Matrix#	1
RO QUESTION #	1
SRO QUESTION #	1
KACatalogID	295002AK2.11
KA Statement	Knowledge of the interrelations between LOSS OF MAIN CONDENSER VACUUM and the following: Seal steam: Plant-Specific.....
RORating	2.6
SRORating	2.7
System	295002
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Vacuum loss rate for loss of Turbine Seals
REFERENCE	HC.OP-AB.ZZ-0208(Q) Rev 6 page 4
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000114 Obj 3
QSOURCE	HCEB significantly modified
QUESTION	The reactor is operating normally at 100 percent power with the the Auxiliary Boilers unavailable. Then, Main condenser Vacuum begins a steady degradation at 1.5 inHgA per minute. Given the following: - Reactor power remains at 100 percent - Main Generator load is decreasing - Average Circ Water inlet/outlet waterbox temperature differential is 22 DegF - RM-11 Offgas Train Outlet Flow CRIDS point shows 10 times normal flowrate Which one of the following is the cause of the loss?
CORRECT ANSWER	b
Answer A	Hydrogen Water Chemical Injection System has tripped
Answer B	Steam Seal Evaporator Main Steam Supply valve closes
Answer C	In-service Steam Jet Air Ejector Low Steam Supply pressure
Answer D	Circulating Water to Cooling Tower Return Bypass valve opens
EXPLANATION OF ANSWER A	Will change offgas flow rates but will not reduce condenser vacuum
EXPLANATION OF ANSWER B	Correct answer. Only an air in-leakage source would cause the offgas outlet flow to go so high. Loss of turbine sealing steam results in a loss of about 1 - 2 inhga/minute. The auxiliary boiler
EXPLANATION OF ANSWER C	not a source of air inleakage
EXPLANATION OF ANSWER D	results in CT temperatures increasing. Offgas flow would not increase

Matrix#	2
RO QUESTION #	2
SRO QUESTION #	2
KACatalogID	295003AK2.04
KA Statement	Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF A.C. POWER and the following: A.C. electrical loads.....
RORating	3.4
SRORating	3.5
System	295003
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Load shed of battery chargers on LOCA/LOP
REFERENCE	HC.OP-AB.ZZ-0135(Q)
Material Provided	
LEARNING OBJECTIVE	LP 0302.000.00H-000066-19 Obj 26
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 85% power - A LOCA coincident with a loss of offsite power occurs - "A" Emergency Diesel Generator (EDG) output breaker fails to automatically close - The operator closes the "A" EDG output breaker from the Control Room Which of the following describes the status of the 125 VDC battery chargers powered from "A" EDG?
CORRECT ANSWER	b
Answer A	1E chargers must be MANUALLY restored.
Answer B	NON-1E chargers must be MANUALLY restored.
Answer C	1E chargers are AUTOMATICALLY restored by the Load Sequencer.
Answer D	NON-1E chargers are AUTOMATICALLY restored by the Load Sequencer.
EXPLANATION OF ANSWER A	1E chargers are automatically restored when the generator output breaker closes
EXPLANATION OF ANSWER B	Correct answer. Non 1E chargers are powered from MCC's that are load shed. The MCC's can be manually restored by closing breakers in the control room
EXPLANATION OF ANSWER C	1E chargers are not shed. They loose power from the loss of offsite power. When the generator output breaker closes, the chargers are restored. The load sequencer does not restore the chargers.
EXPLANATION OF ANSWER D	1E chargers are not shed. Non 1E chargers are not automatically restored with a LOCA

Matrix#	3
RO QUESTION #	3
SRO QUESTION #	3
KACatalogID	295003AK3.05
KA Statement	Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Reactor SCRAM.....
RORating	3.7
SRORating	3.7
System	295003
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Loss of RPS Bus vs Recirc Pump trips
REFERENCE	HC.OP-AB.ZZ-0110(Q) HC.OP-SO.SB-0001 Caution 5.1.4.
Material Provided	
LEARNING OBJECTIVE	0302H-000.00H-000114 Obj 3
QSOURCE	HCEB significantly modified
QUESTION	Given the following conditions: - The plant is at 25% with power ascension to 100% in progress - One of the Electrical Protection Assembly (EPA) breakers on the "A" Reactor Protection System (RPS) MG set has just tripped, de-energizing "A" RPS bus - Investigation shows the breaker tripped on "undervoltage" Which of the following describes the response of the Recirculation Pumps if a Main Turbine trip occurs before the "A" RPS Bus is re-energized?
CORRECT ANSWER	a
Answer A	Both Recirculation Pumps trip
Answer B	Only "A" Recirculation Pump trips
Answer C	Only "B" Recirculation Pump trips
Answer D	Both Recirculation Pumps continue operating
EXPLANATION OF ANSWER A	Correct answer. With turbine control and stop valves closed and EOC not bypassed, both pumps will trip when RPS is transfered IAW HC.OP-SO.SB-0001 Caution 5.1.4.
EXPLANATION OF ANSWER B	Both pumps trip
EXPLANATION OF ANSWER C	Both pumps trip
EXPLANATION OF ANSWER D	With turbine control and stop valves closed and EOC not bypassed, both pumps will trip when RPS is transfered

Matrix#	4
RO QUESTION #	4
SRO QUESTION #	4
KACatalogID	295005AK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to MAIN TURBINE GENERATOR TRIP : Pressure effects on reactor power.....
RORating	4
SRORating	4.1
System	295005
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	RPV Pressure response to Gen Load Reject
REFERENCE	LP 0302-000.00H-000106-05
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000106-05 Obj 1
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power - A Main Generator Load Rejection occurs causing a reactor scram Which of the following describes the plant parameter response to the Load Rejection immediately PRIOR to the scram?
CORRECT ANSWER	c
Answer A	Reactor pressure decreases; reactor water level increases; reactor power decreases
Answer B	Reactor pressure decreases; reactor water level increases; reactor power increases
Answer C	Reactor pressure increases; reactor water level decreases; reactor power increases
Answer D	Reactor pressure increases; reactor water level decreases; reactor power decreases
EXPLANATION OF ANSWER A	Reactor pressure increases, reactor water level decreases and power increases due to void collapse
EXPLANATION OF ANSWER B	Reactor pressure increases, reactor water level decreases
EXPLANATION OF ANSWER C	Correct answer. A generator load reject is an increasing pressure transient. Reactor power increases briefly due to void collapse then decreases after the scram. Water level decreases due to void collapse.
EXPLANATION OF ANSWER D	reactor power increases

Matrix#	5
RO QUESTION #	5
SRO QUESTION #	5
KACatalogID	295007AA2.01
KA Statement	Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE : Reactor pressure.....
RORating	4.1*
SRORating	4.1*
System	295007
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	LOLO Set response to high reactor pressure scram
REFERENCE	HC.OP-SO.SN-0001 rev 3 5.5.3
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000046-13 Obj 12
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power at the end of the fuel cycle - A Main Turbine Trip initiated a reactor scram - Reactor pressure peaked at 1050 psig. - MSIV's are open - Reactor pressure has dropped to 921 psig with 1 turbine bypass valve open Which of the following describes the initial response and current status of the "H" and "P" Safety Relief Valves (SRV)?
CORRECT ANSWER	c
Answer A	Neither the "H" or "P" SRV open
Answer B	The "H" and "P" SRVs open initially and remain open
Answer C	The "H" and "P" SRVs open initially, only the "H" SRV remains open
Answer D	The "H" and "P" SRVs open initially, only the "P" SRV remains open
EXPLANATION OF ANSWER A	both valve open initially.
EXPLANATION OF ANSWER B	both valve open initially. H remains open
EXPLANATION OF ANSWER C	Correct answer. Both valves open initially on 1047 psig. As pressure lowers, P will close at 935 psig. Since pressure has dropped only to 921 psig, H SRV will remain open until Lo Lo Set is reset or until pressure drops below 905 psig
EXPLANATION OF ANSWER D	H remains open

Matrix#	6
RO QUESTION #	6
SRO QUESTION #	6
KACatalogID	295008AK3.05
KA Statement	Knowledge of the reasons for the following responses as they apply to HIGH REACTOR WATER LEVEL : HPCI turbine trip: Plant-Specific.....
RORating	3.5
SRORating	3.6
System	295008
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	HPCI High Level response
REFERENCE	HC.OP-SO.BJ-0001 3.3
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000026 Obj 3 and 5
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - A high Drywell pressure condition has occurred due to a unisolable Reactor Recirc Pump double seal failure (50 gpm) - HPCI has automatically initiated - CRD has been restored Assuming no operator action, what will be the status of HPCI five minutes after the initiation?
CORRECT ANSWER	a
Answer A	Turbine Steam Stop Valve FV-4880 will automatically close on High RPV Level
Answer B	Turbine Steam Supply Valve HV-F001 will automatically close on High RPV Level
Answer C	Turbine Steam Stop Valve FV-4880 will automatically close on High Exhaust Pressure
Answer D	Turbine Steam Supply Valve HV-F001 will automatically close on High Exhaust Pressure
EXPLANATION OF ANSWER A	Correct answer. Trip valve FV-4880 will close on high level. HPCI injection flow rate is 5600 gpm vs 50 gpm leak rate.
EXPLANATION OF ANSWER B	F001 does not automatically close on high level like RCIC F045 valve does
EXPLANATION OF ANSWER C	FV-4880 trips on High Exhaust Pressure but Suppression Chamber pressure will not reach trip setpoint
EXPLANATION OF ANSWER D	F001 does not automatically close on High exhaust pressure

Matrix#	7
RO QUESTION #	7
SRO QUESTION #	7
KACatalogID	295008AA1.07
KA Statement	Ability to operate and/or monitor the following as they apply to HIGH REACTOR WATER LEVEL : Main turbine: Plant-Specific.....
RORating	3.4
SRORating	3.4
System	295008
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Reason for Main Turbine trip at level 8
REFERENCE	HC.OP-SO.AC-0001
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000048-13 Obj 18 LP0301-000.00H-00002-14 Obj 14
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 85% power - A feedwater transient is in progress - Overhead annunciator "RPV LEVEL 8" alarm is received - The Main Turbine does not automatically trip Which one of the following describes the basis for the Main Turbine Trip at RPV Level 8?
CORRECT ANSWER	a
Answer A	To prevent turbine blade damage
Answer B	To prevent overfilling the reactor vessel
Answer C	To reduce erosion of control valve surfaces
Answer D	To reduce the differential pressure across the moisture separators
EXPLANATION OF ANSWER A	Correct answer. Bases for high level trip setpoint
EXPLANATION OF ANSWER B	Tripping the main turbine will not prevent overfill. A reason for tripping the RFPs.
EXPLANATION OF ANSWER C	increased rpv level will increase moisture carryover in steam and cause long term erosion. But not during short term transients such as this
EXPLANATION OF ANSWER D	Diff pressure across the MS will not change due to the MS level is maintained in the Drain Section and not around the cyclone separators. Moisture carry over from the RPV is removed by the HP turbine extraction drains and does not reach the MS.

Matrix#	8
RO QUESTION #	8
SRO QUESTION #	8
KACatalogID	295009AK3.01
KA Statement	Knowledge of the reasons for the following responses as they apply to LOW REACTOR WATER LEVEL : Recirculation pump run back: Plant-Specific.....
RORating	3.2
SRORating	3.3
System	295009
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Recirc response to level 4 condition
REFERENCE	HC.OP-SO.BB-0002
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000020-16 Obj 7
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 80 percent power conducting a normal shutdown - "C" Reactor Feed Pump trips inadvertantly as it it being removed from service - The Digital Feed Control System has malfunctioned causing Master Level Setpoint to drift down to +25 inches - Reactor water level has now reached +25 inches Assuming no operator action, which of the following correctly describes the Reactor Recirculation M/G sets response to these conditions?
CORRECT ANSWER	c
Answer A	A Full runback
Answer B	A Scoop Tube lockup
Answer C	An Intermediate runback
Answer D	Remain at original speed
EXPLANATION OF ANSWER A	A full runback will not occur due to level remains above +12.5 inches and all other full runbacks do not occur
EXPLANATION OF ANSWER B	no scoop tube lock signal would be received from the given conditions
EXPLANATION OF ANSWER C	Correct answer. Since there is a RFPT trip signal present, intermediate runback will occur when level reaches Level 4
EXPLANATION OF ANSWER D	Intermediate runback will occur

Matrix#	9
RO QUESTION #	9
SRO QUESTION #	9
KACatalogID	295010AK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE : Downcomer submergence: Mark-I&II.....
RORating	3
SRORating	3.4
System	295010
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Effects on downcomer submergence during slow drywell pressure increases
REFERENCE	LP 0301-000.00H-000031-12
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000031-12
QSOURCE	new
QUESTION	Given the following: - A large packing leak exists on an Inboard MSIV - Drywell Pressure has increased from 0.5 psig to 1.55 psig - Suppression Chamber pressure is 0.5 psig Which one of the following describes the effect of this pressure change on the ability of the downcomer vent pipes to perform their function?
CORRECT ANSWER	a
Answer A	NO significant effect because the water level inside the vent pipe will lower, the level outside the vent pipe will rise slightly
Answer B	NO significant effect because the water level inside the vent pipe will rise, the level outside the vent pipe will lower slightly
Answer C	Significant effect because the water level outside the vent pipe will lower to uncover the vent pipes causing a decrease of the pressure suppression function capability of the Suppression Pool
Answer D	Significant effect because the water level inside the vent pipe will rise to flood the vent pipe header preventing proper opening of the Drywell to Suppression Chamber Vacuum Breakers
EXPLANATION OF ANSWER A	Correct answer. Rising Drywell pressure causes level inside the vent pipe to lower. Water level outside rises slightly due to the difference of volume of water inside of the pipe to that of the much larger volume outside. This increases downcomer submergence.
EXPLANATION OF ANSWER B	Rising Drywell pressure causes level inside the vent pipe to lower. If level outside the vent pipe lowers, this decreases downcomer submergence.
EXPLANATION OF ANSWER C	The vent pipe openings do not uncover until SP level (both inside and outside the vent pipe) lowers to 38.5 inches
EXPLANATION OF ANSWER D	Rising Drywell pressure causes level inside the vent pipe to lower

Matrix#	10
RO QUESTION #	10
SRO QUESTION #	10
KACatalogID	295014AK2.06
KA Statement	Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following: Moderator temperature.....
RORating	3.4
SRORating	3.5
System	295014
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Effects of reducing reactor pressure on moderator temperature
REFERENCE	LP 0305-000.00H-000228 BWR theory
Material Provided	
LEARNING OBJECTIVE	LP 0305-000.00H-000228-03 Obj 24
QSOURCE	NRC HC Exam 10/99 slightly modified
QUESTION	Given the following: - A reactor Startup was in progress following a 7 day forced outage. - Criticality was achieved and heatup in progress. - Problems with EHC delayed the rod withdrawals for approximately 1.5 hours. - RPV pressure decreased from 360 psig to 325 psig during this delay. - Control rod 14-19 was withdrawn one notch from 10 to 12 in order to re-establish a heatup rate. - Reactor period continued to shorten and the operator re-inserted the rod to notch 10 to determine why SRM Count Rate is higher now than when previously on notch 10. The change in Count Rate indication is normal because:
CORRECT ANSWER	a
Answer A	Moderator temperature had decreased
Answer B	Xenon burnout in the high flux region had begun
Answer C	A positive Moderator Temperature Coefficient exists
Answer D	The Void fraction had decreased due to the lower pressure
EXPLANATION OF ANSWER A	Correct answer. Because of positive reactivity due to cooldown
EXPLANATION OF ANSWER B	is incorrect because core should be xenon free.
EXPLANATION OF ANSWER C	is incorrect because temperature has decreased.
EXPLANATION OF ANSWER D	" is incorrect because void fraction does not decrease with pressure reduction.

Matrix#	11
RO QUESTION #	11
SRO QUESTION #	11
KACatalogID	295015AA1.07
KA Statement	Ability to operate and/or monitor the following as they apply to INCOMPLETE SCRAM : Neutron monitoring system.....
RORating	3.6
SRORating	3.7
System	295015
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	How to determine if SLC is required during ATWS
REFERENCE	EOP 101A RC/Q-8. OHAR procedure HC.OP-AR.ZZ-0011Q rev27 page 139
Material Provided	EOPs without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-000124B Obj 8
QSOURCE	NRC SSES Exam 5/99 significantly modified
QUESTION	Given the following conditions: - The plant is operating at 100% power - A complete loss of the TACS has occurred requiring a scram - Recirculation flow has been reduced to minimum - The "RMCS DISPLAYS INOP" Overhead annunciator alarms - The Reactor Mode Switch is placed in "Shutdown" For these conditions, operators can determine if injection of Standby Liquid Control is immediately required by evaluating which of the following?
CORRECT ANSWER	a
Answer A	APRM power levels
Answer B	the Full Core Display
Answer C	the Four Rod Display
Answer D	the RPS Group logic white lights
EXPLANATION OF ANSWER A	Correct answer. Power levels above 4 percent post scram require initiation of SLC immediately.
EXPLANATION OF ANSWER B	the full core display will be locked up as is
EXPLANATION OF ANSWER C	the Four Rod Display will be locked up as is
EXPLANATION OF ANSWER D	the white lights will extinguish but are no indication of reactor power above or below 4%.

Matrix#	12
RO QUESTION #	12
SRO QUESTION #	12
KACatalogID	295016AK2.02
KA Statement	Knowledge of the interrelations between CONTROL ROOM ABANDONMENT and the following: Local control stations: Plant-Specific.....
RORating	4.0*
SRORating	4.1*
System	295016
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Control room abandonment without actions of AB-130
REFERENCE	HC.OP-IO.ZZ-008Q step 5.1.2
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000112H-03 TLO 1
QSOURCE	New
QUESTION	The control room HAS BEEN evacuated due to heavy smoke. Current plant conditions are: - Reactor power is 100 percent - Reactor pressure is 1000 psig - RPV level is +35 inches IAW HC.OP-IO.ZZ-0008 "Shutdown From Outside Control Room", which one of the following operator actions is required if time did NOT permit any immediate actions of HC.OP-AB.ZZ-0130 "Control Room Evacuation" to be completed before evacuating the control room?
CORRECT ANSWER	c
Answer A	Manually vent the scram air header
Answer B	Remove RPS fuses to de-energize the scram solenoids
Answer C	Open appropriate breakers in the RPS distribution panels
Answer D	Place individual HCU SRI test switches in the TEST position
EXPLANATION OF ANSWER A	Method of scramming reactor due to all rods not full in with a scram signal present (ATWS) IAW EOP-0306
EXPLANATION OF ANSWER B	Method of scramming reactor due to all rods not full in with a scram signal present (ATWS) IAW EOP-0302
EXPLANATION OF ANSWER C	Correct answer. As directed in HC.OP-IO.ZZ-0008 step 5.1.2 as method of scramming if actions of AB- 130 not completed prior to leaving the control room.
EXPLANATION OF ANSWER D	Method of scramming individual control rods with a scram signal present (ATWS) IAW EOP-0303

Matrix#	13
RO QUESTION #	13
SRO QUESTION #	13
KACatalogID	295017AK2.09
KA Statement	Knowledge of the interrelations between HIGH OFF-SITE RELEASE RATE and the following: Condenser air removal system: Plant-Specific.....
RORating	2.8
SRORating	2.9
System	295017
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Response to leaking fuel cladding
REFERENCE	HC.OP-AB.ZZ-0127(Q)
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000114-5 Obj 3
QSOURCE	HCEB Audit 9/99 Significantly modified
QUESTION	Given the following: - The plant is operating at 100% reactor power. - "A" Reactor Recirc pump trips - The "B" Reactor Recirc pump receives a full runback - Power oscillations greater than 10% are observed - The reactor is manually scrammed - Approximately 15 minutes after the transient, both Offgas Pre-Treatment Radiation Monitors go into High Alarm and continue to rise IAW HC.OP-AB.ZZ-0127, which one of the following operator actions must be taken?
CORRECT ANSWER	b
Answer A	Swap the Offgas Recombiner trains
Answer B	Secure the Steam Jet Air Ejector trains
Answer C	Place the mechanical vacuum pumps in service
Answer D	Place the affected radiation monitors in trip condition
EXPLANATION OF ANSWER A	The alarm is valid due to apparent failed fuel. Offgas is not malfunctioning.
EXPLANATION OF ANSWER B	Correct answer IAW AB-127 step 4.10 directs securing the offgas system. This is accomplished by securing the SJAE's
EXPLANATION OF ANSWER C	Placing the MV's in service would create an untreated release path to the SPV and to the public
EXPLANATION OF ANSWER D	Rad monitors are already tripped. There are no automatic actions driven from these alarms.

Matrix#	14
RO QUESTION #	14
SRO QUESTION #	14
KACatalogID	295017AK3.05
KA Statement	Knowledge of the reasons for the following responses as they apply to HIGH OFF-SITE RELEASE RATE : Control room ventilation: Plant-Specific.....
RORating	3.3
SRORating	3.6
System	295017
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	How does CREF maintain CR habitablility
REFERENCE	LP 0301-000.00H-000096-08 page 19
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000096-08 Obj 8
QSOURCE	New
QUESTION	Which one of the following decribes how the Control Area Ventillation / Control Room Emergency Filtration systems limit radioactive material contamination in the Control Room?
CORRECT ANSWER	a
Answer A	Iodine activity is limited by pressurization
Answer B	Iodine activity is removed by HEPA filters
Answer C	Noble Gas activity is limited by charcoal filters
Answer D	Noble Gas activity is removed by HEPA filters
EXPLANATION OF ANSWER A	Correct answer. Quanity of Noble gases entering the CR is reduced by keeping it at a positive pressure and reducing the amount of outside air used
EXPLANATION OF ANSWER B	HEPA filters will not remove Iodine
EXPLANATION OF ANSWER C	Noble gases are not reduced by charcoal
EXPLANATION OF ANSWER D	Noble gases are not reduced by filtration

Matrix#	15
RO QUESTION #	15
SRO QUESTION #	15
KACatalogID	295022AA1.01
KA Statement	Ability to operate and/or monitor the following as they apply to LOSS OF CRD PUMPS: CRD hydraulic system.....
RORating	3.1
SRORating	3.2
System	295022
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Effect of a LOCA signal on CRD pumps
REFERENCE	HC.OP-AB.ZZ-0135
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000006-15 Obj 25
QSOURCE	HCEB significantly modified
QUESTION	Due to a loss of drywell cooling, drywell pressure has increased to 2.0 psig. Which one of the following describes ALL major actions IN PROPER SEQUENCE that would have to be performed to restart a CRD Pump? (Select the choice of actions from the following list) I - Press CRD Pump STOP PB II - Press CRD Pump START PB III - Press LOCA OVERIDE PB IV - Press CLOSE PB for 1E breaker on 10C650E
CORRECT ANSWER	d
Answer A	I, III, II
Answer B	I, III, IV
Answer C	III, II, IV
Answer D	III, IV, II
EXPLANATION OF ANSWER A	1E close PB must be depressed
EXPLANATION OF ANSWER B	CRD pump Start PB must be depressed
EXPLANATION OF ANSWER C	Wrong sequence
EXPLANATION OF ANSWER D	Correct answer. Press LOCA OVERIDE PB; then Press CLOSE PB for 1E breaker on 10C650E; then Press CRD Pump START PB in that sequence

Matrix#	16
RO QUESTION #	16
SRO QUESTION #	16
KACatalogID	295023AA1.06
KA Statement	Ability to operate and/or monitor the following as they apply to REFUELING ACCIDENTS : Neutron monitoring.....
RORating	3.3
SRORating	3.4
System	295023
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Operator actions on SRM failure
REFERENCE	HC.OP-AB.ZZ-0107
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-0000114-5 Obj 1
QSOURCE	HCEB Significantly modified
QUESTION	Given the following conditions: - The plant is shutdown for refueling - The Reactor Protection System shorting links have been removed - Core Spiral reload is continuing - 45 fuel bundles are in the core - SRM channel "D" has just failed "downscale" Which one of the following describes the required operator actions?
CORRECT ANSWER	c
Answer A	Verify a half scram is received and terminate fuel movement
Answer B	Verify a full reactor scram and a control rod withdrawal block is received
Answer C	Verify a control rod withdrawal block is received and terminate fuel movement
Answer D	Verify refueling bridge movement is blocked and then manually insert a full reactor scram
EXPLANATION OF ANSWER A	Half scram would not be received
EXPLANATION OF ANSWER B	SRM downscale will not cause full scram
EXPLANATION OF ANSWER C	Correct answer. Immediate operator actions of AB-107
EXPLANATION OF ANSWER D	Will not block movement of the refuel bridge. No reason to manually scram

Matrix#	17
RO QUESTION #	17
SRO QUESTION #	17
KACatalogID	295023AK3.02
KA Statement	Knowledge of the reasons for the following responses as they apply to REFUELING ACCIDENTS : Interlocks associated with fuel handling equipment
RORating	3.4
SRORating	3.8*
System	295023
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Which interlock prevents inadvertent crit with rod withdrawn
REFERENCE	HC.OP-SO.KE-0001(Q) rev 21
Material Provided	
LEARNING OBJECTIVE	LP0302-000.00H-000226-08 Obj 5
QSOURCE	HC Audit 9/99 Significantly modified
QUESTION	Given the following: - The plant is in Operational Condition 5 - A Spiral Fuel Load is in progress - The Reactor Mode Switch is in REFUEL. - The refuel bridge is over the Fuel Pool lifting a fuel bundle - A control rod is withdrawn to position 48 for speed adjustment. Under these conditions, which of the following prevents inadvertant fuel loading into a cell with a withdrawn control rod?
CORRECT ANSWER	c
Answer A	Fuel Hoist Interlock
Answer B	Rod Block Interlock #1
Answer C	Reverse Bridge Stop # 1
Answer D	Procedural compliance only
EXPLANATION OF ANSWER A	Bridge not over core.
EXPLANATION OF ANSWER B	Prevents withdrawing a rod. In this case the rod is already out.
EXPLANATION OF ANSWER C	Correct answer. Activated when reactor mode switch is in Refuel. Hoist is loaded. The bridge is prevented from approaching the core with a rod out.
EXPLANATION OF ANSWER D	Reverse Bridge Stop # 1 function. Procedure compliance is not only barrier.

