

UNITED STATES NUCLEAR REGULATORY COMMISSION

REGION III 801 WARRENVILLE ROAD LISLE, ILLINOIS 60532-4351

October 13, 1998

NOTE TO:

NRC Document Control Desk

Mail Stop 0-5-D-24

FROM:

Mary Ann Bies, Licensing Assistant

Operating Licensing Branch, RIII

SUBJECT:

OPERATOR LICENSING RETAKE EXAMINATION ADMINISTERED

May Am Bres

ON SEPTEMBER 1, 1998, AT CLINTON POWER STATION,

DOCKET NO. 50-461

On September 1, 1998, an Operator Licensing Retake Examination was administered at the referenced facility. Attached, you will find the following information for processing through NUDOCS and distribution to the NRC staff, including the NRC PDR:

Item #1 - a) Facility submitted outline and initial exam submittal, designated for distribution under RIDS Code A070.

 As-given operating examination, designated for distribution under RIDS Code A070.

Item #2 -

Examination Report with the as-given written examination attached, designated for distribution under RIDS Code IE42.

Attachments: As stated

FINAL AS-RUN WALKTHROUGH JPMS FOR CLINTON RETAKE EXAM - WEEK OF 08/31/98

9/1

A070

Facility: _____ Date of Examination: _September 1, 1998 Exam Level (Circle): RO / SRO(I) / SRO(U) Operating Test No.: _98-02

System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. 202001/Start RR Pump A in Slow	1 - Reactivity Cont.	a. A2.10 - 3.9 - Seal Failure
D, S, L		b. K4.17 - 3.5 - Fast Speed Pump Start
2. 209002/Manually Initiate HPCS	2 - Inventory Cont.	a. K6.01 - 3.6 - Loss of Electrical Power
D, S		b. G2.1.14 - 3.3 - Sys. Status Req. Notification
3. 223001/Emerg. S/U Standby DWC	5 - Cont. Integrity	a. K6.11 - 3.0 - Loss of Electrical Power
D, S		b. G2.1.12 - 4.0 - Not Qualified Equipment
4. 264000/Manually Start DG 1A	6 - Electrical	a. K4.08 - 3.7 - Automatic Startup
D, A, S		b. G2.1.12 - 4.0 - T.S. Requirements
5. 239001/Equalize Around and Open MSIVs	3 - Pressure Cont.	a. A2.03 - 4.2 - MSIV Closure
D, S, L		b. K4.01 - 3.8 - Automatic Isol. of Steam Lines
6. 217000/Shutdown RI - Init. Sig. Clear	4 - Heat Removal	a. A2.01 - 3.7 - Initiation Signal
N, S		b. A2.17 - 3.4 - High Suppression Pool Lvl.
7. 261000/Purge PC Using VG	9 - Rad. Release	a. K4.01 - 3.8 - Auto System Init.
N, S		b. K6.04 - 3.1 High Rad. Response
8. 241000/Startup Steam Byp. HPU	3 - Pressure Cont.	a. A2.01 - 3.7 - Pressure Reg. Failure
N, P, R		b. A2.03 - 4.2 - Failed Open BPV
9. 201005/Respond to a Failed Transponder	7 - Instrumentation	a. K3.02 - 3.5 - Effect on Reactor S/U
N, P		b.K1.06 - 3.3 - Bypassed Rod in Gang
10. 400000/Respond to Abn. Level in CCW Exp. Tk.	8 - Plant Service	a. K3.01 - 3.3 - Loads Cooled by CCW
N, P, R		b. A2.01 - 3.4 - Loss of CCW Pump

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

Chief Eyamain

3/13/58

JPM NUMBER: NRC 1	REVISION: 0
TASK TITLE: Start Reactor Recirculation Pump "A" in Slow Speed	
TASK NUMBER: 011202C004	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance X	
Classroom Simulator X Plant	
APPROXIMATE TIME FOR COMPLETION:15_ minutes	
Prepared/Revised by: Da	ate:
Reviewed by: Date	ate:
Approved by: Date	ate:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1	REVISION:0
READ TO TH	E OPERATOR
I will explain the initial conditions, which step(s) to s When you complete the task successfully, the object	simulate or discuss, and provide the initiating cues. ive of this Job Performance Measure will be satisfied.
SIMULATOR SET-UP CONDITIONS:	
Initialize to an IC, similar to IC-5, at approximately copening the CB1, CB2, CB3 and CB4 breakers and and restart the "A" RR HPU from the instructor con are both ON or both OFF.	closing the FCV to minimum. Lockout the "A" FCV
TASK STANDARDS:	
Reactor Recirculation Pump "A" is running in slow s	speed.
TOOLS, EQUIPMENT, OTHER SPECIAL REQ	QUIREMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3302.01, REACTOR RECIRCULATION,	section 8.1.1
ENLY WATER INCOME.	

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RK pump is stopped and the "A" RR loop is unisolated. The CRS directs you to startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.

START	TIME:	

JPM NUMBER: NRC 1			REVISION: 0			
		PERFORMANCE IN	FORMATION			
letters. Faile	ure to meet the	with a asterisk (*) to the left of e standards for a critical step co f steps is assumed unless denot	onstitutes failure of	the Job Performance		
		PERFORMANC	E STEPS			
JPM TITLE	Start Reacto	or Recirculation Pump "A" in S	Slow Speed			
8.1.1.1		Unless checked during drywers is accessible. Reference MS-0 oil level determination criteria.	08.00 for proper RR			
8.1.1.2	required, a regulator,	Verify open 1C11-FO26A(B) to the RR pump seals is 3-5 djust 1C11-D012A(B), Flow C1C11-D012A(B) is used to adjust AZM 189°]. Loosen locknut and rotate st (Clockwise for decreasing flow	gpm on flowmeter 1 Centrol Valve to obtust flow as follows (em until desired flow	C11-D020A(B). If ain 3-5 gpm. Flow (per K2801-0009):		
	b)	Lock stem in desired position tightening locknut.	by holding stem stem	eady whil re-		
STANDAR	D:					
Directs Area	a Operator to	verify CRD flow to RR pump "	'A" seals at 3-5 gpm	1.		
CUE:						
Flow is 4 ga	illons per minu	ite.				
COMMENT	rs:					
			SAT	UNSAT		

JPM NUMB	ER: NRC	L	REVISION: 0	
		NO	DTE]
		e Cavitation Interlocks switch	w feed flow conditions, the white light will stay on and the pumps will start in	
8.1.1.3 a)	Zero the A	/B loop SERVO ERROR		
STANDARD	ı;			
Adjusts B33-	K603A, Reci	irc Loop A Flow Control, so S	Servo Error meter indicates 0% on P680	
CUE:				
COMMENTS	S:			
			SATUNSAT	-
8.1.1.3 b)	Depress fo	llowing reset buttons to clear i	interlocks/alarms:	
	Veri	A/B Motion Inhibit Reset fy the lead HPU becomes oper pited.	rational, and FCV motion is longer	
	2) Pum	p A/B Vibration Reset.		
		Intlk A/B Reset / Rx Run Back Level Intlk A/B Reset	k Reset.	
STANDARD):			
Depresses "A Depresses "A	" Vibration r " Cavitation	nibit reset pushbutton and observeset pushbutton. Interlock pushbutton. w Level pushbutton	erves WHITE light OFF.	
CUE:				
COMMENTS Cavitation int		ot clear when feedwater flow i	is less than 30%. SATUNSAT	

JPM NUMBER: NRC 1 REVISION: 0							
8.1.1.4		rify RWCU system in operation with flow established througobtain a reliable indication of bottom head drain coolant tem					
STANDAR	D:						
Verifies RW	VCU sys	stem in operation with flow established through bottom hear	d drain line.				
CUE:							
COMMEN	TS:						
		SAT	UNSAT				
8.1.1.5	K-75635A Thermal and log data in the MCR						
	a)	Difference between bottom head coolant temperature and temperature is ≤ 100°F. (ITS/GEK)	d the RPV coolant				
	b)	Difference between the RPV coolant temperature in the latter the RPV coolant temp. ature is ≤ 50°F. (ITS/GEK)	RR loop to be started and				
	c)	Difference between idle RR loop to be started and the of (GEK-75635 only: verifies Bkr 5A(5B) Thermal Interloc					

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1	REVISION: 0
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RPV Coolant Temperature	Bottom Head Coolant Temperature	RPV Coolant Temperature in the RR Loop to be Started
MODEs 3/4 with RHR SDC in operation: Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601 MODEs 2-4 with RR loop in operation and RHR SDC secured: Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614. MODEs 1-3 with Rx coolant >	Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at 1H13-P614, or computer points B22DA002/017 (valid when > 214°F).	Use RR pump suction temperature for the idle RR loop from recorder B33-R604 at 1H13-P614.
214°F: Use Steam Dome Temperature computer point B21NA006.		

STANDARD:

Verifies ≤	100°F	difference	e between	bot	ttom	head	and	RPV	coolant
Verifies ≤	50°F	difference	between "	A"	RR	loop	and	RPV	coolant

Verifies ≤ 50°F difference between "A" RR loop and other loop

CUE:

0			

May simulate	logging	information	in	CRO	log
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CAT	I TATC AT
SAT	UNSAT
The same of the sa	

JPM NUM	BER: NRC 1		REVISION: 0
8.1.1.6	Verify annunciators 5003-2C/2J, Recir (verifies GEK-75635A Bkr 5A(5B) pu (annunciator only valid when > 214°F.	mp start loop to loop	lk Actuated are extinguished thermal interlock in effect)
STANDARI	D:		
Verifies ann	nunciators 5003-2C/2J are extinguished.		
CUE:			
COMMENT	TS:		
		SAT	UNSAT
*8.1.1.7	Place 1B33-F060A(B), Recirc FCV i	n minimum open po	sition.
STANDAR	D:		
Verifies "A"	'Flow Control Valve in minimum open po	osition.	
CUE:			
COMMENT	TS:		
		SAT	UNSAT

JPM NUMBI	ER: NRC 1	REVI	SION: 0
8.1.1.8	Verify CRD supply and seal staging flow has be to pump start to ensure pump seals are vented.	en in operation for	at least one hour prior
STANDARD:	r.		
Requests infor	rmation for CRS		
CUE:			
It has been 1 h	hour.		
COMMENTS	S:		
		SAT I	UNSAT
	CAUTION		
	Do <u>not</u> simultaneously start b	oth RR pumps.	
*8.1.1.9	Close the following P680 breakers in order:		
	a) Recirc Pump A(B) Mtr Bkr 3A(3B).b) Recirc Pump A(B) Mtr Bkr 4A(4B).		
STANDARD:	:		
Closes 3A ther	en 4A breakers and observes RED light ON for ea	ch breaker.	
CUE:			
COMMENTS	S:		
The annunciate	tor RECIRC PMP A MTR BRKR TRIP will clear		
		SAT	UNSAT

JPM NUMB	ER: NRC 1 REVISION: 0
	NOTE If FW flow is < 30% (~ 3.74 mlbm/hr, then: a) RR pump will accelerate on the 60 cycle source. b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker closes c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will close
	d) When pump speed drops to 20-26% (356 - 463 rpm), the 2A(2B) breaker will close. If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate directly to 100% (1780 rpm).
8.1.1.10	Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start.
STANDARD	
Requests that	security be notified.
CUE:	
Security has b	been notified.
COMMENT	SATUNSAT

JPM NUMB	ER: NRC 1		REVISION: 0
8.1.1.11 *8.1.1.12	Monitor reactor power and RPV w Start RR pump A(B) by closing	vater level during the start Recirc Pump A(B) Drive	ing of a RR pump. e Motor Bkr 5A(5B).
STANDARD			
Closes RR pur Monitors reac	mp "A" 5A breaker and observes RE tor power and RPV water level duri	ED light ON, pump amps and pump start.	and loop flow increasing.
CUE:			
COMMENTS		SAT	UNSAT
8.1.1.13	If RR pump startup was directed fit 8.2.6.6), return to step 8.2.6.7. Other	rom section 8.2.6, Idle RR herwise continue in this se	Loop - restart (step
STANDARD			
Continues in t	his section		
CUE:			
COMMENTS			
		SAT	UNSAT

JPM NUMBI	ER: NRC 1 REVISION: 0
	NOTE
	A 40 sec incomplete sequence timer starts when the CB-5 breaker is closed. If after 40 sec, pump speed is <u>not</u> 20-26% <u>or</u> CB-2 is <u>not</u> shut, the incomplete sequence relay will trip CB-1 & CB-5.
*8.1.1.14	After the RR pump is in service on the LFMG, open the FCV to full open position. OK to inhibit FCV motion per CPS No. 3302.02, REACTOR RECIRCULATION FLOW CONTROL HYDRAULIC SYSTEM while in slow speed RR pump operation to prevent inadvertent FCV runbacks.
	OK to restart RR HPUs per CPS No. 3302.02 after a short shutdown.
STANDARD:	
Opens "A" rec	circ loop FCV to full open.
CUE:	
COMMENTS	
	SAT UNSAT

JPM NUM	BER: NRC 1		REVISION:0
8.1.1.15		np Seal Key Parameters. (page corrective action should be take	26). If they approach or reach n.
STANDAR	D:		
As a minimushould be ch		ling Water (CCW) temperature	e, and injection water temperature
CUE:		1	
COMMENT	rs:		
		SAT	UNSAT
TERMINA	TING CUES:		
Reactor Red	circulation Pump "A" is runni	ng in slow speed.	
STO	P TIME:		

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1 REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 2020002
 A4.07
 3.2

JPM NUMBER:	NRC 1	REVISION: 0
QUESTION NO.	:	
The reirc pumps a		ing at near rated conditions for the past several weeks ith the Flow Control Valves at 96 and 92% respective
Seal 1 dP Seal 2 dP Seal 1 cavity Seal 2 cavity	"A" 1020 psig 510 psig 110°F 125°F	"B" 1015 psig 500 psig 110°F 125°F
Four hours later, t	he CROA reports the follow	
	"A" 1020 psig 510 psig 115°F 125°F d be taken by the operating of	"B" 1015 psig 500 psig 112°F 125°F
ANSWER:	renare an evaluation to deter	mine if continued plant operation is warranted.
REFERENCE(S)		mine it continued plant operation is warranted.
CPS No. 3302.01 CPS No. 3302.01		
RESPONSE:		
		SATUNSAT

JPM NUMBER: NRC 1	REVISION: 0
QUESTION NO.: 2	
	when the 'A' Reactor Recirculation (RR) pump trips. After taking the proper lty overcurrent relay on breaker 5A. The relay is replaced and the operators ring conditions exist:
Loop 'B' flow	14,950 gpm
Bottom Head Drain temperature	444°F
Loop 'A' suction temperature	481°F
Loop 'B' suction temperature	510°F
Steam Dome temperature	540°F
Loop 'A' Flow Control Valve	Min. position (0)
Loop 'A'	Unisolated
What operator action must be performed prior	r to returning the idle loop to service?
ANSWER:	
Slowly throttle open the idle 'A' loop Flow Co	ontrol Valve (to increase loop 'A' temperature).
REFERENCE(S):	
CPS No. 3302.01 section 8.2.6.4	
RESPONSE:	
	A. Comment of the com
	SATUNSAT

JPM NUMBER: NRC 1		REVISION: 0	-
		Importance Rating	
K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
202001 202001	A2.10 K4.17		3.9 3.5
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		1	
REVIEWED BY:		/	
APPROVED BY:	Supervisor - Requalification and	1	
	Operations Training		

JPM NUMBER: NRC 2	REVISION: 0
TASK TITLE: Manually Initiate the High Pressure Core S Available per CPS 3309.01	pray System (HP) - Initiation Logic
TASK NUMBER: 015200C617	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performa	nceX
Classroom Simulator X	Plant
APPROXIMATE TIME FOR COMPLETION: 3 min	nutes
Prepared/Revised by:	Date:
Reviewed by:Instructor - Operations	Date:
Approved by:Supervisor - Operations Training	Date:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

Initialize to any suitable IC with HPCS in Standby. Suppression Pool Level is < 19' 11.5". RCIC Storage Tank Level is > 2200 gal. Level 8 is clear on HPCS.

