1	0	10					2
	Tier Totals	5	3	3	3	5	3	7	2	3	2	2	38					6
3. Generic Knowledge and Abilities Categories					1	2	3	4	10				1	2	3	4	7	
					3	3	2	2										

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.
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. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system or evolution 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.
- 6.* 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. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.
7. 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; summarize all the SRO-only knowledge and non-A2 applicable categories in the columns labeled "K" and "A". Use duplicate pages for RO and SRO-only exams.
8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.
9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1			X				EK3.2: Knowledge of the reasons for normal, abnormal and emergency operating procedures associated with Reactor Trip Recovery as they apply to the Reactor Trip Recovery.	2.8 3.5	1
000008 Pressurizer Vapor Space Accident / 3	X						AK1.02: Knowledge of the operational implications of the following concepts as they apply to a Pressurizer Vapor Space Accident: Change in leak rate with change in pressure	3.1 3.7	1
000009 Small Break LOCA / 3	X						EK1.02: Knowledge of the operational implications of the following concepts as they apply to the small break LOCA: Use of steam tables	3.5 4.2	1
000011 Large Break LOCA / 3					X		EA2.03: Ability to determine or interpret the following as they apply to a Large Break LOCA: Consequences of managing LOCA with loss of CCW	3.7 4.2	1
000015/17 RCP Malfunctions / 4						X	G2.2.23: Ability to track limiting conditions for operations.	2.6 3.8	1
000022 Loss of Rx Coolant Makeup / 2							~ RANDOMLY DESELECTED ~ Note 4		0
000025 Loss of RHR System / 4				X			AA1.04: Ability to operate and / or monitor the following as they apply to the Loss of Residual Heat Removal System: Closed cooling water pumps	2.8 2.6	1
000026 Loss of Component Cooling Water / 8					X		AA2.04: Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: The normal values and upper limits for the temperatures of the components cooled by CCW	2.5 2.9	1
000027 Pressurizer Pressure Control System Malfunction / 3	X						AK1.02: Knowledge of the operational implications of the following concepts as they apply to Pressurizer Pressure Control Malfunctions: Expansion of liquids as temperature increases	2.8 3.1	1
000029 ATWS / 1	X						EK1.03: Knowledge of the operational implications of the following concepts as they apply to the ATWS: Effects of boron on reactivity	3.6 3.8	1
000038 Steam Gen. Tube Rupture / 3						X	G2.3.2: Knowledge of facility ALARA program.	2.5 2.9	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4		X					EK2.1: Knowledge of the interrelations between the Excess Steam Demand and components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.	3.3 3.6	1
000054 (CE/E06) Loss of Main Feedwater / 4						X	G2.1.24: Ability to obtain and interpret station electrical and mechanical drawings.	2.8 3.1	1
000055 Station Blackout / 6			X				EK3.01: Knowledge of the reasons for the following responses as they apply to the Station Blackout: Length of time for which battery capacity is designed	2.7 3.4	1
000056 Loss of Offsite Power / 6					X		AA2.73: Ability to determine and interpret the following as they apply to the Loss of Offsite Power: PZR heater on/off	3.5 3.6	1
000057 Loss of Vital AC Inst. Bus / 6				X			AA1.01: Ability to operate and / or monitor the following as they apply to the Loss of Vital AC Instrument Bus: Manual inverter swapping	3.7 3.7	1
000058 Loss of DC Power / 6	X						AK1.01: Knowledge of the operational implications of the following concepts as they apply to Loss of DC Power: Battery charger equipment and instrumentation	2.8 3.1	1
000062 Loss of Nuclear Svc Water / 4				X			AA1.05: Ability to operate and / or monitor the following as they apply to the Loss of Nuclear Service Water (SWS): The CCWS surge tank, including level control and level alarms, and radiation alarm	3.1 3.1	1
000065 Loss of Instrument Air / 8						X	G2.2.11: Knowledge of the process for controlling temporary changes.	2.5 3.4	1
W/E04 LOCA Outside Containment / 3							Not applicable to Milestone 2.		