Matrix#	18
RO QUESTION #	18
SRO QUESTION #	18
KACatalogID	295024EK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE : Drywell integrity: Plant-Specific
RORating	4.1
SRORating	4.2*
System	295024
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Base for 65 PSIG Drywell pressure limit
REFERENCE	HC.OP-EO.ZZ-0102 Bases DW/P 13 and 14
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-0001126A Obj 10
QSOURCE	HCEB Unmodified
QUESTION	Which of the following is the basis of the 65 psig Drywell pressure limit during a LOCA?
CORRECT ANSWER	c
Answer A	Hydrostatic test limit for the Drywell
Answer B	The Drywell Spray Isolation valves may not operate
Answer C	The system lineup for containment venting may not be able to be completed
Answer D	Maximum primary containment pressure assumption in UFSAR accident analysis
EXPLANATION OF ANSWER A	The pressure capability for PC is ~ 96 psig
EXPLANATION OF ANSWER B	Differential pressure across the DW spray valves decreases therfore no adverse effect.
EXPLANATION OF ANSWER C	Correct answer. 65 psig is the maximum PC press at which vent valves sized to reject all decay heat from the containment can be opened and closed.
EXPLANATION OF ANSWER D	Maximum design basis accident containment pressure is 48.1 psig

Matrix#	19
RO QUESTION #	19
SRO QUESTION #	19
KACatalogID	295025EA1.08
KA Statement	Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE: †RRCS: Plant-Specific.....
RORating	3.3
SRORating	3.7*
System	295025
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Failure of RPT to trip from high pressure
REFERENCE	LP 0301-000.00H-000019-17 page 54
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000019-17 Obj 22
QSOURCE	HCEB Unmodified
QUESTION	During a valid high reactor pressure condition, the Recirculation Pumps did NOT automatically trip as designed. Which of the following actions must be taken by the Control Room to open the Recirculation Pump Trip (RPT) Breakers?
CORRECT ANSWER	a
Answer A	Direct the local tripping of the RPT Breakers
Answer B	Depress the RPT Breakers' "Tripped" pushbuttons
Answer C	Manually initiate Redundant Reactivity Control System (RRCS)
Answer D	Verify the RPT Breakers trip when the Recirculation Pump MG Set Drive Motor Breakers are opened
EXPLANATION OF ANSWER A	Correct answer. RPT breaker must be manually tripped locally.
EXPLANATION OF ANSWER B	"Tripped" indication only. Depressing "TRIPPED" has no effect.
EXPLANATION OF ANSWER C	Manually initiation of RRCS will not trip RPT breakers.
EXPLANATION OF ANSWER D	RPT breakers do not trip when Drive Motor breaker is opened.

Matrix#	20
RO QUESTION #	20
SRO QUESTION #	20
KACatalogID	295028EK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL TEMPERATURE : Reactor water level measurement.....
RORating	3.5
SRORating	3.7
System	295028
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Affects of increasing drywell temps on RCIC initiation
REFERENCE	LP 0301-000.00H-000002-14 page 39
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000002-14 Obj 14
QSOURCE	SSES Exam 5/99 significantly modified
QUESTION	Given the following: - The plant was operating at 100 percent power when a small break LOCA occurred - Drywell pressure is 4.0 psig and slowly rising - Drywell temperature is 325 DegF and slowly rising - Reactor pressure is steady at 75 psig - HPCI is NOT available - Condensate and Feedwater are NOT available - RCIC is in Standby - RPV indicated water level is -10 inches and slowly lowering - ASSUME NO FURTHER OPERATOR ACTIONS Which one of the following correctly describes the RCIC System automatic response to the continuing loss of RPV inventory? RCIC will initiate _____ .
CORRECT ANSWER	d
Answer A	early because indicated wide range level is lower than actual level
Answer B	early because indicated wide range level is higher than actual level
Answer C	late because indicated wide range level is lower than actual level
Answer D	late because indicated wide range level is higher than actual level
EXPLANATION OF ANSWER A	Will initiate late; Instruments will read higher than actual
EXPLANATION OF ANSWER B	Will initiate late
EXPLANATION OF ANSWER C	Instruments will read higher than actual
EXPLANATION OF ANSWER D	Correct answer.a, b,& c - as saturation conditions are approached and reaches boiling in the ref and var legs will be seen as lower sensed d/p giving a increasing indicated water level. Actual water level will be lower than wide range level setpoints

Matrix#	21
RO QUESTION #	21
SRO QUESTION #	21
KACatalogID	295028EK3.03
KA Statement	Knowledge of the reasons for the following responses as they apply to HIGH DRYWELL TEMPERATURE : †Drywell spray operation: Mark-I&II.....
RORating	3.6
SRORating	3.9
System	295028
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Drywell spray initiation limit
REFERENCE	HC.OP-EO.ZZ-0102 bases step DW/6
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000126A-14 Obj 6a
QSOURCE	HCEB Unmodified
QUESTION	During an emergency, the Drywell Spray Initiation Limit Curve predicts parameters for which drywell spray would be unsafe. What is the bases for NOT spraying the drywell when parameters are in the UNSAFE region?
CORRECT ANSWER	d
Answer A	Convective cooling is ineffective
Answer B	Evaporative cooling is ineffective
Answer C	Unstable steam condensation will damage Suppression Chamber components
Answer D	Relief capacity of the Suppression Chamber to Drywell vacuum breakers is exceeded
EXPLANATION OF ANSWER A	Convective cooling is still effective
EXPLANATION OF ANSWER B	Evaporative cooling would be effective, to the point of loss of containment integrity
EXPLANATION OF ANSWER C	Unstable steam condensation and damage to the SC components is the basis for NOT spraying D/W until SC Pressure is >9.5#
EXPLANATION OF ANSWER D	Correct answer. EOP-102 bases step DW/P-6 Drywell to wet well differential pressure capability is the limiting factor

Matrix#	22
RO QUESTION #	22
SRO QUESTION #	22
KACatalogID	295031EK1.03
KA Statement	Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL : Water level effects on reactor power.....
RORating	3.7
SRORating	4.1
System	295031
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Why is level lowered during ATWS
REFERENCE	HC.OP-EO.ZZ-0101A Bases step LP-14
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-00124B-1 Obj 8
QSOURCE	New
QUESTION	Given the following: - A failure to scram has occurred - SLC is injecting - Reactor power is 35% - The recirc pumps have been tripped - The MSIV's are closed - Suppression pool temperature is 98 DegF Which one of the following describes the reason why it is necessary to terminate and prevent injection at step LP-13 of HC.OP-EO.ZZ-0101A ATWS-RPV Control?
CORRECT ANSWER	d
Answer A	increase natural circulation to remove decay heat
Answer B	increase natural circulation to increase void fraction
Answer C	decrease natural circulation to remove decay heat
Answer D	decrease natural circulation to increase void fraction
EXPLANATION OF ANSWER A	reduces driving head, to increase void fraction
EXPLANATION OF ANSWER B	reduces driving head
EXPLANATION OF ANSWER C	increases void fraction
EXPLANATION OF ANSWER D	Correct answer. Lowering level reduces natural circ driving head to incrase void fraction. This lowers power and heat input into containment.

Matrix#	23
RO QUESTION #	23
SRO QUESTION #	23
KACatalogID	295032EK2.04
KA Statement	Knowledge of the interrelations between HIGH SECONDARY CONTAINMENT AREA TEMPERATURE and the following: PCIS/NSSSS.....
RORating	3.6
SRORating	3.8
System	295032
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Reactor building leak and NSSSs isolation
REFERENCE	HC.OP-AB.ZZ-0116 Immediate Operator Action
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000114-05 Obj 1
QSOURCE	HCEB Slightly modified
QUESTION	With the plant at power the Main Steam/ Reactor Water Cleanup Area Leak Temperature High alarm was received and the RWCU system automatically isolated. The leak has been determined to be in the RWCU Pipe Chase Room 4402. Which of the following is a required immediate operator action for the given conditions?
CORRECT ANSWER	b
Answer A	Enter HC-OP.EO-ZZ-0101(Q)-FC, "Reactor Pressure Vessel (RPV) Control"
Answer B	Close the Recirc Sample Line Isolation Valves (BB-SV-4310 and BB-SV-4311)
Answer C	Isolate RBVS Supply and Exhaust Dampers (GU-HD-9370A/B and GU-HD-9414A/B)
Answer D	Start an additional Reactor Building Exhaust Fan to maintain > .50 inches of vac water gauge
EXPLANATION OF ANSWER A	Since the RWCU leak successfully auto isolated, no automatic or manual reactor scram is necessary or would occur.
EXPLANATION OF ANSWER B	Correct answer. Immediate operator action of AB 116
EXPLANATION OF ANSWER C	Retainment step EOP - 103/4 RB-1 conditions of High Radiation are not met.
EXPLANATION OF ANSWER D	immediate operator action of AB 115 Loss of Reactor Building Integrity if <.25 in vac WC

Matrix#	24
RO QUESTION #	24
SRO QUESTION #	24
KACatalogID	295034EK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT VENTILATION HIGH RADIATION : Personnel protection.....
RORating	3.8
SRORating	4.1
System	295034
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Hi Second Cont Rad Levels
REFERENCE	HC.OP-EO.ZZ-0103/4
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000127-12 Obj 2
QSOURCE	NRC HC exam 10/99 slightly modified
QUESTION	Plant conditions are as follows: - The plant is operating at 100% power - RWCU resin spill has occurred in the Reactor Building - Reactor Building HVAC Exhaust rad level is 2 x 10E-2 uci/ml - Access to the Reactor Building is required Which one of the following actions is required?
CORRECT ANSWER	d
Answer A	Isolate Refuel Floor HVAC
Answer B	Verify Reactor Building Ventilation (RBVS) is in operation
Answer C	Manually scram the reactor IAW HC.OP-AB.ZZ-0000 "Scram"
Answer D	Ensure Filtration Recirculation and Ventilation System (FRVS) initiated
EXPLANATION OF ANSWER A	manual dampers. No procedural step to perform this.
EXPLANATION OF ANSWER B	RBVS will isolate. Cannot override isolation signal
EXPLANATION OF ANSWER C	source of radiation is not a reactor coolant leak. Shutdown by Scram or normal shutdown not required
EXPLANATION OF ANSWER D	Correct answer. Rad level >Initiation signal for FRVS auto start. EOP 103/4 step RB-1

Matrix#	25
RO QUESTION #	25
SRO QUESTION #	25
KACatalogID	295033EK2.01
KA Statement	Knowledge of the interrelations between HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS and the following:Area radiation monitoring system
RORating	3.8
SRORating	4.0
System	295033
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Source of Refuel floor evacuation alarm
REFERENCE	LP 0302-000.00H-000221-07
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000221-07 OBJ 3.d
QSOURCE	New
QUESTION	Given the following: - LPRM changouts are being perfomed within the reactor vessel cavity - One of the old fission chambers is accidently lifted 1 inch clear of the water Which one of the choices correctly completes the following statement regarding the Refueling Floor Evacuation Alarm in the reactor building? The _____ radiation monitor activates the Evacuation Alarm because its detector(s) is(are) located in _____ .
CORRECT ANSWER	b
Answer A	New Fuel Vault; line-of-sight to the refueling cavity
Answer B	Spent Fuel Pool; line-of-sight to the refueling cavity
Answer C	Refuel Floor Exhaust; the ducts above the refueling cavity
Answer D	Reactor Building Exhaust; the ducts above the refueling cavity
EXPLANATION OF ANSWER A	Detectors are located inside the New Fuel Vault, closer to the cavity, but shielded from the radiation from a close to the water object by the concrete vault. Rad source would have to be almost directly above detectors to alarm. Its output does trigger the refuel floor evacuation alarm.
EXPLANATION OF ANSWER B	Correct answer. Activates the evacuation siren on the wall opposite the elevator. Detector is an area radiation monitor also mounted on the wall next to the siren
EXPLANATION OF ANSWER C	Signals to PCIS. Is not connected to the evacuation siren
EXPLANATION OF ANSWER D	Signals to PCIS. Is not connected to the evacuation siren

Matrix#	26
RO QUESTION #	26
SRO QUESTION #	26
KACatalogID	295037EK1.07
KA Statement	Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN : Shutdown margin.....
RORating	3.4
SRORating	3.8
System	295037
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Actions if not shutdown under all conditions following scram
REFERENCE	HC.OP-AB--0000 Retention step S-1
Material Provided	EOP 's without entry conditions
LEARNING OBJECTIVE	0302-000.00H-000123-11
QSOURCE	NRC SSES 5/99 Exam Slightly modified
QUESTION	While responding in accordance with AB-0000, "Scram", on a normal plant shutdown reactor scram, which of the following criteria is utilized to determine if EOP-101A, "ATWS RPV Control" entry is also required?
CORRECT ANSWER	b
Answer A	The status of the IRM "Downscale" lights.
Answer B	The position and number of control rods inserted.
Answer C	The ability to monitor current reactor pressure and level.
Answer D	The value of SRM period after detector insertion is complete.
EXPLANATION OF ANSWER A	APRM downscales not IRMs indicate power is about 4%
EXPLANATION OF ANSWER B	Correct answer. All rods must be inserted to at least maximum subcritical banked withdrawal position of 02
EXPLANATION OF ANSWER C	Criteria for entry into EOP 101
EXPLANATION OF ANSWER D	SRM period provides indication that the reactor is "shutting down" not "shutdown"

Matrix#	27
RO QUESTION #	27
SRO QUESTION #	27
KACatalogID	295038EA1.01
KA Statement	Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE : Stack-gas monitoring system: Plant-Specific.....
RORating	3.9
SRORating	4.2
System	295038
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Why Turbine Building System important after a Rad release
REFERENCE	LP-127, pg 19. Bases: EO103/4, step RR-4 pg 13
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-000127-12 Obj 6
QSOURCE	NRC HC Exam 10/99 slightly modified
QUESTION	A radioactive release in the Turbine Building is in progress. Which of the following describes the effect of failing to restart the Turbine Building Ventilation System if it trips while operating in HC.OP-EO.ZZ-0103/4(Q)-FC, "Reactor Building & Radioactive Release Control"?
CORRECT ANSWER	c
Answer A	The Turbine Building will go to a slightly negative pressure
Answer B	The Turbine Building release will be monitored but not treated
Answer C	The off-site calculated release could be lower than the actual release
Answer D	The off-site calculated release could be higher than the actual release
EXPLANATION OF ANSWER A	TB will go to and equalized pressure with the outside air
EXPLANATION OF ANSWER B	TB releases will be unmonitored leakage
EXPLANATION OF ANSWER C	Correct answer. Releases out of the TB would be unmonitored and therefore higher than the RMS detects
EXPLANATION OF ANSWER D	Releases out of the TB would be unmonitored and therefore lower than the RMS detects

Matrix#	28
RO QUESTION #	28
SRO QUESTION #	28
KACatalogID	295037EK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN:Reactor pressure effects on reactor power
RORating	4.1*
SRORating	4.3*
System	295037
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	SRV Cycling effects on reactor power during ATWS
REFERENCE	HC.OP-EO.ZZ-0101A step RC/P - 14
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000124A Obj 8
QSOURCE	New
QUESTION	Given the following: - An ATWS condition exists - The MSIVs are closed - SLC is injecting - Lo-Lo Set is controlling reactor pressure - Suppression Pool temperature is 105 DegF, rising slowly - Reactor level is swinging from +12.5 inches to +54 inches Which one of the following is the correct operator action IAW Emergency Operating Procedures?
CORRECT ANSWER	d
Answer A	Lower reactor level until all SRVs are closed
Answer B	Lower reactor pressure until power is below 4%
Answer C	Lower and maintain reactor pressure 500 to 600 psig
Answer D	Lower and maintain reactor level -190 inches to -50 inches
EXPLANATION OF ANSWER A	This action ONLY required if SPT >110 DegF
EXPLANATION OF ANSWER B	Lowering pressure is not allowed unless to emergency depressurize
EXPLANATION OF ANSWER C	Lowering pressure is not allowed unless to emergency depressurize
EXPLANATION OF ANSWER D	correct answer. EOP 101A steps LP-13 and LP-15

Matrix#	29
RO QUESTION #	29
SRO QUESTION #	29
KACatalogID	500000EA1.01
KA Statement	Ability to operate and monitor the following as they apply to HIGH CONTAINMENT HYDROGEN CONTROL: Primary containment hydrogen instrumentation
RORating	3.4
SRORating	3.3
System	500000
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Cautions on obtaining analyzer readings
REFERENCE	HCOPSOGS-0002 rev 8 Caution 5.2.3.B
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000034-14 Obj 7
QSOURCE	new
QUESTION	The primary containment Hydrogen Oxygen Analyzer 1AC200 selector switch is moved from Standby to Analyze to perform a required surveillance. Why is there a requirement to wait 90 minutes before taking a reading?
CORRECT ANSWER	c
Answer A	Ensure sample lines are clear of moisture
Answer B	Allow sample flow rate to stabilize below 500 cc/m
Answer C	Obtain a sample indicative of containment conditions
Answer D	Allow the analyzer to warm up to proper operating temperature
EXPLANATION OF ANSWER A	purpose of heat tracing
EXPLANATION OF ANSWER B	Sample flow rate is preadjusted on 1AC200 Analyzer. Excessive flowrate may cause damage to the Supplimental O2 Analyzer 1GS-AY-5042 IAW Caution 5.2.4.G
EXPLANATION OF ANSWER C	Correct answer. IAW HCOPSOGS-0002 rev 8 Caution 5.2.3.B
EXPLANATION OF ANSWER D	Analyzers need 6 hours to come up to proper operating temperature

Matrix#	30
RO QUESTION #	30
SRO QUESTION #	30
KACatalogID	600000AA1.06
KA Statement	Ability to operate and / or monitor the following as theyapply to PLANT FIRE ON SITE: Fire alarm
RORating	3
SRORating	3
System	600000
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Fire systems activated from the Control Room
REFERENCE	302H-000.00H-000094-07 Obj 21
Material Provided	
LEARNING OBJECTIVE	302H-000.00H-000094-07 Obj 21
QSOURCE	HC Audit 9/99 Slightly modified
QUESTION	Which of the following Fire Suppression systems and/or components can be manually operated from the Main Control Room to assist the Fire Department in response to a fire?
CORRECT ANSWER	d
Answer A	Motor Driven Fire Pump AND FRVS Deluge
Answer B	Diesel Driven Fire Pump AND CREF Deluge
Answer C	Bulk Fuel Oil Storage Tank Foam System AND EDG Room CO_2
Answer D	Bulk Fuel Oil Storage Tank Foam System AND Diesel Driven Fire Pumps
EXPLANATION OF ANSWER A	FRVS Vent fans trip on filter deluge actuation. The deluge reset PB resets the fan trip not the deluge. FRVS Deluge isolation valve HV-3408M is a NORMALLY OPEN isolation valve whose purpose is to close to maintain Secondary Containment integrity if needed. This valve is not required by the Fire protection system.
EXPLANATION OF ANSWER B	CREF fans trip on filter deluge actuation. The reset PB resets the fan trip not the deluge
EXPLANATION OF ANSWER C	EDG Room CO2 is alarmed in the control room but has no controls in the Control Room to intitiate the system.
EXPLANATION OF ANSWER D	Correct answer. Both Diesel Driven Fire Pump and Fuel Oil ST Foam system have controls in the Control Room on panel 10C671 to actuate the system .

Matrix#	31
RO QUESTION #	31
SRO QUESTION #	31
KACatalogID	201001A2.01
KA Statement	Ability to (a) predict the impacts of the following on CRD System: Pumps trips
RORating	3.2
SRORating	3.3
System	201001 CRD
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Actions on loss of both CRD pumps
REFERENCE	AB-105
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000006-15 Obj 27
QSOURCE	HCEB Significantly modified
QUESTION	Given the following: - Plant startup and heatup is in progress - The reactor is critical - Reactor pressure is 850 psig - The "B" CRD pump is INOP - The "A" CRD pump discharge pressure decreased to 875 psig - An operator has been dispatched to the CRD pumps to investigate Which one of the following is the correct action for the crew in accordance with HC.OP-AB.ZZ-0105 "Loss of CRD Regulating Function"?
CORRECT ANSWER	b
Answer A	Place the Mode Switch in SHUTDOWN when two CRDMs temperatures exceed 250 F
Answer B	Place the Mode Switch in SHUTDOWN when an accumulator becomes inoperable on withdrawn control rods
Answer C	Commence a normal shutdown within 20 minutes when one CRDM temperature exceeds 250 F
Answer D	Commence a normal shutdown when an accumulator becomes inoperable on withdrawn control rods
EXPLANATION OF ANSWER A	wrong action for high temps
EXPLANATION OF ANSWER B	Correct answer. AB-105 immediate actions
EXPLANATION OF ANSWER C	wrong action for CRD high temps
EXPLANATION OF ANSWER D	Requires mode switch to shutdown. Tech specs provides "otherwise HSD... statement. Stem requires answer based on AB.

Matrix#	32
RO QUESTION #	32
SRO QUESTION #	32
KACatalogID	201001A4.05
KA Statement	Ability to manually operate and/or monitor in the control room: Cooling water header pressure control valve
RORating	2.7
SRORating	2.8
System	201001 CRD
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	manual opration of flow control valve
REFERENCE	HC.OP-SO.BF-0001 rev 17 step 5.4.10 and 11
Material Provided	
LEARNING OBJECTIVE	Lp 0301-000.00H-000006-15
QSOURCE	New
QUESTION	Given the following: - A LOCA has occurred - The crew is implementing HC.OP-EO.ZZ-0101 Reactor Pressure Vessel Control for Alternate Level Control - A loss of high pressure feed sources occurred - Both CRD Pumps have been restarted for 2 pump emergency makeup IAW HC.OP-SO.BF-0001 "CRD System Operation" - The operator observes CRD pump discharge header pressure is 1050 psig Which one of the following describes the operator action required to maintain CRD pump discharge header pressure >1083 psig to prevent runout of the CRD pumps? Throttle the CRD Drive Water _____ .
CORRECT ANSWER	d
Answer A	Pressure Control Valve F003 open
Answer B	Pressure Control Valve F003 closed
Answer C	Flow Control Valve F002A(B) open
Answer D	Flow Control Valve F002A(B) closed
EXPLANATION OF ANSWER A	DWPC valve is full open. Flow Control valve adjusted>1083 to prevent runout conditions.
EXPLANATION OF ANSWER B	Flow Control valve adjusted.
EXPLANATION OF ANSWER C	At 1050 psig, the F002A(B) must be throttled closed to prevent runout conditions
EXPLANATION OF ANSWER D	Correct answer. HC.OP-SO.BF-0001 rev 17 step 5.4.10 and 1. At 1050 psig, the F002A(B) must be throttled closed to prevent runout conditions.

Matrix#	33
RO QUESTION #	33
SRO QUESTION #	33
KACatalogID	201003A3.01
KA Statement	Ability to monitor automatic operations of the CONTROL ROD AND DRIVE MECHANISM including: Control rod position
RORating	3.7
SRORating	3.6
System	201003
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	reason for stuck control rod
REFERENCE	LP 0301-000.00H-000006-15 Page 24 P&ID M-47-1
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000006-15 Obj 14
QSOURCE	HCEB significantly modified
QUESTION	Given the following conditions: - The plant is operating at 25% power performing a shutdown - Control rod 18-23 has been determined to be stuck at position 48 - While attempting to insert the control rod, indicated drive water flow is reading "0" gpm Which of the following is the cause of this indication?
CORRECT ANSWER	c
Answer A	The 2 gpm Stabilizing Valve has failed to reposition.
Answer B	HCU Directional Control Valve (122) has failed to reposition.
Answer C	HCU Directional Control Valve (123) has failed to reposition.
Answer D	Both Cooling Water Header to Exhaust Header Pressure Equalizing Valves have failed open.
EXPLANATION OF ANSWER A	2 gpm valve is normally open. Even if closed, rod will still insert
EXPLANATION OF ANSWER B	This valve does not reposition on an Insert signal
EXPLANATION OF ANSWER C	Correct answer. Insert drive water valve closed blocks flowpath
EXPLANATION OF ANSWER D	DP would lower but drive flow would not be 0 gpm

Matrix#	34
RO QUESTION #	34
SRO QUESTION #	34
KACatalogID	202001K2.02
KA Statement	Knowledge of electrical power supplies to the following: MG sets: Plant-Specific
RORating	3.2
SRORating	3.3
System	202001 Recirculation System
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	cause of drive motor breaker trips
REFERENCE	0301-000.00H-000067-11 E-3040
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000067-11 Obj 6A
QSOURCE	New
QUESTION	Given the following: - The plant startup is in progress - Start attempt of the "B" Reactor Recirc pump fails - The drive motor breaker trips open 20 seconds after closure - 10A120 Bus voltage remained at 7.2 kv - M/G set lube oil temperature is 120 degF - M/G set lube oil pressure is 35 psig - Pump suction valve BB-HV-F023B is open - Pump discharge valve BB-HV-F031B is stoking open Which one of the following is the cause of the breaker trip?
CORRECT ANSWER	a
Answer A	Exciter field overcurrent
Answer B	Generator neutral undervoltage
Answer C	Switchgear Bus differential overcurrent
Answer D	MG Set Drive Motor Bus undervoltage
EXPLANATION OF ANSWER A	Correct answer. Drive motor breaker trip
EXPLANATION OF ANSWER B	Neutral undervoltage is not a trip
EXPLANATION OF ANSWER C	Would trip bus infeeds. Bus voltage is normal
EXPLANATION OF ANSWER D	Bus voltage is normal

Matrix#	35
RO QUESTION #	35
SRO QUESTION #	35
KACatalogID	202002A3.03
KA Statement	Ability to monitor automatic operations of the RECIRCULATION FLOW CONTROL SYSTEM including: Scoop tube operation: BWR-2,3,4
RORating	3.1
SRORating	3
System	202002
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Automatic response to total feedwater flow signal failure
REFERENCE	HC.OP-SO.BB-0002 3.3.1
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000019-17 Obj 23
QSOURCE	HCEB Significantly modified
QUESTION	Given the following conditions: - The reactor is operating at 95% power - An instrumentation technician causes a zero percent feedwater flow signal to be sensed by the Recirculation Flow Control System - The Instrumentation Technician recognizes the error and removes the cause of the low feedwater flow signal 10 seconds later Which one of the following correctly describes the Reactor Recirculation Pumps speed initial response, and response when the error is corrected?
CORRECT ANSWER	a
Answer A	Remains unchanged
Answer B	Lowers to and remains at 30 %
Answer C	Lowers to and remains at 45 %
Answer D	Lowers, then returns to original value
EXPLANATION OF ANSWER A	Correct answer. 15 second time delay will prevent runback on total Feedwater flow <20 percent
EXPLANATION OF ANSWER B	Low feedwater flow runback must persist for >15 seconds
EXPLANATION OF ANSWER C	no intermediate runback is generated
EXPLANATION OF ANSWER D	No runback is generated. If it was generated, would seal in until manually reset

Matrix#	36
RO QUESTION #	36
SRO QUESTION #	36
KACatalogID	203000K6.04
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) :Keep fill system
RORating	3.3
SRORating	3.5
System	203000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Effect of loss of ECCS Jockey pump on RHR
REFERENCE	LP 0301-000.00H-000028-15 page 24 & 25
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000028-15 Obj 11.b
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power - "D" ECCS Jockey Pump trips - RHR LOOP B TROUBLE and RHR LOOP D TROUBLE overhead alarms are received - 10 minutes later, Condensate Transfer is manually valved in - The Reactor Building EO reports significant air was vented from the high point vents Which one of the following describes the Jockey Pump trip effect on the "B" and "D" RHR subsystems until the air is vented?
CORRECT ANSWER	a
Answer A	LPCI response time will be longer
Answer B	Alternate Injection System flowpaths are lost
Answer C	Air binding of the affected RHR pumps would occur
Answer D	Water hammer damage has occured to the RHR piping
EXPLANATION OF ANSWER A	Correct answer. Keepfill provides two functions. To prevent waterhammer damage should an automatic start of a LPCI pump occur and to reduce injection response time
EXPLANATION OF ANSWER B	Alternate Injection System Flowpath from Condensate transfer is still available
EXPLANATION OF ANSWER C	Jockey pump keeps the discharge piping downstream of the pump discharge check valve filled. Air binding can not be avoided be using the jockey pump.
EXPLANATION OF ANSWER D	Loss of the keepfill without an RHR pump start will not cause piping damage alone.

