# Question Cross Reference

• 2

•••

		KA	Record Number	Exam Level	RO	SRO
	295001	AA1.02	1	В	1	1
	295002	AK1.04	2	В	2	2
	295003	AA2.02	3	В	3	3
	295003	2.4.9	4	R	4	
	295004	AA2.01	5	s		4 SAD ULAD
	295004	AK3.03	6	В	5	5 40.1
6V-	295005	AA2.04	۲ ۲	S		6
	295006	2.1.28	8	В	6	7
	295006	AK1.01	9	В	7	8
	295007	AK2.05	10	в	8	9
	295007	AK3.04	11	В	9	10
	295008	AA1.01	12	В	10	11
	295008	AK3.04	13	в	11	12
	295009	AA2.01	14	∕s B		13 SAO UNIQUÉ - RO LEVEL
	295009	2.4.6	V 15	s		14
	295010	AA1.02	16	s		15 SRO UMIQUE - RO LEVEL
	295010	AA1.02	17	R	12	
	295012	AK1.01	18	в	13	16
	295013	AK2.01	19	в	14	17
	295014	AK2.04	20	в	15	18
	295014	AK3.01	21	В	16	19
	295015	2.3.4	า 22	S		20
	295015	AK3.01	ન 23	JE S	17	21
	295016	AA1.02	24	В	18	22
	295017	AA2.01	í 25	s		23
	295018	AA2.03	26	S		24 SRO UNIQUE - ROLEVEL
	295019	AA1.02	27	В	19	25
	295019	AA2.01	28	R	20	
	295021	2.4.41	<sup>د</sup> 29	S		26
	295022	2.4.48	' 30	S		27
	295022	AK2.03	31	В	21	28
	295023	AA1.02	32	в	22	29
	295023	AA2.02	33	в	23	30
	295024	EA1.10	34	В	24	31

Sunday, February 03, 2002

	KA	Record Number	Exam Level	RO	SRO	
295024	2.2.7	35	\$ B		32	
295025	EA2.06	36	R	25		
295025	EK1.05	37	в	26	33	
295026	EK1.02	38	в	27	34	
295028	EK1.02	39	В	28	35	
295030	EA2.04	40	S		36 -	SPO UA
295030	EK2.03	41	в	29	37	
295031	EK2.13	42	в	30	38	
295034	2.2.18	<b>y</b> 43	s		39	
295036	EK2.01	44	в	31	40	
295036	EK3.01	45	В	32	41	
295038	EA2.03	46	R	33		
295038	EK1.02	47	в	34	42	
500000	EK3.03	48	в	35	. 43	
600000	EK3.04	49	R	36		
201001	A3.05	50	В	37	44	
201002	2.4.21	51	R	38		
201002	K4.08	52	В	39	45	
201003	K4.05	53	В	40	46	
201006	2.1.12	<b>د 5</b> 4	s		47	
201006	K3.01	55	в	41	48	
202001	A4.04	56	R	42		
202001	K3.07	57	в	43	49	
202002	K6.04	58	R	44		
203000	A4.07	59	в	45	50	
203000	K1.14	60	в	46	51	
204000	A2.14	61	в	47	52	
206000	A1.06	62	в	48	53	
206000	A3.07	63	R	49		
209001	K1.10	64	в	50	54	
209001	K2.02	65	в	51	55	
211000	2.4.10	66	R	52		
211000	K1.05	67	R	53		
212000	2.1.23	68	R	54		
212000	K5.02	69	в	55	56	

SPO UNIQUE - RO LEVEL

Sunday, February 03, 2002

٠.

sec and

	KA	R N	lecord umber	Exam Level	RO	SRO
215001	K1.05		70	В	56	57
215004	A3.03		71	в	57	58
215004	2.2.6	v <sup>0</sup>	72	S		59
215005	K3.05		73	в	58	60
215005	K5.05		74	в	59	61
216000	A2.08		75	В	60	62
216000	K2.01		76	В	61	63
217000	A2.01	ŧł	77	\$	62	64
217000	K4.05		78	В	63	65
219000	A3.01		79	R	64	
223001	K6.13		80	R	65	
223002	K3.16		81	в	66	66
223002	K4.01		82	в	67	67
226001	A1.06		83	R	68	
226001	A3.05		84	в	69	68
230000	K6.01		85	В	70	69
233000	2.1.7	۱۱	86	S		70
234000	2.2.25	, ۲	87	S		71
239002	A1.02		88	R	71	
239002	A1.05		89	в	72	72
245000	K5.02		90	R	73	
256000	A2.13		91	R	74	
256000	K4.06		92	R	75	
259002	2.4.32	رسا	93	S		73
261000	A4.07		94	В	76	74
261000	K6.03		95	в	77	75
262001	K2.01		96	R	78	
262001	K6.01		97	в	79	76
263000	A1.01		98	в	80	77
263000	K2.01		99	В	81	78
264000	2.1.11	é	100	S		79
268000	A1.01		101	В	82	80
271000	K1.02		102	В	83	81
272000	K6.03		103	в	84	82
290002	A2.02		104	R	85	

es subte a de

Sunday, February 03, 2002

\_\_\_\_

1

٠

	KA	Re Nu	cord mber	Exam Level	RO	SRO
290002	K3.03	1	105	R	86	
290003	K5.01	1	106	в	87	83
GENERIC	2.1.14	<sup>ر 4</sup> 1	107	S		84
GENERIC	2.1.24	1	108	в	88	85
GENERIC	2.1.31	1	109	в	89	86
GENERIC	2.1.33	्र 1	110	S		87
GENERIC	2.1.33	1	111	R	90	
GENERIC	2.1.34	<b>,</b> ð 1	112	S		88
GENERIC	2.2.22	1	113	R	91	
GENERIC	2.2.22	۲ کې	114	S		89
GENERIC	2.2.26	<b>∿</b> ≥ 1	115	S		90
GENERIC	2.2.27	1	116	R	92	
GENERIC	2.2.27	~( 1	117	S		91
GENERIC	2.2.30	1	118	R	93	
GENERIC	2.2.31	v レ 1	119	S		92
GENERIC	2.3.1	1	120	В	94	93
GENERIC	2.3.2	1	121	R	95	
GENERIC	2.3.4	<del>ر ۱</del>	122	S		94
GENERIC	2.3.9	1	123	R	96	
GENERIC	2.3.10	r 1	124	S		95
GENERIC	2.3.11	1	25	в	97	96
GENERIC	2.4.5	1	26	в	98	97
GENERIC	2.4.18	1	27	В	99	98
GENERIC	2.4.28	r 1	28	S		99
GENERIC	2.4.34	1	29	В	100	100

۰.

,

-----

- The plant is operating at 100% power
- A transient caused by a short in the reactor recirculation control circuitry occurs

Immediately following the transient, the plant stabilizes with the following parameters:

### - Reactor Power 50%

- "A" Recirc pump tripped
- "B" Recirc pump at 45% speed
- Loop "A" total jet pump flow is 10 Mlbmlhr
- Loop "B" total jet pump flow is 46 Mlbmlhr
- Total indicated core flow 36 Mlbm/hr

What is actual core flow, and how will the loss of the "A" Recirc pump affect the APRM Scram setpoint?

36 Mlbm/hr. Setpoint unaffected	
36 Mlbm/hr. Setpoint needs to be adjusted	
<b>C</b> 56 Mlbm/hr. Setpoint unaffected	
56 Mlbm/hr. Setpoint needs to be adjusted	····· · · · · · · · · · · · · · · · ·
Answer d Exam Level B Cognitive Level Comprehension Facility	Hope Creek Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO (	2 295001A102
295001 Partial or Complete Loss of Forced Core Flow Circulation	Record Number 1
AA1. Ability to operate and/or monitor the following as they apply to PARTIA FORCED CORE FLOW CIRCULATION:	L OR COMPLETE LOSS OF
AA1.02 RPS	3.3 3.3
Explanation of Answer Below 48% running recirc loop speed, Jet pump loop flows are Setpoints must be adjusted to single loop values within 4 hours	both positive and added together.
Reference Title	
HC.OP-AB.ZZ-0300	
HC.OP-DL.ZZ-0026 Attach 3V	
TS 2.2.1 and 3.4.1	un manifestation de la la la construction de la construction de la construction de la construction de la constr La construction de la construction d
Learning Objectives	
0AB300E003 (R) Discuss the operational implications of the abnormal indications/alarms Power Oscillations, Abnormal Operating Procedure.	for system operating parameters related to Reactor
Material Required for Examination	
Question Source: INPO Exam Bank Question Modif	cation Method: Significantly Modified
Question Source Comments: INPO EXAM BANK QID# 17049 Susquehanna 1 09/30/199	9 9

The plant has been operating at full power for several days.	
<ul> <li>Operators notice that, over the last several hours, Main Condenser Vacuum 3.2"HgA to 4.0"HgA.</li> <li>Over this same period, Offgas system flow has increased from 25 scfm to 38</li> <li>There have been NO ALARMS associated with this problem.</li> </ul>	has risen from 3 scfm.
Which one of the following would cause these indications?	
Cooling tower outlet temperature increase	
Reactor Feed Pump Turbine exhaust piping leak	···· ·································
Tube leak in #2A Feedwater Heater	
Resin intrusion from the Condensate Demineralizers	
Answer b Exam Level B Cognitive Level Comprehension Facility Hope Creek	Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO Group         2	295002K104
295002 Loss of Main Condenser Vacuum	Record Number 2
AK1. Knowledge of the operational implications of the following concepts as they apply to LO CONDENSER VACUUM:	SS OF MAIN
AK1.04 Increased offgas flow	3.0 3.3
<b>Explanation of</b> Answer Increase in air inleakage via the RFPT exhaust piping under vacuum into the m Offgas outlet flows to increase. Cooling tower outlet temp increase would degra change outlet flow. 2A Heaters are internal to the main condenser so no change intrusion causes offgas radiation levels to increase	ain condenser will cause de vacuum but not e in outlet flow. Resin
Reference Title	
HC.OP-AB.ZZ-0001	····
Learning Objectives	
0AB208E006 (R) Explain the bases for Subsequent Actions and the information contained in the Discussion S Vacuum, Abnormal Operating Procedure.	ection of Main Condenser Low
Material Required for Examination	· · · · · · · · · · · · · · · · · · ·
Question Source: INPO Exam Bank Question Modification Method:	Significantly Modified
Question Source Comments: INPO BANK QID# 647 Duane Arnold 05/25/1999	

- The plant is operating at 100 percent power

- A severe electrical transient results in a loss of all offsite power

- 2 control rods are at position "48"

- Reactor power is less than 1 percent

Which one of the following describes the equipment available to control reactor pressure and level?

HPCI	and SRVs	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			
HPCI	and Main Stea	m Line Drains					
C Reac	tor Feed Pumps	s and SRVs					· · · · · · · · · · · · · · · · · · ·
	and Main Stea	m Line Drains					
Answer a	Exam Level B	Cognitive Level Cor	nprehension	Facility Hope C	reek	Exam Date:	03/12/2002
Tier: Eme	rgency and Abnorm	nal Plant Evolutions	<b>RO</b> Group	2 SRO Group	1	29	5003A202
295003	Partial or Comple	ete Loss of A.C. Power	•			Record Number	3
AA2. Abilit A.C.	y to determine and POWER:	or interpret the followi	ng as they ap	ply to PARTIAL (		IPLETE LOSS O	F
AA2.02 Re	actor power, press	ure, and level			· · · · · · · · ·		4.2 4.3
Antonyo Antony	322 as necessa power. RFPT oi	ry. Loss of offsite pow pumps can be restore	er causes Gro ed from EDG Reference Title	oup 1 isln. MSL D backed busses, b	rains wi out cond	Il close if the valv ensate pumps ar	es have e tripped.
HC.OP-AB.2	ZZ-0135						
EOP-101A	· · · · · · · · ·					· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
					··· · · · ·		
		L	earning Objectiv	/es			
0AB135E006	6 (R) Explain the ba Of Offsite Power	ases for Subsequent Action Diesel Generator Malfunctio	s and the informa on, Abnormal Ope	tion contained in the rating Procedure.	Discussio	on Section of Station I	3lackout/Loss
	······				·	·····	· · · · · · · ·
Material Requ	ired for Examination	EOP Flowcha	rts without ent	ry conditions			
Question Sou	rce: New		Qu	estion Modification	Method:		· · · · · · · · · · · · · · · · · · ·
Question Sou	rce Comments:						

- The reactor is in Operational Condition 4			
- "A" RHR Pump is in Shutdown Cooling at rated flow			
- 10A404 4.16KV 1E Bus trips on bus differential overc	current		
Which one of the following describes the effect the bus	s loss will have on Sh	utdown Coolir	ıg?
The Shutdown Cooling common suction line isolat	es and CANNOT be	reset	······
The AP228 Jockey pump trips causing Shutdown	Cooling Loop "A" to	lose keepfill	
Both "A" and "B" Shutdown Cooling Loops lose ab	ility to adjust flow		· · · · · · · · · · · · ·
"B" Reactor Recirc Pump discharge valve automat	tically opens bypassi	ng core flow	···· ··· · · · · · · ·
Answer c Exam Level R Cognitive Level Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group	2 SRO Group 1	29	5003G409
295003 Partial or Complete Loss of A.C. Power	-	Record Number	4
2.4 Emergency Procedures and Plan			
2.4.9 Knowledge of low power / shutdown implications in accid strategies.	ent (e.g. LOCA or loss of	FRHR) mitigation	3.3 3.9
Explanation of Answer "A" RHR SDC Return valve F015A is powered from valve as is. Adjusting flow via RHR HX outlet valve provides keepfill to HPCI only. B RRP disch valve is	"D" Channel 1E 480VA0 and /or bypass valve is r s controlled by NON 1E p	C. Loss of D Bus f not proceduralized power.	ails this I. AP228
Reference Title	•		
HC.OP-SO.BC-0002	· · · · · · · · · · · · · · · · · · ·	· · · ·	
HC.OP-SO.SM-0001			
	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Learning Objecti	ves		
000028E008 (R) Given a system which physically connects to or is require therein, explain the function of the supporting system, IAW th	d to support the operation of th e RHR System Lesson Plan.	e RHR System or cor	nponents
(c) in the state of the state of the state of the state is a state of the state			
Material Required for Examination			
Question Source: New Qu	estion Modification Method:		· ··· · · · · · · · · · · · · · · · ·
Question Source Comments:			

Which one of the following conditions will automatically remove the 125 VDC battery charger from service per HC.OP-AB.ZZ-0150, 125VDC System Malfunction? High output voltage Equalize timer reaches zero Blown fuse in the battery transfer switch d. Low battery terminal voltage Answer Exam Level S Cognitive Level Facility Hope Creek а Memory Exam Date: 03/12/2002 Tier: **RO** Group 295004A201 Emergency and Abnormal Plant Evolutions SRO Group 2 2 295004 Partial or Complete Loss of D.C. Power Record Number 5 AA2. Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: AA2.01 Cause of partial or complete loss of D.C. power 3.2 3.6 Explanation of SRO UNIQUE - RO LEVEL QUESTION Answer The following battery charger malfunctions will shutdown the battery charger: High Voltage Shutdown Relay AC Input Breaker Open/Tripped DC Output Breaker Open/Tripped Loss of 120 VAC Supply Power CORRECT - High Voltage Shutdown Relay. INCORRECT - Low battery terminal voltage. This will generate a Battery Monitor Alarm not a charger trip. INCORRECT - High Voltage Shutdown Relay. This will generate a Battery Monitor Alarm not a charger trip. INCORRECT - Blown fuse in the battery transfer switch. This will generate a Battery Monitor Alarm, not a charger trip. **Reference Title** HC.OP-AB.ZZ-0150 Learning Objectives 0AB150E006 (R) Explain the bases for Subsequent Actions and the information contained in the Discussion Section of 125 VDC System Malfunction, Abnormal Operating Procedure. Material Required for Examination

Question Source: New

Question Modification Method:

Question Source Comments: Concept used from Vision Bank QID# Q61703 for 24 VDC chargers

- The Reactor is in Operational Condition 4
- Plant startup operations are in progress
- The negative battery charger for the "A" ±24 VDC System is out of service
- The positive battery charger for the "B" ±24 VDC System is on an equalizing charge
- All other equipment is aligned for normal operation

Which one of the following will occur if these conditions remain for a prolonged period of time?

An RPS trip will occur due to:

A and C SRMs fail upscale because of low voltage to the drawers

A, C, E, and G IRMs fail upscale because of low voltage to the drawers

B and D LPRMs fail upscale because of high voltage to the detectors

B, D, and F APRMs fail upscale because of high voltage to the detectors

Answer b Exam Level B Cognitive Level Memory Facility Hope Cree	эk	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group 2 SRO Group	2	2950	04K303
295004 Partial or Complete Loss of D.C. Power		Record Number	6
AK3. Knowledge of the reasons for the following responses as they apply to PARTIA OF D.C. POWER:	AL OR	COMPLETE LOS	S
AK3.03 Reactor SCRAM: Plant-Specific			3.1 3.5
Explanation of JUSTIFICATION: Answer			
The negative charger only charges the negative battery while the positi positive battery. Even with the positive charger operating in the Equaliz be discharged resulting in the loss of the DC bus.	ive cha cer mo	arger only charges de, the negative ba	the attery will

CORRECT - IRMs upscale (1/2 scram). The loss of the -24VDC from the A ± 24VDC System will cause IRM indications to rise (upscale). This will insert a 1/2 scram from RPS Channel A. INCORRECT - SRMs upscale (Full Scram). SRM indications to lower (downscale) INCORRECT - LPRMs upscale (Full Scram). LPRMs and APRMs are unaffected by the loss of -24VDC. INCORRECT - APRMs upscale (1/2 scram). LPRMs and APRMs are unaffected by the loss of -24VDC.

いたえ ひんちょうえい いいい ほだえ ひんちょう えつかいえ ひとうかつ たりかつかけ かうかひゃう えきかう かいかい かいかか かいのない とうかつ たちょうかん たちがく	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
	1 2 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1
ANY INTERNAL PROPERTY AND A DESCRIPTION OF A	- C - C - C - C - C - C - C - C - C - C
	COLOR OF CALL
EXAMPLE A CONTRACT OF A DESCRIPTION OF A D	the second se
	the second se

HC.OP-AB.ZZ-0151, Sections 2.1, 4.5 & 5.1

H.C. Incident Report 86-067, CD-1826, PTS-1826

0AB151E003	(R) Discuss the operational implication Malfunction, Abnormal Operating Proce	s of the abnormal indications/alarms for system ope edure.	erating parameters related to 24 VDC
	ti a su		
	a second s		
Material Require	d for Examination		
Question Source	Facility Exam Bank	Question Modification Metho	d: Editorially Modified
<u> </u>		700	

- The reactor is operating normally at 100 percent power

- A transient occurs

Using the attached UFSAR Figure of a plant transient, which one of the following represents the peak reactor pressure that occurred during the transient?

 $\checkmark$ 

a. 975 psig	, , , , , , , , , , , , , , , , , , ,
<b>b</b> 1025 ps	ig
🔄 1120 ps	lig
d 1135 ps	ig
Answer d E	Exam Level S Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/12/2002
Tier: Emerge	ncy and Abnormal Plant Evolutions <b>RO Group</b> 1 <b>SRO Group</b> 2 295005A204
295005 IV	
	determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP:
AA2.04 React	3.7 3.8
Explanation of Answer	Transient is a main turbine trip with bypass valves available. Turbine bypass valves open full, SRV's with 1108, 1120 psig and 1130 psig setpoints open. Normal reactor pressure at 100 percent power is 1005 psig. Vessel Pressure rise (Trace 1) from the trip is 130 psi.
	Reference Title
UFSAR Figure	15.2-3
10CFR55.43(5)	
	Learning Objectives
0AB138E004	Explain the reasons for how plant/system parameters respond when implementing, Turbine Generator Trip/Malfunction, Abnormal Operating Procedure.
000106E001	Given the following lists, summarize and explain both the initial response (goes up, down, stays the same) and the long term response of the parameters in List A to the plant transients in List B IAW the Student Handout.
	List A
	Reactor Power (APRM) Reactor Power (Surface Heat Flux)
	Reactor Pressure (Dome)
	Reactor Indicated Water Level Reactor Indicated Steam Flow
	Reactor Actual Steam Flow
	Reactor Core Flow
	Reactor Recirculation Loop Flow SRV Flow
	List B
	Loss of Feedwater Heating Feedwater Controller Failing to Maximum Demand
	EHC Pressure Sensor Failing High
	Generator Load Rejection with Bypass Valves Available Generator Load Rejection without Bypass Valves Available
	Turbine Trip with Bypass Valves Available
	i urbine i rip without Bypass Valves Available MSIV Closure
	Loss of Condenser Vacuum

Loss of Feedwater Flow

Page 7 of 139

Trip of One Recirculation Pump Trip of Both Recirculation Pumps Recirculation Flow Control Failure - Decreasing Flow Seizure of One Recirculation Pump Recirculation Flow Control Failure - Increasing flow

Material Required for Examination	UFSAR Figure 15.2-3 w	ith title block and description re	moved
Question Source: New		Question Modification Method:	
Question Source Comments:		· · · · · · · · · · ·	·····

Which one of the following is the reason that the reactor operator must wait at least 10 seconds following a reactor scram before attempting a scram reset?
To allow reactor water level to recover above the scram setpoint
To allow all the control rods to insert fully
C To allow the Scram Air header to repressurize
d. To allow the Scram Discharge Volume vent and drain valves to cycle
Answer         b         Exam Level         B         Cognitive Level         Memory         Facility         Hope Creek         Exam Date:         03/12/2002
Tier:       Emergency and Abnormal Plant Evolutions       RO Group       1       SRO Group       1       295006G128         295006       SCRAM       Record Number       8
2.1 Conduct of Operations
2.1.28 Knowledge of the purpose and function of major system components and controls. 3.2 3.3
Explanation of Answer 10 Second time delay is to allow all control rods time to insert full in.
Reference Title
Lesson Plan 0301-000.00H-000022-19
Learning Objectives           000022E007         From memory, state the purpose of the time delay after a scram, IAW the Lesson Plan.
Material Required for Examination
Question Source:       INPO Exam Bank       Question Modification Method:       Editorially Modified         Question Source Comments:       INPO EXAM BANK QID# 7112 Duane Arnold 1 06/03/1996       06/03/1996

\_\_\_

<\_\_\_

Hope Creek requires an Emergency Depressurization after performing steam cooling in EOP-101 "Reactor Control". All actions required by EOP-202, "Emergency Depressurization", have been taken but only 4 Safety Relief Valves (SRV) can be opened and no other means of depressurization is available.

Which one of the following describes the consequences of this failure?

- Steam removal rate from the core is NOT adequate to ensure adequate decay heat removal exists.
- Steam removal rate during a LOCA is NOT adequate to prevent exceeding the Drywell design pressure.
- The pressure reduction rate will NOT allow low pressure injection systems to inject soon enough to recover level before the core becomes uncovered.
- The pressure reduction rate will NOT allow low pressure injection systems to inject prior to reaching the Minimum Steam Cooling RPV Water Level.

Answer a Exam Level B Cognitive Level Memory	Facility Hope Creek	Exam Date: 0	3/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group	1 SRO Group 1	295006	K101
295006 SCRAM		Record Number	9
AK1. Knowledge of the operational implications of the following co	oncepts as they apply to	SCRAM:	
AK1.01 Decay heat generation and removal.			3.7 3.9
<b>Explanation of</b> Answer Minimum Number of SRVs Required for Emergency SRVs is sufficient to remove all decay heat from the	Depressurization (MNS core.	RED) at Hope Creek i	s 5
Reference Title			

HC-EOP 202 Bases

HC.	OP-EO	.ZZ-LIMI	TS-CONV

Learning Objectives

000130E003 (R) Given any step of the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by that step.

Material Required for Examination EOP Flowcharts	s without entry conditions
Question Source: INPO Exam Bank	Question Modification Method: Editorially Modified
Question Source Comments: QID# 14157 Peach Bottom 2	03/26/2001

Saturday, February 02, 2002 1:26:13 PM

- The plant is in Operational Condition 3
- Main Condenser vacuum is broken
- RHR Loop "B" is in Shutdown Cooling
- Reactor level is stable at +35 inches

- Reactor pressure is 50 psig and lowering

- "D" SSW Pump has just tripped

- "B" SSW Pump will NOT start

Which one of the following describes the effect this will have on the plant? (Assume no operator action)

The RHR Shutdown Cooling Loop will isolate due to lowering reactor level

The RHR Shutdown Cooling Loop will isolate due to increasing reactor pressure

B" RHR Pump Min-Flow valve will open due to lowering loop flow

"B" RHR Pump Min-Flow valve will open due to reaching pump shutoff head

Answer b Exam Level B Cognitive Level Comprehension Facility Hope Creek	Exam Date:	03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         1         SRO Group         1	2950	007K205
295007 High Reactor Pressure	Record Number	10
AK2. Knowledge of the interrelations between HIGH REACTOR PRESSURE and the follow	wing:	
AK2.05 Shutdown cooling: Plant-Specific		2.9 3.1
Explanation of Loss of cooling media to RHR HX will cause reactor pressure to increase unt NSSSS SDC isolation	il 82 psig setpoint	for
Reference Title		

HC.OP-SO.SM-0001

Learning Objectives

000028E008 (R) Given a system which physically connects to or is required to support the operation of the RHR System or components therein, explain the function of the supporting system, IAW the RHR System Lesson Plan.

Material Required for Examination

Question Source:	New
* ORG200 * 3 F24 3 * 3 FC04CH0 * 9/1 12 * 9/1 C4CHC # 2 * 3 * 3 * 3 * 3 * 3 * 5 * 5 * 3	

Question Source Comments:

Question Modification Method:

## LID

Following a reactor scram and Main Steam Isolation Valve closure, reactor steam dome pressure reaches 1050 psig causing the "H" and "P" Safety Relief Valves (SRV) to open.

Which one of the following lists the operating setpoints f	or subsequent open	ings of the "P"	SRV?
SRV "P" opens at 1017 psig and closes at 905 psig	·	<u></u>	
SRV "P" opens at 1017 psig and closes at 935 psig	······································	······	· · · · · · · · · · · · · · · · · · ·
SRV "P" opens at 1047 psig and closes at 905 psig	· · · · · · · · · · · · · · · · · · ·	· · · · · · · ·	· ··· · ···· ·
d SRV "P" opens at 1047 psig and closes at 935 psig		····	
Answer d Exam Level B Cognitive Level Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group	1 SRO Group 1	2950	07K304
295007 High Reactor Pressure		Record Number	11
AK3. Knowledge of the reasons for the following responses as the	y apply to HIGH REACT	OR PRESSURE:	
AK3.04 Safety/relief valve operation: Plant-Specific			4.0 4.1
Explanation of SRV "P" opens at 1047 psig and closes at 935 psig			· · · · · ·
Reference Title			
HC.OP-SO.SN-0001 Precautions 3.2.12			
Concerning the safety relief valves; summarize, list or ident         000046E003       (R) Concerning the safety relief valves; summarize, list or ident         a.       The number and type of SRV's at Hope Creek.         b.       Which SRV's have an ADS function.         c.       Power supplies to the SRV solenoids.         d.       Which SRV's can be operated remotely and the location fm         e.       Purpose of the low-low set function and determine which S         f.       Determine the sequence of operation of the low-low set SR	es ify the following IAW the lesso om which each of these valves RV's are used for this functior V's including arming setpoints	on plan. s can be operated. n. , lift points and reclose	setpoints.

Material Required for Examination			
Question Source: Facility Exam Bank	Question Modification	Method: Direct From Source	
Question Source Comments: QID #8451 Hope Creek 02/28/1998		· · · · ·	

The plant is at 62% power, recovering from an inadvertent trip of the "B" Reactor Recirc pump. Shortly after the Recirc pump was started and power ascension commenced, annunciator C8-B5 "RPV LEVEL 7" is received. The NCO notes that actual level is 39" and rising.

At this time, the required of	operator action is to			
a place the reactor ves	sel water level control syste	em in manual.	a da anticipada da seconda da seco	
<b>b.</b> verify Hydrogen Wate	er Chemical Injection trip.		····· · · · ·	···· ··· · ···
c. close the Main Steam	n Isolation Valves.	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
d reduce reactor recirc	flow to minimum.		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Answer a Exam Level B	Cognitive Level Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnorm	al Plant Evolutions RO Grou	p 2 SRO Group 2	2950	008A101
295008 High Reactor Wa	ter Level	······································	Record Number	12
AA1. Ability to operate and/or	monitor the following as they app	oly to HIGH REACTOR WA	TER LEVEL:	
AA1.01 Reactor water level co	ontrol: Plant-Specific			3.7 3.7
Explanation of Immediate opera	ator action from AB-200			
	Reference T	itle		
HC.OP-AB.ZZ-0200				
	Learning Obje	ctives		
0AB200E002 (R) From memory	, recall the Immediate Operator Actions f	or Reactor Level Control Malfunct	ion, Abnormal Operatin	g Procedure.
· · · · · · · · · · · · · · · · · · ·				
Material Required for Examination			· · ·	
Question Source: Facility Exam B	ank	Question Modification Method:	Editorially Modified	l i i
Question Source Comments: Vi	sion QID# Q53987			

A malfunction of the Digital Feedwater Level Controller has resulted in an INCREASING reactor water level. The Reactor Feedwater Pumps are automatically tripped on a high reactor water level signal to prevent:

feed pump damage due to increasing pump discha	arge flow rate and he	ad.	
b main turbine damage due to water impingement or	ו turbine blades.	· · · · · · · · · · · · · · · · · · ·	
c reactor vessel damage due to completely filling and	d overpressurizing th	ie vessel.	
d main steam line piping and hanger damage due to	filling the main stear	n lines.	
Answer b Exam Level B Cognitive Level Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group	2 SRO Group 2	2950	08K304
295008 High Reactor Water Level		Record Number	13
AK3. Knowledge of the reasons for the following responses as the	ey apply to HIGH REACT	OR WATER LEVE	iL:
AK3.04 Reactor feed pump trip: Plant-Specific			3.3 3.5
Explanation of Feedpumps are tripped to prevent reactor overfill an Answer	nd damage to the main tu	rbine.	
Reference Title			
TC Bases 3/4.3.9		<del>.</del>	
Learning Objectiv 000002E008 (R) Given a list of reactor vessel pressure and/or level setpoin Plan.	<b>ves</b> Its determine the automatic act	tion that occurs IAW the	e Lesson

Material Required for Examination

Question Source: INPO Exam Bank

Question Source Comments: QID #6574 Dresden 03/11/1996

Question Modification Method:

**Editorially Modified** 

- A plant start-up is in progress - Reactor power is 1% - Recirculation loop temperature is 300°F - "RPV LEVEL 4" alarm is received
What is the actual RPV water level?
27 inches
30 inches
d 33 inches
Answer a Exam Level & Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         1         SRO Group         1         295009A201
295009   Low Reactor Water Level   Record Number   14
AA2. Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL:
AA2.01 Reactor water level 4.2 4.2
Explanation of Answer       SRO UNIQUE - RO LEVEL QUESTION         Provide a copy of HC.OP-IO.ZZ-0003, Attachment 6 Narrow Range         CORRECT - 24 inches. Value obtained from the 250°F         INCORRECT - 27 inches. Value obtained from the 350°F lines.         INCORRECT - 30 inches. Value without temperature compensation.         INCORRECT - 33 inches. Value indicated level for actual level of 30" at 450 F.
Reference Title
HC.OP-IO.ZZ-0003, Attachment 6

-

		Learning Objectives	
00112CE005	(R) Interpret charts, graphs and tables c Integrated Operating Procedure to maint	ontained within the STARTUP FROM COLD SHUTDOWN TO RATED POWER tain plant operations within specified limits.	1116
		en e	
Material Require	d for Examination HC.OP-IC	0.ZZ-0003, Attachment 6 page 52	
Question Source	Facility Exam Bank	Question Modification Method: Significantly Modified	
Question Source	Comments: VISION BANK QID# Q56	518	1

-	A	LOC	A has	occurred	
---	---	-----	-------	----------	--

- All rods are full in
- "A" and "B" RHR Pumps are NOT available
- HPCI AND RCIC are NOT available
- Reactor water level is -150 and steady
- Reactor Feedwater Pumps are flowing 12,000 gpm each
- Reactor pressure is 1000 psig
- Drywell pressure is 45 psig and rising at 10 psig per minute
- Suppression Chamber pressure is 45 psig and rising at 10 psig per minute

The EOP mitigation strategy for this event is:

Depressurize with SRVs; inject with sources internal to the containment

Depressurize with SRVs; inject with sources external to the containment

Inhibit ADS and remain at pressure to conserve inventory; inject with sources internal to the containment

Inhibit ADS and remain at pressure to conserve inventory; inject with sources external to the containment

Answer a	Exam Level S Cognitive Level Ap	oplication	Fa	cility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Eme	rgency and Abnormal Plant Evolutions	RO Group	1	SRO Group	1	2950	009G406
295009	Low Reactor Water Level					Record Number	15
o ( –							

2.4 Emergency Procedures and Plan

2.4.6 Knowledge symptom based EOP mitigation strategies.

 
 Explanation of Answer
 Conditions provided are symptoms of a Feedwater line break inside the drywell. Drywell pressure above PSP requires emergency depressurization. If Drywell pressure cannot be maintained below 65 psig, then terminate RPV injection from sources outside containment not required for adequate core cooling.

Reference Title

EOP 101 Step RC/L2

#### 10CFR55.43(5)

 Understand
 Learning Objectives

 00124AE006
 (R) Given any step of the procedure, describe the reason for performance of that step and/or expected system response to control manipulation prescribed by that step.

Material Required for Examination EOP Flowcharts without entry conditions

Question Source: New

Question Source Comments:

**Question Modification Method:** 

3.1.4.0

- The plant is operating at 100 percent power
- Equipment Drain Sump leakage has remained constant at 2.0 gpm for 8 weeks.
- Floor Drain Sump leakage has risen steadily over several days from 1.2 g to 1.8 gpm.

At 0800 this day and hourly thereafter, operators obtained the following readings on the Floor Drain Sump:

0800	1.8
0900	2.1
1000	2.5
1100	2.7
1200	3.1
1300	3.2
1400	3.7
1500	3.9

Has a Technical Specification operational leakage limit for the Reactor Coolant System been exceeded and what is the bases for your answer?

No, because total leakage has remained less than 5 gpm

**b** No, because unidentified leakage has remained at about 2.0 gpm

Series Yes, because unidentified leakage has increased by more than 2 gpm

**d** Yes, because total leakage has increased to more than 5 gpm

Answer c Exam Level S Cognitive Level Application Fa	acility Hope Creek	Exam Date: 03/12/2002
Tier: Emergency and Abnormal Plant Evolutions <b>RO Group</b> 1	SRO Group 1	295010A102
295010 High Drywell Pressure		Record Number 16
AA1. Ability to operate and/or monitor the following as they apply to H	HGH DRYWELL PRE	SSURE:
AA1.02 Drywell floor and equipment drain sumps		3.6 3.6
Explanation of Answer SRO UNIQUE - RO LEVEL QUESTION Floor drain leakage is Unidentified leakage. 2 gpm or mo 3.4.3.2	ore increase in 24 hou	irs is an entry into TS
Reference Title		

TS 3.4.3.2

	Learning Objectives
000033E007	(R) Given a copy of the Technical Specifications, choose those sections which are applicable to the Drywell Ventilation System IAW the Drywell Ventilation System Lesson Plan.
000221E006	Given a scenario of applicable operating conditions and access to Technical Specifications:
	a. Identify those sections which are applicable to the Radiation Monitoring System IAW the Radiation Monitoring System Lesson Plan.
	<ul> <li>b. Evaluate RMS operability and determine required actions associated with Radiation Monitoring System inoperability.</li> <li>c. Explain the bases for those Technical Specification items associated with the Radiation Monitoring System. (SRO only)</li> </ul>

Material Required for Examination	Tech Specs without Definitions, Safety Limits, and bases
Question Source: INPO Exam Bank	Question Modification Method: Significantly Modified

Question Source Comments: QID#628 Duane Arnold 05/25/1999

- The reactor has scrammed due to rising Drywell pressure
- Drywell Floor Drain Sump Pumps have stopped running
- Drywell pressure continues to increase

Which one of the following describes the reason why the sump pumps have stopped?

100000					~			~ .	
13 1	TL - D-	بلمما المنبين	Detection	/	ີ້ປະເທດ	Monitoring	a	Hanala	high h
							THES H		
10801		V VVCII LOAN					90000	noouro	i ii Mi i
						<u> </u>	<u> </u>		<u> </u>

**b** The Reactor Recirc Seal Staging flow is isolated

• The sump pump suction screens are clogged

d. The Non-IE power source is shed

Answer d	Exam Level R	Cognitive Level Co	mprehension	Facility Hope Cree	k	Exam Date:	03/12/2002
Tier: Emei	rgency and Abnorn	nal Plant Evolutions	RO Group	1 SRO Group	1	295	010A102
295010	High Drywell Pre	ssure		· · · ·		Record Number	17
AA1. Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE:							

AA1.02 Drywell floor and equipment drain sumps

3.6 3.6

Explanation of Answer Drywell Floor Drain Sump pumps are powered from 10B252 and 262 MCC's which are shed on high drywell pressure.

- DLD goes offscale high- incorrect. This occurs but is not the reason the pumps stopped

- RR seal staging flow leakoff goes to the DW Equipment sump

- Suctions screens could clog from debris, but the pumps would continue to run

Reference Title

HC.OP-SO.SM-0001 Table SM-20

Learning Objectives

000086E011

(R) From memory test/identify the conditions/signals that will cause the Drywell Equipment and Floor Drain Containment Isolation valves to automatically close, IAW the Lesson Plan.

Material Required for Examination

Question Source: New

Question Source Comments:

Question Modification Method:

Given the following conditions:

- A LOCA has occurred

- Drywell temperature is 300F

- Drywell pressure is 3.0 psig

Which one of the following describes the plant response when one loop of Drywell Spray is initiated?

a. Reactor vessel level indications will be lost **b.** SRV operation can no longer be assured Running Drywell cooling fans will automatically trip d Drywell pressure will drop below the scram setpoint Cognitive Level Comprehension Exam Level B Answer d Facility Hope Creek Exam Date: 03/12/2002 Tier: **RO** Group SRO Group 295012K101 **Emergency and Abnormal Plant Evolutions** 2 2 Record Number 295012 High Drywell Temperature 18 AK1. Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL TEMPERATURE: AK1.01 Pressure/temperature relationship 3.3 3.5 Explanation of Bases of Drywell Spray Initiation Limit states "DWSIL is the highest drywell temperature at which Answer initiation of drywell sprays will not result in an evaporative cooling pressure drop to below either. The drywell-below-wetwell differential pressure capability, or - The high drywell pressure scram setpoint. Since the parameters given are in the UNSAFE region of the DWSIL curve, Drywell pressure will drop below the scram setpoint. -Drywell sprays cool the areas surrounding the RPV Level instrumentation reference legs, improving reliablity - Drywell cooling fans trip on 1.68 psig or manually before; not because sprays are initiated

- SRV operation is limited by DW temps above 340F, not sprays initiation

EOP Caution <sup>·</sup>	1
	Learning Objectives
00124AE006	(R) Given any step of the procedure, describe the reason for performance of that step and/or expected system response to control manipulation prescribed by that step.
000002E014	<ul> <li>(R) Given changes in the following parameters, evaluate the affect on each RPV level indication IAW the Lesson Plan.</li> <li>a. Reactor Pressure</li> <li>b. Drywell Temperature</li> <li>c. Steam Flow</li> </ul>
Material Require	ed for Examination
Question Source	E: INPO Exam Bank Question Modification Method: Editorially Modified
Question Source	Comments: QID# 8632 Hope Creek Unit 08/10/1998

Which one of the following describes the bases for Suppression Pool Cooling being required to be in service as a prerequisite to starting HPCI for surveillance testing?

To ensure adequate thermal mixing of the water in the Suppression Pool to limit stress on the torus shell due to differential thermal expansion.

To allow the maximum average Suppression Pool water temperature limit to be increased to 105°F.

To extend the operating time for HPCI testing before the maximum average temperature limit is reached and testing is required to be stopped.

To ensure that heat added to the Suppression Pool does NOT increase Suppression Chamber air space pressure to the point where the Suppression Chamber to Drywell vacuum breakers cycle.

Answer <sub>C</sub> Exam Level <sub>B</sub> Cognitive Level Memory	Facility Hope Creek	Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group	2 SRO Group 1	295013K201
295013 High Suppression Pool Temperature		Record Number (19
AK2. Knowledge of the interrelations between HIGH SUPPRESS	ION POOL TEMPERATU	RE and the following:
AK2.01 Suppression pool cooling		3.6 3.7
Explanation of Reason for prerequisite 2.1.9 of quarterly surveilland	ce test	<u>.</u>
Reference Title		

HC.OP-IS.BJ-0001 Section 2.1.9

		Learning Objectives
000026E014	(R) Given plant problems/industry events	s associated with the HPCI system:
	a. Discuss the root cause of the plant p	problem/industry event IAW the HPCI System Lesson Plan.
	b. Discuss the HCGS design and/or pr	ocedural guidelines that mitigate/reduce the likelihood of the problem/industry event at
	HCGS IAW the HPCI System Lesson Pla	an.
	<ul> <li>c. Discuss the "lessons learned" from thi</li> </ul>	is problem/event IAW the HPCI System Lesson Plan.
Material Required	I for Examination	
Question Source:	INPO Exam Bank	Question Modification Method: Editorially Modified
Question Source	Comments: INPO BANK QID# 8883	

	Гhe	plant	is	operating	at	100%	power
--	-----	-------	----	-----------	----	------	-------

- Main Steam Isolation Valve AB-HV-F022A inadvertently closes

Which one of the following describes the response of the reactor?

Reactor power will:

- drop initially due to a Reactor Recirc intermediate runback when RPV level reaches +30 inches. This increases the boiling boundary length which adds negative reactivity.
- rise initially due to the reactor pressure rising. This causes a collapse of voids in the core which adds positive reactivity.
- rise initially due to a rising core water level caused by rising reactor pressure. Power will return to a slightly lower level in response to Reactor Water Level Control and Turbine Control Valve movement.
- drop initially due to the void boundary being pushed lower in the core. As the Turbine Control Valves respond to lower reactor pressure, power rises as the void boundary rises.

Answer b Exam Level B Cognitive Level Comprehen	sion Facility Hope Creek	Exam Date: 03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Gr	oup 1 SRO Group 1	295014K204
295014 Inadvertent Reactivity Addition		Record Number 20
AK2. Knowledge of the interrelations between INADVERTE	IT REACTIVITY ADDITION a	and the following:
AK2.04 Void concentration		3.2 3.3
<b>Explanation of</b> Answer When the MSIV closes, steam flow is reduced steamlines. Reactor pressure rises and voids of	as 100 percent steam flow no collapse. Void collapse cause	ow passes through only 3 s power to rise.
Reference	e Title	
HC.OP-AB.ZZ-0202		
Learning C	biectives	
000228E024 Given a reactor power change analyze that power char	ge and predict how the various reac	tivity coefficients respond.
Material Required for Examination		
Question Source: INPO Exam Bank	Question Modification Method:	Editorially Modified
Question Source Comments: INPO BANK QID# 16307 Grand Gulf 1	)4/01/2000	

- The plant is operating at 60% power
- Both Reactor Recirc Pump Speed Controllers are in AUTO (Master Manual)

Which one of the following would require the operator to immediately place the Reactor Mode Switch to Shutdown

SIC-R620 Master Speed Control Recirc Master Demand fails full upscale

SIC-R620 Master Speed Control Recirc Master Demand fails full downscale

SIC-R621A Reactor Recirc pump speed demand fails full upscale

SIC-R621A Reactor Recirc pump speed demand fails full downscale

Answer a	Exam Level B	Cognitive Level Me	mory	Facility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Eme	rgency and Abnorm	al Plant Evolutions	RO Group	1 SRO Group	1	2950	014K301
295014	Inadvertent React	ivity Addition				Record Number	21

295014 Inadvertent Reactivity Addition

AK3. Knowledge of the reasons for the following responses as they apply to INADVERTENT REACTIVITY ADDITION:

AK3.01 Reactor SCRAM

Explanation of Answer	Immediate	operator action	for dual recirc	c pump ri	unaway IAW	HC.OP-AB.Z	Z-0204	

HC.OP-AB.ZZ-0204

Learning Objectives

**Reference** Title

0AB204E002 (R) From memory, recall the Immediate Operator Actions for Positive Reactivity Addition, Abnormal Operating Procedure.

Material Required for Examination
Question Source: New

Question Source Comments:

Question Modification Method:

4.1 4.1

- An ATWS with fuel damage has occurred

- The Emergency Duty Officer (EDO) decides that it is necessary to send someone into the Reactor Building (with Radiation Protection) to individually scram rods

What is the maximum allowable dose limit that the EDO may authorize for this evolution?

<sup>a</sup> 5 REM				
• 10 REM				
25 REM				
Answer <sub>C</sub> Exam Level <sub>S</sub> Cognitive Level	Memory Facil	ity Hope Creek	xam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolution	ons <b>RO Group</b> 1 S	RO Group 1	295	015G304
295015 Incomplete SCRAM			lecord Number	22
2.3 Radiological Controls				
2.3.4 Knowledge of radiation exposure limit excess of those authorized.	s and contamination contro	ol, including permissib	e levels in	2.5 3.1
<b>Explanation of</b> Answer The EDO may authorize 25 REM accident.	A per person for emergence	y actions to mitigate th	ne consequen	ces of an
	Reference Title			
NC.EP-EP.ZZ-0304 Sect 5.2				
.10CFR55.43(4)				
	Learning Objectives			
Meterial Partitived for Evamination				
Ouestion Source: INPO Examination	Question	Acdification Method:	Editorially Modifie	۶d
Question Source Comments: INPO EXAM BANK Q	uestion ID# 7986. Hatch 3/97 mc	dified for Hope Creek. EP f	or Licensed Oper	rators. Lesson

- The reactor scrammed from 100 percent power
- Reactor power is on the Source Range Monitors
- 3 rods remain at position "48"
- Scram air header reads 0 psig
- The scram CANNOT be reset

IAW EOP Bases, which one of the following methods of achieving shutdown condition is best for these conditions?

Vent control rod over-piston areas to insert rods

De-energize scram solenoids to insert rods

Defeat Rod Worth Minimizer to insert rods

Initiate Standby Liquid Control to inject boron

Answer <sub>C</sub>	Exam Level B	Cognitive Level Com	prehension	Facility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Emerg	ency and Abnorma	al Plant Evolutions	RO Group	1 SRO Group	1	2950	)15K301
295015	Incomplete SCRA	M				Record Number	23
AK3. Knowl	edge of the reasor	ns for the following resp	oonses as they	apply to INCOM	IPLETE	SCRAM:	
AK3.01 Byp	assing rod insertio	n blocks					3.4 3.7
Explanation of Answer	RC/Q-21 states ' when only a few already de-energy	Drive control rods, def control rods cannot be jized. Power is less tha	eat RWM inter inserted". Th an 4% so SBL0	locks if necessar e scram cannot b C should not be u	ry. This be reset. ised.	method is best ap Scram solenoids	oplied s are

Reference Title

HC EOP Bases step RC/Q-21

1:100.00013100.000	i da cligita Ref (	11111111111	1010010-001	
	• • • • • • • • • • • • • • • • • • •	~L.:		
e een	ina.	i Jni	ACII	VPS
		~~	~~~	

(R) Given any step of the procedure, explain the reason for performance of that step and/or evaluate the expected system response to control manipulations prescribed by that step.

Material Required for Examination EOP Flowcharts without entry conditions

Question Modification Method:

Question Source: New

00124BE008

Question Source Comments:

- The plant was operating at 100% power
- Toxic gas concerns have required the Main Control Room to be evacuated
- The transfer of controls to the Remote Shutdown Panel have been completed

Which of the following systems are available for reactor vessel pressure control from the Remote Shutdown Panel?