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
W/E11: Loss of Emergency Coolant Recirc / 4							Not applicable to Millstone 2		
BW/E04; W/E05: Inadequate Heat Transfer, Loss of Secondary Heat Sink / 4							Not applicable to Millstone 2		
K/A Category Totals	5	1	2	3	3	4	Group Point Total:		18

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1							- ~ RANDOMLY DESELECTED ~ Note 4		0
000003 Dropped Control Rod / 1							- ~ RANDOMLY DESELECTED ~ Note 4		0
000005 Inoperable/Stuck Control Rod / 1							- ~ RANDOMLY DESELECTED ~ Note 4		0
000024 Emergency Boration / 1							- ~ RANDOMLY DESELECTED ~ Note 4		0
000028 Pressurizer Level Malfunction / 2					X		AA2.14: Ability to determine and interpret the following as they apply to the Pressurizer Level Control Malfunctions: The effect on indicated PZR levels, given a change in ambient pressure and temperature of reflux boiling	2.6 2.8	1
000032 Loss of Source Range NI / 7						X	G2.1.1: Knowledge of conduct of operations requirements.	3.7 3.8	1
000033 Loss of Intermediate Range NI / 7			X				AK3.01: Knowledge of the reasons for the following responses as they apply to the Loss of Intermediate Range Nuclear Instrumentation: Termination of startup following loss of intermediate- range instrumentation	3.2 3.6	1
000036 (BW/A08) Fuel Handling Accident / 8							- ~ RANDOMLY DESELECTED ~ Note 4		0
000037 Steam Generator Tube Leak / 3							- ~ RANDOMLY DESELECTED ~ Note 4		0
000051 Loss of Condenser Vacuum / 4							- ~ RANDOMLY DESELECTED ~ Note 4		0
000059 Accidental Liquid RadWaste Rel. / 9		X					AK2.02: Knowledge of the interrelations between the Accidental Liquid Radwaste Release and the following: Radioactive-gas monitors	2.7 2.7	1
000060 Accidental Gaseous Radwaste Rel. / 9							- ~ RANDOMLY DESELECTED ~ Note 4		0
000061 ARM System Alarms / 7	X						AK1.01: Knowledge of the operational implications of the following concepts as they apply to Area Radiation Monitoring (ARM) System Alarms: Detector limitations	2.5 2.9	1
000067 Plant fire on site / 9			X				AK3.02: Knowledge of the reasons for the following responses as they apply to the Plant Fire on Site: Steps called out in the site fire protection plan, FPS manual, and fire zone manual	2.5 3.3	1
000067 Plant fire on site / 9							- ~ RANDOMLY DESELECTED ~ Note 4		0
000068 (BW/A06) Control Room Evac. / 8							- ~ RANDOMLY DESELECTED ~ Note 4		0
000069 (W/E14) Loss of CTMT Integrity / 5							- ~ RANDOMLY DESELECTED ~ Note 4		0
000074 (W/E06&E07) Inad. Core Cooling / 4							- ~ RANDOMLY DESELECTED ~ Note 4		0
000076 High Reactor Coolant Activity / 9		X					AK2.01: Knowledge of the interrelations between the High Reactor Coolant Activity and the following: Process radiation monitors	2.6 3.0	1
W/E01&E02 Rediagnosis & SI Termination / 3							Not applicable to Millstone 2		0
W/E03 Steam Generator Over pressure / 4							Not applicable to Millstone 2		0
W/E15 Containment Flooding / 5							Not applicable to Millstone 2		0
W/E16 High Containment Radiation / 9							Not applicable to Millstone 2		0
BW/A01 Plant Runback / 4							Not applicable to Millstone 2		0
BW/A02&A03 Loss of NNI-XM / 7							Not applicable to Millstone 2		0
BW/A04 Turbine Trip / 4							Not applicable to Millstone 2		0
BW/A05 Emergency Diesel Actuator / 6							Not applicable to Millstone 2		0
BW/A07 Flooding / 8							Not applicable to Millstone 2		0
W/E06 inadequate Subcooling Margin / 4							Not applicable to Millstone 2		0