Matrix#	37
RO QUESTION #	37
SRO QUESTION #	37
KACatalogID	206000A1.02
KA Statement	Ability to predict and/or monitor changes in parameters associated with operating the HIGH PRESSURE COOLANT INJECTION SYSTEM controls including: Reactor pressure: BWR-2,3,4
RORating	4.2*
SRORating	4.2
System	206000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Response in reactor pressure to HPCI speed changes
REFERENCE	HC.OP-AB.ZZ-0135
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000026-18 Obj 15.c
QSOURCE	New
QUESTION	Given the following: - The plant has scrammed from a Loss of Offsite Power - HPCI is operating in Pressure Control mode - HPCI flow controller is in Auto set at 3000 gpm - HPCI discharge pressure is steady at 900 psig - Reactor pressure is steady at 700 psig - The operator lowers the HPCI flow controller setpoint to 2500 gpm in Auto Which of the following describes the response of reactor pressure and HPCI discharge pressure AFTER HPCI flow has STABILIZED? (Assume reactor decay heat load remains constant.) Reactor pressure will _____ and HPCI discharge pressure will _____.
CORRECT ANSWER	d
Answer A	decrease; increase
Answer B	decrease; decrease
Answer C	increase; increase
Answer D	increase; decrease
EXPLANATION OF ANSWER A	Reactor pressure will increase due to lower heat removal rate from lower turbine speed. Discharge pressure will lower.
EXPLANATION OF ANSWER B	Reactor pressure will increase due to lower heat removal rate from lower turbine speed
EXPLANATION OF ANSWER C	Discharge pressure will lower in response to turbine speed lowering
EXPLANATION OF ANSWER D	Correct answer. Discharge pressure will lower in response to turbine speed lowering

Matrix#	38
RO QUESTION #	38
SRO QUESTION #	38
KACatalogID	206000A3.05
KA Statement	Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: Reactor water level: BWR-2,3,4
RORating	4.3*
SRORating	4.3
System	206000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Auto initiation on low water level
REFERENCE	HC.OP-SO.BJ-0001 interlocks 3.3
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000026 Obj 3 and 5
QSOURCE	HCEB Unmodified
QUESTION	During a loss of feedwater, a manual start of the High Pressure Coolant Injection (HPCI) system was done at a water level of -20 inches by operator manipulation of the system components. Which of the following describes the HPCI system response as reactor water level continues to change?
CORRECT ANSWER	a
Answer A	It will automatically trip at +54 inches and will automatically restart at -38 inches.
Answer B	It will automatically trip at +54 inches and will require operator action to restart when level reaches -38 inches.
Answer C	Operator action is required to secure injection when level reaches +54 inches but it automatically restarts at -38 inches.
Answer D	Operator action is required to secure injection when level reaches +54 inches and also to restart when level reaches -38 inches.
EXPLANATION OF ANSWER A	Correct answer. automatically trips at +54; automatically restarts at -38
EXPLANATION OF ANSWER B	automatically restarts at -38
EXPLANATION OF ANSWER C	automatically trips at +54
EXPLANATION OF ANSWER D	automatically restarts at -38 and automatically trips at +54

Matrix#	39
RO QUESTION #	39
SRO QUESTION #	39
KACatalogID	209001A2.02
KA Statement	Ability to (a) predict the impacts of the following on the LOW PRESSURE CORE SPRAY SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:Valve closures
RORating	3.2
SRORating	3.2
System	209001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Core Spray valve interlocks
REFERENCE	HC.OP-SO.BE-0001(Q) 3.3.4
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000027-16 Obj 13
QSOURCE	HCEB Slightly modified
QUESTION	Given the following conditions: - A loss of coolant accident has occurred - Reactor water level reached -140 inches, then recovered to -50 inches and is now rising - Reactor pressure is 50 psig - Drywell pressure is 6 psig - All plant systems responded as designed Which of the following describes the system isolation capabilities for the Core Spray System (CSS) Downstream Loop Injection Valve (F005B) and the CSS Upstream Loop Injection Valve (F004B), if Core Spray Loop "B" isolation is required?
CORRECT ANSWER	a
Answer A	Only F005B valve may be overridden closed
Answer B	Only the F004B valve may be overridden closed
Answer C	Both the F004B and F005B valves may be overridden closed
Answer D	Neither the F004B or F005B valves may be overridden closed
EXPLANATION OF ANSWER A	Correct answer. The F005B valves may be overridden closed with initiation signal present by the Auto Open Ovrd pushbuttons.
EXPLANATION OF ANSWER B	F004B does not have overide capability
EXPLANATION OF ANSWER C	F004B does not have overide capability
EXPLANATION OF ANSWER D	F005B may be overidden closed

Matrix#	40
RO QUESTION #	40
SRO QUESTION #	40
KACatalogID	209001K5.04
KA Statement	Knowledge of the operational implications of the following concepts as they apply to LOW PRESSURE CORE SPRAY SYSTEM : Heat removal (transfer) mechanisms
RORating	2.8
SRORating	2.9
System	209001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	How does Core Spray assure adequate core cooling
REFERENCE	HC.OP-EO.ZZ-0101 Bases step ALC-9
Material Provided	EOP's with out entry conditions
LEARNING OBJECTIVE	0302-000.00H-000124-12 Obj 6
QSOURCE	New
QUESTION	Given the following conditions: - A loss of coolant accident has occurred - Reactor pressure is 50 psig and lowering - Core Spray Loop A is injecting at rated flow - Actual reactor water level is -170 inches and lowering - All other water sources are unavailable Which one of the following methods currently assures adequate core cooling for this situation?
CORRECT ANSWER	c
Answer A	Core submergence
Answer B	Core Spray injection
Answer C	Steam cooling until level reaches -190
Answer D	Steam cooling after level reaches -200
EXPLANATION OF ANSWER A	Level is below TAF and lowering. Core submergence is not possible with given conditions
EXPLANATION OF ANSWER B	Containment flooding with core spray alone is not possible
EXPLANATION OF ANSWER C	Correct answer. Between -161 inches and -190 inches , adequate core cooling is assured by steam cooling with injection.
EXPLANATION OF ANSWER D	Adequate core cooling is not assured below -200 and the reactor depressurized. SRVs will not open to swell up over the uncovered fuel. Steam flow is inadequate to maintain PCT below 1800degF

Matrix#	41
RO QUESTION #	41
SRO QUESTION #	41
KACatalogID	211000K3.01
KA Statement	Knowledge of the effect that a loss or malfunction of the STANDBY LIQUID CONTROL SYSTEM will have on following: Ability to shutdown the reactor in certain conditions
RORating	4.3*
SRORating	4.4*
System	211000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	application of Cold Shutdown boron weight
REFERENCE	Tech spec 3.1.5 table. EOP -101A bases step RC/Q-18
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-00124B-1 Obj 7
QSOURCE	NRC SSES Exam 5/99 slightly modified
QUESTION	Given the following conditions: - The plant was operating at 100 percent power - The plant has experienced a failure-to-scram (ATWS) - The Standby Liquid Control (SLC) system was initiated and injected for 52 minutes before both SLC Pumps tripped simultaneously - Reactor power is in the source range How do the SLC pump trips affect reactor cooldown and depressurization?
CORRECT ANSWER	b
Answer A	Cooldown can be accomplished if completed before Xenon decays out of the core.
Answer B	Boron concentration is sufficient to allow a complete cooldown under any plant conditions.
Answer C	Reactor Engineering must make the determination if current boron concentration will allow a complete cooldown.
Answer D	Boron concentration is sufficient to allow a complete cooldown with a maximum of 8 control rods not fully inserted.
EXPLANATION OF ANSWER A	Cold shutdown boron weight assumes xenon free core
EXPLANATION OF ANSWER B	Correct answer. Bases step RC/Q-19 states with 1100 gal remaining in SLC tank, reactor will remain shutdown under all conditions. Cooldown and depressurization may commence. 52 minutes run time on both slc pumps results in 565 gal remaining if started from tank high level setpoint
EXPLANATION OF ANSWER C	1100 gal remaining is a predetermined value.
EXPLANATION OF ANSWER D	No maximum number of rods limit

Matrix#	42
RO QUESTION #	42
SRO QUESTION #	42
KACatalogID	212000K5.02
KA Statement	Knowledge of the operational implications of the following concepts as they apply to REACTOR PROTECTION SYSTEM : Specific logic arrangements
RORating	3.3
SRORating	3.4
System	212000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Scrams with Shorting links removed
REFERENCE	HC.OP-SO.SB-0001 table SB-001
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000022-16 Obj 8
QSOURCE	HCEB slightly modified
QUESTION	Given the following conditions: - A plant startup was in progress following a refueling outage - The reactor mode switch is in Startup - A reactor scram occurred (all rods inserted) - The sequence of events printout shows that just prior to the scram, Average Power Range Monitoring (APRM) channels "B" and "D" were upscale HI-HI Which of the following additional conditions, by itself, would have caused the full reactor scram signal?
CORRECT ANSWER	c
Answer A	RPS Bus "B" has de-energized.
Answer B	Recirculation Loop flow unit "A" fails downscale
Answer C	The Reactor Protection System shorting links are removed.
Answer D	SRM Channels "A" and "C" are reading 1.5 E5 counts per second.
EXPLANATION OF ANSWER A	Will cause a half scram on the same RPS channel as B and D APRM.
EXPLANATION OF ANSWER B	Would cause a full scram if power was above 51 percent. Max power in SU is 15 percent
EXPLANATION OF ANSWER C	Correct answer. No shorting links, all nuclear instrument upscales are non-coincident scrams which would cause a full scram from B or D APRMS upscale Hi Hi
EXPLANATION OF ANSWER D	SRM Upscale is 2.0 E+5 CPS which is bypassed with shorting links installed

Matrix#	43
RO QUESTION #	43
SRO QUESTION #	43
KACatalogID	212000K6.04
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR PROTECTION SYSTEM : D.C. electrical distribution
RORating	2.8
SRORating	3.1
System	212000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	What is effect of loss of one 125vdc source to RPS
REFERENCE	LP 0301-000.00H-000022-16 Page 15
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000022-16 Obj 14
QSOURCE	new
QUESTION	Given the following: - The plant is operating at 100 percent power - The fuse supplying power to the "A" RPS Backup Scram Solenoid Valve has blown Which of the following correctly describes the effect on the scram air header?
CORRECT ANSWER	b
Answer A	Will immediately depressurize
Answer B	Will depressurize on receipt of a full scram signal
Answer C	Will remain pressurized on receipt of a full scram signal
Answer D	Will remain depressurized when the scram is reset following receipt of a full scram signal
EXPLANATION OF ANSWER A	Will remain pressurized
EXPLANATION OF ANSWER B	Correct answer. The Backup scram air solenoids are normally de-energized, fail as-is which is with the vent port closed. The scram air header will depressurize thru the B Valve vent port on a full scram
EXPLANATION OF ANSWER C	The scram air header will depressurize thru the B Valve vent port on a full scram
EXPLANATION OF ANSWER D	the header will re- pressurize when the scram is reset

Matrix#	44
RO QUESTION #	44
SRO QUESTION #	44
KACatalogID	214000K5.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to ROD POSITION INFORMATION SYSTEM : Reed switches
RORating	2.7
SRORating	2.8
System	214000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Rod Drift - input
REFERENCE	LP 0302-000.00H-000007-13 page 26
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000007-13 Obj 4
QSOURCE	HCEB Significantly modified
QUESTION	Given the following conditions: - No control motion signal is present - Control rod 50-43 ROD DRIFT illuminates on the Full Core Display - Overhead annunciator "ROD DRIFT" C6-E3 alarms Which one of the following caused the alarm? Control Rod 50-43 has _____ .
CORRECT ANSWER	b
Answer A	an odd reed switch opened
Answer B	an odd reed switch closed
Answer C	an even reed switch opened
Answer D	an even reed switch closed
EXPLANATION OF ANSWER A	must be closed to cause rod drift alarm
EXPLANATION OF ANSWER B	Correct answer. Any odd reed switch closed with no rod motion command will cause a rod drift alarm on the affected control rod
EXPLANATION OF ANSWER C	does not cause rod drift alarm
EXPLANATION OF ANSWER D	Does not cause a rod drift alarm

Matrix#	45
RO QUESTION #	45
SRO QUESTION #	45
KACatalogID	215001K6.04
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the TRAVERSING IN-CORE PROBE : Primary containment isolation system: Mark-I&II(Not-BWR1)
RORating	3.1
SRORating	3.4
System	215001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	TIP Response to failed NSSSS channel
REFERENCE	HC.OP-SO.SM-0001 table SM-017
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000018-10 OBJ 6
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - TIP traces are being performed - The "B" TIP detector is in the core - A feedwater tranisient causes a reactor scram - HPCI and RCIC receive Auto Initiation signals - "A" NSSSS channel fails to trip when required Which one of the following describes the automatic response of "B" TIP detector to the NSSSS failure?
CORRECT ANSWER	d
Answer A	The "B" TIP detector will withdraw. The Ball Valve closes.
Answer B	The "B" TIP detector will withdraw. The Ball Valve remains open.
Answer C	The "B" TIP detector will NOT withdraw. The Ball Valve closes.
Answer D	The "B" TIP detector will NOT withdraw. The Ball Valve remains open.
EXPLANATION OF ANSWER A	Will not withdraw. Need both A and B NSSSS channels tripped
EXPLANATION OF ANSWER B	does not withdraw. Ball valve will close only when detector is in-shield via proximity switch
EXPLANATION OF ANSWER C	ball valve will close only when detector is in-shield via proximity switch
EXPLANATION OF ANSWER D	Correct answer. LOCA Level 2 (-38 RPV WL or 1.68 psi DW press) signal from channel A and B NSSSS will cause TIP to withdraw, once the probe reaches the shield, the "in-shield" proximity switch is activated to close the ball valve.

Matrix#	46
RO QUESTION #	46
SRO QUESTION #	46
KACatalogID	215004A2.05
KA Statement	Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Faulty or errartic operation of detectors/system
RORating	3.3
SRORating	3.5
System	215004
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Operator actions for inoperable SRM
REFERENCE	HC.OP-AB.ZZ-0107 rev 0 4.2
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000013-11 Obj 7
QSOURCE	new
QUESTION	Given the following: - A plant startup is in progress - A 100 second positive period has been attained - SRMs are being withdrawn - All IRMs are on range 2 - "B" SRM count rate continues to increase as the "B" detector is withdrawn - The ROD OUT MOTION BLOCK annunciator alarms Can the startup continue and what actions are required by HC.OP-AB.ZZ-0107?
CORRECT ANSWER	c
Answer A	No, insert all SRMs to the full in position
Answer B	No, insert all control rods using the stuff sheet
Answer C	Yes, bypass the channel using the joystick
Answer D	Yes, the channel will automatically bypass when IRM range 3 is selected
EXPLANATION OF ANSWER A	Startup can continue. No direction to insert ALL SRMs in AB-107
EXPLANATION OF ANSWER B	Startup can continue once the SRM is bypassed. AB-107 3.1 directs termination of control rod movement.
EXPLANATION OF ANSWER C	Correct answer. IAW AB-107 terminate rod motion and step 4.2 Bypass the failed SRM
EXPLANATION OF ANSWER D	Channel is automatically bypassed on IRM range 8 not 3. Rod block and point of adding heat will stop power increase from reaching IRM range 8

Matrix#	47
RO QUESTION #	47
SRO QUESTION #	47
KACatalogID	215004K2.01
KA Statement	Knowledge of electrical power supplies to the following: SRM channels/detectors
RORating	2.6
SRORating	2.8
System	215004
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Loss of supply voltage to SRM drawers
REFERENCE	IR-86-067 LP 0302-000.00H-000013-11 page 30
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00HG-000013-11 Obj 13 and 14
QSOURCE	new
QUESTION	Given the following: - The plant is in Cold Shutdown - 24 VDC Battery charger 1AD304 has tripped off line - Battery voltage has dropped to +10.5 VDC Which one of the following correctly describes how the SRM's are affected?
CORRECT ANSWER	b
Answer A	Channel A and C drift upscale
Answer B	Channel A and C drift downscale
Answer C	Channel B and D drift upscale
Answer D	Channel B and D drift downscale
EXPLANATION OF ANSWER A	channel output will drift downscale
EXPLANATION OF ANSWER B	Correct answer. IAW IR-86-067 this event happened at Hope Creek. The A&C SRMs drifted downscale
EXPLANATION OF ANSWER C	no effect on B&D channels
EXPLANATION OF ANSWER D	no effect on B&D channels

Matrix#	48
RO QUESTION #	48
SRO QUESTION #	48
KACatalogID	216000K1.01
KA Statement	Knowledge of the physical connections and/or cause-effect relationships between NUCLEAR BOILER INSTRUMENTATION and the following: Reactor protection system
RORating	3.9
SRORating	4.1
System	216000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Which NBI feeds into RPS logic
REFERENCE	LP-0301-000.00H-000002-14
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000002-14 Obj 21
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power - B2 channel of RPS is in the TRIP condition Which one of the following failures of Nuclear Boiler Instrumentation channels would complete the RPS trip logic, initiating an automatic scram?
CORRECT ANSWER	b
Answer A	Drywell pressure transmitter "C" fails downscale
Answer B	Recirculation Loop flow unit "A" fails downscale
Answer C	Narrow Range reactor pressure channel "A" fails upscale
Answer D	Wide Range reactor water level transmitter "C" fails upscale
EXPLANATION OF ANSWER A	Downscale will not cause an RPS trip
EXPLANATION OF ANSWER B	Correct answer. With the reactor at full power, the downscale failure of a channel A flow unit will result in a A RPS channel trip and complete the RPS logic for a full reactor scram
EXPLANATION OF ANSWER C	Narrow range pressure instruments feed indication only. Will not cause an RPS trip
EXPLANATION OF ANSWER D	Wide Range Level transmitters do not input into RPS.

Matrix#	49
RO QUESTION #	49
SRO QUESTION #	49
KACatalogID	217000A4.08
KA Statement	Ability to manually operate and/or monitor in the control room:System flow

RORating	3.7
SRORating	3.6
System	217000 RCIC
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Change to system flow from valve operation with system in manual
REFERENCE	LP 0301-000.00H-000030-18 Page 27, 28, & 29
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000030-18 Obj 22
QSOURCE	HCEB significantly modified
QUESTION	Given the following conditions: - The Reactor Core Isolation Cooling (RCIC) is operating in Full Flow Recirc - The RCIC flow controller is in "MAN" - The RCIC flow controller indicates 300 gpm - RCIC turbine speed is 2450 rpm - The operator throttles open the RCIC Test Bypass To CST Isolation Valve (F022) for 2 seconds Which of the following describes the response of RCIC turbine speed and system flow AFTER conditions have STABILIZED? RCIC Turbine speed is _____ and system flow is _____.

CORRECT ANSWER	c
Answer A	lower; lower
Answer B	lower; the same
Answer C	the same; higher
Answer D	higher; higher
EXPLANATION OF ANSWER A	The same speed; higher flow
EXPLANATION OF ANSWER B	The same speed; higher flow
EXPLANATION OF ANSWER C	Correct answer. Flow controller in manual is speed control and will stabilize at a speed corresponding with the output of the controller. System flow will go up due to less resistance at the same speed
EXPLANATION OF ANSWER D	The same speed; higher flow

Matrix#	50
RO QUESTION #	50
SRO QUESTION #	50
KACatalogID	217000K4.05
KA Statement	Knowledge of REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) design feature(s) and/or interlocks which provide for the following: Prevents radioactivity release to auxiliary/reactor building
RORating	3.2
SRORating	3.5
System	217000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	RCIC Automatic isolations
REFERENCE	HC.OP-SO.BD-0001 3.3.7
Material Provided	
LEARNING OBJECTIVE	Lp 0301-000.00H-000030-18 Obj 21
QSOURCE	New
QUESTION	The plant has experienced a LOCA in the Drywell, resulting in automatic initiations of all low pressure ECCS, HPCI and RCIC. Following initiation, the RCIC steam line ruptured in the RCIC Turbine room and successfully isolated on high steam flow. Current plant conditions are: - All rods are in - RPV level is being maintained at +5 inches with condensate - RPV pressure is 200 psig and lowering at 10 psig per minute through the break - Low pressure ECCS and HPCI have been secured - Drywell pressure is 6 psig and slowly rising Which one of the following additional AUTOMATIC VALVE CLOSURES will occur for the RCIC System as the RPV continues to depressurize and equalize with Drywell pressure?
CORRECT ANSWER	d
Answer A	Steam Supply Valve HV-F045
Answer B	Turbine Exhaust Isolation Valve HV-F059
Answer C	Lube Oil Cooling Water Isolation Valve HV-F046
Answer D	Turbine Exhaust Vacuum Breaker Isolation Valve HV-F062
EXPLANATION OF ANSWER A	Only auto closes on High RPV level. Level being maintained at +5
EXPLANATION OF ANSWER B	Does not automatically close
EXPLANATION OF ANSWER C	Auto opens on initiation . Auto Closes on high RPV level. Level being maintained at +5
EXPLANATION OF ANSWER D	Correct Answer. VB Isolation valve F062 will receive an isolation signal when RPV pressure lowers to 64.5 psig

Matrix#	51
RO QUESTION #	51
SRO QUESTION #	51
KACatalogID	223001K6.09
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES: Drywell vacuum relief system
RORating	3.4
SRORating	3.6
System	223001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	consequences of failed Rx to SC Vacuum Breakers
REFERENCE	LP 0301-000.00H-000031-12 page 16
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000031-12 Obj 3.L
QSOURCE	HCEB Unmodified
QUESTION	The Suppression Chamber to Drywell vacuum breakers fail to operate when required. Which one of the following is a consequence of the failure of Suppression Chamber vacuum breakers to operate when required?
CORRECT ANSWER	b
Answer A	Drywell failure caused by high internal pressure
Answer B	Drywell failure caused by high external pressure
Answer C	Suppression chamber failure caused by high internal pressure
Answer D	Suppression chamber failure caused by high external pressure
EXPLANATION OF ANSWER A	Drywell would fail from high external pressure because all of the non condensibles would be trapped in the SC
EXPLANATION OF ANSWER B	Correct answer. Bases of SC to DW vacuum breakers. All NC would be in SC and be trapped there.
EXPLANATION OF ANSWER C	External pressure
EXPLANATION OF ANSWER D	All non condensibles would be in SC

Matrix#	52
RO QUESTION #	52
SRO QUESTION #	52
KACatalogID	223002A1.01
KA Statement	Ability to predict and/or monitor changes in parameters associated with operating the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF controls including: System indicating lights and alarms
RORating	3.5
SRORating	3.5
System	223002
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Respond to partial manual initiation
REFERENCE	LP 0302-000.00H-000045-13 page 39 of 49
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000045-13 Obj 5.c
QSOURCE	HCEB slightly modified
QUESTION	Given the following: - A small leak has occurred in the RWCU system. - The operator depresses the "C" and "D" NSSSS manual isolation pushbuttons. Which one of the following correctly describes the response of valves RWCU Inboard and Outboard Isolation Valves BG-HV-F001 and F004?
CORRECT ANSWER	b
Answer A	F001 closes, F004 remains open
Answer B	F004 closes, F001 remains open
Answer C	Both F001 and F004 close
Answer D	Both F001 and F004 remain open
EXPLANATION OF ANSWER A	closed by A NSSSS manual PB
EXPLANATION OF ANSWER B	Correct answer. F004 closes on a manual NSSSS channel D initiation.
EXPLANATION OF ANSWER C	Closed by A and D NSSSS manual PB's
EXPLANATION OF ANSWER D	would be true if B and/or C NSSSS manual initiations pressed

Matrix#	53
RO QUESTION #	53
SRO QUESTION #	53
KACatalogID	226001K3.01
KA Statement	Knowledge of the effect that a loss or malfunction of the RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE will have on following: Containment/drywell/suppression chamber pressure
RORating	3.6
SRORating	3.7
System	226001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	reason for securing DW spray with degraded ECCS performance
REFERENCE	HC.OP-AB.ZZ-0155(Q) Rev 2 Attachment 1 Section 2.0
Material Provided	
LEARNING OBJECTIVE	LP 0303-000.00H-000114-05 Obj 3
QSOURCE	New
QUESTION	Given the following: - B RHR loop Drywell spray is in-service following a LOCA. - B RHR pump amps are fluctuating - A RHR pump is not available - Suppression chamber pressure is 10.2 psig and lowering - Abnormal procedure HC.OP-AB.ZZ-155 "Degraded ECCS Performance/ Loss of NPSH" has been implemented For these conditions, which of the following describes the condition allowing removal of Drywell sprays from service and the basis for their removal?
CORRECT ANSWER	d
Answer A	At 1.68 psig in the Suppression Chamber to prevent "chugging" of the downcomer vent pipes
Answer B	At 9.5 psig in the Suppression Chamber to prevent "chugging" of the downcomer vent pipes
Answer C	At 1.68 psig in the Suppression Chamber to minimize transport of debris to the pump suction strainers
Answer D	At 9.5 psig in the Suppression Chamber to minimize transport of debris to the pump suction strainers
EXPLANATION OF ANSWER A	Bases for initiating spray at 9.5. 1.68 is when sprays removed when NOT in AB-155 conditions
EXPLANATION OF ANSWER B	Wrong reason. Bases for initiating spray at 9.5
EXPLANATION OF ANSWER C	9.5 psig
EXPLANATION OF ANSWER D	Correct answer. AB-155 allows drywell sprays to be removed at 9.5 psig suppression chamber pressure versus 1.68 psig to reduce debris loading of the pump suction strainers

Matrix#	54
RO QUESTION #	54
SRO QUESTION #	54
KACatalogID	226001K4.10
KA Statement	Knowledge of RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE design feature(s) and/or interlocks which provide for the following: Spray flow cooling
RORating	2.9
SRORating	3
System	226001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Drywell spray interlocks
REFERENCE	HC.OP-SO.BC-0001(Q)
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000028-15 Obj 14f
QSOURCE	NRC Exam 10/99 unmodified
QUESTION	Which of the following conditions would PREVENT opening the RHR "B" Loop Inboard and Outboard Drywell Spray Valves (F021B and F016B) following a LOCA?
CORRECT ANSWER	b
Answer A	Reactor water level is above -129 inches
Answer B	The LPCI Injection Valve (F017B) is not fully closed
Answer C	The RHR Full Flow Test Valve (F024B) is not fully closed
Answer D	Less than 5 minutes have elapsed since the "B" RHR initiation occurred
EXPLANATION OF ANSWER A	Opening valves is not dependant on RPV level
EXPLANATION OF ANSWER B	Correct answer. F017B must be full closed to allow opening DW Spray valves
EXPLANATION OF ANSWER C	Procedurally, F024B should be closed, but would not prevent opening DW spray valves
EXPLANATION OF ANSWER D	Opening DW Spray valve is not time dependent.