SRV's F, H & M and RHR Shutdown Cooling

Turbine Bypass Valves and Reactor Core Isolation Cooling

Reactor Feed Pumps and Reactor Recirculation

High Pressure Coolant Injection and LO-LO SET SRVs

Answer a Exam Level B Cognitive Level Memory Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group 2 SRO Group 1	2950	)16A102
295016 Control Room Abandonment	Record Number	24
AA1. Ability to operate and/or monitor the following as they apply to CONTROL ROOM AB	ANDONMENT:	
AA1.02 Reactor/turbine pressure regulating system		2.9 3.1
Answer IO-8 initiates rpv cooldown with SRV's F,H, & M until SDC can be established 130 Trip the main turbine and close the MSIVs. Recirc pumps are manually to closed. HPCI cannot be controlled from the RSP. LO LO SET SRV's are only Control Room.	ripped and dischar y controlled from the	ge valves he
Reference Title		
HC.OP-IO.ZZ-0008		
HC.OP-AB.ZZ-0130		
O0112HE006         (R) Analyze plant conditions and parameters to determine if plant operation is in accordance OUTSIDE THE CONTROL ROOM Integrated Operating Procedure, supporting System Oper Specifications.	with the SHUTDOWN ating Procedures and <sup>-</sup>	FROM Fechnical
Material Required for Examination		
Question Source: INPO Exam Bank Question Modification Method:	Editorially Modified	l Thur th

- A plant shutdown is in progress - North Plant Vent RMS is in HIGH alarm - South Plant Vent RMS is reading 4.5 e+2 uCi/sec - FRVS Vent RMS is reading 6.5 e-2 uCi/sec - FRVS is NOT in service	
Which one of the following is the source of the high alarm?	
Service Area Exhaust System	
Solid Radwaste Exhaust System	
Radwaste Area Exhaust System	
Iurbine Building Exhaust System	
Answer b Exam Level S Cognitive Level Comprehension Facility Hope Creek Exam	Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO Group         1	295017A201
295017   High Off-Site Release Rate	d Number 25
AA2. Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE	ERATE:
AA2.01 Off-site release rate: Plant-Specific	2.9 4.2
Explanation of Answer         HC.OP-AB.ZZ-0126           Solid Radwaste Exhaust discharges to North Plant Vent Stack           Others discharge to the South Plant Vent	:
Reference Title	
HC.OP-AB.ZZ-0126	
10CFR55.43(4)	n version die als waar en waar water water water in als

 O00114E003
 (R) Discuss the operational implications of the abnormal indications/alarms for system operating parameters related to a given Abnormal Operating Procedure.

Material Required for Examination

Question Source: Facility Exam Bank

Question Source Comments: VISION BANK QID# Q55943

Question Modification Method:

**Direct From Source** 

- Marsh Grass intrusion has reduced the flow in Service Water Loops "A" & "B"

- The differential pressure across the "A" SSW Pump Strainer is being reduced to maximize strainer backwash operation

Per HC.OP-AB.ZZ-0122, Service Water System Malfunction, why should the discharge valve of "A" SSW Pump be closed for no more than two minutes during this evolution?

a. All SS	SW flow from SS	SW Loop "A" to RACS	S and SAC	S will be lost	• • • •		· · · · · ·
<b>b</b> Lubri	cating water flow	w will be lost to SSW	Pump "A".				
Spray	v Water Booster	Pump "A" will remain	n stopped b	y interlock			
d Block	age problems c	ould worsen on othe	r SSW Pun	np strainers			
Answer d	Exam Level S	Cognitive Level Memor	у	Facility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Emer	rgency and Abnorm	al Plant Evolutions	RO Group	2 SRO Group	2	29	5018A203
295018	Partial or Comple	te Loss of Component Co	ooling Water			Record Numbe	<b>r</b> 26
AA2. Abilit CON	y to determine and IPONENT COOLIN	or interpret the following G WATER:	as they apply	to PARTIAL OI	RCOMF	PLETE LOSS C	)F
AA2.03 Ca	use for partial or co	omplete loss	· · · · · ·				3.2 3.5
	HC.OP-AB.ZZ-C Closing the disc increasing differ INCORRECT - I from the Lubrica INCORRECT - S Pump is stopped INCORRECT - J be maintained b	2006/2012 problems could we parage path on one pump ential pressure for those Lubricating water flow will ation Head Tanks upstrea Spray Water Booster Pun d when its own discharge All SSW flow from SSW L y operating the C SSW P	bisen on othe build be limited may compou strainers. be lost to SS m of the SSW of the SSW p A will rema valve is shut oop A to RAC ump while the	W Pump A. Luk M Pump A. Luk V Pump discharg in stopped by ir not when the S S and SACS w SSW Pump A	rainers. ith the di- blems o pricating ge valve iterlock. SW Pur ill be los flow is s	n other pumps water flow is s The Spray Wa np discharge v topped.	o.4.D of closed. by upplied iter Booster alve is shut. flow can
		Re	ference Title				
HC.OP-AB.2	2Z-0122, Caution 4	.6.4.D				ata ang ang ang ang ang ang ang ang ang an	
			· · · · ·				
0AB122E004	Explain the reaso Abnormal Operati	Lear ns for how plant/system parame ng Procedure.	ning Objectives eters respond wi	ien implementing, S	Service Wa	ater System Malfur	nction,

Material Required for Examination

Question Source: Facility Exam Bank

Question Source Comments:

Vision Bank QID# Q61195

Question Modification Method: Direct From Source

- A leak on the Instrument Air header has resulted in lowering header pressure.

- The "INST AIR HEADER A PRESSURE LO" annunciator alarm is received.

Which one of the following valves automatically open to restore header pressure and at what pressure?

The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 70 psig	
The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 85 psig	
The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 70 psig	
The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 85 psig	
Answer       b       Exam Level       B       Cognitive Level       Memory       Facility       Hope Creek       Exam Date:         Tier:       Emergency and Abnormal Plant Evolutions       RO Group       2       SRO Group       2       295019         295019       Partial or Complete Loss of Instrument Air       Record Number         AA1.       Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF	03/12/2002 9A102 27
AA1.02 Instrument air system valves: Plant-Specific Explanation of Answer Instrument Air Dryer AF-104 outlet valve will automatically open at 85 psig on lowering air pressu	3.3 3.1 re.
Reference Title HC-OP.AB-ZZ-0131	
Learning Objectives           0AB131E004         Explain the reasons for how plant/system parameters respond when implementing, Loss Of Instrument Air And/Or Ser Abnormal Operating Procedure.	vice Air,
Material Required for Examination       Question Source:       INPO Exam Bank       Question Modification Method:       Significantly Modified         Question Source Comments:       INPO Exam Bank QID #6871 Dresden 2       07/28/1999	

- The plant is operating at 50 percent power during a startup
- Overhead alarms received "MSIV CLOSURE"
- All 4 Outboard MSIV's OPEN and CLOSED indication lights are illuminated

Which one of the following would cause the alarm condition?

Degrading Instrument Air header pressure

**b** Degrading Instrument Gas header pressure

Loss of solenoid power to the MSIV 4-way "operator valves"

Loss of solenoid power to the MSIV "test valves"

Answer a	Exam Level R	Cognitive Level Co	mprehension	Facility Hope Cre	ek	Exam Date: 0	)3/12/2002
Tier: Eme	rgency and Abnorma	al Plant Evolutions	RO Group	2 SRO Group	2	295019	A201
295019	Partial or Complet	e Loss of Instrumen	t Air			Record Number	28

AA2. Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR:

AA2.01 Instrument air system pressure

3.5 3.6

Explanation of Answer Degrading air header pressure on the Reactor Bldg supply header which supplies the outboard MSIVs would cause all four to slowly close. Loss of solenoid power to the test valves will have no effect because they are normally deenergized. "4 way valves" are air powered.

Reference Title

HC.OP-AB.ZZ-0131 Attachment 1

000046E014

Learning Objectives

(R) Concerning the Main Steam Isolation Valves (MSIV's), summarize, list or identify the following IAW the lesson plan.a. Assess the effect on a MSIV if loss of electric or loss of pneumatic supply occurs.

b. Determine the signals which will automatically close the MSIV's and when, if ever, certain isolations can be bypassed.

Material Required f	or Examination		
Question Source:	New		Question Modification Method:
Question Source Co	omments:	 •	

- The reactor has been in COLD SHUTDOWN for two (2) days following power operation

- Reactor vessel water level is +30 inches
- Neither Reactor Recirculation pump is available

- Shutdown Cooling has isolated and the Shutdown Cooling suction valves CANNOT be opened

- The highest RPV metal temperature is 190°F and rising
- HC.OP-AB.ZZ-0142, Loss of Shutdown Cooling has been entered

NEPONIE AUAT

Based on given information, which one of the following is the highest ECG classification applicable?

8 hour report			
b 4 hour report			
C Unusual Event			
d Alert			
Answer d Exam Level S Cognitive Level Application	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group	3 SRO Group 2	295	021G441
295021 Loss of Shutdown Cooling		Record Number	29
2.4 Emergency Procedures and Plan			
2.4.41 Knowledge of the emergency action level thresholds and	classifications.		2.3 4.1
Explanation of ECG EAL 8.1.2 Inability to maintain the plant in Col	d Shutdown		
Reference Titl	<b>e</b>		
HC ECG EAL 8.1.2			
10CFR55.43(5) Learning Object	ives		
Material Required for Examination	×		
	uestion Modification Metho		
Question Source Comments: EP Lesson Plan		en e	

- The plant is operating at 100 percent power
- "A" CRD Pump is C/T for maintenance
- CRD SYSTEM TROUBLE overhead alarm C6-F2 comes in
- CRD Cooling Water flow drops to zero gpm

What is the bases for the 20 minute provision of Tech Specs before a manual scram is required?

Residual pressure remains in the charging water header for greater than 20 minutes

- **b** Demonstrated leak rate of the scram accumulator outlet checkvalves will maintain accumulator pressures
- Adequate time to place a CRD pump back in service
- d Ability for charging header pressure alone to fully insert all control rods

Answer	C Exam Level S Cognitive Level Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier:	Emergency and Abnormal Plant Evolutions RO Group	2 SRO Group 2	2950	22G448
295022	Loss of CRD Pumps		Record Number	30
2.4	Emergency Procedures and Plan		· · ·	
2.4.48	Ability to interpret control room indications to verify the st understand how operator action s and directives affect pl	atus and operation of syst lant and system conditions	em, and	3.5 3.8
Explanat Answer	<b>ion of</b> Tech spec bases 3/4 1.3. The question is based on requirements on a loss of both CRD pumps.	the TS bases for an oper	ator manual scram	n time
	Reference Titl	8		

Tech spec bases 3/4 1.3

Question Source Comments:

#### 10CFR55.43(2)

Learning Objectives (R) Given a scenario of applicable operating conditions and access to Technical Specifications complete each of the following 000006E033 IAW Technical Specifications: Select those sections applicable to the CRDH System. a. Evaluate CRDH System operability and determine required actions and time limits associated with inoperable components. b.

Explain the bases for those Technical Specification sections associated with the CRDH System. SRO ONLY C.

Material Required for	or Examination	Т	ech	Specs without	Definitions,	Safety Limits,	and bases
Question Source:	New	-			Questio	on Modification N	lethod:
- The plant is at 37% power
- Both CRD pumps are tripped on low suction pressure
- The Reactor Building Operator is swapping CRD suction filters
- CRD ACCUM TROUBLE Overhead Annuciator C6-D4 is clear

(Assume NO other operator actions)

Which one of the following describes the effect on gas pressure in the HCU Accumulators 2 minutes following the pump trip?

<sup>a</sup> Stays the same because reactor pressure holds the charging water check valve closed

**b** Stays the same because accumulator pressure holds the charging water check valve closed

c. Lowers because the reactor scrams

Lowers because the accumulator piston moves when charging water header pressure is lost

Answer b Exam Level B Cognitive Level Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group	2 SRO Group 2	29502	2K203
295022 Loss of CRD Pumps		Record Number	31
AK2. Knowledge of the interrelations between LOSS OF CRD PU	MPS and the following:		
AK2.03 Accumulator pressures.			3.4 3.4
<b>Explanation of</b> Answer Charging water check valve 115 maintains water vol pumps. N2 gas pressure will remain the same as lon not hold, the piston will stroke and N2 pressure will c	ume on a loss of chargin ig as the check valve hole frop causing low accumu	g pressure from the ds. If the check valv lator pressure alarm	CRD e does

Reference Title

HC.OP-IS.BF-0103 Purpose

Lesson Plan 00006

Learning Objectives

000006E017 (R) Given the appropriate procedure or access to the procedure, summarize the accumulator trouble alarms and their setpoints associated with each CRD HCU and how these problems may impact CRDH System Operation, IAW the Lesson Plan.

Material Required for Examination

Question Source: New

Question Source Comments:

Question Modification Method:

- "A" Fuel Pool Cooling Pump is tagged for maintenance

- "B" Fuel Pool Cooling Pump trips

How does this affect the ability to monitor Fuel Pool temperature in the Control Room?

a.	Temperature r	recorder	TR-4683 is	unaffected	because	it monitors	Skimmer	Surge	Tank
	temperature								

The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is INVALID because it monitors Skimmer Surge Tank temperature

The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is VALID because it monitors Fuel Pool Cooling Pump common discharge piping

Temperature recorder TR-4683 is INVALID because it monitors Fuel Pool Cooling Pump common discharge piping

Answer d Exam Level B Cognitive Level Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group	3 SRO Group 1	29502	23A102
295023 Refueling Accidents		Record Number	32
AA1. Ability to operate and/or monitor the following as they apply	to REFUELING ACCIDE	NTS:	
AA1.02 Fuel pool cooling and cleanup system			2.9 3.1
<b>Explanation of</b> Answer Both Temp alarm and Recorder TR-4683 monitor the of the FPCC pumps. With no flow, the piping will equivalent temperature of the FPCC pumps.	e same parameter in the ualize with ambient air ter	common discharge mperature, no longe	piping r valid

indication of Fuel Pool Temperature.

Reference Title

HC.OP-AR.ZZ-0013 Attachment D5

000043E017

Learning Objectives

(R) Given a set of conditions and a drawing of the controls, instrumentation and/or alarms located in the Control Room, identify the status of the FPCCS or its components by evaluation of the controls/instrumentation/alarms, IAW the Fuel Pool Cooling and Cleanup System (FPCCS) Lesson Plan.

Material Required for	or Examination	Drawing of alarm window D1-D5. Drawing of TR-4683
Question Source:	New	Question Modification Method:
Question Source Co	mments:	

- Core offload is in progress - A fuel bundle was removed from the reactor vessel, full up on the Fuel Hoi chute heading for the Fuel Pool - Fuel Pool Skimmer Surge Tank Level is lowering rapidly	st, and in the ca	ttle
Which one of the following describes the operator actions required?  Place the bundle into its original reactor core location		
Place the bundle into the Fuel Prep Machine		
Stop the bridge at its current location and leave the refueling floor		
d Stop the bridge at its current location and lower the bundle full down		
Answer a Exam Level B Cognitive Level Memory Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group 3 SRO Group 1	29502	23A202
295023 Refueling Accidents	Record Number	33
AA2. Ability to determine and/or interpret the following as they apply to REFUELING ACCI	DENTS:	
AA2.02 Fuel pool level		3.4 3.7
<b>Explanation of</b> Answer IIII Immediate operator action on loss of fuel pool inventory/cooling is to return the reactor vessel or the fuel pool. Tech Spec definition of Core Alterations allows component to a safe location.	e bundle to either t s continued movem	he lent of a
Reference Title		
HC.OP-AB.ZZ-0144		
0AB144E002 (R) From memory, recall the Immediate Operator Actions for Loss Of Fuel Pool Inventory/Cor Procedure.	oling, Abnormal Operati	ng
Material Required for Examination Ouestion Source: New Question Modification Method:		

- The reactor at rated power
- Hope Creek experiences a Loss of Offsite Power event and a reactor scram
- Approximately 13 sec into the event, Drywell pressure is 1.9 psig

Which one of the following describes the operation of the LOCA and LOP sequencers?

The LOP sequencer program will be in control of restoring the loads.

- The LOP sequencer will complete sequencing 2 minutes later, then the LOCA sequencer will start.
- The LOCA sequencer program will be in control of restoring the loads.
- The LOCA sequencer will complete sequencing 2 minutes later, then the LOP sequencer will start.

Answer <sub>C</sub>	Exam Level B	Cognitive Level M	lemory	Facility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Emerge	ency and Abnorm	al Plant Evolutions	RO Group	1 SRO Group	1	295	024A110
295024	High Drywell Pres	sure				Record Number	34
EA1. Ability	to operate and/or	monitor the followin	g as they apply to	o HIGH DRYWEL	L PRES	SURE:	
EA1.10 A.C.	distribution						3.4 3.6
Explanation of Answer	Justification The LOCA Sequ protect the core loads do not ove	encer takes priority and prevent radioac rload the diesels	over the LOP Se stive release are s	quencer to ensur sequenced on wh	e that al ien requ	l systems requir ired and that unr	ed to necessary
			Reference Title				
HC.OP-SO.K.	J-0001						
			Learning Objective	×s			

000066E012	Sumn	narize/identify on Plan.	the emerge	ency load seque	encer response	for a LOP cor	ncurrent with a LOCA	signal IAW Attachn	nent 1 of the
									· ·
	:								

Material Required for Examination

Question Source: Facility Exam Bank

Question Source Comments: VISION BANK QID# Q53753

Question Modification Method:

Editorially Modified

Which one of the following evolutions is considered an (IPTE) in accordance with NC.NA-AP.ZZ-0084?	Infrequently Perform	ed Test or Evol	ution
Tagging and draining a Reactor Auxiliaries Cooling	I Pump		
LOP / LOCA surveillance testing			•••••••••••••••••••••••••••••••••••••••
Single Loop operations following Recirc Pump trip		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Primary containment local leak rate testing		· · · · · · · · · ·	
Answer b Exam Level S Cognitive Level Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group	1 SRO Group 1	2950	24G207
295024 High Drywell Pressure		Record Number	35
2.2 Equipment Control			
2.2.7 Knowledge of the process for conducting tests or experim report.	ents not described in the	safety analysis	2.0 3.2
<b>Explanation of</b> Answer NC.NA-AP-ZZ-0084 lists LOP /LOCA Testing as an This question is based on IPTE of LOP/LOCA surve experiments during emergency conditions would not	example of IPTE. illances because perform be plaausible. Very toug	ance of tests or h KA to match.	
Reference Title			
NC.NA-AP.ZZ-0084		· ·	
10CFR55.43(1)			
000113E082 Determine if an activity meets the criteria for an Infrequently P	erformed Test or Evolution.		
nou as no onut			
Material Required for Examination			
Question Source: INPO Exam Bank Qu	estion Modification Method:	Significantly Modifie	ed
Question Source Comments: INPO BANK QID# 17619 Sequoyah 06/01/199	8		

· \_\_\_\_

- The reactor is operating at 100% power
- A spurious Main Turbine trip occurs
- The reactor scrams with all rods going full in

- Turbine Bypass valves fail to operate properly resulting in a reactor pressure excursion up to 1100 psig

What is the impact on the Digital Feedwater Level Control System? (Assume no operator action)

Operation of RFP Controllers in MANUAL is available after 55 seconds

Dependion of all controllers is automatically restored in 12.5 minutes

C Operation of RFP Controllers is available in MANUAL or AUTO until the RFP's trip

d The Master Level Controller will stay at its original demand signal for 10 seconds

Answer <sub>C</sub> Exam Level R Cognitive Level Comprehension Fac	lity Hope Creek Exam Date:	03/12/2002					
Tier: Emergency and Abnormal Plant Evolutions RO Group 1	SRO Group 1 29	5025A206					
295025 High Reactor Pressure	Record Number	. 36					
EA2. Ability to determine and/or interpret the following as they apply to	HIGH REACTOR PRESSURE:						
EA2.06 Reactor water level		3.7 3.8					
Explanation of Answer Reactor high pressure causes RRCS initiation. ARI initiates but Feedwater Runback requires APRMS Inop or Not Downscale (ATWS). This question tests the operators ability to determine the post transient control of reactor level.							
Reference Title							
HC.OP-SO.AE-0001							

000059E015

Learning Objectives

E015 (R) From memory, describe the three possible RFP runback signals including conditions, setpoints and time delays if applicable, IAW the Feedwater Control System Lesson Plan.

Material Required for Examination

Question Source: INPO Exam Bank

Question Modification Method: Significantly Modified

Question Source Comments: INPO EXAM BANK QID# 2336 Perry 08/30/1997

	The	plant	was	operating	at	100%	power
--	-----	-------	-----	-----------	----	------	-------

- A transient occurs

- RPV pressure reached 1330 psig before turning downward

WHICH ON	NE of the follow	/ing states the requ	uired action	(s) for RPV pre	essure	e reaching 1330	psig?
a. Prepa	re and submit a	a Safety Limit Viola	tion Report	within 30 day	S.		
<b>b.</b> Resto	re to within limi	ts within 15 minute	s or be in C	OLD SHUTD	OWN (	within the next 6	3 hours.
C. Resto	re to within limi	ts within 1 hour or	be in COLD	SHUTDOWN	withi	n the next 12 ho	ours.
d Perfor	m an engineer	ing evaluation on t	he out-of-lin	nits condition v	within	24 hours.	
Answer a	Exam Level B	Cognitive Level App	lication	Facility Hope Cr	eek	Exam Date:	03/12/2002
Tier: Emerg	gency and Abnorm	nal Plant Evolutions	RO Group	1 SRO Group	1	2950	)25K105
295025	High Reactor Pre	ssure				Record Number	37
EK1. Know PRES	ledge of the opera SURE:	tional implications of th	ne following co	incepts as they a	pply to	HIGH REACTOR	
EK1.05 Exc	eeding safety limit	ts					4.4 4.7
Explanation of Answer	Action for Safety	y Limit Violation is spec	cified in TS Ad	min controls sec	tion 6.7	.1.d	
			Reference Title				
HC Tech Spe	ecs 6.7.1.d						
		Ļ	earning Objectiv	<b>es</b>			
000110E002	(R) Given Technic Limit is violated.	cal Specifications, determine	e the administrati	ve and operational ac	tions tha	t must be performed if	a Safety
	- · · · ·						
Material Requi	red for Examination	Tech Specs w	ithout Definitio	ons, Safety Limits	, and b	ases	
Question Sour	ce: INPO Exam Ba	nk	Qu	estion Modification	Method:	Significantly Modifi	ied

Question Source Comments: INPO BANK QID# 13957 Palo Verde 11/18/1996

- A LOCA has occurred
- Drywell temperature is 240°F
- Suppression Chamber pressure is 7.5 psig
- Suppression Pool temperature is 125 F and rising

Which one of the following describes the bases for initiating Suppression Chamber Spray at this pressure?

To prevent exceeding the negative design pressure of the primary containment.

- To reduce primary containment pressure by condensing steam which may be present in the Suppression Chamber airspace.
- To reduce accumulation of non-condensibles in the Suppression Chamber.
- To prevent Drywell depressurization that exceeds the capacity of the Suppression Chamber to Drywell vacuum breakers.

Answer b Exam Level B Cognitive Level Comprehension Facility Hope Creek Exam	n Date: 03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group 2 SRO Group 1	295026K102
295026 Suppression Pool High Water Temperature Reco	ord Number 38
EK1. Knowledge of the operational implications of the following concepts as they apply to SUPPF POOL HIGH WATER TEMPERATURE:	RESSION
EK1.02 Steam condensation	3.5 3.8
Explanation of Suppression chamber sprays are initiated below 9.5 psig to reduce primary contained condensing steam which may be present in the SC airspace.	nent pressure by
Reference Title	
HC EOP Bases step DW/P-5	
Learning Objectives	
00126AE009 (R) Given plant conditions and access to EOPs, select the value of the Suppression Chamber Spray explain the basis for this limit IAW the Primary Containment Control - Drywell Lesson Plan.	Initiation Pressure and
	د ه د م م م

 Question Source:
 INPO Exam Bank
 Question Modification Method:
 Significantly Modified

Question Source Comments: INPO EXAM BANK QID# 8062Hope Creek Unit 09/28/1997

- The Reactor has scrammed
- A small break occurred on the RPV head vent line
- Drywell temperature is 330°F and rising
- Drywell sprays are NOT available

Emergency Depressurization is required to prevent exceeding which one of the following?

Readable range of Drywell temperature instrumentation

Maximum capacity of the Drywell Cooling system

Saturation temperature for the Drywell design pressure

Environmental qualification temperature of safety related equipment in the Drywell

Tier: Emergency and Abnormal Plant Evolutions RO Group 2 SRO Group 2	2950	28K102
295028 High Drywell Temperature Reco	rd Number	39
EK1. Knowledge of the operational implications of the following concepts as they apply to HIGH D TEMPERATURE:	RYWELL	
EK1.02 Equipment environmental qualification		2.9 3.1
<b>Explanation of</b> Answer IAW EOP 102 bases step DW/T-3, 340°F is the qualification limit for ADS as well as temp. ED before 340 so that ADS valves can be used.	the Drywell	design
Reference Title	SCINC SCINC	
EOP 102 bases step DW/T-3 and DW/T-5		
		C 7 1 19-14 844 1 1 1 1 1 2 144 18
Learning Objectives           00126AE007         (R) Given any step of the procedure, determine the reason for performance of that step and/or predict response to control manipulations prescribed by that step IAW the Primary Containment Control - Dryn	expected syst well Lesson PI	em an.
	···.	
Material Required for Examination		

Question Source: Facility Exam Bank
Question Source Comments:

Question Modification Method:

Significantly Modified

- Reactor is scrammed

- Suppression Pool level is lowering

If Suppression Pool level reaches 49 inches, which one of the following wou	Ild occur?
Reactor Building to Suppression Chamber Vacuum Breakers close if op	pen
Reactor Building to Suppression Chamber Vacuum Breakers open if closed	osed
C Drywell to Suppression Chamber differential pressure increases	
d Drywell to Suppression Chamber differential pressure decreases	
Answer d Exam Level S Cognitive Level Comprehension Facility Hope Creek	Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO Group         1	295030A204
295030 Low Suppression Pool Water Level	Record Number 40
EA2. Ability to determine and/or interpret the following as they apply to LOW SUPPRESSI LEVEL:	ON POOL WATER
EA2.04 Drywell/ suppression chamber differential pressure: Mark-I&II	3.5 3.7
Explanation of At 55 inches in the SC, the Vent Header drain pipe uncovers causing different	ntial pressure to equalize.
Reference Title	
EOP- 102 step SP/L-5 bases	· · · · · · · · · · · · · · · · · · ·
Learning Objectives	
00125AE009 (R) Given any step of the procedure, determine the reason for performance of that step and/	or predict expected system
response to control manipulations prescribed by that step IAW the Primary Containment Cor Plan.	trol - Suppression Pool Lesson
	a a companya a company A companya a
Material Required for Examination	
Question Source: New Question Modification Method:	
Oriestion Source Comments:	

<ul> <li>A plant shutdown is in progress</li> <li>"A" RHR is tagged for motor replacement</li> <li>"B" RHR is in Shutdown Cooling at 210°F</li> <li>Suppression Pool Level Low annunciator alarms</li> <li>The PO reports Suppression Pool level is lowering</li> </ul>
Which one of the following makeup sources must be used?
Suppression Pool Makeup from HPCI using OP-EO.ZZ-0312
Suppression Pool Makeup from RCIC using OP-EO.ZZ-0313
Suppression Pool Makeup from Service Water using OP-EO.ZZ-0314
Suppression Pool Makeup from Core Spray using OP-EO.ZZ-0315
Answer d Exam Level B Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO Group         1         295030K203
295030     Low Suppression Pool Water Level     Record Number     41
EK2. Knowledge of the interrelations between LOW SUPPRESSION POOL WATER LEVEL and the following:
EK2.03 LPCS 3.8 3.9
Explanation of Answer The plant is in Op Cond 3. Core Spray must be used because it is the only source available for the given conditions. HPCI and RCIC do not have steam to run. SSW cannot be used due to B RHR is in SDC mode.
Reference Title
HC EOP step SP/L-4
D0125AE009       (R) Given any step of the procedure, determine the reason for performance of that step and/or predict expected system response to control manipulations prescribed by that step IAW the Primary Containment Control - Suppression Pool Lesson Plan.
Material Required for Examination EOP Flowcharts without entry conditions
Question Source: New Question Modification Method:
Question Source Comments:

- I&C surveillance	testing has	caused an	inadvertent RP	S scram signal
--------------------	-------------	-----------	----------------	----------------

- RPS actuates but some rods remain out with power at 2%
- RPV level lowers until RCIC and HPCI initiate
- Operators commence recovering level with Feedwater
- RPV level was below Level 2 for 15 seconds
- The Main Turbine is still on-line

(Assume NO other operator actions)

Which one of the following describes the status of RRCS?

ARI valves are energized and RPT breakers are open

RPT breakers are closed and ARI valves are de-energized

E Feed pumps have runback to minimum and RPT breakers are closed

ARI valves are energized and SLC pumps will initiate when 3.9 minute timer times out

Answer a Exam Level B Cognitive Level Comprehension Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emergency and Abnormal Plant Evolutions RO Group 1 SRO Group 1	2950	31K213
295031 Reactor Low Water Level	Record Number	42
EK2. Knowledge of the interrelations between REACTOR LOW WATER LEVEL and the f	ollowing:	
EK2.13 ARI/RPT/ATWS: Plant-Specific		4.1 4.2
Explanation of AnswerSLC will not initiate, power < 4% Feedpumps will not runback, no 1071 psig signal. ARI will actuate, energizing the valves. RPT breakers will be open, level was < -38 for >9 seconds.		
Reference Title		

HC.OP-SO.SA-0001

Learning Objectives

000024E007 (R) From memory, predict the sequence of events which occur within the Redundant Reactivity Control System upon: a. Automatic initiation in response to a high reactor vessel pressure condition with or without the APRM permissive, IAW the Lesson Plan.

b. Automatic initiation in response to a low reactor vessel water level condition with or without the APRM permissive, IAW the Lesson Plan.

c. Manual initiation with or without the APRM permissive, IAW the Lesson Plan.

Material Required for Examination

Question Source: Facility Exam Bank

Question Source Comments: Vision Bank QID# Q53742

Question Modification Method:

Editorially Modified

- The plant is in Operational Condition 5 for Refueling
- Fuel movement has been suspended
- Radiography of the reactor head is in progress on the Refueling Floor

- Due to misplaced shielding, all 3 channels of Refuel Floor Exhaust RMS unexpectedly alarm HIGH on the RM-11

- PCIS responds normally

ALTO ALYONT

Which one of the following is the highest ECG classification (if any) applicable?

a. NOT Re	portable						
b. 8 hour re	eport						
🖸 Unusual	Event						
d. Alert							
Answer b E	xam Level S	<b>Cognitive Level</b>	Application	Facility Hope	Creek	Exam Date:	03/12/2002
Tier: Emerger	ncy and Abnorm	al Plant Evolutio	ns RO Group	2 SRO Group	2		295034G218
295034 Se	econdary Conta	inment Ventilatio	on High Radiation			Record Numl	<b>ber</b> 43
2.2 Equipme	ent Control						
2.2.18 Knowl	edge of the proc	cess for managi	ng maintenance ac	tivities during sh	utdown ope	rations.	2.3 3.6
Answer t	RAL 11.3.3 Bas to valid Hi radiat Therefore, the E	ion conditions fr SF is reportable	om the radiography	/. The actuations	s were not p	part of a pre-	planned test.
<b>500 0</b> tion 4/	1.2.2 haaaa		incici cinec i ilu	M			
ECG Section 1	1.3.3 Dases						
10CER55 43(5)							
			Learning Object	ives			
			ntrali i si si				
• :				e de tradición			- 
						<sup>.</sup> .	
Material Required	I for Examination	ECG an	d ECG Technical E	Bases ES⊦ Actua	ation Flow C	nart page 2	and 3 of 4
Question Source:	New			uestion Modificatio	on Method:		
Question Source	Comments: E	> Lesson Plan					

- The reactor is operating at 100% power

- Annunciator B1-B3 (RCIC PUMP ROOM FLOODED) alarms with the following alarm message presented on the CRIDS display: D2887 RCIC PUMP RM 4151-1 LSH 4151-1 HI

- An investigation reveals that Reactor Building Floor Drain Sump pumps have been running continuously for 10 minutes

- The Reactor Building Operator reports the leak is coming from the CST suction line

In addition to running the sump pumps, which of the following action(s), if any, is required by EOP 103/4?

	Isol	ate	RC	IC
--	------	-----	----	----

- II -- Immediately commence a normal reactor shutdown
- III -- Runback reactor recirculation and manually scram the reactor
- IV Emergency depressurize the reactor

a. I - ONLY

II - ONLY

C I and II

I, III, and IV

Tier:       Emergency and Abnormal Plant Evolutions       R0 Group       3       SR0 Group       2       295036K201         295036       Secondary Containment High Sump/Area Water Level       Record Number       44         EK2.       Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL and the following:       3.1       3.2         EK2.01       Secondary containment equipment and floor drain system       3.1       3.2         Explanation of Answer       The source of the leak is RCIC suction from the CST. Step RB 14 applies since RCIC is not required to assure adequate core cooling, shutdown the reactor, protect primary containment integrity, or suppress a fire. Reactor coolant is not the source of the leak based on RBO report. RB-15 is answered NO. Only one area is affected therefore Step RB-22 is not reached.         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.	Miswer   a	Exam Level B	Cognitive Level Ap	plication	Facility Hope Cre	ek <b>Exam</b>	Date: 03/12/2002
295036       Secondary Containment High Sump/Area Water Level       Record Number       44         EK2.       Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL and the following:       44         EK2.01       Secondary containment equipment and floor drain system       3.1 3.2         Explanation of Answer       The source of the leak is RCIC suction from the CST. Step RB 14 applies since RCIC is not required to assure adequate core cooling, shutdown the reactor , protect primary containment integrity, or suppress a fire. Reactor coolant is not the source of the leak based on RBO report. RB-15 is answered NO. Only one area is affected therefore Step RB-22 is not reached.         EOP 103/4 step RB-12         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.	Tier: Emerg	ency and Abnorn	nal Plant Evolutions	RO Group	3 SRO Group	2	295036K201
EK2. Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL and the following:       3.1 3.2         Ex2.01 Secondary containment equipment and floor drain system       3.1 3.2         Explanation of Answer       The source of the leak is RCIC suction from the CST. Step RB 14 applies since RCIC is not required to assure adequate core cooling, shutdown the reactor , protect primary containment integrity, or suppress a fire. Reactor coolant is not the source of the leak based on RBO report. RB-15 is answered NO. Only one area is affected therefore Step RB-22 is not reached.         Reference Title       EOP 103/4 step RB-12         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.	295036	Secondary Conta	ainment High Sump/A	rea Water Leve		Recor	d Number 44
EK2.01 Secondary containment equipment and floor drain system       3.1 3.2         Explanation of Answer       The source of the leak is RCIC suction from the CST. Step RB 14 applies since RCIC is not required to assure adequate core cooling, shutdown the reactor, protect primary containment integrity, or suppress a fire. Reactor coolant is not the source of the leak based on RBO report. RB-15 is answered NO. Only one area is affected therefore Step RB-22 is not reached.         Reference Title         EOP 103/4 step RB-12         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.	EK2. Knowle LEVEI	edge of the interro	elations between SEC g:	ONDARY CON	TAINMENT HIGH	I SUMP/AREA	WATER
Explanation of Answer       The source of the leak is RCIC suction from the CST. Step RB 14 applies since RCIC is not required to assure adequate core cooling, shutdown the reactor , protect primary containment integrity, or suppress a fire. Reactor coolant is not the source of the leak based on RBO report. RB-15 is answered NO. Only one area is affected therefore Step RB-22 is not reached.         Reference Title       EOP 103/4 step RB-12         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.	EK2.01 Sec	ondary containme	ent equipment and flo	or drain system			3.1 3.2
Reference Title         EOP 103/4 step RB-12         Learning Objectives         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.         Imaterial Required for Examination       EOD Elemetee without entry coorditions	Explanation of Answer	The source of the assure adequate a fire. Reactor content on the area is affered by the source of the source of the area is affered by the source of the sou	ne leak is RCIC suction e core cooling, shutdo coolant is not the sour cted therefore Step R	on from the CST own the reactor ce of the leak ba B-22 is not reac	. Step RB 14 appl , protect primary o ased on RBO repo hed.	ies since RCIC containment int ort. RB-15 is ar	is not required to egrity, or suppress nswered NO. Only
EOP 103/4 step RB-12           Learning Objectives           000127E006         (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.				Reference Title			
Description       Learning Objectives         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.         Image: Control manipulation       ECOD Elausebaste without entry conditions	EOP 103/4 st	ep RB-12	ana ang ang ang ang ang ang ang ang ang				e Alexandre and a second
000127E006 (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.				Learning Objective	<b>%</b>		
Material Description Events without on the conditions	000127E006	(R) Given any ste	ep in the procedure, descril	be the reason for pe	erformance of that step	and/or expected	system response to
Material Pequired for Examination		control manipulat	ions prescribed by the step	Ο.			
Endering required to Examination in the provenants without entry conditions		control manipulat	ions prescribed by the step	<b>).</b>			
Question Source: New Question Modification Method:	Material Requir	control manipulat	EOP Flowch	arts without entr	y conditions		
Question Source Comments: Vision Bank QID# Q56139 concept used	Material Requir	control manipulat	EOP Flowch	arts without entr	y conditions stion Modification M	ethod:	

HC.OP-EO.ZZ-103/4, "Reactor Building Control", requires an Emergency Depressurization of the RPV if the Maximum Safe Operating Limit is exceeded in 2 or more areas listed in Table 2 Column 2.

SELECT the BASES for this Emergency Depressurization of the RPV.

To red	uce the maxin	num lodine release	allowable of	luring a MSL b	reak a	ccident	
<sup>b.</sup> To pre	vent release c	of fission products i	nto the Rea	ctor Building by	/ preve	enting fuel dam	age
C To red	uce the driving	g head and, therefo	ore, the flow	of the unisolat	ed lea	king Primary S	ystem
d To pro	tect personne	I from high tempera	ture enviro	nments while o	peratir	ng equipment	
Answer <sub>C</sub>	Exam Level B	Cognitive Level Mer	nory	Facility Hope Cre	ek	Exam Date:	03/12/2002
Tier: Emerg	ency and Abnorn	nal Plant Evolutions	RO Group	3 SRO Group	2	2950	36K301
295036	Secondary Conta	ainment High Sump/Are	ea Water Leve			Record Number	45
EK3. Knowle HIGH	edge of the reaso SUMP/AREA WA	ons for the following res	ponses as the	ey apply to SECO	NDARY	CONTAINMENT	
EK3.01 Eme	rgency depressu	irization					2.6 2.8
Explanation of Answer	EOP Bases sta heat to the supp of the primary s	tes "RPV depressurizat pression pool in prefere ystems that are unisola	tion places the ence to outside ated and disch Reference Title	e primary system i e containment, and arging into the rea	n its low 1 reduce actor bu	rest energy state, es the driving head ilding."	rejects d and flow
EOP 103 Bas	es Step RB-19		· · · · · · · · · · · · · · · · · · ·				
000127E003	(R) Define the ter	te m "Maximum Safe Operating	arning Objectiv g Temperature".	<b>65</b>			
Material Require	ed for Examination						
Question Source	e: Facility Exam E	Bank	Que	stion Modification M	lethod:	Editorially Modified	
Question Source	e Comments: V	ision Bank QID# Q56112					

Which one of the following gaseous radioactive release limits corresponds to the EOP-104 entry	
condition?	

condition?			
🌯 500 mR	em to the Thyroid CEDE		
<b>b</b> 5000 m	Rem to the Thyroid CEDE		
c. 2 times	10CFR 20 Appendix B limits		
d. 200 tim	es 10CFR 20 Appendix B limits		
Answer d	Exam Level R Cognitive Level Memory Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emerge	ncy and Abnormal Plant Evolutions RO Group 2 SRO Group 1	2950	38A203
295038 F	ligh Off-Site Release Rate	Record Number	46
EA2. Ability to	o determine and/or interpret the following as they apply to HIGH OFF-SITE RE	LEASE RATE:	
EA2.03 Radia	tion levels		3.5 4.3
Answer	CORRECT - IAW ECG Section 6 and Lesson plan 0302-000.00H-000127, the the 10CFR20 Appendix B value Reference Title	alert value is 200	) times
ECG Section 6	5.0		
LP 0302-000.0	DH-000127		
000127E002	Learning Objectives	1103/4 evists	
Material Required			
Question Source	New Question Modification Method:	1:	· · · · · · · · · · · · · · · · · · ·
Question Source	Comments:	<u>u</u>	

Given the following:
<ul> <li>A LOCA outside primary containment and the Reactor Building has occurred</li> <li>AB-203 Main Steam Line High Radiation actions have been completed</li> <li>All control rods are full in</li> <li>Fuel cladding damage has occurred</li> <li>Release rates are above General Emergency levels</li> <li>Reactor level is -60 inches and rising slowly</li> <li>Reactor pressure is 100 psig</li> </ul>
Why is an Emergency Depressurization required?
To ensure primary containment integrity
To allow low pressure ECCS to inject
To reduce the release rates
To provide core steam cooling
Answer c Exam Level B Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/12/2002
Tier:         Emergency and Abnormal Plant Evolutions         RO Group         2         SRO Group         1         295038K102
295038     High Off-Site Release Rate     Record Number     47
EK1. Knowledge of the operational implications of the following concepts as they apply to HIGH OFF-SITE RELEASE RATE:
EK1.02       Protection of the general public       4.2       4.4
Explanation of Answer EOP 104 Bases for step RR-6 states an ED is required if release rates are above GE levels to reduce the radioactivity release rate. RX pressure is already low enough for low press ECCS to inject. The primary containment is already somehow bypassed. The ED is not driven by adequate core cooling requirements. The RPV water level is above TAF.
Reference Title
EOP 103/4 step RR-6 through 8
Learning Objectives           000127E006         (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.
Learning Objectives           000127E006         (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.
Learning Objectives         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.         Material Particut for Examination       EOD Elevelbarte without entry and the step.
Learning Objectives         000127E006       (R) Given any step in the procedure, describe the reason for performance of that step and/or expected system response to control manipulations prescribed by the step.         Material Required for Examination       EOP Flowcharts without entry conditions         Question Source:       Eacility Exam Bank

 $\langle \cdot \rangle$ 

Given the fo	llowing:		••			
- A large bre - Multiple eq - Drywell pre - Steam coo - The Conta - The High H	eak LOCA ha uipment failu essure is 15 p ling was requ inment H2/O lydrogen ala	s occurred inside res occurred osig uired until water le 2 Analyzers were rms are clear	the Drywell evel was rest placed in se	ored above TAF with rvice	Fire Water	
Which one c	of the followir	g actions is requi	red IAW EOI	P-102?		
a Vent the	e Drywell bed	ause Hydrogen o	oncentration	is above 2%		
🕨 Exit EO	P-102 and e	nter SAG becaus	e Hydrogen o	concentration is abov	e 2%	
C Vent the	e Suppressio	n Chamber beca	use Hydroge	n concentration is be	low 2%	
d. Place th	ne Hydrogen	Recombiners in s	ervice becau	ise Hydrogen concer	ntration is belo	w 2%
Answer b	Exam Level B	Cognitive Level A	oplication	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Emerge	ncy and Abnorr	nal Plant Evolutions	RO Group	1 SRO Group 1	500	)000K303
500000 H	ligh Containme	nt Hydrogen Concent	ration		Record Number	48
EK3. Knowled HYDRC	dge of the reaso OGEN CONCEN	ons for the following r	esponses as th	ey apply to HIGH PRIMA	RY CONTAINME	NT
EK3.03 Opera	ation of hydroge	n and oxygen recom	biners			3.0 3.5
Explanation of Answer	High H2 alarms PC/H1 directs e	come in at 2% Hydr exit from EOP-102 an	ogen. Since the d enter SAG	H2 concentration is above	ve 2%, EOP-102	step
			Reference Title			
EOP-102 step	PC/H1					
	N 11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1					
			Learning Objecti	/es		
00126AE004	Recall the reaso Containment Co a. Drywell Press b. Average Dryw c. H2 and Q2 co	ns why the following are un htrol - Drywell Lesson Plar ure ell Temperature ocentrations in the drywell	sed for determining 1.	the entry condition and / or su	osequent actions IAW	/ the Primary
Material Require	d for Examination	EOP Flowch	arts without en	ry conditions		
Question Source	: New		Qu	estion Modification Method:		
Question Source	Comments:					

~ ~

During a fire at the station, a Fire Department Liaison is assigned by the Operations Superintendent.