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
BW/E08; W/E03 LOCA Cooledown; Depress / 4							Not applicable to Millstone 2		0
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4	X						AK1.3: Knowledge of the operational implications of annunciators and conditions indicating signals and remedial actions associated with the Natural Circulation Operations as they apply to the Natural Circulation Operations.	3.1 3.4	1
BW/E13&E14 EOP Rules and Enclosures							Not applicable to Millstone 2		0
CE/A11; W/E08 RCS Overcooling - PTS / 4					X		AA2.2: Ability to determine and interpret adherence to appropriate procedures and operation within the limitations in the facility's license and amendments as they apply to the RCS Overcooling.	3.0 3.4	1
CE/A16 Excess RCS Leakage / 2							~ RANDOMLY DESELECTED ~ Note 4		0
CE/E09 Functional Recovery							~ RANDOMLY DESELECTED ~ Note 4		0
K/A Category Point Totals:	2	2	2	0	2	1	Group Point Total:		9

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
003 Reactor Coolant Pump						X						K6.04: Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Containment isolation valves affecting RCP operation	2.8 3.1	1
004 Chemical and Volume Control Note 3												†A1.05: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CVCS controls including: S/G pressure and level.	2.9 3.2	0
004 Chemical and Volume Control Note 3								X ³				Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Excessive letdown flow, pressure, and temperatures on ion exchange resins (also causes)	2.7 2.7	1
004 Chemical and Volume Control									X ¹			¹ A1.10: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CVCS controls including: Reactor power	3.7 3.9	1
005 Residual Heat Removal					X							K5.09: Knowledge of the operational implications of the following concepts as they apply the RHRS: Dilution and boration considerations.	3.2 3.4	1
006 Emergency Core Cooling Note 3												G2.2.33: Knowledge of control rod programming.	2.5 2.9	0
006 Emergency Core Cooling Note 3										X ³		Ability to manually operate and/or monitor in the control room: Valves	4.0 3.8	1
007 Pressurizer Relief/Quench Tank					X							K5.02: Knowledge of the operational implications of the following concepts as they apply to PRTS: Method of forming a steam bubble in the PZR.	3.1 3.4	1
008 Component Cooling Water				X								K4.02: Knowledge of CCWS design feature(s) and/or interlock(s) which provide for the following: Operation of the surge tank, including the associated valves and controls.	2.9 2.7	1
010 Pressurizer Pressure Control									X			A3.01: Ability to monitor automatic operation of the PZR PCS, including: PRT temperature and pressure during PORV testing.	3.0 3.2	1
012 Reactor Protection Note 3												K3.04: Knowledge of the effect that a loss or malfunction of the RPS will have on the following: ESFAS.	3.8 4.1	0
012 Reactor Protection			X									K3.01: Knowledge of the effect that a loss or malfunction of the RPS will have on the following: CRDS	3.9 4.0	1
013 Engineered Safety Features Actuation		X										K2.01: Knowledge of bus power supplies to the following: ESFAS/safeguards equipment control.	3.6 3.8	1
022 Containment Cooling							X ¹					A1.02: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCS controls including: Containment pressure.	3.6 3.8	1