Override MANUAL INITIATION PUSHBUTTON

TASK STANDARDS:

The High Pressure Core Spray (HPCS) System is manually initiated and is injecting into the reactor vessel.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 3309.01, HIGH PRESSURE CORE SPRAY

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

The CRS directs you to manually initiate and inject with HPCS. Transient annunciator response is in effect.

START TIME:	START	TIME:		
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JPM NUME	BER: NRC 2		REVISION:0
	PERFORMANCE INF	ORMATION	
letters. Failur	Critical steps are denoted with a asterisk (*) to the left of the step number and appear in BOLDED letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the comments section of the JPM.		
	PERFORMANCE	STEPS	
JPM TITLE:	Manually Initiate High Pressure Core Spray	(HP) - Logic Op	perable
8.1.3 a)	During HPCS operation, verify as appropri		
	Opens whenever HPCS flow is < 6 psig, and Shuts whenever HPCS flow is ≥ 62		CS discharge pressure > 145
* b)	Arm and Depress HPCS MANUAL INIT	FIATION pushl	button.
STANDARD			
HPCS Manua Reports failure	I Initiation pushbutton is armed and depresse to CRS.	d and observes N	NO response on HPCS.
CUE:			
Acknowledge	failure and direct manual initiation of HPCS		
COMMENTS			
		SAT	UNSAT

JPM NUM	BER: NRC 2		REVISION:0
8.1.4 a)	During HPCS operation, verify as a To Suppr Pool: Opens whenever HPCS flow HPCS discharge pressure <	is , 625 gpm with 145 psig, and	012, HPC3 Pump Min Flow
	Shuts whenever HPCS flow	is ≥ 625 gpm.	
b)	Start HPCS Pump, 1E22-C001.		
STANDARD):		
Takes handsv	witch for 1E22-C001 to START and ve	erifies RED light ON.	
CUE:			
COMMENTS	S:		
		SAT	UNSAT
c)	Verify 1E22-F012, HPCS Pump Min	Flow To Suppr Pool o	pens.
STANDARD			
Verifies RED	light ON 1E22-F012		
CUE:			
COMMENTS			
		SAT	UNSAT

JPM NUMB	ER: NRC 2		REVISION: 0
d)	Verify HPCS Pmp Rm Sply Fans,	1VY08CA and B start.	
STANDARD			
Verifies RED	light ON for 1VY08CA and B		
CUE:			
COMMENTS	i :		
On vertical sec	ction of panel P-800		
		SAT	UNSAT
	To open 1E22-F004 that has clo SEAL IN RESET push-button in	NOTE seed on Level 8, the RX nust be depressed (when	WTR LEVEL HI > level 2).
e)	Open 1E22-F004, HPCS To CNN	AT Outbd Isln Valve	
STANDARD:			
Takes handswi Verifies RED	itch for 1E22-F004 to OPEN and ve and GREEN light ON for 1E22-F01	erifies RED light ON.	
CUE:			
COMMENTS			
Min. Flow valv Red and green time.	ve may be in mid position based on plights for the injection valve may be	pressure and flow. e ON at the same time du	ue to the long valve stroke
		SAT	UNSAT

JPM NUMI	BER: NRC 2		REVISION:0
f)	Restore and maintain level using 1E.	22-F004, HPCS To Cl	NMT Outbd Isln Valve.
STANDARD):		
Operates han	dswitch for 1E22-F004 to adjust HPCS	S flow to restore and n	naintain RPV level.
COMMENTS	S:		
		SAT	UNSAT
TERMINAT	ING CUES:		
The HPCS sys	item is injecting water into the reactor of the injection water into the injection water i	vessel.	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

209002 A4.05

3.8

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 209002
 A4.05
 3.8

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.:	
The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. It loss of the 4.16 bus resulted in a trip of the reactor feed pumps with the resulting level transient. Le transient. What caused the auto start of Diesel Generator 1C automatically started during the	The
ANSWER:	
Actuation of High Pressure Core Spray (HPCS) logic	
REFERENCE(S):	
E02-1HP99, Sheet 5	
RESPONSE:	

SAT ____UNSAT ____

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

The High Pressure Core Spray (HPCS) System is in standby and reactor power is 75%. As CRS, you have just been informed that during the performance of a surveillance, it was found that the Suppression this condition?
ANSWER:
The allowable value is ≤ 12 inches. Declare HPCS System inoperable within 1 hour and place the channel in trip within 24 hours OR align the HPCS pump suction to the suppression pool within 24 hours.

REFERENCE(S):

QUESTION NO.

ITS 3.3.5.1, Actions D.1, D.2.1 and D.2.2 ITS Table 3.3.5.1-1, Function 3.e

RESPONSE.

SAT ____ UNSAT ___

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating K/A SYSTEM NUMBER K/A NUMBER RO SRO 209002 K6.01 209002 3.6 G2.1.14 3.3 JTA: TASK NUMBER ANSWER TIME: Min ORIGINATED/REVISED BY: REVIEWED BY: APPROVED BY: Supervisor - Requalification and Operations Training

JOB PERFORMANCE MEASURE OPERATOR COPY

JPM NUMBER: NRC 3	REVISION:0
TASK TITLE: Emergency Startup of Standby Drywell Cooling System	
TASK NUMBER: 011222C506	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance X	
Classroom Simulator X Plant	
APPROXIMATE TIME FOR COMPLETION: 6 minutes	
Prepared/Revised by: Date:	
Reviewed by: Date:	-
Instructor - Operations	_
Approved by: Date: Date:	

JPM NUMBER: NRC 3 REVISION: 0	
READ TO THE OPERATOR	
I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied	d.
SIMULATOR SET-UP CONDITIONS:	
Initiate to any suitable IC that has a VP in standby.	
TASK STANDARDS:	
Operator actions performed per CPS No. 3320.01, Step 8.2.2	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:	
None	
PROCEDURAL/REFERENCES:	
CPS No. 3320.01, DRYWELL COOLING SYSTEM, Step 8.2.2	
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the IPM steps.	
NITIAL CONDITIONS AND INITIATING CUE:	
In Emergency Condition Exists; the CRS directs you to perform an emergency startup of the 'A' Drywell Cooling System per CPS No. 3320.01. Transient annunciator response is in effect.	
TART TIME:	

JPM NUM	BER: NRC 3 REVISION: 0
	PERFORMANCE INFORMATION
Critical step letters. Failu Measure. Ti	are denoted with a asterisk (*) to the left of the step number and appear in BOLDED are to meet the standards for a critical step constitutes failure of the Job Performance he sequence of steps is assumed unless denoted in the comments section of the JPM.
	PERFORMANCE STEPS
JPM TITLE:	Emergency Startup of Standby Drywell Cooling System
8.2.2.1	At 1H13-P801, start the standby Drywell Cooling System as follow:
*8.2.2.1.1	Start Drywell Cooling Fans 1VP01CB and 1VP01CD (1VP01CA and 1VP01CC).
STANDARD	
Takes handsweach fan.	vitches for Drywell Cooling Fans 1B and 1D to START and observes RED light ON for
CUE:	
COMMENTS	
f an area oper	rator is dispatched to the chiller, cue that an area operator is on his way to the chiller.
	SAT INSAT

REVISION:0
irst
s RED light ON.
UNSAT
UNSAT

JPM NUMI	BER: NRC 3 REVISION: 0
*8.2.2.1.4	Start standby Drywell Chiller 1VP04CB (1VP04CA) using the START pushbutton on 1H13-P801.
STANDARD):
Depresses ST	ART pushbutton for standby Drywell Chiller 1B and observes RED light ON.
COMMENTS	S:
	SATUNSAT
8.2.2.1.5	Send an area operator to the Drywell Chiller to monitor performance and load the chiller as required in accordance with steps 8.1.1.5.7 and 8.1.1.5.8.
STANDARD:	
Dispatches are	ea operator to monitor and load the chiller as required.
As area operat	or, report that the chiller is loaded and operating normally.
COMMENTS	
	SATUNSAT

JPM NUM	IBER: NRC 3 REVISION: 0	
8.2.2.1.6	If 1VP01CA, 1VP01CC, and 1VP01CB, 1VP01CD are all going to be left runnin open 1VP10Y and 1VP12Y at PNL 1PL43JA and JB.	g, then
STANDARI	D:	
Notifies area	a operator to open the dampers as required.	
CUE:		
Dampers hav	ve been opened.	
COMMENT	rs:	
	SATUNSAT	
8.2.2.2	At 1H13-P800-65, transfer Supplemental Drywell Cooling Coil Units 1VP02SE an 1VP02SF to the operating Drywell Cooling System as follows:	d
*8.2.2.2.1	Close Supplemental Drywell Cooling Coil Units Supply and Return Isol Valve 1VP090A/1VP091A (1VP090B/1VP091B).	s
STANDARD		
Takes handsw	vitch for 1VP090A/91A to CLOSE and observes GREEN light ON for both valves	
CUE:		
COMMENTS		
	SATUNSAT	

JPM NUMB	BER: NRC 3		REVISION: 0
*8.2.2.2.2	Open Supplemental Drywell Cooling (1VP090B/1VP091B (1VP090A/1VP09	Coil Units Suppl	y and Return Isol Valves
STANDARD			
Takes handsw	vitch for 1VP090B/91B to OPEN and obse	rves RED light O	N for both valves
CUE:			
COMMENTS			
		SAT	UNSAT
8.2.2.2.3	Verify WO system lineup to supplemental IVP02SH.	drywell cooling of	coil units 1VP02SG and
STANDARD:			
144033110332	extem lineup by observing RED light ON for A CH WTR OUTBD ISOL VLVS B CH WTR INBD ISOL VLVS	or the following:	
CUE:			
COMMENTS:			
		SAT	UNSAT

JPM NUMB	BER: NRC 3		REVISION:0
8.2.2.3	Locally monitor Drywell Chiller 1A f	for proper operation.	
STANDARD Notifies area	operator to monitor the Drywell Chiller	r 1A for proper operati	on
CUE:	er 1A is operating properly		
COMMENTS	S:		
		SAT	UNSAT
TERMINAT	ING CUES:		
Startup of dry	well cooling system is complete.		
STOP	гіме:		

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 295024
 EA1.14
 3.5

QUESTION NO.: 1
A small break LOCA has occurred and drywell pressure has increased to 2.5 psig. Describe the response of the Drywell Cooling System (VP) components as a result of the event.
ANSWER:
Drywell Chillers, Chill Water Pumps, and Fans trip. The Containment Isol. Vlvs 1VP004A&B, 5A&B, 14A&B, 15A&B, 1W0551A&B and 552A&B isolate. (These components/valves cannot be restarted/reopened until the condition clears)
Supplemental Drywell Cooling Fans (1E, 1F, 1G, and 1H) 'shunt trip'. (These components can be restarted at the local breakers)
REFERENCE(S):
CPS No. 3320.01
RESPONSE:
SAT UNSAT

QUESTION NO.: 2
The Plant is operating at 100 % power. A CR has just been delivered to the Control Room which has identified the oil coolers for the Drywell Purge Compressors as being Non-Q. What action must be taken due to this condition?
Follow-up question:
What constitutes the Hydrogen Control Function?
ANSWER:
The Drywell Purge Compressors must be declared INOP and verify the status of the Hydrogen Control Function.
At least ONE (1) Division of Hydrogen Igniters are OPERABLE.
REFERENCE(S):
TS 3.6.3.3 Action B.1 and Bases
RESPONSE:
SATUNSAT

		Importance Rating	
223001 223002	K/A NUMBER K6.11 G2.1.12	RO	<u>SRO</u> 3.0 4.0
JTA: TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		1	
REVIEWED BY:		/	
APPROVED BY:	Supervisor - Requalification and	1	
	Operations Training		

JPM NUMBER: NRC 4	REVISION:0
TASK TITLE: Manually Start Emergency Diesel Generator 1A	
TASK NUMBER:011264C526	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	a mana dalah dari dalah dalah dari dan dan dina dari atau atau atau atau dari dari dari atau atau dari atau ata
Simulated Performance Actual Performance X	
Classroom Simulator X Plant	
APPROXIMATE TIME FOR COMPLETION: 20 minutes	
Prepared/Revised by: Dat	e:
Reviewed by: Date	e:
Approved by: Dat Supervisor - Operations Training	e:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER:	NRC 4	REVISION:	0

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

Any suitable IC in which DG 1A is in standby with support systems available.

Insert Instructor Override 05A1A5S19_X DG 1A Voltage Regulator switch disabled.