Who, by title, normally functions in this role and what is their duty?

a. Comm mitigat	unicator designated equipment operator. Advises e the fire.	the Fire Depart	ment on how f	0
b. Comm what e	unicator designated equipment operator. Advises quipment needs to be removed from service.	the Operations	Superintende	nt on
S Work (	Control Supervisor. Advises the Fire Department of	on how to mitiga	ite the fire.	
Work (     be rem	Control Supervisor. Advises the Operations Super loved from service.	intendent on wh	nat equipment	needs to
Answer d	Exam Level R Cognitive Level Memory Faci	lity Hope Creek	Exam Date:	03/12/2002
Tier: Emerg	ency and Abnormal Plant Evolutions R0 Group 2	SRO Group 2	600	000K304
600000	Plant Fire On Site		Record Number	49
EK3. Knowle	edge of the reasons for the following responses as they app	ly to PLANT FIRE	ON SITE:	
EK3.04 Actio	ons contained in the abnormal procedure for plant fire on site	e		2.8 3.4
HC.FP-EO.ZZ	Reference Title		ize ne plant.	
NC.NA-AP.ZZ	2-0005 Attachment 9 Note 3			
	Learning Objectives			
000113E011	a. Summarize the responsibilities of the following personnel: Operations Superintendent Control Room Supervisor/ Field Supervisor Shift Technical Advisor Licensed Operators [RO/PO]			
000113E021	a. Determine the following: The level of licensing required for the OS, CRS, and RO/PO. Minimum shift manning requirements for all plant conditions. Normal shift staffing levels. When a person can serve a dual role as CRS/STA or OS/STA			
Material Require	ed for Examination			
Question Sourc	e: New Question I	Hodification Method:		
Question Sourc	e Comments:			

Given the following: A plant startup is in progress. - Reactor Power on range 4 of IRMs - Reactor Level at + 46 inches - Reactor Pressure at 0 psig Reactor Temperature at 180°F The operating Control Rod Drive Pump trips. The Control Room Operator attempted to start the standby CRD Pump and the pump failed to start. Control Rod movement has been suspended. Which one of the following describes the response of reactor water level and why? (ASSUME NO OPERATOR ACTION) Reactor Water level will: rise due to the reactor being at the point of adding heat. remain stable due to water expansion from heating overcoming any losses to ambient. remain stable due to water expansion from heating overcoming any losses to RWCU. drop due to RWCU rejecting water for level control. Exam Level B Cognitive Level Comprehension Exam Date: Answer d Facility Hope Creek 03/12/2002 Tier: Plant Systems **RO** Group SRO Group 201001A305 1 2 **Record Number** Control Rod Drive Hydraulic System 50 201001 Ability to monitor automatic operations of the CONTROL ROD DRIVE HYDRAULIC SYSTEM including A3. A3.05 Reactor water level 2.8 2.8 Explanation of RWCU is normally balanced to reject the 69 gpm makeup from CRD. Without the CRD pump running, Answer RWCU is rejecting at approximately the same rate. RPV level will lower. Reference Title HC.OP-IO.ZZ-0003 Learning Objectives 000006E028 From memory, determine why a method of reactor water level control must be available prior to placing the CRDH System inservice including the preferred method of level control. IAW the Lesson Plan. Material Required for Examination **Question Source:** Question Modification Method: INPO Exam Bank Editorially Modified **Question Source Comments:** INPO EXAM BANK QID# 16316 Grand Gulf 1 04/01/2000

- The plant was manually scrammed due to prolonged loss of CRD - A CRD pump has been restarted - All surveillances are current - All equipment is operable Which one of the following PREVENTS control rod withdrawals?       Red Worth Minimizer insert and withdraw errors will result in a control rod withdrawal block signal      The Reactor Mode Switch in "Shutdown" inserts a continuous control rod withdrawal block signal      The Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset by the operator     Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed     Romere b     Exemption R     Equipment is operable     Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed     Romere b     Exemption R     Equipment System     I SEQ Group     I Reactive functions including:     I. Reactive control     Concoling and heat removal     Reactor containts system integrity     A containment conditions     S Radioactivity release control.     Exemption     Michael Refuel, one rod withdrawn, second rod selected causes a rod out motion block.     Reference Title     Rod Worth Minimizer     Reference Title     Rod Worth Minimizer     Reference Title     Rod Worth Minimizer     Rod Worth Minimizer     Rod Worth Minimizer     Reference Title     Rod Worth Minimizer     Rod W	Given the following:	
	- The plant was manually scrammed due to prolonged loss of CRD - A CRD pump has been restarted - All surveillances are current - All equipment is operable	
En The Reactor Mode Switch in "Shutdown" inserts a continuous control rod withdrawal block signal En The Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset by the operator If Reactor Monitor "Downscale" inserts a control rod withdrawal signal until bypassed Answer b Exam Laves R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Plant Systems R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Plant Systems R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Plant Systems R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Plant Systems R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Plant Systems R Cognitive Level Memory Facility Hope Creek Exam Date: 03/1220 Terr Colling and heat removal Control System Creek Exam Date: 03/1220 2.4 Emergency Procedures and Plan Reactor Wonderge of the parameters and logic used to assess the status of safety functions including: 1.7.14. 1. Reactivity control 2. Containment conditions Statem theored assess the status of safety functions including: 1.7.14. 2. Containment conditions Statem Integrity 4. Containment conditions Statem Integrity 4. Containment conditions Statem Lesson Plan: a. Rod Wond Memory System Lesson Plan: a. Rod Wond Memory System Creation Bate Reactor Manual Control System and the following, IAW the Reactor Manual Control System System C. Reactor Manual Control System System C. Reactor Monutal System Lesson Plan: a. Rod Wond Memory System C. Reactor Manual Control System and the following, IAW the Reactor Manual Control System System C. Reactor Manual Control System System C. Reactor Manual Control System C. React	Rod Worth Minimizer insert and withdraw errors will result in a control rod withdrawal bl signal	ock
Entry       Fine Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset by the operator         Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed         Answer       b       Exam Lavel R       Cognitive Level Memory       Facility Hope Creek       Exam Date:       03/12/20         Ther Plant Systems       Rod Group       1       SRO Group       2       201002G421         201002       Reactor Manual Control System       Record Number       1         2.4. 21       Knowledge of the parameters and logic used to assess the status of safety functions including:       1.7.4.1         2.4. 2.1       Knowledge of the parameters and logic used to assess the status of safety functions including:       3.7.4.1         2.4. 2. Core cooling and heat removal       3.8.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	The Reactor Mode Switch in "Shutdown" inserts a continuous control rod withdrawal blo signal	ock
Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed         Answer       b       Exam Lavel       R       Cognitive Level       Memory       Facility       Hope Creek       Exam Date:       03/12/20         Tim       Plant Systems       RO Group       1       SRO Group       2       201002G421         201002       Reactor Manual Control System       Record Number       2       201002G421         2.4       Emergency Procedures and Plan       1       SRO Group       2       201002G421         2.4.2       Innowledge of the parameters and logic used to assess the status of safety functions including:       3.7       4.1         2.4.2       Containment conditions       5.Radioactivity release control       3.7       4.1         2.0       Cotainment conditions       5.Radioactivity release control.       5.7         Explanation of MS in Refuel, one rod withdrawn, second rod selected causes a rod out motion block.       7         Mawer       Reference Title       7       7         HC OP-SO.KE-0001       1       8       2       2       2         000007E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System       8       8       2       8 <td< td=""><td>The Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset b operator</td><td>y the</td></td<>	The Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset b operator	y the
Answer       b       Exam Level       R       Cognitive Level       Memory       Facility       Hope Creek       Exam Date:       03/12/20         Tier       Plant Systems       RO Group       1       SRO Group       2       201002G421         201002       Reactor Manual Control System       Record Number       2       201002G421         2.4       Emergency Procedures and Plan       1       SRO Group       2       Record Number         2.4.1       Knowledge of the parameters and logic used to assess the status of safety functions including:       3.7.1.4.1         1. Reactivity control       2. Core cooling and heat removal       3. Reactor coolant system integrity       4. Containment conditions       5. Radioactivity release control.       2         Explanation of Answer       MS in Refuel, one rod withdrawn, second rod selected causes a rod out motion block.       3.7.1.4.1         Mcs.OP-SO.KE-0001       Examing Objectives       2       2         0000077E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System       4. Redeting System         a. Rod Worth Minimizer       b. Neutron Monitoring System       6. Redeting System         b. Neutron Monitoring System       c. Rod Biock Monitor System       4. Mode Switch         c. Rod Biock Monitor System       c. Rod Biock Monito	Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed	
Titer:       Plant Systems       RO Group       1       SR0 Group       2       201002G421         201002       Reactor Manual Control System       Record Number       Record Number         2.4       Emergency Procedures and Plan	Answer b Exam Level R Cognitive Level Memory Facility Hope Creek Exam Date:	03/12/200
2.4       Emergency Procedures and Plan       1         2.4.21       Knowledge of the parameters and logic used to assess the status of safety functions including:       3.7         1. Reactivity control       2. Core cooling and heat removal       3.7         3. Reactor coolant system integrity       4. Containment conditions       3.7         4. Containment conditions       5. Radioactivity release control.       3.7         Explanation of Answer         MS in Refuel, one rod withdrawn, second rod selected causes a rod out motion block.         Learning Objectives         000007E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System and the following, IAW the Reactor Manual Control System Lesson Plan:         a. Rod Worth Minimizer       b. Neutron Monitoring System         b. Neutron Monitoring System       c. Rod Block Monitor System         c. Rod Block Monitor System       c. Rod Block Monitor System         d. Mode Switch       e. Refueling System         e. Refueling System       f. 120 VAC Uninterruptible Power Supply         1       1.90 Exam Bank       Question Modification Method:       Editorially Modified         Question Source:       INPO ExaM Bank       Question Source Comments:       10/19/1599 Peach Bottom 2       09/19/1997 </td <td>Filer:       Plant Systems       RO Group       1       SRO Group       2       20100         201002       Reactor Manual Control System       Record Number       Record Number</td> <td>)2G421 5</td>	Filer:       Plant Systems       RO Group       1       SRO Group       2       20100         201002       Reactor Manual Control System       Record Number       Record Number	)2G421 5
Explanation of Answer         MS in Refuel, one rod withdrawn, second rod selected causes a rod out motion block.         Reference Title         HC.OP-SO.KE-0001         Learning Objectives         000007E008         (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System Lesson Plan: <ul> <li>a. Rod Worth Minimizer</li> <li>b. Neutron Monitoring System</li> <li>c. Rod Block Monitor System</li> <li>d. Mode Switch</li> <li>e. Refueling Grapple/Hoists</li> <li>f. 120 VAC Uninterruptible Power Supply</li> </ul> Image: Material Required for Examination           Material Required for Examination         Question Modification Method:         Editorially Modified           Question Source:         INPO Exam Bank         Question Modification Method:         Editorially Modified           Question Source         INPO Exam Bank         09/19/1997         Editorially Modified	<ul> <li>2.4.21 Knowledge of the parameters and logic used to assess the status of safety functions including:         <ol> <li>1.Reactivity control</li> <li>2.Core cooling and heat removal</li> <li>3.Reactor coolant system integrity</li> <li>4.Containment conditions</li> <li>5.Radioactivity release control.</li> </ol> </li> </ul>	3.7 4.3
Reference Title         HC.OP-SO.KE-0001         Learning Objectives         000007E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System Lesson Plan: <ul> <li>a. Rod Worth Minimizer</li> <li>b. Neutron Monitoring System</li> <li>c. Rod Block Monitor System</li> <li>d. Mode Switch</li> <li>e. Refueling System</li> <li>d. Mode Switch</li> <li>e. Refueling Bridge</li> <li>2) Refueling Bridge</li> <li>2) Refueling Grapple/Hoists</li> <li>f. 120 VAC Uninterruptible Power Supply</li> </ul> <li>Material Required for Examination</li> <li>Question Modification Method:</li> <li>Editorially Modified</li> <li>Question Source: INPO Exam Bank</li> <li>Question Modification Method:</li> <li>Editorially Modified</li> <li>Question Source Comments:</li>	Explanation of MS in Refuel, one rod withdrawn, second rod selected causes a rod out motion block.	
HC.OP-SO.KE-0001         Learning Objectives         O00007E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System and the following, IAW the Reactor Manual Control System and the following System         a.       Rod Worth Minimizer       b.       Neutron Monitoring System         c.       Rod Block Monitor System       d.       Mode Switch         e.       Refueling System       1)       Refueling Bridge         2)       Refueling Grapple/Hoists       f.       120 VAC Uninterruptible Power Supply         Material Required for Examination         Question Source:       INPO Exam Bank       Question Modification Method:       Editorially Modified         Question Source Comments:       INPO BANK QID#1599 Peach Bottom 2       09/19/1997	Reference Title	
Learning Objectives         000007E008       (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW the Reactor Manual Control System and the following and	1C.OP-SO.KE-0001	
Material Required for Examination         Question Source:       INPO Exam Bank       Question Modification Method:       Editorially Modified         Question Source Comments:       INPO BANK QID#1599 Peach Bottom 2       09/19/1997	Learning Objectives           000007E008         (R) From memory, explain the interrelationships between the Reactor Manual Control System and the following, IAW Reactor Manual Control System Lesson Plan: <ul></ul>	the
Question Source:       INPO Exam Bank       Question Modification Method:       Editorially Modified         Question Source Comments:       INPO BANK QID#1599 Peach Bottom 2       09/19/1997		
Question Source Comments:         INPO Exam bank         Editor include         Editor include           Question Source Comments:         INPO BANK QID#1599 Peach Bottom 2         09/19/1997         09/19/1997	Material Required for Examination	
	Duration Badification Mathematican	

Saturday, February 02, 2002 1:26:25 PM

Page 54 of 139

The Control Room operator is moving control rods when a ROD DRIFT annunciator is received.
Which one of the following controls caused this annunciator?
An odd reed switch is passed while settling from Insert of the control rod one notch using the INSERT PB
An even reed switch is passed while settling from Withdrawal of the control rod one notch using the WITHDRAW PB
An odd reed switch is passed while settling from Insert of the control rod two notches using th CONTINUOUS INSERT PB
An even reed switch is passed while settling from Withdrawal of the control rod two notches using the CONTINUOUS WITHDRAW PB
Answer C Exam Level B Cognitive Level Memory Facility Hope Creek Exam Date: 03/12/2
Tier:         Plant Systems         R0 Group         1         SR0 Group         2         201002K408
201002 Reactor Manual Control System Record Number
<ul> <li>K4. Knowledge of REACTOR MANUAL CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following:</li> <li>K4.08 Continuous In rod insertion</li> </ul>
Explanation of Answer Rod settle function is bypassed during Continuous Insert. A rod settling from continuous insert does not have a rod motion command. Any rod motion detected from odd or even reed switches without a rod motion command causes the Rod Drift alarm.
Reference Title
HC.OP-AR.ZZ-0011 Attachment E3
Constraining Objectives         000007E003       (R) Given a labeled diagram/drawing of, or access to, the Reactor Manual Control System controls/indication bezel, summaria the following IAW the Reactor Manual Control System Lesson Plan: <ul> <li>a. The function of each indicator.</li> <li>b. The condition which will cause the indicator to light or extinguish.</li> <li>c. The effect of each control on the Reactor Manual Control System.</li> <li>d. The conditions or permissives required for the control switches to perform their intended function.</li> </ul>
Material Required for Examination
Question Source:         INPO Exam Bank         Question Modification Method:         Editorially Modified
Question Source Comments:

~

Control rod 30	)-31 is being	inserted from	position 12 to	position 08.		
The PO notes	that during	rad mation the	following occu			
THE KO HOLES	s that during					
<ul> <li>Control Rod</li> <li>Control Rod</li> <li>RPIS Status</li> </ul>	30-31 positio 30-31 positio DATA FAUI	on indicates "X on indicates "X _T light on 100	(X" on the 4-Rc (X" on CRIDS 2651 is lit	od display		
WHICH ONE	of the followi	ing describes t	the status of ro	d 30-31?		
Reed swi	tch has faile	d				
Scramme	эd					
Uncouple	эd					
Disarmed	J					
Answer a Ex	am Level B	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Syst	tems		RO Group	2 SRO Group 3	201	003K405
201003 Co	ntrol Rod and D	Drive Mechanism			Record Number	53
K4. Knowledg provide fo	e of CONTROL	ROD AND DRI	/E MECHANISM o	design feature(s) and/or in	nterlocks which	
K4.05 Rod po	sition indication					3.2 3.3
Explanation of C	ontrol rod indica	ation with a failed	open reed switch	is XX.		
	a de la compañía de l		Reference Title			
HC.OP-SO.SF-0	001 Attachmen	t 1 page 31				
	a constant all all and a la constant of all househouse of all house					
			Learning Objectiv	res		
000007E004	(R) Given plant cor	nditions and a drawing	Learning Objectiv g of the controls, instru	res Imentation and/or alarms locate	ed in the Control Roon	n, assess the
000007E004	(R) Given plant cor status of the React	nditions and a drawin for Manual Control Sy	Learning Objective g of the controls, instru- stem IAW the Reactor	res Imentation and/or alarms locate Manual Control System Lesso	ed in the Control Room on Plan.	n, assess the
000007E004	(R) Given plant cor status of the React	nditions and a drawin for Manual Control Sy	Learning Objective g of the controls, instru- stem IAW the Reactor	res Imentation and/or alarms locate Manual Control System Lesso	ed in the Control Room on Plan.	n, assess the
000007E004	(R) Given plant cor status of the React or Examination	nditions and a drawing for Manual Control Sy	Learning Objectiv g of the controls, instru stem IAW the Reactor	res Imentation and/or alarms locate Manual Control System Lesso	ed in the Control Roon on Plan.	n, assess the
000007E004 Material Required f	(R) Given plant cor status of the React or Examination INPO Exam Ban	nditions and a drawing for Manual Control Sy	Learning Objective g of the controls, instru- rstem IAW the Reactor	res Imentation and/or alarms locate Manual Control System Lesso estion Modification Method:	ed in the Control Room on Plan.	n, assess the

< >

1

Given the following:	
Given the following.	
- An entire startup was performed with an inoperable RWM on 1/12/2001	
- With the RWM still inoperable, the reactor scrams on 12/25/2001	
- Today's date is 170/2002	
What RWM requirements must be met to withdraw control rods per Technical Specifications?	
Startup is NOT allowed until 01/12/2002	
The RWM must be restored to operability within 8 hours of withdrawal of the first rod	
Startup may commence as soon as one licensed operator and one technically qualified member of the technical staff are present at the reactor control console until the first twelve control rods are fully withdrawn	
Startup may commence as soon as one licensed operator and one technically qualified member of the technical staff are present at the reactor control console until power is above 10%	Э
Answer d Exam Level S Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/1	2/2002
Tier:     Plant Systems     RO Group     2     SRO Group     2     201006G1	12
201006 Rod Worth Minimizer System (RWM) (Plant Specific) Record Number	54
2.1 Conduct of Operations	
2.1.12 Ability to apply technical specifications for a system.	4.0
<b>Explanation of</b> Answer TS 3.1.4.1 is limited by calendar year not rolling year. Startup may commence since this is the first startup of the new year. Once >10 percent power, the LCO is no longer applicable.	
Reference Title	
HC TS 3.1.4.1	
10CFR55.43(2)	
Learning Objectives	
000009E009         (R) Given plant conditions and access to Technical Specifications:           a. Select those sections, which are applicable to the Rod Worth Minimizer IAW HCGS Technical Specifications.           b. Evaluate Rod Worth Minimizer operability and determine required actions based upon system inoperability IAW HCGS Technical Specifications.           c. Evaluate the bases for those Technical Specifications associated with the Rod Worth Minimizer IAW HCGS Technical	
Specifications. (SRO ONLY).	
Material Required for Examination	
Question Source:         Facility Exam Bank         Question Modification Method:         Significantly Modified	
Question Source Comments: Vision Bank QID# Q56372	

~

- A reactor startup is in progress
- Reactor power is 42% after completion of RWM Group Step 500
- The total steam flow signal output from Digital Feed fails to the equivalent of 15% power

Which one of the following describes how control rod motion is effected by the Rod Worth	
Minimizer (RWM)?	

a The R	WM will NOT allow	w any control ro	od insertion of	or withdrawal			
The R\	WM will allow all r	normal control r	od motion u	ntil actual pov	wer is le	ess than the L	PSP.
The R	WM will apply rod	blocks in acco	rdance with	the loaded ro	d seque	ence.	
The R	WM will allow con	tinued control r	rod moveme	nt only by sin	gle noto	ch increments	•
Answer C	Exam Level B	ognitive Level Co	mprehension	Facility Hope C	Creek	Exam Date:	03/12/2002
Tier: Plant S	Systems		RO Group	2 SRO Group	2	201	1006K301
201006	Rod Worth Minimize	r System (RWM) (	Plant Specific)			Record Number	55
K3. Knowle have c	edge of the effect tha on following:	t a loss or malfund	ction of the RO	D WORTH MINI	MIZER S	YSTEM (RWM)	will
K3.01 Rea	ctor manual control s	ystem: P-Spec(No	ot-BWR6)				3.2 3.5
	Total steam flow fro power. "The RWM will NO" The RWM will allow computer. "The RWM will allow The RWM will allow computer.	Im Digital Feed is f allow any control movements as lo w continued contro movements as lo	the signal used I rod insertion of ng as they mee ol rod movemer ng as they mee	by the RWM to r withdrawal." et the required s at only by single et the required s	determin equence notch ind equence	programmed inte programmed inte crements." programmed inte	o the
			Reference Title	and the second		(garage)	
HC.OP-SO.S	F-0003						
			_earning Objectiv	es			
000009E004	<ul> <li>(R) Given plant condi</li> <li>the RWM Lesson Plant</li> <li>a. Rod Position Inform</li> <li>b. Reactor Manual Condition</li> <li>c. Feedwater Level Condition</li> <li>d. Process Computer</li> <li>e. 120 VAC</li> </ul>	ions, summarize the ir n. nation System (RPIS) Introl System (RMCS) ontrol System	nterrelationship(s)	between the Rod W	orth Minimi	zer and any of the fo	Ilowing IAW
Material Requir	ed for Examination						
Question Source	Facility Exam Bank		Qu	estion Modification	n Method:	Direct From Sou	rce
Saturday, Fe	ebruary 02, 2002 1:26:25	PM	Page 58 of 13	9			

Saturday, February 02, 2002 1:26:25 PM

Page 59 of 139

Given the following:		
- The reactor is operating at 80% power		
- Core flow was 68.0 Mlbm/hour		
- The "A" Recirculation Pump tripped		
- Reactor power stabilized at 57%		
- Total core flow stabilized at 43.0 Mlbm/hour		
- No operator actions have been taken		
Based on plant conditions, which one of the following operator actions are r (AB-300 Attachment-1 is attached)	equired?	
Reduce power by single rod scrams		
Reduce power by lowering recirculation flow		
Raise flow by restarting the "A" Recirculation Pump		
Raise flow by raising the speed of the "B" Recirculation Pump		
Answer d Exam Level R Cognitive Level Comprehension Facility Hope Creek	Exam Date:	03/12/2002
Tier:         Plant Systems         RO Group         2         SRO Group         2	2020	01A404
202001 Recirculation System	Record Number	56
A A Ability to many ally an arete and/or manifesting in the sector large and		
A4. Addity to manually operate and/or monitor in the control room:		
A4. Ability to manually operate and/or monitor in the control room: A4.04 System flow		3.7 3.7
A4.       Ability to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single	rod scrams is not a	3.7 3.7 llowed.
A4.       Additive to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title	rod scrams is not a	3.7 3.7
A4.       Ability to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title         HC.OP-AB.ZZ-0300	rod scrams is not a	3.7 3.7 Ilowed.
A4.       Additive to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title         HC.OP-AB.ZZ-0300	rod scrams is not a	3.7 3.7
A4.       Adding to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title         HC.OP-AB.ZZ-0300	rod scrams is not a	3.7 3.7
A4.       Additive to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title         HC.OP-AB.ZZ-0300         Learning Objectives         0AB300E005       (B) Interpret and apply charts, graphs and tables contained within the Reactor Power Oscilla	rod scrams is not a	3.7 3.7
A4.       Additive to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title       Reference Title         HC.OP-AB.ZZ-0300       Learning Objectives         0AB300E005       (R) Interpret and apply charts, graphs and tables contained within the Reactor Power Oscilla Procedure.	rod scrams is not a	3.7 3.7 Illowed.
A4.       Additive to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title         HC.OP-AB.ZZ-0300         Learning Objectives         0AB300E005       (R) Interpret and apply charts, graphs and tables contained within the Reactor Power Oscilla Procedure.	rod scrams is not a	Ilowed.
A4.       Ability to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title       Iteration of HC.OP-AB.ZZ-0300         Learning Objectives       0AB300E005         (R) Interpret and apply charts, graphs and tables contained within the Reactor Power Oscilla Procedure.         Material Required for Examination       HC.OP-AB.ZZ-0300 Attachment 1	rod scrams is not a	ing
A4.       Ability to manually operate and/or monitor in the control room:         A4.04       System flow         Explanation of Answer       Options are to raise recirc flow to exit or insert rods. Inserting rods by single         Reference Title       Reference Title         HC.OP-AB.ZZ-0300       Learning Objectives         0AB300E005       (R) Interpret and apply charts, graphs and tables contained within the Reactor Power Oscilla Procedure.         Material Required for Examination       HC.OP-AB.ZZ-0300 Attachment 1         Question Source:       INPO Exam Bank	rod scrams is not a tions, Abnormal Operat	ing

<u>~</u>\_

Given the fol	llowing:					
- The plant w - RWCU pum - The plant s - RPV level is - RPV Press	vas operating np "A" is C/T crammed foll s stable at +3 ure is stable a	at 100 percen for maintenanc owing a dual re 0 inches at 920 psig	t power ce ecirc pump trip			
Based on pla	ant conditions	, which one of	the following is	required?		
Trip CRI	D pumps					
<b>b</b> Trip RW	/CU pumps					
C Increase	e CRD coolin	a water flow				
		rom the Recirc				
		Cognitive Level	Application	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Sv	stems		RO Group	2 SRO Group 2	2	202001K307
202001 R	ecirculation Sys	tem			Record Numb	ye <b>r</b> 57
K3. Knowled following	dge of the effect g:	that a loss or ma	Ifunction of the REC	CIRCULATION SYSTE	M will have on	
K3.07 Vesse	el bottom head d	rain temperature				2.9 2.9
Explanation of Answer	If 1 RWCU pum accomplished b	p is running, maxi v throttling down f	imize bottom head ( low to the recirc loc	drain flow to prevent the ops using valves HV-F1	ermal stratificati 02	on. This is
		, anetang action	Reference Title	<b>.</b>		
HC.OP-AB.ZZ-	0000 Step S-18					
HC.OP-SO.BG	-0001 Step 5.5.	3.B				
			Learning Objectiv	es		
000123E004	(R) Given any ste response to contr	p of the procedure, de ol manipulations pres	etermine the reason for cribed by that step.	performance of that step and	l/or evaluate expect	ed system
000021E013	Given any systen Plan.	that interrelates with	the RWCU System, ex	plain the purpose of that inte	rface IAW the RWC	U System Lesson
Material Required	d for Examination					
Question Source:	New		Que	estion Modification Method		
Question Source	Comments:					

Given the fo	llowing:					
- The plant is - Total Feed	s operating at water Flow sig	100 percent p gnal from Digit	oower al Feed is lost			
Which one o	of the following	g describes the	e effect of the lo	ss on the plant?		
Recirc F	Pump Scoop	Tube Lockup				
<b>b</b> . Recirc F	Pump Speed	Limiter Full rur	nback			
Reactor	Scram on Lo	w RPV level				
d. Reactor	· Feed Pumps	Speed Limite	d to 2500 RPM			
Answer	Exam Level R	Cognitive Level	Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant S	ustems		RO Group	1 SRO Group	1	202002K604
202002 F	Recirculation Flor	w Control System	, <b></b>		Record Num	ber 58
K6. Knowle FLOW	dge of the effect	that a loss or ma TEM:	Ifunction of the folk	owing will have on th	e RECIRCULATIC	N
K6.04 Feed	water flow inputs	s: BWR-3, 4, 5,6				3.5 3.5
Explanation of Answer	Loss of FW flow	v signal causes R	R runback full due	to FW flow <20%		
			Reference Title			57U
HC.OP-SO.BB	-0002		-			
HC.OP-SO.AE	-0001					
			Learning Objectiv	/es		
000019E013	(R) From memory Lesson Plan.	y, explain the purpose	e of each recirc pump ru	nback and list signals wh	ich will generate each	runback IAW the
Material Permise	d for Examination					
Question Source	New		Qu	estion Modification Me	thod:	
Question Source	Comments:					

.

Given the following:				
- A LOCA concurrent with a	a partial Station Blackout h	as occurred		
- "A" LPCI is being injected	into the RPV			
- Reactor Pressure is stead	ly at 100 psig			
- Reactor Bldg Temperature	e is steady at 105°F			
- Drywell Temperature is in	creasing slowly at 285°F	leady		
- Fuel Zone Indicators are r	eading - too inches and s	leauy		
Based on the above curren	t conditions, adequate co	re cooling is		
a assured, since actual f	RPV level is -150"			
assured, since actual I	RPV level is -159"			
NOT assured, since ac	ctual RPV level is -170"			
NOT assured, since ad	ctual level is -173"			
Answer b Exam Level B	Cognitive Level Application	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Systems	RO Grou	p 1 SRO Group 1		203000A407
203000 RHR/LPCI: Injection	on Mode (Plant Specific)		Record Num	ber 59
A4. Ability to manually operate	e and/or monitor in the control r	oom:		
A4.07 Reactor water level				4.5 4.5
Explanation of Uncompensated I	evel is -168".			
Answer -RB Temp Correct	tion: $105^\circ - 75^\circ = 30^\circ$			
-DVV Temp Correct -TAF curves shift	upwards 6" for a 30° F increas	e in RX Blda temp		
-TAF curves shift	down 3" for a 150°F increase in	Drywell Temp		
-The resulting TA	F curve at 100 psig is shifted up	owards 3".		
-The TAF Curve a	at 100 psig is -173". 2" places the Curve at -170"			
-Indicated level of	f -168" is 2" above the TAF Cur	ve.		
Actual compensa assured.	ted level is therefore 2" above -	AF or -159" and therefore A	Adequate Core	Cooling is
	Reference	Title		
Station Aid OPA-92-039				
	Learning Obj	ectives	- even at a suptom	a roomanaa ta
00124AE006 (R) Given any step control manipulatio	of the procedure, describe the reason in prescribed by that step.	for performance of that step and/o	r expected system	
Material Required for Examination	Station Aid OPA-92-039			
Question Source: Facility Exam Ba	nk	Question Modification Method:	Significantly	Modified
Question Source Comments: visi	on Bank QID # Q56158		***************************************	

Page 63 of 139

Given the following: - "B" RHR pump is running in Shutdown Cooling (SDC) - I&C error initiates "B" LPCI Initiation Logic on High Drywell Pressure signal Which one of the following describes the "B" RHR Pump, SDC Discharge Valve F015B, and LPCI Injection Valve F017B response? "B" RHR pump trips, F015B closes and F017B opens "B" RHR pump trips, F015B closes and F017B remains closed "B" RHR pump remains running, F015B remains open and F017B opens "B" RHR pump remains running, F015B remains open and F017B remains closed Cognitive Level Comprehension Facility Hope Creek Answer C Exam Date: 03/12/2002 Exam Level B 203000K114 **RO** Group SRO Group Tier: Plant Systems Record Number 60 203000 RHR/LPCI: Injection Mode (Plant Specific) Knowledge of the physical connections and/or cause- effect relationships between RHR/LPCI: INJECTION K1. MODE and the following: 3.6 3.7 K1.14 Shutdown cooling system: Plant-Specific Explanation of F015B closes on Low RPV level or Hi RPV pressure. Neither is present so F015B stays open. F017B Answer opens on High Drywell Pressure or Low RPV pressure. Since High DW pressure initiation is given, F017B opens. There is no signal present to trip LPCI pump B so B RHR pump remains running. **Reference Title** HC.OP-SO.BC-0001 HC.OP-SO.BC-0002 Learning Objectives Given a copy/mimic of the RHR System controls on 10C650A, predict proper RHR System response during the LPCI mode of 000028E014 operation to include the following, IAW the RHR System Lesson Plan: From memory, state the two automatic initiation signals and setpoints for LPCI initiation, IAW the RHR System Lesson Plan. а. Determine the pump starting sequence for the LPCI pumps with and without off-site power available, IAW the RHR System b. Lesson Plan Determine the actions required to override the LPCI initiation and stop the LPCI pump, IAW the RHR System Lesson Plan. C Determine the actions required to override the LPCI initiation and close the LPCI injection valve HV-F017, IAW the RHR d. System Lesson Plan. Determine the operator actions required to initiate suppression pool cooling during LPCI mode of operation, IAW the RHR ρ System Lesson Plan. Determine the operator actions required to initiate Torus/containment spray during LPCI mode of operation, IAW the RHR f. System Lesson Plan Material Required for Examination **Question Modification Method: Question Source:** New Question Source Comments:

- The reactor is	operating i	in STARTUP
------------------	-------------	------------

- RCS temp is 190°F
- RWCU blowdown operation to the Liquid Radwaste System at 60 gpm

- The operator fully opens Blowdown Line Restricting Orifice Bypass Valve (HV-F031)

Which one of the following describes the operational effect of this high bypass flow and how does the operator adjust for the change?

The Re flow IA	generative He W OP-SO.BG	≽at Exchanger ( -0001	(RHX) RWCL	outlet temper	ature will	lower. Lov	ver RACS	
b The Re flow IA	generative He W OP-SO.BG	at Exchanger ( -0001	(RHX) RWCU	outlet temper	ature will	lower. Rai	se RACS	
The No RACS	n-Regenerativ flow IAW OP-	/e Heat Exchar 3O.BG-0001	nger (NRHX)	RACS outlet te	emperatu	re will rise.	Lower	
The No RACS	n-Regenerativ flow IAW OP-	/e Heat Exchar 3O.BG-0001	nger (NRHX)	RACS outlet te	emperatu	re will rise.	Raise	
Answer d	Exam Level B	Cognitive Level	Comprehensior	Facility Hope	Creek	Exam Date:	03/12/2	2002
Tier: Plant S	ystems		RO Group	2 SRO Group	2		204000A214	1
204000	Reactor Water Cl	eanup System				Record Numb	yer	61
A2. Ability to based of abnorm	o (a) predict the on those prediction nal conditions or o	impacts of the folic ons, use procedure operations:	es to correct, co	ntrol, or mitigate t	he conseq	uences of the	10 (D) ISE	2.2
Explanation of Answer	With increased I at the RWCU in 5.9.4 throttles of	blowdown flow, les let to the NRHX. F pen 1-ED-V035 to	s RWCU return for the same RA increase RACS	flow through the CS cooling flow, flow.	Regen HX RACS outl	causes temp et temp will ir	to increase icrease. Ste	p
			Reference Til	le de la companya de				
HC.OP-SO.BC	6-0001 step 5.9.4							
000021E012	(R) From memory System Lesson P	, summarize the effect lan.	Learning Objects of RWCU System	tives blowdown operation	on the RHX a	Ind NRHX's IAW	the RWCU	
Material Remuire	d for Examination							
Question Source	E Facility Exam B	ank		uestion Modificatio	n Method:	Significantly M	Indified	
Question Source	Comments: Vi	sion Bank QID# Q5639	Ľ					
			-					

- The High Pressure Coolant Injection System (HPCI) is operating in Pressure Control alignment
- The HPCI flow controller is in "Automatic"
- HPCI turbine speed is 2450 rpm

Which one of the following describes the response of HPCI turbine speed and system flow if the operator throttles the HPCI Test Bypass To CST Isolation Valve (F008) in the "open" direction for the given conditions?

(Compare the conditions after they stabilize to before the valve was throttled.)

(00.000 000 000							
<ul><li> HPCI</li><li> System</li></ul>	turbine spee m flow returr	ed lowers าร to original va	alue				
In the second	turbine spee m flow goes	ed lowers down					
HPCI Syste	turbine spee m flow returr	ed raises ns to original va	alue				
HPCI Syste	turbine spee m flow goes	ed raises up					
Answer a	Exam Level B	Cognitive Level	Comprehensio	on Facility Hope C	reek	Exam Date:	03/12/2002
Tier: Plant Sy	vstems		RO Grou	p 1 SRO Group	1	206	000A106
206000 H	ligh Pressure C	coolant Injection S	ystem			Record Number	62
A1. Ability to COOLA	o predict and/or NT INJECTION	monitor changes	in parameters a ) controls includ	issociated with oper ing:	ating the	HIGH PRESSUR	RE
A1.06 Syste	m flow: BWR-2	., 3, 4					3.8 3.7
Explanation of Answer	With flow contr that turbine spe	roller in Auto open eed), flow controlle	ing, the CST va er reduces turbir	lve reduces the resi ne speed to return to	stance to flow se	o flow (flow increa tpoint.	ses for
-			Reference	litle			
HC.OP-SO.BJ-	-0001						
			Learning Obj	ectives			
000026E016	(R) Given plant of the status of the	conditions and a drawi HPCI System by eval	ing of the controls, i luation of the contro	nstrumentation and/or al ls/instrumentation/alarms	arms locat s, IAW the	ed in the main control HPCI System Lesson	room, assess Plan.
Material Require	d for Examination						
Question Source	: New			Question Modification	Method:		
Question Source	Comments:						

- I&C is performing testing on HPCI TURBINE EXHAUST DIAPHRAGM RUPTURE transmitter PISH-N655A

- A ZERO psig signal is set on the calibration device

- The following Alarms/ Status lights from the testing are received in the Control Room:

- HPCI SYSTEM OUT OF SERVICE - LIT

- IN TEST STATUS on Logic Channel "A" - LIT

- TRIP UNIT IN CAL OR GROSS FAIL on Logic Channel "A" - LIT

- HPCI TURBINE EXHAUST DIAPHRAGM RUPTURED - Extinguished

With this configuration, how will HPCI respond to an actual HPCI Initiation with a subsequent diaphragm rupture?

"A" channel isolation valves only will isolate. HPCI Turbine will NOT trip.

"C" channel isolation valves only will isolate. HPCI Turbine will trip.

"A" and "C" channel isolation valves will isolate. HPCI Turbine will trip.

"A" and "C" channel isolation valves will isolate. HPCI Turbine will NOT trip.

Answer b Exam Level R	Cognitive Level Application	Facility Hope Creek	Exam Date: 03/12/2002
Tier: Plant Systems	RO Group	1 SRO Group 1	206000A307
206000 High Pressure	Coolant Injection System		Record Number 63

A3. Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM (HPCI) including:

A3.07 Lights and alarms: BWR-2, 3, 4

Explanation of Answer "C" Channel transmitters PISH -655C & G will still respond properly to a valid diaphragm rupture. HPCI Turbine will trip. The Channel "A" Logic will not trip due to the 655A transmitter is in test with a zero psig signal. 2 of 2 transmitters are required per logic channel to actuate.

3.9 3.8

Reference Title

HC.OP-SO.BJ-0001

		Learning Objectives
000026E016	(R) Given plant conditi the status of the HPCI	ons and a drawing of the controls, instrumentation and/or alarms located in the main control room, assess System by evaluation of the controls/instrumentation/alarms, IAW the HPCI System Lesson Plan.
Material Require	d for Examination	J-0650 of HPCI status lights and overhead alarm windows
Question Source	e: New	Question Modification Method:
Question Source	Comments: INPO E	ANK QID# 17084 Susquehanna 1 09/30/1999 Concept Used

- The plant is operating at 100% reactor power
- A small instrument line break LOCA occurs
- Drywell pressure is 2.5 psig increasing
- RPV water level reaches -30 inches and is rising
- Drywell pressure trip unit N694F to Core Spray (1 of 2) has failed to trip

Which one of the following describes the response of the Emergency Diesel Generators?

a.	AI	Emerg	gency	Diesel	Generators	start and	load onto	their res	pective	busses

A, C, & D Emergency Diesel Generators start but DO NOT load onto their respective busses

A, B, & D Emergency Diesel Generators start and load onto their respective busses

All Emergency Diesel Generators start but DO NOT load onto their respective busses

Answer b	Exam Level	В	Cognitive Level	Comprehension	Fa	cility	Hope Creek	Exam D	ato:	03/12/2002
Tier: Plan	t Systems			RO Group	1	SRO	Group 1		20900	)1K110
209001	Low Pressu	re Core	Sprav System					Record	Number	64

3.7 3.8

209001 Low Pressure Core Spray System

Knowledge of the physical connections and/or cause- effect relationships between LOW PRESSURE K1. CORE SPRAY SYSTEM and the following:

K1.10 Emergency generator

Explanation of Both Hi DW Pressure trip units N694B & F must trip to cause an initiation signal to B Core Spray Loop Answer and its respective EDG. RPV level did not reach -129" necessary to cause Level 1 trip. The EDG does not load because LOP is not present.

## **Reference Title**

HC.OP-SO.BE-0001

HC.OP-SO.KJ-0001

## Learning Objectives

(R) From memory, summarize/identify the two Core Spray System initiation signals which will also cause an automatic start o 000027E009 the emergency diesel generators, IAW the Core Spray System Lesson Plan

## Material Required for Examination **Question Source:** Question Modification Method: Facility Exam Bank **Direct From Source** Question Source Comments: Vision Bank QID# Q56486
Given the following: A Loss of Offsite Power occurs followed by a LOCA - "B" EDG fails to start Drywell pressure is 5.7 psig Reactor pressure is 440 psig decreasing Which one of the following describes the effect on the "D" Core Spray Pump and Injection Valve BE-HV-F005B? "D" Core Spray Pump will NOT start but F005B opens "D" Core Spray Pump will NOT start and F005B will NOT open "D" Core Spray Pump starts but F005B will NOT open "D" Core Spray Pump starts and F005B opens Facility Exam Level B Cognitive Level Comprehension Exam Date: Answer Hope Creek 03/12/2002 c Tier: **RO** Group SRO Group 209001K202 Plant Systems 1 1 Record Number 65 209001 Low Pressure Core Spray System K2. Knowledge of electrical power supplies to the following: 2.5 2.7 K2.02 Valve power Explanation of Correct answer based on F005B is a B channel valve which will not open in response to the LOCA. Answer Reference Title HC.OP-SO.BE-0001 P&ID M-52 Learning Objectives (R) From memory, summarize/identify the sequence of events following receipt of an automatic or manual Core Spray System 000027E004 initiation signal, IAW the Core Spray System Lesson Plan. (R) For a given set of plant conditions, from memory, summarize/identify the interrelationship between the Core Spray System 000027E005 and any of the following, IAW the Core Spray System Lesson Plan: Residual Heat Removal (RHR) System а b. Torus Compartment 4160 VAC Class 1E Distribution System C. d. 480 VAC Class 1E Distribution System 125 VDC Class 1E Distribution System e. f. Nuclear Boiler Liquid Radwaste System q. Condensate Storage and Transfer System h. Primary Containment Instrument Gas (PCIG) System i. High Pressure Coolant Injection (HPCI) System i. Condensate Storage Tank k. Automatic Depressurization System (ADS) Emergency Diesel Generators (EDGs) m. Nuclear Boiler Instrumentation System n. Standby Liquid Control (SLC) System ο. 000027E012 (R) Given a labeled diagram/drawing of the Core Spray System controls/indication bezel, IAW the Core Spray System Lesson Plan: Explain the function of each indicator. а. b. Assess plant conditions that will cause the indicators to light or extinguish. Determine the effect of each control switch on the Core Spray System. C. Assess plant conditions or permissives required for the control switches to perform their intended functions. d.

Material Required for Examination

Saturday, February 02, 2002 1:26:27 PM

Page 69 of 139

Question Source:	Facility Exam	1 Bank	Question Modification Method:	Editorially Modified
Question Source Co	mments:	Vision Bank QID# Q56228		1 1 1 PW - 04 11 a core a la farancien encore enconomie a core en

~ /

Given the fol	lowing:						
- A plant shu	tdown is in p	rogress IAW H	C.OP-IO.ZZ	-0004			
- Both Stand	by Liquid Co	ntrol pumps ar	e inoperable				
- A scram co	ndition is rea	iched and the r	eactor fails f	o scram			
When will the	e SLC/RRCS	INITIATION F		erhead Alarm	occur?		
(Assume RP	V level stabil	lizes at -50 incl	nes and read	tor power rer	nains at 8%	b.)	
When the	e RRCS PO	TENTIAL ATV	/S alarm occ	urs			
<b>b.</b> When th	e RRCS CO		VS alarm oc	curs			
Si 30 seco	nds after the	RRCS POTEN	ITIAL ATWS	alarm			
d. 30 seco	nds after the	RRCS CONFI	RMED ATW	S alarm			
Answer d	Exam Level R	Cognitive Level	Memory	Facility Ho	ope Creek	Exam Date:	03/12/2002
Tier: Plant Sy	stems		RO Gro	up 1 SRO Gr	oup 1	2	11000G410
211000 S	tandby Liquid C	Control System				Record Numb	er 66
2.4 Emerge	ncy Procedures	and Plan					
2.4.10 Know	ledge of annund	ciator response pr	ocedures.				3.0 3.1
Explanation of Answer	30 seconds afte	er the RRCS CON	FIRMED ATW	S alarm occurs	Correct- IAW	OHA C1-F1	
			Reference	Title			
HC.OP-AR.ZZ-	0008 Attachme	nt F1					
			Learning Ob	ectives		ated in the main of	control room
000024E005	(R) Given a set of determine the standard Lesson Plan.	of conditions and a dra atus of the Redundant	wing of the contro Reactivity Control	s, instrumentation, a System by evaluation	on of the controls	s/instrumentation/	alarms, IAW the
Material Required	1 for Examination						
Material Required Question Source:	Facility Examination	Bank		Question Modific	ation Method:	Editorially Moc	lified

- Reactor power is 90%

- HC.OP-IS.BH-0001, Standby Liquid Control Pump AP208 In-service Test, will be performed to check flow rates during power operation.

How is the automatic Reactor Water Cleanup system isolation avoided during this test?

The Standby Liquid Control pump is started with the local control switch.

The RWCU system must be shutdown and the appropriate isolation valves closed.

The breakers for the appropriate RWCU isolation valves must be opened.

The fuses for the SLC squib valve firing circuitry must be removed.

Answer a Exam Level R Cognitive Level	Memory	Facility Hope Creek	Exam Date: 03/12/200	)2
Tier: Plant Systems	RO Group	1 SRO Group 1	211000K105	
211000 Standby Liquid Control System			Record Number 6	57

3.4 3.6

K1. Knowledge of the physical connections and/or cause- effect relationships between STANDBY LIQUID CONTROL SYSTEM and the following:

### K1.05 RWCU

Explanation of Answer Starting the Standby Liquid Control pump with the local control switch bypasses the RWCU isolation signal.

Reference Title

HC.OP-SO.BH-0001

HC.OP-SO.BG-0001

Learning Objectives

000023E004	Given plant conditions, summarize/iden	ntify the interrelationship between the following Systems a	and the Standby Liquid Control
	System I.A.W. the Lesson Plan.	•	
	a. 480V 1E AC Distribution		
	b. Core Spray		
	c. Service Compressed Air		
	d. Demineralized Water Makeup, Stor	rage & Transfer System	
	e. Redundant Reactivity Control Syste	em	
	f. Reactor Water Cleanup System		
	g. Standby Diesel Generator	4	
	n. Nuclear Steam Supply Shuton Sys	item	
	1		
Material Require	d for Examination		-
Question Source	Facility Exam Bank	Question Modification Method:	Editorially Modified
Question Source	Comments: Vision Bank QID# Q567	772	

Saturday, February 02, 2002 1:26:27 PM

may be bypassed	?						
When moving	the mo	de switch from RI	EFUEL to SI	HUIDOWN			
<b>b.</b> When moving	the mo	de switch from SI	HUTDOWN	to REFUEL			
When testing	the "Or	e Rod Out Interlo	ck"				
d. When a contr	ol rod b	lade is being unco	oupled				
Answer a Exam Le	vel R	Cognitive Level Me	emory	Facility Hope (	Creek	Exam Date:	03/12/2002
Tier: Plant Systems			RO Group	1 SRO Group	1	2	12000G123
212000 Reactor	Protectic	n Svstem				Record Numb	<b>er</b> 68
2.1 Conduct of Op	erations						
2.1Conduct of Ope2.1.23Ability to per operation.	erations form spec	cific system and integ	rated plant pro	cedures during (	lifferent r	nodes of plant	3.9 4.0
2.1Conduct of Ope2.1.23Ability to per operation.Explanation of AnswerThe Re Shutdo	erations form spec actor Mo wn when	cific system and integ de Switch Shutdown all control rods are fu	rated plant pro position scram ılly inserted or	cedures during o may be bypass the reactor is de	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0
2.1 Conduct of Ope 2.1.23 Ability to per- operation. Explanation of Answer The Re Shutdo	erations form spect actor Mo wn when	cific system and integ de Switch Shutdown all control rods are fu	rated plant pro position scram Illy inserted or Reference Title	cedures during o may be bypass the reactor is de	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0 n refuel to
2.1 Conduct of Ope 2.1.23 Ability to per- operation. Explanation of Answer The Re Shutdo HC.OP-SO.SB-0001 F	erations form spectra eactor Mo wn when vrereq 2.6	cific system and integ de Switch Shutdown all control rods are fu	rated plant pro position scram ully inserted or Reference Title	cedures during of may be bypass the reactor is de	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0
2.1 Conduct of Ope 2.1.23 Ability to per- operation. Explanation of Answer The Re Shutdo HC.OP-SO.SB-0001 F	erations form spectra actor Mo wn when vrereq 2.6	cific system and integ de Switch Shutdown all control rods are fu	rated plant pro position scram Illy inserted or Reference Title	cedures during of may be bypass the reactor is de	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0
2.1 Conduct of Ope 2.1.23 Ability to per- operation. Explanation of Answer The Re Shutdo HC.OP-SO.SB-0001 F	erations form spec eactor Mo wn when Prereq 2.6	cific system and integ de Switch Shutdown all control rods are fu 5.2	rated plant pro position scram ully inserted or Reference Title	cedures during of may be bypass the reactor is de	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0
2.1 Conduct of Ope 2.1.23 Ability to per- operation. Explanation of Answer The Re Shutdo HC.OP-SO.SB-0001 F 000022E004 (R) Fro param	erations form spec eactor Mo wn when Prereq 2.6	cific system and integ de Switch Shutdown all control rods are fu 5.2 , identify the parameters we termine when the parame	rated plant pro position scram Illy inserted or Reference Title Learning Objective which initiate a Rea oter is bypassed, I/	cedures during of may be bypass the reactor is de res actor Scram, list the AW the Lesson Plan	different r ed to mov fueled.	nodes of plant ve the MS from tion setpoints for	3.9 4.0 n refuel to
2.1       Conduct of Operation         2.1.23       Ability to perioperation.         Explanation of Answer       The Rest Shutdo         HC.OP-SO.SB-0001 F         000022E004       (R) From parameter	erations form spec eactor Mo wn when Prereq 2.6	cific system and integ de Switch Shutdown all control rods are fu 5.2 , identify the parameters we termine when the parame	rated plant pro position scram ully inserted or Reference Title Learning Objection which initiate a Rea eter is bypassed, l/	cedures during of may be bypass the reactor is de the reactor is de <b>res</b> actor Scram, list the AW the Lesson Plan	different r ed to mov fueled.	nodes of plant ve the MS from	3.9 4.0 n refuel to
2.1       Conduct of Operation         2.1.23       Ability to perioperation.         Explanation of Answer       The Result         HC.OP-SO.SB-0001 F       The Result         000022E004       (R) Free parameter	erations form spec eactor Mo wn when Prereq 2.6	cific system and integ de Switch Shutdown all control rods are fu 5.2	rated plant pro position scram ully inserted or Reference Title Learning Objection which initiate a Rea ther is bypassed, I/	cedures during of may be bypass the reactor is de the reactor is de res actor Scram, list the AW the Lesson Plan	different r ed to mov fueled.	nodes of plant ve the MS from tion setpoints for	3.9 4.0 n refuel to
2.1       Conduct of Ope         2.1.23       Ability to per operation.         Explanation of Answer       The Result         HC.OP-SO.SB-0001 F       The Result         000022E004       (R) From parameter         Material Required for Example       The Result	erations form spec eactor Mo wn when Prereq 2.6 Prereq 2.6 Commemory eter, and de mination	cific system and integ de Switch Shutdown all control rods are fu 3.2 , identify the parameters we termine when the parame	rated plant pro position scram Illy inserted or <b>Reference Title</b> Learning Objective which initiate a Reactive ther is bypassed, I/	cedures during of may be bypass the reactor is de res actor Scram, list the AW the Lesson Plan	different r ed to mov fueled.	nodes of plant ve the MS from tion setpoints for	3.9 4.0 n refuel to

With the plant operating at rated power, the power supply fuse to a backup scram valve fails creating an open in the supply circuit.