Matrix#	55
RO QUESTION #	55
SRO QUESTION #	55
KACatalogID	230000A1.11
KA Statement	Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: TORUS/SUPPRESSION POOL SPRAY MODE controls including: Suppression chamber air temperature
RORating	3.6
SRORating	3.6
System	230000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Actions required to initiate SP sprays
REFERENCE	HC.OP-SO.BC-0001
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000028-15 obj 11d
QSOURCE	HC Audit exam 9/99 significantly modified
QUESTION	The plant was operating at 100 percent power when a reactor scram and MSIV closure occurred. An SRV tailpipe has broken in the Suppression Chamber air space as the SRV opened to control reactor pressure. Given the following: - Suppression Chamber pressure is 5 psig - Suppression Chamber air space temperature is 225 DegF and rising - "B" RHR Pump in running in Suppression Pool Cooling Which of the following operator actions are required IAW HC.OP-SO.BC-0001 to establish flow through the Suppression Chamber Spray Valve BC-HV-F027B?
CORRECT ANSWER	b
Answer A	F027B Auto Open Overide must be pressed.
Answer B	F027B Auto Close Overide must be pressed.
Answer C	F027B Auto Open Overide must be pressed AND the LPCI Initiation must be RESET.
Answer D	F027B Auto Close Overide must be pressed AND the LPCI Initiation must be RESET.
EXPLANATION OF ANSWER A	Auto Open Override must be pressed for F017B Injection Valve, not F027B
EXPLANATION OF ANSWER B	Correct answer. Auto close override pb must be pressed and high DW pressure must exist
EXPLANATION OF ANSWER C	Auto Open Override must be pressed for F017B Injection Valve, not F027B
EXPLANATION OF ANSWER D	LPCI Initiation does not need to be reset

Matrix#	56
RO QUESTION #	56
SRO QUESTION #	56
KACatalogID	241000K1.06
KA Statement	Knowledge of the physical connections and/or cause-effect relationships between REACTOR/TURBINE PRESSURE REGULATING SYSTEM and the following: Bypass valves
RORating	3.8
SRORating	3.9
System	241000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Plant response to Bypass jack operation
REFERENCE	LP 0301-000.00H-000051-16 page 23
Material Provided	LP 0301-000.00H-000051-16 figure 8
LEARNING OBJECTIVE	LP 0301-000.00H-000051-16 Obj 15
QSOURCE	NRC HC Exan 10/99 signifcantly modified
QUESTION	Given the following: - The reactor is at 90% power. - Main Turbine Bypass Valve testing is in progress - The Plant Operator inadvertently depresses the INCREASE push button for the bypass valve jack and the button sticks down until the percent demand indication on panel 10C651D reads 100%. WHICH ONE of the following describe the turbine control and bypass valve response? (Reference Attachment B-1 provided)
CORRECT ANSWER	a
Answer A	Bypass valves open and control valves throttle closed to maintain reactor pressure
Answer B	Bypass valves open and control valves throttle open to the Load Limit setpoint
Answer C	Bypass valves remain closed and control valves throttle closed to raise reactor pressure
Answer D	Bypass valves remain closed and control valves throttle open to lower reactor pressure
EXPLANATION OF ANSWER A	Correct answer. Bypass valves open in response to BP jack and control valves throttle closed to maintain reactor pressure
EXPLANATION OF ANSWER B	Control valves will throttle closed
EXPLANATION OF ANSWER C	Control valve throttle to maintain pressure, bypass valves open
EXPLANATION OF ANSWER D	Control valve throttle to maintain pressure, bypass valves open

Matrix#	57
RO QUESTION #	57
SRO QUESTION #	57
KACatalogID	256000A4.08
KA Statement	Ability to manually operate and/or monitor in the control room:Reactor water level
RORating	3.7
SRORating	3.7
System	256000 Reactor Condensate System
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	RPV Level Response to SCP discharge valve opening
REFERENCE	HCOP-IO.ZZ-003 Caution 5.3.24.c
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000058-11 Obj 30.c.
QSOURCE	New
QUESTION	Given the following: - A plant startup is in progress - Reactor power is at 2 percent - Reactor pressure is 110 psig - The first Secondary Condensate Pump (SCP) is running on min-flow - The StartUp Level Control is in AUTO at 5 percent Demand - Reactor level is stable at 35 inches - The operator opens the SCP discharge valve Which one of the following describes the initial Reactor water level response, and Start Up Level Control Valve (SULCV) Demand after conditions stabilize?
CORRECT ANSWER	d
Answer A	Initially RPV level will decrease; stable SULCV demand will be higher
Answer B	Initially RPV level will decrease; stable SULCV demand will be lower
Answer C	Initially RPV level will increase; stable SULCV demand will be higher
Answer D	Initially RPV level will increase; stable SULCV demand will be lower
EXPLANATION OF ANSWER A	response of starting SCP and leaving discharge closed
EXPLANATION OF ANSWER B	Response in single element control to decreasing steam loads
EXPLANATION OF ANSWER C	Response in single element control to increasing steam loads
EXPLANATION OF ANSWER D	Correct answer. With the SCP discharge valve opening, D/p seen by the SU valve will increase, causing level to increase, causing the SU valve to close initially and end further closed.

Matrix#	58
RO QUESTION #	58
SRO QUESTION #	58
KACatalogID	256000A2.01
KA Statement	Ability to (a) predict the impacts of the following on the REACTOR CONDENSATE SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Pump trips
RORating	3.3
SRORating	3.3
System	256000 Reactor Condensate System
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Response to a PCP trip
REFERENCE	HC.OP-AB.ZZ-0200(Q) rev 7 page 11 and 12
Material Provided	HC.OP-AB.ZZ-0200(Q) rev 7 page 11 and 12
LEARNING OBJECTIVE	0302-000.00H-000052-15 Obj 16
QSOURCE	HCEB Audit 9/99 Unmodified
QUESTION	Given the following conditions: - A plant startup is in progress. - Reactor power is 60% - "A" and "B" Primary Condensate Pumps (PCP) are running - "A" and "C" Secondary Condensate Pumps (SCP) are running - "B" and "C" Reactor Feed Pumps (RFP) are running What is the response of the Feedwater System to a trip of the "A" PCP? (Reference Attachments B-2A & B-2B provided)
CORRECT ANSWER	a
Answer A	"A" SCP Trips, "B" RFP trips
Answer B	"A" SCP Trips, "C" RFP Trips
Answer C	"C" SCP Trips, "B" RFP trips
Answer D	"C" SCP Trips, "C" RFP Trips
EXPLANATION OF ANSWER A	Correct answer. HC.OP-AB.ZZ-0200(Q) Rev 7 Primary and secondary pump logic. A PCP trip will trip A SCP. "A" SCP trip will trip "B" RFPT
EXPLANATION OF ANSWER B	"B" RFP trips
EXPLANATION OF ANSWER C	"A" SCP trips
EXPLANATION OF ANSWER D	"A" SCP Trips, "B" RFP trips

Matrix#	59
RO QUESTION #	59
SRO QUESTION #	59
KACatalogID	259001K3.02
KA Statement	Knowledge of the effect that a loss or malfunction of the REACTOR FEEDWATER SYSTEM will have on following: Reactor water level control system
RORating	3.8
SRORating	3.8
System	259001
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	DFCS response to RFPT minflow failed "as-is"
REFERENCE	LP-0058-11 page 23 of 89
Material Provided	LP 0301-000.00H-00058-11 figure 26
LEARNING OBJECTIVE	LP-0301-000.00H-00058-11 Obj.28
QSOURCE	HCEB significantly modified
QUESTION	Given the following conditions: - A plant startup is in progress - Reactor power at 5% - "B" Reactor Feedwater Pump operating in Differential Pressure (D/P) Control - SV-1783B, "B" RFP Minimum Flow Recirculation valve solenoid, loses electrical power Which of the following correctly describes "B" RFP response? The "B" RFP will _____ . (Reference Attachments B-3A & B-3B provided)
CORRECT ANSWER	d
Answer A	trip on overspeed
Answer B	control at a lower speed
Answer C	control at a higher speed
Answer D	control at the same speed
EXPLANATION OF ANSWER A	SV-1783B fails "as is" on a loss of power, Pump speed will not change
EXPLANATION OF ANSWER B	SV-1783B fails "as is" on a loss of power, Pump speed will not change
EXPLANATION OF ANSWER C	SV-1783B fails "as is" on a loss of power, Pump speed will not change
EXPLANATION OF ANSWER D	Correct answer. SV-1783B fails "as is" on a loss of power, Pump speed will not change

Matrix#	60
RO QUESTION #	60
SRO QUESTION #	60
KACatalogID	261000A4.03
KA Statement	Ability to manually operate and/or monitor in the control room: Fan
RORating	3.0
SRORating	3.0
System	261000 FRVS /SBGT
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Observation of auto initiation parameters
REFERENCE	HC.OP-SO.GU-0001(q) rev 16 step 5.2.3
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000042-11 Obj 31
QSOURCE	HCEB Unmodified
QUESTION	Given the following: - All FRVS Recirculation Fans are in AUTO - "A" FRVS Vent Fan is in Auto Lead - "B" FRVS Vent Fan is in Auto - FRVS automatically initiates on RPV Level 2 Select the total FRVS Recirculation and total Vent flow after the operator has completed HC.OP-SO.GU-0001 "Filtration, Recirculation and Ventilation System Operation" actions for initiation verification.
CORRECT ANSWER	a
Answer A	120,000 cfm; 9000 cfm
Answer B	120,000 cfm; 18,000 cfm
Answer C	180,000 cfm; 9000 cfm
Answer D	180,000 cfm; 18,000 cfm
EXPLANATION OF ANSWER A	Correct answer. Flow for 4 recirc and 1 vent. Operator actions of SO.GU-0001 secure the E and F Recirc fans
EXPLANATION OF ANSWER B	flow for 4 recirc and 2 vent
EXPLANATION OF ANSWER C	Flow for 6 recirc and 1 vent if operator did not take actions of SO-GU-0001
EXPLANATION OF ANSWER D	Flow for 6 recirc and 2 vent

Matrix#	61
RO QUESTION #	61
SRO QUESTION #	61
KACatalogID	262002A3.01
KA Statement	Ability to monitor automatic operations of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) including: Transfer from preferred to alternate source
RORating	2.8
SRORating	3.1
System	262002
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Effect of lost source on inverter
REFERENCE	HC.OP-SO.PN-0001
Material Provided	HC.OP-SO.PN-0001 Exhibit 2
LEARNING OBJECTIVE	LP 0302-000.00H-000066-19 Obj 24.c
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power - Energized testing activities are in progress on the 1AD481 1E 20 KVA Uninterruptable Power Supply (UPS). - The Manual Bypass switch in the BYPASSED TO ALTERNATE position The Backup AC power input breaker CB301 has tripped open to the 1AD481. The power supplied to distribution panel 1AJ481 will be _____ because the load was on the _____. (Reference Attachment B-4 provided)
CORRECT ANSWER	a
Answer A	lost; Backup AC source
Answer B	lost; Static Inverter output
Answer C	maintained; Normal AC source
Answer D	maintained; Static Switch output
EXPLANATION OF ANSWER A	Correct answer. output is lost because the load was on the Backup AC source. Contacts 3 and 4 are open. Contacts 1,2, and 5 are closed
EXPLANATION OF ANSWER B	Static inverter output is isolated. Contact 4 and static switch output contact 3 are open.
EXPLANATION OF ANSWER C	Static inverter output is isolated. Contact 4 and static switch output contact 3 are open.
EXPLANATION OF ANSWER D	Static inverter output is isolated. Contact 4 and static switch output contact 3 are open.

Matrix#	62
RO QUESTION #	62
SRO QUESTION #	62
KACatalogID	263000K5.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to D.C. ELECTRICAL DISTRIBUTION: Hydrogen generation during battery charging
RORating	2.6
SRORating	2.9
System	263000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	reason battery room exhaust required
REFERENCE	HC.OP-SO.PJ-0001 Prerequist 2.1.2
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000069-13 Obj 18
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power - The RCIC 250 VDC battery is being returned to service following maintenance - Maintenance requests 1BD433 250 VDC battery charger placed in service for testing Why is it necessary to have Battery Room Exhaust ventilation in-service prior to this testing?
CORRECT ANSWER	c
Answer A	Permissive to energize battery room duct heater
Answer B	Prevent overheating of the battery charger rectifier stack
Answer C	Prevent accumulation of hydrogen gas in the battery room
Answer D	Maintain battery room temperature above Tech Spec minimum
EXPLANATION OF ANSWER A	Supply ventilation is a separate system which regulates temperature in the battery room. Duct heater has own flow switch in supply duct.
EXPLANATION OF ANSWER B	Battery chargers are not cooled by battery room ventilation
EXPLANATION OF ANSWER C	Correct answer. Battery room ventilation removes hydrogen gas generated from the battery charging process.
EXPLANATION OF ANSWER D	Supply ventilation is a separate system which regulates temperature in the battery room.

Matrix#	63
RO QUESTION #	63
SRO QUESTION #	63
KACatalogID	271000K1.06
KA Statement	Knowledge of the physical connections and/or cause- effect relationships between OFFGAS SYSTEM and the following: Main steam system
RORating	2.8
SRORating	2.9
System	271000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	Effects of loss of Main Steam supply
REFERENCE	LP -0301-000.00H-000054-13
Material Provided	
LEARNING OBJECTIVE	LP-0301-000.00H-000054-13 Obj 14a
QSOURCE	new
QUESTION	Given the following: - The plant is operating at 100% power - Main Condenser vacuum is being maintained with Steam Jet Air Ejectors - Feed Gas Recombiner Preheater outlet temperatures are lowering - Feed Gas Recombiner temperatures are lowering Which one of the following would cause this change?
CORRECT ANSWER	c
Answer A	Feed Gas Pre-heater drain pot low level
Answer B	Feed Gas Cooler Condenser high RACS flow
Answer C	Main Steam Supply Valve HA-HV-5640 is closed
Answer D	Feed Gas Recombiner strip heater power supply is lost
EXPLANATION OF ANSWER A	P/H outlet temp will remain the same or go up
EXPLANATION OF ANSWER B	would not effect P/H outlet temp or recombiner temp
EXPLANATION OF ANSWER C	Correct answer. Main steam supplies the preheater. P/H outlet temp will lower. Less H2 will recombine therefore recombiner temps will also lower
EXPLANATION OF ANSWER D	While recombiner temperature may lower, preheater outlet temp will not change. Heater trip is not a recombiner trip.

Matrix#	64
RO QUESTION #	64
SRO QUESTION #	64
KACatalogID	271000K6.02
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the OFFGAS SYSTEM : Process radiation monitoring system
RORating	3
SRORating	3.2
System	271000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Effect of Post Treatment RMS failure on Offgas
REFERENCE	LP 0302-000.00H-000221-07
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000221-07 Obj 3.f
QSOURCE	NRC HC 12/98 exam significantly modified
QUESTION	Given the following conditions: - The plant is operating at 100 percent power - Offgas Post Treatment Radiation monitor channel RE-6281 fails upscale What actions would occur as a result of this failure?
CORRECT ANSWER	b
Answer A	An isolation of the Offgas Recombiner System
Answer B	An alarm only from the Radiation Monitor System
Answer C	Trip of the Hydrogen Water Injection System (HWCI)
Answer D	Loss of Offgas Post Treatment manual sample capability
EXPLANATION OF ANSWER A	alarm only
EXPLANATION OF ANSWER B	Correct answer. Post Treatment monitors cause alarm only
EXPLANATION OF ANSWER C	alarm only
EXPLANATION OF ANSWER D	alarm only

Matrix#	65
RO QUESTION #	65
SRO QUESTION #	65
KACatalogID	272000K4.02
KA Statement	Knowledge of RADIATION MONITORING System design feature(s) and/or interlocks which provide for the following: Automatic actions to contain the radioactive release in the event that the predetermined release rates are exceeded
RORating	3.7
SRORating	4.1
System	272000
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	LRW Discharge Isolations
REFERENCE	HC.OP-SO.SP-00001 rev
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000086-08 Obj 5
QSOURCE	New
QUESTION	Given the following conditions: - The plant is operating at 100 percent power - A severe marsh grass intrusion is in progress at the Service Water Intake Structure - Over the next hour, the operators note that cooling tower basin level is lowering due to insufficient Service Water makeup to the basin - Radwaste Operators report the Liquid Radwaste Discharge line to the Cooling Tower Blowdown (CTB) just isolated in the middle of a tank release What caused the Liquid Radwaste discharge isolation?
CORRECT ANSWER	c
Answer A	Low Sample Flow to the Liquid Radwaste Radiation Monitor
Answer B	Low Sample Flow to the Cooling Tower Blowdown Radiation Monitor
Answer C	Low CTB Weir Flow to the Liquid Radwaste Radiation Monitor
Answer D	Low CTB Weir Flow to the Cooling Tower Blowdown Radiation Monitor
EXPLANATION OF ANSWER A	Low sample flow is an isolation but not from the conditions given
EXPLANATION OF ANSWER B	No isolation functions associated with CTB RMS, Alarms only
EXPLANATION OF ANSWER C	Correct answer. Low CTB weir flow isolates the LRW Discharge line
EXPLANATION OF ANSWER D	Low Weir flow isolation inputs to the LRW Rad monitor, not the CTB Rad monitor

Matrix#	66
RO QUESTION #	66
SRO QUESTION #	66
KACatalogID	290003A4.03
KA Statement	Ability to manually operate and/or monitor in the control room: Reposition dampers
RORating	2.8
SRORating	2.8
System	290003 Control Room HVAC
Type	PS
Tier#	2
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	How does CR HVAC Respond to Hi Rad
REFERENCE	0301-000.00H-000096-08 page 13
Material Provided	
LEARNING OBJECTIVE	0301-000.00H-000096-08 Obj 2
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power with all systems normal - A LOCA with a containment breach has occurred - Control Room HVAC has sensed high radiation in the intake plenum Which one of the following decribes the automatic response?
CORRECT ANSWER	a
Answer A	CREF dampers re-position to the OA mode. The Control Room envelope maintains a positive pressure
Answer B	CREF dampers re-position to the OA mode. The Control Room envelope maintains a negative pressure
Answer C	CREF dampers re-position to the RECIRC mode. The Control Room envelope maintains a positive pressure
Answer D	CREF dampers re-position to the RECIRC mode. The Control Room envelope maintains a negative pressure
EXPLANATION OF ANSWER A	Correct answer. With all systems normal CR HVAC is in the OA mode. When initation signal starts CREF in ISOLATE, still stays in OA mode. Must manually select RECIRC mode
EXPLANATION OF ANSWER B	With all systems normal and initiation signal, CREF starts in the OA positive pressure mode
EXPLANATION OF ANSWER C	Will be in OA mode with all systems normal. Will remain in OA mode during LOCA
EXPLANATION OF ANSWER D	Will be in OA mode with all systems normal positive pressure. Will stay in OA mode during LOCA. Will maintain positive pressure.

Matrix#	67
RO QUESTION #	67
SRO QUESTION #	67
KACatalogID	2.1.32
KA Statement	Ability to explain and apply all system limits and precautions.
RORating	3.4
SRORating	3.8
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Caution for Loss of Offsite Power
REFERENCE	HC.OP-AB.ZZ-0135(Q) Rev 19 Caution 4.2
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000068-18 Obj 12
QSOURCE	NRC HC Exam 10/99 unmodified
QUESTION	During a loss of offsite power, the operator is cautioned NOT to acknowledge the flashing "Trip" pushbuttons for the 4.16 KV Vital 1E Bus infeed breakers. Which of the following will occur if these pushbuttons are pressed?
CORRECT ANSWER	a
Answer A	The Diesel Generator associated with that bus will NOT load and its output breaker will NOT close.
Answer B	The Diesel Generator associated with that bus, if running, will trip and its output breaker will open.
Answer C	That bus' alternate feeder breaker will trip open and then immediately reclose when the pushbutton is released.
Answer D	That bus' feeder breaker will attempt to close until the anti-pump feature causes it to trip open and remain open.
EXPLANATION OF ANSWER A	Correct answer. IAW HCOPABZZ-0135 caution 4.2
EXPLANATION OF ANSWER B	Will not trip the EDG output breaker once closed
EXPLANATION OF ANSWER C	The alternate breaker will not trip open when the normal breaker trip PB is depressed
EXPLANATION OF ANSWER D	The normally closed infeed breaker would have AUTO CLOSE BLOCK selected, preventing breaker reclosure

Matrix#	68
RO QUESTION #	68
SRO QUESTION #	68
KACatalogID	2.2.26
KA Statement	Knowledge of refueling administrative requirements.
RORating	2.5
SRORating	3.7
System	
Type	GEN
Tier#	3
Question level	B
COGNITIVE LEVEL	F
Question Topic	Admin req for fuel moves
REFERENCE	NC.NA-AP.ZZ-0049
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000113-10 Obj 62
QSOURCE	NRC HC Exam 10/99 unmodified
QUESTION	Given the following: - The plant is in a refueling outage. - Fuel movement is in progress. - The refueling bridge operator is moving a fuel assembly from the pool to the core when the control room RO reports to the Refuel Floor that the SRM in the destination core quadrant has failed upscale and will not be returned to service for 4 hours. What action is required by the Refuel bridge operator if the assembly has been raised halfway out of the Fuel Pool storage racks?
CORRECT ANSWER	b
Answer A	Suspend the move, leave the bundle as-is until the SRM is repaired
Answer B	Suspend the move, insert the fuel assembly to its previous position in the fuel pool
Answer C	Continue the move, it can be completed because of symmetric SRM coverage
Answer D	Continue the move, stopping just short of the core to allow for repair of the SRM
EXPLANATION OF ANSWER A	a bundle should not be left suspended when it can be placed in a known safe position that is consistent with the current move on the fuel moving plan
EXPLANATION OF ANSWER B	Correct answer.The procedure and TS required that the SRM in the quadrant be operable. The move cannot be completed and a bundle should not be left suspended when it can be placed in a known safe position that is consistent with the current move on the fuel moving plan.
EXPLANATION OF ANSWER C	The procedure and TS required that the SRM in the quadrant be operable
EXPLANATION OF ANSWER D	The procedure and TS required that the SRM in the quadrant be operable. A bundle should not be left suspended when it can be placed in a known safe position that is consistent with the current move on the fuel moving plan

Matrix#	69
RO QUESTION #	69
SRO QUESTION #	69
KACatalogID	2.2.22
KA Statement	Knowledge of limiting conditions for operations and safety limits.
RORating	3.4
SRORating	4.1
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Long Term Single Loop Operation vs. MCPR
REFERENCE	TS, Section 2.1
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 1
QSOURCE	NRC HC Exam 10/99 slightly modified
QUESTION	Which of the following is the Technical Specification limit value that is changed during single loop operation?
CORRECT ANSWER	b
Answer A	Linear Heat Generation Rate thermal limit
Answer B	Minimum Critical Power Ratio Safety Limit
Answer C	The size of the Exit region of the Power/Flow Map
Answer D	The Temperature/Pressure limits for heatups and cooldowns
EXPLANATION OF ANSWER A	- not changed per the COLR
EXPLANATION OF ANSWER B	Correct answer. MCPR changes from 1.09 to 1.11
EXPLANATION OF ANSWER C	- the Tech Spec provides a blown up section of the P/F Map but it doesn't change the region
EXPLANATION OF ANSWER D	- no changes for single loop

Matrix#	70
RO QUESTION #	70
SRO QUESTION #	70
KACatalogID	2.3.11
KA Statement	Ability to control radiation releases.
RORating	2.7
SRORating	3.2
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Reason for entering EOP-0103 on RB ventilation high radiation
REFERENCE	EOP 103/4 bases page 2
Material Provided	EOP's without entry condidtions
LEARNING OBJECTIVE	LP 0303-000.00H-000127-12 Obj 2
QSOURCE	HCEB slightly modified
QUESTION	Which of the following is the reason why HC.OP-EO.ZZ-0103/4(Q)-FC, "Reactor Building & Rad Release Control", is entered on high Reactor Building HVAC Exhaust radiation levels?
CORRECT ANSWER	c
Answer A	Provides rapid, initial indications of the size of the off-site releases.
Answer B	Required to direct the operator to verify RBVS initiates and FRVS isolates.
Answer C	These high radiation conditions are indication that radioactivity is being released and automatic system isolations may not have occurred.
Answer D	These high radiation levels can only be caused by the primary containment parameters monitored and controlled by the EOP.
EXPLANATION OF ANSWER A	EOP 103/4 does not quantify leak size
EXPLANATION OF ANSWER B	RBVS isolates and FRVS initiates. AB - 126 also performs this verification
EXPLANATION OF ANSWER C	Correct answer. EOP - 103/4 bases page 2.
EXPLANATION OF ANSWER D	Secondary containment, not primary. Parameters monitored do not cause high radiation but may be indication of a source.

Matrix#	71
RO QUESTION #	71
SRO QUESTION #	71
KACatalogID	2.4.48
KA Statement	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.
RORating	3.5
SRORating	3.8
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	H
Question Topic	assessment of conditions leading to automatic TACS swap
REFERENCE	HC.OP-SO.EG-0001
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000080-15 Obj 7e
QSOURCE	HCEB Significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power - SACS loop "A" supplying TACS - SACS pump "B" supplying loop "B" loads - SACS pump "D" is in AUTO NOT running - The Loop "A" expansion tank level instrument (LSLLL-2508A) fails downscale Which of the below describes the SACS/TACS alignment as a result of this instrument failure? ASSUME NO OPERATOR ACTIONS
CORRECT ANSWER	c
Answer A	"A" SACS Pump trips because "A" TACS Supply and Return valves close
Answer B	"A" SACS Pump trips because the failed transmitter inputs into the pump trip logic
Answer C	"D" SACS Pump auto starts because "A" TACS Supply and Return valves close
Answer D	"D" SACS Pump auto starts because the failed transmitter inputs into the pump start logic
EXPLANATION OF ANSWER A	A SACS pump does not trip
EXPLANATION OF ANSWER B	A SACS pump does not trip. The transmitter does not input into the pump trip logic
EXPLANATION OF ANSWER C	Correct answer. A supply and return valves close causing a low TACS flow auto start of the opposite loop pump in auto (D)
EXPLANATION OF ANSWER D	The transmitter does not input into the pump start logic

Matrix#	72
RO QUESTION #	72
SRO QUESTION #	72
KACatalogID	2.4.20
KA Statement	Knowledge of operational implications of EOP warnings, cautions, and notes.
RORating	3.3
SRORating	4.0
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Drywell Temperature vs. Level Indication - RPV Saturation Curve
REFERENCE	HC.OP-EO.ZZ-0302 Caution 5.1.2
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000158-02 Obj 2
QSOURCE	Dresden exam significantly modified
QUESTION	Given the following: - A failure to scram has occurred - HC.OP-EO.ZZ-0302 "De-energization of Scram Solenoids" is being implemented - The operator is cautioned to pull the SDV Vent and Drain fuses first Fuse removal in the sequence listed in HC.OP-EO.ZZ-0302 is required to prevent _____ .
CORRECT ANSWER	d
Answer A	inconsistent rod patterns from occurring
Answer B	manual bypass of the Hi SDV Level Scram
Answer C	damage to the CRD mechanism inner tubes
Answer D	creating a flow path from the RPV to the Reactor Building
EXPLANATION OF ANSWER A	Inconsistent rod patterns will occur as a result of pulling fuses per EOP-302. Rods scrammed by pulling each set of fuses are not organized into any pattern.
EXPLANATION OF ANSWER B	pulling these fuses does not bypass the SDV Scram
EXPLANATION OF ANSWER C	Fuses are pulled to isolate the SDV
EXPLANATION OF ANSWER D	Correct answer. SDV Vent ant drain fuses are pulled first to isolate the SDV from the RX Building which would be a primary containment bypass LOCA.