TASK STANDARDS:

Diesel Generator 1A running at rated frequency, DG 1A Voltage Regulator identified as malfunctioning and all post-start verifications are completed.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 3506.01, DIESEL GENERATOR AND SUPPORT SYSTEMS, Section 8.1.3 and 8.3. CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS CPS No. 3506.01C002, DIESEL GENERATOR START LOG

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

The CRS directs you to manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. An A/C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

START	TIME.		
M. S. S. S. S. S.	A MATERIA		

JPM NUMB	ER: NRC 4	REVISION:0		
	PERFORMANCE II	NFORMATION		
CAPITAL let	are denoted with a asterisk (*) to the left of the service. Failure to meet the standards for a conference of steps is assumed.	of the step number a	es failure of the Job	
	PERFORMAN	CE STEPS		
JPM TITLE	Manual Start Emergency Diesel Gen	erator 1A		
8.1.3.7	Notify operator in Diesel Generator 1A(ensure the respective Diesel Generator I			
STANDARD				
Notifies C-Are is clear of pers	ea operator of impending diesel start. Dissonnel.	spatches operator to	verify DG 1A HVAC Room	
CUE:				
As C-Area op	erator, acknowledge that a start of DG1A	is impending and I	OG 1A HVAC Room is clear.	
COMMENTS				
		SAT	UNSAT	

JPM NUMBI	ER: NRC 4	F	EVISION:0
*8.1.3.8	Start Diesel Generator 1A (1B) (1C) with the 1H13-P877 (P601).	e DG 1A (1B)	(1C) Control switch on
STANDARD:			
Starts DG 1A	using Control switch on 1H13-P877 and observ	es DG 1A light	ON.
CUE:			
COMMENTS			
		SAT	UNSAT
8.1.3.9	Verify the Fuel Oil Transfer Pump starts at 1H	13-P877 (P601), or locally.
STANDARD:			
Observes RED	light ON for 1DO01PA.		
CUE:			
COMMENTS			
		SAT	UNSAT

ER: NRC 4			REVISION:0_
Verify DG 1A (1B) (1C) Room or locally.	Ventilation l	Fan running on	1H13-P801 (P800),
1			
D light ON for 1VD01CA.			
S:			
		SAT	UNSAT
Verify DG 1A (1B) (1C) Hx Ou		7063A(B) (1SX	(006C) open.
D light ON for 1SX063A.			
S:			
		SAT	UNSAT
	Verify DG 1A (1B) (1C) Room or locally. D light ON for 1VD01CA. Verify DG 1A (1B) (1C) Hx Outline D light ON for 1SX063A.	Verify DG 1A (1B) (1C) Room Ventilation I or locally. D light ON for 1VD01CA. Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX D light ON for 1SX063A.	Verify DG 1A (1B) (1C) Room Ventilation Fan running on or locally. D light ON for 1VD01CA. SAT Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX063A(B) (1SX in the content of the content

JPM NUMB	BER: NRC 4		REVISION:0	
8.1.3.12	IF SX pump 1SX01PA(B)(C) starts, THEN Verify Plant Service Water (WS) isolation valve 1SX014A (B) (C) closed.	to Shutdown Serv	ice Water (SX) header	
STANDARD):			
Verifies GRE	EN light ON for 1SX014A if 1SX01PA sta	arts		
CUE:				
COMMENT	S:			
1SX01PA sh	ould not start due to this evolution.	SAT	UNSAT	
8.1.3.13	Verify DG 1A (1B) (1C) frequency 58.8-	61.2 Hz.		
STANDARD);			
Verifies DG	1A frequency 58.8 to 61.2 on Output Frequ	ency meter.		
CUE:				
COMMENT	S:			
		SAT	UNSAT	

JPM NUMI	BER: NRC 4	REVISION:0
8.1.3.14		g indications) DG1A (1B) (1C) voltage, panel meter bint 4015 (4015) (4015), GETARS 3911
STANDARI	D:	
Verifies DG	1A voltage < 4200 volts using panel	meter 4000, computer point 4015, or GETARS 3911.
CUE:		
COMMENT	'S:	
		SATUNSAT
*8.1.3.15	Verify remote speed control by 1A (1B) (1C) Governor contro	varying DG 1A (1B) (1C) frequency with DG switch on 1H13-P877 (P601)
STANDARI):	
Alternately s increase and		he Governor Control Switch. Observes frequency
CUE:		
COMMENT	S:	
		SATUNSAT

JOB PERFORMANCE MEASURE WORKSHEET

IDM NIIMDED. NOCA

	REVISION: 0
*8.1.3.16	Verify remote voltage control by varying DG 1A (1B) (1C) voltage with DG 1A (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P601)
STANDARD	
Alternately se no change in v manual control	lects "INCREASE" and "DECREASE" on the voltage regulator control switch. Observes voltage and reports to CRS that the voltage regulator is malfunctioning (not responding to bl).
CUE:	
	owledge the malfunctioning voltage regulator and direct that the diesel remain running until estigate the problem.
COMMENTS	
	SATUNSAT
8.1.3.17	Locally check cylinder test valves and handhold covers for leakage and tighten as necessary.
STANDARD	
Directs C Are	a operator to check cylinder test valves and handhole covers for leakage.
CUE:	
COMMENTS	
	SATUNSAT

JPM NUMBER: NRC 4	REVISION:0
TERMINATING CUES:	
DG 1A is operating at rated frequency and post-start	verifications are complete.
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4	REVISION: 0
	TELL TROTOIT.

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
264000	A4.04		3.7

JOB PERFORMANCE MEASURE OPERATOR COPY

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.: 1
Diesel Generator 1A has been started and paralleled wih the RAT. The ERAT is tagged out. A small leak has caused drywell pressure to increase to 2.3 psig. Subsequently, 4160 vac bus 1A1 experiences a momentary (approximately 3 seconds) voltage drop to 3100 volts. Describe the response of diesel generator 1A to this sequence of events
ANSWER:
The diesel generator output breaker would OPEN on the LOCA signal but would remain running. The momentary drop in bus voltage WOULD NOT cause the output breaker to reclose on the bus. (There is a time delay of 15 seconds)
REFERENCE(S):
CPS No. 3506.01
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

QUESTION NO.: 2

The plant is at 100% power with all equipment normal except that 1A Diesel Generator is tagged out for turbocharger repair. Annunciator "HIGH/LOW TEMP DG ROOM 1B" (5052-4A) alarms. The operator notes that the temperature in the 1B Diesel Generator room is 48°F and decreasing at approximately 1°F. per minute. What action(s) must be taken by the control room operators?
ANSWER:
Declare the 1B Diesel Generator inoperable and attempt to restore DG Room Make Up Heater.
REFERENCE(S):
CPS ITS Section 3.8.1 Action E CPS No. 5052.04, page 1 (4A) CPS No. 3403.01
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
264000 264000	K4.08 G2.1.12		3.7 4.0
204000	02.1.12		4.0
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		,	
ORIGINATED/REVISED BT.			
REVIEWED BY:		/	
APPROVED BY:		1	
	Supervisor - Requalification and Operations Training		

JPM NUMBER: NRC 5	REVISION:0_
TASK TITLE: Equalize Around and Open MSIVs per CPS No. 4411.0	9
TASK NUMBER: 015200C643	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance X	_
Classroom Simulator X Plant	
APPROXIMATE TIME FOR COMPLETION: 30 minutes	
Prepared/Revised by: Date:	
Reviewed by: Date:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM	NI	JM	BE	R.	NR	C	5

REVISION. 0

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

Any IC with the reactor shutdown, RPV pressurized, and MSIVs/MSL drains shut. Establish/verify a condenser vacuum pump is lined up and running on the Main Condenser. Reset the Main Turbine and close Turbine Drains.

TASK STANDARDS:

Operator actions performed per CPS No. 4411.09

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 4411.09, RPV PRESSURE CONTROL SOURCES

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

A loss of IA resulted in closure of the MSIVs. IA has been recovered and EOP-1 has been entered. The CRS directs you to reopen the MSIVs per CPS No. 4411.09 to assist in RPV pressure control

START TIME:	-	444	-			
THE PARTY OF THE P	CALL Y	A.D.A.	TERA	E77		
	7% B /A	D 24	8 8 19/8	B1.7		

JPM NUMBI	ER: NRC 5	REVISION: 0
		PERFORMANCE INFORMATION
letters. Failure	e to meet the	with a asterisk (*) to the left of the step number and appear in BOLDED standards for a critical step constitutes failure of the Job Performance steps is assumed unless denoted in the comments section of the JPM.
		PERFORMANCE STEPS
JPM TITLE:	Equalize Are	und and Open MSIVs per CPS No. 4411.09
		NOTE
		al guidance for normal operating modes is in CPS No. 3101.01, TEAM (MS, IS & ADS).
2.2.2 a	IF Thi	s step was entered from EOP-2, EOP-3, or EOP-4,
	THEN 1)	OK to defeat isolations per CPS No. 4410.00C007, DEFEATING RPV PRESSURE CONTROL SYSTEM INTERLOCKS.
	2)	OK to exceed 100°F/hr cooldown.
2.2.2 b	Reset any c	leared GROUP 1 isolations.
STANDARD:		
Determines the reset.	at no pressur	e control system interlocks need to be defeated and that Group 1 isolation is
CUE:		
COMMENTS		
		SATUNSAT

JPM NUMBI	ER: N	REVISION:0_
2.2.2 c	Regai	ordless if Circ Water (CW) is available or not: OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to BYPASS to clear Gr 1 interlocks.
	1)	Establish vacuum per CPS No. 3112.01, CONDENSER VACUUM (CA), or
	2)	If vacuum cannot be established, open 1CA007, Condenser Vacuum Breaker Valve.
2.2.2 d	To av	void inadvertent bypass valve operation, maintain Pressure Set Point at least 50 psig V pressure.
STANDARD:		
Determines th	at Con	denser vacuum is already established
CUE:		
COMMENTS	:	
		SATUNSAT

JPM NUMB	ER: NRC 5 REVISION: 0
*2.2.2 e	Open 1B21-F098A(B, C, & D), Main Steam Shutoff Valves.
STANDARD	
Takes handsw	vitches for 1B21-F098A(B,C,&D) to OPEN and observes RED light ON for each valve.
CUE:	
COMMENTS	3:
	SATUNSAT
*2.2.2 f	Open 1B21-F028A(B, C, & D), Main Steam Line Outbd MSIVs. OK to open following drains to assist in the attempt. 1B21-F067A(B, C, & D), MSL Outbd MSIV Before Seat Drn Vlvs. 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv. 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
STANDARD	
Takes handsv	vitches for 1B21-F)28A(B, C, & D), to OPEN and observes RED light ON for each valve.
CUE:	
COMMENTS	S:
May open dra	ain valves to assist in equalizing
	SATUNSAT

JPM NUM	BER: 1	NRC 5 REVISIO	N:0_
*2.2.2 g	Equa	nalize around the MSIVs by opening:	
	1)	1B21-F016, MS Drn & MSIV Byp Inbd Isol Valve.	
	2)	1B21-F019, MS Drn & MSIV Byp Outbd Isol Valve. 1B21-F020, MSIV Byp Vlv For MS Line Warm Up.	
STANDAR	D:		
Takes hands	switches	s for 1B21-F016, 19, and 20 to OPEN and observes RED light ON	for each valve.
CUE:			
COMMENT	rs:		
		SATUNS	AT

JPM NUME	BER: NRC 5	REVISION: _0_
*2.2.2 h	 1B21-F033, Inbd MSIV 1B21-F068, Outbd MSIV 1B21-F069, Outbd MSIV 1B21-F070, MS Low Po 1B21-F071, MS Low Po 	assist in the attempt. Sints Drn Shutoff Valve. Before Seat Warmup Drn Valve. Before Seat Warmup Drn Valve. V Before Seat Warmup Drn Vlv. V Before Seat Norm Drn Vlv. Sint Warm Up Drn Vlv.
STANDARI Establishes <	(TG needs to be reset to	
CUE:	'S:	
		SATUNSAT

JPM MBER: NRC 5	REVISION: 0				
*8.2.2.2 i Open 1B21-F022A(B, C, & D), Main S	Steam Line Inbd	MSIVs.			
STANDARD:					
Takes handswitches for 1B21-FO22A(B, C, & D) to OPEN, and observes RED light ON for each valve.					
CUE:					
COMMENTS:					
	SAT	UNSAT			
TERMINATING CUES: MSIVs are reopened. STOP TIME:					

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 239001
 A4.01
 4.0

QUESTION NO.:
The plant operating at 96% power. A C&I tech is performing a surveillance on Group One closure signals and currently has one of the channels tripped to perform the surveillance. The plant experiences a transient that results in the other channel tripping and causing an MSIV closure and a resultant SCRAM. The operators perform the immediate actions for the SCRAM. When the turbine generator tripped off line, one of the bypass valves came open about 50% and stuck open. The MSL pressure dropped quickly (<300 psig), while reactor vessel pressure is being controlled by the relief valves 51C and 51D.
Determine how you would recover (unisolate and open MSIVs) from this situation.
ANSWER:
Shut the open bypass valve, Open all the MSIVs except the inboards, Bypass the Inboard MSIVs and reduce dP to less than 100 psid, open Inboard MSIVs
REFERENCE(S):
CPS No. 3101.01, MAIN STEAM (MS, IS & ADS)
RESPONSE:
SATUNSAT

QUESTION NO.: 2	
You are the CRS and the plant has been operating at near rated power for se shift, the BCRO announced that temperatures in the main steam line tunnels and slowly increasing. He now reports that main steam line tunnel temperature increasing. What action(s) should the control room crew take as a result of the state of	were approximately 140°F ure is 160°F and still slowly
ANSWER:	
Initiate a reactor scram Initiate Group 1 (MSLs and Drains) and Group 4 (RWCU) isolations. (A Group 1 and 4 isolation should have occurred at 156°F)	
REFERENCE(S):	
CPS No. 5067.01D CPS No. 5067.02F	
RESPONSE:	
SAT_	UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
239001 239001	A2.03 K4.01			4.2 3.8
JTA:				
TASK NUMBER	,			
ANSWER TIME: Min				
ORIGINATED/REVISED BY:		1		
REVIEWED BY:		/		
APPROVED BY:		/	PRODUCE AND THE ROOM AND A TOTAL	
	Supervisor - Requalification and Operations Training			

JPM NUMBER: NRC 6	REVISION: 0
TASK TITLE: Shutdown RCIC - Initiation Signal Clear	
TASK NUMBER: 011217C005	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	X
Classroom Simulator X Plan	nt
APPROXIMATE TIME FOR COMPLETION: _5_ minutes	
Prepared/Revised by:	Date:
Reviewed by: Instructor - Operations	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 6	REVISION:0
READ TO THE O	PERATOR
I will explain the initial conditions, which step(s) to simul When you complete the task successfully, the objective of	
SIMULATOR SET-UP CONDITIONS:	
100% power with RCIC operating in the tank to tank me	ode.
TASK STANDARDS:	
RCIC shutdown per CPS No. 3310.01, Section 8.1.6	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUI	REMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3310.01, REACTOR CORE ISOLATION CO	OLING (RI), Section 8.1.6
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE:	
RCIC is currently operating in tank to tank mode. The 0 3310.01.	CRS directs you to shutdown RCIC per CPS No.
START TIME:	