Which one of the following identifies the response of the associated backup scram valve and scram response due to this failure?

a. Valve re	positions to	trip position but	NO scram occ	urs			
b. Valve C/	ANNOT repo	sition but redur	ndant valves ca	in effect scram	n if an F	RPS trip occur	S
C Valve C	ANNOT repo	osition and NO s	scram can occu	ur even if an R	PS trip	occurs	
d. Valve re	positions to	trip position and	l a full scram o	ccurs			
Answer b	xam Level B	Cognitive Level	Comprehension	Facility Hope C	reek	Exam Date:	03/12/2002
Tier: Plant Sy	stems		RO Group	1 SRO Group	1	212	2000K502
212000 R	eactor Protecti	on System				Record Number	69
K5. Knowled PROTEC	ge of the opera	ational implications M:	of the following co	oncepts as they a	apply to F	REACTOR	
K5.02 Specif	ic logic arrange	ements					3.3 3.4
Answer	cannot reposition	on. In conjunction v if a full scram sign	vith the valve pipir al is received. Reference Title	ng arrangement, t	the other	valve will comple	ete the
HC.OP-SO.SB	0001						
000022E009	(R) Given plant of	conditions, evaluate the	Learning Objecti	<b>ves</b> an electrical failure, l <i>f</i>	W the Les	son Plan.	
Material Required	I for Examination						
Question Source:	INPO Exam B	ank	Q	estion Modification	Method:	Editorially Modifie	ed
Question Source	Comments:	NPO EXAM BANK QID	# 11769 Nine Mile Po	int 1 01/20/1998			

A TIP System frace is being taken when an I&C Technician error causes actuation of the NSSSS Channel "A" manual isolation switch. Which one of the following describes the TIP system response? The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. The TIP detectors will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically closes, cutting the detector cable and sealing the guide tube. B No automatic actions occur when only one NSSSS channel manual isolation switch is actuated Answere b EarrCavel B Cognitive Level Comprehension Facility Hope Creek Exam Date (2)12200 Traversing In-Core Probe K1. Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN- CORE PROBE and the following: K1.05 Primary containment isolation system: (Not-BWR1) Statement of JUSTIFICATION: The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Clude Tube Ball Valve automatically close. Correct The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Shear Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve automatically closes. Outomatic actions occur when only one NSSS Channel manual isolation switch is actuated. Incorrect							
Which one of the following describes the TIP system response?         Image: The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube.         Image: The TIP Guide Tube Ball Valve automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically closes, cutting the detector cable and sealing the guide tube.         Image: The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.         Image: The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.         Image: The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.         Image: Traversing In-Core Probe       Exampted to the following:         K1.       Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN-CORE PROBE and the following:         K1.5       Primary containment isolation system: (Not-BWR1)       3.3.3.4         Explanation of JUSTFICATION:       The TIP Guide Tube Ball Valves automatically close. Correct The TIP Shear Valve automatically close. Correct The TIP Shear Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Shear Valves must be manually infitted.         The TIP Clude Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - manual indiction of NSSSS Channel 'An' will cause isolation of affected systems, including TIP.         Incorrect - manual indiction of NSSSS Channel 'An' will cause isolation of affected systems, including TIP	A TIP Sys Channel "	tem trace is be A" manual isol	eing taken wher ation switch.	i an I&C Techn	cian error causes ac	tuation of th	e NSSSS
The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. The TIP detectors will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically closes, cutting the detector cable and sealing the guide tube. Inter TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated. Answer: b Example B Cognitive Level: Comprehension Facility: Hope Creek Example 03/12/200 Traversing In-Core Probe Record Number 7 K1. Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN-CORE PROBE and the following: K1.05 Primary containment isolation system: (Not-BWR1) 3.3.3.4 Explanation of JUSTFICATION: The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct The TIP Detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct The TIP Guide Tube Ball Valve automatically closes, cuting the detector cable and seal the guide tube. Incorrect - the Sher Valves imust be manually initiated. The TIP Guide Tube Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one SNSS channel manual isolation switch is actuated. Incorrect - manual implement on SNSS channel manual isolation switch is actuated. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions cocur when only one SNSS channel manual isolation switch is actuated. Incorrect - manual inside of NSSSS channel manual isolation of affected systems, including TIP. Retering Objectives 000018E006 (R) From memory explain the response of the TIP System following	Which one	e of the followi	na describes the	e TIP svstem re	sponse?		
Endity       The TIP detectors will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically closes.         E       The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.         E       No automatic actions occur when only one NSSSS channel manual isolation switch is actuated.         Answer       b       Exam Date:       03/12/200         Tar       Plant Systems       Economitive Level       Exam Date:       03/12/200         Tar       Prevents       B       Economitive Level       Control Contecontrol Control Contecontrol Control Contro	The T	IP Shear Valv	e automatically	fires to cut the	detector cable and s	eal the guide	e tube.
E The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.         Image: Search 2000       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         Iter: Plant Systems       Cognitive Level: Comprehension       Facility Hope Creek       Exam Date:       03/12/200         K1. Knowledge of the physical connections and/or cause effect relationships between TRAVERSING IN-       CocRet ProBE and the following.       State St	b. The T Tube	TP detectors w Ball Valves au	vill automatically utomatically clos	withdraw to the.	eir "in-shield" positio	n and the TI	P Guide
Image: Bit No automatic actions occur when only one NSSSS channel manual isolation switch is actuated         Inswer: bit Exam Level Bit Cognitive Level Comprehension       FRO Group 3       SRO Group 3       215001K105         Tier: Plant Systems       RC Group 3       SRO Group 3       215001K105         215001       Traversing In-Core Probe       Record Number 7         K1.       Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN-CORE PROBE and the following:       3.3 3.4         K1.05       Primary containment isolation system: (Not-BWR1)       3.3 3.4         Explanation of Answer       JUSTIFICATION:       The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct       The TIP Guide Tube Ball Valves automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Shear Valves must be manually initiated.       The TIP Guide Tube Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSS Channel manual isolation switch is actuated. Incorrect - manual initiation of NSSS Channel Manual isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Modification Method:       Direct From Source <t< td=""><th>The T guide</th><td>TP Guide Tube tube.</td><td>e Ball Valve aut</td><td>omatically close</td><th>es, cutting the detect</th><td>or cable and</td><td>sealing the</td></t<>	The T guide	TP Guide Tube tube.	e Ball Valve aut	omatically close	es, cutting the detect	or cable and	sealing the
Answer       b       Exam Level       B       Cognitive Level       Comprehension       Facility       Hope Creek       Exam Date:       03/12/200         Tier       Plant Systems       RO Group       3       SR0 Group       3       215001K105         215001       Traversing In-Core Probe       Record Number       7         K1       Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN-CORE PROBE and the following:       3.3       3.4         K1.05       Primary containment isolation system: (Not-BWR1)       3.3       3.4         Explanation of Answer       JUSTIFICATION:       3.3       3.4         The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct       The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. Incorrect - the Shear Valves must be manually initiated. The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated. Incorrect - manual initiation of NSSS Channel "A" will cause isolation of affected systems, including TIP.         Incorrect - manual initiation of NSSSS Channel "A" will cause isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         000018E006       (R) From mem	🖭 No au	utomatic action	is occur when o	nly one NSSSS	channel manual iso	lation switch	is actuated
Iter       Plant Systems       Record Number       7         215001       Traversing In-Core Probe       Record Number       7         K1.       Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN- CORE PROBE and the following:       3.3       3.4         K1.05       Primary containment isolation system: (Not-BWR1)       3.3       3.4         Explanation of Answer       JUSTIFICATION:       3.3       3.4         Incorrect - the Shear Valves must be manually close. Correct       The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and seal the guide tube. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated. Incorrect - manual initiation of NSSSS Channel "A" will cause isolation of affected systems, including TIP.         Explanating Objectives       0000015E006	Answer b	Exam Level B	Cognitive Level	Comprehension	Facility Hope Creek	Exam Date:	03/12/200
X1:0011       Traversing In-Core Proce       Record Nature         X1.       Knowledge of the physical connections and/or cause- effect relationships between TRAVERSING IN-CORE PROBE and the following:         X1.05       Primary containment isolation system: (Not-BWR1)       3.3 [3.4]         Explanation of Answer       JUSTIFICATION:         The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct         The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. Incorrect - the Shear Valves must be manually initiated.         The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated. Incorrect - manual initiation of NSSSS Channel "A" will cause isolation of affected systems, including TIP.         Reference Title         HC.OP-SO.SM-0001 Table SM-017         Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Modification Method:       Direct From Source         Question Source:       Facility Exam Bank       Question Modification Method:       Direct From Source </td <th>Plant</th> <td>Systems</td> <td>Decks</td> <td>RO Group</td> <th>3 SRO Group 3</th> <td>Zanavel Numb</td> <td>215001K105</td>	Plant	Systems	Decks	RO Group	3 SRO Group 3	Zanavel Numb	215001K105
KILL       Kille privation of another constrained in the following:       3.3 3.4         Explanation of Answer       JUSTIFICATION:       3.3 3.4         Explanation of Answer       JUSTIFICATION:       The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct       The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. Incorrect - the Shear Valves must be manually initiated.         The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.       Incorrect - the Shear Valves must be manually initiated.         The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.       Incorrect - the Ball Valve will not close with the cable inside the valve.         No automatic actions occur when only one NSSSS channel manual isolation switch is actuated.       Incorrect - manual initiation of NSSSS Channel "A" will cause isolation of affected systems, including TIP.         Reference Title       HC.OP-SO.SM-0001 Table SM-017       Earning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Modification Method:       Direct From Source         Question Source:       Facility Exam Bank       Question Modification Method:       Direct From Source	215001	I raversing In-C	ore Probe	ad/or oou of offoo	rolationahina hatuaan T		
K1.05       Primary containment isolation system: (Not-BWR1)       3.3       3.4         Explanation of Answer       JUSTIFICATION: The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. Incorrect - the Shear Valves must be manually initiated. The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated. Incorrect - manual initiation of NSSSS Channel "A" will cause isolation of affected systems, including TIP.         Reference Title         HC.OP-SO.SM-0001 Table SM-017         Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Modification Method:       Direct From Source         Question Source:       Facility Exam Bank       Question Modification Method:       Direct From Source	COR	E PROBE and the	e following:	nd/or cause- enec	relationships between r	RAVERSING	<b>N-</b>
Explanation of Answer       JUSTIFICATION: The TIP detectors not in the "in-shield" position will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close. Correct The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube. Incorrect - the Shear Valves must be manually initiated. The TIP Guide Tube Ball Valves automatically closes, cutting the detector cable and sealing the guide tube. Incorrect - the Ball Valve will not close with the cable inside the valve. No automatic actions occur when only one NSSS channel manual isolation switch is actuated. Incorrect - manual initiation of NSSSS Channel "A" will cause isolation of affected systems, including TIP. Reference Title         HC.OP-SO.SM-0001 Table SM-017         Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Modification Method:       Direct From Source         Question Source:       Facility Exam Bank       Question Modification Method:       Direct From Source	K1.05 Pri	mary containmen	t isolation system:	(Not-BWR1)			3.3 3.4
Reference Title         HC.OP-SO.SM-0001 Table SM-017         Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination		The TIP detect and the TIP Getect The TIP Shear Incorrect - the The TIP Guide tube. Incorrect - the No automatic a Incorrect - man	tors not in the "in-s uide Tube Ball Valv r Valve automatical Shear Valves musi Tube Ball Valve a Ball Valve will not o actions occur when nual initiation of NS	nield" position will res automatically c ly fires to cut the d t be manually initia utomatically closes close with the cabl only one NSSSS SSS Channel "A"	automatically withdraw to lose. Correct etector cable and seal the ted. a, cutting the detector cab e inside the valve. channel manual isolation will cause isolation of affe	e guide tube. e guide tube. ele and sealing switch is actua ected systems,	the guide the guide ated. including TIP.
HC.OP-SO.SM-0001 Table SM-017         Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination       Question Source:         Facility Exam Bank       Question Modification Method:         Direct From Source       Vision Bank QID# Q53710				Reference Title			
Learning Objectives         000018E006       (R) From memory explain the response of the TIP System following the receipt of an isolation signal from the Nuclear Steam Supply Shutoff System, IAW the Lesson Plan.         Material Required for Examination	HC.OP-SO.S	SM-0001 Table S	M-017				
Material Required for Examination         Question Source:       Facility Exam Bank       Question Modification Method:       Direct From Source         Question Source Comments:       Vision Bank QID# Q53710       Vision Bank QID# Q53710	000018E006	(R) From memo Supply Shutoff	bry explain the response System, IAW the Lesso	Learning Objecti of the TIP System foll n Plan.	res owing the receipt of an isolation	n signal from the N	luclear Steam
Question Source:         Facility Exam Bank         Question Modification Method:         Direct From Source           Question Source Comments:         Vision Bank QID# Q53710         Vision Bank QID# Q53710         Vision Bank QID# Q53710	Material Requ	ired for Examination		······································			
Question Source Comments: Vision Bank QID# Q53710	Question Sour	rce: Facility Exam	Bank	01	estion Modification Method:	Direct From Se	ource
	Question Sour	rce Comments:	Vision Bank QID# Q537	·10			

Given the fo	llowing:					
- The reacto - The RPS s - SRM "A" fa	r is in Operatic horting links a ails upscale	onal Condition re removed	5			
Which one of	of the following	describes the	e resulting autor	matic action?		
a. Rod blo	ock only					
<b>b</b> 1/2 scra	am RPS-A only	1				
Rod blo	ock and 1/2 scr	am RPS-A on	lly		PPERIODAN INTERNATIONAL IN BUILDING AND INCOME	
d. Full scr	am					
Answer d	Exam Level B	Cognitive Level	Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant S	ystems		RO Group	1 SRO Group 1	215	004A303
215004 \$	Source Range Mo	nitor (SRM) Syst	em		Record Number	71
A3. Ability t	o monitor automa	tic operations of	the SOURCE RAN	IGE MONITOR (SRM) S	SYSTEM including	:
A3.03 RPS	status					3.6 3.5
Explanation of Answer	Installation of the 18 taken once	Shorting links er	nables the SRM Hi	-Hi rps scrams and cha	nges the coincider	ice to 1 of
			Reference Title			
HC.OP-SO.SB	8-0001					
77.			Learning Objectiv	/es		
000022E014	Given labeled diag scram.	rams/drawings of the	e RPS trip logics, expla	in the coincidence requirement	nts necessary to gener	ate a reactor
						· · · · · · · · · · · · · · · · · · ·
Material Recuire	d for Examination					
Question Source	INPO Exam Ban	k	Qu	estion Modification Method	Editorially Modifie	ed
Question Source	Comments: INF	PO BANK QID# 1722	5 Columbia Gen Sta	3/08/1999		

Given the following: - An I&C Technician is in the middle of SRM "A" Channel Functional Test - The next section of his procedure contains several discrepancies Which one of the following changes is PROHIBITED as an "On The Spot Change" to the procedure? Increasing the trip setpoint tolerance to reduce nuisance alarms **b.** Minor alterations to a step to clarify that step Changing a step which returns the "B" SRM Mode Switch to the original position d. Adding a supervisory review signoff Exam Date: 03/12/2002 Facility Hope Creek Answer a Exam Level S Cognitive Level Comprehension 215004G206 **RO** Group SRO Group 1 1 Tier: Plant Systems Record Number 72 215004 Source Range Monitor (SRM) System Equipment Control 2.2 Knowledge of the process for making changes in procedures as described in the safety analysis 2.3 3.3 2.2.6 report. Increasing the tolerance of the trip setpoint is a change of intent because it is not being performed to Explanation of align with Technical Specifications. Clarifying a step is permitted under Attachment 1. Changing the Answer level of oversight is permitted IF the change results in increased oversight. "B" SRM Mode switch is a typo error because the Tech is performing "A" SRM channel testing. **Reference Title** NC.NA-AP.ZZ-0001 Attachment 1 and Form 1 10CFR55.43(3) Learning Objectives Describe what requirements must be satisfied to make an On-the-Spot change, and the required approval signatures. 000113E002 Material Required for Examination **Question Modification Method:** Significantly Modified **Question Source: INPO Exam Bank** INPO EXAM BANK QID# 355 Question Source Comments:

- Local Power Range Monitor (LPRM) detector 32-33-C has just failed downscale
- Subsequently, Control Rod 30-31 is selected

Which one of the following describes the effect of the failure on the associated APRM and RBM channels?

## The LPRM input:

- will be automatically bypassed and removed from the APRM only. The APRM and RBM readings will be lower than actual power.
- will be automatically bypassed and removed from both the APRM and RBM. The APRM and RBM readings will remain the same.
- will be automatically bypassed and removed from the APRM only. The APRM reading will remain the same and the RBM reading will be lower than actual power.
- will be automatically bypassed and removed from the RBM only. The APRM and the RBM readings will be lower than actual power.

Answe	d	Exam Level B	Cognitive Level	Comprehension	Facility Hope Cree	ek Exam Date:	03/12/2002
Tier:	Plant \$	Systems		RO Group	1 SRO Group	1 2150	05K305
21500	5	Average Power	r Range Monitor/Loo	cal Power Range N	Ionitor System	Record Number	73
K3.	Knowl	ledge of the effe	ct that a loss or ma	Ifunction of the AP	RM/LPRM will have	e on following:	
K3.05	Rea	actor power indic	ation				3.8 3.8
Explan: Answei	ation of r	The LPRM mu automatically feeding the AF fails downscal	ust be manually byp bypassed in the RB PRM avg, the indica le so the gain chang	bassed to remove f BM Count Circuit if ated avg will be low ge circuit will null to	rom the APRM ave the detector is read er. Since the contro the now lower AP	raging circuit. The LPRM ing <4%. Since the LPRM of rod is selected after the RM reference signal.	is ∕l is still è LPRM

Reference Title

C.OP-SO.SF	F-0002	
100		Learning Objectives
000017E008	Given the applicable drawing, determine h a. Local Power Range Monitoring (LPRM b. Average Power Range Monitoring (AF c. Recirculation Flow Units d. 120 VAC Instrument Power System e. 120 VAC Un-interruptible Power Supp f. Reactor Manual Control System (RMC IAW the Rod Block Monitor (RBM) System	ow the Rod Block Monitor (RBM) System interrelates with the following systems: /) System PRM) System /y System (S) I Lesson Plan
aterial Require	ed for Examination	Question Modification Method: Significantly Modified

The plant is operating at full power when the hold down assembly fails on Jet Pumps #1 & #2. This allows the Jet Pump nozzle assembly (Rams Head) to separate from the "B" Recirc Loop piping inside the RPV.

- Annunciators APRM/RBM FLOW REF OFF NORMAL and ROD OUT MOTION BLOCK are also received

- At 10C650, Recirc Pump Discharge Flow indicators are found to be reading 47,000 gpm for "A" Recirc and 54,000 gpm for "B" Recirc

Which one of the following describes how the APRM Flow Units will respond in this situation?

Upscale	e trips from al	l four (4) Flow	units						
Compa	re trips from c	only two (2) Flo	w units						
🖸 Compa	re trips from a	Ill four (4) Flow	/ units						
d. Upscale	e trips from or	nlv two (2) Flov	v units						
Answer a	Exam Level B	Cognitive Level	Comprehensio	on Fa	cility Hope (	Creek	Exam Date:	03/12/2	002
Tier: Plant S	ystems		RO Grou	P 1	SRO Group	1		215005K505	
215005	Average Power F	ange Monitor/Lo	cal Power Rang	e Monit	or System	•	Record Numb	))))	74
K5. Knowle	dge of the opera	tional implication:	s of the followin	g conce	pts as they	apply to A	PRM/LPRM:		
K5.05 Core	flow effects on A	PRM trip setpoin	ts					3.6 3	.6
	Rated flow is 45 through both loc	,200 gpm per loo pps. They will read	p. Comparator d high but the s Reference	trips will ame val Title	not be in be ues betwee	ecause ea n channels	ch flow unit s s.		
HC.OP-SO.SE	-0001 Table SE	-001							
			Learning Obj	ectives					
000016E002	<ul> <li>(R) Given a labele</li> <li>a. Explain the fun</li> <li>b. Assess the pla</li> <li>c. Predict the effed</li> <li>d. Select the condition that the select that the selec</li></ul>	ed diagram of, or acce ction of each indicato nt conditions that cau ect of each control swi ditions or permissives	ess to, the APRMS, r, IAW the Student se each indicator to itch on the APRMS required for the co	/Flow Unit Handout. b light or e /Flow Unit ntrol switc	controls locat extinguish, IAW is, IAW the Stu ches to perform	ed on control / the Student ident Handou n their intend	room panels 10 Handout. it. ed function, IAW	0C608/10C651: / the Student	
000016E005	Given a basic dia determining flow	gram of the recirc flow biased setpoints, IAW	w units and an APR / the Student Hand	M Block E out.	Diagram evalua	ate how the f	ow signal is dev	eloped for use	n
Material Require	d for Examination								
Question Source	INPO Exam Ba	nk		Questio	n Modificatio	n Method:	Editorially Mod	dified	
Question Source	Comments:	IPO BANK QID# 675	Duane Arnold 1 05	6/25/1999					

Page 79 of 139

Given the following:				
- A Small Break LOCA o	ccurred			
- Drywell temp is 450°F a	and rising			
- RPV pressure is 275 ps	sig			
- RPV level indication is	lost			
- 28 control rods are full	out			
- Suppression Chamber	pressure is 10 psig			
What is action is required	d to assure adequate core c	ooling?		
Enter HC.OP-EO.ZZ	Z-0206, open SRVs until RP	/ pressure is below 60	psig	
Enter HC.OP-EO.ZZ	Z-0206, open at least 5 SRV	5		
Enter HC.OP-EO.ZZ	Z-0206A, open SRVs until RI	PV pressure is below 2	75 psig	
Enter HC.OP-EO.ZZ	Z-0206A, open at least 5 SR	Vs		
Answer d Exam Level B	Cognitive Level Application	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Diant Systems	R0 Grou	1 SRO Group 1	216	6000A208
Fiant Systems			L	
216000 Nuclear Boiler Ir	nstrumentation		Record Number	75
216000Nuclear Boiler IrA2.Ability to (a) predict the based on those predict abnormal conditions or	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations:	JCLEAR BOILER INSTRUI	Record Number MENTATION; and equences of those	75 1 (b)
216000Nuclear Boiler IrA2.Ability to (a) predict the based on those predict abnormal conditions orA2.08Elevated containmer	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature	JCLEAR BOILER INSTRUI	Record Number MENTATION; and equences of those	75 1 (b) <u>3.2 3.4</u>
216000Nuclear Boiler IrA2.Ability to (a) predict the based on those predict abnormal conditions orA2.08Elevated containmerExplanation of Answer28 rods are out adequate core	nstrumentation e impacts of the following on the Ni tions, use procedures to correct, c r operations: nt temperature t so EOP -206A is appropriate. 5 S cooling.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse	Record Number	3.2 3.4 assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature t so EOP -206A is appropriate. 5 S cooling. Reference 1	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure	Record Number	75       1 (b)       3.2       3.4       assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature t so EOP -206A is appropriate. 5 S cooling. Reference 1	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure	Record Number	3.2 3.4 assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5	nstrumentation e impacts of the following on the Ni tions, use procedures to correct, c r operations: nt temperature t so EOP -206A is appropriate. 5 S cooling. Reference 1	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse	Record Number	3.2 3.4 assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5	nstrumentation e impacts of the following on the Nitions, use procedures to correct, correct, correctations: nt temperature it so EOP -206A is appropriate. 5 S cooling.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse	Record Number	75       1 (b)       3.2       3.4       assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5	nstrumentation e impacts of the following on the Nitions, use procedures to correct, c r operations: nt temperature t so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Obje	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itie	Record Number	75       1 (b)       3.2       3.4       assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5         000134E008       (R) Given any st control manipula	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature it so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Objet tep of the procedure, describe the reason f ations prescribed by that step.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itte	Record Number	75       1 (b)       3.2       3.4       assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5       000134E008         (R) Given any st control manipula	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature it so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Objet tep of the procedure, describe the reason f ations prescribed by that step.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itte	Record Number	3.2 3.4 assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5       000134E008         (R) Given any st control manipula	nstrumentation e impacts of the following on the Nitions, use procedures to correct, correct, corrections: nt temperature t so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Objection of the procedure, describe the reason fations prescribed by that step.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itie	Record Number	75         1 (b)         3.2         3.2         assure
216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5       000134E008         (R) Given any st control manipula         Material Required for Examination	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature it so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Objet tep of the procedure, describe the reason f ations prescribed by that step.	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itile ctives or performance of that step and/or entry conditions	Record Number	75         1 (b)         3.2         3.2         3.4         assure         sponse to
Praint Systems         216000       Nuclear Boiler Ir         A2.       Ability to (a) predict the based on those predict abnormal conditions or         A2.08       Elevated containmer         Explanation of Answer       28 rods are out adequate core         EOP-206A step RF-5       000134E008         (R) Given any st control manipula         Material Required for Examination         Question Source:       New	nstrumentation e impacts of the following on the N tions, use procedures to correct, c r operations: nt temperature it so EOP -206A is appropriate. 5 S cooling. Reference 1 Learning Objet tep of the procedure, describe the reason f ations prescribed by that step. EOP Flowcharts without	JCLEAR BOILER INSTRUI ontrol, or mitigate the conse RVs are required to assure itte ctives or performance of that step and/or entry conditions Question Modification Method:	Record Number	3.2 3.4 assure

	•		
Given the follo	wing:		
- 120 VAC UF	S TROUBLE Annunciator D3-E3 alarms		
- "B" channel	ECCS Rosemount Trip Units lose power		
- "B" channel	analog RPV level indications fail downscale		
Which one of	he following 120 VAC inverter malfunctions would cause	this loss?	
a 1BD-481			
<b>b.</b> 1BD-483			
🖻 1BD-491			
<b>d</b> 1BD-492			
Answer a Ex	m Level B Cognitive Level Memory Facility Hope Creek	k Exam Date:	03/12/2002
Tier: Plant Syst	ems RO Group 1 SRO Group	1	216000K201
216000 Nu	clear Boiler Instrumentation	Record Nun	iber 76
K2. Knowledg	e of electrical power supplies to the following:		
K2.01 Analog	trip system: Plant-Specific	· · · · · ·	2.8 2.8
Answer D	3-136 Caution 4.9 states: "The 1(A-D)D481 Inverters power the ECCS D484 Inverters power the Bailey 1E and Non 1E Logic Cabinets." 1BI	5 Analog Trip Units D483 Inverter pow	ers the
01	erhead annunciators which would prevent all overhead alarms from c	oming in. 1BD492	feeds the BOP
C	Properties and a second s		
HC OP-AB ZZ-0	36 Caution 4.9		
		······································	
:			
	Learning Objectives		
000066E018	From memory, summarize/identify the systems/components supplied by the Uninterrup Attachment 2 of the Lesson Plan.	ptable Power Supplies	System, IAVV
Question Source:	New Question Modification Me	thod:	
Question Source C	mments:		
CONTRACTOR OF A DESCRIPTION OF A			

Page 81 of 139

- RPV level dropped until RCIC reached an automatic initiation setpoint

- RCIC failed to automatically initiate

- When armed and pressed, RCIC fails to initiate

IAW HC.OP-AB.ZZ-0001 Transient Plant Conditions, which one of the following actions is taken FIRST to manually inject with RCIC?

Adjust F	IC-R600 RCI	C FLOW setpoin	t to zero %			
Press a	nd hold the F	C-HV-F045 RCIC	Steam Sup	ply OPEN PB		
Ensure	OP-219 RCI0	VACUUM PUM	P is runnina			
			ie onen			
						03/40/2003
	Exam Level B	Coduina read			Exam Date.	2170004201
Plant Sy	rstems	lation Cooling System			Record Numb	77
A2. Ability to SYSTEI consequ	o (a) predict the M (RCIC); and (I Juences of those	impacts of the follow b) based on those pr abnormal conditions	ing on the REA edictions, use or operations:	ACTOR CORE ISOLATIO	ON COOLING ontrol, or mitigate	e the
A2.01 Syste	m initiation signa	al				3.8 3.7
Explanation of Answer	HC.OP-AB.ZZ-0	001 Attachment 6 st	ep B.1. answe	er c. is first, followed by c	i. , b. then a.	
			Reference Title	9		an a
			Learning Object	ives		
000030E022	(R) Given RCIC to Lesson Plan.	urbine control system failu	ires, evaluate and	determine the effect on the R	CIC system, IAW th	e RCIC System
000030E023	<ul> <li>(R) Given any of i system, IAW the</li> <li>a. A given valve</li> <li>b. Loss of DC o</li> <li>c. Inadequate s</li> <li>d. An oil system</li> <li>e. Failure of the</li> <li>f. Loss of room</li> <li>g. Rupture disc</li> <li>h. Steam line bu</li> <li>i. Low condensation</li> </ul>	he following and appropri RCIC System Lesson Pla e opening or closure r AC power supply ystem flow malfunction RCIC Gland Seal Conde cooling failure on the RCIC exhau eak ate storage tank level	ate control room r n: nser Vacuum Pum ust	eference material, evaluate ar	nd determine the effe	ect on the RCIC
Material Require	for Examination					
Question Source	New		Q	uestion Modification Method	f:	
Question Source	Comments:					

	corom coourro	ad during a startun		
- A reactor	scram occurre	d dunng a startup		
	bine Exhaust r	oiping has ruptured		
- Reactor r	pressure is 50 r	psig and lowering		
- A small s	team leak in th	e Drywell is causing Drywell	pressure to rise	
Which one	of the following	g valves will automatically clo	ose if Drywell pressure	e reaches HI-HI?
BD-H	/-F031 Torus S	Suction Isolation Valve		
۵. BD-H۱	/-F013 Pump [	Discharge to Feedwater Isola	ation Valve	
		n Breaker Isolation Valve		
	-FUUZ Vacuum	II DICARCI ISOIALIOII VAIVC		
I FC-H∖	/-F059 Exhaus	st Line Isolation Valve		
Answer <sub>C</sub>	Exam Level B	Cognitive Level Comprehension	Facility Hope Creek	Exam Date: 03/1
Tier: Plant	Systems	RO Group	1 SRO Group 1	217000K4
217000	Reactor Core Isc	plation Cooling System (RCIC)		Record Number
K4. Know interlc	ledge of REACTO	R CORE ISOLATION COOLING S e for the following:	SYSTEM (RCIC) design fe	ature(s) and/or
K4.05 Pre	vents radioactivity	release to auxiliary/reactor buildin	ng	3.2
Explanation of	RCIC Exhaust v	vacuum breaker isln valve will close	e to isolate the piping brea	ch
7.110.000		Reference Ti	tie	
HC.OP-SO.E	3D-0001			
		Learning Object	tives	
000030E023	<ul> <li>(R) Given any of system, IAW the</li> </ul>	the following and appropriate control room RCIC System Lesson Plan:	reference material, evaluate and	I determine the effect on the R
	a. A given valve	e opening or closure		
	c. Inadequate s	or AC power supply system flow		
	d. An oil system	m malfunction		
		e RCIC Gland Seal Condenser Vacuum Pu	imp	
	e. Failure of the f. Loss of room	1 cooling		
	e. Failure of the f. Loss of room g. Rupture disc	n cooling c failure on the RCIC exhaust		
	e. Failure of the f. Loss of room g. Rupture disc h. Steam line b	n cooling c failure on the RCIC exhaust preak sate storage tank level		
	<ul> <li>e. Failure of the</li> <li>f. Loss of room</li> <li>g. Rupture disc</li> <li>h. Steam line b</li> <li>i. Low condens</li> </ul>	n cooling c failure on the RCIC exhaust preak sate storage tank level		
	e. Failure of the f. Loss of room g. Rupture disc h. Steam line b i. Low condens	n cooling c failure on the RCIC exhaust preak sate storage tank level		
Material Requi	e. Failure of the f. Loss of room g. Rupture disc h. Steam line b i. Low condens	n cooling c failure on the RCIC exhaust preak sate storage tank level		

 $\sim 2$ 

- "A" RHR Pump is running in Suppression Pool Cooling mode

- A complete loss of offsite power occurs

- All Emergency Diesel Generators have automatically started and aligned to their respective busses

Which one of the following describes the response of the "A" RHR Test Return Valve BC-HV-F024A?

Remain	is open until C	LOSE PB is pres	ssed				
Remain	ns open until A	UTO CLOSE O\	/ERRIDE PB	is pressed			
Receive	es close signa	5 seconds afte	r bus reenerg	ized			
d. Receive	es close signa	10 seconds afte	er bus reenerg	jized			
Answer a	Exam Level R	Cognitive Level Co	omprehension	Facility Hope Cree	ek	Exam Date:	03/12/2002
Tier: Plant Sy	ystems		RO Group	2 SRO Group	2	2	19000A301
219000 F	RHR/LPCI: Torus	Suppression Pool	Cooling Mode			Record Numbe	ə <b>r</b> 79
A3. Ability to MODE	o monitor automa including:	itic operations of the	RHR/LPCI: TO	RUS/SUPPRESSI	ION PO	OL COOLING	
A3.01 Valve	operation						3.3 3.3
Explanation of Answer	On LOP , F024A LOCA signal. 5 a	will remain as is. O and 10 second delay	nce power is res are for pump s	tored, valve will re start for normal or	emain op emerge	oen because t ncy power.	here is no
			Reference Title				
HC.OP-SO.BC	-0001						
			Learning Objective	es de la companya de			
000028E012	Given a set of cor the status of the F RHR System Less	ditions and a drawing of esidual Heat Removal S on Plan.	the controls, instrum ystem or its compon	nentation and/or alarmater and a second s neutrino second se	s located the contro	in the main contro Is/instrumentatior	ol room, assess n/alarms IAW the

L				
Material Required for Examinati	on			
Question Source: New		Question Modification	Method:	
Question Source Comments:	INPO EXAM BANK QID# 12246 I	Limerick 01/20/1998 Concept Use	d	

- A LOCA has occurred

- The CRS directs the Suppression Chamber to be vented IAW HC.OP-EO.ZZ-0318 Containment Venting

- Instrument air header pressure is 0 psig

Which one of the following describes how the Hard Torus Vent path valves/dampers are operated IAW HC.OP-EO.ZZ-0318 under these conditions?

PCIG opens the inboard damper; the outboard valve is motor operated

PCIG opens the inboard damper; the outboard valve is manually operated

E The inboard damper is motor operated; the outboard valve is motor operated

The inboard damper is manually operated; the outboard valve is manually operated

Answer	Exam Level R Cognitive Level Comprehension F	acility Hope Creek	Exam Date:	03/12/2002
Tier: Pla	ant Systems RO Group 1	SRO Group 1	2230	01K613
223001	Primary Containment System and Auxiliaries		Record Number	80
K6. Kn CC	nowledge of the effect that a loss or malfunction of the followin DNTAINMENT SYSTEM AND AUXILIARIES:	ng will have on the PR	RIMARY	
K6.13	Applicable plant air system/ nitrogen make-up system.			3.2 3.4
Explanation Answer	The inboard damper is normally operated with Instrume is using Hydraulic Manual operators on both valves.	nt Air. Since IA is zer	o psig, the only wa	y to vent
	Reference Title			

HC.OP-EO.ZZ-0318

			Learning O	bjectives			
000158E004	From memory, procedures.	describe any/all	flow paths established I	by the performance o	f each of the 300 s	eries Emergency	y Operating
-							
Material Required	for Examinatio	n					
Question Source:	New			Question Modifi	cation Method:	L	
Question Source C	Comments:	-					

The plant is in Cold Shutdown with Shutdown Cooling in service. A single transmitter fails causing a loss of Shutdown Cooling.

Which one of the following caused the trip?

N078B RPV Pressure transmitter fails upscale

N080A RPV Level transmitter fails upscale

N080A RPV Level transmitter fails downscale

N078B RPV Pressure transmitter fails downscale

Answer	Exam Level B Cogn	itive Level Memory	Facility H	lope Creek	Exam Date:	03/12/2002
Tier: Plan	t Systems	RO	Group 1 SRO G	roup 1	2230	002K316
223002	Primary Containment Isc	plation System/Nuclea	ar Steam Supply Sh	nut-Off	Record Number	81
K3. Knov	wledge of the effect that a	oss or malfunction of	the PCIS/NSSSS v	will have on fo	llowing:	
K3.16 Sł	utdown cooling system/RI	łR				3.2 3.3
Explanation of Answer	Justification: N080A RF N080A RPV Level tran- detectors per channel to N078B RPV Pressure pressure not low N078B RPV Pressure coincidence isolation	PV Level transmitter fa smitter fails downscal to fail transmitter fails downs transmitter fails upsca	ails upscale-Incorre e-Incorrect- correct scale-Incorrect- wro le-Correct -Pressu	ect- failure mo t mode of failu ong failure mo re transmitter	de would be down ure but requires tw de needs to see h upscale is single	nscale vo nigh

**Reference Title** 

HC.OP-SO.SM-0001

		Learning Objectives
000045E010	Given a malfunction of the NSSSS, whi any, of that malfunction on each of the a. Reactor Water Level b. Fuel Cladding Temperatures c. Inplant/Offsite Radiological Concer d. Reactor Pressure	ch either isolates or fails to isolate a plant system, evaluate and explain the effects, if following IAW the NSSSS Lesson Plan. ns
000045E014	(R) Given a specific parameter, which is setpoint at which the isolation signal is	nitiates NSSSS, isolation signals, identify all valves isolated by that parameter and the generated IAW the NSSSS Lesson Plan.
Material Require	ed for Examination	Question Modification Method: Direct From Source
Question Source	e Comments: VISION BANK QID# Q5	6211

- '	The	plant	is	operating	at	100	percent	power
-----	-----	-------	----	-----------	----	-----	---------	-------

- Main Steam Line (MSL) "A" Flow Transmitter PDT- N086A fails low

Which one of the following describes how Main Steam Lines will be isolated if an actual high flow in the "A" MSL occurs?

(LIMIT YOUR RESPONSE TO MAIN STEAM LINE FLOW INSTRUMENTATION ONLY)

a.	"A" and	"C" NSS	SSS logic v	/ill trip	closing	Inboard	MSIVs	only
----	---------	---------	-------------	-----------	---------	---------	-------	------

"A" and "D" NSSSS logic will trip closing Outboard MSIVs only

"B" and "C" NSSSS logic will trip closing Inboard and Outboard MSIVs

"B" and "D" NSSSS logic will trip closing Inboard and Outboard MSIVs

Answer <sub>C</sub> Exam Level	B Cognitive Level	Comprehension	Facility Hope Creek	Exam Date: 03/12/2002
Tier: Plant Systems		RO Group	1 SRO Group 1	223002K401

82

3.0 3.2

223002 Primary Containment Isolation System/Nuclear Steam Supply Shut-Off Record Number

K4. Knowledge of PCIS/NSSSS design feature(s) and/or interlocks which provide for the following:

K4.01 Redundancy

Explanation of Answer MSL Flow transmitter failed low in A MSL will prevent A NSSSS logic from tripping. B, C, and D NSSSS flow transmitters on the A MSL will trip in response to an actual high flow but only C and B or C and D can make the MSIVs go closed

**Reference Title** 

HC.OP-SO.SM-0001

HC Tech Specs 3.3.2

Learning Objectives

000045E005	Given a labeled diagra a. The function of ea b. The condition whi c. The effect of each	am/drawing of NSSSS controls, io ach indicator. ch will cause the indicator to ligh a control on the NSSSS.	lentify/explain each of the following IAW the to extinguish.	NSSSS Lesson Plan.
Material Require	d for Examination	P&ID M-41 Sheet 1		
Question Source	e: New		Question Modification Method:	

Saturday, February 02, 2002 1:26:29 PM

**Question Source Comments:** 

Given the f	ollowing:					
- Drywell pr - "A" RHR p - The CRS - The assoc	ressure is 13 p oump is runnin orders Drywel ciated Drywell	sig g I Spray initiated Spray Containn	on the "A" RH nent Isolation \	R loop /alves are opened		
Which one	of the followin	g describes act	ions required	o establish desired	RHR flow?	
Throttle	e BC-HV-F048	A to obtain 540	gpm flow on I	FI-4461A		
b. Throttle	e BC-HV-F048	A to obtain 10,4	170 gpm flow o	on FR-R608A	·····	
	e BC-HV-F003	A to obtain 540	gpm flow on f	FI-4461A		
d. Throttle	e BC-HV-F000	3A to obtain 10	470 gpm flow	on FR-R608A		
Answer	Exam Level R	Cognitive Level		Facility Hone Creek	Exam Date:	03/12/2002
Tier: Plant S	Systems		RO Group	2 SRO Group 1	2	26001A106
226001	RHR/LPCI: Cont	ainment Spray Sys	tem Mode		Record Numb	er 83
A1. Ability CONT	to predict and/or AINMENT SPRA`	monitor changes in Y SYSTEM MODE	parameters asso controls including	ciated with operating th	ne RHR/LPCI:	
A1.06 Syst	tem flow					3.2 3.2
Explanation of Answer	IAW HC.OP-SO loop flow on FR FI-4461 is Supp F048A valve is f P&ID M-51-0 Sh	.BC-0001 and HC. R608A in the contr ression Chamber S ully closed. eet 2 is used by th	OP-AB.ZZ-0001 I rol room. Spray Flow indicat e student to deter	Drywell Spray is throttle ion mine which flow indicat	d to maintain 10, tor monitors Dryv	470 gpm vell Spray
		alte-disclosed Parlies	Reference Title			
HC.OP-SO.BO	C-0001					
M-51 Sheet 2						
			Learning Objectiv	es		
000028E011	Given a labeled d a. Explain the fu b. Assess plant c. Determine the d. Assess plant IAW the RHR Sys	rawing of, or access to nction of each indicator conditions which will ca effect of each control conditions or permissiv tem Lesson Plan.	the Residual Heat Re r IAW the RHR System buse the indicators to on the RHR System I es required for the co	moval System controls/indica n Lesson Plan. light or extinguish IAW the R AW the RHR System Lesson ntrol switches/pushbuttons to	ation on 10C650: HR System Lesson F Plan. o perform their intend	Plan. led functions

# Material Required for Examination P&ID M-51 Sheet 2

Question Source: New	Question Modification Method:	
Question Source Comments:		

Given the following: - There is a steam leak in the Drywell - The "B" loop RHR pump was placed in operation - Drywell spray valves BC-HV-F016B and HV-F021B are stroking open Select the automatic system response if the high Drywell pressure clears before the valves are full open? Drywell spray valves: a stop in an intermediate position. b. reverse direction and close. stroke full open. d. stroke full open then close. Cognitive Level Memory Facility Hope Creek Exam Date: 03/12/2002 Exam Level B Answer C 226001A305 **RO** Group SRO Group Tier: Plant Systems 2 1 Record Number 84 RHR/LPCI: Containment Spray System Mode 226001 Ability to monitor automatic operations of the RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE A3. including: 4.0 4.0 Containment pressure A3.05 Containment spray valves need 1.68 psig permissive to open however once started open the valves will Explanation of Answer travel full stroke. There is no interlock to close the valves on low containment pressure. **Reference Title** HC.OP-SO.BC-0001 Learning Objectives Given a labeled drawing of, or access to the Residual Heat Removal System controls/indication on 10C650: 000028E011 Explain the function of each indicator IAW the RHR System Lesson Plan. а. Assess plant conditions which will cause the indicators to light or extinguish IAW the RHR System Lesson Plan. h Determine the effect of each control on the RHR System IAW the RHR System Lesson Plan. C. Assess plant conditions or permissives required for the control switches/pushbuttons to perform their intended functions d. IAW the RHR System Lesson Plan. Material Required for Examination **Question Modification Method: Question Source:** Significantly Modified **INPO Exam Bank** INPO BANK QID# 11905 Nine Mile Point 1 07/08/1996 **Question Source Comments:** 

- Suppression Chamber pressure is elevated
- The CRS orders Suppression Chamber Sprays placed in service
- While opening the "B" RHR Suppression Chamber Spray Valve F027B, indications are as follows:
  - Yellow OVLD/PWR FAIL light is FLASHING
  - Green CLSD light is EXTINGUISHED
  - Red OPEN light is LIT
  - White OVERRIDDEN light is LIT

Which one of the following describes the valve status?

The valve breaker is tripped open. The valve is open with spray flow.

The valve breaker is tripped open. The valve is closed.

The valve overloads have tripped. The valve is open with spray flow.

The valve overloads have tripped. The valve is closed.

Answer	с	Exam Level B	Cognitive Level	Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier:	Plant	Systems		RO Group	2 SRO Group 2	230	000K601
230000	1	RHR/LPCI: Toru	s/Suppression Pc	ool Spray Mode		Record Number	85
<b>K6</b> .	Know TORL	ledge of the effec	t that a loss or ma N POOL SPRAY	alfunction of the follo MODE:	owing will have on the R	HR/LPCI:	
K6.01	A.C	. electrical					3.3 3.4
Explanal Answer	tion of	Valve motor ov MOV still has p	erloads have tripp ower, therefore th	bed causing the yell ne breaker is not trip	low flashing light. Red O oped.	PEN light Lit mean	s the
				Reference Title			

HC.OP-AR.ZZ-0005 Attachment B1

000028E011	Given a labeled a. Explain the b. Assess plar c. Determine t d. Assess plar IAW the RHR S	drawing of, or access t function of each indica at conditions which will he effect of each contro at conditions or permiss ystem Lesson Plan.	Learning Objectives o the Residual Heat Removal System controls/indication on 10C650: tor IAW the RHR System Lesson Plan. cause the indicators to light or extinguish IAW the RHR System Lesson Plan. ol on the RHR System IAW the RHR System Lesson Plan. sives required for the control switches/pushbuttons to perform their intended functions
Material Require	d for Examination		
Question Source	: New		Question Modification Method:
Question Source	Comments:		

- The plant is in Operational Condition 2 with a reactor startup in progress

- One Fuel Pool Cooling Pump, Heat Exchanger and demin are in service
- Fuel Pool inventory is slowly lowering
- Digital alarms and leak detection monitors do NOT identify the source of the leakage
- ALL sump pumps appear to be operating normally
- CST level is stable
- HC.OP-AB.ZZ-0144, Loss of Fuel Pool Inventory/Cooling is entered

Which one of the following actions is required IAW HC.OP-AB.ZZ-0144 Attachment 1.

Isolate FPCC Heat Exchanger		
Enter the Drywell and check for leakage		
Check Torus Level and verify RHR alignment		
Isolate RWCU Non-Regenerative Heat Exchanger		
Answer a Exam Level S Cognitive Level Application Facility Hope Creek	Exam Date:	03/12/2002
Tier:     Plant Systems     R0 Group     3     SR0 Group     3	2330	00G107
233000 Fuel Pool Cooling and Clean-up	Record Number	86
2.1 Conduct of Operations		
2.1.7 Ability to evaluate plant performance and make operational judgments based on op characteristics, reactor behavior, and instrument interpretation.	erating	3.7 4.4
Explanation of Answer Justification CORRECT - Isolate FPCC Heat Exchanger. Following the flow chart of Attach 0144: All conditions enter the first two decision blocks on excessive sump put	nment 1 of HC.OP- mp operations. The	AB.ZZ- stem

International states that all sump pumps are operating normally. The third decision block is in regards to the CST level. The stem stipulates that the CST level is normal. The fourth decision block is in regards to RPV head status. The stem stipulates OC2; hence the RPV head is installed. The fifth decision block asks whether FPCC or RHR FPCC Assist is in service. The stem stipulates that FPCC is in service. Therefore, the action is to check for increasing SACS Head Tank Levels - isolate FPCC Hx.

Reference Title

HC.OP-AB.ZZ-0144 Attachment 1

5.000 (C. 1980)

		Learning (	Objectives	
0AB144E005	(R) Interpret and apply c Procedure.	harts, graphs and tables conta	ained within the Loss Of Fuel Pool Invento	ory/Cooling, Abnormal Operating
Material Require	d for Examination	HC.OP-AB.ZZ-0144	Attachment 1	
Question Source	Facility Exam Bank		Question Modification Method:	Significantly Modified
Question Source	Comments: Vision B/	ANK QID# Q61347		

Page 91 of 139

Which one of the limit interloc	of the following describes the bases for the Refueling Platform M	lain Grapple we	ight
Prevent	ts release of activity in excess of that contained in a single fuel a	issembly	
b. Preven	ts damage to core internals from excessive lifting force		
C. Preven	ts damage to hoist safety brake from excessive speed		
d. Preven	ts engaging more than one fuel assembly or control rod blade gu	uide	
Answer b	Exam Level S Cognitive Level Memory Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant S	vstems R0 Group 3 SRO Group 2	2340	00G225
234000 F	Fuel Handling Equipment	Record Number	87
2.2 Equipm	ent Control		
2.2.25 Know	rledge of bases in technical specifications for limiting conditions for operations	and safety limits.	2.5 3.7
Explanation of Answer	Tech Spec bases 3/4.9.6		
	Reference Title		
Tech Spec bas	ses 3/4.9.6		
10CFR55.43(7	)		
000226E012	(R) Given a scenario of applicable operating conditions and access to Technical Specification a. Choose those sections which are applicable to the refueling platform and associated equinate Specifications. b. Evaluate Refuel Platform operability and determine required actions based upon system Specifications. c. Explain the basis for those Tech Spec items associated with the refuel platform IAW HCC (SRO only)	is: ipment IAW HCGS Teo operability IAW HCGS 3S Technical Specifica	:hnical Technical tions.
Material Require	d for Examination Tech Specs without Definitions, Safety Limits, and ba	ISES	

•

.

- The plant is operating at 100 percent power

- SRV "B" has inadvertently opened

- Operators attempt to close the SRV

IAW HC.OP-AB.ZZ-0121 "FAILED OPEN SRV/RELIEF VALVE", which one of the following is a positive indication that the SRV has CLOSED?