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
022 Containment Cooling					X ²						X ₂	G2.3.1: Knowledge of 10 CFR: 20 and related facility radiation control requirements.	2.6 3.0	1
025 Ice Condenser												Not applicable to Millstone 2	N/A	0
026 Containment Spray	X ¹											K1.01: Knowledge of the physical connections and/or cause-effect relationships between the CSS and the following systems: ECCS.	4.2 4.2	1
026 Containment Spray			X ¹									K3.02: Knowledge of the effect that a loss or malfunction of the CSS will have on the following: Recirculation spray system.	4.2 4.3	1
039 Main and Reheat Steam					X							K5.08: Knowledge of the operational implications of the following concepts as they apply to the MRSS: Effect of steam removal on reactivity.	3.6 3.6	1
056 Condensate	X											K1.03: Knowledge of the physical connections and/or cause-effect relationships between the Condensate system and the following systems: MFW.	2.6 2.6	1
059 Main Feedwater					X ³ → X ²							A1.07: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MFW controls including: Feed Pump speed, including normal control speed for ICS.	2.5 2.6	1
061 Auxiliary/Emergency Feedwater			X ¹									K3.02: Knowledge of the effect that a loss or malfunction of the AFW will have on the following: S/G.	4.2 4.4	1
061 Auxiliary/Emergency Feedwater						X ¹						K6.02: Knowledge of the effect of a loss or malfunction of the following will have on the AFW components: Pumps.	2.6 2.7	1
062 AC Electrical Distribution					X ² → X ²							A1.03: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ac distribution system controls including: Effect on instrumentation and controls of switching power supplies.	2.5 2.8	1
062 AC Electrical Distribution												G2.3.9: Knowledge of the process for performing a containment purge.	2.5 3.4	0
Note 3														
062 AC Electrical Distribution							X ³					A1.01: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ac distribution system controls including: Significance of D/G load limits	3.4 3.8	1
063 DC Electrical Distribution		X ¹										K2.01: Knowledge of bus power supplies to the following: Major DC loads.	2.9 3.1	1
063 DC Electrical Distribution							X ¹					A1.01: Ability to predict and/or monitor changes in parameters associated with operating the DC electrical system controls including: Battery capacity as it is affected by discharge rate.	2.5 3.3	1
064 Emergency Diesel Generator								X				A2.05: Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loading the ED/G.	3.1 3.2	1

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
073 Process Radiation Monitoring											X	G2.1.7: "Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation."	3.7 4.4	1
076 Service Water									X			A3.02: Ability to monitor automatic operation of the SWS, including: Emergency heat loads.	3.7 3.7	1
078 Instrument Air	X ²						(X) ²					K1.03: Knowledge of the physical connections and/or cause-effect relationships between the IAS and the following systems: Containment air.	3.3 3.4	1
103 Containment					(X)		X ²					A1.01: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the containment system controls including: Containment pressure, temperature, and humidity.	3.7 4.1	1
K/A Category Point Totals:	3	2	3	1	3	2	6	2	3	1	2	Group Point Total:		28

0011

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
001 Control Rod Drive					X							K5.95: Knowledge of the following operational implications as they apply to the CRDS: Effect of reactor power changes on RCS temperature.	3.4 3.7	1
002 Reactor Coolant												~ RANDOMLY DESELECTED ~ Note 4		0
011 Pressurizer Level Control						X						K6.04: Knowledge of the effect of a loss or malfunction on the following will have on the PZR LCS: Operation of PZR level controllers.	3.1 3.1	1
014 Rod Position Indication				X								K4.06: Knowledge of RPIS design feature(s) and/or interlock(s) which provide for the following: Individual and group misalignment.	3.4 3.7	1
015 Nuclear Instrumentation		X										K2.01: Knowledge of bus power supplies to the following: NIS channels, components, and interconnections.	3.3 3.7	1
016 Non-nuclear Instrumentation												~ RANDOMLY DESELECTED ~ Note 4		0
017 In-core Temperature Monitor												~ RANDOMLY DESELECTED ~ Note 4		0
027 Containment Iodine Removal												Not applicable to Millstone 2	N/A	0
028 Hydrogen Recombiner and Purge Control	X											K1.01: Knowledge of the physical connections and/or cause-effect relationships between the HRPS and the following systems: Containment annulus ventilation system (including pressure limits).	2.5 2.5	1
029 Containment Purge												~ RANDOMLY DESELECTED ~ Note 4		0
033 Spent Fuel Pool Cooling												~ RANDOMLY DESELECTED ~ Note 4		0
034 Fuel Handling Equipment												~ RANDOMLY DESELECTED ~ Note 4		0
035 Steam Generator												~ RANDOMLY DESELECTED ~ Note 4		0
041 Steam Dump/Turbine Bypass Control					X							K5.08: Knowledge of the operational implications of the following concepts as they apply to the SDS: Effect of power change on fuel cladding.	2.5 2.8	1
045 Main Turbine Generator										X		A4.01: Ability to manually operate and/or monitor in the control room: Turbine valve indicators (throttle, governor, control, stop, intercept), alarms, and annunciators.	3.1 2.9	1