Matrix#	73
RO QUESTION #	73
SRO QUESTION #	73
KACatalogID	2.4.18
KA Statement	Knowledge of the specific bases for EOPs.
RORating	2.7
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Bases for DW Temp limit of 340 DegF
REFERENCE	HC.OP-EO.ZZ-0102 Bases DW/T-3
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-000126A Obj 7
QSOURCE	HCEB Significantly modified
QUESTION	Given the following: - A steam break has occurred in the drywell coincident with a failure to scram. - Drywell Temperature is 345 DegF - Emergency depressurization was not initiated at the required drywell temperature. Which one of the following describes the effect of this condition?
CORRECT ANSWER	b
Answer A	The ability to monitor drywell temperature is lost
Answer B	The ability to emergency depressurize cannot be assured
Answer C	Design temperature of SRV tailpipes have been exceeded
Answer D	Drywell spray, if initiated, will rapidly vaporize causing a rapid pressure increase
EXPLANATION OF ANSWER A	Drywell temperature monitoring instruments would still be on scale
EXPLANATION OF ANSWER B	Correct answer. 340 degf is the maximun temperature which ADS is qualified to operate
EXPLANATION OF ANSWER C	SRV taipipe design temperature limits will not be exceeded
EXPLANATION OF ANSWER D	pressure will decrease

Matrix#	74
RO QUESTION #	74
SRO QUESTION #	74
KACatalogID	295013 2.4.49
KA Statement	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls: High Suppression Pool Temperature
RORating	4.0
SRORating	4.0
System	295013
Type	PE
Tier#	1
Question level	BOTH
COGNITIVE LEVEL	F
Question Topic	Immediate actions for Stuck open SRV
REFERENCE	HC.OP-AB.ZZ-0121 (Q) immediate operator actions
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000114 Obj 1
QSOURCE	NRC HC Exam 10/99 Slightly Modified
QUESTION	Given the following conditions: - Unit is operating at 75% power - One Safety Relief Valve opened one minute ago and will not close by pressing the associated SRV Open and Close pushbuttons - Suppression Pool average water temperature is 115 degrees F and rising - "SV ENRGZ" light is NOT lit Which one of the following is a required action for these conditions?
CORRECT ANSWER	c
Answer A	Reduce pressure set to 840 psig
Answer B	Reduce the Reactor Recirculation Pumps to 45% speed
Answer C	Place the Reactor Mode Switch in the "Shutdown" position
Answer D	Rotate "Max Combined Flow" potentiometer fully counter-clockwise
EXPLANATION OF ANSWER A	Immediate operator action 3.4 to lower pressure set to no less than 850 psig
EXPLANATION OF ANSWER B	Reduce recirc to minumum
EXPLANATION OF ANSWER C	Correct answer. Immediate operator action 3.5
EXPLANATION OF ANSWER D	will cause reactor pressure to rise and subsequent RX scram

Matrix#	75
RO QUESTION #	75
SRO QUESTION #	
KACatalogID	295004AA2.01
KA Statement	Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER : Cause of partial or complete loss of D.C. power.....
RORating	3.2
SRORating	3.6
System	295004
Type	PE
Tier#	1
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Effect of loss of RCIC 250 VDC battery
REFERENCE	HC.OP-AB.ZZ-0149(Q) rev 3
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000030-18 Obj 10.d & 10.f
QSOURCE	HC Audit Exam 9/99 unmodified
QUESTION	The plant is operating at 100% power with all systems normal when the 250 VDC TROUBLE overhead annunciator alarms. The Auxiliary Building Operator reports that the 250 VDC supply breaker to RCIC MCC has tripped open. Which of the following describes the effect on the RCIC System? RCIC will respond to _____ .
CORRECT ANSWER	c
Answer A	Low RPV Water Level 2 initiation
Answer B	Low Condensate Storage Tank Level
Answer C	High Room Temperature isolation
Answer D	High Suppression Chamber Water Level
EXPLANATION OF ANSWER A	Valves which activate on Low RPV Water Level 2 initiation signal are powered from RCIC 250 VDC MCC which is de-energized.
EXPLANATION OF ANSWER B	Valves which activate on Low Condensate Storage Tank Level signal are powered from RCIC 250VDC MCC which is de-energized.
EXPLANATION OF ANSWER C	Correct answer. Isolation valves are powered from 1E 480 VAC busses
EXPLANATION OF ANSWER D	HPCI only has valves which activate on High Suppression Chamber Water Level signals.

Matrix#	76
RO QUESTION #	76
SRO QUESTION #	
KACatalogID	295010AK2.05
KA Statement	Knowledge of the interrelations between HIGH DRYWELL PRESSURE and the following: Drywell cooling and ventilation.....
RORating	3.7
SRORating	3.8
System	295010
Type	PE
Tier#	1
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Effects of Hi Drywell press on Drywell coolers
REFERENCE	HC.OP-SO.SM-0001 Table SM-20, HC.OP-EO.ZZ-0102 Bases DW/T-4
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-000033-12 Obj 5b
QSOURCE	HCEB Significantly modified
QUESTION	Given the following conditions: - A LOCA has occurred - Drywell pressure is 1.8 psig - HPCI is controlling reactor vessel level - ALL ECCS have responded as designed Which of the following describes the response of the Drywell Ventilation System (DVS) to this event? The DVS fans _____ .
CORRECT ANSWER	a
Answer A	tripped and may be manually restarted, if necessary
Answer B	tripped, but were restored within 13 seconds by the LOCA sequencer
Answer C	continue to operate, but on low speed until manually switched to high speed
Answer D	continue to operate, but the cooling coils must be manually aligned to RACS
EXPLANATION OF ANSWER A	Correct answer. Fans trip when their MCC's are load shed. Fans may be manually restarted after MCC 1E breakers overidden and closed and DW Sprays are secured.
EXPLANATION OF ANSWER B	Not restored by the LOCA sequencer
EXPLANATION OF ANSWER C	All fans trip. Low speed is only used for Integrated Leak Testing
EXPLANATION OF ANSWER D	All fans trip.

Matrix#	77
RO QUESTION #	77
SRO QUESTION #	
KACatalogID	295012AA2.01
KA Statement	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE : Drywell temperature.....
RORating	3.8
SRORating	3.9
System	295012
Type	PE
Tier#	1
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Loss of TB Chilled water on Drywell Air temperature
REFERENCE	HC.OP-AB.ZZ-201 Rev 2 Step 4.2
Material Provided	
LEARNING OBJECTIVE	LP 0301-000-00H-000081-16 OBJ 13g
QSOURCE	HC Audit exam 9/99 Significantly modified
QUESTION	Given the following: - The plant is operating at 100% power with all systems normal - A large pipe break occurs in the Turbine Building Chilled Water system - All Turbine Building Chilled Water Pumps trip on low flow - Turbine Building Floor Drain Sump levels are rising Which of the following operator actions BY ITSELF will control Drywell temperature before a reactor shutdown is required?
CORRECT ANSWER	a
Answer A	Manually align Drywell cooling to RACS
Answer B	Press the OPEN RACS PB on 10C651E
Answer C	Place additional Drywell Cooling Fans in service
Answer D	Place additional Drywell Cooler cooling coils in service
EXPLANATION OF ANSWER A	Correct answer. Subequent actions of HC.OP-AB.ZZ-0201 rev 2 Swap to RACS for DW Cooling
EXPLANATION OF ANSWER B	Will cross-tie RACS to the damaged chilled water system and cause a loss of RACS.
EXPLANATION OF ANSWER C	All 16 DW Cooler fans are already running
EXPLANATION OF ANSWER D	Will not help unless because chilled water to drywell cooling is lost

Matrix#	78
RO QUESTION #	78
SRO QUESTION #	
KACatalogID	295029EK1.01
KA Statement	Knowledge of the operational implications of the following concepts as they apply to HIGH SUPPRESSION POOL WATER LEVEL : Containment integrity.....
RORating	3.4
SRORating	3.7
System	295029
Type	PE
Tier#	1
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Use of Containment level formula to determine PC level and convert to equivalent SP level
REFERENCE	EOP 102 step SP/L-13
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-00125A-12 Obj 11
QSOURCE	New
QUESTION	Given the following: - A LOCA has occurred - RPV Pressure is 15 psig - Drywell Pressure is 15 psig and steady - Drywell Sprays are in service - Adequate core cooling is assured - HPCI Suction is lined up to the Suppression Pool - HPCI Min Flow isolation valve has been cycled - HPCI suction pressure is 21 psig and steady - Suppression Pool water level instruments are not working - Instrument Zero = 94 inches Containment level Which one of the following is the Suppression Pool level indication equivalent to current Primary Containment water level?
CORRECT ANSWER	a
Answer A	98.0 inches
Answer B	110.0 inches
Answer C	144.5 inches
Answer D	192.0 inches
EXPLANATION OF ANSWER A	Correct answer. Alternate SP level indication from HPCI Suction press should be used. [(21-15)*2.3] + 2.2 = 16 ft or 192 inches -94inches difference between Instrument zero and Torus bottom equals 98 inches
EXPLANATION OF ANSWER B	Wrong because result of 16 inches used instead of feet. [(21-15)*2.3] + 2.2 =16 ft. 16 inches + 94 inches = 110 inches. 94 inches difference between Instrument zero and Torus bottom has been added.
EXPLANATION OF ANSWER C	Wrong because Drywell pressure not subtracted and inches used instead of feet [(21)*2.3] + 2.2 = 50.5 ft. 94 inches difference between Instrument zero and Torus bottom has been added. 50.5 inches + 94 inches = 144.5 inches
EXPLANATION OF ANSWER D	[(21-15)*2.3] + 2.2 = 16 ft or 192 inches. 94inches difference between Instrument zero and Torus bottom has not been subtracted

Matrix#	79
RO QUESTION #	79
SRO QUESTION #	
KACatalogID	215005A3.07
KA Statement	Ability to monitor automatic operations of the APRM/LPRM including:RPS status
RORating	3.8
SRORating	3.8
System	215005
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	LPRM/ARPM relationships, Inop APRM
REFERENCE	Technical Specification Table 3.3.1-1 notation (e)
Material Provided	Drawing of E APRM backpanel indicator lights
LEARNING OBJECTIVE	0302-000.00H-000016-03 Obj 10
QSOURCE	HCEB Unmodified
QUESTION	Given the following: - "E" APRM back-panel indicator lights are as shown on the attached drawing Which of the following correctly describes APRM "E" operation? (Reference Attachment R-5 provided)
CORRECT ANSWER	b
Answer A	The APRM is inoperable when LPRM 1D-32-49 is bypassed
Answer B	The APRM is inoperable when LPRM 3B-32-33 is bypassed
Answer C	The INOP lamp should illuminate when LPRM 1D-32-49 is bypassed
Answer D	The INOP lamp should illuminate when LPRM 3B-32-33 is bypassed
EXPLANATION OF ANSWER A	Operable because APRM "E" still has at least 2 LPRMs at every level
EXPLANATION OF ANSWER B	correct answer. The APRM is administratively inoperable due to less than 2 LPRMs per level for the "E" APRM
EXPLANATION OF ANSWER C	INOP light will NOT come on because "E" APRM has 14 LPRMs remaining
EXPLANATION OF ANSWER D	INOP light will NOT come on because "E" APRM has 14 LPRMs remaining

Matrix#	80
RO QUESTION #	80
SRO QUESTION #	
KACatalogID	201002K4.05
KA Statement	Knowledge of REACTOR MANUAL CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: Notch override rod withdrawal
RORating	3.3
SRORating	3.3
System	201002
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Continous withdraw interlocks
REFERENCE	HC.OP-SO.SF-0001 Attachment 1
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000007-13 Obj 3
QSOURCE	New
QUESTION	Given the following : - A plant startup is in progress - Reactor power is 25 percent - Control rods are being withdrawn using the startup rod pull sequence - Permission is granted by the RE to use the Continuous Withdraw PB - The selected rod is being continuously withdrawn from 00 to 48 when the operator notices the rod has stopped moving at notch 22 Which one of the following indicates a condition that would interrupt the continuous withdrawal of the control rod?
CORRECT ANSWER	d
Answer A	DATA FAULTS light illuminated
Answer B	ROD SELECTION BLOCK light illuminated
Answer C	RWM Display WITHDRAW BLOCK illuminated
Answer D	ACTIVITY CONTROLS DISAGREE light illuminated
EXPLANATION OF ANSWER A	Lights when 2 more more even reed switches made up. Does not prevent continuous rod withdraw
EXPLANATION OF ANSWER B	Prevents selection of another rod than the one currently selected. Does not stop continuous rod withdraw
EXPLANATION OF ANSWER C	Indication only at this power level. Still permits rod withdraw. Does not prevent continuous rod withdraw
EXPLANATION OF ANSWER D	Correct answer. Stops all rod motion except scram.

Matrix#	81
RO QUESTION #	81
SRO QUESTION #	
KACatalogID	202001K6.06
KA Statement	Knowledge of the effect that a loss or malfunction of the following will have on the RECIRCULATION SYSTEM : Recirculation system motor-generator sets: Plant-Specific
RORating	3.1
SRORating	3.1
System	202001
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Loss of MG speed control
REFERENCE	HC.OP-SO.BB-0002 page 12 3.3.5
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000019-17 Obj 22b
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power - The "A" Reactor Recirculation MG Set speed control signal fails downscale Which one of the following describes the effect of this failure on the "A" Reactor Recirc loop?
CORRECT ANSWER	a
Answer A	Scoop tube lockup
Answer B	Overhead alarm only
Answer C	Drive Motor breaker trips
Answer D	Runback to 30% speed limiter
EXPLANATION OF ANSWER A	Correct Answer. Loss of speed control signal high or low is a scoop tube lock
EXPLANATION OF ANSWER B	does not actuate this overhead alarm.
EXPLANATION OF ANSWER C	Not a Drive motor trip
EXPLANATION OF ANSWER D	Not a runback signal

Matrix#	82
RO QUESTION #	82
SRO QUESTION #	
KACatalogID	203000K4.07
KA Statement	Knowledge of RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) design feature(s) and/or interlocks which provide for the following:Emergency generator load sequencing
RORating	3.7
SRORating	3.9
System	203000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Pump start delay Emergency power
REFERENCE	Tech Specs 3.3.3.2.e
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000028-15 Obj 14.b
QSOURCE	New
QUESTION	Given the following: - A valid high drywell pressure condition is reached coincident with a loss of offsite power - Only 'A' and 'C' emergency diesel generators have started The _____ RHR pump will start _____ seconds after its respective diesel output breaker closes.
CORRECT ANSWER	a
Answer A	A; zero (immediately)
Answer B	A; five
Answer C	C; six
Answer D	C; ten
EXPLANATION OF ANSWER A	Correct answer. Starts immediately (<1 second) after gen output breaker closes when NO offsite power is available
EXPLANATION OF ANSWER B	time delay for offsite power available
EXPLANATION OF ANSWER C	time delay for Core Spray on emergency power.
EXPLANATION OF ANSWER D	time delay for Core Spray for offsite power available

Matrix#	83
RO QUESTION #	83
SRO QUESTION #	
KACatalogID	215001A3.03
KA Statement	Ability to monitor automatic operations of the TRAVERSING IN-CORE PROBE including: Valve operation: Not-BWR1
RORating	2.5*
SRORating	2.6*
System	215001
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	TIP Panel Indications in automatic operation
REFERENCE	LP 0302-000.00H-000018-10 page 23. HC.RE.FT-SE-0001
Material Provided	LP 0302-000.00H-000018-10 Figure 10
LEARNING OBJECTIVE	LP 0302-000.00H-000018-10 Obj 8
QSOURCE	New
QUESTION	Given the following conditions: - The plant is operating at 40 percent power - The Reactor Engineer is performing LPRM calibrations - The "C" Transvering Incore Probe (TIP) is being used - The "C" TIP drawer Mode switch is in AUTO - The READY light is illuminated - The FWD light is extinguished - The REVERSE light is extinguished - The VALVE light is dim Which one of the following is the current location for the "C" probe? (Reference Attachment R-6 provided)
CORRECT ANSWER	c
Answer A	In the indexer
Answer B	At the core top
Answer C	In the shield pig
Answer D	At the core bottom
EXPLANATION OF ANSWER A	VALVE light would be bright signifying the ball valve is open. Ready light would be lit.
EXPLANATION OF ANSWER B	VALVE light would be bright signifying the ball valve is open
EXPLANATION OF ANSWER C	Correct answer. VALVE light is dim when Ball valve is closed. With the drive in Auto, the Ball valve will be closed when the probe is in the shield. The Ready light and the Valve light status are needed to determine the position of the probe with no motion in Auto
EXPLANATION OF ANSWER D	VALVE light would be bright signifying the ball valve is open. Auto

Matrix#	84
RO QUESTION #	84
SRO QUESTION #	
KACatalogID	218000K2.01
KA Statement	Knowledge of electrical power supplies to the following: ADS logic
RORating	3.1*
SRORating	3.3
System	218000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Power supply to B ADS Logic
REFERENCE	0302-000.00H-000029-16 page 28
Material Provided	
LEARNING OBJECTIVE	0302-000.00H-000029-16 Obj 10.d
QSOURCE	HCEB Unmodified
QUESTION	Given the following conditions: - The Automatic Depressurization System (ADS) Manual Initiation Channel "B" and "F" pushbuttons (S6B and S6F) have been armed and depressed - There is no Safety Relief Valve response Which one of the following failures caused this system response?
CORRECT ANSWER	b
Answer A	Loss of 125 VDC Bus 1BD318
Answer B	Loss of 125 VDC Bus 1BD417
Answer C	Loss of 120 VAC Bus 1BJ481
Answer D	Loss of 120 VAC Bus 1BJ482
EXPLANATION OF ANSWER A	Non 1E 125 VDC
EXPLANATION OF ANSWER B	Correct answer. Solenoids and logic powered from 1E 125 VDC
EXPLANATION OF ANSWER C	powers trip units and optical isolators
EXPLANATION OF ANSWER D	powers amber logic status lights

Matrix#	85
RO QUESTION #	85
SRO QUESTION #	
KACatalogID	218000K3.02
KA Statement	Knowledge of the effect that a loss or malfunction of the AUTOMATIC DEPRESSURIZATION SYSTEM will have on following: Ability to rapidly depressurize the reactor
RORating	4.5*
SRORating	4.6*
System	218000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Minimum Number of SRVs for Emergency Depressurization
REFERENCE	LP-0302-000.00H-000130 Pg. 12-13,
Material Provided	
LEARNING OBJECTIVE	LP-0302-000.00H-000130 Pg. 12-13, OBJ 3
QSOURCE	NRC HC Exam 10/99 Slightly modified
QUESTION	Which of the following describes the EOP bases for the minimum required number of SRVs for Emergency Depressurization?
CORRECT ANSWER	b
Answer A	To ensure steam removal rate during a LOCA is adequate to prevent exceeding the drywell design pressure
Answer B	To ensure steam removal rate from the core is sufficient to remove all decay heat with adequate ECCS makeup flow
Answer C	To ensure the pressure reduction rate will allow low pressure injection systems to inject soon enough to recover level before core uncovery occurs
Answer D	To ensure the pressure reduction rate will allow low pressure injection systems to inject prior to reaching the Minimum Steam Cooling RPV Water Level
EXPLANATION OF ANSWER A	not an ED issue
EXPLANATION OF ANSWER B	Correct answer. 4 SRV's required for adequate steam flow to assure adequate core cooling
EXPLANATION OF ANSWER C	not a concern during ED
EXPLANATION OF ANSWER D	not an ED consideration

Matrix#	86
RO QUESTION #	86
SRO QUESTION #	
KACatalogID	219000A1.02
KA Statement	Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE controls including: System flow
RORating	3.5
SRORating	3.5
System	219000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Sytem flow response to LPCI initiation
REFERENCE	HC.OP-SO.BC-0001
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000028-14 Obj 9
QSOURCE	new
QUESTION	Given the following: - The plant has scrammed on full MSIV closure - "B" RHR loop is in Suppression Pool Cooling at rated flow - HPCI is running in pressure control mode - Reactor level is +35 inches - Reactor pressure is 900 psig - "B" RHR loop has just initiated on High Drywell Pressure Assuming no other operator action, which one of the following describes the "B" RHR loop flow as indicated by the Flow Recorder FR-R608B after the "B" RHR Loop valves respond and conditions have stabilized?
CORRECT ANSWER	d
Answer A	Flow increases because the RHR F017B Injection Valve has opened
Answer B	Flow decreases because the RHR F007B Min Flow Valve has closed
Answer C	Flow increases because the RHR F048B HX Bypass Valve has opened
Answer D	Flow decreases because the RHR F024B Test Return Valve has closed
EXPLANATION OF ANSWER A	F017B will not open due to reactor pressure
EXPLANATION OF ANSWER B	would be true if RHR remained in Suppression pool cooling lineup. In this case flow does not decrease BECAUSE of the F007B. It decreases because F024B closes.
EXPLANATION OF ANSWER C	F048 will open on hi DW pressure but flow decreases because the F024B closes
EXPLANATION OF ANSWER D	Correct answer. Because F024B is not overridden prior to High DW pressure, it will stroke closed.

Matrix#	87
RO QUESTION #	87
SRO QUESTION #	
KACatalogID	233000K3.08
KA Statement	Knowledge of the effect that a loss or malfunction of the FUEL POOL COOLING AND CLEAN-UP will have on following: †Refueling operations
RORating	2.9
SRORating	3.5
System	233000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Actions to improve cavity clarity
REFERENCE	HC.OP-SO.EC-0001 5.7.5
Material Provided	
LEARNING OBJECTIVE	LP- 0301-000.00H.000043-14 Obj 3
QSOURCE	New
QUESTION	Given the following: - The plant is in a Refueling outage - Fuel moves are in progress IAW HC.OP-IO.ZZ-0009 "Refueling Operations" - The Refueling SRO reports visability in the core region is marginal and has stopped fuel moves Which one of the following operator actions will improve water clarity?
CORRECT ANSWER	b
Answer A	Align RHR in Fuel Pool Cooling Assist
Answer B	Shift FPCC return to the Reactor cavity
Answer C	Place a Reactor Recirculation Pump in-service
Answer D	Bypass the RWCU Regenerative Heat Exchanger
EXPLANATION OF ANSWER A	Improves decay heat removal. Will make clarity worse
EXPLANATION OF ANSWER B	Correct answer. IAW HCOPSOEC-0001 section 5.7.5. Flowpath concentrates cleanup in the reactor cavity area. HCOPIOZZ-0009 3.7.2 Control room personnel shall direct and control plant systems with activities in-progress on the refuel floor
EXPLANATION OF ANSWER C	Improves core circulation. Will make clarity worse
EXPLANATION OF ANSWER D	Will assist cooling but not clarity issue

Matrix#	88
RO QUESTION #	88
SRO QUESTION #	
KACatalogID	245000A2.03
KA Statement	Ability to (a) predict the impacts of the following on the MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of Condenser Vacuum
RORating	3.5
SRORating	3.6
System	245000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Immediate Actions for Loss of Vacuum
REFERENCE	HC-OP.AB.ZZ-0208 Immediate operator actions
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-00114 Obj 1
QSOURCE	NRC HC Exam 10/99 unmodified
QUESTION	Plant conditions are as follows: - Reactor Power is at 70% - Condenser Vacuum is 5.1" Hg absolute and degrading Which one of the following states a required Immediate Operator Action?

CORRECT ANSWER	d
Answer A	Place the standby SJAE in-service
Answer B	Ensure turbine sealing steam pressure is normal
Answer C	Trip the Main Turbine if 350 Mwe is reached and back pressure exceeds 5.0" Hg ABS
Answer D	Reduce reactor power as necessary to maintain condenser vacuum less than 5.0" Hg ABS
EXPLANATION OF ANSWER A	a, b, c are discussed under subsequent actions
EXPLANATION OF ANSWER B	a, b, c are discussed under subsequent actions
EXPLANATION OF ANSWER C	a, b, c are discussed under subsequent actions
EXPLANATION OF ANSWER D	Correct answer. Only "d" is an immediate action. Low Vac Alarm 5.1" HGA

Matrix#	89
RO QUESTION #	89
SRO QUESTION #	
KACatalogID	272000K3.02
KA Statement	Knowledge of the effect that a loss or malfunction of the RADIATION MONITORING System will have on following: †Station gaseous effluent release monitoring
RORating	3.1
SRORating	3.8
System	272000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Effect of SPV detector failure
REFERENCE	0302-000.00H-000221-07 page 48
Material Provided	LP 0302-000.00H-000221-07 Fig 24
LEARNING OBJECTIVE	0302-000.00H-000221-07 Obj 3b
QSOURCE	new
QUESTION	Given the following: - The plant is operating at 100 percent power - The South Plant Vent Low Range Gas RE-4875B detector has failed downscale What effect does this failure have on the capability of the South Plant Vent RMS skid to monitor gaseous releases? (ASSUME NO OPERATOR ACTIONS TAKEN) (Reference Attachment R-7 provided)
CORRECT ANSWER	a
Answer A	Particulate, Iodine, & Gas (PIG) monitoring is still accurate
Answer B	Particulate, Iodine, & Gas (PIG) monitoring is no longer accurate
Answer C	The Bypass pump starts and the High Range monitor is still accurate
Answer D	The Bypass pump starts and the High Range monitor is no longer accurate
EXPLANATION OF ANSWER A	Correct answer. PIG monitoring flowpath stays in service and is accurate when the low range monitor fails low
EXPLANATION OF ANSWER B	PIG monitoring flowpath stays in service and is accurate when the low range monitor fails low
EXPLANATION OF ANSWER C	The BYPASS Pump will not start. The High range will not be accurate
EXPLANATION OF ANSWER D	The BYPASS Pump will not start.