The "B" SR\	<b>/</b>						
a. "SV EN	RGZ" light ext	nguishes.					
b. Acousti	c Monitor gree	n light illumina	ites.				
c. associa	ited power fuse	e is pulled.					
d. tailpipe	temperature s	tabilizes.					
Answer b	Exam Level R	Cognitive Level	Memory	Facility	Hope Creek	Exam Date:	03/12/2002
Tier: Plant S	ystems		RO Group	1 SRC	) Group 1	-	239002A102
239002 F	Relief/Safety Valve	es				Record Num	ber 88
A1. Ability t VALVE	o predict and/or n S controls includii	nonitor changes in ng:	n parameters asso	ciated w	ith operating the	RELIEF/SAF	ETY
A1.02 Acou	stical monitor nois	se: Plant-Specific					3.7 3.8
Explanation of Answer	Acoustic Monitor	green close light	on is used to veri	y the SR	V is closed		
			Reference Title				
HC.OP-AB.ZZ	-0121 step 4.5						
	_		Learning Objectiv	es		ile d On en Codeb	DeliefMature
0AB121E001	Recognize abnorm Abnormal Operatir	al indications/alarms g Procedure.	and/or procedural req	irements t	or implementing, Fa	alled Open Safety	Relief valve,
0AB121E004	Explain the reason Operating Procedu	s for how plant/system re.	m parameters respond	when impl	ementing, Failed O	pen Safety Relief	Valve, Abnormal
0AB121E006	(R) Explain the bas Relief Valve, Abno	ses for Subsequent A rmal Operating Proce	ctions and the informa dure.	ion contair	ned in the Discussio	on Section of Faile	ed Open Safety
Material Require	d for Examination						
Question Source	* New		Qu	estion Mo	dification Method:		
Question Source	Comments:						

• \_:

The following plant conditions exist at T = 0:
- Reactor water level is -130 inches - Reactor pressure is 900 psig - Drywell pressure is 1.2 psig - All ECCS pumps are running - MSIV's are closed
Based on plant conditions, which one of the following describes the response of ADS?
ADS will initiate at T = 105 seconds
ADS will initiate at T = 300 seconds
ADS will initiate at T = 405 seconds
ADS will NOT initiate until Drywell pressure increases above 1.68 psig
Answer C Exam Level B Cognitive Level Comprehension Facility Hope Creek Exam Date: 03/12/2002
Tier:         Plant Systems         RO Group         1         SRO Group         1         239002A105
239002 Relief/Safety Valves 89
A1. Ability to predict and/or monitor changes in parameters associated with operating the RELIEF/SAFETY VALVES controls including:
A1.05 Reactor water level 3.7 3.8
ADS will NOT initiate drift Dryweit pressure increases above 1.06 psigincorrect- it will initiate based on the DW Press Bypass Timer ·ADS will initiate at T = 105 secondsIncorrect- With the plant conditions as stated, the ADS HIGH DRYWELL PRESSURE BYPASS TIMER will have initiated. This timer is 5 minutes (or 300 seconds). Once this timer is timed out the ADS initiating timer starts. This has a time of 105 seconds. The total time required to reach initiation is 405 seconds ·ADS will initiate at T = 300 seconds. Incorrect- With the plant conditions as stated, the ADS HIGH DRYWELL PRESSURE BYPASS TIMER will have initiated. This timer is 5 minutes (or 300 seconds). Once this timer is timed out the ADS initiating timer starts. This has a time of 105 seconds. The total time required to reach initiation is 405 seconds Once this timer is timed out the ADS initiating timer starts. This has a time of 105 seconds. The total time required to reach initiation is 405 seconds ·ADS will initiate at T = 405 secondsCorrect-
Reference Title
HC.OP-SO.SN-0001 section 3.3.1
Learning Objectives         000029E010       (R) From memory, evaluate the interrelationship between the Automatic Depressurization System and the following, IAW the Automatic Depressurization System Lesson Plan: <ul> <li>a. Residual Heat Removal (RHR) and Core Spray Systems</li> <li>b. Deleted</li> <li>c. Primary Containment Instrument Gas (PCIG) System</li> <li>d. 125 VDC Class 1E Distribution System</li> <li>e. 120 VAC Uninterruptible Power Supply (UPS) Instrumentation</li> </ul>
Material Required for Examination           Question Source:         Facility Exam Bank         Question Modification Method:         Editorially Modified
Saturday, February 02, 2002 1:26:29 PM Page 94 of 139

Saturday, February 02, 2002 1:26:30 PM

Page 95 of 139

Given the	e following:					
- With po	wer at 22%, a l	oss of Stator Co	oling occurred			
- All auto	matic actions o	ccurred as desig	yned			
- The turl	oine did NOT tr	ip				
- HC.OP-	AB.ZZ-0138 M	AIN TURBINE T	RIP/MALFUN	CTION has been er	itered	
- There is	s no time estima	ate for restoratio	n of Stator Co	oling		
The decis	sion if and whe	n to trip the Mair	n Turbine is ba	sed upon:		
a state	or cooling water	conductivity prie	or to the start o	of the transient.		
🕒 the r	ate of increase	of stator temper	ratures after th	e runback is comple	ete.	
c. the c	urrent plant loc	ation on the pow	ver to flow map	0.		
d. final	main generato	r field (amps) aft	er the runback	has gone to compl	etion.	
Answer a	Exam Level R	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plan	It Systems		RO Group	2 SRO Group 2	245	000K502
245000	Main Turbine G	enerator and Auxilia	ary Systems		Record Number	90
K5. Kno GEN	wledge of the oper	rational implications	of the following c	oncepts as they apply t	o MAIN TURBINE	
K5.02 Ti	urbine operation a	nd limitations				2.8 3.1
Explanation Answer	of Conductivity reevent is key.	eadings are not vali	d following loss of	system flow. The cond	uctivity reading prior	to the
			Reference Title	Ð		
HC.OP-AB	ZZ-0138 Step 4.4	.8				
	Contraction of the		Learning Objecti	Ves		
0AB138E00	6 (R) Explain the Trip/Malfunctior	bases for Subsequent A n, Abnormal Operating P	ctions and the information of th	ation contained in the Discus	sion Section of Turbine G	enerator
Material Dea		C # 5 W 5 U 5 U 5 W 5 W 5 W 5 W 5 W 5 U 5 U				
materialiteq	uired for Examination					
Question So	uired for Examination urce: INPO Exam B	Bank	<u></u>	estion Modification Metho	Editorially Modified	1

من \_

- The plant is operating at 100 percent power

- Instrument air is lost to the following valves:
  - AD-LV-1657-1 Condensate Makeup
  - AD-LV-1657-2 Condensate Reject
  - AD-FV-1677 SCP Suction Reject Bypass

IAW HC.OP-AB.ZZ-0131 "LOSS OF INSTRUMENT AIR AND/OR SERVICE AIR", which one of the following describes the Condensate System response and operator "Contingency Action" necessary to mitigate the event?

а.	Condensate Reject Valve fails open; Close Condensate Makeup Bypass Valve to resto	re
	lotwell level	

Condensate Reject Valve fails open; Open Condensate Makeup Isolation Valve to restore Hotwell level

Condensate Makeup Valve fails closed; Open Condensate Makeup Bypass Valve to restore Hotwell level

Condensate Makeup Valve fails closed; Close Condensate Makeup Isolation Valve to restore Hotwell level

Answer <sub>C</sub>	Exam Level R Cognitive Level	Comprehension	Facility Hope Creek	Exam Date: 03/12/2	2002
Tier: Plan	t Systems	RO Group	2 SRO Group 3	256000A213	3
256000	Reactor Condensate System			Record Number	91

A2. 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:

A2.13 Loss of applicable plant air systems

2.9 3.0

Explanation of AB-131. Condensate Makeup valve LV-1657 fails closed. Makeup bypass valve Answer v091 is opened to raise level

Reference Title

HC.OP-AB.ZZ-0131 Attachment 1

M-05 sheet 3

		Learning C	bjectives	
0AB131E004	Explain the reasons fo Abnormal Operating P	r how plant/system parameters r rocedure.	espond when implementing, Loss Of Instrument Air And/Or	Service Air,
Material Require	d for Examination	P&ID M-05 Sheet 3		
Question Source	e: New		Question Modification Method:	
Question Source	e Comments:			

- The plant is at 70% power
- The Main Turbine trips causing Hi Hi levels in the 1A, 2A heaters and 2A drain cooler

Which one of the following describes the valves that isolate for the 1A, 2A heaters and 2A drain cooler?

a Conder	nsate side inlet	and outlet val	ves						
b. The ex	traction steam i	solation valve	S						
C The Hig	gh Level Dump	valves							
The Sta	artup and Opera	ating vent val	/es						
Answer a	Exam Level R	Cognitive Level	Memory	Fi	acility Hope Cr	reek	Exam Date:	03/12/20	02
Tier: Plant S	Systems		RO Gro	<u>1</u> ه	SRO Group	3	-	256000K406	
256000	Reactor Condensa	te System					Record Num	her	92
K4. Knowle	edge of REACTOR	CONDENSATE	SYSTEM des	ign feat	ure(s) and/or	interlock	s which provi	de for	
K4 06 Cont	trol of extraction ste	eam						2.8 2.	8
Explanation of	JUSTIFICATION:								
Answer			1.1. <b>*</b>		A hart ·	104 June 1	n oocler		
	Condensate syste	em inlet and outle OP-SO AF-000	et valves for th 1 Section 3.2.	e 1A, 2 Limitat	A heaters and ions.	a 2A drai	n cooler.		
			1, 0004011 0.2,	Ennior					
	The extraction ste	eam isolation val	ve for the 1A, : team isolation	2A heat	ers and 2A dr	ain coole heaters :	er. and 2A drain (	cooler	
		S no extraction s	teamisolation	valve ie		neutore			
	The level control	valves for the 1A	, 2A heaters a	nd 2A c	Irain cooler.	only that	normal lovel (	control valvo	
	for feedwater hea	iter 2A (and drai	n cooler 2A)g	oing to	feedwater he	ater 1A	-would close		
		- I		hastaw		ndonoot	a flow through	the 2A drain	
	cooler.	valve for the 1A	, 2A teedwater	neaters	s, allowing col	ndensate	e now through	The 2A grain	
	Incorrect - the con 2A and the drain	ndensate inlet ar cooler; they are	nd outlet valve in series.	s close,	isolating flow	through	feedwater he	eaters 1A and	
			Reference	Title					
HC.OP-SO.A	F-0001 Section 3.2	4							
			Learning Oh	loctivos					
04B118E004	Explain the reasons	s for how plant/syste	m parameters res	pond whe	en implementing.	Loss Of F	eedwater Heate	rs, Abnormal	
0/10/10/2004	Operating Procedu	re.							
000055E008	(R) From memory, heaters, IAW the le	determine the auton sson plan.	natic system respo	onse asso	ciated with the f	ollowing at	onormal condition	is for all feedwat	er
	a. Heater high lev	vel							
	c. Main turbine tr	ip							
Material Require	ed for Examination								
Question Sourc	e: Facility Exam Ba	nk		Questi	on Modification	Method:	Significantly	Modified	]
Saturday, Fe	ebruary 02, 2002 1:26:3	BO PM	Page 98	of 139					

Saturday, February 02, 2002 1:26:30 PM

Page 99 of 139

- The plant is operating at 90 percent power

- Power ascension in progress

- 1BD483 120 VAC inverter output is lost

In addition to entering HC.OP-AB.ZZ-0136 "Loss of 120 VAC Inverter", which other operating procedure must be entered for this condition and why?

HC.OP-EO.ZZ-0101 "RPV Control" to stabilize reactor pressure

HC.OP-AB.ZZ-0143 "Loss of Overhead Annunciators / Loss of CRIDS" to stabilize RPV Level

HC.OP-EO.ZZ-0101A "ATWS RPV Control" to respond to failure to scram

HC.OP-AB.ZZ-0153 "Optic Isolator Panel Malfunction" to respond to single Recirc Pump trip

Answer	b	Exam Level	S	Cognitive Level	Memory	Facility H	lope Creek	Exam Date:	03/12/2002
Tier: P	lant S	Systems			RO Group	1 SRO G	roup 1		259002G432

**Record Number** 

93

3.3 3.5

2.4 Emergency Procedures and Plan

2.4.32 Knowledge of operator response to loss of all annunciators.

Reactor Water Level Control System

Explanation of Answer Loss of BD 483 inverter causes loss of overhead annunciators and trip of B RFPT. AB-143 directs operator to stabilize level if 1BD483 inverter is lost. The reactor should not scram.

Reference Title

# HC.OP-AB.ZZ-0143

259002

# 10CFR55.43(5) 0AB143E004 Explain the reasons for how plant/system parameters respond when implementing, Loss Of The Overhead Annunciators/Loss of CRIDS, Abnormal Operating Procedure.

Material Required for	r Examination		
0			
Question Source:	New	Question Modification Method:	
Question Source Co	mments:		

- The plant is in Operational Condition 5

- All RBVS and RBVE fans are running

- FRVS is in a normal standby configuration

- "B" and "D" Emergency Diesel Generators are tagged out for maintenance

A radiological incident on the Refuel Floor causes Refuel Floor Exhaust Radiation to reach 3.1x10-3 uCi/ml.

Which one of the following describes total FRVS recirculation flow one minute after this event? (Assume no operator actions )

<b>a</b> 0 c	cfm											
<b>b.</b> 90	,000 cf	m										
<b></b> 12	0,000 (	cfm										
d. 18	0,000 (	cfm										
Answer	d Ex	am Level B	3 <b>Co</b> g	jnitive Level	Comp	rehension	F	acility Hope	Creek	Exam Da	te:	03/12/2002
Tier: P	lant Sys	tems				RO Group	1	SRO Grou	2 1		261	000A407
261000	Sta	indby Gas	Treatmer	nt System						Record N	lumber	94
A4. A	bility to r	manually o	perate an	d/or monito	r in the	control roc	om:					
A4.07	System	flow										3.1 3.2
Explanation Answer	on of R	FE HI HI S efuel Floor	tart of FR Exhaust	VS is 2.0 E HIHI starts	-2 uCi/r all 6 far	nl. The va ns at 30,00	lue g 0 scf	iven is abo m each, sir	ve this se nce norma	tpoint. Il power is a	availabl	le.
		004	- 0.4.4		Re	eference Title	8					
HC.OP-S	50.GU-0	0001 sectio	on 3.1.1									
								-				
					Lear	ming Objecti	ives					
000042E	5006	(R) Given pla Ventilation Sy	ant condition ystem (FRV	s, distinguish S) Recirc Fans	petween s, IAW the	the automation e Lesson Pla	c start n.	s and stops a	ssociated wi	th the Filtratic	on Recirci	ulation
-												
Material R	Required f	or Examinati	ion									
Question	Source:	Facility Exa	am Bank			Q	uestic	on Modificatio	on Method:	Editorially	/ Modified	d
Question	Source C	omments:	Vision QI	D# Q60662								

Given the foll	lowing:					
- The plant is - A Loss of O - Drywell pres - "A" Emerge	operating a ffsite power ssure is 5 ps ncy Diesel C	t 100 percent po occurs sig and rising Generator fails to	ower o start	S after 3 minutes	2	
(Assume NO	operator ac	tion)			•	
Only 3 R	Recirc Fans a	and one Vent Fa	an start			
b. Only 4 R	Recirc Fans a	and one Vent Fa	an start			
C Only 3 R	Recirc Fans	and NO Vent Fa	in start			
, و بر	Recirc Fans	and NO Vent Fa	an start			
	xam Level R	Cognitive Level	Comprehension	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Sy	stems		R0 Group	1 SRO Group	1	261000K603
261000 St	tandby Gas Tr	eatment System			Record Num	ber 95
K6. Knowled	Ige of the effect	t that a loss or mai /I:	function of the follo	owing will have on th	e STANDBY GAS	
K6.03 Emerg	gency diesel ge	enerator system				3.0 3.1
Explanation of Answer	A EDG powers the B Vent Fan	A and E FRVS Re after Low Flow fro	circ and A Vent fai m A Fans starts th	n. The B,C, D and F e Auto fan.	Recirc Fans will s	tart as well as
	Sandrasa ang San		Reference Title			
HC.OP-SO.GU	-0001					
			Learning Objectiv	/es		
000040E012	(R) Given a set identify the state Containment Le	of conditions and a draw us of the Secondary Con sson Plan.	wing of the controls, ins ntainment by evaluatio	strumentation and/or aları n of the controls/ instrume	ns located in the main entation/alarms IAW th	control room, e Secondary
Material Required	<b>i for Examinatio</b> r					
Question Source:	New		Qu	estion Modification Met	hod:	
Question Source	Comments:					

Given the follo	wing:						
- A station blac - All 500 KV Li	ckout has oc ines to Hope	ccurred Creek are de	e-energized				
IAW HC.OP-A restore power	B.ZZ-0135, to Hope Cre	which one of eek 13 KV ring	the following 50 g bus?	00 KV lines is t	he first	to be re-ene	ergized to
Red Lion	5015 Line						
b. Deans 50	21 Line						
New Free	edom 5023 L	_ine					
d. Salem 50	)37 Line						
Answer d Ex	am Level R	Cognitive Level	Memory	Facility Hope Cr	eek	Exam Date:	03/12/200
Tier: Plant Syst	tems		R0 Group	2 SRO Group		20	52001K201
262001 A.C	C. Electrical Di	stribution				Record Humbe	
K2. Knowledg	ge of electrical	power supplies to	o the following:				3336
K2.01 Off-site	e sources of po	wer		and the Solom	5037 line	and the Salen	n Gas
Explanation of A Answer T	B-135 power r urbine	estoration strateg	gy is to restore pow	el via une Salenn	0007 1110		
			Reference Title	<b>)</b>			
HC.OP-AB.ZZ-0	)135						
			Learning Objecti	Ves			
000065E015	(R) Given plant p a. Discuss the b. Discuss the Main Power Syst	problems/industry eve root cause of the plan HCGS design and /o tem Lesson Plan.	ents associated with the int problem/industry eve or procedural guidelines	Main Power System: nt IAW the Main Pow that mitigate/reduce t	er System he likeliho	Lesson Plan. od of the problem/e	event IAW the
0AB135E006	c. Discuss the (R) Explain the b	"lesson learned" from bases for Subsequent	n this problem/event IAV t Actions and the inform	N the Main Power System ation contained in the	stem Less Discussio	n Section of Statio	n Blackout/Loss
	Of Offsite Power	Diesel Generator Ma	alfunction, Abnormal Op	erating Procedure.			
Material Required	for Examination						
Question Source:	New		Q	uestion Modification	n Method:		
Question Source	Comments:						

Given the fo	lowing:					
- The plant is - Several ove - 4.16KV - 4.16KV - Yellow INC equipment d - Reactor po	a operating at 100 percent power erhead annunciators alarm including: FDR TO USS XFMR BRKR MALF SYS INCOMING BRKR MALF P control bezels are flashing on 10A401 "A" 1E 4.16KV bus circul oes NOT change state wer, pressure, and level remain stable	it breakers l	out the			
Which one o	f the following caused the alarms?					
Loss of	power to the Optical Isolator Cabinets					
b. Loss of	inverter power to the "A" Channel 1E Bailey Cabinets					
C Loss of	AC power to the 10A401 bus		]			
d. Loss of	DC control power to the 10A401 bus					
Answer d	Exam Level B Cognitive Level Comprehension Facility Hope Creek	Exam Date:	03/12/2002			
Tier: Plant Sy	stems RO Group 2 SRO Group 1	26	2001K601			
262001 A	.C. Electrical Distribution	Record Numbe	97			
K6. Knowle DISTRI	lge of the effect that a loss or malfunction of the following will have on the A.C. BUTION:	ELECTRICAL				
K6.01 D.C.	bower		3.1 3.4			
Explanation of Answer	A loss of DC control power prevents the breakers from tripping and causes flas bezels. A loss of AC power would cause equipment to trip, specifically A RFPT cause RPV level to change. Loss of inverter power to Bailey would cause all co to go dark. Loss of power to the optical Isolation cabinets would not cause flash Reference Title	hing INOP ala would trip whi ntrol room bre hing INOP be	irm on ch would eaker bezels zels.			
	Learning Objectives					
000066E026	Given a set of conditions and a drawing of the controls, instrumentation, and/or alarms located i the status of the 1E AC Power Distribution by evaluation of the controls/instrumentation/alarms	n the main contro IAW the Lesson I	ol room, assess Plan.			
000066E027	Given the loss of a portion of the DC distribution system, evaluate the affect on the 1E AC distri Plan.	bution system IA	W the Lesson			
Material Require	I for Examination					
Question Source	New Question Modification Method:					
Question Source	Comments:					
Given the following:						
---	--	--	--	--	--	--
<ul> <li>The plant is operating at 100 percent power</li> <li>HPCI 250 VDC battery has just completed deep discharge rate surveillance testing</li> <li>The HPCI Battery charger has been returned to service and associated fuse transfer switch closed</li> <li>IAW HC.OP-AB.ZZ-0149 250 VDC MALFUNCTION, performance of the 250 VDC Maintenance</li> <li>Weekly Battery Surveillance is recommended</li> </ul>						
What is the bases for this recommendation?						
To ensure battery operability						
The battery charger may NOT be operable						
The 250 VDC bus alignment still needs to be verified						
The battery charger alignment still needs to be verified						
Answer a Exam Level B Cognitive Level Memory Facility Hope Creek	Exam Date: 03/12/2002					
Tier:         Plant Systems         RO Group         2         SRO Group         2	263000A101					
263000 D.C. Electrical Distribution	Record Number 98					
A1. Ability to predict and/or monitor changes in parameters associated with operating the DISTRIBUTION controls including:	D.C. ELECTRICAL					
A1.01 Battery charging/discharging rate	2.5 2.8					
Answer Answer AB-149 recommends performing Maint surv HC.MD-ST.PJ-0001 250 Volt We verify battery operability following the battery discharge event. This is based on Inoperable When Exiting LCO where the battery was declared operable before to operable category limits.	ekly Battery Surveillance to on OE9182 - Battery e charging restored battery					
Reference/Title						
HC.OP-AB.ZZ-0149						

	and the second	Learning Objectives
0AB149E006	(R) Explain the bases f Malfunction, Abnormal	or Subsequent Actions and the information contained in the Discussion Section of 250 VDC System Operating Procedure.
Material Require	d for Examination	
Question Source	e New	Question Modification Method:
Question Source	e Comments:	

4

Page 105 of 139

Which one of loss of Chani	f the followii nel "A" 125\	ng describes th /DC CLASS 1	ne effect on the E Panel 1AD4	e Class 1E AC Pow 17?	er Distributio	n System by a
a. Loss of s	switchgear	10B430 Norma	I Control Pow	er		
b Loss of s	switchgear	10B440 Norma	I Control Pow	er		
Loss of s	switchgear	10B450 Alterna	ate Control Po	wer		
d. Loss of s	switchgear	10B460 Alterna	ate Control Po	wer		
Answer <sub>C</sub> E	xam Level B	Cognitive Level	Memory	Facility Hope Creek	Exam Dat	e: 03/12/2002
Tier: Plant Sys	stems		RO Grou	p 2 SRO Group 2	2	263000K201
263000 D.	C. Electrical [	Distribution			Record N	umber 99
K2. Knowled	ge of electrica	I power supplies	to the following:			
K2.01 Major	D.C. loads					3.1 3.4
Explanation of Answer	correct answe	r. 10B450 is "A" C	hannel switchge	ar Alternate control powe	er is fed from 1	AD417
			Reference	litle		
HC.OP-SO.PK-	0001					
				- Alizza		
000005040		alectrical load and a	Learning Obje	n roforonco matorial, determin	the power supply	to the load IAW the
000069E019	DC Distribution	System Lesson Plan.	Iccess to control tool	Thereferice material, determin	ie tile power supply	
Material Required	for Examination	n				
Question Source:	Facility Exam	Bank		Question Medification Met	hod: Significan	tly Modified
Question Source	Comments:	Vision Bank QID# Q5	6195	annan ann an Anna a' Thannan an Anna a		

Given the fol	lowing:					-
- The plant is	s operating a	at 100 percent p	ower			
- "D" SACS F	oump is inor	perable for sched	duled mainten	ance		
- "B" Emerge	ncy Diesel	Generator (EDG	) becomes inc	perable		
D Lineige			, ,			
Which one o	f the followi	ng actions is req	uired within or	e hour?		
a. Cross-ti	e the "D" E[	)G to the "A" SA	CS Loop IAW	HC.OP-SO.EG-000		
Perform	AC Power	Distribution Line	up - Weekly IA	WHC.OP-ST.ZZ-00	01	
Perform	"B" SACS I	Pump In-service	Test - Quarte	IV IAW HC.OP-IS.EC	G-0002	
d Perform	"A" EDG O	perability Survei	llance Test - N	Ionthly IAW HC.OP-	ST.KJ-0001	
Answer b	xam Level S	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Sv	ustems		RO Group	1 SRO Group 1	26	4000G111
264000 F	mergency Ge	nerators (Diesel/Jet	)		Record Number	100
	t of Operation	•				
		ban ana haur taahni	ical specification	action statements for sys	tems	3.0 3.8
2.1.11 Know	leage of less t	nan one nour techni		action statemente lor eye	ithin one hour and	t at least
Explanation of Answer	Tech spec 3.8 once per 8 ho	urs thereafter. This	es surveillance requisiter surveillance requi	rement is contained with	in HC.OP-ST.ZZ-	0001
			Reference Tit	9		
Tech spec 3.8.	1.1.1					
10CFR55.43(2	)					
	,		Learning Objec	ives		
000068E030	(R) Given a so	enario of applicable cond	litions and access to	technical specifications:		
00000000000	a. Choose thos	e sections which are ap	plicable to the Emerg	ency Diesel Generators, IAW I	ICGS Technical Spec	ifications.
	b. Assess Eme	rgency Diesel Generator	r operability and dete	mine required actions associa	ted with Diesel Genera	ator
	c. Explain the l	basis for those technical	specification items a	sociated with the Diesel Gene	rators, IAW HCGS Te	chnical
	Specifications.	(SRO ONLY)				
	4					
Material Require	d for Examinatio	n				
Question Source	New			uestion Modification Method		
Question Source	Comments:					

Given the following:	
<ul> <li>A discharge of the Equipment Drain Sample Tank is in progress to the R</li> <li>The Liquid Radwaste Discharge Isolation Valve to the Cooling Tower Block</li> <li>closes</li> </ul>	River owdown automatically
Which one of the following conditions would cause this termination? (Assume no operator action)	
Cooling Tower Blowdown weir flow rate HI setpoint is reached	
Liquid Radwaste Effluent sample flow rate HI setpoint is reached	
Liquid Radwaste Effluent radiation HI setpoint is reached	
In the Cooling Tower Blowdown RMS radiation HI setpoint is reached	
Answer C Exam Level B Cognitive Level Comprehension Facility Hope Creek	Exam Date: 03/12/2002
Tier:     Plant Systems     RO Group     3     SRO Group     3	268000A101
268000 Radwaste	Record Number 101
A1. Ability to predict and/or monitor changes in parameters associated with operating including:	the RADWASTE controls
A1.01 Radiation level	2.7 3.1
Explanation of Answer Of choices given, only Radwaste Effluent Radiation HI setpoint will cause termination. Other answer choices cause alarms but not isolation.	release isolation and
Reference Title	
HC.OP-AR.SP-0001 Attachment 5	
Learning Objectives	
000086E005 (R) From memory list/identify the five conditions that will cause a liquid release to be auto Plan.	omatically terminated, IAW the Lesson
Material Required for Examination	
Question Source: INPO Exam Bank Question Modification Metho	Editorially Modified
Question Source Comments: INPO EXAM BANK QID# 16367 Grand Gulf 04/01/2000	THE PERSON NEEDED AND A DESCRIPTION OF THE PERSON OF THE P

1 s.

~

. . . 5

				DM 11 hos	iuct ann	unciated I	n addition to
The Off-Gas	Pre-I reatmer	nt High Radiati	on alarm on t	cause the high	h offaas	nre-treatm	ient
a fuel elemen	nt failure, which	ch one of the li	Showing could	cause the high	n ongas	pic-ticati	ioni
radiation con		<b>.</b>					
Fire in th	he offgas hold	up pipe					
b. Low offg	jas recombine	er temperature	S				
c. Increase	ed Main Cond	enser air in-lea	akage				
d. Condens	sate deminera	alizer resin intr	usion				
Answer d E	xam Level B	Cognitive Level	Memory	Facility Hope C	Creek	Exam Date:	03/12/2002
Tier: Plant Sy	stems		RO Group	2 SRO Group	2		271000K102
271000 O	ffgas System					Record Num	ber 102
K1. Knowled the follow	lge of the physic wing:	al connections ar	id/or cause- effe	ct relationships be	etween OF	FGAS SYST	EM and
K1.02 Proce	ss radiation mor	itoring system					3.1 3.3
Explanation of Answer	Condensate den monitors. Others pretreatment RM	hin resin intrusion affect offgas flov IS.	into the RPV wil is and temperati	l cause increased ires. Fire in the ho	rad levels oldup pipe	s at the Pre-T is downstrea	reatment Rad am of offgas
			Reference Til	le			
HC.OP-AB.ZZ-	0100						
	·						
			Learning Object	tives			
0AB100E006	(R) Explain the ba Activity, Abnorma	ses for Subsequent A I Operating Procedure	Actions and the informed e.	nation contained in the	e Discussion	Section of High	Reactor Coolant
-							
Material Required	d for Examination				- Mothod-		Modified
Question Source	INPO Exam Ba	nk			n metroa:	Significantly	MODILEU
Question Source	Comments: IN	PO EXAM BANK QIE	# 6550 Dresden 03/	11/1996			

ł

- A plant startup is in progress

- The 'A' RPS Motor-Generator Voltage Regulator fails causing generator output voltage to decrease to approximately 100VAC

Which one of the following describes the effect of this condition on the Main Steam Line (MSL) **Radiation Monitors?** 

a. Power	is lost to MSL	Radiation Mo	nitors RE-N006A	\ ar	nd RE- N006C, r	esulting in a	n INOP trip
Power trip	is lost to MSL	Radiation Mo	nitors RE-N006A	\ ar	nd RE-N006C, re	esulting in a	HI-HI RAD
The re RE-N0	duced voltage	causes a DO	WNSCALE trip c	of M	SL Radiation Mo	onitors RE-№	1006A and
The re     N006E	duced voltage 3 to indicate lo	e causes radiat wer than actua	ion levels for MS al	SL F	Radiation Monito	ors RE-N006	A and RE-
Answer a	Exam Level B	Cognitive Level	Memory	Fa	Hope Creek	Exam Date:	03/12/2002
Tier: Plant	Systems		RO Group	2	SRO Group 2	5	272000K603
272000	Radiation Monitor	oring System				Record Nun	103 103
K6. Know MONI	edge of the effect TORING SYSTE	t that a loss or ma M:	alfunction of the folk	win	g will have on the R	ADIATION	
K6.03 A.C	. power						2.8 3.0
Answer	Correct - when RPS Bus trip o Rad Monitors F Power is lost to Incorrect - an I The reduced v Incorrect - any trip occurs on a The reduced v indicate lower Incorrect - any trip occurs on a	A' RPS MG outp n undervoltage, c RE-N006A & C sir MSL Radiation M NOP trip occurs c oltage causes a D voltage reduction a loss of power to oltage causes rad than actual. voltage reduction a loss of power to	Aut is less than 108 V ausing a loss of the nee they are powere Monitors RE-N006A on a loss of power to DOWNSCALE trip of a would be momenta the MSL Rad Monit intion levels for MS a would be momenta the MSL Rad Monit	/AC 'A' I d fro and the MS ors. L Ra ary d	, the EPA Breakers RPS bus. This resu om RPS Bus 'A'. RE-N006C, resultin MSL Rad Monitors L Radiation Monitors ue to the UV trip of adiation Monitors RI	on the MG ou lits in an INOP ng in a HI-HI R s. rs RE-N006A a the EPA Breal E-N006A and F the EPA Breal	tput to the 'A' trip of MSL AD trip. and RE-N006C. cers; an INOP RE-N006B to cers; an INOP
			Reference Title				
HC.OP-SO.	SB-0001						
HC.OP-SO.S	SP-0001						
			Learning Objecti	ves			
000221E002	(R) Regarding t a. From mem	ne main steam line Ra ory, explain the setpoi	ints/conditions associate	em: d wit	h a high-high radiation o	r inoperative trip I	AW the Radiation
	Monitoring Syst b. Given norn high radiation o c. From mem	em Lesson Plan. nal Control Room refe r inoperative trip IAW ory, evaluate the effec	tences, determine the au the Radiation Monitoring ct of a loss of RPS powe	itoma Sys r IAW	atic plant actuations/trips tem Lesson Plan. / the Radiation Monitorir	s which occur as a ng System Lesson	result of a high- Plan.
Saturday, I	February 02, 2002 1:	26:31 PM	Page 110 of	139			

3			
Material Required	or Examination		
Question Source:	Facility Exam Bank	Question Modification Method:	Editorially Modified
Question Source C	omments: VISION BANK QID# Q56950		

Saturday, February 02, 2002 1:26:31 PM

...

• •

Page 111 of 139

Given the following:		
<ul> <li>The plant is in Operational Condition 2 with a startup in progress</li> <li>Reactor pressure is 300 psig</li> <li>The lowest Reactor Vessel Metal Temperature thermocouple is reading 15</li> </ul>	0°F	
Which one of the following actions is required?		
(Use Technical Specification Figure 3.4.6.1-3 provided)		
Hold reactor pressure at current value for at least 30 minutes		
Raise reactor pressure at least 20 psig within the next 30 minutes		
Lower reactor pressure at least 20 psig within the next 30 minutes		
Raise reactor metal temperature a maximum of 20°F within the next 30	minutes	
Answer c Exam Level R Cognitive Level Application Facility Hope Creek	Exam Date:	03/12/2002
Tier: Plant Systems R0 Group 3 SR0 Group 3	2 	290002A202
290002 Reactor Vessel Internals	Record Num	ber 104
A2. Ability to (a) predict the impacts of the following on the REACTOR VESSEL INTERN. on those predictions, use procedures to correct, control, or mitigate the consequence conditions or operations:	ALS; and (b) b s of those abr	based normal
A2.02 Overpressurization transient		3.6 3.9
Explanation of Answer Given conditions place the lowest metal temp to the left of the curve in figure pressure moves the operating plot to the right side of the curve. Metal temp r the right side of the curve	3.4.6.1-3. Lov nust move 37	vering reactor DegF to get to
Reference Title		
Tech spec 3.4.6.1 figure 3.4.6.1-3		
O0112CE006         (R) Analyze plant conditions and parameters to determine if plant operation is in accordance SHUTDOWN TO RATED POWER Integrated Operating Procedure, supporting System Oper Specifications.	with the STARTL ating Procedures	JP FROM COLD and Technical
Material Required for Examination Tech spec 3.4.6.1 figure 3.4.6.1-3		
Question Source: New Question Modification Method:		
Question Source Comments:		

The plant is operating at 100 percent power Which one of the following describes the effect on the plant if a piece of foreign material blocked a fuel support piece flow orifice? Core thermal power would decrease Steam guality exiting the reactor vessel will decrease Jet pump net positive suction head would increase d. Indicated reactor water level will fluctuate 03/12/2002 Cognitive Level Memory Facility Hope Creek Exam Date: Answer a Exam Level R 290002K303 **RO** Group Tier: Plant Systems 3 SRO Group 3 Record Number 290002 105 Reactor Vessel Internals Knowledge of the effect that a loss or malfunction of the REACTOR VESSEL INTERNALS will have on K3. following: 3.3 3.4 Reactor power K3.03 Low reactor coolant flow past a bundle will drastically increase voids in the channel. Reactor power will Explanation of Answer decrease **Reference** Title LP 0301-000.00H-000001-12 Learning Objectives Given a reactor power change analyze that power change and predict how the various reactivity coefficients respond. 000228E024 (R) From memory, explain the reason for core orificing and how this is accomplished, IAW the Lesson Plan. 000001E008 (R) Given plant problems/industry events associated with the Reactor Vessel and Internals: 000001E009 Discuss the root cause of the plant problem/industry event IAW the plant/industry event. а. Discuss the HCGS design and/or procedural guidelines that mitigate/reduce the likelihood of the problem/industry event at b. HCGS IAW the plant/ industry event. Discuss the "lessons learned" from this problem/event IAW the plant/industry event. C. Material Required for Examination **Question Modification Method: Question Source:** New Question Source Comments: New

- The plant is operating at 100% power
- "A" Control Room HVAC train and Chilled Water system is running
- A light haze with an acrid odor is noticed in the Main Control Room
- No alarms are received that could explain the origin of the haze and odor

- HC.OP-AB.ZZ-0129, High Radiation, Smoke or Toxic Gases in the Control Room Air Supply is entered

Based on plant conditions, which one of the following is an immediate action IAW HC.OP-AB.ZZ-0129?

Verify that the Control Room Supply Ventilation has automatically isolated

Verify that the "A" Control Room Emergency Filter Unit automatically started

Press the CONTROL ROOM EMER FILTER UNIT A and B OA pushbuttons

Press the CONTROL ROOM EMER FILTER UNIT A and B RECIRC MODE pushbuttons

Answer d Exam Level B Cognitive Level Memory Facility Hope Cree	k Exam Date: 03/12/2002						
Tier: Plant Systems RO Group 2 SRO Group	2 290003K501						
290003 Control Room HVAC	Record Number 106						
K5. Knowledge of the operational implications of the following concepts as they app HVAC	ply to CONTROL ROOM						
K5.01 Airborne contamination (e.g., radiological, toxic gas, smoke) control	3.2 3.5						
Explanation of Answer       Press the CONTROL ROOM EMER FILTER UNIT A and B RECIRC MODE pushbuttons. For a toxic gas in the Control Room Supply, isolate Control Room Ventilation and place CREF in the Recirc Mode.         INCORRECT - Press the CONTROL ROOM EMER FILTER UNIT A and B OA pushbuttons. CREF must be in the Recirc Mode for a toxic gas event.         INCORRECT - Verify that the Control Room Supply Ventilation has automatically isolated. Toxic gas will not automatically isolate Control Room Ventilation. Only high rad.         INCORRECT - Verify that the "A" Control Room Emergency Filter Unit automatically started. Does not automatically start on toxic gas, only high rads.							
Reference Title							
HC.OP-AB.ZZ-0129							

		Learning Objectives
0AB129E002	(R) From memory, recall the Immediate Supply, Abnormal Operating Procedure.	Operator Actions for High Radiation, Smoke or Toxic Gases in the Contorl Room Air
Material Require	d for Examination	
Question Source	Facility Exam Bank	Question Modification Method: Significantly Modified
Question Source	Comments: VISION BANK QID# Q6	1261

Page 114 of 139

Given the fo	llowing:					
- The plant is - Core offloa - A spent fue - The refuel	s in Operation d is in progre d bundle is fu bridge spotte	nal Condition 5 ess Ill up on the ma r notices the fu	in hoist over the el bundle has u	e core nlatched and fallen fr	ree into the v	vessel
What operat	or action is re	equired?	lease rate			
E Determ	ine South Pla			-fame the Depater Fi	ainoor	
<b>b</b> Determ	ine the location	on of the dropp	ed bundle and I	nform the Reactor Er	igineei	
Re-esta	ablish Second	lary Containme	nt within 1 hour			
d. Evacua	te all unnece	ssary personne	I from the Read	tor Building		
Answer d	Exam Level S	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Generic	: Knowledge and	d Abilities	RO Group	1 SRO Group 1	29	94001G114
GENERIC					Record Numbe	107
2.1 Conduc	t of Operations				1	2522
2.1.14 Knov	vledge of systen	n status criteria wh	ich require the noti	fication of plant personne	) . 	2.3 3.3
Answer	Justification: IA - Evacuate all u 4.2 - Determine So FRVS system i - Re-establish in place during CORE ALTER the location of location	W HC.OP-AB.ZZ- unnecessary perso buth Plant Vent RM s placed in service Secondary Contair all fuel moves the ATIONS and opera the dropped bundle	0101 section 4.0 onnel from the Read S release rate-Inco which does not ex- ment within 1 hour re is no time limit if ations with the pote e and inform the SI	ctor BuildingCorrect- IAV prrect- if Rx Bldg or RF Fl chaust though the South I - Incorrect- Secondary of lost, actions are to suspe- ntial for draining the vess RO-Incorrect- there are n	W HC.OP-AB.Z loor rad levels a Plant vent see s ontainment is re end irradiated fu- iel. See step 4.3 o actions to det	Z-0101 step are rising the step 4.5 equired to be jel moves , 3 -Determine termine the
	7 0101 section	10	Reference Tille			
HU.UP-AD.Z	2-0101 Section -					
10CFR55.43( 0AB101E006	5)(7) (R) Explain the Damage, Abnor	bases for Subsequent a mal Operating Procedu	Learning Objective Actions and the informative.	res tion contained in the Discussio	n Section of Irradia	ated Fuel
Material Requir	e: Facility Examination	Bank	Q	estion Modification Method:	Editorially Mod	lified
Question Source	e Comments:	Vision QID# Q60871				

No to the second s

Page 115 of 139

Using provid Exchanger (	ed copy of P8 Jutlet Temper	LD M-51 Shee	et 2, determine t	he computer p	ooint ID	) for "A" RH	R Heat
a. A2020							
Þ. A2380							
A2381							
d. A3132			· · · · · · · · · · · · · · · · · · ·				
Answer <sub>C</sub>	Exam Level B	Cognitive Level	Comprehension	Facility Hope Cr	eek	Exam Date:	03/12/2002
Tier: Generic	Knowledge and	Abilities	RO Group	1 SRO Group	1	2	94001G124
GENERIC						Record Numb	<b>er</b> 108
2.1 Conduct	t of Operations					1979 - 1989 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	
2.1.24 Ability	to obtain and in	terpret station ele	ectrical and mechar	nical drawings.			2.8 3.1
Answer	A2380 HX Inlet A2381 HX Outle A3132 HX Outle	Femperature - Inc t Temperature - C t Flow - Incorrect	correct Correct				
			Reference Title				
M-51 Sheet 2							
			Learning Objectiv	<b>es</b>		Lin Alto anala anali	
000028E012	Given a set of con the status of the R RHR System Less	ditions and a drawing tesidual Heat Remov son Plan.	of the controls, instrun al System or its compor	nentation and/or alarr nents by evaluation o	ns located f the contr	ols/instrumentatio	on/alarms IAW the
				-			
Material Require	d for Examination						
Question Source	New	- -	Qu	estion Modification	Method:		
<b>Question Source</b>	Comments:						

Saturday, February 02, 2002 1:26:32 PM

*.*-

Page 116 of 139

1. . . **.** 

Which one of the following individuals is responsible Audit and how often is it performed?	e for performing the Con	trol Room Key Sw	vitch
Oncoming RO/PO, once per day			
Oncoming RO/PO, twice per day			
Gff-Going RO/PO, once per day			
Off-Going RO/PO, twice per day			
Answer d Exam Level B Cognitive Level Memory	Facility Hope Creek	Exam Date: (	)3/12/2002
Tier: Generic Knowledge and Abilities RO Gr	oup 1 SRO Group 1	294001	G131
GENERIC		Record Number	109
2.1 Conduct of Operations			
2.1.31 Ability to locate control room switches, controls and correctly reflecting the desired plant lineup.	indications and to determine th	hat they are	4.2 3.9
Explanation of Performed by the offgoing RO/PO after every Answer	12 hour shift or twice a day.		
Reference	e Title		
SH.OP-AP.ZZ-0107			
	blasting		
000113E102 List/identify six items that should be discussed in the S	hift Turnover Briefing		
Material Required for Examination			
Question Source: Facility Exam Bank	Question Modification Method:	Significantly Modified	
Question Source Comments: Vision Bank QID #Q56224			

Saturday, February 02, 2002 1:26:32 PM

ţ.

Page 117 of 139

Given the following:
- The reactor is operating at 75% power following a transient - The reactor engineer reports that the MAXIMUM FRACTION OF LIMITING CRITICAL POWER RATIO (MFLCPR) is 1.001
Which one of the following describes the Technical Specifications required action(s)?
The reactor must be in HOT SHUTDOWN within two hours and the NRC notified within one hour.
The reactor must be in STARTUP within 6 hours, HOT SHUTDOWN within the following 6 hours, and COLD SHUTDOWN within the subsequent 24 hours.
Corrective action be initiated within 15 minutes and the MCPR restored to within the limit within two hours or reduce thermal power to less than 25% of rated within the next four hours.
An immediate reactor scram by placing the Reactor Mode Switch in the SHUTDOWN position.
Answer C Exam Level S Cognitive Level Application Facility Hope Creek Exam Date: 03/12/200
Tier:         Generic Knowledge and Abilities         RO Group         1         SRO Group         1         294001G133
GENERIC Record Number 11
2.1 Conduct of Operations
2.1.33 Ability to recognize indications for system operating parameters which are entry-level conditions for 3.4 4.0
Explanation of TECH SPEC 2.1.2   TECH SPEC 6.7.1
Answer
Justification: The reactor to be in HOT SHUTDOWN within two hours and the NRC operations center notified as soon as possible and in all cases within one hour-Incorrect- exceed SL 2.1.2 MCPR limit of >1.10 MCPR, requires Hot shutdown within 2 hours, 6.7.1.a requires 1 hour notification No operator action since reactor pressure is greater than 785 psig and core flow is greater than 10% of rated flowIncorrect- SL 2.1.2 exceed
Corrective action be initiated within 15 minutes and the MCPR restored to within the initiation two bours or reduce thermal power to less than 25% of rated within the next four hours-Correct- A MFLCPR
Value of 1.001 indicates the CPR in the core is slightly exceeding the LCO Limit but below the SL. This
is the action for MCPR Thermal Limit exceeding Tech Spec limit. The Safety Limit is not violated. An immediate reactor scram by placing the Reactor Mode Switch in the SHUTDOWN positionIncorrect- Hot shutdown in 4 hrs does not requires immediate MSS to Shutdown
Reference Title
TS 2.1.2
10CFR35.43(2)       Learning Objectives         000110E008       (R) Given specific plant operating conditions and a copy of the Hope Creek Generating Station Technical Specifications, evaluate plant/system operability and determine required actions (if any) to be taken. (SRO Only)
Material Required for Examination Tech Specs without Definitions, Safety Limits, and bases
Question Source:         Facility Exam Bank         Question Modification Method:         Significantly Modified
Saturday, February 02, 2002 1:26:32 PM Page 118 of 139

\_

 $\sim$ 

Question Source Comments: Vision Bank QID# Q54864

Saturday, February 02, 2002 1:26:32 PM

e \* 5

۲

Page 119 of 139

Given the following:	
<ul> <li>The plant is operating at 90 percent power</li> <li>The #1 Main Turbine Stop Valve has slowly drifted closed</li> <li>All Turbine Bypass valves responded full open</li> <li>Reactor steam dome pressure stabilizes at 1025 psig</li> <li>All other equipment functions properly</li> </ul>	
Which one of the following actions is required by Technical Specifications?	
Re-open the Turbine Stop Valve within one hour	
Reduce reactor thermal power by at least 25 percent within 15 minutes	
Reduce reactor steam dome pressure by at least 6 psig within 15 minutes	
Determine MCPR is less than or equal to the EOC-RPT inoperable limit within one hou	r
Answer o Exam Level P Cognitive Level Application Facility Hope Creek Exam Date:	03/12/2002
Tier:     Generic Knowledge and Abilities     RO Group     1     SRO Group     1	01G133
GENERIC Record Number	111
2.1 Conduct of Operations	
2.1.33 Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4 4.0
Explanation of Reactor steam dome pressure is above the LCO limit of 1020 psig. Reduce pressure to less that psig within 15 minutes or be in at least hot shutdown within 12 hours	an 1020
Reference Title	
HC Tech Specs 3.4.6.2	
Dearning Objectives           000051E017         (R) Given a scenario of applicable operating conditions and access to Technical Specifications:           a. Select those sections applicable to the EHC Control Logic System, IAW HCGS Technical Specifications.           b. Evaluate EHC Control Logic System operability and determine required actions based upon system inoperability Technical Specifications.           c. Explain the bases for those Technical Specification sections associated with the EHC Logic System, IAW HCGS Specifications.           c. Explain the bases for those Technical Specification sections associated with the EHC Logic System, IAW HCGS Specifications.	, IAW HCGS Technical
Material Required for Examination Tech Specs without Definitions, Safety Limits, and bases	
Question Source: New Question Rounded of Incontent of the second	

Given the follo	wing:					
A plant condi	tion has res	sulted in a react able at 50% aft	or power redu er the transier	ction It		
Chemistry re	ports that D	OSE EQUIVAL	ENT I-131 is :	3.0 microcuries/g		for 19 hours
Which one of f IAW Technica	the following I Specificati	g describes the ions?	bases that all	ows plant operati	ion to continue	101 40 110013
To allow f	for possible	lodine spiking	phenomenon			
<b>b</b> To allow	for stable R	eactor Coolant	chemistry san	nple data		
C To allow	for decay o	f short lived iso	topes			
d. To allow	reasonable	time to verify the	ne initial samp	le results	Evam Date	03/12/2002
Answer a Ex	am Level S	Cognitive Level	Memory	Facility Hope Cree		294001G134
Tier: Generic k	(nowledge an	d Abilities	RO Group	1 SRO Group	1 Record Ni	umber 112
GENERIC						
2.1 Conduct	of Operations	imary and second	ary plant chemist	ry within allowable lin	nits.	2.3 2.9
2.1.34 ADIIIty	S BASES 3.4	.5 Allows for up to	48 hours with a	imit of 4 microcuries/	/gram to accomm	odate possible
Answer	odine spiking	which may occur f	Beference T	tie		
			Kelekenee			
Tech Spec base	es 3/4.4.5					
400EB55 43(2)						
10CFR55.43(2)			Learning Obje	ctives		es to Tochnical
000220E006	<ul> <li>(R) Given a conspecifications:</li> <li>a. Identify the signal dentify the signal dentify the signal dentify the signal dentify the signal dentifications.</li> </ul>	py of the Chemistry Da sections, which are app he status of the applica e bases for those Tech	ily Summary, a scen blicable to Chemistry ble LCOs and summ nical specification se	ario of applicable operatin Control IAW Technical Sp arize the actions required ctions associated with Ch	ng conditions and acce pecifications. (SRO / S HAW Technical speci memistry Control IAW T	STA only) fications. Fechnical
	•					
Material Require	d for Examination	on		Question Modification	Method: Significa	antly Modified
Question Source	INPO Exam	Bank	72 Polo Verde 03/2	4/1997		
Question Source	Comments:	INPO BANK QID# 15	TO FAIL VEILLE UUTZ			

Given the following:	
- Reactor power is 40%	
- ALL Turbine Bypass Valves fail OPEN	
- The MSIVs FAIL to automatically close	
Which one of the following combinations of reactor power and reactor pressure would in	ndicate that
a Safety Limit violation occurred?	
Reactor power is 10% and RPV pressure is 750 psig	
Reactor power is 20% and RPV pressure is 770 psig	
Reactor power is 30% and RPV pressure is 775 psig	
Reactor power is 35% and RPV pressure is 810 psig	
Answer C Exam Level R Cognitive Level Comprehension Facility Hope Creek Exam Date:	03/12/2002
Tier Constitution and Abilities BO Group 1	294001G222
Generic Kilowiedge and Abilities	
Generic Knowledge and Abilities Record Num	113
Generic Knowledge and Abilities     Record Num       GENERIC     Record Num       2.2     Equipment Control	iber 113
GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.	10er 113 3.4 4.1
GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia	113 3.4 4.1
GENERIC       Record Num         2.2       Equipment Control         2.2.2       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title	113 3.4 4.1
GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Tech Spec 2.1.1	113 3.4 4.1
GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Tech Spec 2.1.1	113 3.4 4.1
GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title         Tech Spec 2.1.1	113 3.4 4.1
Generic Knowledge and Abilities       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Tech Spec 2.1.1         Learning Objectives       000110E001 <sup>1</sup> (R) From memory, state the four (4) Safety Limits in terms of conditions.	113 3.4 4.1
Generic Knowledge and Abilities       Record Num         GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Tech Spec 2.1.1         Learning Objectives       000110E001         (R) From memory, state the four (4) Safety Limits in terms of conditions.	113 3.4 4.1
Generic Knowledge and Abilities       Record Num         GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Reference Title         Tech Spec 2.1.1       Learning Objectives         000110E001       (R) From memory, state the four (4) Safety Limits in terms of conditions.	113 3.4 4.1
Generic Knowledge and Abilities       Record Num         GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Reference Title         Tech Spec 2.1.1       Learning Objectives         000110E001       (R) From memory, state the four (4) Safety Limits in terms of conditions.         Material Required for Examination       Material Required for Examination	113 3.4 4.1
Generic Knowledge and Abilities       Record Planting Conditions         GENERIC       Record Num         2.2       Equipment Control         2.2.22       Knowledge of limiting conditions for operations and safety limits.         Explanation of Answer       Reactor thermal power is greater than 25% with reactor pressure less than 800 psia         Reference Title       Reference Title         Tech Spec 2.1.1       Learning Objectives         000110E001       (R) From memory, state the four (4) Safety Limits in terms of conditions.         Material Required for Examination       Question Modification Method:         Direct From Source:       INPO Exam Bank	113 3.4 4.1

S. . . .

The reactor is operating at 100% power. During an operability check of the RCIC system it is discovered that the flow controller FIC-600 on 10C650B will NOT regulate RCIC flow in automatic, however, manual control does function properly.