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 2 (RO/SRO)											Form ES-401-2		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
055 Condenser Air Removal	X ²						X					K1.06: Knowledge of the physical connections and/or cause-effect relationships between the CARS and the following systems: PRM system.	2.6 2.6	1
068 Liquid Radwaste												~ RANDOMLY DESELECTED ~ Note 4		0
071 Waste Gas Disposal				X								K4.03: Knowledge of design feature(s) and/or interlock(s) which provide for the following: Tank loop seals.	2.5 2.6	1
072 Area Radiation Monitoring												~ RANDOMLY DESELECTED ~ Note 4		0
075 Circulating Water												~ RANDOMLY DESELECTED ~ Note 4		0
079 Station Air												~ RANDOMLY DESELECTED ~ Note 4		0
086 Fire Protection							X					A1.05: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with Fire Protection System operating the controls including: FPS lineups.	2.9 3.1	1
K/A Category Point Totals:	2	1	0	2	2	1	1	0	0	1	0	Group Point Total:		10

~~Graved out rows are not applicable to Millstone Unit Two (GE designed plant).~~

- Note 1 – Randomly selected to be duplicated to achieve required count for Tier and Group.
- Note 2 – Randomly reselected due to no K/A with an IR >= 2.5 existing in the initial category.
- Note 3 – Randomly redrawn based on Lead Examiners initial comment of K/A not fitting system interrelations of MP2 and to ensure required distribution of K/As.
- Note 4 – Randomly deselected to achieve the required item count per the applicable Tier and Group.

Facility: Millstone Unit 2

Date of Exam:

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.	3.0	1		
	2.1.3	Knowledge of operator responsibilities during all modes of plant operation.	3.0	1		
	2.1.20	Ability to execute procedure steps.	4.3	1		
	Subtotal			3		
2. Equipment Control	2.2.4	"(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility."	2.8			Note 1
	2.2.12	Knowledge of surveillance procedures.	3.0	1		
	2.2.13	Knowledge of tagging and clearance procedures.	3.6	1		
	2.2.30	"Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area, communication with fuel storage facility, systems operated from the control room in support of fueling operations, and supporting instrumentation."	3.5	1		
	Subtotal			3		
3. Radiation Control	2.3.11	Ability to control radiation releases.	2.7	1		
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	1		Note 2
	Subtotal			2		
4. Emergency Procedures / Plan	2.4.23	Knowledge of the bases for prioritizing emergency procedure implementation during emergency operations.	2.8	1		
	2.4.26	Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.	2.9	1		Note 1
	2.4.50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	1		Note 2
	Subtotal			2		
Tier 3 Target Point Total				10		

Note 1: Deselected per NRC Examiner initial comments.

Note 2: Randomly reselected, per NRC Examiner, to meet category number requirement.

All K/As were randomly selected using the guidance provided in NUREG 1021, ES-401, Attachment 1