Matrix#	90
RO QUESTION #	90
SRO QUESTION #	
KACatalogID	288000A4.01
KA Statement	Ability to manually operate and/or monitor in the control room:Start and stop fans
RORating	3.1
SRORating	2.9
System	288000 Plant Ventilation systems
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Restarting DW Coolers after trip
REFERENCE	HC.OP-SO-GT-0001
Material Provided	LP 0302-000.00H-000033-12 Figure 3
LEARNING OBJECTIVE	LP 0302-000.00H-000033-12 Obj 5
QSOURCE	New
QUESTION	Given the following: - An I&C tech has inadvertantly generated a spurious "A" channel LOCA signal - Drywell Cooler fans have tripped - The LOCA signal has been reset - All tripped MCC breakers have been reclosed What actions must be performed to restore each Drywell Cooler Fan to service? The _____ PB must be pressed followed by the _____ PB. (Reference Attachment R-8 provided)
CORRECT ANSWER	d
Answer A	MAN; AUTO
Answer B	MAN; START HI
Answer C	STOP; AUTO
Answer D	STOP; START HI
EXPLANATION OF ANSWER A	Will not restart fan
EXPLANATION OF ANSWER B	Stop PB must be pressed
EXPLANATION OF ANSWER C	Start HI must be pressed to start fan
EXPLANATION OF ANSWER D	Correct answer. Stop must be pressed to reset trip logic. START Hi starts the fan

Matrix#	91
RO QUESTION #	91
SRO QUESTION #	
KACatalogID	300000K1.02
KA Statement	Knowledge of the connections and / or cause effect relationships between INSTRUMENT AIR SYSTEM and the following: Service air
RORating	2.7
SRORating	2.8
System	300000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Effect of Service air leak on instrument air
REFERENCE	HC.OP-AB.ZZ-0131
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000075-14 Obj 19 b
QSOURCE	HCEB Significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power - A leak has occurred in the Service Air Header Select the automatic response to the Service Air header leak. If _____ Air header pressure has lowered to _____ .
CORRECT ANSWER	a
Answer A	Instrument; 83 psig, the Emergency Instrument Air Compressor is running
Answer B	Instrument; 87 psig, the 1AF104 Instrument Air Dryer is on line
Answer C	Service; 93 psig, the Standby Service Air Compressor is running
Answer D	Service; 95 psig, the Service Air Supply header isolation valve closes
EXPLANATION OF ANSWER A	Correct answer. EIAC Auto starts on <85 psig IA header pressure
EXPLANATION OF ANSWER B	Goes on line at 85 psig
EXPLANATION OF ANSWER C	starts at <92 Service air receiver pressure
EXPLANATION OF ANSWER D	closes at 70 psig instrument air header pressure

Matrix#	92
RO QUESTION #	92
SRO QUESTION #	
KACatalogID	2.1.8
KA Statement	Ability to coordinate personnel activities outside the control room.
RORating	3.8
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Controling equip from local panels
REFERENCE	HC.OP-IO.ZZ-0008(Q)
Material Provided	
LEARNING OBJECTIVE	LP 0301-000.00H-000028-15 Obj 15
QSOURCE	HCEB Significantly modified
QUESTION	Given the following conditions: - The Control Room has been evacuated in accordance with HC.OP-AB.ZZ-0130(Q), "Control Room Evacuation" - Control has been established at the Remote Shutdown Panel (RSP) in accordance with HC.OP-IO.ZZ-0008(Q), "Shutdown From Outside Control Room" - All RSP Transfer switches have been placed to Emergency - RCIC is operating, maintaining reactor water level at +35 inches - Safety Relief Valves (SRV) are being used to control pressure - No other operator actions have been taken Which of the following must be placed in-service from the local breaker panels if the 10B460 Unit Substation infeed breaker trips open?
CORRECT ANSWER	c
Answer A	"D" Station Service Water Pump
Answer B	HPCI Turbine in pressure control mode
Answer C	RHR Pump in Suppression Pool Cooling
Answer D	RCIC Gland Seal Condenser Condensate Pump
EXPLANATION OF ANSWER A	Can be operated from the RSP. Not affected by bus loss
EXPLANATION OF ANSWER B	HPCI cannot be operated locally other than to stop the turbine. SRV's will not be affected by the bus loss.
EXPLANATION OF ANSWER C	Correct answer. B RHR valve control capability would be lost requiring A RHR to be operated from the local breaker panels.
EXPLANATION OF ANSWER D	Operated from the RSP manually

Matrix#	93
RO QUESTION #	93
SRO QUESTION #	
KACatalogID	2.1.22
KA Statement	Ability to determine Mode of Operation.
RORating	2.8
SRORating	3.3
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Op Cond Max temp limit change during hydrostatic testing
REFERENCE	Tech spec definitions and TS 3.10.8
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 5
QSOURCE	New
QUESTION	Given the following: - Reactor vessel hydrostatic testing is in progress - Reactor coolant temperature is 199 degF - Secondary Containment is in effect Which one of the following describes the Operational Condition and maximum reactor coolant temperature allowed by Technical Specifications for these conditions?
CORRECT ANSWER	d
Answer A	Operational Condition 3 and 200 degF
Answer B	Operational Condition 3 and 212 degF
Answer C	Operational Condition 4 and 200 degF
Answer D	Operational Condition 4 and 212 degF
EXPLANATION OF ANSWER A	Change to OC 3 not permitted
EXPLANATION OF ANSWER B	Change to OC 3 not permitted
EXPLANATION OF ANSWER C	Change to max temp of 212 permitted.
EXPLANATION OF ANSWER D	Correct answer. Temperature change to 212 is permitted. This is not considered a OC change to Condition 3

Matrix#	94
RO QUESTION #	94
SRO QUESTION #	
KACatalogID	2.2.33
KA Statement	Knowledge of control rod programing
RORating	2.5
SRORating	2.9
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	F
Question Topic	power to flow control
REFERENCE	HC.OP-AB.ZZ-0118 rev 11
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000114- 05
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 94% reactor power - Core Flow is 93% - A significant feedwater heating loss occurs, and reactor power increases to 98% In accordance with HC.OP-AB.ZZ-0118 "Loss of Feedwater Heaters", the required actions are to reduce power to _____.
CORRECT ANSWER	a
Answer A	74%
Answer B	80%
Answer C	89%
Answer D	94%
EXPLANATION OF ANSWER A	Correct answer. Immediately reduce power with recirc byat least 20% of the original value then insert control rods using the stuff sheet to prevent a scram
EXPLANATION OF ANSWER B	Only 14 %. Must be reduced at least 20 percent on a significant feedwater heating loss.
EXPLANATION OF ANSWER C	Only 5%. Must be reduced at least 20 percent on a significant feedwater heating loss.
EXPLANATION OF ANSWER D	Actions for a minor loss. Stem states loss SIGNIFICANT. Must be reduced at least 20 percent on a significant feedwater heating loss.

Matrix#	95
RO QUESTION #	95
SRO QUESTION #	
KACatalogID	2.3.9
KA Statement	Knowledge of the process for performing a containment purge.

RORating	2.5
SRORating	3.4
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Knowledge of containment purge permit
REFERENCE	Tech Spec 3.6.1.8 HC.OP-Ap.ZZ-0104Q
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	0301-000.00H-000032-13 Obj 15
QSOURCE	NRC Exam 10/99 slightly modified
QUESTION	To ensure compliance with Tech Specs, administrative controls are placed on opening the drywell and suppression chamber purge system supply and exhaust isolation valves. Which one of the following correctly describes the OPERATIONAL CONDITIONS requiring a permit and the TIME PERIOD for which the permit is valid IAW HC.OP-AP.ZZ-0104(Q) "Administrative Control of Containment Atmosphere Control (GS) Valve Open Time"?

CORRECT ANSWER	d
Answer A	Any Operational Condition; any rolling 24 hour period
Answer B	Any Operational Condition; that calendar day ending at 2400
Answer C	Operational Condition 1, 2, or 3; any rolling 24 hour period
Answer D	Operational Condition 1, 2, or 3; that calendar day ending at 2400
EXPLANATION OF ANSWER A	Operational Condition 1, 2, or 3; one calendar day ending at 2400
EXPLANATION OF ANSWER B	Operational Condition 1, 2, or 3;
EXPLANATION OF ANSWER C	one calendar day ending at 2400
EXPLANATION OF ANSWER D	Correct answer. Operating Condition 1, 2, or 3; one calendar day ending at 2400

Matrix#	96
RO QUESTION #	96
SRO QUESTION #	
KACatalogID	2.3.10
KA Statement	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.
RORating	2.9
SRORating	3.3
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Independent Verification in High Rad Areas
REFERENCE	NC.NA-AP.ZZ-0005 Attachment 6 1.4
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000113-10 Obj 14
QSOURCE	HCEB Unmodified
QUESTION	During the performance of Independent Verification of an ECCS valve lineup, some of the valves that need to be verified are located in Locked High Radiation Areas. Estimates indicate that a dose of 100 mrem could be received during the performance of the verification. Which one of the following describes the Independent Verification method required?
CORRECT ANSWER	b
Answer A	Hands On
Answer B	Assessment of system parameters
Answer C	A OFF-NORMAL report position review
Answer D	Must be performed by a licensed operator
EXPLANATION OF ANSWER A	Hands On not required if cumulative dose >10 mrem
EXPLANATION OF ANSWER B	Correct answer. NAAP5 Attachment 6 step 1.4 states IV shall be accomplished by observing appropriate parameters and HANDS ON is not required if >10 mrem cumulative dose
EXPLANATION OF ANSWER C	Does not meet requirements for IV
EXPLANATION OF ANSWER D	No requirement for IV to be performed by Licensed Operator

Matrix#	97
RO QUESTION #	97
SRO QUESTION #	
KACatalogID	2.4.11
KA Statement	Knowledge of abnormal condition procedures.

RORating	3.4
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Methods for monitoring APRM oscillations when operating in the instability region.
REFERENCE	HC.OP-AB.ZZ-0300
Material Provided	HC.OP-AB.ZZ-0300 Attachment 1
LEARNING OBJECTIVE	LP 0302-000.00H-00114-05
QSOURCE	HCEB Unmodified
QUESTION	A trip of a recirculation pump has resulted in operation in the "Exit" region of the power to flow map. Which of the following lists two indications which are both acceptable for monitoring for power oscillations? (Reference Attachment R-9 provided)

CORRECT ANSWER	d
Answer A	CRIDs and LPRM meters
Answer B	APRM Chart recorders and CRIDs
Answer C	LPRM meters and SPDS computer
Answer D	APRM Chart Recorders and period meters
EXPLANATION OF ANSWER A	Process Computer, CRIDS, and SPDS should not be used
EXPLANATION OF ANSWER B	Process Computer, CRIDS, and SPDS should not be used
EXPLANATION OF ANSWER C	Process Computer, CRIDS, and SPDS should not be used
EXPLANATION OF ANSWER D	correct answer. Hardwired neutron monitoring should be used.

Matrix#	98
RO QUESTION #	98
SRO QUESTION #	
KACatalogID	295036 2.4.21
KA Statement	Knowledge of the parameters and logic used to assess the status of safety functions including: 1. Reactivity control 2. Core cooling and heat removal 3. Reactor coolant system integrity 4. Containment conditions 5. Radioactivity release control: Secondary Containment Hi Sump/Area Water Level
RORating	3.7
SRORating	4.3
System	295036
Type	PE
Tier#	1
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Reactor Scram - reactor building control
REFERENCE	EOP 103 bases RB-16 page 8 of 16
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-000127-12 Obj 5
QSOURCE	HCEB Unmodified
QUESTION	EOP HC.OP-EO.ZZ-0103/4 "Reactor Building & Rad Release Control", directs the operator to initiate a manual reactor scram before any floor level reaches its Maximum Safe Op Floor Level. The reason the Reactor Building Control EOP, directs scramming the reactor is to _____ .

CORRECT ANSWER	c
Answer A	ensure the reactor can be made subcritical by the insertion of all control rods
Answer B	ensure the reactor is shutdown prior to initiating a rapid reactor depressurization
Answer C	reduce the energy discharged through an unisolable primary leak to decay heat levels
Answer D	reduce the discharge rate through a primary system rupture to within the removal capacities of the sump pumps
EXPLANATION OF ANSWER A	Not reason reactor scrammed at this step
EXPLANATION OF ANSWER B	Not reason reactor scrammed at this step
EXPLANATION OF ANSWER C	Correct answer. EOP bases step RB-16
EXPLANATION OF ANSWER D	Not reason reactor scrammed at this step

Matrix#	99
RO QUESTION #	99
SRO QUESTION #	
KACatalogID	216000G2.2.12
KA Statement	Knowledge of surveillance procedures.

RORating	3.0
SRORating	3.4
System	216000
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	H
Question Topic	Knowledge of Channel Check requirements of surveillance procedures
REFERENCE	HC.OP-ST.SH-0001(Q) rev 16 page 21 of 33
Material Provided	HC.OP-ST.SH-0001(Q) rev 16 page 21 of 33
LEARNING OBJECTIVE	LP 0301-000.00H-000002-14 Obj 20
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power - Accident Monitoring Instrumentation Channel Check - Monthly is being performed - PAMS reactor pressure indicator PI-3684A (red) is reading 1050 psig - PAMS reactor pressure indicator PR-3684B (red) is reading 1000 psig Which of the following action(s) (if any) are required? (Reference Attachment R-10 provided)

CORRECT ANSWER	b
Answer A	Channel Check is SAT, no action required
Answer B	Channel Check is SAT, System Engineer notification required
Answer C	Channel Check is UNSAT, Tech Spec entry is required
Answer D	Channel Check is UNSAT, System Engineer notification required
EXPLANATION OF ANSWER A	System Engineer notifcation is required
EXPLANATION OF ANSWER B	Correct answer. Variance is less than 75 psig but greater than 1/2 required value
EXPLANATION OF ANSWER C	Channel check should be marked SAT. PAM instrumentation Tech spec is satisfied. Candidate may incorrectly associate 1050 reading above 1037 scram setpoint as an unsat channel check. System Engr notification required
EXPLANATION OF ANSWER D	Channel check should be marked SAT. PAM instrumentation Tech spec is satisfied. Candidate may incorrectly associate 1050 reading above 1037 scram setpoint as an unsat channel check

Matrix#	100
RO QUESTION #	100
SRO QUESTION #	
KACatalogID	239002K1.06
KA Statement	Knowledge of the physical connections and/or cause- effect relationships between RELIEF/SAFETY VALVES and the following: Drywell instrument air/ drywell pneumatics: Plant-Specific
RORating	3.4
SRORating	3.6
System	239002 SRV's
Type	PS
Tier#	2
Question level	RO
COGNITIVE LEVEL	F
Question Topic	Why use sustained SRV opening to depressurize with no PCIG or air.
REFERENCE	HC.OP-EO.ZZ-0101 Bases step RC/P-6
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	0302-000.00H-00124C-14 Obj 8
QSOURCE	HCEB Slightly Modified
QUESTION	Following a reactor scram with a Main Steam Isolation Valve Closure, the plant is being depressurized using the Safety Relief Valves (SRV) in accordance with HC.OP-EO.ZZ-0101 "Reactor / Pressure Vessel (RPV) Control". Which of the following is the reason why the depressurization must be accomplished with "sustained" versus "intermittent" SRV openings if PCIG and instrument air are lost to the SRVs?
CORRECT ANSWER	c
Answer A	This ensures SRVs remain available to cooldown to below the shutdown cooling interlocks.
Answer B	This limits SRV usage to prevent exceeding the 100 DegF/hr cooldown limit during the depressurization.
Answer C	This conserves the SRVs for later use if the Emergency Operating Procedures require Emergency Depressurization.
Answer D	This directs the operator to complete the depressurization without regard to the Technical Specification cooldown limits before control of the SRVs is lost.
EXPLANATION OF ANSWER A	Not the bases for sustained openings
EXPLANATION OF ANSWER B	Not the bases for sustained openings
EXPLANATION OF ANSWER C	Correct answer. Conserves gas for possible future Emergency Depressurization
EXPLANATION OF ANSWER D	This step does not permit exceeding cooldown limits

Matrix#	101
RO QUESTION #	
SRO QUESTION #	75
KACatalogID	2.2.10
KA Statement	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.
RORating	1.9
SRORating	3.3
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Temporary Modifications
REFERENCE	Control of Temporary Modifications NC.NA-AP.ZZ-0013 Rev. 7, Step 5.3 & 5.1.14
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000113-10 Obj 37
QSOURCE	NRC HC Exam 10/99 slightly modified
QUESTION	Which one of the following is a temporary modification IAW NC.NA-AP.ZZ-0013(Q)"Control of Temporary Modifications"?
CORRECT ANSWER	d
Answer A	Temporary shielding installed in accordance with an approved rad pro procedure
Answer B	Connection of a sample tube to a sampling connection to obtain an RHR system sample
Answer C	Installation of a pressure gauge on an instrument tap during the conduct of a system pressure test
Answer D	Bypassing a malfunctioning local alarm panel annunciator which cannot be immediately cleared by corrective maintenance
EXPLANATION OF ANSWER A	not considered a t-mod IAW 5.1.14.D
EXPLANATION OF ANSWER B	not considered a t-mod IAW 5.1.14.B
EXPLANATION OF ANSWER C	not considered a t-mod IAW 5.1.14.A
EXPLANATION OF ANSWER D	Correct answer. TMOD IAW NAAP 0013 IAW 5.3

Matrix#	102
RO QUESTION #	
SRO QUESTION #	76
KACatalogID	2.4.45
KA Statement	Ability to prioritize and interpret the significance of each annunciator or alarm.
RORating	3.3
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Evaluate Overheads for priority
REFERENCE	Tech Specs 3.8.2.1.d, 3.7.4, 3.3.9, 3.6.1.4
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0301-000.00H-000059-12 Obj 18b
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power with all systems normal - Over a one hour period, several overhead annunciators come into alarm - Assume all of the alarms are UNRELATED Which one of the following has the most limiting LCO?
CORRECT ANSWER	c
Answer A	Battery charger 1AD413 trips causing "125 VDC System Trouble" (D3 - E3)
Answer B	RCIC Jockey Pump trips causing "RCIC Inj Header Pressure Lo" (B1 - D1)
Answer C	Level 8 trip unit "C" failed causing "Feedwater 2/3 Logic Sensor Fail" (B1 - F5)
Answer D	Breaker for Seal Gas Sply Header Sply Shutoff MOV HV-5829A tripped causing "Inbd MSIV Sealing Sys Trouble" (A4 - A1)
EXPLANATION OF ANSWER A	not limiting because 1AD414 is available
EXPLANATION OF ANSWER B	14 day LCO for RCIC
EXPLANATION OF ANSWER C	Correct answer. 7 day LCO IAW TS 3.3.9
EXPLANATION OF ANSWER D	HV-5829A is NOT a PC isolation valve. 30 day LCO for MSIVSS

Matrix#	103
RO QUESTION #	
SRO QUESTION #	77
KACatalogID	2.2.17
KA Statement	Knowledge of the process for managing maintenance activities during power operations.
RORating	2.3
SRORating	3.5
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Retests for online Maintenance activities
REFERENCE	HC.OP-AP.ZZ-0108(Q) rev 17
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0301-000.00H-000026-17 Obj R18
QSOURCE	HC Audit 9/99 slightly modified
QUESTION	Given the following: - The plant is operating at 100% reactor power - HPCI is being retested following an on-line maintenance outage - HPCI Pump IST test is in progress at rated flow and pressure - HPCI Full Flow Test return valve BJ-HV-F008 has tripped its breaker with the valve in the partially open position - The Equipment Operator at the valve reports that the valve has seized and its motor has a burnt smell What effect does this have on HPCI Operability?
CORRECT ANSWER	c
Answer A	HPCI is operable because it has only lost testing capability
Answer B	HPCI is "operable but degraded" because it has lost testing capability
Answer C	HPCI is inoperable because it is NOT capable of meeting all surveillance requirements
Answer D	HPCI is "operable but non-conforming" because it is NOT capable of meeting all surveillance requirements
EXPLANATION OF ANSWER A	HPCI can not meet all Tech Spec surveillance requirements while F008 is stuck open.
EXPLANATION OF ANSWER B	HPCI is inoperable while F008 is open. Although HPCI can still inject full flow on an injection signal because F011 will auto close, TS Surveillance requirement 4.5.1.c.1 states that each automatic valve in the flowpath actuates to its correct position (closed).
EXPLANATION OF ANSWER C	Correct answer. Although HPCI can still inject full flow on an injection signal because F011 will auto close, TS Surveillance requirement 4.5.1.c.1 requires upon an initiation signal, each automatic valve in the flowpath actuates to its correct position.
EXPLANATION OF ANSWER D	operable but non conforming is not applicable

Matrix#	104
RO QUESTION #	
SRO QUESTION #	78
KACatalogID	2.2.18
KA Statement	Knowledge of the process for managing maintenance activities during shutdown operations.
RORating	2.3
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Operations with the Potential to Drain the RPV
REFERENCE	HC.OP-IO.ZZ-0005 Precaution 3.1
Material Provided	P&ID M-51 sht 1 and 2 marked for A RHR loop tag boundary
LEARNING OBJECTIVE	LP 00202-04 Obj 1c
QSOURCE	new
QUESTION	Given the following: - The plant is in Operational Condition 4 - Cold Shutdown making preparations for refueling - Maintenance activities are in progress on the "A" RHR System - "A" RHR Loop is Cleared & Tagged (C/T) and completely drained - "B" RHR is in Shutdown Cooling Which one of the following is an Operation with Potential to Drain the Reactor pressure Vessel (OPDRV)? (Reference Attachments S-5A & S-5B provided)
CORRECT ANSWER	d
Answer A	Disassembly of the "A" LPCI Pump for inspection
Answer B	Disassembly of the BC-HV-F041A LPCI Injection Testable Check Valve for inspection
Answer C	Temporary Tag Release of Drywell Spray Isolation BC-HV-F016A for stroke time testing
Answer D	Temporary Tag Release of Shutdown Cooling Suction BC-HV-F006A for stroke time testing
EXPLANATION OF ANSWER A	Blocking boundry would prevent OPDRV
EXPLANATION OF ANSWER B	Blocking boundry would prevent OPDRV
EXPLANATION OF ANSWER C	Blocked by closed downstream isolation valve BC-HV-F021A. Not an OPDRV with these conditions
EXPLANATION OF ANSWER D	Correct answer. F006A is a boundary blocking point between the in service SDC loop and A RHR. Stoke time testing of F006 would drain the RPV into the empty "A" RHR system and is therefore an OPDRV

Matrix#	105
RO QUESTION #	
SRO QUESTION #	79
KACatalogID	2.4.46
KA Statement	Ability to verify that the alarms are consistent with the plant conditions.
RORating	3.5
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Select appropriate procedure for given alarms (10cfr55.43-5)
REFERENCE	HC.OP-AB.ZZ-0110 Rev 4
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000022-16 Obj 17 b.
QSOURCE	New

QUESTION	Given the following conditions:
	
	- The plant is operating at 100% rated power
	- The following overhead annunciator alarms are received:
	  - MANUAL SCRAM
	  - DRYWELL PRESSURE HI-HI
	  - REACTOR SCRAM TRIP LOGIC A1
	  - REACTOR SCRAM TRIP LOGIC A2
	  - NSSSS MSIV LOGIC A INITIATED
	  - NSSSS MSIV LOGIC C INITIATED
	- Control rod positions and Main Generator output have not changed.
	
	Which procedure shall be immediately entered?

CORRECT ANSWER	c
Answer A	HC.OP-AB.ZZ-0000 "Scram"
Answer B	HC.OP-EO.ZZ-101A "ATWS RPV Control"
Answer C	HC.OP-AB.ZZ-0110 "Loss of an RPS Bus"
Answer D	HC.OP-EO.ZZ-102 "Primary Containment Control"
EXPLANATION OF ANSWER A	Only half scram. Full scram signal not present
EXPLANATION OF ANSWER B	Only half scram. Full scram signal not present therefore no ATWS
EXPLANATION OF ANSWER C	Correct answer. A RPS bus power supply lost causing a half RPS trip and half NSSSS isolation trip. Manual scram and Drywell Pressure HIHI alarms come in from either channel tripped. Therefore AB-110 should be immediately entered
EXPLANATION OF ANSWER D	High DW Pressure annunciator due to loss of logic power, not valid high pressure condition. Emergency condition does not exist, therefore EOP not entered.

Matrix#	106
RO QUESTION #	
SRO QUESTION #	80
KACatalogID	2.3.10
KA Statement	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.
RORating	2.9
SRORating	3.3
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Protective Action Recommendations
REFERENCE	ECG Attachment 4 General Emergency
Material Provided	ECG with Intro & Usage section removed
LEARNING OBJECTIVE	LP NEPECDTYSC rev 0 Obj 5
QSOURCE	New
QUESTION	Given the following: - A large break LOCA is in progress. - Multiple ECCS subsystems/trains have failed. - RPV Water level is -240 inches and steady - Drywell pressure is at 20 psig and slowly rising - You estimate Containment venting will need to be performed in 4 hours - There is NO radiological release in progress at this time - The weather is warm and sunny with wind direction FROM 182 Degrees at 5 MPH - The other ERO facilities HAVE NOT yet activated Which one of the following is the correct Predetermined Protective Action Recomendation?
CORRECT ANSWER	b
Answer A	Shelter ALL Sectors 0 to 5 miles
Answer B	Evacuate ALL Sectors 0 to 5 miles
Answer C	Evacuate ALL Sectors 0 to 5 miles, Evacuate Sectors NNW - N - NNE 5 to 10 miles, AND Shelter ALL remaining Sectors 5 to 10 miles
Answer D	Evacuate ALL Sectors 0 to 5 miles, Shelter Sectors NNW - N - NNE 5 to 10 miles, AND Shelter ALL remaining Sectors 5 to 10 miles
EXPLANATION OF ANSWER A	Shelter 0-5 miles only if travel extremely hazardous. No reason to assume hazardous travel with conditions stated.
EXPLANATION OF ANSWER B	Correct answer. PAR based on 9 points on the barrier table.EALs 3.1.1.b, 3.2.1.b/ 3.2.2.b and 3.3.1. Containment venting in NOT in progress or IMMINENT (<2 hrs). Down wind sectors are NNW - N - NNE
EXPLANATION OF ANSWER C	PAR based on 10 points and hazardous travel conditions.
EXPLANATION OF ANSWER D	Incorrect application of 10 point PAR

Matrix#	107
RO QUESTION #	
SRO QUESTION #	81
KACatalogID	2.2.25
KA Statement	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.
RORating	2.5
SRORating	3.7
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Tech spec bases for instrumentation setpoints
REFERENCE	Tech Spec bases B 3/4 3.2
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 10
QSOURCE	new
QUESTION	Upon reviewing an I&C calibration surveillance, an Isolation Actuation Instrumentation Trip unit is found to have the following data: - Desired Trip setpoint = 1.68 psig - As Left value = 1.81 psig Which one of the following describes the status of the trip unit? The trip unit is _____ .
CORRECT ANSWER	a
Answer A	Operable because it is within the allowable values of the safety analysis
Answer B	Operable because it is within the allowable values of the vender recommendations
Answer C	Inoperable because it is outside the allowable values of the Technical Specifications
Answer D	Inoperable because it is outside the allowable values of the ASME Boiler and Pressure Vessel Code
EXPLANATION OF ANSWER A	Correct answer. Operation is acceptable on the basis that the difference between the trip setpoint and the allowable value is an allowance for instrument drift specifically allocated for each trip unit in the safety analysis.
EXPLANATION OF ANSWER B	Vendor recommendations are not mentioned in the bases.
EXPLANATION OF ANSWER C	Operable, still within tech spec allowable range.
EXPLANATION OF ANSWER D	Operable

Matrix#	108
RO QUESTION #	
SRO QUESTION #	82
KACatalogID	2.1.34
KA Statement	Ability to maintain primary and secondary plant chemistry within allowable limits.
RORating	2.3
SRORating	2.9
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Chemistry limits
REFERENCE	Tech Spec 3.4.4
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	new
QUESTION	Given the following: - The plant was operating at 50% power when a resin intrusion occurred from Condensate Demineralizer operations. - Main Steam Line RMS only reached 1.5X NFPB. - 20 minutes later Chemistry reports: --Chlorides = 0.18 ppm --Conductivity = 14.2 umho/cm@25C --pH = 5.8 Which one of the following is the required Technical Specification action? Be in _____ .
CORRECT ANSWER	d
Answer A	Startup within the next 6 hours
Answer B	Startup within the next 12 hours
Answer C	Hot Shutdown within the next 6 hours
Answer D	Hot Shutdown within the next 12 hours
EXPLANATION OF ANSWER A	Wrong action. Wrong action time
EXPLANATION OF ANSWER B	Must be in Shutdown not Startup
EXPLANATION OF ANSWER C	Wrong action time
EXPLANATION OF ANSWER D	Correct answer. 3.4.4.a.3. Conductivity above 10 uMHO requires HSD within 12 hrs and CSD in next 24 hrs.