Based on plant conditions, which one of the following actions is required?

a. No actio	on is required	since RCIC flow	can be ma	nually controlled		
Restore     the next	the controller t 12 hours, and	to operable sta d have steam do	tus within 7 ome pressu	days, or be in at leas re less than 150 psig	st hot shutdo in the follow	wn within ing 24 hou
Restore	the controller t12 hours and	to operable sta I have steam do	tus within 1 me pressu	4 days, or be in at lea e less than 150 psig	ast hot shutde in the followi	own within ng 24 hour
Restore the nex	the controller t12 hours and	to operable sta I have steam do	tus within 1 me pressu	4 days, or be in at lea re less than 100 psig	ast hot shutd in the followi	own within ng 24 hour
Answer C	Exam Level S	Cognitive Level A	pplication	Facility Hope Creek	Exam Date:	03/12/2
Tier: Generic	Knowledge and	Abilities	RO Grou	1 SRO Group 1		294001G222
GENERIC					Record Num	ber
2.2 Equipm	ent Control					
2.2.22 Know	ledge of limiting	conditions for opera	itions and saf	ety limits.		3.4 4
T/S [amendme	the next 12 hrs a next 12 hrs	on	ome pressure Reference T	itle	lowing 24 hrs.	
10CFR55.43(2	)					
000030E013	(R) Given plant co a. Select those s b. Evaluate RCI Technical Specific c. Explain the ba Specifications.	nditions and access to sections which are appli C System operability and ations. (SRO Only) uses for those Technical	Learning Obje Fechnical Specificable to the RCI0 d determine required Specification ite	ctives cations: C System, IAW HCGS Technica ired actions based upon syst ms associated with the RCIC S	al Specifications. tem inoperability, IA ystem, IAW HCGS	W HCGS Technical
Material Require	d for Examination	ank		Question Modification Metho	<b>d:</b> Direct From	Source
Question Source	Comments: Vis	sion Exam Bank QID# Q	54171			

 $z \gg$ 

- A complete core offload was completed at the beginning of the refueling outage

- Fuel reload is ready to commence IAW "Fuel Handling Control" Core Alteration Forms. [HC.OP-FR.ZZ-0001]

- All SRM's are fully inserted with the following count rates:

- "A" – 5 cps

- "B" – 2 cps

- "C" 6 cps
- "D" 1 cps

Based on these conditions, which of the following actions is required IAW plant procedures?

Spiral Reload may commence with no restrictions as long as any two SRM's are reading > 3 cps

A Movable SRM detector must be hooked up to the normal SRM channel instrumentation and be placed in either "B" or "D" quadrant, indicating > 3 CPS prior to Spiral fuel reload commencement

Spiral fuel reload may commence in "A" and "C" quadrants only, until either "B" or "D" quadrant SRM is reading > 3 cps at which time complete reload may be commenced

Spiral fuel reload may commence up to the first 16 bundles, at which time all four SRM's must read > 3 cps to perform a complete reload

Answer d Exam Level S Cognitive Level Application	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Generic Knowledge and Abilities RO Group	1 SRO Group 1	29400	01G226
GENERIC		Record Number	115
2.2 Equipment Control			
2.2.26 Knowledge of refueling administrative requirements.			2.5 3.7
Explanation of Justification: IAW HC.OP-IO.ZZ-0009 step 5.2.10 di	irects to verify SRM coun	ts > 3CPS after first	16

Reference Title

T.S.3.9.2.e.

HC.OP-IO.ZZ-0009 step 5.2.10

10CFR55.43(6)

		Learning Objectives
00112IE006	(R) Analyze plant condition OPERATIONS Integrated	ns and parameters to determine if plant operation is in accordance with the REFUELING Operating Procedure, supporting System Operating Procedures and Technical Specifications
Material Require	ed for Examination	Tech Specs without Definitions, Safety Limits, and bases
Question Sourc	e: Facility Exam Bank	Question Modification Method: Editorially Modified
Question Sourc	e Comments: Vision Exa	im Bank QID# Q58929

Page 124 of 139

- Tech Spec compliance has been verified IAW "Refueling Operations". [HC.OP-IO.ZZ-0009]
- Multiple Control Rod Drive Mechanisms are being removed IAW Technical Specification 3.9.10.2 - Spiral Fuel offload is in progress per directions of Reactor Engineers and Fuel Handling Control
- Core Alteration forms. [HC.RE-FR.ZZ-0001]
- 14 Fuel Assemblies are remaining in the Vessel

Which one of the following conditions would require a formal declaration of Suspension of Core Alterations as described in plant procedures?

Spent Fuel Storage Area Radiation Monitor in alarm while transporting LPRMS through the Cattle Shute

**b** All SRMs indicate between 2.1 & 2.6 cps

Mode Switch position change from Shutdown to Refuel for Rod Speed adjustments per system operating procedure

Refueling Bridge Platform surveillance identifies Frame Mounted hoist up travel stops are out of Technical Specification tolerance

Answer a	Exam Level R	Cognitive Level	Application	Facility Hope	Creek	Exam Date:	03/12/2002
Tier: Gener	ic Knowledge and	Abilities	RO Group	1 SRO Group	1	29	4001G227
GENERIC						Record Number	116
2.2 Equip	ment Control						
2.2.27 Kno	wledge of the refu	eling process.					2.6 3.5
Explanation of Answer	Justification HC.OP-IO.ZZ-0 handling activitie Additionally, Re Damage" which Other choices a	009, directs use es, adverse radio fuel Radiation Ard directs suspensi re all within the A	of NC.NA-AP.ZZ-00 logical conditions a ea Alarms is an ent on of all refueling o Nowable Technical	049, for direction re one of the cr ry condition for perations. Specification be	n on formal Iteria. HC.OP-AB pundaries f	suspension of .ZZ-0101 "Irrad or Core Alterati	fuel liated Fuel ions.
			Reference Title				
NC.NA-AP.Z	Z-0049						
A State of the second sec			Learning Objectiv	/es			
00112IE004	(R) Apply Precau	tions, Limitations and	Notes while executing	the REFUELING O	PERATIONS	Integrated Operati	ng Procedure
Value and a second s							
Material Requi	red for Examination					<b>1</b>	
Question Source	ce: Facility Exam B	ank	Qu	estion Modificatio	n Method:	Editorially Modifi	ied
Question Source	ce Comments: V	sion Bank QID# Q58	930				

Given the fo	lowing:		
- The plant h - Vessel disa - The I&C de inoperable	as just completed a shutdown for refueling issembly has commenced partment has determined that IRM "A" and SRM "B" have bad d	etectors and ar	e
Shutdov	vn margin must be demonstrated		
SRM B	will have to be replaced so offload can occur in that quadrant		
Both ins	truments must be replaced before any core alterations can begin	n	
d. IRM A r	nust be restored in order to meet the minimum operable channel	requirements	
Answer	xam Level S Cognitive Level Comprehension Facility Hope Creek	Exam Date:	03/12/2002
Tier: Generic	Knowledge and Abilities RO Group 1 SRO Group 1	29400	01G227
GENERIC		Record Number	117
2.2 Equipm	ent Control		
2.2.27 Know	ledge of the refueling process.		2.6 3.5
Explanation of Answer	Core alterations may only be conducted in a quadrant with an operable SRM o	detector	
	Reference Title		
Tech Spec 3.9	2		
NC.NA-AP.ZZ-	0049		
10CFR55.43(6			
000113E071	a. State the responsibilities of the following personnel: Refueling SRO.(SRO ONLY) Refueling Bridge Operator Control Room refuel Monitor		
Material Require	For Examination Tech Specs without Definitions. Safety Limits and ba	Ses	
Question Source	INPO Exam Bank Question Modification Method:	Significantly Modifie	d
Question Source	Comments: INPO EXAM BANK QID# 16846 Quad Cities 03/19/1998		

.

Same S

.

- The Core has been off-loaded to the Fuel Pool per NC.NA-AP.ZZ-0049, Conduct of Fuel Handling
- Five control rods are to be replaced with new ABB rods
- All plant conditions have been met for the control rod replacement

In addition to the Refuel Bridge operator and RP Technician, which one of the following must be part of the minimum crew compliment required for the replacement of the control rods?

Refuelin	g SRO - Only	y required to b	e on site						
<b>b</b> Refuelin	g SRO - Req	uired on the F	Refuel Floor						
Reactor	Engineer - R	equired on the	e Refuel Floor						
d. Reactor	Engineer - C	only required to	o be on site						
Answer <sub>C</sub> E	xam Level R	Cognitive Level	Memory	Fa	cility Hope Cr	eek	Exam Date:		03/12/2002
Tier: Generic	Knowledge and	Abilities	R0 Group	1	SRO Group	1	-	29400	1G230
GENERIC							Record Num	ber	118
2.2 Equipme	ent Control								
2.2.30 Know	edge of new an	d spent fuel mov	ement procedures.						2.6 3.5
	NC.NA-AP.ZZ-C includes the Fu Reactor Engine	0049 stipulates th el Crane Operato er may fulfill the o	at the minimum creater, Radiation Protect duties of the spotte	ew fo tion r; he	or non-core al Technician, F nce the minir	teration Reactor I num per	fuel handling Engineer and missible crew	activitie Spotte is thre	es r. The e.
			Reference Title	<u>)</u>					
NC.NA-AP.ZZ-	0049								
			Learning Object	VAR					
000113E073	State the minimu	m fuel handling crew	requirement for non-co	re alte	eration non irrad	iated fuel	handling.		
0001102070									
Material Require	t for Examination								
Question Source	Facility Exam I	Bank	Q	uestic	on Modification	Method:	Direct From	Source	
Question Source	Comments: V	ision Exam Bank QI	D# Q61057						

1

- The plant is in Operational Condition 5
- You are the oncoming Refueling SRO
- The offgoing SRO briefs you of their activities

Which one of the following would constitute a violation of Refuel SRO duties while core alterations are IN PROGRESS?

Picking	up a fuel bund	le after Contr	ol Room comr	nunications are lost		
<b>b</b> 5 hours	of continuous	fuel moves				
Control	rod blade rem	oval from an	unloaded fuel	cell		
I Fuel me	ovement with F	uel Pool wate	er level 1 inch l	pelow wave scuppers		
Answer a	Exam Level S	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/200
Tier: Generic	Knowledge and A	Abilities	R0 Group	1 SRO Group 1		294001G231
GENERIC					Record Num	ber 11
2.2 Equipm	ent Control					
2.2.31 Know	ledge of SRO fue	handling respo	nsibilities.			1.6 3.8
NC.NA-AP.ZZ	Continuous comn suspended if cont -0049	nunications mus inuous comms	t be established v lost. Reference Titl	vith the main control room.	Core Alts mu	ist be
10CFR55.43(7	7)		Losming Object			
000113E071	a. State the response Refueling SRO.(SR Refueling Bridge Op Control Room refue	sibilities of the follow O ONLY) perator I Monitor	ving personnel:			
Material Require	d for Examination					
Question Source	Facility Exam Bai	ık	۵	uestion Modification Method:	Direct From S	Source
Question Source	Comments: VIS	ON BANK QID# Q	6513			

An operator has the following exposure history this year until today:

Deep Dose Equivalent (DDE)210 mremCommitted Effective Dose Equivalent (CEDE)45 mremShallow Dose Equivalent (SDE)33 mrem

Today, the operator was required to make two entries into the Drywell at 5 percent reactor power:

Entry 1: Gamma dose: 52 mrem; Neutron dose: 24 mrem Entry 2: Gamma dose: 124 mrem; Neutron dose: 54 mrem

How much radiation exposure is available to the operator without extension if he has to make additional entries?

His available Non-Emergency margin for the year is...

b 1521 mrem   c 1599 mrem   d 1712 mrem     Answer b   Exam Level B   Cognitive Level Comprehension   Facility Hope Creek   Exam Date: 03/12/2002   Tier: Generic Knowledge and Abilities   RO Group 1   SRO Group 1   SRO Group 1   2.3 Radiological Controls   2.3.1 Knowledge of 10 CFR 20 and related facility radiation control requirements.   2.3.1 CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
C       1599 mrem         d.       1712 mrem         Answer       b       Exam Level       B       Cognitive Level       Comprehension       Facility       Hope Creek       Exam Date:       03/12/2002         Tier:       Generic Knowledge and Abilities       RO Group       1       SRO Group       1       294001G301         GENERIC       Record Number       120         2.3       Radiological Controls       2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6       3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE       120
d. 1712 mrem         Answer       b       Exam Level       B       Cognitive Level       Comprehension       Facility       Hope Creek       Exam Date:       03/12/2002         Tier:       Generic Knowledge and Abilities       RO Group       1       SRO Group       1       294001G301         GENERIC       Record Number       120         2.3       Radiological Controls       1       2.6       3.0         2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6       3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
Answer       b       Exam Level       B       Cognitive Level       Comprehension       Facility       Hope Creek       Exam Date:       03/12/2002         Tier:       Generic Knowledge and Abilities       RO Group       1       SRO Group       1       294001G301         GENERIC       Record Number       120         2.3       Radiological Controls       2.3         2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6       3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE       2.6       3.0
Tier:       Generic Knowledge and Abilities       R0 Group       1       SR0 Group       1       294001G301         GENERIC       Record Number       120         2.3       Radiological Controls       120         2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6       3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
GENERIC       Record Number       120         2.3       Radiological Controls       2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6 3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
2.3       Radiological Controls         2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6 3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
2.3.1       Knowledge of 10 CFR 20 and related facility radiation control requirements.       2.6 3.0         Explanation of Answer       CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
Explanation of Answer CORRECT ANSWER. Gamma and neutron dose are summed for DDE. DDE and CEDE are summed together to obtain TEDE. The Dose limit without extension is 2000 mrem/year TEDE
Reference Title NC.NA-AP.ZZ-0024
000113E059       a. Identify the personnel responsible for approval of the following dose extension: Yearly Dose Extension         Declared Pregnant Women Dose Extension         Lifetime Dose Extension
Material Required for Examination Ougestion Source: INPO Exam Pank Significantly Medified

Page 129 of 139

- A LPCI manual injection valve with remote indication requires an Independent Verification (IV)
- The valve is located 8 feet above the grating
- The valve is located in a 90 mrem/hr radiation area
- The temperature in the area is 90 F
- It is estimated that an individual will take 10 minutes to conduct the IV locally

Based on these conditions, which one of the following describes when the "Hands On" IV requirement can be waived?

For clir	nbing on equipment conce	rns		
<b>b</b> For AL	ARA concerns			
C For he	at stress concerns			
For fall	protection concerns			
Answer. b	Exam Level R Cognitive Lev	el Comprehension	Facility Hope Creek	Exam Date: 03/12/2002
Tier: Generi	c Knowledge and Abilities	RO Group	1 SRO Group 1	294001G302
GENERIC				Record Number 121
2.3 Radiol	ogical Controls			
2.3.2 Knov	wledge of facility ALARA program	n.		2.5 2.9
	Distrators are based on safety allowed to waive Hands On IV.	concerns which woul	d make the job longer or r	more difficult but are not
NC.NA-AP.ZZ	2-0005 Section 1.4	Reference inte		
-				
		Learning Objecti	es	
000113E015	Determine the requirements for Inde	ependent Verification		
Material Require	ed for Examination			
Question Sourc	e: INPO Exam Bank	QU	estion Modification Method:	Editorially Modified
Question Sourc	e Comments: INPO EXAM BANK	QID# 11424 LaSalle 1 (	4/21/1997	

- The plant is in Operational Condition 4 for a short outage

- During a Drywell inspection, the operator notices some radiation barricade ropes in the area of RWCU Isolation valve BG-HV-F001

- A radiation sign on the ropes reads "Caution; High Radiation Area, RWP Required For Entry" and indicates a MAXIMUM radiation level of 1.10 Rem/hr inside the ropes

Which one of the following additional posting requirements and /or controls are required for this area according to Technical Specifications?

The area requires a flashing light in the immediate area as a warning device

The area is required to be fenced off and the Drywell Airlock shall be kept locked with the keys kept under the administrative control of the Operations Superintendent

The area should be posted as a Very High Radiation Area with continuous electronic surveillance used to control access

The area requires a closed circuit TV monitor be installed to give radiation protection personnel continuous monitoring capability

Answer	a <b>Exam Level</b> S	Cognitive Level A	oplication	Facility	Hope Creek	Exam Date:	03/12/2002
Tier;	Generic Knowledge and	d Abilities	RO Group	1 SRO	Group 1	294	001G304
GENE	RIC					Record Number	122
2.3	Radiological Controls						,
2.3.4	Knowledge of radiation excess of those authors	on exposure limits an orized.	d contaminati	on control, i	ncluding perm	issible levels in	2.5 3.1
Explana Answer	tion of TS 6.12 require	s the area roped off,	conspicuousl	y posted and	d a flashing w	arning light.	
			Reference Ti	tie			

Tech Specs 6.12.2

10CFR55.43(4)

10011(00.40(4	·)				
			Learning Objectives	1.11	
000113E057	a. State the definition of Contaminated Area High Radiation Area Locked High Radiation A Radiation Area Restricted Area Very High Radiation Area Airborne Radioactivity Ar Declared Pregnant Wom Total Effective Dose Equ	he following terms rea ea an (DPW) ivalent (TEDE)	•		
Material Require	d for Examination	Tech Specs	without Definitions, Safety Lin	nits, and bas	es
Question Source	INPO Exam Bank		Question Modificati	ion Method:	Editorially Modified
Question Source	Comments: INPO EX	AM BANK QID# 54	84 Salem Unit 07/08/1996		

Page 131 of 139

Given the follow	ina:							
- The plant is in - The reason for - Reactor pressu - Drywell Oxyge - Primary Conta	Operationa shutdown ure is 920 p n concentra inment Rele	I Condition 3 was excessive sig ation is 2.5% ease permit he	- Hot Shutdo e unidentifie as been obta	own, going d RCS lea ained	to Cold Shu kage	tdown		
Which one of th	e following	is required pri	or to purging	g the Prima	ary Containm	nent?		
A Drywell w	/alkdown m	ust be comple	eted					
A Valve Op	en Time pe	rmit must be	initiated					
The plant n	nust be in C	perational Co	ondition 4 - C	old Shutd	own			
d Primary Co	ntainment A	Airlock Operal	oility Test m	ust be perf	formed			
Answer b Exam	Level R	Cognitive Level	Memory	Facility	Hope Creek	Exam Date:	0	3/12/2002
Tier: Generic Kno	wledge and A	bilities	RO Grou		Group 1		294001	G309
GENERIC						Record Nun	nber	123
2.3 Radiologica	I Controls							
2.3.9 Knowledg	e of the proce	ess for performin	g a containme	nt purge.				2.5 3.4
Explanation of Answer ope	ect answer. A n.	Valve open time	e permit must b	e prepared t	o track # of hou	irs that purge	valves a	are
			Reference	litle				
HC.OP-SO-GS.000	D1							
HC.OP-AP.ZZ-010	4							
			Learning Ohi	actives				
000032E015 (R a. b. IA' c. the	) Given a scenari Select those sec Evaluate Contair W the Lesson Pla Explain the base e Lesson Plan.	io of applicable oper- tions which are appli ment Inerting and P an. (SRO Only) s for those Technica	ating conditions an icable to the Conta urge System oper I Specification sec	id access to Te inment Inerting ability and deter tions associate	chnical Specification and Purge System rmine required action d with the Containn	ns: IAW the Lessor ons based upon s nent Inerting a P	n Plan. system ino urge Syste	perability m IAW
Material Required for	Examination	Tech Sne	cs without Def	nitions Safe	tv Limits, and b	ases		
Question Source	Facility Evam Rat	nk		Question Mo	dification Method:	Editorially N	lodified	
guesuon cource.	, aonin Lan Da			B-1998 64 56 10 10 10 10 10 10 10 10 10 10 10 10 10	No. of the Contract of the Con	concentration (1)		

Saturday, February 02, 2002 1:26:34 PM

Page 132 of 139

Off Gas Radiation 9RX612 and 9RX622 parameters indicate yellow on the RM-11 terminal Chemistry has been directed to commence sampling

Based on plant conditions, power level should be lowered ...

until the GAS RADW CHAR TRTMT PNL 00C367 alarm is clear.

ito maintain Main Steam Line Rad Monitors less than the HIGH alarm setpoint.

until North Plant Vent activity less than the HIGH alarm setpoint.

d to maintain Off Gas activity less than the RM-11 ALERT alarm setpoint

Answer d	Exam Level S	Cognitive Level	Memory	Facility	Hope Creek	Exam Date:	03/12/2002
Tier: Generi	c Knowledge and	Abilities	RO Grou	p 1 SR	O Group 1	2940	01G310
GENERIC						Record Number	124
2.3 Radiol	ogical Controls	NAT 1					
2.3.10 Abilitexpc	ty to perform proc osure.	edures to reduce	excessive leve	ls of radiatio	on and guard a	against personnel	2.9 3.3
	maintain the Off Reduce Power 1 Main Steam Rad Reduce power 1 entry not the Ch Reduce Power 1 RM-11 is the en	gas activity less t to maintain Main S d not listed in this until the GAS RAE arcoal treatment. to maintain North try not the NPV.	han the alert ala Steam Line Rad procedure DW CHAR TRTM Plant Vent activ	Irm setpoint Monitors le AT PNL 003	. Correct ss than the hi 67 alarm is cl n the high alar	gh alarm setpointInd ear-Incorrect-RM-11 m setpoint. Incorrect-	correct- is the Off Gas
			Reference T	itle			
HC.OP-AB.Z	Z-0127 rev 5, Sec	ction 4.1					
10CFR55.43(4	4)		Learning Obje	ctives			
0AB127E006	(R) Explain the ba	uses for Subsequent A nal Operating Procedu	Actions and the info	mation contail	ned in the Discus	sion Section of Off-Gas S	<u> </u>
	to a state on the second office the source of a second the first second	····· ··························					ystem-High

Question Source: INPO Exam Bank	Question Modification Method: Editorially Modified
Question Source Comments: Vision Bank QID# Q62046	

Given the f	ollowing condit	tions:				
- The plant - Main Stea trending up - Chemistry - HC.OP-Al	has been open im Line (MSL) wards reports the hi B.ZZ-0203, Ma	rating at 100% radiation level gher radiation ain Steam Line	power for seve s have been av levels are due High Radiatior	ral weeks eraging 120 mRem b to failed fuel is entered	out are now s	slowly
Based on p	additional Con	s, which one of densate Demir	f the following lineralizers in se	nmediate Operator A	Actions are re	equired?
b. Peduc		er to maintain N	MSL radiation le	evels less than 180 m	ıRem	
	Deceter Water		to the main our			
						1 400
Scram MRem	the reactor an	id close the Ma	ain Steam Isola	tion Valves when MS	SL levels read	n 180
Answer b	Exam Level B	Cognitive Level	Memory	Facility Hope Creek	Exam Date:	03/12/2002
Tier: Gener	ic Knowledge and	I Abilities	RO Group	1 SRO Group 1	2	94001G311
GENERIC					Record Numbe	ə <b>r</b> 125
2.3 Radiol	ogical Controls	4				0700
2.3.11 Abili	ty to control radia	ition releases.				2.1 3.2
	Ensure all appro Reduce reactor Trip the H2O2 I Shutdown If a valid MAIN S Drains	popriate automatic power to clear the njection System if STEAM LINE HI H	actions have occu e MN STM LINE R f Radmonitors read	rred ADIATION HI alarm (1.5) h 2.0 and notify Chemisti ion exists, then SCRAM	X) ry to verify the s and shut the MS	system is SIVs and
	CORRECT - Re the normal aver INCORRECT - will not have an exhausted neith INCORRECT - greater than 120 INCORRECT - done, it is not di	educe reactor pow age value of 120 Direct Reactor Wa appreciable affect her of which were Scram the reactor 0 mrem. This is no Place additional C irected by AB-203	ver to maintain MS mr stated in the st ater Cleanup flow f t on coolant activit stated in the stem. r and close the Ma ot performed until Condensate Demin	- radiation levels less that em. Reducing power is IC o the main condenser to y unless the RWCU dem in Steam Isolation Valves he MSL HI HI Rad alarm eralizers in service if pos	in 180 mrem. 18 DA 2 above. reduce coolant in is out of servi when MSL leve is in at 3xNorm sible. While this	80 mr is 1.5X activity. This ice of els are al. could be
			Reference Title			
HC.OP-AB.Z	Z-0203, Section 3	.2				
0AB203E002	(R) From memory	y, recall the Immediate	Learning Objecti e Operator Actions for	<b>ves</b> Main Steam Line High Radiatio	n, Abnormal Operat	ting Procedure.
		· · · · · · · · · · · · · · · · · · ·				
Material Requir	ed for Examination					

Saturday, February 02, 2002 1:26:34 PM

Page 134 of 139

Question Source: Facility Exa	m Bank	Question Modification Method:	Editorially Modified
Question Source Comments:	Vision Bank QID# Q61774		

•...\*

Which one o	of the followin	a describes or	ganizational gro	ouping of Abno	rmal Opera	ating Proced	ures
(ABs) IAW S	SH.OP-AP.ZZ	-0102 "Use of	Procedures".		•	•	
100 ser	ies are opera	tional transien	t procedures				
<sup>b.</sup> 200 ser	ies address o	component fail	ures				
🔄 300 ser	ies apply at a	II times					
<b>0</b> 00 ser	ies address f	ire and medica	al emergencies				
Answer C	Exam Level B	Cognitive Level	Memory	Facility Hope Cr	eek Ex	am Date:	03/12/2002
Tier: Generic	: Knowledge and	l Abilities	R0 Group	1 SRO Group	<b>1</b>	29400	1G405
GENERIC					Re	cord Number	126
2.4 Emerge	ency Procedures	and Plan					
2.4.5 Know emer	vledge of the org gency evolution	anization of the o s.	perating procedure	es network for nor	mal, abnorma	al, and	2.9 3.6
Explanation of Answer	Justification IAW SH.OP-AP	.ZZ-0102, sectio	n 5.5.2				
			Reference Titl	9			
SH.OP-AP.ZZ-	-0102, section 5	5.5.2					
r							······································
	244						
000113E005	a. Summarize th Abnormal Opera Emergency Oper Alarm Response	e guidelines for the us ing Procedures rating Procedures procedures	se of the following type	s of procedures:			
	······					······································	•
Material Require	d for Examination	rendor si					
Question Source	Facility Exam I	Bank	] @	estion Modification	Method: Di	rect From Source	
Question Source	Comments: V	ISION BANK QID# Q	57004				

HC.OP-EO.Z	Z-0206A is be	ing implemen	ted during ar	ATWS e	event.		
Which one o SRVs?	f the following	describes why	y RCIC inject	on must	be terminated	l prior to oper	ning
a. RCIC is	injecting cold	water					
RCIC Tu	urbine damage	e may occur					
The Bor	on concentrat	on will be dilu	ted				
d. RPV pre	essure may NO	)T be sufficier	nt to drive the	RCIC Tu	urbine		
Answer b	Exam Level B	Cognitive Level	Memory	Facility	Hope Creek	Exam Date:	03/12/2002
Tier: Generic	Knowledge and	Abilities	RO Group	1 SRC	) Group 1	29	4001G418
GENERIC						Record Number	• 127
2.4 Emerge	ncy Procedures a	and Plan					
2.4.18 Know	ledge of the spec	ific bases for EO	Ps.				2.7 3.6
Explanation of Answer	Reference: HC.O	P-EO.ZZ-0206A,	Step RF-15 Ba	ses			
			Reference Ti	le			
HC.OP-EO.ZZ	2-0206A, Step RF	-15 Bases					
		Hellow (	Learning Object	tives			
000134E008	(R) Given any step control manipulatio	of the procedure, de ns prescribed by that	scribe the reason fo	r performanc	e of that step and/or	expected system re	esponse to
Material Required	d for Examination						
Question Source	Facility Exam Ba	nk		Question Mo	dification Method:	Editorially Modif	ied
Question Source	Comments: Vis	ion Exam Bank QID a	# Q62115				

Given the following:								
<ul> <li>The Control Room receives a telephoned bomb threat</li> <li>The caller states that an explosive device is attached to a hydrogen trailer Chemical Injection offloading station in the yard south of the power block</li> <li>Security is implementing Contingency Procedures</li> <li>Security officers confirm the presence of a suspicious device</li> <li>No other suspicious activity is observed at this time</li> </ul>	at the Hydrogen Water							
Which one of the following describes the time requirement in which the NRC	must be notified?							
Within 15 minutes								
🕅 Within 1 hour								
Within 4 hours								
Within 24 hours								
Answer b Exam Level S Cognitive Level Comprehension Facility Hope Creek	Exam Date: 03/12/2002							
Tier:       Generic Knowledge and Abilities       RO Group       1       SRO Group       1	294001G428							
GENERIC	Record Number 128							
2.4 Emergency Procedures and Plan								
2.4.28 Knowledge of procedures relating to emergency response to sabotage.								
Explanation of Answer The event requires Unusual Event declaration IAW ECG Section 9.1.1. NRC notification is required within I one hour.								
Reference Title								
HC ECG Section 9.1.1								
10CFR55.43(1)								
Learning Objectives								
Material Required for Examination ECG without Usage Section 1								
Question Source: INPO Exam Bank Question Modification Method:	Editorially Modified							
Question Source Comments: INPO EXAM BANK QID# 1978 Palisades 1 06/14/1999	······································							

. .

Page 138 of 139

< < z

Which one o	of the followin	g describes how a s	cram is ver	ified in accore	dance v	vith HC.OP-I	0.ZZ-
	trogen pressi	re verified to be less	s than 800	nsig at each l	HCU		
			s than 000	usig at cacin			
Reactor	r vessel press	sure verified less that	n 920 psig			· ····	
🖻 RPS pc	wer distributi	on circuit breakers v	erified to be	e open			·
d Scram	air header pre	essure verified to be	less than 1	00 psig			
Answer a	Exam Level B	Cognitive Level Memo	ory	Facility Hope Cr	eek	Exam Date:	03/12/2002
Tier: Generic	: Knowledge and	I Abilities	RO Group	1 SRO Group	1	29	4001G434
GENERIC						Record Number	129
2.4 Emerge	ency Procedures	and Plan					
2.4.34 Know includ	ledge of RO tas	ks performed outside the graphy and system impli	e main contro cations.	l room during er	nergency	operations	3.8 3.6
Explanation of Answer	The scram is ve	erified outside the control	l room via HC	U Accumulator	pressure	s < 800 psig at	each HCU
		R	eference Title				
HC.OP-IO.ZZ-	0008						
	••••••••••••••••••••••••••••••••••••••	Lea	rning Objective	s and a second			
00112HE004	(R) Apply Precau Integrated Opera	OM OUTSII	DE THE CONTROL	ROOM			
Material Require	d for Examination						
Question Source	Facility Exam E	Bank	Que	stion Modification	Method:	Direct From Sou	rce
Question Source	Comments: V	ision Exam Bank QID # Q540 <sup>°</sup>	18				1960-1990 - W. M.

Page 139 of 139

BLANK
- 1. Given the following:
  - The plant is operating at 100% power
  - A transient caused by a short in the reactor recirculation control circuitry occurs

Immediately following the transient, the plant stabilizes with the following parameters:

- Reactor Power 50%
- "A" Recirc pump tripped
- "B" Recirc pump at 45% speed
- Loop "A" total jet pump flow is 10 Mlbmlhr
- Loop "B" total jet pump flow is 46 Mlbmlhr
- Total indicated core flow 36 Mlbm/hr

What is actual core flow, and how will the loss of the "A" Recirc pump affect the APRM Scram setpoint?

- a. 36 Mlbm/hr. Setpoint unaffected
- b. 36 Mlbm/hr. Setpoint needs to be adjusted
- c. 56 Mlbm/hr. Setpoint unaffected
- d. 56 Mlbm/hr. Setpoint needs to be adjusted
- 2. The plant has been operating at full power for several days.

- Operators notice that, over the last several hours, Main Condenser Vacuum has risen from 3.2"HgA to 4.0"HgA.

- Over this same period, Offgas system flow has increased from 25 scfm to 38 scfm.
- There have been NO ALARMS associated with this problem.

Which one of the following would cause these indications?

- a. Cooling tower outlet temperature increase
- b. Reactor Feed Pump Turbine exhaust piping leak
- c. Tube leak in #2A Feedwater Heater
- d. Resin intrusion from the Condensate Demineralizers

- 3. Given the following:
  - The plant is operating at 100 percent power
  - A severe electrical transient results in a loss of all offsite power
    - 2 control rods are at position "48"
    - Reactor power is less than 1 percent

Which one of the following describes the equipment available to control reactor pressure and level?

- a. HPCI and SRVs
- b. HPCI and Main Steam Line Drains
- c. Reactor Feed Pumps and SRVs
- d. RCIC and Main Steam Line Drains
- 4. Given the following:
  - The reactor is in Operational Condition 4
  - "A" RHR Pump is in Shutdown Cooling at rated flow
  - 10A404 4.16KV 1E Bus trips on bus differential overcurrent

Which one of the following describes the effect the bus loss will have on Shutdown Cooling?

- a. The Shutdown Cooling common suction line isolates and CANNOT be reset
- b. The AP228 Jockey pump trips causing Shutdown Cooling Loop "A" to lose keepfill
- c. Both "A" and "B" Shutdown Cooling Loops lose ability to adjust flow
- d. "B" Reactor Recirc Pump discharge valve automatically opens bypassing core flow

- 5. Given the following:
  - The Reactor is in Operational Condition 4
  - Plant startup operations are in progress
  - The negative battery charger for the "A" ±24 VDC System is out of service
  - The positive battery charger for the "B" ±24 VDC System is on an equalizing charge
  - All other equipment is aligned for normal operation

Which one of the following will occur if these conditions remain for a prolonged period of time?

An RPS trip will occur due to:

- a. A and C SRMs fail upscale because of low voltage to the drawers
- b. A, C, E, and G IRMs fail upscale because of low voltage to the drawers
- c. B and D LPRMs fail upscale because of high voltage to the detectors
- d. B, D, and F APRMs fail upscale because of high voltage to the detectors
- 6. Which one of the following is the reason that the reactor operator must wait at least 10 seconds following a reactor scram before attempting a scram reset?
  - a. To allow reactor water level to recover above the scram setpoint
  - b. To allow all the control rods to insert fully
  - c. To allow the Scram Air header to repressurize
  - d. To allow the Scram Discharge Volume vent and drain valves to cycle

7 Hope Creek requires an Emergency Depressurization after performing steam cooling in EOP-101 "Reactor Control". All actions required by EOP-202, "Emergency Depressurization", have been taken but only 4 Safety Relief Valves (SRV) can be opened and no other means of depressurization is available.

Which one of the following describes the consequences of this failure?

- a. Steam removal rate from the core is NOT adequate to ensure adequate decay heat removal exists.
- b. Steam removal rate during a LOCA is NOT adequate to prevent exceeding the Drywell design pressure.
- c. The pressure reduction rate will NOT allow low pressure injection systems to inject soon enough to recover level before the core becomes uncovered.
- d. The pressure reduction rate will NOT allow low pressure injection systems to inject prior to reaching the Minimum Steam Cooling RPV Water Level.
- 8. Given the following:
  - The plant is in Operational Condition 3
  - Main Condenser vacuum is broken
  - RHR Loop "B" is in Shutdown Cooling
  - Reactor level is stable at +35 inches
- Reactor pressure is 50 psig and lowering
  - "D" SSW Pump has just tripped
  - "B" SSW Pump will NOT start

Which one of the following describes the effect this will have on the plant? (Assume no operator action)

- a. The RHR Shutdown Cooling Loop will isolate due to lowering reactor level
- b. The RHR Shutdown Cooling Loop will isolate due to increasing reactor pressure
- c. "B" RHR Pump Min-Flow valve will open due to lowering loop flow
- d. "B" RHR Pump Min-Flow valve will open due to reaching pump shutoff head

- 9. Following a reactor scram and Main Steam Isolation Valve closure, reactor steam dome pressure reaches 1050 psig causing the "H" and "P" Safety Relief Valves (SRV) to open.
- Which one of the following lists the operating setpoints for subsequent openings of the "P" SRV?
  - a. SRV "P" opens at 1017 psig and closes at 905 psig
  - b. SRV "P" opens at 1017 psig and closes at 935 psig
  - c. SRV "P" opens at 1047 psig and closes at 905 psig
  - d. SRV "P" opens at 1047 psig and closes at 935 psig
- 10. The plant is at 62% power, recovering from an inadvertent trip of the "B" Reactor Recirc pump. Shortly after the Recirc pump was started and power ascension commenced, annunciator C8-B5 "RPV LEVEL 7" is received. The NCO notes that actual level is 39" and rising.

At this time, the required operator action is to...

- a. place the reactor vessel water level control system in manual.
- b. verify Hydrogen Water Chemical Injection trip.
- c. close the Main Steam Isolation Valves.
- d. reduce reactor recirc flow to minimum.
- 11. A malfunction of the Digital Feedwater Level Controller has resulted in an INCREASING reactor water level. The Reactor Feedwater Pumps are automatically tripped on a high reactor water level signal to prevent:
  - a. feed pump damage due to increasing pump discharge flow rate and head.
  - b. main turbine damage due to water impingement on turbine blades.
  - c. reactor vessel damage due to completely filling and overpressurizing the vessel.
  - d. main steam line piping and hanger damage due to filling the main steam lines.

- 12. Given the following:
  - The reactor has scrammed due to rising Drywell pressure
  - Drywell Floor Drain Sump Pumps have stopped running
    - Drywell pressure continues to increase

Which one of the following describes the reason why the sump pumps have stopped?

- a. The Drywell Leak Detection (DLD) Sump Monitoring goes offscale high
- b. The Reactor Recirc Seal Staging flow is isolated
- c. The sump pump suction screens are clogged
- d. The Non-IE power source is shed
- 13. Given the following conditions:
  - A LOCA has occurred
  - Drywell temperature is 300F
  - Drywell pressure is 3.0 psig

Which one of the following describes the plant response when one loop of Drywell Spray is initiated?

- a. Reactor vessel level indications will be lost
- b. SRV operation can no longer be assured
- c. Running Drywell cooling fans will automatically trip
- d. Drywell pressure will drop below the scram setpoint

- 14 Which one of the following describes the bases for Suppression Pool Cooling being required to be in service as a prerequisite to starting HPCI for surveillance testing?
  - a. To ensure adequate thermal mixing of the water in the Suppression Pool to limit stress on the torus shell due to differential thermal expansion.
  - b. To allow the maximum average Suppression Pool water temperature limit to be increased to 105°F.
  - c. To extend the operating time for HPCI testing before the maximum average temperature limit is reached and testing is required to be stopped.
  - d. To ensure that heat added to the Suppression Pool does NOT increase Suppression Chamber air space pressure to the point where the Suppression Chamber to Drywell vacuum breakers cycle.
- 15. Given the following:
  - The plant is operating at 100% power
  - Main Steam Isolation Valve AB-HV-F022A inadvertently closes

Which one of the following describes the response of the reactor?

Reactor power will:

- a. drop initially due to a Reactor Recirc intermediate runback when RPV level reaches +30 inches. This increases the boiling boundary length which adds negative reactivity.
- b. rise initially due to the reactor pressure rising. This causes a collapse of voids in the core which adds positive reactivity.
- c. rise initially due to a rising core water level caused by rising reactor pressure. Power will return to a slightly lower level in response to Reactor Water Level Control and Turbine Control Valve movement.
- d. drop initially due to the void boundary being pushed lower in the core. As the Turbine Control Valves respond to lower reactor pressure, power rises as the void boundary rises.

- 16. Given the following:
  - The plant is operating at 60% power
  - Both Reactor Recirc Pump Speed Controllers are in AUTO (Master Manual)

Which one of the following would require the operator to immediately place the Reactor Mode Switch to Shutdown

- a. SIC-R620 Master Speed Control Recirc Master Demand fails full upscale
- b. SIC-R620 Master Speed Control Recirc Master Demand fails full downscale
- c. SIC-R621A Reactor Recirc pump speed demand fails full upscale
- d. SIC-R621A Reactor Recirc pump speed demand fails full downscale
- 17. Given the following:
  - The reactor scrammed from 100 percent power
  - Reactor power is on the Source Range Monitors
  - 3 rods remain at position "48"
  - Scram air header reads 0 psig
  - The scram CANNOT be reset

IAW EOP Bases, which one of the following methods of achieving shutdown condition is best for these conditions?

- a. Vent control rod over-piston areas to insert rods
- b. De-energize scram solenoids to insert rods
- c. Defeat Rod Worth Minimizer to insert rods
- d. Initiate Standby Liquid Control to inject boron

### 18. Given the following:

- The plant was operating at 100% power
- Toxic gas concerns have required the Main Control Room to be evacuated
- The transfer of controls to the Remote Shutdown Panel have been completed

Which of the following systems are available for reactor vessel pressure control from the Remote Shutdown Panel?

- a. SRV's F, H & M and RHR Shutdown Cooling
- b. Turbine Bypass Valves and Reactor Core Isolation Cooling
- c. Reactor Feed Pumps and Reactor Recirculation
- d. High Pressure Coolant Injection and LO-LO SET SRVs
- 19. Given the following:
  - A leak on the Instrument Air header has resulted in lowering header pressure.
  - The "INST AIR HEADER A PRESSURE LO" annunciator alarm is received.

Which one of the following valves automatically open to restore header pressure and at what pressure?

- a. The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 70 psig
  - b. The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 85 psig
  - c. The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 70 psig
  - d. The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 85 psig

### 20. Given the following:

- The plant is operating at 50 percent power during a startup
- Overhead alarms received "MSIV CLOSURE"
- All 4 Outboard MSIV's OPEN and CLOSED indication lights are illuminated

Which one of the following would cause the alarm condition?

- a. Degrading Instrument Air header pressure
- b. Degrading Instrument Gas header pressure
- c. Loss of solenoid power to the MSIV 4-way "operator valves"
- d. Loss of solenoid power to the MSIV "test valves"
- 21. Given the following:
  - The plant is at 37% power
  - Both CRD pumps are tripped on low suction pressure
  - The Reactor Building Operator is swapping CRD suction filters
  - CRD ACCUM TROUBLE Overhead Annuciator C6-D4 is clear

(Assume NO other operator actions)

Which one of the following describes the effect on gas pressure in the HCU Accumulators 2 minutes following the pump trip?

- a. Stays the same because reactor pressure holds the charging water check valve closed
- b. Stays the same because accumulator pressure holds the charging water check valve closed
- c. Lowers because the reactor scrams
- d. Lowers because the accumulator piston moves when charging water header pressure is lost

### 22. Given the following:

- "A" Fuel Pool Cooling Pump is tagged for maintenance
- "B" Fuel Pool Cooling Pump trips

How does this affect the ability to monitor Fuel Pool temperature in the Control Room?

- a. Temperature recorder TR-4683 is unaffected because it monitors Skimmer Surge Tank temperature
- b. The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is INVALID because it monitors Skimmer Surge Tank temperature
- c. The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is VALID because it monitors Fuel Pool Cooling Pump common discharge piping
- d. Temperature recorder TR-4683 is INVALID because it monitors Fuel Pool Cooling Pump common discharge piping
- 23. Given the following:
  - Core offload is in progress

- A fuel bundle was removed from the reactor vessel, full up on the Fuel Hoist, and in the cattle chute heading for the Fuel Pool

- Fuel Pool Skimmer Surge Tank Level is lowering rapidly

Which one of the following describes the operator actions required?

- a. Place the bundle into its original reactor core location
- b. Place the bundle into the Fuel Prep Machine
- c. Stop the bridge at its current location and leave the refueling floor
- d. Stop the bridge at its current location and lower the bundle full down

### 24. Given the following:

- The reactor at rated power
- Hope Creek experiences a Loss of Offsite Power event and a reactor scram
- Approximately 13 sec into the event, Drywell pressure is 1.9 psig

Which one of the following describes the operation of the LOCA and LOP sequencers?

- a. The LOP sequencer program will be in control of restoring the loads.
- b. The LOP sequencer will complete sequencing 2 minutes later, then the LOCA sequencer will start.
- c. The LOCA sequencer program will be in control of restoring the loads.
- d. The LOCA sequencer will complete sequencing 2 minutes later, then the LOP sequencer will start.
- 25. Given the following:
  - The reactor is operating at 100% power
  - A spurious Main Turbine trip occurs
  - The reactor scrams with all rods going full in

- Turbine Bypass valves fail to operate properly resulting in a reactor pressure excursion up to 1100 psig

What is the impact on the Digital Feedwater Level Control System? (Assume no operator action)

- a. Operation of RFP Controllers in MANUAL is available after 55 seconds
- b. Operation of all controllers is automatically restored in 12.5 minutes
- c. Operation of RFP Controllers is available in MANUAL or AUTO until the RFP's trip
- d. The Master Level Controller will stay at its original demand signal for 10 seconds

- 26. Given the following:
  - The plant was operating at 100% power
  - A transient occurs
  - RPV pressure reached 1330 psig before turning downward

WHICH ONE of the following states the required action(s) for RPV pressure reaching 1330 psig?