JPM NUN	MBER: NRC 6	REVISION: 0		
Services (AS) Million Million (ASIA (ASIA (ASIA) ASIA (ASIA)	PERFORMANCE IN	FORMATION	The Color and th	
letters. Fai	ps are denoted with a asterisk (*) to the left of ilure to meet the standards for a critical step of the sequence of steps is assumed unless denoted.	onstitutes failure of	the Job Performance	
	PERFORMANC	E STEPS		
JPM TITL	E: Shutdown RCIC - Initiation Signal Clear			
	NOTE			
	Do not secure or place RCIC in manual ov		ed to per the	
	EOPs, or by at least two independent indication a) misoperation in automatic mode is con-			
	b) adequate core cooling is assured.	,		
	Minimize time on RCIC Min flow per Limi	tation 6.2.5.		
8.1.6.1	If necessary, depress RCIC SEAL IN RE	SET push-button.		
STANDAF	RD:			
Determines	s RESET is not necessary. WHITE light is ext	inguished.		
CUE:				
COMMEN	TTS:			
		SAT	UNSAT	

JPM NUMBER: NRC 6	REVISION:0
*8.1.6.2 Shut (if open) 1E51-F022, RCIC Pmp First Test Valve To Stor Tank.	
STANDARD:	
Takes handswitch for 1E51-F022 to CLOSE and observes GREEN light ON.	
CUE:	
COMMENTS:	
SAT	UNSAT
*8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Valve.	
STANDARD:	
Takes handswitch for 1E51-F095 to SHUT and observes GREEN light ON.	
CUE:	
COMMENTS:	
SAT	UNSAT

JPM NUMI	BER: NRC 6		REVISION:0			
*8.1.6.4	Trip RCIC turbine from 1H the RCIC TURBINE REMO					
STANDARI):					
	IC turbine by depressing the trip e speed decreasing	pushbutton and observes G	REEN light ON for trip/throttle			
CUE:						
COMMENT	S:					
		SAT	UNSAT			
*8.1.6.5	Shut (if open) 1E51-F059, RCIC Pmp Second Test V	Valve To Stor Tank.				
STANDARD):					
Takes hands	witch for 1E51-F059 to close and	d observes GREEN light Of	٧.			
CUE:						
COMMENT	S:					
		SAT	UNSAT			

JPM NUM	BER: 1	REVISION: 0
*8.1.6.6		verify shut 1E51-F045, CIC Turb Stm Supp Shutoff Valve.
STANDAR	D:	
Takes hand	switch fo	r 1E51-F045 to CLOSE and observes GREEN light ON.
CUE:		
COMMEN	TS:	
		SATUNSAT
8.1.6.7	After	-F005 is normally closed and opens as required by a level signal from the ne exhaust drain pot. 1E51-F045 closes, the following valves open automatically: 1E51-F004, RCIC Turb Exh Drn To RF First Isol VIv. 1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve. 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.
STANDAR	D:	
After 1E51- each valve.	-F045 is \$	SHUT, verifies 1E51-F004, F025, and F026 OPEN by observing RED light ON for
CUE:		
COMMEN	TS:	
		SATUNSAT

JPM NUMI	IBER: NRC 6	REVISION:0
8.1.6.8	Verify following valves shut:	
	 a) 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Va b) 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr F 	
STANDARI	LD:	
Verifies 1E5	51-F013 and 1E51-F019 SHUT by observing GREEN light ON f	or each valve.
CUE:		
COMMENT	TS:	
	SAT	UNSAT
8.1.6.9	Reset the RCIC Turbine Trip & Throttle Valve as follows: a) Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch RCIC Turbine Trip & Throttle Valve. b) Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).	
STANDARI	ID:	
	switch for 1E51-C002 to CLOSE and verifies GREEN light ON. to OPEN and verifies RED light ON.	Takes handswitch for
CUE:		
COMMENT	TS:	
	SAT	UNSAT

JPM NUMBER: NRC 6	REV	VISION:0
8.1.6.10 Stop the Gland Seal Air Compressor		
STANDARD:		
Takes handswitch for Gland Seal Compressor to STOP and o	bserves GREEN li	ght ON.
CUE:		
COMMENTS:		
	SAT	_UNSAT
8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb L	ube Oil Clr.	
STANDARD:		
Takes handswitch for 1E51-F046 to CLOSE and verifies GR	EEN light ON.	
CUE:		
COMMENTS:		
	SAT	UNSAT
8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 se	et to 600 gpm/AUT	°O.
STANDARD:		
Verifies 1E51-R600 set to 600 gpm and in AUTO.		
CUE:		
COMMENTS:		
	SAT	_UNSAT

JPM NUMBER: NRC 6	REVISION:0
TERMINATING CUES:	
RCIC is shutdown	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6 REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 217000
 A4.04
 3.6

JOB PERFORMANCE MEASURE OPERATOR COPY

l .	
causing dry	ith the 'B' TDRFP having been shutdown for troubleshooting, well temperature and pressure to increase to the point of a e as follows:
800 psig - 50 inches 2.5 psig 160°F	Slowly decreasing Slowly increasing Slowly increasing Slowly increasing
	lated. Why did RCIC trip and isolate AND what caused the
emperature values of the appressor to a ssure signal.	which caused the trip. The high temperature was caused by the auto start on an initiation signal because it had been shunt
	SAT UNSAT
	causing dry onditions are 800 psig - 50 inches 2.5 psig 160°F pped and iso ad isolation?

JOB PERFORMANCE MEASURE OPERATOR COPY

THIS IS A CLOSED BOOK QUESTION

OHESTION NO .

QUESTION NO.			
The plant is operating at rated conditions. mode. Current conditions are as follows:	RCIC has b	een operating and align	ned in the CST to CST
RCIC Steam Tunnel temperature	125°F	Slowly increasing	
RCIC Steam Tunnel delta T	30°F	Slowly increasing	
RCIC Equip. Area temperature	140°F	Slowly increasing	
RCIC Equip. Area delta T	22°F	Slowly increasing	
Suppression Pool temperature	87°F	Slowly increasing	
Suppression Pool level	feet	Slowly increasing	
What is the affect on RCIC due to these c	onditions?	1	
ANSWER:			
RCIC suction should have realigned to the	e Suppressio	n Pool.	
RCIC Suppr Pool Suction Valve, opens RCIC Storage Tank Suction Valve, closes RCIC Pmp First Test Valve to Stor Tank, RCIC Pmp Second Test Valve to Stor Ta Pump runs on minimum flow	closes		
REFERENCE(S):			
CPS No. 3310.01			
RESPONSE:			
		TAZ	IINSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
217000 217000	A2.01 A2.12			3.7 3.4
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY:		1		
REVIEWED BY:		/		
APPROVED BY:	Supervisor - Requalification and	1		
	Operations Training			

JPM NUMBER: NRC 7	REVISION: 0
TASK TITLE: Purge Primary Containment Using VG	
TASK NUMBER: 011261C505	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance X	
Classroom Simulator X Plant	
APPROXIMATE TIME FOR COMPLETION: 15 minutes	
Prepared/Revised by: Da	ite:
Reviewed by: Da	ite:
Approved by: Da	ite:

JPM NUMBER: NRC 7	REVISION:0		
READ TO T	HE OPERATOR		
	simulate or discuss, and provide the initiating cues. etive of this Job Performance Measure will be satisfied		
SIMULATOR SET-UP CONDITIONS:			
Any suitable IC with VG trains in standby and cont for 1VQ006A/B and 1VQ002A/B	ainment pressure < 2.6 psig. Remove tags and cover		
TASK STANDARDS:			
Primary Containment purged using SGTS per CPS	No. 3319.01		
TOOLS, EQUIPMENT, OTHER SPECIAL RE	QUIREMENTS:		
None			
PROCEDURAL/REFERENCES:			
CPS No. 3319.01, STANDBY GAS TREATMEN	T (VG), Section 8.2.5		
EVALUATOR INSTRUCTIONS:			
Amplifying cues are provided within the JPM steps they are not applicable to the task being performed annunciator(s) should be announced to the control known or expected.	in this JPM. When annunicators alarm, the		
INITIAL CONDITIONS AND INITIATING CO	UE:		
Due to increasing Containment pressure, the CRS of 1.68 psig using SGTS (VG) Train B.	directs you to hold Containment pressure less than		
START TIME:			

JPM NUMBER: NRC 7		REVISION: 0	
	PERFORMANCE	INFORMATION	
letters Failu	ire to meet the standards for a critical ste	of the step number and appear in BOLDED op constitutes failure of the Job Performance enoted in the comments section of the JPM.	
	PERFORMA	NCE STEPS	
JPM TITLE	: Purge Primary Containment Using Sta	ndby Gas Treatment (VG)	
	C	AUTION	
	SBGT should not be used if area be	eing ventilated is > 212°F.	
		NOTE	
	CNMT purge is <u>not</u> available if CN ≥ 2.6 psid. This interlock shall <u>not</u> (Actual setpoint 2.56 psid, SPDS r	be defeated to run VG fcr CNMT purge.	
8.2.5.1	Verify CNMT pressure < 2.6 psid by (above 1VG01YA/B switch) OFF.	observing HI CNMT PRESS white indicating light	
STANDAR	D:		
Verifies cor	ntainment pressure < 2.6 psid by observing	ng HI CNMT PRESS WHITE light OFF.	
CUE:			
COMMEN	TS:		
		SATUNSAT	

JPM NUMB	ER: N	RC 7	I	REVISION:0	
Notify Radiation Protection to verify 0PR03S or 0PR04S in service and Chemistry Department should be notified immediately after establishing flow.					
STANDARD	:				
Notifies RP to	o verify	OPR03S or OPR04S in service. Not	ifies Chemistry after	er establishing flow.	
CUE:					
As RP, cue th	nat OPR	03S is in service. As Chemistry, ack	nowledge establish	ing SGTS flow.	
COMMENTS	S:				
			SAT	UNSAT	
*8.2.5.3	Position the selected train's 1VG02YA(B), Fuel Building Isolation Damper control switch to CLOSE and verify:				
	a) 1VG02YA(B) closes. (if open)				
			Des Des Suction	Damper closes	
	b)	1VG04YA(B), SGTS TRN A(B)			
	c)	1VG05YA(B), SGTS TRN A(B) Fuel Bldg Suct Dmpr closes (if open)			
	d)	1VG06YA(B), SGTS TRN A (B	ECCS Rms Suct	Dmpr closes.	
STANDARD):				
Takes handsv 1VG05YB, a		r 1VG02YB to CLOSE and verifies G06YB.	GREEN light ON	for 1VG02YB, 1VG04YB,	
CUE:					
COMMENT	S:				
			SAT	UNSAT	

JPM NUMB	BER: NRC 7 REVISION: 0
	c NOTE
	In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.
Obtain	Shift/Assistant Shift Supervisors approval to perform the following step.
*8.2.5.4	Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.
STANDARD	D:
Requests per After receiving each damper	rmission to complete step 8.2.5.4 and open 1VQ006A and 1VQ006B. ing permission, takes handswitch for 1VQ006A/6B to OPEN and observes RED light for r.
CUE:	
As CRS, dire tags for 1VQ	rect that 1VQ006A and 1VQ006B. If asked, the WCS has temporarily lifted and remove Q006A/B
COMMENT	rs:
	e plant is currently in Mode 3, and the WCS has temporarily lifted and removed tags for
1VQ006 A/I	SATUNSAT

	NOTE
	Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.
*8.2.5.5	Place the selected train in service by starting its respective Exhaust Fan 0VG02CA(B).
STANDAR	D.
Takes hand	switch for 0VG02CB Exhaust Fan to START and observes RED light ON.
CUE:	
COMMEN	TS:
	SATUNSAT

PM NUMB	ER: NRC 7 REVISION:0
	NOTE
	The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.
	For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.
*8.2.5.6	If the white Permissive light is unlit (indicating less than 2.6 psid Containment pressure then open VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.
	then ope VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.
STANDARE Verifies WH	then ope VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE. TTE Permissive light is UNLIT and takes handswitch for 1VG01YB to PURGE and observed to the purge Isolation Damper by positioning its control switch to PURGE.
STANDARE Verifies WH	then ope VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE. TTE Permissive light is UNLIT and takes handswitch for 1VG01YB to PURGE and observed to the purge Isolation Damper by positioning its control switch to PURGE.
STANDARD Verifies WH RED light O	then ope VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE. TE Permissive light is UNLIT and takes handswitch for 1VG01YB to PURGE and observed.

JPM NUMBI	ER: NRC 7 REVISION: 0
	c NOTE
	In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, &3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.
	Shift/Assistant Shift Supervisors approval to perform the following step.
*8.2.5.7	When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
STANDARD	
When Contai	mission to open 1VR002A and 1VR002B when containment pressure becomes negative. nment pressure becomes negative, takes handswitch for 1VR002A and 1VR002B to OPEN RED light ON for each damper.
CUE:	
As CRS, dire	ect 1VR002A and 1VR002B be OPENED when containment pressure becomes negative.
COMMENT	S:
	SATUNSAT

PM NUMB	ER: NRC 7 REVISION: 0
*8.2.5.8	When Containment Purge with SGTS is no longer desired, close 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
STANDARD	
Takes handsv damper.	witch for 1VR002A and 1VR002B to CLOSE and observes GREEN light ON for each
CUE:	
Containment	purge using SGTS is no longer needed.
COMMENT	S:
	SATUNSAT
*8.2.5.9	Close 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypa dampers
STANDARI	D:
Takes hands damper.	switch for 1VQ006A and 1VQ006B to CLOSE and observes GREEN light ON for each
CUE:	
COMMEN	TS:

IPM NUMB	ER: NRC 7 REVISION: 0
*8.2.5.10	Close 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its handswitch to NORMAL.
STANDARD	
Takes handsw	vitch for 1VG01YB to NORMAL and observes GREEN light ON.
CUE:	
COMMENTS	S:
	SATUNSAT
8.2.5.11	Verify Chemistry has performed samples as required per CPS 919940.01, WEEKLY CHEMISTRY SURVEILLANCE LOG and ODCM 3.2.2/ TBL 3.4-1 ITEM B prior to shutdown.
STANDARD) :
Contacts Che	emistry to verify samples have been performed per CPS 919940.01
CUE:	
Samples have	e been performed per CPS 919940.01
COMMENT	S:
	SATUNSAT

ER: NRC 7 REVISION: 0
NOTE
1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when the Exhaust Fan is stopped.
Shutdown the operating SGTS train by stopping its respective Exhaust Fan 0VG02CA(B) by returning its control switch to AUTO.
):
witch for 0VG02CB to AUTO and observes GREEN light ON.
rs:

in the charcoal absorber has decreased t needed. (Refer to section 8.2.2.2 for sh	
Start Cooling Fan, 0VG03CA(B), and	verify that the following dampers open:
a) 0VG03YA(B), SGTS TRN A(
b) 0VG04YA(B), SGTS TRN A(B) Clg Fan 3CA(B) Exh Damper
c) 0VG05YA(B), SGTS TRN A((B) Exh Fan (Stack) Damper
ND:	
Iswitch for 0VG03CB to AUTO and obser VG03YB, 0VG04YB, and 0VG05YB.	ves RED light ON. Verifies RED light ON for
NTS:	
	SATUNSAT
1	continue to operate the fan until such the in the charcoal absorber has decreased to needed. (Refer to section 8.2.2.2 for she start Cooling Fan, 0VG03CA(B), and so ovG03YA(B), SGTS TRN A(B), SGTS TRN A(CO) OVG04YA(B), SGTS TRN A(CO) OVG05YA(B), SGTS TRN A(CO) OVG05YA(B), SGTS TRN A(CO) OVG05YA(B), SGTS TRN A(CO) OVG03CB to AUTO and observed by G03YB, 0VG04YB, and 0VG05YB.