Matrix#	109
RO QUESTION #	
SRO QUESTION #	83
KACatalogID	2.4.36
KA Statement	Knowledge of chemistry / health physics tasks during emergency operations.
RORating	2.0
SRORating	2.8
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Event escalation due to RP field tasks during an emergency
REFERENCE	ECG Section 6.0 EAL 6.1.4.b
Material Provided	ECG with Intro & Usage section removed
LEARNING OBJECTIVE	LP NEPECDTYSC rev 0 Obj 3
QSOURCE	new
QUESTION	Given the following: - A transient that damaged fuel has occurred. - A release is in progress from an unknown source - An ALERT has been declared. - The OSC is manned - Field survey teams have been dispatched Which one of the following reports would require escalation to a SITE AREA EMERGENCY?
CORRECT ANSWER	c
Answer A	Field Measured Dose Rates are 25 mRem/hr at the MEA
Answer B	Field Measured Dose Rates are 76 mRem/hr at the Protected Area Boundary
Answer C	A Dose Assessment indicates a TEDE 4 Day Dose of 126 mRem at the MEA
Answer D	A Dose Assessment indicates a TEDE 4 Day Dose of 33 mRem at the Protected Area Boundary
EXPLANATION OF ANSWER A	A and D are wrong because the Field Measured Dose Rate limit of 100 mRem/hr is measured at the PAB
EXPLANATION OF ANSWER B	Less than the limit of 100 mRem/hr
EXPLANATION OF ANSWER C	Correct answer. The dose assessment limit is 100 mRem at the MEA and beyond. The MEA is beyond the Protectected Area Boundary.
EXPLANATION OF ANSWER D	Wrong because the TEDE limit is measured at the MEA

Matrix#	110
RO QUESTION #	
SRO QUESTION #	84
KACatalogID	2.2.24
KA Statement	Ability to analyze the affect of maintenance activities on LCO status.

RORating	2.6
SRORating	3.8
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Maint activities preventing mode change
REFERENCE	Tech Spec 3.0.4 Tech Spec 3.7.7
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	NRC Exam 10/99 slightly modified for format
QUESTION	Given the following: - A plant startup is in progress. - You just took shift turnover as the CRS. - Reactor power is 10% - Mode Switch is in Startup/Hot Standby - While reviewing the required paperwork prior to taking the Mode Switch to Run, you note that 2 Main Turbine Bypass Valves are inoperable. - No other problems are found. - The valves will NOT be repaired for at least 24 hours. Which one of the following actions would be required / permitted by Technical Specifications at this time? The Reactor Mode Switch _____ .
CORRECT ANSWER	a
Answer A	may be placed in Run
Answer B	must remain in Startup/Hot Standby
Answer C	must be placed in Shutdown within the next 4 hours
Answer D	may be placed in Run, but a thermal power increase is NOT permitted
EXPLANATION OF ANSWER A	Correct answer. Since Turbine bypass valves TS 3.7.7 is not applicable until 25 percent power, the mode switch may be placed in run and thermal power increase to <25%
EXPLANATION OF ANSWER B	May remain in Startup or moved to Run
EXPLANATION OF ANSWER C	May remain in Startup or moved to Run
EXPLANATION OF ANSWER D	Thermal power increase to <25 % allowed by 3.0.4

Matrix#	111
RO QUESTION #	
SRO QUESTION #	85
KACatalogID	201002K1.08
KA Statement	Knowledge of the physical connections and/or cause- effect relationships between REACTOR MANUAL CONTROL SYSTEM and the following: †Refueling interlocks: Plant-Specific
RORating	2.9
SRORating	3.3
System	201002
Type	PS
Tier#	2
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Reactor Mode Switch position interlocks
REFERENCE	Tech Spec bases 3/4 9.1
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 7
QSOURCE	new
QUESTION	The plant is in a refueling outage. The Reactor Mode Switch is locked in Refuel position. Which one of the following is the Technical Specifiction bases for locking the Reactor Mode Switch in Refuel position?
CORRECT ANSWER	a
Answer A	Ensures restrictions on control rod withdrawal are enforced
Answer B	Ensures restrictions on fuel movement sequence are enforced
Answer C	Ensures reactor internals are protected from excessive lifting operations
Answer D	Ensures the Control Rod Drive Mechanism is protected from damage due to inadvertent scram
EXPLANATION OF ANSWER A	Correct answer. part of the bases for Mode switch position
EXPLANATION OF ANSWER B	Can not enforce fuel movement sequence. Move sheets perform that function
EXPLANATION OF ANSWER C	Bases of fuel hoist load limits
EXPLANATION OF ANSWER D	Reactor internal damage specified in bases is due to inadvertant criticallity events. May reduce inadventant scrams but not the bases in Tech Specs

Matrix#	112
RO QUESTION #	
SRO QUESTION #	86
KACatalogID	2.1.11
KA Statement	Knowledge of less than one hour technical specification action statements for systems.
RORating	3.0
SRORating	3.8
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Less than one hour actions for 3.0.3
REFERENCE	Tech spec 3.0.3 Operator standards sh.op-dd.zz-0004 rev 4 4.1.5 page 15
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	SSES SRO exam 7/99 slightly modified
QUESTION	Given the following: - Hope Creek is operating at 100% power - Technical Specification LCO 3.0.3 was entered at 1400, May 25, 2000 - Preparations for Unit shutdown are in progress What are the HCGS administrative time guidelines for commencing the power reduction? Power reduction shall begin NOT later than _____ hours.
CORRECT ANSWER	b
Answer A	1430
Answer B	1500
Answer C	1600
Answer D	1800
EXPLANATION OF ANSWER A	30 minutes. Based on improper use of old guidance
EXPLANATION OF ANSWER B	Correct answer. Power reduction shall begin within one hour of entry into 3.0.3
EXPLANATION OF ANSWER C	2 hours. One hour to prepare and one hour to begin power reduction. Based on improper use of old admin guidance.
EXPLANATION OF ANSWER D	4 hours. One hour to prepare and 3 hours (1/2) of shutdown action time to get ot requires condition. Based on previous administrative guidance.

Matrix#	113
RO QUESTION #	
SRO QUESTION #	87
KACatalogID	2.1.12
KA Statement	Ability to apply technical specifications for a system.

RORating	2.9
SRORating	4.0
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	SLC concentration
REFERENCE	Tech Spec 3.1.5
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	HCEB significantly modified
QUESTION	Given the following: - The plant is operating at 100% power - Following the performance of both Standby Liquid Control (SLC) Pump Inservice tests, results from Chemistry analysis of the SLC Storage Tank are as follows: --- Sodium Pentaborate Weight - 5670 pounds --- Concentration - 13.7 weight % --- Volume - 4705 gallons Which one of the following describes the Technical Specification actions (if any) required?

CORRECT ANSWER	d
Answer A	No actions required
Answer B	Take actions of 3.0.3
Answer C	Take actions of 3.1.5.a.1
Answer D	Take actions of 3.1.5.a.2
EXPLANATION OF ANSWER A	Tech spec action required. SLC Tank concentration below minimum limits. Tank common to both systems
EXPLANATION OF ANSWER B	Tech spec 3.0.3 not applicable since a specific action time for both subsystems inoperable is specified within 3.1.5.
EXPLANATION OF ANSWER C	Wrong action time since both subsystems inop
EXPLANATION OF ANSWER D	Correct answer. The SLC tank is common to both subsystems, therefore both are inop. Action 3.1.5.a.2 applies

Matrix#	114
RO QUESTION #	
SRO QUESTION #	88
KACatalogID	2.1.5
KA Statement	Ability to locate and use procedures and directives related to shift staffing and activities.
RORating	2.3
SRORating	3.4
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Minimum staffing
REFERENCE	NC.NA-AP.ZZ-0005 / TC 6.2.2
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	NRC SRO Exam 10/99 unmodified
QUESTION	According to Technical Specifications, which one of the following identifies the only shift complement position that CANNOT be reduced temporarily by one less than the minimum to accommodate unexpected absence of on-duty shift crew members?
CORRECT ANSWER	c
Answer A	Shift Technical Advisor
Answer B	Control Room Supervisor
Answer C	Operations Superintendent
Answer D	Radiation Protection Technician
EXPLANATION OF ANSWER A	Can be short up to 2 hours
EXPLANATION OF ANSWER B	Can be short up to 2 hours
EXPLANATION OF ANSWER C	Correct answer. All except OS can be one short for up to 2 hours
EXPLANATION OF ANSWER D	Can be short up to 2 hours

Matrix#	115
RO QUESTION #	
SRO QUESTION #	89
KACatalogID	2.1.33
KA Statement	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.
RORating	3.4
SRORating	4.0
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	LCO limits
REFERENCE	Tech Specs 3.6.1.6 3.4.6.2 3.6.6.2
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 10
QSOURCE	new
QUESTION	Given the following: - A transient has occurred - Reactor power is 95% and steady - Drywell pressure is 1.4 psig and steady - Reactor water level is +15 inches and slowly recovering - Reactor pressure is 1023 psig and steady - Drywell oxygen concentration is 3.7 percent - CMFLPD is .936 - CMAPR is .819 - CMFCP is .821 Which one of the following actions is required by Technical Specifications?
CORRECT ANSWER	b
Answer A	Restore Drywell pressure to within the limit within 1 hour
Answer B	Restore reactor pressure to within the limit within 15 minutes
Answer C	Restore Drywell oxygen concentration to within the limit within 1 hour
Answer D	Restore the Linear Heat Generation Rate to within the limit within 15 minutes
EXPLANATION OF ANSWER A	LCO Limit is 1.5 psig
EXPLANATION OF ANSWER B	Correct answer. LCO limit is 1020 psig
EXPLANATION OF ANSWER C	LCO limit is 4% with 24 hours
EXPLANATION OF ANSWER D	Limit for LHGR is determined by CMFLPD of 1.0. Given CMFLPD is less than LCO limit

Matrix#	116
RO QUESTION #	
SRO QUESTION #	90
KACatalogID	2.2.23
KA Statement	Ability to track limiting conditions for operations.
RORating	2.6
SRORating	3.8
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Maximum Out Of Service Time calculation and application
REFERENCE	Operability definition, TS3.0.1 bases T.S 3.5.1.b
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	SSES SRO exam 7/99 significantly modified
QUESTION	Given the following: - The plant is operating at 100 percent power - LPCI Pump "C" became Inoperable 14 days ago at 0800 - LPCI Pump "D" became Inoperable yesterday at 0800 - LPCI Pump "C" was restored to Operable status today at 0800 Which one of the following correctly describes the required Technical Specification actions? LPCI Pump "D" must be restored to Operable status by 0800 _____ day(s) from today, or be in Hot Shutdown within the next 12 hours and Cold Shutdown within the following 24 hours.
CORRECT ANSWER	c
Answer A	Two
Answer B	Three
Answer C	Sixteen
Answer D	Twenty nine
EXPLANATION OF ANSWER A	Would be true if LPCI C still inop
EXPLANATION OF ANSWER B	72 hours. Would be true if third LPCI became inop today at 0800
EXPLANATION OF ANSWER C	Correct answer. Total AOT for one pump is 30 days. Since the pump outages overlapped, the 30 day clock did not reset. There are 30 - 14 = 16 days remaining in the LCO
EXPLANATION OF ANSWER D	Would be true if LPCI C was never inop or all LPCI were operable before D LPCI became inop

Matrix#	117
RO QUESTION #	
SRO QUESTION #	91
KACatalogID	264000G2.2.24
KA Statement	Ability to analyze the affect of maintenance activities on LCO status. Emergency Diesel Generators
RORating	2.6
SRORating	3.8
System	264000GEN
Type	PS
Tier#	2
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Emergent maintenance issue for EDG
REFERENCE	TS 3.8.1.1 action b
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	new
QUESTION	Given the following: - The "A" Emergency Diesel Generator Starting Air Compressor has broken its drive belts. - The Shift Maintenance Supervisor has estimated time for repair at 3 hours - "A" EDG Starting Air Receiver pressures are A - 305 psig and B - 310 psig, dropping at 40 psig per hour - All other receiver pressures are normal - Field operators report the "A" EDG Starting Air Receivers have been cross tied to the "C" EDG Starting Air Compressor - Starting Air Receiver pressures are currently A - 330 psig and B - 335 psig, and rising. Emergency Diesel Generator "A" is _____ . Surveillance Requirement(s) _____ must be performed.
CORRECT ANSWER	a
Answer A	operable; 4.8.1.1.1.a only
Answer B	operable; 4.8.1.1.1.a, 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for "A" diesel only
Answer C	inoperable; 4.8.1.1.1.a, 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for all diesels
Answer D	inoperable; 4.8.1.1.1.a, 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for "B", "C" and "D"" diesels
EXPLANATION OF ANSWER A	Correct answer. Minimum air pressure for Operability is 325 psig. Since this is not a potential common mode failure, no EDG's must be run. SR 4.8.1.1.1.a must be performed when any EDG becomes inop.
EXPLANATION OF ANSWER B	Since this is not a potential common mode failure, no EDG's must be run.
EXPLANATION OF ANSWER C	Since this is not a potential common mode failure, no EDG's must be run.
EXPLANATION OF ANSWER D	Since this is not a potential common mode failure, no EDG's must be run.

Matrix#	118
RO QUESTION #	
SRO QUESTION #	92
KACatalogID	2.3.4
KA Statement	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.
RORating	2.5
SRORating	3.1
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Emergency dose authorization
REFERENCE	EPIP 304H
Material Provided	
LEARNING OBJECTIVE	LP NEPECDTYSC rev 0 Obj 4.2
QSOURCE	new
QUESTION	Given the following conditions: - A General Emergency has been declared at Hope Creek - It has been determined that immediate action is required to operate specific plant equipment in order to stop an in-progress radiological release - A team of 2 operators and 2 technicians have been dispatched - The TSC has NOT yet activated - The Operations Superintendent (OS) is the Emergency Coordinator (EC) What is the MAXIMUM Total Effective Dose Equivalent (TEDE) radiation exposure that the OS can authorize those emergency personnel to receive?
CORRECT ANSWER	c
Answer A	2000 mRem
Answer B	4500 mRem
Answer C	25 Rem
Answer D	75 Rem
EXPLANATION OF ANSWER A	1st level Admin limit
EXPLANATION OF ANSWER B	Automatic authorization at ALERT
EXPLANATION OF ANSWER C	Correct answer. The OS acting as EDO until relieved, can authorize Planned Emergency Exposure Limit of 25 REM for Accident Mitigation. This limit is per individual team member
EXPLANATION OF ANSWER D	P.E.E.L for life saving efforts

Matrix#	119
RO QUESTION #	
SRO QUESTION #	93
KACatalogID	2.4.5
KA Statement	Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.
RORating	2.9
SRORating	3.6
System	
Type	GEN
Tier#	3
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Approval required to deviate from approved written procedures
REFERENCE	NA-AP-0005
Material Provided	
LEARNING OBJECTIVE	LP 0302-000.00H-000113-10 Obj 11
QSOURCE	NRC HC Exam 10/99 slightly modified
QUESTION	10 CFR 50.54(X) and NC.NA-AP.ZZ-0005, "Station Operating Practices," state, in part, "reasonable action that departs from a license condition or a Technical Specification in an emergency when this action is immediately needed to protect the public health and safety is permitted..." These actions shall be _____ .
CORRECT ANSWER	d
Answer A	approved by any member of the plant who holds an SRO license
Answer B	reported to the NRC within 15 minutes of the action being taken
Answer C	approved by the Operations Manager prior to the action taking place
Answer D	approved by a licensed SRO on the operating shift prior to the action taking place
EXPLANATION OF ANSWER A	The distractors are incorrect combinations of similar requirements stated in the procedure.
EXPLANATION OF ANSWER B	The distractors are incorrect combinations of similar requirements stated in the procedure.
EXPLANATION OF ANSWER C	The distractors are incorrect combinations of similar requirements stated in the procedure.
EXPLANATION OF ANSWER D	Correct answer.The reference states that an SRO on the crew must approve a 50.54(x) departure prior to the action.

Matrix#	120
RO QUESTION #	
SRO QUESTION #	94
KACatalogID	295005AA2.02
KA Statement	Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP : Turbine vibration.....
RORating	2.4
SRORating	2.7
System	295005
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Conservative operations
REFERENCE	AB-138, AB-200, SH.OP-DD.ZZ-0004
Material Provided	
LEARNING OBJECTIVE	LP0302-000.00H-I89007-3 Obj 1
QSOURCE	new
QUESTION	Given the following: - The plant is operating at 60% power for planned HCU maintenance - "A" Reactor Feedwater Pump is out of service for Lube Oil System repairs - Power level has been reduced to 45% due to "B" Reactor Feedwater Pump trip - Main Turbine vibrations have increased from the load reduction to 9.8 mils on bearing # 7 and are continuing to increase at 0.2 mils/minute - The shift electrician reports a blown fuse may have caused the "B" Reactor Feed Pump trip with a 15 minute estimated replacement time IAW SH.OP-AP.ZZ-0101 "Post Transient Response Requirements" and HC.OP-AB.ZZ-0138 "Main Turbine Trip/Malfunction", which one of the following actions shall be taken for the given conditions?
CORRECT ANSWER	b
Answer A	Reduce power sufficiently to offset power rise caused by lack of feedwater heating
Answer B	Reduce Reactor Recirc to minimum, then scram the reactor and trip the Main Turbine
Answer C	Immediately trip the Main Turbine, then scram the reactor when vibrations reach 14 mils
Answer D	Replace the fuse, then begin a power increase with Reactor Recirc when Main Turbine vibrations have stabilized
EXPLANATION OF ANSWER A	Subsequent action of AB-0138 in response to Main Turbine trip from low power. Does not address turbine vibration.
EXPLANATION OF ANSWER B	Correct answer. Based on requirements of SH.OP-AP.ZZ-0101 to stabilize the plant, conservative operations guidelines of SH.OP-DD.ZZ-0004 and time constraints and limits of AB-138 driven by the conditions.
EXPLANATION OF ANSWER C	Immediate turbine trip at 12 mils, not 14. After reducing Recirc to minimum, rx power will be above 30 percent.
EXPLANATION OF ANSWER D	Intentional power increase not allowed until transient effects understood, reviewed and approved. Reactivity manipulation shall be a controlled, well thought out process. Even if the fuse is replaced; in 11 minutes the turb will reach 12 mils and must be tripped.

Matrix#	121
RO QUESTION #	
SRO QUESTION #	95
KACatalogID	295006AA2.03
KA Statement	Ability to determine and/or interpret the following as they apply to SCRAM : Reactor water level.....
RORating	4
SRORating	4.2*
System	295006
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Interpret T/A Plots for loss of rpv inventory scram
REFERENCE	FSAR figure 15.2-8
Material Provided	FSAR figure 15.2-8
LEARNING OBJECTIVE	LP 0302-000.00H-000106-05 Obj 1 page 23
QSOURCE	new
QUESTION	Using the attached transient analysis plots of a reactor scram, which one of the following failures caused the scram? (Reference Attachment S-6 provided)
CORRECT ANSWER	d
Answer A	EHC Pressure Regulator Failure to 0%
Answer B	EHC Pressure Regulator Failure to 130%
Answer C	Master Level Control Setpoint Failure to +60 inches
Answer D	Master Level Control Setpoint Failure to zero inches
EXPLANATION OF ANSWER A	Causes RPV level to go down slightly then recovers with no scram
EXPLANATION OF ANSWER B	Causes RPV level to go up
EXPLANATION OF ANSWER C	Causes RPV level to go up
EXPLANATION OF ANSWER D	Correct answer. Master level control setpoint failing to zero inches low reduces feed flow and lowers rpv level to the scram setpoint

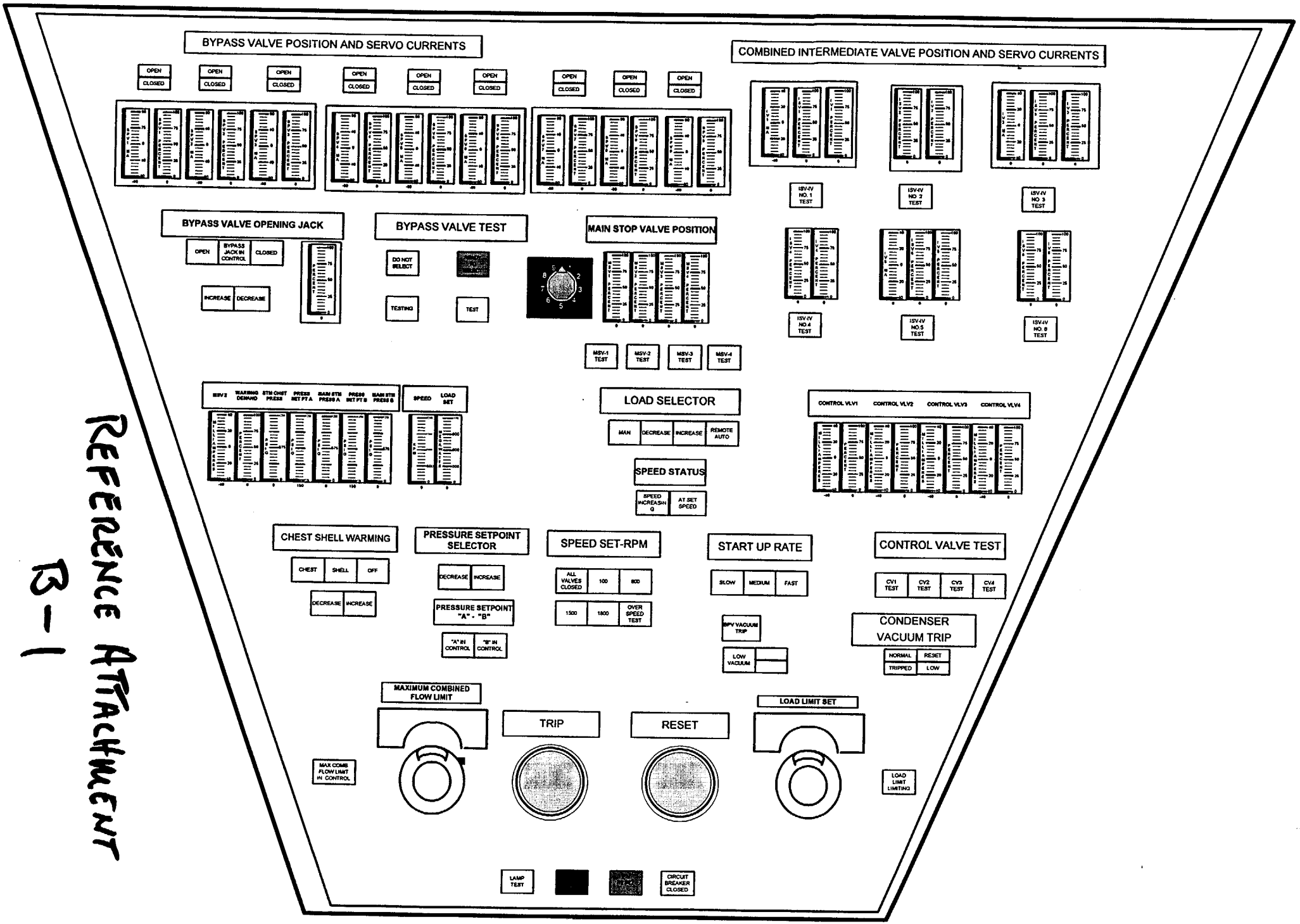
Matrix#	122
RO QUESTION #	
SRO QUESTION #	96
KACatalogID	295014AA2.05
KA Statement	Ability to determine and/or interpret the following as they apply to INADVERTENT REACTIVITY ADDITION : †Violation of safety limits.....
RORating	4.2*
SRORating	4.6
System	295014
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	F
Question Topic	Effect of Recirc runaway on MCPR
REFERENCE	Tech Spec Bases 2.1.2 Bases 3/4.2.3
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 7
QSOURCE	new
QUESTION	Which one of the following conditions has the greatest potential for exceeding the MCPR Safety Limit? _____ Reactor Recirc Pump(s) running at _____ speed on the 100 percent Rod Line?
CORRECT ANSWER	a
Answer A	One; minimum
Answer B	One; maximum
Answer C	Two; minimum
Answer D	Two; maximum
EXPLANATION OF ANSWER A	Correct answer. MCPR Safety limit is 1.11 with one pump operation due to higher uncertanties in operating parameters. Delta MCPR is higher at lower recirc pump speeds. This is the bases for the Kf Multiplier imposed at low pump speeds.
EXPLANATION OF ANSWER B	Delta MCPR is small from a recirc runaway from 100 % speed to the scoop tube stop.
EXPLANATION OF ANSWER C	Two pumps have lower uncertainty values.
EXPLANATION OF ANSWER D	Delta MCPR is small from a dual recirc runaway from 100 % speed to the scoop tube stop.