- a. Prepare and submit a Safety Limit Violation Report within 30 days.
- b. Restore to within limits within 15 minutes or be in COLD SHUTDOWN within the next 6 hours.
- c. Restore to within limits within 1 hour or be in COLD SHUTDOWN within the next 12 hours.
- d. Perform an engineering evaluation on the out-of-limits condition within 24 hours.
- 27. Given the following:
  - A LOCA has occurred
  - Drywell temperature is 240°F
  - Suppression Chamber pressure is 7.5 psig
  - Suppression Pool temperature is 125 F and rising

Which one of the following describes the bases for initiating Suppression Chamber Spray at this pressure?

- a. To prevent exceeding the negative design pressure of the primary containment.
- b. To reduce primary containment pressure by condensing steam which may be present in the Suppression Chamber airspace.
- c. To reduce accumulation of non-condensibles in the Suppression Chamber.
- d. To prevent Drywell depressurization that exceeds the capacity of the Suppression Chamber to Drywell vacuum breakers.

#### 28. Given the following:

- The Reactor has scrammed
- A small break occurred on the RPV head vent line
- Drywell temperature is 330°F and rising
- Drywell sprays are NOT available

Emergency Depressurization is required to prevent exceeding which one of the following?

- a. Readable range of Drywell temperature instrumentation
- b. Maximum capacity of the Drywell Cooling system
- c. Saturation temperature for the Drywell design pressure
- d. Environmental qualification temperature of safety related equipment in the Drywell
- 29. Given the following:
  - A plant shutdown is in progress
  - "A" RHR is tagged for motor replacement
  - "B" RHR is in Shutdown Cooling at 210°F
  - Suppression Pool Level Low annunciator alarms
  - The PO reports Suppression Pool level is lowering

Which one of the following makeup sources must be used?

- a. Suppression Pool Makeup from HPCI using OP-EO.ZZ-0312
- b. Suppression Pool Makeup from RCIC using OP-EO.ZZ-0313
- c. Suppression Pool Makeup from Service Water using OP-EO.ZZ-0314
- d. Suppression Pool Makeup from Core Spray using OP-EO.ZZ-0315

#### 30. Given the following:

- I&C surveillance testing has caused an inadvertent RPS scram signal
- RPS actuates but some rods remain out with power at 2%
- RPV level lowers until RCIC and HPCI initiate
- Operators commence recovering level with Feedwater
- RPV level was below Level 2 for 15 seconds
- The Main Turbine is still on-line

(Assume NO other operator actions)

Which one of the following describes the status of RRCS?

- a. ARI valves are energized and RPT breakers are open
- b. RPT breakers are closed and ARI valves are de-energized
- c. Feed pumps have runback to minimum and RPT breakers are closed
- d. ARI valves are energized and SLC pumps will initiate when 3.9 minute timer times out

### 31. Given the following:

- The reactor is operating at 100% power
- Annunciator B1-B3 ( RCIC PUMP ROOM FLOODED ) alarms with the following alarm message presented on the CRIDS display: D2887 RCIC PUMP RM 4151-1 LSH 4151-1 HI
- An investigation reveals that Reactor Building Floor Drain Sump pumps have been running continuously for 10 minutes

- The Reactor Building Operator reports the leak is coming from the CST suction line

In addition to running the sump pumps, which of the following action(s), if any, is required by EOP 103/4?

- I --- Isolate RCIC
- II -- Immediately commence a normal reactor shutdown
- III -- Runback reactor recirculation and manually scram the reactor
- IV Emergency depressurize the reactor
  - a. I ONLY
  - b. II ONLY
  - c. I and II
  - d. I, III, and IV

32. HC.OP-EO.ZZ-103/4, "Reactor Building Control", requires an Emergency Depressurization of the RPV if the Maximum Safe Operating Limit is exceeded in 2 or more areas listed in Table 2 Column 2.

SELECT the BASES for this Emergency Depressurization of the RPV.

- a. To reduce the maximum lodine release allowable during a MSL break accident
- b. To prevent release of fission products into the Reactor Building by preventing fuel damage
- c. To reduce the driving head and, therefore, the flow of the unisolated leaking Primary System
- d. To protect personnel from high temperature environments while operating equipment
- 33 Which one of the following gaseous radioactive release limits corresponds to the EOP-104 entry condition?
  - a. 500 mRem to the Thyroid CEDE
  - b. 5000 mRem to the Thyroid CEDE
  - c. 2 times 10CFR 20 Appendix B limits
  - d. 200 times 10CFR 20 Appendix B limits

### 34. Given the following:

- A LOCA outside primary containment and the Reactor Building has occurred
- AB-203 Main Steam Line High Radiation actions have been completed
- All control rods are full in
- Fuel cladding damage has occurred
- Release rates are above General Emergency levels
- Reactor level is -60 inches and rising slowly
- Reactor pressure is 100 psig

Why is an Emergency Depressurization required?

- a. To ensure primary containment integrity
- b. To allow low pressure ECCS to inject
- c. To reduce the release rates
- d. To provide core steam cooling

### 35. Given the following:

- A large break LOCA has occurred inside the Drywell
- Multiple equipment failures occurred
- Drywell pressure is 15 psig
- Steam cooling was required until water level was restored above TAF with Fire Water
- The Containment H2/O2 Analyzers were placed in service
- The High Hydrogen alarms are clear

Which one of the following actions is required IAW EOP-102?

- a. Vent the Drywell because Hydrogen concentration is above 2%
- b. Exit EOP-102 and enter SAG because Hydrogen concentration is above 2%
- c. Vent the Suppression Chamber because Hydrogen concentration is below 2%
- d. Place the Hydrogen Recombiners in service because Hydrogen concentration is below 2%
- 36. During a fire at the station, a Fire Department Liaison is assigned by the Operations Superintendent.

Who, by title, normally functions in this role and what is their duty?

- a. Communicator designated equipment operator. Advises the Fire Department on how to mitigate the fire.
- b. Communicator designated equipment operator. Advises the Operations Superintendent on what equipment needs to be removed from service.
- c. Work Control Supervisor. Advises the Fire Department on how to mitigate the fire.
- d. Work Control Supervisor. Advises the Operations Superintendent on what equipment needs to be removed from service.

- 37. Given the following:
  - A plant startup is in progress.
  - Reactor Power on range 4 of IRMs
  - Reactor Level at + 46 inches
  - Reactor Pressure at 0 psig
  - Reactor Temperature at 180°F

The operating Control Rod Drive Pump trips. The Control Room Operator attempted to start the standby CRD Pump and the pump failed to start. Control Rod movement has been suspended.

Which one of the following describes the response of reactor water level and why? (ASSUME NO OPERATOR ACTION)

Reactor Water level will:

- a. rise due to the reactor being at the point of adding heat.
- b. remain stable due to water expansion from heating overcoming any losses to ambient.
- c. remain stable due to water expansion from heating overcoming any losses to RWCU.
- d. drop due to RWCU rejecting water for level control.
- $\sim$ 38. Given the following:
  - The plant was manually scrammed due to prolonged loss of CRD
  - A CRD pump has been restarted
  - All surveillances are current
  - All equipment is operable

Which one of the following PREVENTS control rod withdrawals?

- a. Rod Worth Minimizer insert and withdraw errors will result in a control rod withdrawal block signal
- b. The Reactor Mode Switch in "Shutdown" inserts a continuous control rod withdrawal block signal
- c. The Reactor Mode Switch in "Shutdown" maintains a scram signal on RPS until reset by the operator
- d. Rod Block Monitor "Downscale" inserts a control rod withdrawal signal until bypassed

- 39. The Control Room operator is moving control rods when a ROD DRIFT annunciator is received.
  - Which one of the following controls caused this annunciator?
    - a. An odd reed switch is passed while settling from Insert of the control rod one notch using the INSERT PB
    - b. An even reed switch is passed while settling from Withdrawal of the control rod one notch using the WITHDRAW PB
    - c. An odd reed switch is passed while settling from Insert of the control rod two notches using the CONTINUOUS INSERT PB
    - d. An even reed switch is passed while settling from Withdrawal of the control rod two notches using the CONTINUOUS WITHDRAW PB
- 40. Control rod 30-31 is being inserted from position 12 to position 08.

The RO notes that during rod motion the following occur:

- Control Rod 30-31 position indicates "XX" on the 4-Rod display
- Control Rod 30-31 position indicates "XX" on CRIDS
- RPIS Status DATA FAULT light on 10C651 is lit
- WHICH ONE of the following describes the status of rod 30-31?
  - a. Reed switch has failed
  - b. Scrammed
  - c. Uncoupled
  - d. Disarmed

#### 41. Given the following:

- A reactor startup is in progress
- Reactor power is 42% after completion of RWM Group Step 500
- The total steam flow signal output from Digital Feed fails to the equivalent of 15% power

Which one of the following describes how control rod motion is effected by the Rod Worth Minimizer (RWM)?

- a. The RWM will NOT allow any control rod insertion or withdrawal.
- b. The RWM will allow all normal control rod motion until actual power is less than the LPSP.
- c. The RWM will apply rod blocks in accordance with the loaded rod sequence.
- d. The RWM will allow continued control rod movement only by single notch increments.
- 42. Given the following:
  - The reactor is operating at 80% power
  - Core flow was 68.0 Mlbm/hour
  - The "A" Recirculation Pump tripped
  - Reactor power stabilized at 57%
  - Total core flow stabilized at 43.0 Mlbm/hour
  - No operator actions have been taken

Based on plant conditions, which one of the following operator actions are required? (AB-300 Attachment-1 is attached)

- a. Reduce power by single rod scrams
- b. Reduce power by lowering recirculation flow
- c. Raise flow by restarting the "A" Recirculation Pump
- d. Raise flow by raising the speed of the "B" Recirculation Pump

- 43. Given the following:
  - The plant was operating at 100 percent power
  - RWCU pump "A" is C/T for maintenance
  - The plant scrammed following a dual recirc pump trip
  - RPV level is stable at +30 inches
  - RPV Pressure is stable at 920 psig

Based on plant conditions, which one of the following is required?

- a. Trip CRD pumps
- b. Trip RWCU pumps
- c. Increase CRD cooling water flow
- d. Reduce RWCU flow from the Recirc Loops
- 44. Given the following:
  - The plant is operating at 100 percent power
  - Total Feedwater Flow signal from Digital Feed is lost

Which one of the following describes the effect of the loss on the plant?

- a. Recirc Pump Scoop Tube Lockup
  - b. Recirc Pump Speed Limiter Full runback
  - c. Reactor Scram on Low RPV level
  - d. Reactor Feed Pumps Speed Limited to 2500 RPM

### 45. Given the following:

- A LOCA concurrent with a partial Station Blackout has occurred
- "A" LPCI is being injected into the RPV
- Reactor Pressure is steady at 100 psig
- Reactor Bldg Temperature is steady at 105°F
- Drywell Temperature is increasing slowly at 285°F
- Fuel Zone indicators are reading -168 inches and steady

Based on the above current conditions, adequate core cooling is ......

- a. assured, since actual RPV level is -150"
- b. assured, since actual RPV level is -159"
- c. NOT assured, since actual RPV level is -170"
- d. NOT assured, since actual level is -173"

46. Given the following:

- "B" RHR pump is running in Shutdown Cooling (SDC)
- I&C error initiates "B" LPCI Initiation Logic on High Drywell Pressure signal

Which one of the following describes the "B" RHR Pump, SDC Discharge Valve F015B, and LPCI Injection Valve F017B response?

- a. "B" RHR pump trips, F015B closes and F017B opens
- b. "B" RHR pump trips, F015B closes and F017B remains closed
- c. "B" RHR pump remains running, F015B remains open and F017B opens
- d. "B" RHR pump remains running, F015B remains open and F017B remains closed

#### 47. Given the following:

- The reactor is operating in STARTUP
- RCS temp is 190°F
- RWCU blowdown operation to the Liquid Radwaste System at 60 gpm
- The operator fully opens Blowdown Line Restricting Orifice Bypass Valve (HV-F031)

Which one of the following describes the operational effect of this high bypass flow and how does the operator adjust for the change?

- a. The Regenerative Heat Exchanger (RHX) RWCU outlet temperature will lower. Lower RACS flow IAW OP-SO.BG-0001
- b. The Regenerative Heat Exchanger (RHX) RWCU outlet temperature will lower. Raise RACS flow IAW OP-SO.BG-0001
- c. The Non-Regenerative Heat Exchanger (NRHX) RACS outlet temperature will rise. Lower RACS flow IAW OP-SO.BG-0001
- d. The Non-Regenerative Heat Exchanger (NRHX) RACS outlet temperature will rise. Raise RACS flow IAW OP-SO.BG-0001
- 48. Given the following:
  - The High Pressure Coolant Injection System (HPCI) is operating in Pressure Control alignment
  - The HPCI flow controller is in "Automatic"
  - HPCI turbine speed is 2450 rpm

Which one of the following describes the response of HPCI turbine speed and system flow if the operator throttles the HPCI Test Bypass To CST Isolation Valve (F008) in the "open" direction for the given conditions?

(Compare the conditions after they stabilize to before the valve was throttled.)

- a. -- HPCI turbine speed lowers -- System flow returns to original value
- b. -- HPCI turbine speed lowers -- System flow goes down
- c. -- HPCI turbine speed raises-- System flow returns to original value
- d. -- HPCI turbine speed raises
  - -- System flow goes up

- 49. Given the following:
  - I&C is performing testing on HPCI TURBINE EXHAUST DIAPHRAGM RUPTURE transmitter PISH-N655A
    - A ZERO psig signal is set on the calibration device
    - The following Alarms/ Status lights from the testing are received in the Control Room:
      - HPCI SYSTEM OUT OF SERVICE LIT
      - IN TEST STATUS on Logic Channel "A" LIT
      - TRIP UNIT IN CAL OR GROSS FAIL on Logic Channel "A" LIT
      - HPCI TURBINE EXHAUST DIAPHRAGM RUPTURED Extinguished

With this configuration, how will HPCI respond to an actual HPCI Initiation with a subsequent diaphragm rupture?

- a. "A" channel isolation valves only will isolate. HPCI Turbine will NOT trip.
- b. "C" channel isolation valves only will isolate. HPCI Turbine will trip.
- c. "A" and "C" channel isolation valves will isolate. HPCI Turbine will trip.
- d. "A" and "C" channel isolation valves will isolate. HPCI Turbine will NOT trip.
- 50. Given the following:
  - The plant is operating at 100% reactor power
  - A small instrument line break LOCA occurs
  - Drywell pressure is 2.5 psig increasing
  - RPV water level reaches -30 inches and is rising
  - Drywell pressure trip unit N694F to Core Spray (1 of 2) has failed to trip

Which one of the following describes the response of the Emergency Diesel Generators?

- a. All Emergency Diesel Generators start and load onto their respective busses
- b. A, C, & D Emergency Diesel Generators start but DO NOT load onto their respective busses
- c. A, B, & D Emergency Diesel Generators start and load onto their respective busses
- d. All Emergency Diesel Generators start but DO NOT load onto their respective busses

### 51. Given the following:

- A Loss of Offsite Power occurs followed by a LOCA
- "B" EDG fails to start
- Drywell pressure is 5.7 psig
- Reactor pressure is 440 psig decreasing

Which one of the following describes the effect on the "D" Core Spray Pump and Injection Valve BE-HV-F005B?

- a. "D" Core Spray Pump will NOT start but F005B opens
- b. "D" Core Spray Pump will NOT start and F005B will NOT open
- c. "D" Core Spray Pump starts but F005B will NOT open
- d. "D" Core Spray Pump starts and F005B opens
- 52. Given the following:
  - A plant shutdown is in progress IAW HC.OP-IO.ZZ-0004
  - Both Standby Liquid Control pumps are inoperable
  - A scram condition is reached and the reactor fails to scram

When will the SLC/RRCS INITIATION FAILURE Overhead Alarm occur?

(Assume RPV level stabilizes at -50 inches and reactor power remains at 8%.)

- a. When the RRCS POTENTIAL ATWS alarm occurs
- b. When the RRCS CONFIRMED ATWS alarm occurs
- c. 30 seconds after the RRCS POTENTIAL ATWS alarm
- d. 30 seconds after the RRCS CONFIRMED ATWS alarm

### 53. Given the following:

- Reactor power is 90%

- HC.OP-IS.BH-0001, Standby Liquid Control Pump AP208 In-service Test, will be performed to check flow rates during power operation.

How is the automatic Reactor Water Cleanup system isolation avoided during this test?

- a. The Standby Liquid Control pump is started with the local control switch.
- b. The RWCU system must be shutdown and the appropriate isolation valves closed.
- c. The breakers for the appropriate RWCU isolation valves must be opened.
- d. The fuses for the SLC squib valve firing circuitry must be removed.
- 54. Which one of the following describes when the Reactor Mode Switch Shutdown position scram may be bypassed?
  - a. When moving the mode switch from REFUEL to SHUTDOWN
  - b. When moving the mode switch from SHUTDOWN to REFUEL
  - c. When testing the "One Rod Out Interlock"
  - d. When a control rod blade is being uncoupled
- 55. With the plant operating at rated power, the power supply fuse to a backup scram valve fails creating an open in the supply circuit.

Which one of the following identifies the response of the associated backup scram valve and scram response due to this failure?

- a. Valve repositions to trip position but NO scram occurs
- b. Valve CANNOT reposition but redundant valves can effect scram if an RPS trip occurs
- c. Valve CANNOT reposition and NO scram can occur even if an RPS trip occurs
- d. Valve repositions to trip position and a full scram occurs

- 56 A TIP System trace is being taken when an I&C Technician error causes actuation of the NSSSS Channel "A" manual isolation switch.
  - Which one of the following describes the TIP system response?
    - a. The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube.
    - b. The TIP detectors will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close.
    - c. The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.
    - d. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated.
- 57. Given the following:
  - The reactor is in Operational Condition 5
  - The RPS shorting links are removed
  - SRM "A" fails upscale

Which one of the following describes the resulting automatic action?

- a. Rod block only
  - b. 1/2 scram RPS-A only
  - c. Rod block and 1/2 scram RPS-A only
  - d. Full scram

### 58. Given the following:

- Local Power Range Monitor (LPRM) detector 32-33-C has just failed downscale
- Subsequently, Control Rod 30-31 is selected

Which one of the following describes the effect of the failure on the associated APRM and RBM channels?

The LPRM input:

- a. will be automatically bypassed and removed from the APRM only. The APRM and RBM readings will be lower than actual power.
- b. will be automatically bypassed and removed from both the APRM and RBM. The APRM and RBM readings will remain the same.
- c. will be automatically bypassed and removed from the APRM only. The APRM reading will remain the same and the RBM reading will be lower than actual power.
- d. will be automatically bypassed and removed from the RBM only. The APRM and the RBM readings will be lower than actual power.
- 59. Given the following:

The plant is operating at full power when the hold down assembly fails on Jet Pumps #1 & #2. This allows the Jet Pump nozzle assembly (Rams Head) to separate from the "B" Recirc Loop piping inside the RPV.

- Annunciators APRM/RBM FLOW REF OFF NORMAL and ROD OUT MOTION BLOCK are also received

- At 10C650, Recirc Pump Discharge Flow indicators are found to be reading 47,000 gpm for "A" Recirc and 54,000 gpm for "B" Recirc

Which one of the following describes how the APRM Flow Units will respond in this situation?

- a. Upscale trips from all four (4) Flow units
- b. Compare trips from only two (2) Flow units
- c. Compare trips from all four (4) Flow units
- d. Upscale trips from only two (2) Flow units

#### 60. Given the following:

- A Small Break LOCA occurred
- Drywell temp is 450°F and rising
- RPV pressure is 275 psig
- RPV level indication is lost
- 28 control rods are full out
- Suppression Chamber pressure is 10 psig

What is action is required to assure adequate core cooling?

- a. Enter HC.OP-EO.ZZ-0206, open SRVs until RPV pressure is below 60 psig
- b. Enter HC.OP-EO.ZZ-0206, open at least 5 SRVs
- c. Enter HC.OP-EO.ZZ-0206A, open SRVs until RPV pressure is below 275 psig
- d. Enter HC.OP-EO.ZZ-0206A, open at least 5 SRVs
- 61. Given the following:
  - 120 VAC UPS TROUBLE Annunciator D3-E3 alarms
  - "B" channel ECCS Rosemount Trip Units lose power
  - "B" channel analog RPV level indications fail downscale

Which one of the following 120 VAC inverter malfunctions would cause this loss?

- a. 1BD-481
- b. 1BD-483
- c. 1BD-491
- d. 1BD-492

### 62. Given the following:

- RPV level dropped until RCIC reached an automatic initiation setpoint
- RCIC failed to automatically initiate
- When armed and pressed, RCIC fails to initiate

IAW HC.OP-AB.ZZ-0001 Transient Plant Conditions, which one of the following actions is taken FIRST to manually inject with RCIC?

- a. Adjust FIC-R600 RCIC FLOW setpoint to zero %
- b. Press and hold the FC-HV-F045 RCIC Steam Supply OPEN PB
- c. Ensure OP-219 RCIC VACUUM PUMP is running
- d. Ensure BD-HV-F046 Lube Oil Cooling is open
- 63. Given the following:
  - A reactor scram occurred during a startup
  - RCIC started and tripped
  - RCIC Turbine Exhaust piping has ruptured
  - Reactor pressure is 50 psig and lowering
  - A small steam leak in the Drywell is causing Drywell pressure to rise

Which one of the following valves will automatically close if Drywell pressure reaches HI-HI?

- a. BD-HV-F031 Torus Suction Isolation Valve
- b. BD-HV-F013 Pump Discharge to Feedwater Isolation Valve
- c. FC-HV-F062 Vacuum Breaker Isolation Valve
- d. FC-HV-F059 Exhaust Line Isolation Valve

### 64. Given the following:

- "A" RHR Pump is running in Suppression Pool Cooling mode
- A complete loss of offsite power occurs

- All Emergency Diesel Generators have automatically started and aligned to their respective busses

Which one of the following describes the response of the "A" RHR Test Return Valve BC-HV-F024A?

- a. Remains open until CLOSE PB is pressed
- b. Remains open until AUTO CLOSE OVERRIDE PB is pressed
- c. Receives close signal 5 seconds after bus reenergized
- d. Receives close signal 10 seconds after bus reenergized
- 65. Given the following:
  - A LOCA has occurred

- The CRS directs the Suppression Chamber to be vented IAW HC.OP-EO.ZZ-0318 Containment Venting

- Instrument air header pressure is 0 psig

Which one of the following describes how the Hard Torus Vent path valves/dampers are operated IAW HC.OP-EO.ZZ-0318 under these conditions?

- a. PCIG opens the inboard damper; the outboard valve is motor operated
- b. PCIG opens the inboard damper; the outboard valve is manually operated
- c. The inboard damper is motor operated; the outboard valve is motor operated
- d. The inboard damper is manually operated; the outboard valve is manually operated

- 66. The plant is in Cold Shutdown with Shutdown Cooling in service. A single transmitter fails causing a loss of Shutdown Cooling.
  - Which one of the following caused the trip?
    - a. N078B RPV Pressure transmitter fails upscale
    - b. N080A RPV Level transmitter fails upscale
    - c. N080A RPV Level transmitter fails downscale
    - d. N078B RPV Pressure transmitter fails downscale
- 67. Given the following:
  - The plant is operating at 100 percent power
  - Main Steam Line (MSL) "A" Flow Transmitter PDT- N086A fails low

Which one of the following describes how Main Steam Lines will be isolated if an actual high flow in the "A" MSL occurs?

(LIMIT YOUR RESPONSE TO MAIN STEAM LINE FLOW INSTRUMENTATION ONLY)

- a. "A" and "C" NSSSS logic will trip closing Inboard MSIVs only
- b. "A" and "D" NSSSS logic will trip closing Outboard MSIVs only
- c. "B" and "C" NSSSS logic will trip closing Inboard and Outboard MSIVs
  - d. "B" and "D" NSSSS logic will trip closing Inboard and Outboard MSIVs
- 68. Given the following:
  - Drywell pressure is 13 psig
  - "A" RHR pump is running
  - The CRS orders Drywell Spray initiated on the "A" RHR loop
  - The associated Drywell Spray Containment Isolation Valves are opened

Which one of the following describes actions required to establish desired RHR flow?

- a. Throttle BC-HV-F048A to obtain 540 gpm flow on FI-4461A
- b. Throttle BC-HV-F048A to obtain 10,470 gpm flow on FR-R608A
- c. Throttle BC-HV-F003A to obtain 540 gpm flow on FI-4461A
- d. Throttle BC-HV-F0003A to obtain 10,470 gpm flow on FR-R608A

- 69. Given the following:
  - There is a steam leak in the Drywell
  - The "B" loop RHR pump was placed in operation
  - Drywell spray valves BC-HV-F016B and HV-F021B are stroking open

Select the automatic system response if the high Drywell pressure clears before the valves are full open?

Drywell spray valves:

- a. stop in an intermediate position.
- b. reverse direction and close.
- c. stroke full open.
- d. stroke full open then close.
- 70. Given the following:
  - Suppression Chamber pressure is elevated
  - The CRS orders Suppression Chamber Sprays placed in service
  - While opening the "B" RHR Suppression Chamber Spray Valve F027B, indications are as follows:
    - Yellow OVLD/PWR FAIL light is FLASHING
    - Green CLSD light is EXTINGUISHED
    - Red OPEN light is LIT
    - White OVERRIDDEN light is LIT

Which one of the following describes the valve status?

- a. The valve breaker is tripped open. The valve is open with spray flow.
- b. The valve breaker is tripped open. The valve is closed.
- c. The valve overloads have tripped. The valve is open with spray flow.
- d. The valve overloads have tripped. The valve is closed.

- 71. Given the following:
  - The plant is operating at 100 percent power
  - SRV "B" has inadvertently opened
  - Operators attempt to close the SRV

IAW HC.OP-AB.ZZ-0121 "FAILED OPEN SRV/RELIEF VALVE", which one of the following is a positive indication that the SRV has CLOSED?

The "B" SRV...

- a. "SV ENRGZ" light extinguishes.
- b. Acoustic Monitor green light illuminates.
- c. associated power fuse is pulled.
- d. tailpipe temperature stabilizes.
- 72. The following plant conditions exist at T = 0:
  - Reactor water level is -130 inches
  - Reactor pressure is 900 psig
  - Drywell pressure is 1.2 psig
  - All ECCS pumps are running
  - MSIV's are closed

Based on plant conditions, which one of the following describes the response of ADS?

- a. ADS will initiate at T = 105 seconds
- b. ADS will initiate at T = 300 seconds
- c. ADS will initiate at T = 405 seconds
- d. ADS will NOT initiate until Drywell pressure increases above 1.68 psig

### 73. Given the following:

- With power at 22%, a loss of Stator Cooling occurred
- All automatic actions occurred as designed
- The turbine did NOT trip
- HC.OP-AB.ZZ-0138 MAIN TURBINE TRIP/MALFUNCTION has been entered
- There is no time estimate for restoration of Stator Cooling

The decision if and when to trip the Main Turbine is based upon:

- a. stator cooling water conductivity prior to the start of the transient.
- b. the rate of increase of stator temperatures after the runback is complete.
- c. the current plant location on the power to flow map.
- d. final main generator field (amps) after the runback has gone to completion.
- 74. Given the following:
  - The plant is operating at 100 percent power
  - Instrument air is lost to the following valves:
    - AD-LV-1657-1 Condensate Makeup
    - AD-LV-1657-2 Condensate Reject
    - AD-FV-1677 SCP Suction Reject Bypass

IAW HC.OP-AB.ZZ-0131 "LOSS OF INSTRUMENT AIR AND/OR SERVICE AIR", which one of the following describes the Condensate System response and operator "Contingency Action" necessary to mitigate the event?

- a. Condensate Reject Valve fails open; Close Condensate Makeup Bypass Valve to restore Hotwell level
- b. Condensate Reject Valve fails open; Open Condensate Makeup Isolation Valve to restore Hotwell level
- c. Condensate Makeup Valve fails closed; Open Condensate Makeup Bypass Valve to restore Hotwell level
- d. Condensate Makeup Valve fails closed; Close Condensate Makeup Isolation Valve to restore Hotwell level

- 75. Given the following:
  - The plant is at 70% power
  - The Main Turbine trips causing Hi Hi levels in the 1A, 2A heaters and 2A drain cooler

Which one of the following describes the valves that isolate for the 1A, 2A heaters and 2A drain cooler?

- a. Condensate side inlet and outlet valves
- b. The extraction steam isolation valves
- c. The High Level Dump valves
- d. The Startup and Operating vent valves
- 76. Given the following:
  - The plant is in Operational Condition 5
  - All RBVS and RBVE fans are running
  - FRVS is in a normal standby configuration
  - "B" and "D" Emergency Diesel Generators are tagged out for maintenance

A radiological incident on the Refuel Floor causes Refuel Floor Exhaust Radiation to reach 3.1x10-3 uCi/ml.

Which one of the following describes total FRVS recirculation flow one minute after this event? (Assume no operator actions )

- a. 0 cfm
- b. 90,000 cfm
- c. 120,000 cfm
- d. 180,000 cfm
### 77. Given the following:

- The plant is operating at 100 percent power
- A Loss of Offsite power occurs
- Drywell pressure is 5 psig and rising
- "A" Emergency Diesel Generator fails to start

Which one of the following describes the effect on FRVS after 3 minutes? (Assume NO operator action)

- a. Only 3 Recirc Fans and one Vent Fan start
- b. Only 4 Recirc Fans and one Vent Fan start
- c. Only 3 Recirc Fans and NO Vent Fan start
- d. Only 4 Recirc Fans and NO Vent Fan start
- 78. Given the following:
  - A station blackout has occurred
  - All 500 KV Lines to Hope Creek are de-energized

IAW HC.OP-AB.ZZ-0135, which one of the following 500 KV lines is the first to be reenergized to restore power to Hope Creek 13 KV ring bus?

- a. Red Lion 5015 Line
- b. Deans 5021 Line
- c. New Freedom 5023 Line
- d. Salem 5037 Line

### 79. Given the following:

- The plant is operating at 100 percent power
- Several overhead annunciators alarm including:
  - 4.16KV FDR TO USS XFMR BRKR MALF
  - 4.16KV SYS INCOMING BRKR MALF

- Yellow INOP control bezels are flashing on 10A401 "A" 1E 4.16KV bus circuit breakers but the equipment does NOT change state

- Reactor power, pressure, and level remain stable

Which one of the following caused the alarms?

- a. Loss of power to the Optical Isolator Cabinets
- b. Loss of inverter power to the "A" Channel 1E Bailey Cabinets
- c. Loss of AC power to the 10A401 bus
- d. Loss of DC control power to the 10A401 bus

#### 80. Given the following:

- The plant is operating at 100 percent power
- HPCI 250 VDC battery has just completed deep discharge rate surveillance testing

- The HPCI Battery charger has been returned to service and associated fuse transfer switch closed

- IAW HC.OP-AB.ZZ-0149 250 VDC MALFUNCTION, performance of the 250 VDC Maintenance Weekly Battery Surveillance is recommended

What is the bases for this recommendation?

- a. To ensure battery operability
- b. The battery charger may NOT be operable
- c. The 250 VDC bus alignment still needs to be verified
- d. The battery charger alignment still needs to be verified

- 81. Which one of the following describes the effect on the Class 1E AC Power Distribution System by a loss of Channel "A" 125VDC CLASS 1E Panel 1AD417?
  - a. Loss of switchgear 10B430 Normal Control Power
  - b. Loss of switchgear 10B440 Normal Control Power
  - c. Loss of switchgear 10B450 Alternate Control Power
  - d. Loss of switchgear 10B460 Alternate Control Power
- 82. Given the following:

A discharge of the Equipment Drain Sample Tank is in progress to the River
The Liquid Radwaste Discharge Isolation Valve to the Cooling Tower Blowdown automatically closes

Which one of the following conditions would cause this termination? (Assume no operator action)

- a. Cooling Tower Blowdown weir flow rate HI setpoint is reached
- b. Liquid Radwaste Effluent sample flow rate HI setpoint is reached
- c. Liquid Radwaste Effluent radiation HI setpoint is reached
- d. The Cooling Tower Blowdown RMS radiation HI setpoint is reached
- 83. The Off-Gas Pre-Treatment High Radiation alarm on the RM-11 has just annunciated. In addition to a fuel element failure, which one of the following could cause the high offgas pre-treatment radiation condition?
  - a. Fire in the offgas holdup pipe
  - b. Low offgas recombiner temperatures
  - c. Increased Main Condenser air in-leakage
  - d. Condensate demineralizer resin intrusion

### 84. Given the following:

- A plant startup is in progress

- The 'A' RPS Motor-Generator Voltage Regulator fails causing generator output voltage to decrease to approximately 100VAC

Which one of the following describes the effect of this condition on the Main Steam Line (MSL) Radiation Monitors?

- a. Power is lost to MSL Radiation Monitors RE-N006A and RE- N006C, resulting in an INOP trip
- b. Power is lost to MSL Radiation Monitors RE-N006A and RE-N006C, resulting in a HI-HI RAD trip
- c. The reduced voltage causes a DOWNSCALE trip of MSL Radiation Monitors RE-N006A and RE-N006C
- d. The reduced voltage causes radiation levels for MSL Radiation Monitors RE-N006A and RE-N006B to indicate lower than actual
- 85. Given the following:
  - The plant is in Operational Condition 2 with a startup in progress
  - Reactor pressure is 300 psig
  - The lowest Reactor Vessel Metal Temperature thermocouple is reading 150°F

Which one of the following actions is required?

(Use Technical Specification Figure 3.4.6.1-3 provided)

- a. Hold reactor pressure at current value for at least 30 minutes
- b. Raise reactor pressure at least 20 psig within the next 30 minutes
- c. Lower reactor pressure at least 20 psig within the next 30 minutes
- d. Raise reactor metal temperature a maximum of 20°F within the next 30 minutes

86. The plant is operating at 100 percent power

Which one of the following describes the effect on the plant if a piece of foreign material blocked a fuel support piece flow orifice?

- a. Core thermal power would decrease
- b. Steam quality exiting the reactor vessel will decrease
- c. Jet pump net positive suction head would increase
- d. Indicated reactor water level will fluctuate

#### 87. Given the following:

- The plant is operating at 100% power
- "A" Control Room HVAC train and Chilled Water system is running
- A light haze with an acrid odor is noticed in the Main Control Room
- No alarms are received that could explain the origin of the haze and odor

- HC.OP-AB.ZZ-0129, High Radiation, Smoke or Toxic Gases in the Control Room Air Supply is entered

Based on plant conditions, which one of the following is an immediate action IAW HC.OP-AB.ZZ-0129?

- a. Verify that the Control Room Supply Ventilation has automatically isolated
  - b. Verify that the "A" Control Room Emergency Filter Unit automatically started
  - c. Press the CONTROL ROOM EMER FILTER UNIT A and B OA pushbuttons
  - d. Press the CONTROL ROOM EMER FILTER UNIT A and B RECIRC MODE pushbuttons
- 88. Using provided copy of P&ID M-51 Sheet 2, determine the computer point ID for "A" RHR Heat Exchanger Outlet Temperature.
  - a. A2020
  - b. A2380
  - c. A2381
  - d. A3132

- 89. Which one of the following individuals is responsible for performing the Control Room Key Switch Audit and how often is it performed?
  - a. Oncoming RO/PO, once per day
    - b. Oncoming RO/PO, twice per day
    - c. Off-Going RO/PO, once per day
    - d. Off-Going RO/PO, twice per day

### 90 Given the following:

- The plant is operating at 90 percent power
- The #1 Main Turbine Stop Valve has slowly drifted closed
- All Turbine Bypass valves responded full open
- Reactor steam dome pressure stabilizes at 1025 psig
- All other equipment functions properly

Which one of the following actions is required by Technical Specifications?

- a. Re-open the Turbine Stop Valve within one hour
- b. Reduce reactor thermal power by at least 25 percent within 15 minutes
- c. Reduce reactor steam dome pressure by at least 6 psig within 15 minutes
- d. Determine MCPR is less than or equal to the EOC-RPT inoperable limit within one hour
- 91. Given the following:
  - Reactor power is 40%
  - ALL Turbine Bypass Valves fail OPEN
  - The MSIVs FAIL to automatically close

Which one of the following combinations of reactor power and reactor pressure would indicate that a Safety Limit violation occurred?

- a. Reactor power is 10% and RPV pressure is 750 psig
- b. Reactor power is 20% and RPV pressure is 770 psig
- c. Reactor power is 30% and RPV pressure is 775 psig
- d. Reactor power is 35% and RPV pressure is 810 psig

### 92. Given the following:

- Tech Spec compliance has been verified IAW "Refueling Operations". [HC.OP-IO.ZZ-0009]
- Multiple Control Rod Drive Mechanisms are being removed IAW Technical Specification 3.9.10.2

- Spiral Fuel offload is in progress per directions of Reactor Engineers and Fuel Handling Control Core Alteration forms. [HC.RE-FR.ZZ-0001]

- 14 Fuel Assemblies are remaining in the Vessel

Which one of the following conditions would require a formal declaration of Suspension of Core Alterations as described in plant procedures?

- a. Spent Fuel Storage Area Radiation Monitor in alarm while transporting LPRMS through the Cattle Shute
- b. All SRMs indicate between 2.1 & 2.6 cps
- c. Mode Switch position change from Shutdown to Refuel for Rod Speed adjustments per system operating procedure
- d. Refueling Bridge Platform surveillance identifies Frame Mounted hoist up travel stops are out of Technical Specification tolerance
- 93. Given the following:

- The Core has been off-loaded to the Fuel Pool per NC.NA-AP.ZZ-0049, Conduct of Fuel Handling

- Five control rods are to be replaced with new ABB rods

- All plant conditions have been met for the control rod replacement

In addition to the Refuel Bridge operator and RP Technician, which one of the following must be part of the minimum crew compliment required for the replacement of the control rods?

- a. Refueling SRO Only required to be on site
- b. Refueling SRO Required on the Refuel Floor
- c. Reactor Engineer Required on the Refuel Floor
- d. Reactor Engineer Only required to be on site

94. An operator has the following exposure history this year until today:

Deep Dose Equivalent (DDE)	210 mrem
Committed Effective Dose Equivalent (CEDE)	45 mrem
Shallow Dose Equivalent (SDE)	33 mrem

Today, the operator was required to make two entries into the Drywell at 5 percent reactor power:

Entry 1: Gamma dose: 52 mrem; Neutron dose: 24 mrem Entry 2: Gamma dose: 124 mrem; Neutron dose: 54 mrem

How much radiation exposure is available to the operator without extension if he has to make additional entries?

His available Non-Emergency margin for the year is...

- a. 1488 mrem
- b. 1521 mrem
- c. 1599 mrem
- d. 1712 mrem

### 95. Given the following:

- A LPCI manual injection valve with remote indication requires an Independent Verification (IV)

- The valve is located 8 feet above the grating
- The valve is located in a 90 mrem/hr radiation area
- The temperature in the area is 90 F
- It is estimated that an individual will take 10 minutes to conduct the IV locally

Based on these conditions, which one of the following describes when the "Hands On" IV requirement can be waived?

- a. For climbing on equipment concerns
- b. For ALARA concerns
- c. For heat stress concerns
- d. For fall protection concerns

#### 96. Given the following:

- The plant is in Operational Condition 3 Hot Shutdown, going to Cold Shutdown
- The reason for shutdown was excessive unidentified RCS leakage
- Reactor pressure is 920 psig
- Drywell Oxygen concentration is 2.5%
- Primary Containment Release permit has been obtained

Which one of the following is required prior to purging the Primary Containment?

- a. A Drywell walkdown must be completed
- b. A Valve Open Time permit must be initiated
- c. The plant must be in Operational Condition 4 Cold Shutdown
- d. Primary Containment Airlock Operability Test must be performed
- 97. Given the following conditions:
  - The plant has been operating at 100% power for several weeks

- Main Steam Line (MSL) radiation levels have been averaging 120 mRem but are now slowly trending upwards

- Chemistry reports the higher radiation levels are due to failed fuel
- HC.OP-AB.ZZ-0203, Main Steam Line High Radiation is entered

Based on plant conditions, which one of the following Immediate Operator Actions are required?

- a. Place additional Condensate Demineralizers in service if possible
- b. Reduce reactor power to maintain MSL radiation levels less than 180 mRem
- c. Direct Reactor Water Cleanup flow to the main condenser to reduce coolant activity
- d. Scram the reactor and close the Main Steam Isolation Valves when MSL levels reach 180 mRem

- 98. Which one of the following describes organizational grouping of Abnormal Operating Procedures (ABs) IAW SH.OP-AP.ZZ-0102 "Use of Procedures".
  - a. 100 series are operational transient procedures
  - b. 200 series address component failures
  - c. 300 series apply at all times
  - d. 000 series address fire and medical emergencies
- 99 HC.OP-EO.ZZ-0206A is being implemented during an ATWS event.

Which one of the following describes why RCIC injection must be terminated prior to opening SRVs?

- a. RCIC is injecting cold water
- b. RCIC Turbine damage may occur
- c. The Boron concentration will be diluted
- d. RPV pressure may NOT be sufficient to drive the RCIC Turbine
- <sup>1</sup>00 Which one of the following describes how a scram is verified in accordance with HC.OP-IO.ZZ-0008 Shutdown from Outside the Control Room?
  - a. HCU nitrogen pressure verified to be less than 800 psig at each HCU
  - b. Reactor vessel pressure verified less than 920 psig
  - c. RPS power distribution circuit breakers verified to be open
  - d. Scram air header pressure verified to be less than 100 psig

BLANK

- 1. Given the following:
  - The plant is operating at 100% power
  - A transient caused by a short in the reactor recirculation control circuitry occurs

Immediately following the transient, the plant stabilizes with the following parameters:

- Reactor Power 50%
- "A" Recirc pump tripped
- "B" Recirc pump at 45% speed
- Loop "A" total jet pump flow is 10 Mlbmlhr
- Loop "B" total jet pump flow is 46 Mlbmlhr
- Total indicated core flow 36 Mlbm/hr

What is actual core flow, and how will the loss of the "A" Recirc pump affect the APRM Scram setpoint?

- a. 36 Mlbm/hr. Setpoint unaffected
- b. 36 Mlbm/hr. Setpoint needs to be adjusted
- c. 56 Mlbm/hr. Setpoint unaffected
- d. 56 Mlbm/hr. Setpoint needs to be adjusted
- $\sim 2$ . The plant has been operating at full power for several days.
  - Operators notice that, over the last several hours, Main Condenser Vacuum has risen from 3.2"HgA to 4.0"HgA.
  - Over this same period, Offgas system flow has increased from 25 scfm to 38 scfm.
  - There have been NO ALARMS associated with this problem.

Which one of the following would cause these indications?

- a. Cooling tower outlet temperature increase
- b. Reactor Feed Pump Turbine exhaust piping leak
- c. Tube leak in #2A Feedwater Heater
- d. Resin intrusion from the Condensate Demineralizers

- 3. Given the following:
  - The plant is operating at 100 percent power
  - A severe electrical transient results in a loss of all offsite power
  - 2 control rods are at position "48"
  - Reactor power is less than 1 percent

Which one of the following describes the equipment available to control reactor pressure and level?

- a. HPCI and SRVs
- b. HPCI and Main Steam Line Drains
- c. Reactor Feed Pumps and SRVs
- d. RCIC and Main Steam Line Drains
- 4. Which one of the following conditions will automatically remove the 125 VDC battery charger from service per HC.OP-AB.ZZ-0150, 125VDC System Malfunction?
  - a. High output voltage
  - b. Equalize timer reaches zero
  - c. Blown fuse in the battery transfer switch
- d. Low battery terminal voltage
- 5. Given the following:
  - The Reactor is in Operational Condition 4
  - Plant startup operations are in progress
  - The negative battery charger for the "A" ±24 VDC System is out of service
  - The positive battery charger for the "B" ±24 VDC System is on an equalizing charge
  - All other equipment is aligned for normal operation

Which one of the following will occur if these conditions remain for a prolonged period of time?

An RPS trip will occur due to:

- a. A and C SRMs fail upscale because of low voltage to the drawers
- b. A, C, E, and G IRMs fail upscale because of low voltage to the drawers
- c. B and D LPRMs fail upscale because of high voltage to the detectors
- d. B, D, and F APRMs fail upscale because of high voltage to the detectors

- 6. Given the following:
  - The reactor is operating normally at 100 percent power
  - A transient occurs

Using the attached UFSAR Figure of a plant transient, which one of the following represents the peak reactor pressure that occurred during the transient?

- a. 975 psig
- b. 1025 psig
- c. 1120 psig
- d. 1135 psig
- 7 Which one of the following is the reason that the reactor operator must wait at least 10 seconds following a reactor scram before attempting a scram reset?
  - a. To allow reactor water level to recover above the scram setpoint
  - b. To allow all the control rods to insert fully
  - c. To allow the Scram Air header to repressurize
  - d. To allow the Scram Discharge Volume vent and drain valves to cycle
- 8. Hope Creek requires an Emergency Depressurization after performing steam cooling in EOP-101 "Reactor Control". All actions required by EOP-202, "Emergency Depressurization", have been taken but only 4 Safety Relief Valves (SRV) can be opened and no other means of depressurization is available.

Which one of the following describes the consequences of this failure?

- a. Steam removal rate from the core is NOT adequate to ensure adequate decay heat removal exists.
- b. Steam removal rate during a LOCA is NOT adequate to prevent exceeding the Drywell design pressure.
- c. The pressure reduction rate will NOT allow low pressure injection systems to inject soon enough to recover level before the core becomes uncovered.
- d. The pressure reduction rate will NOT allow low pressure injection systems to inject prior to reaching the Minimum Steam Cooling RPV Water Level.

- 9. Given the following:
  - The plant is in Operational Condition 3
  - Main Condenser vacuum is broken
  - RHR Loop "B" is in Shutdown Cooling
  - Reactor level is stable at +35 inches
  - Reactor pressure is 50 psig and lowering
  - "D" SSW Pump has just tripped
  - "B" SSW Pump will NOT start

Which one of the following describes the effect this will have on the plant? (Assume no operator action)

- a. The RHR Shutdown Cooling Loop will isolate due to lowering reactor level
- b. The RHR Shutdown Cooling Loop will isolate due to increasing reactor pressure
- c. "B" RHR Pump Min-Flow valve will open due to lowering loop flow
- d. "B" RHR Pump Min-Flow valve will open due to reaching pump shutoff head
- 10. Following a reactor scram and Main Steam Isolation Valve closure, reactor steam dome pressure reaches 1050 psig causing the "H" and "P" Safety Relief Valves (SRV) to open.

Which one of the following lists the operating setpoints for subsequent openings of the "P" SRV?

- a. SRV "P" opens at 1017 psig and closes at 905 psig
- b. SRV "P" opens at 1017 psig and closes at 935 psig
- c. SRV "P" opens at 1047 psig and closes at 905 psig
- d. SRV "P" opens at 1047 psig and closes at 935 psig

11. The plant is at 62% power, recovering from an inadvertent trip of the "B" Reactor Recirc pump. Shortly after the Recirc pump was started and power ascension commenced, annunciator C8-B5 "RPV LEVEL 7" is received. The NCO notes that actual level is 39" and rising.

At this time, the required operator action is to...

- a. place the reactor vessel water level control system in manual.
- b. verify Hydrogen Water Chemical Injection trip.
- c. close the Main Steam Isolation Valves.
- d. reduce reactor recirc flow to minimum.
- 12 A malfunction of the Digital Feedwater Level Controller has resulted in an INCREASING reactor water level. The Reactor Feedwater Pumps are automatically tripped on a high reactor water level signal to prevent:
  - a. feed pump damage due to increasing pump discharge flow rate and head.
  - b. main turbine damage due to water impingement on turbine blades.
  - c. reactor vessel damage due to completely filling and overpressurizing the vessel.
  - d. main steam line piping and hanger damage due to filling the main steam lines.

### 13. Given the following:

- A plant start-up is in progress
- Reactor power is 1%
- Recirculation loop temperature is 300°F
- "RPV LEVEL 4" alarm is received

What is the actual RPV water level?

- a. 24 inches
- b. 27 inches
- c. 30 inches
- d. 33 inches

- 14. Given the following:
  - A LOCA has occurred
  - All rods are full in
    - "A" and "B" RHR Pumps are NOT available
    - HPCI AND RCIC are NOT available
    - Reactor water level is -150 and steady
    - Reactor Feedwater Pumps are flowing 12,000 gpm each
    - Reactor pressure is 1000 psig
    - Drywell pressure is 45 psig and rising at 10 psig per minute
    - Suppression Chamber pressure is 45 psig and rising at 10 psig per minute

The EOP mitigation strategy for this event is:

- a. Depressurize with SRVs; inject with sources internal to the containment
- b. Depressurize with SRVs; inject with sources external to the containment
- c. Inhibit ADS and remain at pressure to conserve inventory; inject with sources internal to the containment
- d. Inhibit ADS and remain at pressure to conserve inventory; inject with sources external to the containment

- 15 Given the following:
  - The plant is operating at 100 percent power
  - Equipment Drain Sump leakage has remained constant at 2.0 gpm for 8 weeks.
  - Floor Drain Sump leakage has risen steadily over several days from 1.2 g to 1.8 gpm.