PM NUMBI	ER: NRC 7 REVISION: 0
*8.2.5.14	Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed)
GREEN light	vitch 1VG02YA to AUTO and verifies RED light ON for 1VG04YB. Verifies 1VG04YA
CUE:	S:
	SATUNSAT
8.2.5.15	If desired, establish Containment Building ventilation/purge per CPS No. 3408.01, CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ).
STANDAR	D:
Requests di	rection to establish Containment Building ventilation.
CUE:	
Will not be	established at this time.
COMMEN	TTS:
	SATUNSAT

JPM NUMBER: NRC 7	REVISION:0
TERMINATING CUES:	
Containment Purge using SGTS has been completed.	
STOP TIME:	_

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 261000
 A4.04
 3.4

JOB PERFORMANCE MEASURE OPERATOR COPY

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.:		
Given the following conditions:		
 A complete Standby Gas Treatment System initiation signal of Both Standby Gas Treatment Trains started as designed. The "A" Standby Gas Treatment Train was manually secured. The "B" Standby Gas Treatment Train is currently operating. 	d by the Bo	
What condition will automatically start the "A" Standby Gas Treatn	nent Train?	
ANSWER:		
Low flow in the operating train (Standby Gas Treatment Train).		
REFERENCE(S):		
CPS No. 3319.01		
RESPONSE:		
S	SAT	UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

The plant was Exhaust radia Purge (CCP).	operating at 100% power when an accident occurred that continue is currently 120 mr. Describe how this condition affects	aused a radiation release. CC s Continuous Containment
ANSWER:	Containment Purge fans should have tripped and CCP should	THE RESIDENCE OF THE PARTY OF T
1 POOCA 1		Chut
VRUUOAI	CNMT Bldg Outbd Isol VIv	Shut
VR006A1		Shut
IVR006B	CNMT Bldg Inbd Isol Vlv	
		Shut

IA Sig Inbd Isol VIv For Dmpr 1VR04Y

IA Sig Inbd Isol VIv For Dmpr 1WO521

REFERENCE(S):

1VR035

1VR040

CPS No. 3319.01 CPS No. 3404.01

CP3 No. 3408.01

RESPONSE:

SAT	UNSAT
OUI	C1101

Shut

Shut

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	O SRO
261000 261000	K4.01 K6.04		3.8 3.1
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY: _		/	
REVIEWED BY:		/	
APPROVED BY:	Supervisor - Requalification and	1	
	Operations Training		

JPM NUMBER: NRC 8	REVISION:0_
TASK TITLE: Startup a Steam Bypass Hydraulic Power Un	iit
TASK NUMBER: 041248C517	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance X Actual Performance	e
Classroom Simulator	Plant X
APPROXIMATE TIME FOR COMPLETION: 20 minut	tes
Prepared/Revised by	Date:
Reviewed by:	Date:
Approved by: Supervisor - Operations Training	Date:

JPM NUMBER: NRC 8	REVISION:0_
READ TO TH	IE OPERATOR
I will explain the initial conditions, which step(s) to s When you complete the task successfully, the object	simulate or discuss, and provide the initiating cues. ive of this Job Performance Measure will be satisfied
SIMULATOR SET-UP CONDITIONS:	
None	
TASK STANDARDS:	
Operator actions performed per CPS No. 3105.04	
TOOLS, EQUIPMENT, OTHER SPECIAL REC	QUIREMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3105.04, STEAM BYPASS AND PRESS	URE REGULATOR (SB)
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CU	E:
A plant is currently in an outage. The CRS directs y The pump is being started on a daily basis. All prere	
START TIME:	

JPM NUMBI	ER: NR	C 8		REVISION:0_
	The same later was and a page and	PERFORMAN	ICE INFORMATION	
letters. Failure	e to meet	ed with a asterisk (*) to the the standards for a critical e of steps is assumed unle	l step constitutes failure	
Marie Other Anth-Andre Steve Offer Article Steve (Add.) Albert of		PERFOR	MANCE STEPS	
JPM TITLE:	Startup a	Steam Bypass Hydraulic	Power Unit	
			NOTE	
	valves	ollowing startup refers to the operation of the St the will be per the plant star	eam Bypass and Pressur	re Regulation (SB)
	Tempe	erature of the fluid must b	e ≥ 90°F before the pun	nps are started.
8.1.1 a)	<u>IF</u> :	Fluid temperature is < 9	0°F,	
	THEN:	Turn on space heaters 12 temperature.	A and/or 1B to increase	fluid
b)	<u>IF</u> :	Temperature is ≥ 90°F,		
	THEN:	Verify/Place space heater	s 1A and 1B in Auto.	
STANDARD:				
Simulates turni	ing space	heater 1A and/or 1B ON		
CUE:				
Switch is in Of	N			
COMMENTS: If temperature		verifies space heaters 1A a	and 1B in Auto. SAT	UNSAT

BER: N	NRC 8		REVISION: _0_
		NOTE	
shu	tdown, the hydraulic pumps	must be filled with oil before	c pump or extended ore starting in order
<u>IF</u> :			suction piping, the hydraulic
THE	N:Perform the following step	os to fill the pump(s):	
			per CPS
	2) Clean the area around the	e case vent connection.	
			igh the case vent
	4) Re-install the case vent co	onnection	
	5) Remove the tagout that v	was installed in step 1.	
Open	1C85-FV01, Supply HDR	Bypass Valve one-half to	urn
);			
		urning the valve handwhee	l in the
ndwheel	is turning.		
S:			
		SAT	UNSAT
	Foll shu to p IF: THE CLOCKY	IF: This will be a startup following or an extended shute THEN: Perform the following step 1) Isolate and remove from No. 1014.01, SAFETY 7. 2) Clean the area around the connection located on to 4) Re-install the case vent considered the tagout that we have the tagout that we considered the tagout the tagout the tagout the tagout the tagout the tagout that we considered the tagout that we can be tagout the tagout the tago	NOTE Following maimenance on the suction piping, the hydraulis shutdown, the hydraulic pumps must be filled with oil before to prevent damage to the pumps. IF: This will be a startup following maintenance on the pump or an extended shutdown. THEN:Perform the following steps to fill the pump(s): 1) Isolate and remove from service the EHC pump(s) No. 1014.01, SAFETY TAGGING. 2) Clean the area around the case vent connection. 3) Fill/verified filled the EHC pump(s) with fluid through connection located on top of the pump housing. 4) Re-install the case vent connection 5) Remove the tagout that was installed in step 1. Open 1C85-FV01, Supply HDR Bypass Valve one-half to be chockwise direction.

JPM NUMBER: NRC 8	R	EVISION:0_
*e) START Hydraulic Pump 1A (1B) by placi	ng control switc	h to RUN.
STANDARD:		
Simulates placing Hydraulic Pump 1A control switch to RUN	N	
CUE:		
Switch is in RUN		
COMMENTS:		
	SAT	UNSAT
f) Verify pump discharge pressure increases		
STANDARD:		
Verifies pump discharge pressure increasing		
CUE:		
Pressure is increasing		
COMMENTS:		
	SAT	UNSAT

JPM NUMI	BER: N	JRC 8		REVISION:0_
g)	<u>IF</u> :	Motor current > 50 amps,		
	THE	N:Shut slightly 1C85-FV01, Supcurrent amps.	ply HDR Bypass Val	ve to reduce motor
STANDARI):			
Checks moto	or curren	t < 50 amps		
CUE:				
Motor curren	nt is 40 a	umps		
COMMENT	S:			
			SAT	UNSAT
*h)		urize system by <u>slowly</u> opening taneously <u>slowly</u> shutting 1C85		
STANDARI) :			
COUNTERC	CLOCKY	usly slowly OPENING 1C85-FV WISE direction, and slowly SHU OCKWISE direction.		
CUE:				
For each valv	ve cue, t	he valve handwheel is turning, the	en, the valve handwh	neel has stopped turning.
COMMENT	S:			
			SAT	UNSAT

JPM NUMBER: NRC 8	REVISION:0_
i) <u>IF</u> : Pump discharge pressure is	not between 1600 - 1650 psig,
THEN: Adjust the compensator of within the band.	on the pump as necessary to maintain pressure
STANDARD:	
Verifies pump discharge pressure is between 160	0 - 1650 psig
CUE:	
Pressure is 1625 psig	
COMMENTS:	
	SATUNSAT
j) Place Control Switch for Hydraul	lic Pump not started in AUTO.
STANDARD:	
Simulates placing the control switch for Hydrauli	ic Pump 1B in AUTO.
CUE:	
Switch is in AUTO	
COMMENTS:	
	SATUNSAT

JPM NUMBER: NRC 8	REVISION:0_
NOTE	
Step k is not required if the system was stored or the standby pump is unavailable.	arted up for testing during a outage
k) Perform Section 8.2.5 Testing Pumps Auto	o Start Features.
STANDARD:	
No action. System was started for testing.	
CUE:	
COMMENTS:	
	SATUNSAT
NOT	E
Fuller's Earth Filter System should be in	operation as much as possible.
l) If desired place the Fuller's Earth Filter in	service per section 8.2.3.
STANDARD:	
No action.	
CUE:	
The Fuller's Earth Filter system will not be put in operation	an an
COMMENTS:	711.
COMMENTS.	SAT LINGAT
	SATUNSAT

JPM NUMBER: NRC 8	REVISION: 0
TERMINATING CUES:	
The 'A' Steam Bypass HPU has been started for testing.	
STOP TIME:	_

CLINTON POWER STATION JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
241000	A4.06		3.9

JOB PERFORMANCE MEASURE OPERATOR COPY

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.:	1		
The plant is operating at full po	ower. The following parameters/in	ndications and tr	ends are observed:
RGLTR ERROR indicat MODULE 1(2,3) TRIPI	PED indicating light on 1H13-P63	Increasing Increasing Increasing Closing 37 illuminated	
What has occurred to cause th	is transient?		
ANSWER:			
Pressure Regulator failure LO	W		
REFERENCE(S):			
EHC System System Flow Pat	h		
RESPONSE:			
		SAT	UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

QUESTION NO.: 2
The plant is operating with one of the Steam Bypass & Pressure Control pressure regulators in TEST when the remaining pressure regulator fails HIGH. What is the expected plant response assuming no operator action. Plant pressure begins to decrease due to the Bypass Valves opening.
Follow-up question:
What SB&PC control can be used to close the Bypass Valves?
ANSWER:
Steam Bypass Valves begin to OPEN causing Reactor Pressure to Decrease (TCVs should CLOSE in response but the reactor may scram on low pressure in RUN mode)
Maximum Combined Flow Limiter
REFERENCE(S):
EHC System Signal Flow Path
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
241000 241000	A2.01 A2.03			3.7 4.2
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY: _		1		
REVIEWED BY:		1		
APPROVED BY:		1		
	Supervisor - Requalification and Operations Training			

JPM NUMBER: NRC 9	REVISION: 0
TASK TITLE: Respond to a Failed Transponder	
TASK NUMBER: 011201C529	
APPLICABILITY: RO SRO _X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance X Actual Performance	e
Classroom Simulator	Plant X
APPROXIMATE TIME FOR COMPLETION: 45 minute	es
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

Not Applicable.

TASK STANDARDS:

Rod Drive bypassed, directional control valves disarmed, and RCIS reset per CPS No. 3304.02

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RCIS)

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided wirnin the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. The CRS directs you to bypass control rod 20-25 and reset RCIS.

START TIME:

JPM NUM	BER: NRC	9		REVISION: _	0
		PERF	ORMANCE INFORMATION	V	Service (Service Service Servi
letters. Fail	ure to meet the	he standards fo	k (*) to the left of the step number a critical step constitutes failured unless denoted in the comment	re of the Job Perform	mance
		1	PERFORMANCE STEPS		
JPM TITLE	E: Respond to	a Failed Tran	sponder		
			NOTE		
	The req		of the control rod/drive is specif	fied in ITS LCOs 3.	1.3
	Only or	ne rod can be b	ypassed at a time at the RGDC.		
	The by	passed rod's no	ormal drive motion is inhibited w	hen bypassed.	
8.2.10.1	<u>IF</u>		nsponder card is present, and RC at conditions/surveillances,	CIS is needed to sup	port
	THEN	To prevent	inadvertent rod motion when re-	setting RCIS,	
		a) First:	Perform section 8.2.10.3 to ele directional control valve.	ctrically disarm the	
		b) Second:	Perform section 8.2.10.2 to by transponder card & reset RCIS		

JPM NUMBI	ER: NRC 9	REVISION:0
	NOTE Electrically disarming a second INOP control re	od will shut down RCIS.
8.2.10.3	To electrically disarm the directional control valve as governed by ITS LCO 3.1.3, or for Transpond	게 되는 그리고 그리고 있다. 그리고 있는 것이 되었다면 그 아이를 보고 있다면 하는데 이번 이번 그들이 되는데 되었다면 하는데 하는데 그리고 되었다.
*a)	Remove the amphenol connectors, and place (control valves disconnected at the transponder control rod drive(s): • JIE (insert exhaust) • JWE (withdraw exhaust) • JWS (withdraw supply) • JIS (insert supply)	
STANDARD		
	ning cover on transponder card box and removing plates placing Caution Tags on the directional contra	
CUE:		
Amphenol cor	nnectors are removed and caution tags placed.	
COMMENTS		
If desired, use	picture and drawing of the inside of the transpond	er card box. AT UNSAT

JEMI NUMB	ER: NRC9 REVISION: 0
b)	To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
	 Clear CAUTION TAGS Reconnect the amphenols to the transponder card.
STANDARD	
Continues to	3.2.10.2
CUE:	
COMMENTS	
	SATUNSAT
8.2.10.2 * a)	To bypass the directional control valves for the first INOP control rod, or for Transponder Card failures: Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card faulure location will have an illuminated area for the Transponder that has a fault.
STANDARD	
Locates rod 2	0-25 on RGDC Fault Map Legend.
CUE:	
After rod iden	tified, cue that area is illuminated. If the wrong rod is identified, cue that the area is NOT
COMMENTS	
	SATUNSAT