Matrix#	123
RO QUESTION #	
SRO QUESTION #	97
KACatalogID	295018AA2.02
KA Statement	Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : Cooling water temperature.....
RORating	3.1
SRORating	3.2
System	295018
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Interptret Tech Spec 3.7.1.3 effects on Station Service Water pump operability
REFERENCE	Tech spec 3.7.1.3, 3.7.1.1 and 3.7.1.2
Material Provided	Tech Specs without definitions, sections 2.0, 3.0/4.0, and bases
LEARNING OBJECTIVE	LP 0302-000.00H-000110-10 Obj 8
QSOURCE	new
QUESTION	Given the following: - The plant is at 100 % power - "B" Station Service Water Pump was just secured 5 minutes ago due to a failed upper motor bearing - Delaware River Water Temperature has spiked from 84.3 DegF to 87.5 DegF Which of the following actions will allow continued operation? _____the Yard Dump Valves HV-2356A/B and restore the inoperable Station Service Water Pump to Operable status within _____ or Hot Shutdown within 12 hours and Cold Shutdown within the following 24 hours.
CORRECT ANSWER	b
Answer A	Open; 72 hours
Answer B	Open; 30 days
Answer C	Close; 72 hours
Answer D	Close; 30 days
EXPLANATION OF ANSWER A	30 day lco provided river temp stays below 88 DegF 3.7.1.3
EXPLANATION OF ANSWER B	Correct answer. TS 3.7.1.3 directs opening emergency overboard valves (HV-2356A/B) Restore pump within 30 days
EXPLANATION OF ANSWER C	Must open yard dumps above 85 DegF. 30 day lco provided river temp stays below 88 DegF 3.7.1.3
EXPLANATION OF ANSWER D	Must open yard dumps above 85 DegF. 30 day lco provided river temp stays below 88 DegF 3.7.1.3

Matrix#	124
RO QUESTION #	
SRO QUESTION #	98
KACatalogID	295024EA2.06
KA Statement	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression pool temperature.....
RORating	4.1
SRORating	4.1
System	295024
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Determine NPSH limit from EOP Caution 2 graphs
REFERENCE	EOP Caution 2 RHR NPSH curves
Material Provided	EOP Caution 2 ECCS NPSH curves, AB-155 Figure 1 NPSH curves
LEARNING OBJECTIVE	LP 0302-000.00H-000126A-14 Obj 8
QSOURCE	new
QUESTION	Given the following: - A prolonged Station Blackout has occurred - Suppression Pool water level is at 0 inches - Suppression Pool Water Temp is 230 DegF - Drywell Pressure is 5 psig - Suppression Chamber Pressure is 5 psig - RPV level is +35 inches - Power has been restored to "A" RHR Pump Which one of the following is the limit on RHR Pump flow? (EOP Caution 2 and Reference Attachment S-7 provided)
CORRECT ANSWER	a
Answer A	6,000 gpm
Answer B	8,000 gpm
Answer C	10,000 gpm
Answer D	12,000 gpm
EXPLANATION OF ANSWER A	Correct answer.EOP-102 step SP/T-3 directs use of EOP Caution 2 curves. For 230 DegF SPT and 5 psig SP pressure and ZERO inch SPL, NPSH limit is 6,000 gpm
EXPLANATION OF ANSWER B	Limit for 0 psig SP pressure at 212 DegF at zero inch SPL. Also limit for 0 psig SP pressure at 230 DegF at 74.5"
EXPLANATION OF ANSWER C	Limit for 5 psig SP pressure at 230 DegF at 74.5 inch SPL
EXPLANATION OF ANSWER D	Limit for 5 psig SP pressure at 225 DegF at 74.5 inch SPL

Matrix#	125
RO QUESTION #	
SRO QUESTION #	99
KACatalogID	295029EA2.03
KA Statement	Ability to determine and/or interpret the following as they apply to HIGH SUPPRESSION POOL WATER LEVEL : Drywell/containment water level.....
RORating	3.4
SRORating	3.5
System	295029
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Use of Containment level formula to determine correct action
REFERENCE	EOP 102 step SP/L-13 and SP/L-20 and 21
Material Provided	EOP's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-00125A-12 Obj 9, 10 & 11
QSOURCE	New
QUESTION	Given the following: - A LOCA has occurred - RPV Pressure is 15 psig - Drywell Pressure is 15 psig and steady - Drywell Sprays are in service - Adequate core cooling is assured - HPCI Suction is lined up to the Suppression Pool - HPCI Min Flow isolation valve has been cycled - HPCI suction pressure is 21 psig and steady - Suppression Pool water level instruments are not working - Instrument Zero = 94 inches Containment level Which one of the following operator actions is required IAW EOP's?
CORRECT ANSWER	c
Answer A	Vent the Drywell
Answer B	Vent the Suppression Chamber
Answer C	Continue Drywell Sprays
Answer D	Terminate Drywell Sprays
EXPLANATION OF ANSWER A	SPL < 180 inches. 65 psi Drywell pressure not threatened
EXPLANATION OF ANSWER B	SPL < 180 inches. 65 psi Drywell pressure not threatened
EXPLANATION OF ANSWER C	Correct answer. Alternate SP level indication from HPCI Suction press should be used. [(21-15)*2.3] + 2.2 = 16 ft or 192 inches -94inches difference between Instrument zero and Torus bottom equals 98 inches <124 inches; therefore do not terminate sprays
EXPLANATION OF ANSWER D	SPL only 98 inches

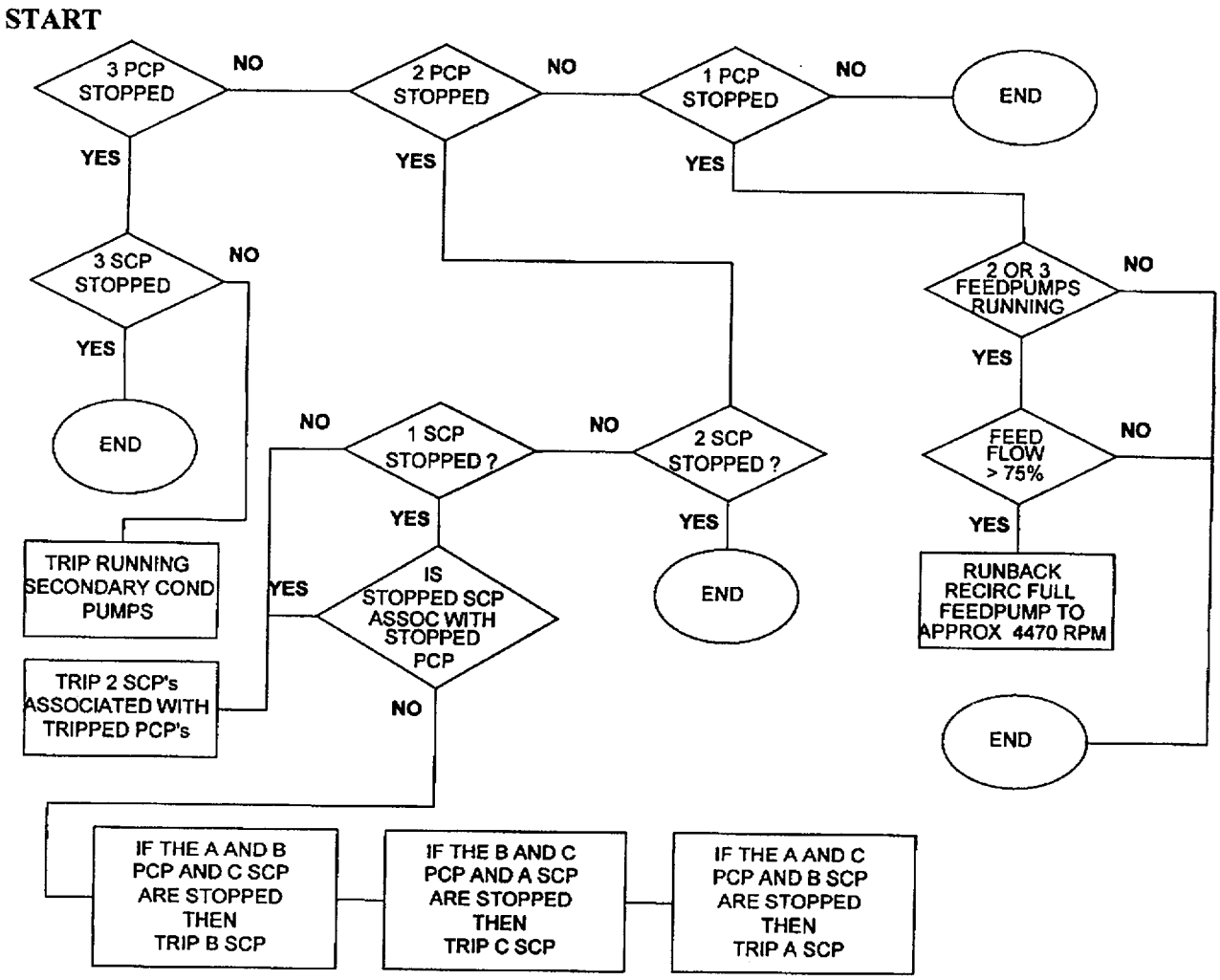
Matrix#	126
RO QUESTION #	
SRO QUESTION #	100
KACatalogID	295030EA2.03
KA Statement	Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL : Reactor pressure.....
RORating	3.7
SRORating	3.9
System	295030
Type	PE
Tier#	1
Question level	SRO
COGNITIVE LEVEL	H
Question Topic	Choose method for Reactor depressurization on low SP Level
REFERENCE	EOP 102 step SP/L-7
Material Provided	Eop's without entry conditions
LEARNING OBJECTIVE	LP 0302-000.00H-00125A-12 Obj 9
QSOURCE	New
QUESTION	Given the following: - The plant is operating at 100 percent power with all systems normal - An armed, violent intruder has gained access to the reactor building - An explosive device has detonated causing a 6 inch hole in the bottom of the torus - Suppression pool water level is 48 inches and lowering at 2 inches per minute - Emergency Make-Up efforts are hindered by the intruder threat - The reactor is manually scrammed - Control rod 14-31 is stuck at position 48 - Control rod 42-27 is stuck at position 02 Assuming a constant inventory loss rate, which one of the following actions must you direct IAW EOPs?
CORRECT ANSWER	a
Answer A	Emergency Depressurize with 5 ADS SRV's
Answer B	Immediately open all Turbine Bypass Valves
Answer C	Wait for SP Level to drop below 38.5 inches then open 5 ADS SRV's
Answer D	Wait for SP Level to drop below 38.5 inches then open all Turbine Bypass Valves
EXPLANATION OF ANSWER A	Correct answer. All rods are not in. Use of TBV's at step RCP-2 not permitted. Emergency depressurization is required. Use of ADS SRVs from 74.5" to 38.5" is permitted
EXPLANATION OF ANSWER B	All rods are not in. Use of TBV's at step RCP-2 not permitted.
EXPLANATION OF ANSWER C	All rods are not in. Use of TBV's at step RCP-2 not permitted. After 20 minutes SPL would be below 38.5".
EXPLANATION OF ANSWER D	All rods are not in. Use of TBV's at step RCP-2 not permitted.



REFERENCE ATTACHMENT
B-1

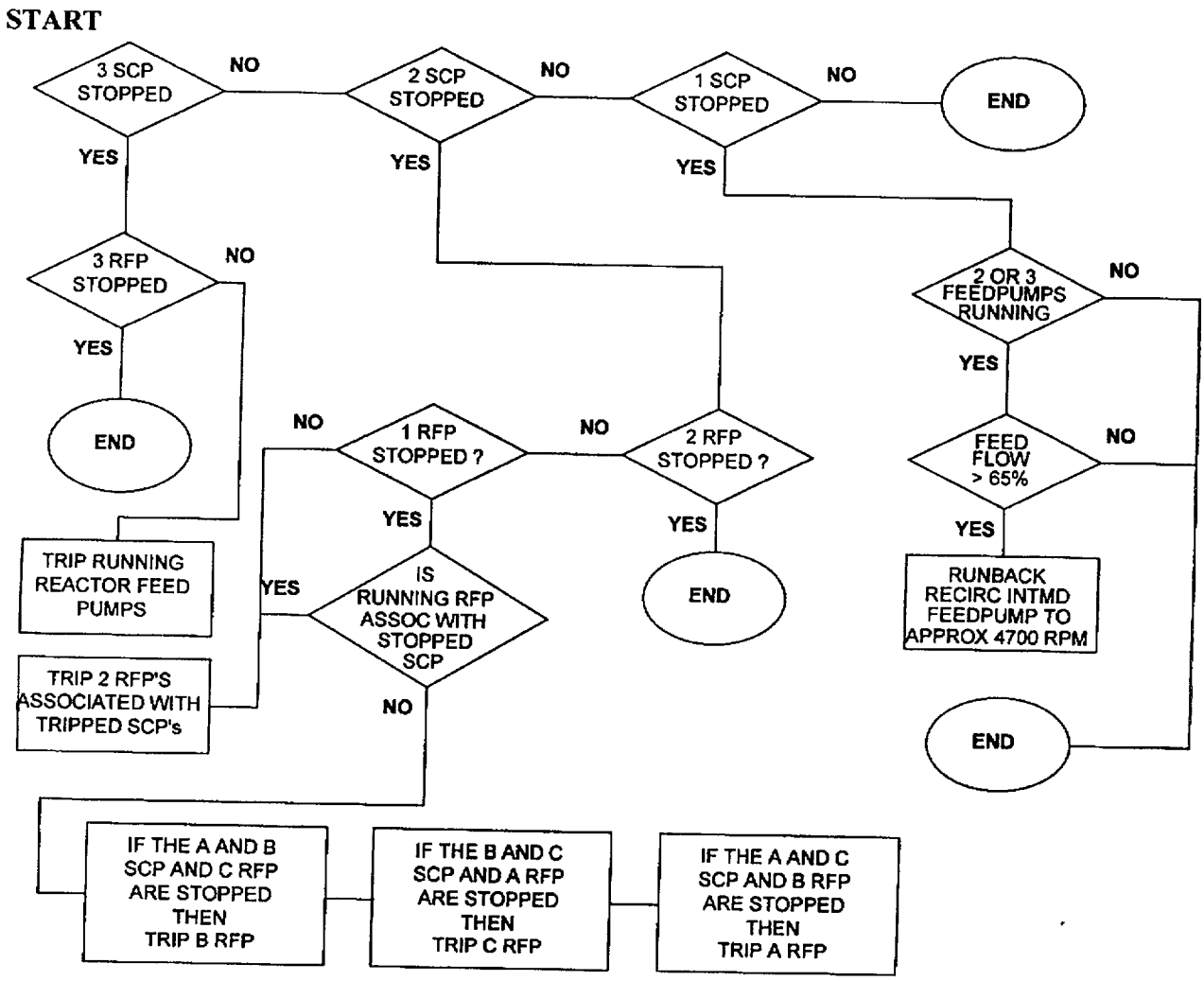
5.13 The following Pictograms illustrate the signals required for Feedpump and Recirc Pump runbacks; as well as, the feed pump tripping scheme.

PRIMARY CONDENSATE PUMP LOGIC



REFERENCE ATTACHMENT
B-2A

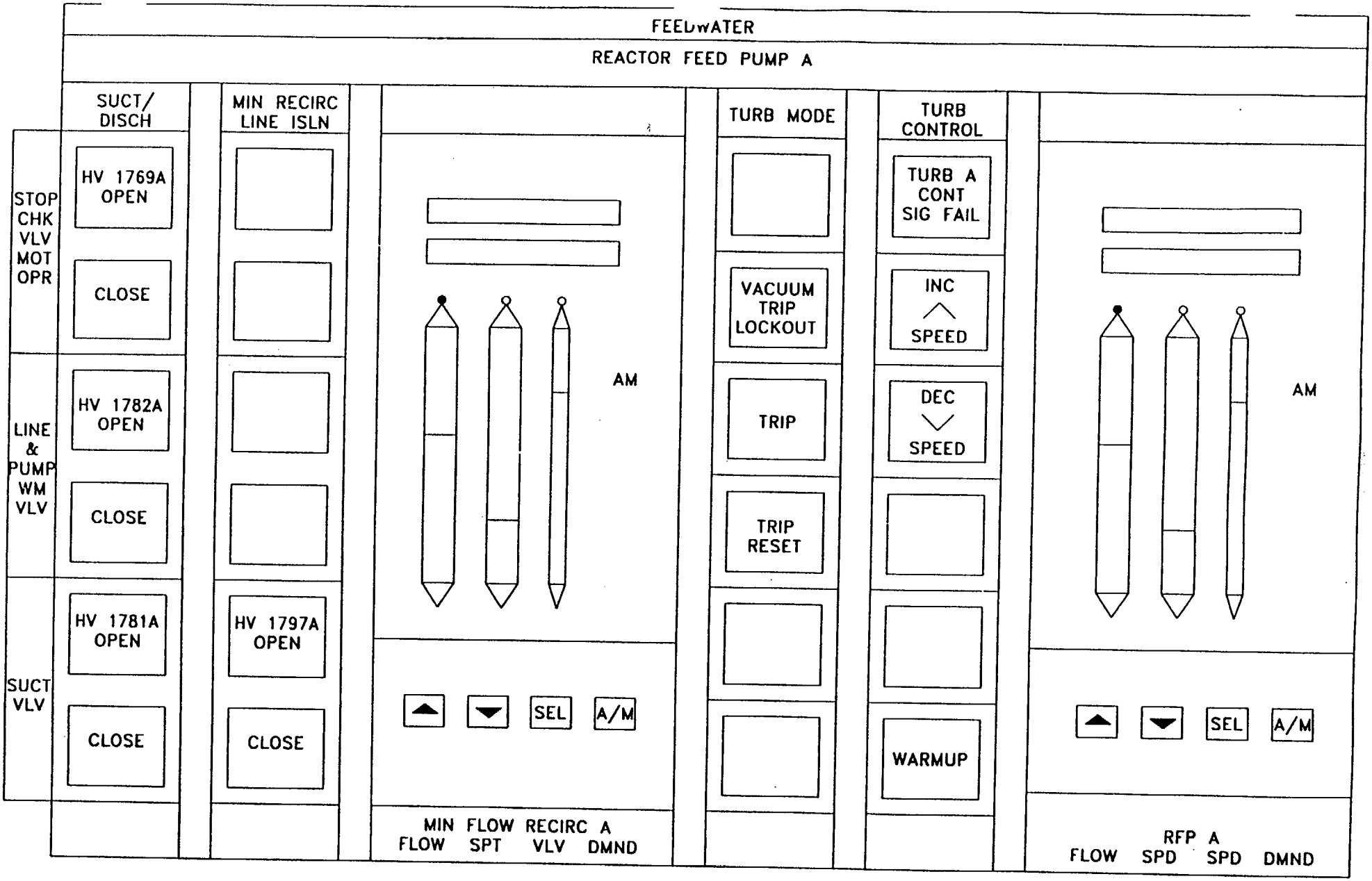
SECONDARY CONDENSATE PUMP LOGIC



5.14 The existence of this procedure fulfills the requirements found in the following Commitment Documents:

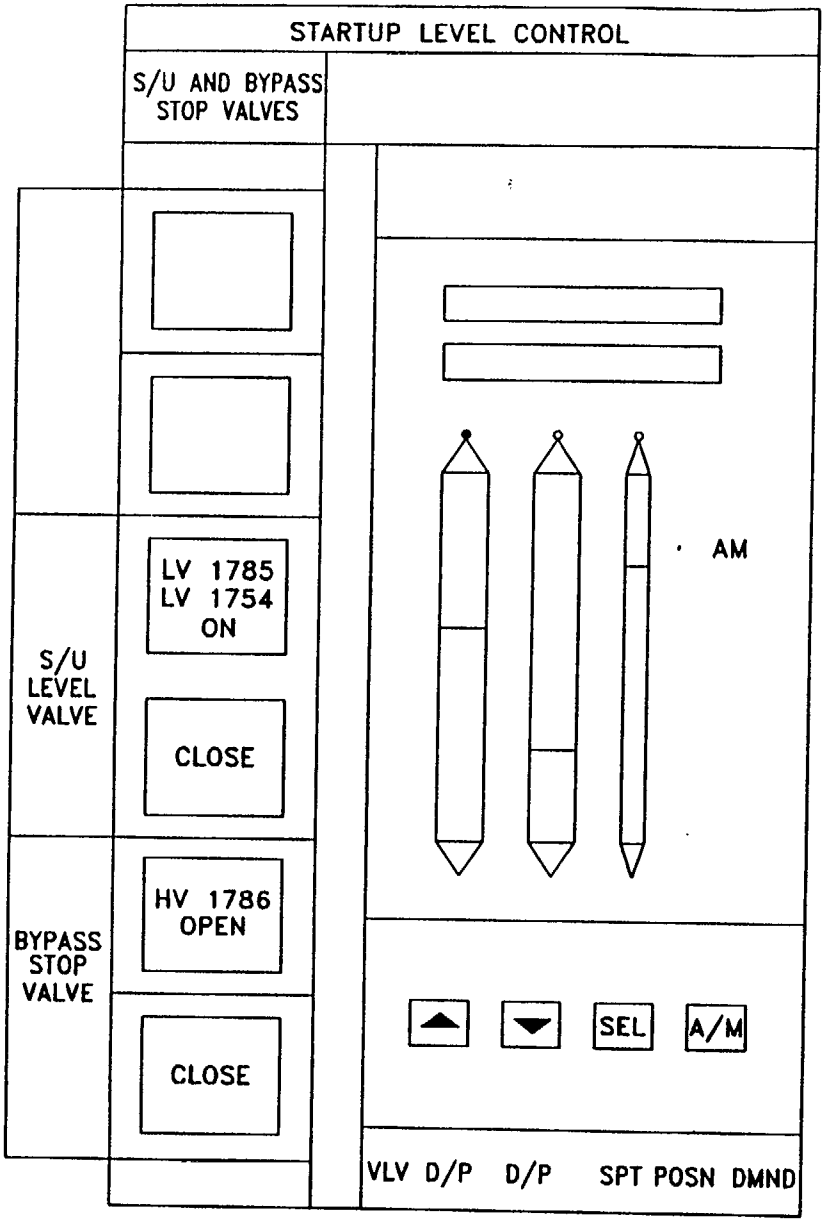
CD-409D INPO SOER 84-04R01
CD-958X NHO HSAR F15-0068-00
PR 960910160

REFERENCE ATTACHMENT B-2B



REFERENCE ATTACHMENT
B-3A

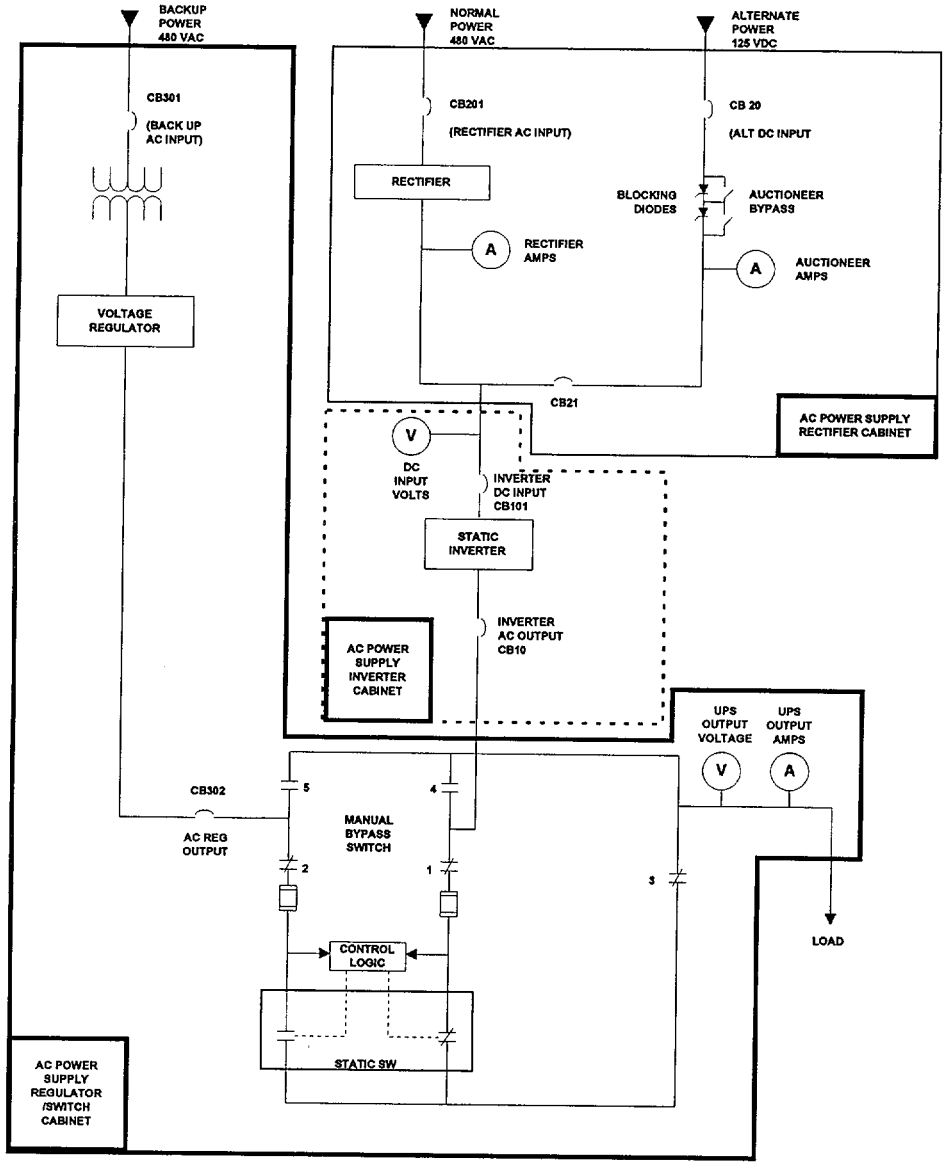
EMI	BOOK 38	LP	302H-000.00H-000058 301H-000.00H-00AE01	REV 3
	PAGE 121	TITLE	FEED PUMP TURBINE A CONTROL	FIG 26
	PROG ACAD			
	DWG AV2969			HOPE CREEK



REFERENCE ATTACHMENT
B-3B

VIS	BOOK 38	LP	302H-000.00H-000058 301H-000.00H-00AE01	REV 1
	PAGE 123	TITLE	STARTUP LEVEL CONTROL	FIG 28
	PROG ACAD			
	DWG AV2969B			HOPE CREEK

EXHIBIT 2
Page 1 of 1
UPS POWER CONTROL (TYPICAL)



SWITCH POSITION	1	2	3	4	5
NORMAL	X	X	X		
BYPASS TO PREFERRED	X	X		X	
ISOLATE (AFTER PREF.)				X	
BYPASS TO ALTERNATE	X	X			X
ISOLATE (AFTER ALT.)					X

REFERENCE ATTACHMENT B-4