At 0800 this day and hourly thereafter, operators obtained the following readings on the Floor Drain Sump:

0800	1.8
0900	2.1
1000	2.5
1100	2.7
1200	3.1
1300	3.2
1400	3.7
1500	3.9

Has a Technical Specification operational leakage limit for the Reactor Coolant System been exceeded and what is the bases for your answer?

- a. No, because total leakage has remained less than 5 gpm
- b. No, because unidentified leakage has remained at about 2.0 gpm
- c. Yes, because unidentified leakage has increased by more than 2 gpm
  - d. Yes, because total leakage has increased to more than 5 gpm
- 16. Given the following conditions:
  - A LOCA has occurred
  - Drywell temperature is 300F
  - Drywell pressure is 3.0 psig

Which one of the following describes the plant response when one loop of Drywell Spray is initiated?

- a. Reactor vessel level indications will be lost
- b. SRV operation can no longer be assured
- c. Running Drywell cooling fans will automatically trip
- d. Drywell pressure will drop below the scram setpoint

- 17. Which one of the following describes the bases for Suppression Pool Cooling being required to be in service as a prerequisite to starting HPCI for surveillance testing?
  - a. To ensure adequate thermal mixing of the water in the Suppression Pool to limit stress on the torus shell due to differential thermal expansion.
  - b. To allow the maximum average Suppression Pool water temperature limit to be increased to 105°F.
  - c. To extend the operating time for HPCI testing before the maximum average temperature limit is reached and testing is required to be stopped.
  - d. To ensure that heat added to the Suppression Pool does NOT increase Suppression Chamber air space pressure to the point where the Suppression Chamber to Drywell vacuum breakers cycle.
- 18. Given the following:
  - The plant is operating at 100% power
  - Main Steam Isolation Valve AB-HV-F022A inadvertently closes

Which one of the following describes the response of the reactor?

Reactor power will:

- a. drop initially due to a Reactor Recirc intermediate runback when RPV level reaches +30 inches. This increases the boiling boundary length which adds negative reactivity.
- b. rise initially due to the reactor pressure rising. This causes a collapse of voids in the core which adds positive reactivity.
- c. rise initially due to a rising core water level caused by rising reactor pressure. Power will return to a slightly lower level in response to Reactor Water Level Control and Turbine Control Valve movement.
- d. drop initially due to the void boundary being pushed lower in the core. As the Turbine Control Valves respond to lower reactor pressure, power rises as the void boundary rises.

#### 19. Given the following:

- The plant is operating at 60% power
- Both Reactor Recirc Pump Speed Controllers are in AUTO (Master Manual)

Which one of the following would require the operator to immediately place the Reactor Mode Switch to Shutdown

- a. SIC-R620 Master Speed Control Recirc Master Demand fails full upscale
- b. SIC-R620 Master Speed Control Recirc Master Demand fails full downscale
- c. SIC-R621A Reactor Recirc pump speed demand fails full upscale
- d. SIC-R621A Reactor Recirc pump speed demand fails full downscale
- 20 Given the following:

- An ATWS with fuel damage has occurred

- The Emergency Duty Officer (EDO) decides that it is necessary to send someone into the Reactor Building (with Radiation Protection) to individually scram rods

What is the maximum allowable dose limit that the EDO may authorize for this evolution?

- a. 5 REM
- b. 10 REM
- c. 25 REM
- d. 75 REM

#### 21. Given the following:

- The reactor scrammed from 100 percent power
- Reactor power is on the Source Range Monitors
- 3 rods remain at position "48"
- Scram air header reads 0 psig
- The scram CANNOT be reset

IAW EOP Bases, which one of the following methods of achieving shutdown condition is best for these conditions?

- a. Vent control rod over-piston areas to insert rods
- b. De-energize scram solenoids to insert rods
- c. Defeat Rod Worth Minimizer to insert rods
- d. Initiate Standby Liquid Control to inject boron
- 22 Given the following:
  - The plant was operating at 100% power
  - Toxic gas concerns have required the Main Control Room to be evacuated
  - The transfer of controls to the Remote Shutdown Panel have been completed

Which of the following systems are available for reactor vessel pressure control from the Remote Shutdown Panel?

- a. SRV's F, H & M and RHR Shutdown Cooling
- b. Turbine Bypass Valves and Reactor Core Isolation Cooling
- c. Reactor Feed Pumps and Reactor Recirculation
- d. High Pressure Coolant Injection and LO-LO SET SRVs

- 23. Given the following:
  - A plant shutdown is in progress
  - North Plant Vent RMS is in HIGH alarm
  - South Plant Vent RMS is reading 4.5 e+2 uCi/sec
  - FRVS Vent RMS is reading 6.5 e-2 uCi/sec
  - FRVS is NOT in service

Which one of the following is the source of the high alarm?

- a. Service Area Exhaust System
- b. Solid Radwaste Exhaust System
- c. Radwaste Area Exhaust System
- d. Turbine Building Exhaust System
- 24. Given the following:
  - Marsh Grass intrusion has reduced the flow in Service Water Loops "A" & "B"

- The differential pressure across the "A" SSW Pump Strainer is being reduced to maximize strainer backwash operation

Per HC.OP-AB.ZZ-0122, Service Water System Malfunction, why should the discharge valve of "A" SSW Pump be closed for no more than two minutes during this evolution?

- a. All SSW flow from SSW Loop "A" to RACS and SACS will be lost
- b. Lubricating water flow will be lost to SSW Pump "A".
- c. Spray Water Booster Pump "A" will remain stopped by interlock
- d. Blockage problems could worsen on other SSW Pump strainers

- 25. Given the following:
  - A leak on the Instrument Air header has resulted in lowering header pressure.
  - The "INST AIR HEADER A PRESSURE LO" annunciator alarm is received.

Which one of the following valves automatically open to restore header pressure and at what pressure?

- a. The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 70 psig
- b. The Instrument Air Dryer 1A-F-104 outlet valve KB-HV-11416; 85 psig
- c. The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 70 psig
- d. The Instrument Air Dryer 10-F-104 outlet valve KB-HV-7618; 85 psig
- 26. Given the following:
  - The reactor has been in COLD SHUTDOWN for two (2) days following power operation
  - Reactor vessel water level is +30 inches
  - Neither Reactor Recirculation pump is available
  - Shutdown Cooling has isolated and the Shutdown Cooling suction valves CANNOT be opened
  - The highest RPV metal temperature is 190°F and rising
  - HC.OP-AB.ZZ-0142, Loss of Shutdown Cooling has been entered

Based on given information, which one of the following is the highest ECG classification applicable?

- a. 8 hour report
- b. 4 hour report
- c. Unusual Event
- d. Alert

### 27 Given the following

- The plant is operating at 100 percent power
- "A" CRD Pump is C/T for maintenance
- CRD SYSTEM TROUBLE overhead alarm C6-F2 comes in
- CRD Cooling Water flow drops to zero gpm

What is the bases for the 20 minute provision of Tech Specs before a manual scram is required?

- a. Residual pressure remains in the charging water header for greater than 20 minutes
- b. Demonstrated leak rate of the scram accumulator outlet checkvalves will maintain accumulator pressures
- c. Adequate time to place a CRD pump back in service
- d. Ability for charging header pressure alone to fully insert all control rods
- 28. Given the following:
  - The plant is at 37% power
  - Both CRD pumps are tripped on low suction pressure
  - The Reactor Building Operator is swapping CRD suction filters
  - CRD ACCUM TROUBLE Overhead Annuciator C6-D4 is clear

(Assume NO other operator actions)

Which one of the following describes the effect on gas pressure in the HCU Accumulators 2 minutes following the pump trip?

- a. Stays the same because reactor pressure holds the charging water check valve closed
- b. Stays the same because accumulator pressure holds the charging water check valve closed
- c. Lowers because the reactor scrams
- d. Lowers because the accumulator piston moves when charging water header pressure is lost

### 29. Given the following:

- "A" Fuel Pool Cooling Pump is tagged for maintenance
- "B" Fuel Pool Cooling Pump trips

How does this affect the ability to monitor Fuel Pool temperature in the Control Room?

- a. Temperature recorder TR-4683 is unaffected because it monitors Skimmer Surge Tank temperature
- b. The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is INVALID because it monitors Skimmer Surge Tank temperature
- c. The High Temperature alarm to Fuel Pool System Trouble (D1-D5) is VALID because it monitors Fuel Pool Cooling Pump common discharge piping
- d. Temperature recorder TR-4683 is INVALID because it monitors Fuel Pool Cooling Pump common discharge piping
- 30. Given the following:
  - Core offload is in progress

- A fuel bundle was removed from the reactor vessel, full up on the Fuel Hoist, and in the cattle chute heading for the Fuel Pool

- Fuel Pool Skimmer Surge Tank Level is lowering rapidly

Which one of the following describes the operator actions required?

- a. Place the bundle into its original reactor core location
- b. Place the bundle into the Fuel Prep Machine
- c. Stop the bridge at its current location and leave the refueling floor
- d. Stop the bridge at its current location and lower the bundle full down

#### 31. Given the following:

- The reactor at rated power
- Hope Creek experiences a Loss of Offsite Power event and a reactor scram
- Approximately 13 sec into the event, Drywell pressure is 1.9 psig

Which one of the following describes the operation of the LOCA and LOP sequencers?

- a. The LOP sequencer program will be in control of restoring the loads.
- b. The LOP sequencer will complete sequencing 2 minutes later, then the LOCA sequencer will start.
- c. The LOCA sequencer program will be in control of restoring the loads.
- d. The LOCA sequencer will complete sequencing 2 minutes later, then the LOP sequencer will start.
- 32 Which one of the following evolutions is considered an Infrequently Performed Test or Evolution (IPTE) in accordance with NC.NA-AP.ZZ-0084?
  - a. Tagging and draining a Reactor Auxiliaries Cooling Pump
  - b. LOP / LOCA surveillance testing
  - c. Single Loop operations following Recirc Pump trip
  - d. Primary containment local leak rate testing
- 33. Given the following:
  - The plant was operating at 100% power
  - A transient occurs
  - RPV pressure reached 1330 psig before turning downward

WHICH ONE of the following states the required action(s) for RPV pressure reaching 1330 psig?

- a. Prepare and submit a Safety Limit Violation Report within 30 days.
- b. Restore to within limits within 15 minutes or be in COLD SHUTDOWN within the next 6 hours.
- c. Restore to within limits within 1 hour or be in COLD SHUTDOWN within the next 12 hours.
- d. Perform an engineering evaluation on the out-of-limits condition within 24 hours.

#### 34 Given the following:

- A LOCA has occurred
- Drywell temperature is 240°F
- Suppression Chamber pressure is 7.5 psig
- Suppression Pool temperature is 125 F and rising

Which one of the following describes the bases for initiating Suppression Chamber Spray at this pressure?

- a. To prevent exceeding the negative design pressure of the primary containment.
- b. To reduce primary containment pressure by condensing steam which may be present in the Suppression Chamber airspace.
- c. To reduce accumulation of non-condensibles in the Suppression Chamber.
- d. To prevent Drywell depressurization that exceeds the capacity of the Suppression Chamber to Drywell vacuum breakers.

### 35. Given the following:

- The Reactor has scrammed
- A small break occurred on the RPV head vent line
- Drywell temperature is 330°F and rising
- Drywell sprays are NOT available

Emergency Depressurization is required to prevent exceeding which one of the following?

- a. Readable range of Drywell temperature instrumentation
- b. Maximum capacity of the Drywell Cooling system
- c. Saturation temperature for the Drywell design pressure
- d. Environmental qualification temperature of safety related equipment in the Drywell

- 36. Given the following:
  - Reactor is scrammed
  - Suppression Pool level is lowering

If Suppression Pool level reaches 49 inches, which one of the following would occur?

- a. Reactor Building to Suppression Chamber Vacuum Breakers close if open
- b. Reactor Building to Suppression Chamber Vacuum Breakers open if closed
- c. Drywell to Suppression Chamber differential pressure increases
- d. Drywell to Suppression Chamber differential pressure decreases
- 37. Given the following:
  - A plant shutdown is in progress
  - "A" RHR is tagged for motor replacement
  - "B" RHR is in Shutdown Cooling at 210°F
  - Suppression Pool Level Low annunciator alarms
  - The PO reports Suppression Pool level is lowering

Which one of the following makeup sources must be used?

- a. Suppression Pool Makeup from HPCI using OP-EO.ZZ-0312
  - b. Suppression Pool Makeup from RCIC using OP-EO.ZZ-0313
  - c. Suppression Pool Makeup from Service Water using OP-EO.ZZ-0314
  - d. Suppression Pool Makeup from Core Spray using OP-EO.ZZ-0315

#### 38. Given the following:

- I&C surveillance testing has caused an inadvertent RPS scram signal
- RPS actuates but some rods remain out with power at 2%
- RPV level lowers until RCIC and HPCI initiate
- Operators commence recovering level with Feedwater
- RPV level was below Level 2 for 15 seconds
- The Main Turbine is still on-line

(Assume NO other operator actions)

Which one of the following describes the status of RRCS?

- a. ARI valves are energized and RPT breakers are open
- b. RPT breakers are closed and ARI valves are de-energized
- c. Feed pumps have runback to minimum and RPT breakers are closed
- d. ARI valves are energized and SLC pumps will initiate when 3.9 minute timer times out

#### 39. Given the following:

- The plant is in Operational Condition 5 for Refueling
- Fuel movement has been suspended
- Radiography of the reactor head is in progress on the Refueling Floor

- Due to misplaced shielding, all 3 channels of Refuel Floor Exhaust RMS unexpectedly alarm HIGH on the RM-11

- PCIS responds normally

Which one of the following is the highest ECG classification (if any) applicable?

- a. NOT Reportable
- b. 8 hour report
- c. Unusual Event
- d. Alert

- 40 Given the following:
  - The reactor is operating at 100% power
  - Annunciator B1-B3 (RCIC PUMP ROOM FLOODED) alarms with the following alarm message presented on the CRIDS display: D2887 RCIC PUMP RM 4151-1 LSH 4151-1 HI An investigation reveals that Reactor Building Floor Drain Sump pumps have been running continuously for 10 minutes

- The Reactor Building Operator reports the leak is coming from the CST suction line

In addition to running the sump pumps, which of the following action(s), if any, is required by EOP 103/4?

- I --- Isolate RCIC
- II -- Immediately commence a normal reactor shutdown
- III -- Runback reactor recirculation and manually scram the reactor
- IV Emergency depressurize the reactor
- a. I ONLY
- b. II ONLY
- c. I and II
- d. I, III, and IV
- 41. HC.OP-EO.ZZ-103/4, "Reactor Building Control", requires an Emergency Depressurization of the RPV if the Maximum Safe Operating Limit is exceeded in 2 or more areas listed in Table 2 Column 2.

SELECT the BASES for this Emergency Depressurization of the RPV.

- a. To reduce the maximum lodine release allowable during a MSL break accident
- b. To prevent release of fission products into the Reactor Building by preventing fuel damage
- c. To reduce the driving head and, therefore, the flow of the unisolated leaking Primary System
- d. To protect personnel from high temperature environments while operating equipment

### 42. Given the following:

- A LOCA outside primary containment and the Reactor Building has occurred
- AB-203 Main Steam Line High Radiation actions have been completed
- All control rods are full in
- Fuel cladding damage has occurred
- Release rates are above General Emergency levels
- Reactor level is -60 inches and rising slowly
- Reactor pressure is 100 psig

Why is an Emergency Depressurization required?

- a. To ensure primary containment integrity
- b. To allow low pressure ECCS to inject
- c. To reduce the release rates
- d. To provide core steam cooling

### 43. Given the following:

- A large break LOCA has occurred inside the Drywell
- Multiple equipment failures occurred
- Drywell pressure is 15 psig
- Steam cooling was required until water level was restored above TAF with Fire Water
- The Containment H2/O2 Analyzers were placed in service
- The High Hydrogen alarms are clear

Which one of the following actions is required IAW EOP-102?

- a. Vent the Drywell because Hydrogen concentration is above 2%
- b. Exit EOP-102 and enter SAG because Hydrogen concentration is above 2%
- c. Vent the Suppression Chamber because Hydrogen concentration is below 2%
- d. Place the Hydrogen Recombiners in service because Hydrogen concentration is below 2%

#### 44 Given the following:

- A plant startup is in progress.
- Reactor Power on range 4 of IRMs
- Reactor Level at + 46 inches
- Reactor Pressure at 0 psig
- Reactor Temperature at 180°F

The operating Control Rod Drive Pump trips. The Control Room Operator attempted to start the standby CRD Pump and the pump failed to start. Control Rod movement has been suspended.

Which one of the following describes the response of reactor water level and why? (ASSUME NO OPERATOR ACTION)

Reactor Water level will:

- a. rise due to the reactor being at the point of adding heat.
- b. remain stable due to water expansion from heating overcoming any losses to ambient.
- c. remain stable due to water expansion from heating overcoming any losses to RWCU.
- d. drop due to RWCU rejecting water for level control.
- 45 The Control Room operator is moving control rods when a ROD DRIFT annunciator is received.

Which one of the following controls caused this annunciator?

- a. An odd reed switch is passed while settling from Insert of the control rod one notch using the INSERT PB
- b. An even reed switch is passed while settling from Withdrawal of the control rod one notch using the WITHDRAW PB
- c. An odd reed switch is passed while settling from Insert of the control rod two notches using the CONTINUOUS INSERT PB
- d. An even reed switch is passed while settling from Withdrawal of the control rod two notches using the CONTINUOUS WITHDRAW PB

46 Control rod 30-31 is being inserted from position 12 to position 08.

The RO notes that during rod motion the following occur:

- Control Rod 30-31 position indicates "XX" on the 4-Rod display
- Control Rod 30-31 position indicates "XX" on CRIDS
- RPIS Status DATA FAULT light on 10C651 is lit

WHICH ONE of the following describes the status of rod 30-31?

- a. Reed switch has failed
- b. Scrammed
- c. Uncoupled
- d. Disarmed
- 47. Given the following:
  - An entire startup was performed with an inoperable RWM on 1/12/2001
  - With the RWM still inoperable, the reactor scrams on 12/25/2001
  - Today's date is 1/6/2002

What RWM requirements must be met to withdraw control rods per Technical Specifications?

- a. Startup is NOT allowed until 01/12/2002
- b. The RWM must be restored to operability within 8 hours of withdrawal of the first rod
- c. Startup may commence as soon as one licensed operator and one technically qualified member of the technical staff are present at the reactor control console until the first twelve control rods are fully withdrawn
- d. Startup may commence as soon as one licensed operator and one technically qualified member of the technical staff are present at the reactor control console until power is above 10%

### 48. Given the following:

- A reactor startup is in progress
- Reactor power is 42% after completion of RWM Group Step 500
- The total steam flow signal output from Digital Feed fails to the equivalent of 15% power

Which one of the following describes how control rod motion is effected by the Rod Worth Minimizer (RWM)?

- a. The RWM will NOT allow any control rod insertion or withdrawal.
- b. The RWM will allow all normal control rod motion until actual power is less than the LPSP.
- c. The RWM will apply rod blocks in accordance with the loaded rod sequence.
- d. The RWM will allow continued control rod movement only by single notch increments.

### 49. Given the following:

- The plant was operating at 100 percent power
- RWCU pump "A" is C/T for maintenance
- The plant scrammed following a dual recirc pump trip
- RPV level is stable at +30 inches
- RPV Pressure is stable at 920 psig

Based on plant conditions, which one of the following is required?

- a. Trip CRD pumps
- b. Trip RWCU pumps
- c. Increase CRD cooling water flow
- d. Reduce RWCU flow from the Recirc Loops

#### 50. Given the following:

- A LOCA concurrent with a partial Station Blackout has occurred
- "A" LPCI is being injected into the RPV
- Reactor Pressure is steady at 100 psig
- Reactor Bldg Temperature is steady at 105°F
- Drywell Temperature is increasing slowly at 285°F
- Fuel Zone indicators are reading -168 inches and steady

Based on the above current conditions, adequate core cooling is ......

- a. assured, since actual RPV level is -150"
- b. assured, since actual RPV level is -159"
- c. NOT assured, since actual RPV level is -170"
- d. NOT assured, since actual level is -173"
- 51. Given the following:
  - "B" RHR pump is running in Shutdown Cooling (SDC)
  - I&C error initiates "B" LPCI Initiation Logic on High Drywell Pressure signal

Which one of the following describes the "B" RHR Pump, SDC Discharge Valve F015B, and LPCI Injection Valve F017B response?

- a. "B" RHR pump trips, F015B closes and F017B opens
- b. "B" RHR pump trips, F015B closes and F017B remains closed
- c. "B" RHR pump remains running, F015B remains open and F017B opens
- d. "B" RHR pump remains running, F015B remains open and F017B remains closed

#### 52. Given the following:

- The reactor is operating in STARTUP
- RCS temp is 190°F
- RWCU blowdown operation to the Liquid Radwaste System at 60 gpm
- The operator fully opens Blowdown Line Restricting Orifice Bypass Valve (HV-F031)

Which one of the following describes the operational effect of this high bypass flow and how does the operator adjust for the change?

- a. The Regenerative Heat Exchanger (RHX) RWCU outlet temperature will lower. Lower RACS flow IAW OP-SO.BG-0001
- b. The Regenerative Heat Exchanger (RHX) RWCU outlet temperature will lower. Raise RACS flow IAW OP-SO.BG-0001
- c. The Non-Regenerative Heat Exchanger (NRHX) RACS outlet temperature will rise. Lower RACS flow IAW OP-SO.BG-0001
- d. The Non-Regenerative Heat Exchanger (NRHX) RACS outlet temperature will rise. Raise RACS flow IAW OP-SO.BG-0001
- 53. Given the following:

- The High Pressure Coolant Injection System (HPCI) is operating in Pressure Control alignment

- The HPCI flow controller is in "Automatic"
- HPCI turbine speed is 2450 rpm

Which one of the following describes the response of HPCI turbine speed and system flow if the operator throttles the HPCI Test Bypass To CST Isolation Valve (F008) in the "open" direction for the given conditions?

(Compare the conditions after they stabilize to before the valve was throttled.)

- a. -- HPCI turbine speed lowers -- System flow returns to original value
- b. -- HPCI turbine speed lowers -- System flow goes down
- c. -- HPCI turbine speed raises -- System flow returns to original value
- d. -- HPCI turbine speed raises
  - -- System flow goes up
#### 54. Given the following:

- The plant is operating at 100% reactor power
- A small instrument line break LOCA occurs
- Drywell pressure is 2.5 psig increasing
- RPV water level reaches -30 inches and is rising
- Drywell pressure trip unit N694F to Core Spray (1 of 2) has failed to trip

Which one of the following describes the response of the Emergency Diesel Generators?

- a. All Emergency Diesel Generators start and load onto their respective busses
- b. A, C, & D Emergency Diesel Generators start but DO NOT load onto their respective busses
- c. A, B, & D Emergency Diesel Generators start and load onto their respective busses
- d. All Emergency Diesel Generators start but DO NOT load onto their respective busses
- 55. Given the following:
  - A Loss of Offsite Power occurs followed by a LOCA
  - "B" EDG fails to start
  - Drywell pressure is 5.7 psig
  - Reactor pressure is 440 psig decreasing

Which one of the following describes the effect on the "D" Core Spray Pump and Injection Valve BE-HV-F005B?

- a. "D" Core Spray Pump will NOT start but F005B opens
- b. "D" Core Spray Pump will NOT start and F005B will NOT open
- c. "D" Core Spray Pump starts but F005B will NOT open
- d. "D" Core Spray Pump starts and F005B opens

56. With the plant operating at rated power, the power supply fuse to a backup scram valve fails creating an open in the supply circuit.

Which one of the following identifies the response of the associated backup scram valve and scram response due to this failure?

- a. Valve repositions to trip position but NO scram occurs
- b. Valve CANNOT reposition but redundant valves can effect scram if an RPS trip occurs
- c. Valve CANNOT reposition and NO scram can occur even if an RPS trip occurs
- d. Valve repositions to trip position and a full scram occurs
- 57 A TIP System trace is being taken when an I&C Technician error causes actuation of the NSSSS Channel "A" manual isolation switch.

Which one of the following describes the TIP system response?

- a. The TIP Shear Valve automatically fires to cut the detector cable and seal the guide tube.
- b. The TIP detectors will automatically withdraw to their "in-shield" position and the TIP Guide Tube Ball Valves automatically close.
- c. The TIP Guide Tube Ball Valve automatically closes, cutting the detector cable and sealing the guide tube.
- d. No automatic actions occur when only one NSSSS channel manual isolation switch is actuated.
- 58. Given the following:
  - The reactor is in Operational Condition 5
  - The RPS shorting links are removed
  - SRM "A" fails upscale

Which one of the following describes the resulting automatic action?

- a. Rod block only
- b. 1/2 scram RPS-A only
- c. Rod block and 1/2 scram RPS-A only
- d. Full scram

- 59. Given the following:
  - An I&C Technician is in the middle of SRM "A" Channel Functional Test
  - The next section of his procedure contains several discrepancies

Which one of the following changes is PROHIBITED as an "On The Spot Change" to the procedure?

- a. Increasing the trip setpoint tolerance to reduce nuisance alarms
- b. Minor alterations to a step to clarify that step
- c. Changing a step which returns the "B" SRM Mode Switch to the original position
- d. Adding a supervisory review signoff
- 60. Given the following:
  - Local Power Range Monitor (LPRM) detector 32-33-C has just failed downscale
  - Subsequently, Control Rod 30-31 is selected

Which one of the following describes the effect of the failure on the associated APRM and RBM channels?

The LPRM input:

- a. will be automatically bypassed and removed from the APRM only. The APRM and RBM readings will be lower than actual power.
- b. will be automatically bypassed and removed from both the APRM and RBM. The APRM and RBM readings will remain the same.
- c. will be automatically bypassed and removed from the APRM only. The APRM reading will remain the same and the RBM reading will be lower than actual power.
- d. will be automatically bypassed and removed from the RBM only. The APRM and the RBM readings will be lower than actual power.

61. Given the following:

The plant is operating at full power when the hold down assembly fails on Jet Pumps #1 & #2. This allows the Jet Pump nozzle assembly (Rams Head) to separate from the "B" Recirc Loop piping inside the RPV.

- Annunciators APRM/RBM FLOW REF OFF NORMAL and ROD OUT MOTION BLOCK are also received

- At 10C650, Recirc Pump Discharge Flow indicators are found to be reading 47,000 gpm for "A" Recirc and 54,000 gpm for "B" Recirc

Which one of the following describes how the APRM Flow Units will respond in this situation?

- a. Upscale trips from all four (4) Flow units
- b. Compare trips from only two (2) Flow units
- c. Compare trips from all four (4) Flow units
- d. Upscale trips from only two (2) Flow units
- 62. Given the following:

- A Small Break LOCA occurred
- Drywell temp is 450°F and rising
- RPV pressure is 275 psig
- RPV level indication is lost
- 28 control rods are full out
- Suppression Chamber pressure is 10 psig

What is action is required to assure adequate core cooling?

- a. Enter HC.OP-EO.ZZ-0206, open SRVs until RPV pressure is below 60 psig
- b. Enter HC.OP-EO.ZZ-0206, open at least 5 SRVs
- c. Enter HC.OP-EO.ZZ-0206A, open SRVs until RPV pressure is below 275 psig
- d. Enter HC.OP-EO.ZZ-0206A, open at least 5 SRVs

- 63. Given the following:
  - 120 VAC UPS TROUBLE Annunciator D3-E3 alarms
  - "B" channel ECCS Rosemount Trip Units lose power
  - "B" channel analog RPV level indications fail downscale

Which one of the following 120 VAC inverter malfunctions would cause this loss?

- a. 1BD-481
- b. 1BD-483
- c. 1BD-491
- d. 1BD-492
- 64 Given the following:
  - RPV level dropped until RCIC reached an automatic initiation setpoint
  - RCIC failed to automatically initiate
  - When armed and pressed, RCIC fails to initiate

IAW HC.OP-AB.ZZ-0001 Transient Plant Conditions, which one of the following actions is taken FIRST to manually inject with RCIC?

- a. Adjust FIC-R600 RCIC FLOW setpoint to zero %
  - b. Press and hold the FC-HV-F045 RCIC Steam Supply OPEN PB
  - c. Ensure OP-219 RCIC VACUUM PUMP is running
  - d. Ensure BD-HV-F046 Lube Oil Cooling is open

- 65. Given the following:
  - A reactor scram occurred during a startup
  - RCIC started and tripped
    - RCIC Turbine Exhaust piping has ruptured
    - Reactor pressure is 50 psig and lowering
    - A small steam leak in the Drywell is causing Drywell pressure to rise

Which one of the following valves will automatically close if Drywell pressure reaches HI-HI?

- a. BD-HV-F031 Torus Suction Isolation Valve
- b. BD-HV-F013 Pump Discharge to Feedwater Isolation Valve
- c. FC-HV-F062 Vacuum Breaker Isolation Valve
- d. FC-HV-F059 Exhaust Line Isolation Valve
- 66 The plant is in Cold Shutdown with Shutdown Cooling in service. A single transmitter fails causing a loss of Shutdown Cooling.

Which one of the following caused the trip?

- a. N078B RPV Pressure transmitter fails upscale
- b. N080A RPV Level transmitter fails upscale
- c. N080A RPV Level transmitter fails downscale
- d. N078B RPV Pressure transmitter fails downscale
- 67 Given the following:
  - The plant is operating at 100 percent power
  - Main Steam Line (MSL) "A" Flow Transmitter PDT- N086A fails low

Which one of the following describes how Main Steam Lines will be isolated if an actual high flow in the "A" MSL occurs?

(LIMIT YOUR RESPONSE TO MAIN STEAM LINE FLOW INSTRUMENTATION ONLY)

- a. "A" and "C" NSSSS logic will trip closing Inboard MSIVs only
- b. "A" and "D" NSSSS logic will trip closing Outboard MSIVs only
- c. "B" and "C" NSSSS logic will trip closing Inboard and Outboard MSIVs
- d. "B" and "D" NSSSS logic will trip closing Inboard and Outboard MSIVs

- 68. Given the following:
  - There is a steam leak in the Drywell
  - The "B" loop RHR pump was placed in operation
  - Drywell spray valves BC-HV-F016B and HV-F021B are stroking open

Select the automatic system response if the high Drywell pressure clears before the valves are full open?

Drywell spray valves:

- a. stop in an intermediate position.
- b. reverse direction and close.
- c. stroke full open.
- d. stroke full open then close.
- 69. Given the following:
  - Suppression Chamber pressure is elevated
  - The CRS orders Suppression Chamber Sprays placed in service
  - While opening the "B" RHR Suppression Chamber Spray Valve F027B, indications are as follows:
    - Yellow OVLD/PWR FAIL light is FLASHING
    - Green CLSD light is EXTINGUISHED
    - Red OPEN light is LIT
    - White OVERRIDDEN light is LIT

Which one of the following describes the valve status?

- a. The valve breaker is tripped open. The valve is open with spray flow.
- b. The valve breaker is tripped open. The valve is closed.
- c. The valve overloads have tripped. The valve is open with spray flow.
- d. The valve overloads have tripped. The valve is closed.

#### 70. Given the following:

- The plant is in Operational Condition 2 with a reactor startup in progress
- One Fuel Pool Cooling Pump, Heat Exchanger and demin are in service
- Fuel Pool inventory is slowly lowering
- Digital alarms and leak detection monitors do NOT identify the source of the leakage
- ALL sump pumps appear to be operating normally
- CST level is stable
- HC.OP-AB.ZZ-0144, Loss of Fuel Pool Inventory/Cooling is entered

Which one of the following actions is required IAW HC.OP-AB.ZZ-0144 Attachment 1.

- a. Isolate FPCC Heat Exchanger
- b. Enter the Drywell and check for leakage
- c. Check Torus Level and verify RHR alignment
- d. Isolate RWCU Non-Regenerative Heat Exchanger
- 71 Which one of the following describes the bases for the Refueling Platform Main Grapple weight limit interlocks?
  - a. Prevents release of activity in excess of that contained in a single fuel assembly
  - b. Prevents damage to core internals from excessive lifting force
  - c. Prevents damage to hoist safety brake from excessive speed
  - d. Prevents engaging more than one fuel assembly or control rod blade guide
- 72. The following plant conditions exist at T = 0:
  - Reactor water level is -130 inches
  - Reactor pressure is 900 psig
  - Drywell pressure is 1.2 psig
  - All ECCS pumps are running
  - MSIV's are closed

Based on plant conditions, which one of the following describes the response of ADS?

- a. ADS will initiate at T = 105 seconds
- b. ADS will initiate at T = 300 seconds
- c. ADS will initiate at T = 405 seconds
- d. ADS will NOT initiate until Drywell pressure increases above 1.68 psig

#### 73. Given the following:

- The plant is operating at 90 percent power
- Power ascension in progress
  - 1BD483 120 VAC inverter output is lost

In addition to entering HC.OP-AB.ZZ-0136 "Loss of 120 VAC Inverter", which other operating procedure must be entered for this condition and why?

- a. HC.OP-EO.ZZ-0101 "RPV Control" to stabilize reactor pressure
- b. HC.OP-AB.ZZ-0143 "Loss of Overhead Annunciators / Loss of CRIDS" to stabilize RPV Level
- c. HC.OP-EO.ZZ-0101A "ATWS RPV Control" to respond to failure to scram
- d. HC.OP-AB.ZZ-0153 "Optic Isolator Panel Malfunction" to respond to single Recirc Pump trip
- 74. Given the following:
  - The plant is in Operational Condition 5
  - All RBVS and RBVE fans are running
  - FRVS is in a normal standby configuration
  - "B" and "D" Emergency Diesel Generators are tagged out for maintenance

A radiological incident on the Refuel Floor causes Refuel Floor Exhaust Radiation to reach 3.1x10-3 uCi/ml.

Which one of the following describes total FRVS recirculation flow one minute after this event? (Assume no operator actions )

- a. 0 cfm
- b. 90,000 cfm
- c. 120,000 cfm
- d. 180,000 cfm

#### 75. Given the following:

- The plant is operating at 100 percent power
- A Loss of Offsite power occurs
- Drywell pressure is 5 psig and rising
- "A" Emergency Diesel Generator fails to start

Which one of the following describes the effect on FRVS after 3 minutes? (Assume NO operator action)

- a. Only 3 Recirc Fans and one Vent Fan start
- b. Only 4 Recirc Fans and one Vent Fan start
- c. Only 3 Recirc Fans and NO Vent Fan start
- d. Only 4 Recirc Fans and NO Vent Fan start
- 76 Given the following:
  - The plant is operating at 100 percent power
  - Several overhead annunciators alarm including:
    - 4.16KV FDR TO USS XFMR BRKR MALF
    - 4.16KV SYS INCOMING BRKR MALF
  - Yellow INOP control bezels are flashing on 10A401 "A" 1E 4.16KV bus circuit breakers but the equipment does NOT change state
    - Reactor power, pressure, and level remain stable

Which one of the following caused the alarms?

- a. Loss of power to the Optical Isolator Cabinets
- b. Loss of inverter power to the "A" Channel 1E Bailey Cabinets
- c. Loss of AC power to the 10A401 bus
- d. Loss of DC control power to the 10A401 bus

- 77. Given the following:
  - The plant is operating at 100 percent power
  - HPCI 250 VDC battery has just completed deep discharge rate surveillance testing
  - The HPCI Battery charger has been returned to service and associated fuse transfer switch closed

- IAW HC.OP-AB.ZZ-0149 250 VDC MALFUNCTION, performance of the 250 VDC Maintenance Weekly Battery Surveillance is recommended

What is the bases for this recommendation?

- a. To ensure battery operability
- b. The battery charger may NOT be operable
- c. The 250 VDC bus alignment still needs to be verified
- d. The battery charger alignment still needs to be verified
- 78. Which one of the following describes the effect on the Class 1E AC Power Distribution System by a loss of Channel "A" 125VDC CLASS 1E Panel 1AD417?
  - a. Loss of switchgear 10B430 Normal Control Power
  - b. Loss of switchgear 10B440 Normal Control Power
- c. Loss of switchgear 10B450 Alternate Control Power
  - d. Loss of switchgear 10B460 Alternate Control Power
- 79. Given the following:
  - The plant is operating at 100 percent power
  - "D" SACS Pump is inoperable for scheduled maintenance
  - "B" Emergency Diesel Generator (EDG) becomes inoperable

Which one of the following actions is required within one hour?

- a. Cross-tie the "D" EDG to the "A" SACS Loop IAW HC.OP-SO.EG-0001
- b. Perform AC Power Distribution Lineup Weekly IAW HC.OP-ST.ZZ-0001
- c. Perform "B" SACS Pump In-service Test Quarterly IAW HC.OP-IS.EG-0002
- d. Perform "A" EDG Operability Surveillance Test Monthly IAW HC.OP-ST.KJ-0001

- 80. Given the following:
  - A discharge of the Equipment Drain Sample Tank is in progress to the River
    The Liquid Radwaste Discharge Isolation Valve to the Cooling Tower Blowdown automatically closes

Which one of the following conditions would cause this termination? (Assume no operator action)

- a. Cooling Tower Blowdown weir flow rate HI setpoint is reached
- b. Liquid Radwaste Effluent sample flow rate HI setpoint is reached
- c. Liquid Radwaste Effluent radiation HI setpoint is reached
- d. The Cooling Tower Blowdown RMS radiation HI setpoint is reached
- 81 The Off-Gas Pre-Treatment High Radiation alarm on the RM-11 has just annunciated. In addition to a fuel element failure, which one of the following could cause the high offgas pre-treatment radiation condition?
  - a. Fire in the offgas holdup pipe
  - b. Low offgas recombiner temperatures
  - c. Increased Main Condenser air in-leakage
  - d. Condensate demineralizer resin intrusion

#### 82. Given the following:

- A plant startup is in progress

- The 'A' RPS Motor-Generator Voltage Regulator fails causing generator output voltage to decrease to approximately 100VAC

Which one of the following describes the effect of this condition on the Main Steam Line (MSL) Radiation Monitors?

- a. Power is lost to MSL Radiation Monitors RE-N006A and RE- N006C, resulting in an INOP trip
- b. Power is lost to MSL Radiation Monitors RE-N006A and RE-N006C, resulting in a HI-HI RAD trip
- c. The reduced voltage causes a DOWNSCALE trip of MSL Radiation Monitors RE-N006A and RE-N006C
- d. The reduced voltage causes radiation levels for MSL Radiation Monitors RE-N006A and RE-N006B to indicate lower than actual
- 83. Given the following:
  - The plant is operating at 100% power
  - "A" Control Room HVAC train and Chilled Water system is running
  - A light haze with an acrid odor is noticed in the Main Control Room
  - No alarms are received that could explain the origin of the haze and odor

- HC.OP-AB.ZZ-0129, High Radiation, Smoke or Toxic Gases in the Control Room Air Supply is entered

Based on plant conditions, which one of the following is an immediate action IAW HC.OP-AB.ZZ-0129?

- a. Verify that the Control Room Supply Ventilation has automatically isolated
- b. Verify that the "A" Control Room Emergency Filter Unit automatically started
- c. Press the CONTROL ROOM EMER FILTER UNIT A and B OA pushbuttons
- d. Press the CONTROL ROOM EMER FILTER UNIT A and B RECIRC MODE pushbuttons

- 84. Given the following:
  - The plant is in Operational Condition 5
  - Core offload is in progress
  - A spent fuel bundle is full up on the main hoist over the core
  - The refuel bridge spotter notices the fuel bundle has unlatched and fallen free into the vessel

What operator action is required?

- a. Determine South Plant Vent RMS release rate
- b. Determine the location of the dropped bundle and inform the Reactor Engineer
- c. Re-establish Secondary Containment within 1 hour
- d. Evacuate all unnecessary personnel from the Reactor Building
- 85. Using provided copy of P&ID M-51 Sheet 2, determine the computer point ID for "A" RHR Heat Exchanger Outlet Temperature.
  - a. A2020
  - b. A2380
  - c. A2381
  - d. A3132
- 86. Which one of the following individuals is responsible for performing the Control Room Key Switch Audit and how often is it performed?
  - a. Oncoming RO/PO, once per day
  - b. Oncoming RO/PO, twice per day
  - c. Off-Going RO/PO, once per day
  - d. Off-Going RO/PO, twice per day

- 87. Given the following:
  - The reactor is operating at 75% power following a transient

- The reactor engineer reports that the MAXIMUM FRACTION OF LIMITING CRITICAL POWER RATIO (MFLCPR) is 1.001

Which one of the following describes the Technical Specifications required action(s)?

- a. The reactor must be in HOT SHUTDOWN within two hours and the NRC notified within one hour.
- b. The reactor must be in STARTUP within 6 hours, HOT SHUTDOWN within the following 6 hours, and COLD SHUTDOWN within the subsequent 24 hours.
- c. Corrective action be initiated within 15 minutes and the MCPR restored to within the limit within two hours or reduce thermal power to less than 25% of rated within the next four hours.
- d. An immediate reactor scram by placing the Reactor Mode Switch in the SHUTDOWN position.
- 88 Given the following:
  - A plant condition has resulted in a reactor power reduction
  - Reactor power is now stable at 50% after the transient
  - Chemistry reports that DOSE EQUIVALENT I-131 is 3.0 microcuries/gram

Which one of the following describes the bases that allows plant operation to continue for 48 hours IAW Technical Specifications?

- a. To allow for possible lodine spiking phenomenon
- b. To allow for stable Reactor Coolant chemistry sample data
- c. To allow for decay of short lived isotopes
- d. To allow reasonable time to verify the initial sample results

89. The reactor is operating at 100% power. During an operability check of the RCIC system it is discovered that the flow controller FIC-600 on 10C650B will NOT regulate RCIC flow in automatic, however, manual control does function properly.

Based on plant conditions, which one of the following actions is required?

- a. No action is required since RCIC flow can be manually controlled
- b. Restore the controller to operable status within 7 days, or be in at least hot shutdown within the next 12 hours, and have steam dome pressure less than 150 psig in the following 24 hours
- c. Restore the controller to operable status within 14 days, or be in at least hot shutdown within the next 12 hours and have steam dome pressure less than 150 psig in the following 24 hours
- d. Restore the controller to operable status within 14 days, or be in at least hot shutdown within the next 12 hours and have steam dome pressure less than 100 psig in the following 24 hours
- 90. Given the following:

A complete core offload was completed at the beginning of the refueling outage
 Fuel reload is ready to commence IAW "Fuel Handling Control" Core Alteration Forms.
 [HC.OP-FR.ZZ-0001]

- All SRM's are fully inserted with the following count rates:

- "A" 5 cps
- "B" 2 cps
- "C" 6 cps
- "D" 1 cps

Based on these conditions, which of the following actions is required IAW plant procedures?

- a. Spiral Reload may commence with no restrictions as long as any two SRM's are reading
  > 3 cps
- b. A Movable SRM detector must be hooked up to the normal SRM channel instrumentation and be placed in either "B" or "D" quadrant, indicating > 3 CPS prior to Spiral fuel reload commencement
- c. Spiral fuel reload may commence in "A" and "C" quadrants only, until either "B" or "D" quadrant SRM is reading > 3 cps at which time complete reload may be commenced
- d. Spiral fuel reload may commence up to the first 16 bundles, at which time all four SRM's must read > 3 cps to perform a complete reload

#### 91. Given the following:

- The plant has just completed a shutdown for refueling
- Vessel disassembly has commenced

- The I&C department has determined that IRM "A" and SRM "B" have bad detectors and are inoperable

Which one of the following actions must be completed prior to full core offload?

- a. Shutdown margin must be demonstrated
- b. SRM B will have to be replaced so offload can occur in that quadrant
- c. Both instruments must be replaced before any core alterations can begin
- d. IRM A must be restored in order to meet the minimum operable channel requirements

#### 92. Given the following:

- The plant is in Operational Condition 5
- You are the oncoming Refueling SRO
- The offgoing SRO briefs you of their activities

Which one of the following would constitute a violation of Refuel SRO duties while core alterations are IN PROGRESS?

a. Picking up a fuel bundle after Control Room communications are lost

- b. 5 hours of continuous fuel moves
- c. Control rod blade removal from an unloaded fuel cell
- d. Fuel movement with Fuel Pool water level 1 inch below wave scuppers

93. An operator has the following exposure history this year until today:

Deep Dose Equivalent (DDE)	210 mrem
Committed Effective Dose Equivalent (CEDE)	45 mrem
Shallow Dose Equivalent (SDE)	33 mrem

Today, the operator was required to make two entries into the Drywell at 5 percent reactor power:

Entry 1: Gamma dose: 52 mrem; Neutron dose: 24 mrem Entry 2: Gamma dose: 124 mrem; Neutron dose: 54 mrem

How much radiation exposure is available to the operator without extension if he has to make additional entries?

His available Non-Emergency margin for the year is...

- a. 1488 mrem
- b. 1521 mrem
- c. 1599 mrem
- d. 1712 mrem

#### 94. Given the following:

- The plant is in Operational Condition 4 for a short outage

- During a Drywell inspection, the operator notices some radiation barricade ropes in the area of RWCU Isolation valve BG-HV-F001

- A radiation sign on the ropes reads "Caution; High Radiation Area, RWP Required For Entry" and indicates a MAXIMUM radiation level of 1.10 Rem/hr inside the ropes

Which one of the following additional posting requirements and /or controls are required for this area according to Technical Specifications?

- a. The area requires a flashing light in the immediate area as a warning device
- b. The area is required to be fenced off and the Drywell Airlock shall be kept locked with the keys kept under the administrative control of the Operations Superintendent
- c. The area should be posted as a Very High Radiation Area with continuous electronic surveillance used to control access
- d. The area requires a closed circuit TV monitor be installed to give radiation protection personnel continuous monitoring capability

95. Given the following:

Off Gas Radiation 9RX612 and 9RX622 parameters indicate yellow on the RM-11 terminal Chemistry has been directed to commence sampling

Based on plant conditions, power level should be lowered ...

- a. until the GAS RADW CHAR TRTMT PNL 00C367 alarm is clear.
- b. to maintain Main Steam Line Rad Monitors less than the HIGH alarm setpoint.
- c. until North Plant Vent activity less than the HIGH alarm setpoint.
- d. to maintain Off Gas activity less than the RM-11 ALERT alarm setpoint
- 96. Given the following conditions:
  - The plant has been operating at 100% power for several weeks

- Main Steam Line (MSL) radiation levels have been averaging 120 mRem but are now slowly trending upwards

- Chemistry reports the higher radiation levels are due to failed fuel
- HC.OP-AB.ZZ-0203, Main Steam Line High Radiation is entered

Based on plant conditions, which one of the following Immediate Operator Actions are required?

- a. Place additional Condensate Demineralizers in service if possible
- b. Reduce reactor power to maintain MSL radiation levels less than 180 mRem
- c. Direct Reactor Water Cleanup flow to the main condenser to reduce coolant activity
- d. Scram the reactor and close the Main Steam Isolation Valves when MSL levels reach 180 mRem
- 97. Which one of the following describes organizational grouping of Abnormal Operating Procedures (ABs) IAW SH.OP-AP.ZZ-0102 "Use of Procedures".
  - a. 100 series are operational transient procedures
  - b. 200 series address component failures
  - c. 300 series apply at all times
  - d. 000 series address fire and medical emergencies

98. HC.OP-EO.ZZ-0206A is being implemented during an ATWS event.

Which one of the following describes why RCIC injection must be terminated prior to opening SRVs?

- a. RCIC is injecting cold water
- b. RCIC Turbine damage may occur
- c. The Boron concentration will be diluted
- d. RPV pressure may NOT be sufficient to drive the RCIC Turbine
- 99. Given the following:
  - The Control Room receives a telephoned bomb threat
  - The caller states that an explosive device is attached to a hydrogen trailer at the Hydrogen Water Chemical Injection offloading station in the yard south of the power block
  - Security is implementing Contingency Procedures
  - Security officers confirm the presence of a suspicious device
  - No other suspicious activity is observed at this time

Which one of the following describes the time requirement in which the NRC must be notified?

- a. Within 15 minutes
- b. Within 1 hour
  - c. Within 4 hours
  - d. Within 24 hours
- 100. Which one of the following describes how a scram is verified in accordance with HC.OP-IO.ZZ-0008 Shutdown from Outside the Control Room?
  - a. HCU nitrogen pressure verified to be less than 800 psig at each HCU
  - b. Reactor vessel pressure verified less than 920 psig
  - c. RPS power distribution circuit breakers verified to be open
  - d. Scram air header pressure verified to be less than 100 psig

Page 45 of 45