JPM NUMBER: NRC 9					RE	VIS	ION		0		
* b) Using the legend data on t values for the drive to be d						f the le	gend	, ide	ntif	y the	e binary
STANDARD:											
Identifies the binary values for rod 20-25	IDI	ENT	IFIE	D:				_			
CUE:	AC	TUA	AL:	00	0111	, 0100	00				
COMMENTS:											
					SAT			U	NSA	т_	**************************************
* c) On the analyzer card of th TOGGLE SWITCHES (1 found on the Fault Map L	= Sw	itch									
Simulates setting toggle switches either up											
the Fault Map Legend	X4	X3	X2	X1	X0		Y4	Y3	Y2	Y1	Y0
CUE:											
Toggle switch up (or down)	0	0	1	1	1		0	1	0	0	0
COMMENTS:	D	D	U	U	U		D	U	D	D	Ь
			S	АТ			UN	SAT			

JPM NUMBER: NRC 9	REVISION:0
 d) Have a second licensed operator verify that the conselected. 	rect rod identity is
STANDARD:	
Requests that a second licensed operator verify the correct rod ide	entity is selected.
CUE:	
I acknowledge that you would have a second licensed operator verevaluator I cannot verify that selection.	rify the rod selection but as an
COMMENTS:	
SA	TUNSAT
* e) Position the rod BYPASS toggle switch "up" to	bypass the rod.
STANDARD:	
Simulates placing the rod BYPASS toggle switch "up"	
CUE:	
Switch is UP	
COMMENTS:	
SAT	UNSAT

JPM NUMBER: NRC 9		REVISION: 0
8.2.9.3 To reset RCIS a) Verify POWE If found to be	R GATE breaker CB2 is ON. OFF, then with SS/ASST.SS permitation may need to be checked permitation.	mission, place breaker CB2 to ON. er 5.0 Prerequisites.
STANDARD:		
Verifies POWER GATE brea	er CB2 is ON.	
CUE:		
If breaker is OFF, then as SM	CRS cue that CB2 can be CLOSI	ED or taken to ON.
COMMENTS:		
If Power Gate breaker is OFF	and the operator has to switch to	ON, step becomes critical.
	SAT_	UNSAT
[18] [18] V. T. (18] M. M. H. H. J. H. H. H. H. H. W. H. W. H.	GDS STATUS INOPERATIVE INOPERATIVE, SCAN ERRO	E RESET pushbutton in 1H13- OR, and MASTER ERROR lights
STANDARD:		
Simulates depressing RGDS S	tatus Inoperative Reset pushbutto	on.
CUE:		
Inoperative, scan error, and m	aster error lights are extinguished	
COMMENTS:		
	, SAT_	UNSAT

JPM NUMB	ER: NRC 9	REVISION:	0
c) 8.2.9.4		RCIS does <u>not</u> properly RESET after the initial attempt in 'b above, Wait ~ 20 seconds before trying to RESET the system a second blow. Shas been reset, perform an OD-7 Option 2 (or Option 4) and od position information.	ond
STANDARD			
Requests an (DD-7 Option 2	2	
CUE:			
Rod positions	have been co	ompared to previous rod position information.	
COMMENTS	S:		
		SATUNSAT	
g)	Depress DR was bypasse	RIVE BYPASSED pushbutton to display on the OCM that the sed	correct rod
STANDARD			
Simulates dep	oressing Drive	e Bypassed pushbutton	
CUE:			
OCM display	indicates the	correct rod.	
COMMENTS	S:		
		SATUNSAT	

JPM NUMB	ER: NRC 9 REVISION: 0
	CAUTION
	In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.
h)	Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INVALID DRIVE" position, and provide information about the possible effect of using gang mode.
STANDARD	
Simulates place	cing Caution Tags on Drive Mode select pushbutton.
CUE:	
Caution Tags	are hung
COMMENTS	ł:
	SATUNSAT

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9		NRC 9 REVISION:0
i)		restore the drive when the control rod is OPERABLE (OK to defer while tinuing on in procedure. Clear CAUTION TAGS. At the RGDC, position the rod BYPASS toggle switch, "down" to unbypass the rod. On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down (0) position. Depress DRIVE BYPASSED push-button to display on the OCM that the rod in no longer bypassed.
STANDARI	D :	
No action re	quired	
CUE:		
Drive will no	ot be re	estored.
COMMENT	rs:	
		SATUNSAT
TERMINA		
	20-25 P TIM	is bypassed and RCIS is reset. E:

REVISION: ___O____

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9 REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

 K/A SYSTEM NUMBER
 K/A NUMBER
 RO
 SRO

 201005
 A4.01
 3.7

JOB PERFORMANCE MEASURE OPERATOR COPY

QUESTION NO.:
A reactor startup is in progress. During the performance of CPS No. 9014.02, ROD PATTERN CONTROL SYSTEM ROD SEQUENCE CHECK, an out of sequence control rod was selected and moved one notch. What is the effect on the reactor startup?
ANSWER:
The reactor startup must stop immediately due to the Rod Pattern Controller not performing its intended function. Rod movement is ONLY by scram.
REFERENCE(S):
CPS No. 9014.02 CPS ITS 3.3.2.1 Action B.1
RESPONSE:
SAT UNSAT

OB PERFORMANCE MEASURE OPERATOR COPY

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.: 2
What affect does bypassing a control rod in the Rod Gang Drive System have on the ability to move the bypassed control rod, individually and in gang mode?
ANSWER:
The bypassed control rod if selected will not move. (The RCIS System does not know
the control rod is even there). If gang mode is selected and another control rod in the
gang is selected the bypassed control rod will move with the rest of the gang.
REFERENCE(S):
CPS No. 3304.02
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
201005 201005	K3.02 K1.06			3.5 3.3
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY: _		1		
REVIEWED BY:		/		
APPROVED BY:	Supervisor - Requalification and	1		
	Operations Training			

JPM NUMBER: NRC 10	REVISION: 0			
TASK TITLE: Respond To Abnormal Level in CCW Expansion Tank				
TASK NUMBER: 044208C505				
APPLICABILITY: RO SRO _X				
TRAINEE	DATE			
IRAINEE	DATE			
EVALUATOR				
METHOD OF TESTING:	er die dere dan dan den den den dan dan den den den par sen dan dan den den der dan den den den den den den den			
Simulated Performance X Actual Performance				
Classroom Simulator Pla	untX			
APPROXIMATE TIME FOR COMPLETION: 15 minutes	S			
Prepared/Revised by:	Date:			
Reviewed by: Instructor - Operations	Date:			
Approved by:Supervisor - Operations Training	Date:			

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10	REVISION: 0
READ TO THE OPE	ERATOR
I will explain the initial conditions, which step(s) to simulat When you complete the task successfully, the objective of the step of the	
SIMULATOR SET-UP CONDITIONS:	
None	
TASK STANDARDS:	
Operator actions performed per CPS No. 3203.01	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIRE	EMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3203.01, COMPONENT COOLING WATER (C	CC)
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE:	
There is a high level in the CCW Expansion Tank. The sou CRS directs you to locally return CCW Expansion Tank level.	

START TIME:

JPM NUMB	SER: NRC 10		REVISION:0_
China dana dana dana dana dana dana dana d	PERFORMANC	CE IMPORMATION	MEN THE SEC AND SECURE AND SEC
letters. Failur	are denoted with a asterisk (*) to the re to meet the standards for a critical s e sequence of steps is assumed unless	step constitutes failure o	f the Job Performance
	PERFORM	IANCE STEPS	
JPM TITLE:	Respond To Abnormal Level in CCV	V Expansion Tank	
*8.2.2.2.1	Verify 1CC90, CCW Expansion Texpansion Tank Makeup Valve By		s isolated and 1CC092, CCW
STANDARD	t;		
	90 is isolated by simulating turning va E direction. Verifies 1CC092 shut by E direction.		
CUE:			
For each valve	re operated, cue that the valve handwh	neel is turning, then cue	the valve handwheel stops
COMMENTS	S:		
		SAT	UNSAT

JPM NUMI	BER: NRC 10 REVISION: 0
8.2.2.2.2	Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.
STANDARI):
No action. I	nitial Conditions had the source isolated.
CUE:	
COMMENT	S:
	SATUNSAT
	NOTE
	If necessary, place alternate system load on service, whenever possible.
8.2.2.2.3	If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.
STANDARI);
No action. I	nitial Conditions had the source isolated.
CUE:	
COMMENT	S:
	SATUNSAT

JPM NUMB	ER: NRC 10 REVISION:0
	NOTE
	When the source of inleakage is isolated, the CCW Expansion Tank level should stabilize.
*8.2.2.2.4	Lower CCW Expansion Tank level as follows:
	a) Open 1TE083, CCW Exp Tk Drain
	b) Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117"
STANDARD	
	ENING 1TE083 by turning handwheel in the COUNTERCLOCKWISE direction. ottling OPEN 1CC253 by turning handwheel in the COUNTERCLOCKWISE direction.
CUE:	
For each valve stops turning.	e operated, cue that the valve handwheel is turning. For 1TE083, cue the valve handwheel
COMMENTS	
	SATUNSAT

JPM NUMBI	ER: NRC 10	REVISION:0_	
*8.2.2.2.5	When desired level is reached		
	a) Close 1CC253, CCW Expansion Tank Auto D	rain Valve	
	b) Close 1TE083, CCW Exp Tk Drain		
STANDARD:			
Contacts MCR to monitor expansion tank level. After receiving cue that level is 115", simulates closing 1CC253 and 1TE083 by turning valve handwheels in the CLOCKWISE direction.			
CUE:			
	the MCR, cue that level is 115". operated, cue that the valve handwheel is turning then	the valve handwheel has stopped.	
COMMENTS			
May monitor le	evel on expansion tank sightglass SAT	UNSAT	
8.2.2.2.6 Check pump suction pressure, adjust per 8.1.1.1.b, if necessary.			
STANDARD:			
Checks pump adjustment is n	suction pressure by observing idle pump discharge prenecessary.	ssure. Determines that no	
CUE:			
COMMENTS			
idle pump discharge pressure should be approximately 14 psig.			
	SAT	UNSAT	

JPM NUMBI	ER: NRC 10	F	REVISION:0_
8.2.2.2.7	If possible, leave the component that is the so until it is repaired.	ource of inleakag	ge off service and isolated,
STANDARD:			
No action.			
CUE:			
The componer	nt will be left isolated until repaired.		
COMMENTS			
		SAT	UNSAT
TERMINAT	ING CUES:		
CCW Expansi	on Tank level has been returned to normal.		
STOP	TIME:		

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
400000	A4.01		3.0

JOB PERFORMANCE MEASURE OPERATOR COPY

QUESTION NO.:	1	_	
The plant is in the power ascended:	ension program	m and currently at 75% power.	The following parameters
CCW Outlet Pressure	96 psig	Steady	
CCW Outlet Temperature	110°F	Increasing	
Condenser Vacuum	27 inches	Decreasing	
What option will be available	for LONG T	ERM RPV pressure control?	
ANSWER:			
Only SRVs on compressed ga	as will be avai	lable	
REFERENCE(S):			
CPS No. 4004.01			
CPS No. 3203.01			
RESPONSE:			
		SAT	INSAT

are

JOB PERFORMANCE MEASURE OPERATOR COPY

UESTION NO.: 2
the plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 Bus 1B results in a trip of the reactor feed pumps with the resulting level transient. Level ecreases below level 2 before recovering. Based on this transients effect on Component Cooling Water CC), what system/component loss will occure if NO operator action is taken?
NSWER:
rip of the running Service Air Compressor.
EFERENCE(S):
PS No. 5041.01-1A
ESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
400000 400000	K3.01 A2.01		3.3 3.4
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		1	
REVIEWED BY:		/	
APPROVED BY:		/	
	Supervisor - Requalification and Operations Training		

INITIAL SUBMITTAL OF OUTLINE AND WALKTHROUGH JPMS FOR CLINTON RE-EXAMINATION THE WEEK OF 08/31/98

A070

Facility: Clinton Date of Examination: September 1, 1998 Exam Level (Circle): RO SRO(I) SRO(U) Operating Test No.: 98-02 System / JPM Title / Type Codes* Safety Planned Follow-up Questions: Function K/A/G // Importance // Description 1. 202001/Start RR Pump A in Slow 1 - Reactivity Cont. a. A2.10 - 3.9 - Seal Failu. 3 D, S, L b. K4.17 - 3.5 - Fast Speed Pump Start 2. 209002/Manually Initiate HPCS 2 - Inventory Cont. a. K6.01 - 3.6 - Loss of Electrical Power D. S b. G2.1.14 - 3.3 - Sys. Status Reg. Notification 3. 223001/Emerg. S/U Standby DWC 5 - Cont. Integrity a. K6.11 - 3.0 - Loss of Electrical Power b. G2.1.12 - 4.0 - Not Qualified Equipment 4. 264000/Manually Start DG 1A 6 - Electrical a. K4.08 - 3.7 - Automatic Startup D, A, S b. G2.1.12 - 4.0 - T.S. Requirements 5. 239001/Equalize Around and Open 3 - Pressure Cont. a. A2.03 - 4.2 - MSIV Closure MSIVs D, S, L b. K4.01 - 3.8 - Automatic Isol. of Steam Lines 6. 217000/Shutdown RI - Init. Sig. 4 - Heat Removal a. A2.01 - 3.7 - Initiation Signal Clear N, S b. A2.17 - 3.4 - High Suppression Pool Lvl. 7. 261000/Purge PC Using VG 9 - Rad. Release a. K4.01 - 3.8 - Auto System Init. N.S b. K6.04 - 3.1 High Rad. Response 8. 241000/Startup Steam Byp. HPU 3 - Pressure Cont. a. A2.01 - 3.7 - Pressure Reg. Failure b. A2.03 - 4.2 - Failed Open BPV N, P, R 9. 201005/Respond to a Failed 7 - Instrumentation a. K3.02 - 3.5 - Effect on Reactor S/U Transponder N.P b.K1.06 - 3.3 - Bypassed Rod in Gang 10. 400000/Respond to Abn. Level in 8 - Plant Service a. K3.01 - 3.3 - Loads Cooled by CCW CCW Exp. Tk. b. A2.01 - 3.4 - Loss of CCW Pump