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/1	2.2.23	<p>000015/17 RCP Malfunctions / 4; Redrawn, with the approval of the Lead Examiner, due to the lack of system concepts that would meet the K/A and still distinguish between a competent and non-competent Operator.</p> <p>Randomly reselected K/A AK3.04: Knowledge of the reasons for the following responses as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Sequence of events for manually tripping reactor and RCP as a result of an RCP malfunction</p>
1/1	2.1.24	<p>000054 (CE/E06) Loss of Main Feedwater / 4; Redrawn, with the approval of the Lead Examiner, due to the original K/A testing a concept that is meant to be evaluated in a JPM (open reference) format.</p> <p>Randomly reselected K/A AA1.02: Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater (MFW): Manual startup of electric and steam-driven AFW pumps.</p>
1/1	EK3.01	<p>000055 Station Blackout / 6; Redrawn, with the approval of the Lead Examiner, due to the similarity with the K/A drawn for question #50.</p> <p>Randomly reselected K/A EK3.02: Knowledge of the reasons for the following responses as they apply to the Station Blackout: Actions contained in EOP for loss of offsite and onsite power.</p>
1/2	AA2.14	<p>000028 Pressurizer Level Malfunction / 2; Reselected, with Lead Examiner approval, due to K/A concept not existing in a C.E. plant.</p> <p>Randomly reselected K/A AA2.10: Ability to determine and interpret the following as they apply to the Pressurizer Level Control Malfunctions: Whether the automatic mode for PZR level control is functioning improperly, necessity of shift to manual modes.</p>

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/2	2.1.1	<p>000032 Loss of Source Range NI / 7: Redrawn based on feedback from Lead Examiner. Original K/A did not distinguish between competent and non-competent operator.</p> <p>Randomly reselected K/A AK2.01: Knowledge of the interrelations between the Loss of Source Range Nuclear Instrumentation and the following: Power supplies, including proper switch positions.</p>
2/1	A1.05	<p>004 Chemical and Volume Control: Redrawn based on Lead Examiners initial comment of K/A not fitting system interrelations of MP2 and to ensure required distribution or K/As.</p> <p>Randomly reselected K/A A2.21: Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Excessive letdown flow, pressure, and temperatures on ion exchange resins (also causes)</p>
2/1	2.2.33	<p>006 Emergency Core Cooling; Redrawn based on Lead Examiners initial comment of K/A not fitting system interrelations of MP2 and to ensure required distribution or K/As.</p> <p>Randomly reselected K/A A4.02: Ability to manually operate and/or monitor in the control room: Valves</p>
2/1	K3.04	<p>012 Reactor Protection; Redrawn based on Lead Examiners initial comment of K/A not fitting system interrelations of MP2 and to ensure required distribution or K/As.</p> <p>Randomly reselected K/A K3.01: Knowledge of the effect that a loss or malfunction of the RPS will have on the following: CRDS</p>
2/1	2.3.1	<p>022 Containment Cooling; K/A redrawn by instruction from Lead Examiner due to over-sampling of ALARA concept.</p> <p>Randomly reselected K/A 2.4.5: Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions</p>

Tier / Group	Randomly Selected K/A	Reason for Rejection
2/1	2.3.9	<p>062 AC Electrical Distribution; Redrawn based on Lead Examiners initial comment of K/A not fitting system interrelations of MP2 and to ensure required distribution or K/As.</p> <p>Randomly reselected K/A A1.01: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ac distribution system controls including: Significance of D/G load limits</p>
2/2	K5.06	<p>041 Steam Dump/Turbine Bypass Control; Redrawn based on Lead Examiner feedback, due to original concept not distinguishing between a competent and non-competent RO.</p> <p>Randomly reselected K/A K5.02: Knowledge of the operational implications of the following concepts as they apply to the SDS: Use of steam tables for saturation temperature and pressure.</p>
2/2	K4.03	<p>071 Waste Gas Disposal; Randomly redrawn due to original K/A not fitting system design of MP2.</p> <p>Randomly reselected K/A K4.05: Knowledge of design feature(s) and/or interlock(s) which provide for the following: Point of Release.</p>
3	2.2.4	<p>(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility. Deselected per NRC Examiner initial comments. (Unit 2 is a CE unit, Unit 3 is a Westinghouse unit)</p> <p>Randomly reselected K/A 2.3.10: Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.</p>
3	2.4.26	<p>Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage. Deselected per NRC Examiner initial comments. (Licensed operators are not necessarily qualified as Fire Brigade members.)</p> <p>Randomly reselected K/A 2.4.50: Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.</p>