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

Facility: Clinton Power Station Exam Level (Circle): (RO / SRO	D(I)	Date of Examination: <u>January 19, 1998</u> Operating Test No.: <u>98-01</u>
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G / Importance / Description
1. 295031 RCIC/Defeat Isolation	4. Emergency Plant Evolutions	a. 217000/ K6.01/ 3.4 //Electrical Power
D, P		b. 217000/A1.05/3.6/RCIC Turbine Speed
2.241000 EHC/Respond to low pressure	3. Pressure Control	a. K1.10/3.0/Front Standard Trip System
D, P, R		b. K1.20/2.7/Turbine Speed
3. 286000 Manual Start of the Diesel Fire Pump	8. Plant Service Systems	a. K4.03/3.3/System Design
D, P, R		b. K4.01/3.4/System Interrelationship
4. 259002 FW/Operate SULCV	2. Reactor Water Inventory	a.K4.12/A5.03/3.8/Operate components in manual
D, S, L	Control	b. K1.02/A2.01/3.5/Cause and Effects
5.295016 RSP/3PC	5. Suppression Pool Cooling Mode	a. AA2.06/3.3/Cooldown Rate
D, S, A		b. AK2.02/4.0/Local control stations
6. 202001 Normal S/D of RR pumps	Reactivity Control	a. K4.02/3.1/Adequate recirculation pump NPSH
D, S		b. A1.08/3.7/Recirc FCV Position
7.217000 Manual start of LPCS	4. Ab normal Plant Evolutions	a. K4.03/3.3/Valve Operation
M, S, A		b. K1.10/3.7/System Interlocks
8. 288000 Shift VR Supply and Exhaust Fans (Auto Operation)	9. Radioactivity Release	a. K4.01/3.7/Vent Interlocks
M, S, A		b. A3.01/3.8/System Operations
9. 300000 IA/ Pressurize DW/Containment air headers	8. Plant Service Systems	a. K3.02/3.3/Loss of Air
D, S		b. K4.02/3.0/Interlocks
10. 264000 Manually Shutdown a Diesel Generator	6. Emergency Generators	a. A2.09/3.9/Loss of AC power
N, S		b. K4.02/4.1/Generator Trips

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

Facility: <u>Clinton Power Station</u> Exam Level: SRO(U)		Date of Examination: <u>January 19, 1998</u> Operating Test No.: <u>98-01</u>
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G / Importance / Description
1.		
2.241000 EHC/Respond to low pressure	3. Pressure Control	a. K1.10/3.0/Front Standard Trip System
D, P, R		b. K1.20/2.7/Turbine Speed
2. 286000 Lineup FP (Fire Protection) Injection Flowpath to the RPV	8. Plant Service Systems	a. K4.03/3.3/System Design
D, P, R		b. K4.01/3.4/System Interrelationship
4. 259002 FW/Operate SULCV	2. Reactor Water Inventory	a.K4.12/A5.03/3.8/Operate components in manual
D, S, L	Control	b. K1.02/A2.01/3.5/Cause and Effects
5.295016 RSP/SPC	5. Suppression Pool Cooling Mode	a. AA2.06/3.3/Cooldown Rate
D, S, A		b. AK2.02/4.0/Lucal control stations
6. 202001 Normal S/D of RR pumps	Reactivity Control	a. K4.02/3.1/Adequate recirculation pump NPSH
D, S		b. A1.08/3.7/Recirc FCV Position
	-	
		Market Annual Market State Control of St

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





Illinois Power Company Clinton Power Station P.O. Box 678 Clinton, IL 61727 Tel 217 935-8881

Joseph V. Sipek Director - Licensing

U-603057 1A.120

July 31, 1998

Docket No. 50-461

Mr. Melvyn N. Leach, Chief Operator Licensing Branch U.S. Nuclear Regulatory Commission Region III 801 Warrenville Road Lisle, Illinois 60632-4351

Subject: Initial Licensed Operator Examination Materials

Dear Mr. Leach:

The Clinton Power Station (CPS) Initial Licensed Operator examination materials for Mr. Jeff Naden are in the attached envelope. The examination materials are submitted in accordance with the guidance in Interim Revision 8, NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and your letter of May 12, 1998. The examination materials shall be withheld from public disclosure until after the examination is are complete.

Please direct questions concerning the CPS Initial Licensed Operator Examination to Mr. Dale Hill at (217) 935-8881, extension 4135.

Sincerely yours,

Director-Licensing

BGS/krk

cc: (without attachments)

Clinton Licensing Project Manager, Region III, USNRC NRC Resident Office, V-690 Regional Administrator, Region III, USNRC Illinois Department of Nuclear Safety

JPM NUMBER: NRC 1	REVISION: 0
TASK TITLE: Start Reactor Recirculation Pump "A" in Slo	ow Speed
TASK NUMBER: 011202C004	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	eX
Classroom Simulator X	Plant
APPROXIMATE TIME FOR COMPLETION: 15 minu	utes
Prepared/Revised by:	Date:
Reviewed by: Instructor - Operations	Date:
Approved by:Supervisor - Operations Training	Date:

JOB PERFORMANCE MEASURE WORKSHEET

REVISION: __0

JPM NUMBER: NRC 1

READ TO THE OPERATOR
I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.
SIMULATOR SET-UP CONDITIONS:
Initialize to an IC at approximately 30% power. Shutdown the "A" RR pump by opening the CB1, CB2, CB3 and CB4 breakers and closing the FCV to minimum. Lockout the "A" FCV and restart the "A" RR HPU from the instructor console. Verify the Cavitation Interlock lights on P680 are both ON or both OFF.
TASK STANDARDS:
Reactor Recirculation Pump "A" is running in slow speed.
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:
None
PROCEDURAL/REFERENCES:
CPS No. 3302.01, REACTOR RECIRCULATION, section 8.1.1
EVALUATOR INSTRUCTIONS:
Amplifying cues are provided within the JPM steps.
INITIAL CONDITIONS AND INITIATING CUE:
The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RR pump is stopped and the "A" RR loop is unisolated. Startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.
START TIME.

JPM NUM	BER: NRC 1 REVISION: 0
	PERFORMANCE INFORMATION
letters. Fail	os are denoted with a asterisk (*) to the left of the step number and appear in BOLDED dure to meet the standards for a critical step constitutes failure of the Job Performance. The sequence of steps is assumed unless denoted in the comments section of the JPM.
	PERFORMANCE STEPS
JPM TITLE	E: Start Reactor Recirculation Pump "A" in Slow Speed
8.1.1.1	(Local) Unless checked during drywell close-out, check RR pump motor oil levelsif the drywell is accessible. Reference MS-08.00 for proper RR Pump A(B), 1B33 C001A(B) oil level determination criteria.
8.1.1.2	(Local) Verify open 1C11-FO26A(B), CRD Supp Isol To RR Pump A(B) and verify CRD supply to the RR pump seals is 3-5 gpm on flowmeter 1C11-D020A(B). If required, adjust 1C11-D012A(B), Flow Control Valve to obtain 3-5 gpm. Flow regulator, 1C11-D012A(B) is used to adjust flow as follows (per K2801-0009): [CNMT755' AZM 189°]. a) Loosen locknut and rotate stem until desired flow is attained.
	(Clockwise for decreasing flow, counter-CW for increasing flow)
	 b) Lock stem in desired position by holding stem steady while re- tightening locknut.
STANDAR	D:
Directs Are	a Operator to verify CRD flow to RR pump "A" seals at 3-5 gpm.
CUE:	
Flow is 4 ga	allons per minute.
COMMEN	TS:
	SATUNSAT

JPM NUMB	BER:	NRC 1		RE	VISION: 0
			NOTE		
	al	Then starting pumps at low power the Cavitation Interlocks a slow speed.	wer/low feed flow co switch will stay on a	nditions, nd the pu	the white light imps will start
8.1.1.3 a)	Zer	o the A/B loop SERVO ERRO)R		
STANDARD):				
Adjusts so Se	ervo E	erro meter indicates 0% on P68	30		
CUE:					
COMMENT	S:				
			SAT_		_UNSAT
8.1.1.3 b)	Dep 1) 2) 3) 4)	Press following reset buttons to FCV A/B Motion Inhibit Reverify the lead HPU becominhibited. Pump A/B Vibration Reset. Cav Intlk A/B Reset / Rx Ru Low Level Intlk A/B Reset	eset les operational, and F		on is longer
STANDARD):				
Depresses "A Depresses "A	" Vib	tion Inhibit reset pushbutton as tration reset pushbutton. vitation Interlock pushbutton. seel Low Level pushbutton and			F.
CUE:					
COMMENTS Cavitation in		k will not clear when feedwate		%.	_UNSAT

JPM NUM	BER: _	NRC 1 REVISION: 0	
8.1.1.4	Ver to o	fy RWCU system in operation with flow established through bottom head drain libtain a reliable indication of bottom head drain coolant temperature.	ne
STANDAR	D:		
Verifies RV	VCU sy	stem in operation with flow established through bottom head drain line.	
CUE:			
COMMEN	rs:		
		SATUNSAT	
*8.1.1.5	Ver	hin 15 min. prior to starting the A(B) RR pump, ify following ITS SR 3.4.11.3/4 temperature limits and GEK-75635A Therma ck limits (use table below for data point locations) are met, and log data in the Monal.	
	a)	Difference between bottom head coolant temperature and the RPV coolant temperature is ≤ 100 °F. (ITS/GEK)	
	b)	Difference between the RPV coolant temperature in the RR loop to be started at the RPV coolant temperature is $\leq 50^{\circ}$ F. (ITS/GEK)	nd
	c)	Difference between idle RR loop to be started and the other RR loop is ≤ 50°F (GEK-75635 only: verifies Bkr 5A(5B) Thermal Interlock item satisfied.	

JPM NUMBER: NRC 1 R	EVISION: _	0
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RPV Coolant	Bottom Head	RPV Coolant
Temperature	Coolant Temperature	Temperature in the RR
MODEs 3/4 with RHR SDC in		Loop to be Started
operation: Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601		
MODEs 2-4 with RR loop in operation and RHR SDC secured: Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614.	Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at 1H13-P614, or computer points B22DA002/017 (valid when > 214°F).	Use RR pump suction temperature for the idle RR loop from recorder B33-R604 at 1H13-P614.
MODEs 1-3 with Rx coolant > 214°F: Use Steam Dome Temperature computer point B21NA006.		
STANDARD:		
Verifies ≤ 100°F difference betwee Verifies ≤ 50°F difference betwee Verifies ≤ 50°F difference betwee		
CUE:		
COMMENTS:		
May simulate logging information	n in CRO log.	

JPM NUMB	ER: NRC 1		REVISION: 0
8.1.1.6	Verify annunciators 5003-2C/2J, Recirc Pmp (verifies GEK-75635A Bkr 5A(5B) pump sta (annunciator only valid when > 214°F.)	A/B Temp In	tlk Actuated are extinguished thermal interlock in effect)
STANDARD			
Verifies annu	nciators 5003-2C/2J are extinguished.		
CUE:			
COMMENTS	S:		
		SAT	UNSAT
*8.1.1.7	Place 1B33-F060A(B), Recirc FCV in mini	mum open po	osition.
STANDARD	:		
Verifies "A" l	Flow Control Valve in minimum open position		
CUE:			
COMMENTS	3:		
		SAT	UNSAT

JPM NUMBI	ER: _1	NRC 1 REVISION: 0
8.1.1.8		fy CRD supply and seal staging flow has been in operation for at least one hour prior mp start to ensure pump seals are vented.
STANDARD:		
Requests info	matio	n for CRS
CUE:		
It has been 1 h	our.	
COMMENTS	:	
		SATUNSAT
		CAUTION Do not simultaneously start be a PR pumps.
*8.1.1.9	Close	e the following P680 breakers in order:
	a) b)	Recirc Pump A(B) Mtr Bkr 3A(3B). Recirc Pump A(B) Mtr Bkr 4A(4B).
STANDARD		
Closes 3A the	n 4A t	breakers and observes RED light ON for each breaker.
CUE:		
COMMENTS	:	
The annunciat	or RE	CIRC PMP A MTR BRKR TRIP will clear.
		SATUNSAT

JPM NUM	BER: NRC1 REVISION: 0
	NOTE If FW flow is < 30% (~ 3.74 mlbm/hr, then:
	a) RR pump will accelerate on the 60 cycle source.
	b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker
	c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will close
	d) When pump speed drops to 20-26% (356 - 463 rpm), the 2A(2B) breaker will close.
	If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate
	directly to 100% (1780 rpm).
8.1.1.10	Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start
STANDAR	D:
Requests that	at security be notified.
CUE:	
It is dayligh	t and the pump will only be started in slow speed.
COMMENT	rs:
	SATUNSAT

JPM NUMB	ER: NRC 1		REVISION:0
8.1.1.11 *8.1.1.12	Monitor reactor power and RPV v Start RR pump A(B) by closing	water level during the start Recirc Pump A(B) Drive	ing of a RR pump. e Motor Bkr 5A(5B).
STANDARD			
Closes RR pu Monitors reac	mp "A" 5A breaker and observes R tor power and RPV water level dur	ED light ON, pump amps ing pump start.	and loop flow increasing.
CUE:			
COMMENTS	l:	SAT	UNSAT
8.1.1.13	If RR pump startup was directed f 8.2.6 6), return to step 8.2.6.7. Oth	from section 8.2.6, Idle RR herwise continue in this se	Loop - restart (step ction.
STANDARD			
Continues in t	his section		
CUE:			
COMMENTS	:		
		SAT	UNSAT

JPM NUMBER: NRC 1		REVISION: 0	
		NOTE	
	A 40 sec incomplete sequence ti If after 40 sec, pump speed is no incomplete sequence relay will t	t 20-26% or CB-2 is not	
*8.1.1.14	After the RR pump is in service OK to inhibit FCV motion RECIRCULATION FLOW speed RR pump operation	n per CPS No. 3302.02, I W CONTROL HYDRAU	REACTOR ULIC SYSTEM while in slo
	OK to restart RR HPUs per	CPS No. 3302.02 after	a short shutdown.
STANDARD):		
Opens "A" re	ecirc loop FCV to full open.		
CUE:			
COMMENTS	S:		
		SAT	UNSAT

JPM NUMB	ER: NRC 1	RE	VISION:0
8.1.1.15	Monitor Table 1, RR Pump Seal Key Paramethe maximum allowable, corrective action sh		f they approach or reach
STANDARD);		
	m seal staging pressure, Cooling Water (CCW) should be checked.	temperature, and i	injection water
CUE:			
COMMENTS	S:		
		SAT	UNSAT

JPM NUMBER: NRC 1	REVISION: 0
TERMINATING CUES:	
Reactor Recirculation Pump "A" is running in slow s	speed.
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

JOB PERFORMANCE MEASURE OPERATOR COPY

QUESTION N	0.:1	
The reirc pump	S on shift with the plant operating as are operating at Fast Speed with the seal pressures have been reading it.	at near rated conditions for the past several weeks. the Flow Control Valves at 96 and 92% respectivally. In the normal range,
	"A"	"B"
Seal 1 dP	1020 psig	1015 psig
Seal 2 dP	510 psig	500 psig
Seal 1 cavity	115°F	115°F
Seal 2 cavity	125°F	125°F
	orms you that in the last hour that the hat the "B" seal 1 cavity shows	he "A" RR pump seal I cavity temperature has no temperature change.
What actions sh	ould or should not be taken?	
ANSWER:		
THEN	RR Pump Seal Key Parameters excelling in the RR Pump Seal Key Parameters excelled in the RR Pump Seal Key Para	eed any 'Abnormal Value' listed in Table 1, on to determine if continued plant operation);
REFERENCE	(S):	
CPS No. 3302.0 CPS No. 3302.0		
RESPONSE:		

SAT UNSAT

JOB PERFORMANCE MEASURE OPERATOR COPY

The plant has been in a long outage due to recirc pump problems. The plant is cu	rrently operating at
approximately 40% power with the Recirc Pumps in Fast Speed. The A CRO rep	
look good and are all in specifications. Two hours later, the A CRO reports that a	annunciator 5067-2K is
alarming (Loose Part Manitoring Sys Trouble) When the alarm panel is checked	the channel 2 light in

alarming (Loose Part Monitoring Sys Trouble). When the alarm panel is checked, the channel 3 light is blinking with 3 other lights steady lit. (Channel 3 is A Recirc Pump Suction). The B CRO states that he has just checked the lower thrust bearing temperature on the A RRP and it has increased 20°F and that the upper thrust bearing temperature has decreased 15°F. Also the Seal cavity 1 has just had a pressure

increase.

QUESTION NO .:

What is a possible cause and what actions will you take.

ANSWER:

The possible cause is a failure of the upper wear ring bolts on the A RR pump. (This results in the upper wear ring coming loose from the stuffing box and falling into the upper impeller region. The upper area then equalizes with the pump discharge pressure and overcomes the normal up thrust of the pump, causing the lower thrust shoes of the motor bearing to carry the thrust load.)

If a drop is suspected, contact the NSED - ECCS & Reactivity System Team immediately. If reverse thrust is suspected, the affected RR pump should be shutdown as soon as practical to minimize secondary component damage.

REFERENCE(S):

CPS No. 3302.01, Reactor Recirculation (RR)

CPS No. 3301.02, Loose Parts Monitoring System (Lm)

CPS No. 5067-2K, Loose part Monitoring Sys Trouble

RESPONSE:

SAT ____UNSAT ___

JOB PERFORMANCE MEASURE OPERATOR COPY

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
202001 202001	A2.10 K4.17		3.9 3.5
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		,	
ORGINATED/REVISED B1.			
REVIEWED BY:		,	
APPROVED BY:		1	
	Supervisor - Requalification and Operations Training		

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RR pump is stopped and the "A" RR loop is unisolated. Startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.

- 8.0 PROCEDURE
- 8.1 Normal Operations
- 8.1.1 RR Pump Startup
- 6.1.1.1 (Local) Unless checked during drywell close-out, check RR pump motor oil levels if the drywell is accessible. Reference MS-08.00 for proper RR Pump A(B), 1B33-C001A(B) oil level determination criteria.

14.2.47 126.97-0542

c 8.1.1.2

- (Local) SLOWLY open 1C11-F026A(B), CRD Supp Isol To RR Pump A(B) and verify CRD supply to the RR pump seals is 3 5 gpm on flowmeter 1C11-D020A(B). If required, adjust 1C11-D012A(B), Flow Control Valve to obtain 3 5 gpm. Flow regulator, 1C11-D012A(B) is used to adjust flow as follows (per K2801-0009): [CNMT 755' AZM 189°].
- a) Loosen locknut and rotate stem until desired flow is attained. (Clockwise for decreasing flow, counter-CW for increasing flow)
- b) Lock stem in desired position by holding stem steady while re-tightening locknut.

NOTE

When starting pumps at low power/low feed flow conditions, the white light above the Cavitation Interlocks switch will stay on and the pumps will start in slow speed.

- @ c8.1.1.3 a) Zero the A/B loop SERVO ERROR.
 - b) Depress following reset buttons to clear interlocks/alarms:
 - FCV A/B Motion Inhibit Reset.
 Verify the lead HPU becomes operational, and FCV motion is no longer inhibited.
 - 2) Pump A/B Vibration Reset.
 - 3) Cav Intlk A/B Reset / Rx Run Back Reset.
 - 4) Low Level Intlk A/B Reset.

- 8.1.1 RR Pump Startup (cont'd)
- 8.1.1.4 Verify RWCU system in operation with flow established through bottom head drain line to obtain a cliable indication of bottom head drain coolant temperature.
- O Verify following ITS SR 3.4.11.3/4 temperature limits and GEK-75635A Thermal Shock limits (use table below for data point locations) are met, and log the data in the MCR Journal.
 - a) · Difference between bottom head coolant temperature and the RPV coolant temperature is ≤ 100°F. (ITS/GEK)
 - b) Difference between the RPV coolant temperature in the RR loop to be started and the RPV coolant temperature is ≤ 50°F. (ITS/GEK)
 - c) Difference between idle RR loop to be started and the other RR loop is ≤ 50°F. (GEK-75635A only: verifies Bkr 5A(5B) Thermal Interlock item satisfied.)

RPV Coolant Temperature	Bottom Head Coolant Temperature	RPV Coolant Temperature in the RR Loop to be Started
MODEs 3/4 with RHR SDC in operation:	*	
Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601.		
MODEs 2-4 with RR loop in operation and RHR SDC secured:	Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at	Use RR pump suction temperature for the idle RR loop from
Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614.	1H13-P614, or computer points B33DA002/017 (valid when > 214°F).	recorder B33-R604 at 1H13-P614.
MODEs 1-3 with Rx coolant > 214°F:		1
Use Steam Dome Temperature computer point B21NA006.	,	

- 0

- 8.1.1 RR Pump Startup (cont'd)
- 0 8.1.1.6 Verify annunciators 5003-2C/2J, Recirc Pmp A/B Temp Intlk Actuated are extinguished (verifies GEK-75635A Bkr 5A(5B) pump start loop to loop thermal interlock in effect) (annunciator only valid when > 214°F).
 - 8.1.1.7 Place 1B33-F060A(B), Recirc FCV in minimum open position.
 - 8.1.1.8 Verify CRD supply and seal staging flow has been in operation for at least one hour prior to pump start to ensure the pump seals are vented.

CAUTION

Do not simultaneously start both RR pumps.

- * 8.1.1.9 Close the following P680 breakers in order:
 - a) Recirc Pump A(B) Mtr Bkr 3A(3B).
 - b) Recirc Pump A(B) Mtr Bkr 4A(4B).

NOTE

- If FW flow is < 30% (~ 3.74 mlbm/hr), then:
- a) RR pump will accelerate on the 60 cycle source.
- b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker closes.
- c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will open.
- d) When pump speed drops to 20-26% (356 -463 rpm), the 2A(2B) breaker will close.
- If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate directly to 100% (1780 rpm).
- 8.1.1.10 Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start.

- 8.1.1 RR Pump Startup (cont'd)
- 8.1.1.11 Monitor reactor power and RPV water level during the starting of a RR pump.
- 8.1.1.12 Start RR pump A(B) by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B).
- 8.1.1.13

 If RR pump startup was directed from section 8.2.6, Idle RR Loop Restart (step 8.2.6.6), return to step 8.2.6.7. Otherwise continue in this section.

NOTE

A 40 sec incomplete sequence timer starts when the CB-5 breaker is closed. If after 40 sec, pump speed is not 20-26% or CB-2 is not shut, the incomplete sequence relay will trip CB-1 & CB-5.

- 8.1.1.14 . After the RR pump is in service on the LFMG, open the FCV to full open position.
 - OK to inhibit FCV motion per CPS No. 3302.02, REACTOR RECIRCULATION FLOW CONTROL HYDRAULIC SYSTEM while in slow speed RR pump operation to prevent inadvertent FCV runbacks.
 - OK to restart RR HPUs per CPS No. 3302.02 after a short shutdown.
- 8.1.1.15 Monitor Table 1, RR Pump Seal Key Parameters (page 26).

 If they approach or reach the maximum allowable,
 corrective action should be taken.
- 0 8.1.1.16 STA: To obtain a valid heat balance, verify/substitute 0.074 into points B33NA003 and 004, RR Pump A(B) Motor Power per CPS No. 3512.01, DISPLAY CONTROL SYSTEM (DCS)/PERFORMANCE MONITORING SYSTEM (PMS).
 - 8.1.1.17 To start the other RR pump, repeat section 8.1.1.

0

JPM NUMBER: NRC 2	REVISION: 0
TASK TITLE: Manually Initiate the High Pressure Core Spra Available per CPS 3309.01	y System (HP) - Initiation Logic
TASK NUMBER: 015200C617	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	eX
Classroom Simulator X F	Plant
APPROXIMATE TIME FOR COMPLETION: 3 minute	
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 2	REVISION:0_
READ TO THE	OPERATOR
I will explain the initial conditions, which step(s) to si When you complete the task successfully, the objective satisfied.	mulate or discuss, and provide the initiating cues. we of this Job Performance Measure will be
SIMULATOR SET-UP CONDITIONS:	
Initialize to any suitable IC with HPCS in Standby. S RCIC Storage Tank Level is > 2200 gal.	uppression Pool Level is < 19' 11.5".
TASK STANDARDS:	
The High Pressure Core Spray (HPCS) System is mar vessel.	nually initiated and is injecting into the reactor
TOOLS, EQUIPMENT, OTHER SPECIAL REQU	UIREMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3309.01, HIGH PRESSURE CORE SPRAY	
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE	
An emergency condition exists. Manually initiate HP	CS using the manual initiation pushbutton.
START TIME:	

JPM NUME	BER: NRC 2		REVISION:0
	PERFORMANCE I	NFORMATION	
letters. Failu	s are denoted with a asterisk (*) to the left are to meet the standards for a critical step he sequence of steps is assumed unless der	constitutes failure o	f the Job Performance
	PERFORMAN	CE STEPS	
JPM TITLE:	Manually Initiate High Pressure Core Sp	oray (HP) - Logic Op	perable
8.1.3 a)	During HPCS operation, verify as appreciation to Suppr Pool: Opens whenever HPCS flow is psig, and Shuts whenever HPCS flow is	< 625 gpm with HF	
* b)	Arm and Depress HPCS MANUAL I	NITIATION push	button.
STANDARD);		
HPCS Manua	al Initiation pushbutton is armed and depr	essed.	
CUE:			
COMMENT	S:		
	NUAL INITIATION SWITCH IN ARME acknowledged.	D POSITION" and	"HPCS AUTO START"
		SAT	UNSAT

JPM NUMI	BER: NRC 2		REVISION: 0
c) 8.1.2 a) b)	Verify HPCS initiates per section 8.1. During HPCS operation, verify as app To Suppr Pool: Opens whenever HPCS flow in HPCS discharge pressure < 14 Shuts whenever HPCS flow is Verify following events occur upon H 1) 1E22-F001, HPCS Storage Tank S 1E22-F015, Suppr Pool Suction Value	oropriate that 1E22-F0 s, 625 gpm with s psig, and s ≥ 625 gpm. Suction Valve opens if	
STANDARI	D:		
Verifies REI	D light ON for 1E22-F001		
CUE:			
COMMENT	rs:		
		SAT	UNSAT
	2) HPCS Pump, 1E22-C001 starts.		
STANDARI	D:		
Verifies REI	D light ON for HPCS pump.		
CUE:			
COMMENT	rs:		
		SAT	UNSAT

JPM NUMBER: NRC 2		REVISION:0_
3) HPCS Pmp Rm Sply Fans, 1VY08CA	and B start.	
STANDARD:		
Verifies RED light ON for 1VY08CA and B		
CUE:		
COMMENTS:		
On vertical section of panel P-800		
	SAT	UNSAT
4) 1E22-F004, HPCS To CNMT Outbd Is	sln Valve opens	S.
STANDARD:		
Verifies RED light ON for 1E22F004. Verifies RED and GREEN light ON for 1E22-F012		
CUE:		
COMMENTS:		
Min. Flow valve may be in mid position based on pressure Red and green lights for the injection valve may be ON at time.		due to the long valve stroke
	SAT	UNSAT

JPM NUMBER: NRC 2		REVISION:0_
5) Diesel Generator 1C starts.		
STANDARD:		
Verifies RED light ON for DG 1C		
CUE:		
COMMENTS:		
	SAT	UNSAT
6) SSW Pump 1C, 1SX01PC starts.		
STANDARD:		
Verifies RED light ON for SX Pump 1C.		
CUE:		
COMMENTS:		
	SAT	UNSAT

JPM NUMBER: NRC 2		REVISION: 0
c)	Verify shut: 1) 1E22-F010, HPCS First Test VIv to Storage Tank 2) 1E22-F011, HPCS Second Test VIv to Storage Tank 3) 1E22-F023, HPCS Test Valve to Suppr Pool	
STANDARD		
Verifies GRE	EN light ON for 1E22-F010, 1E22-F011, and 1E22-F023	
CUE:		
COMMENTS	3:	
	SAT	UNSAT

JPM NUMBER: NRC 2	REVISION: 0
TERMINATING CUES:	
The HPCS system is injecting water into the reactor vessel.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.:1
The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 bus resulted in a trip of the reactor feed pumps with the resulting level transient. Level decreased below level 2 before recovering. Diesel Generator 1C automatically started during the transient. What caused the auto start of Diesel Generator 1C?
ANSWER:
Actuation of High Pressure Core Spray (HPCS) logic
REFERENCE(S):
E02-1HP99, Sheet 5
RESPONSE:
SAT LINSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.:

The High Pressure Core Spray (HPCS) System is in standby and reactor power is 75%. An instrument failure results in the shift of the HPCS suction to the suppression pool. What reports/notifications, if any, must be made?
ANSWER:
No notification required
REFERENCE(S):
CPS No. 1016.04, Appendix E, LER 86-20 CPS No. 1405.04, Also see 2.2 INVALID ACTUATIONS
RESPONSE:
SAT LINGAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
209002 209002	K6.01 G2.1.14		3.6 3.3
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY:		/	
REVIEWED BY:		1	
APPROVED BY:	Supervisor Dequalification and	/	
	Supervisor - Requalification and Operations Training		

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

An emergency condition exists. Manually initiate HPCS using the manual initiation pushbutton.

8.1.3 Manual Initiation - Logic Operable

- During HPCS operation, verify appropriate that 1E22-F012, HPCS Pump Min Flow T Suppr Pool: Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and Shuts whenever HPCS flow is ≥ 625 gpm.
- b) Arm and Depress HPCS MANUAL INITIATION pushbutton.
- c) Verify HPCS initiates per section 8.1.2.

NOTE

Shutting 1E22-F004, HPCS To CNMT Outbd Isln Valve with an initiation signal present prevents any further automatic opening until the initiate signal clears and is reset; therefore, manual operation of the valve will be required to maintain level.

To open 1E22-F004 that has closed on Level 8, the RX WTR LEVEL HI SEAL IN RESET push-button must be depressed (when > Level 2).

d) Restore and maintain level using 1E22-F004, HPCS To CNMT Outbd Isln Valve.

8.1.4 Manual Initiation - Logic NOT Operable

- During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool: Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and Shuts whenever HPCS flow is ≥ 625 gpm.
- b) Start HPCS Pump, 1E22-C001.
- c) Verify 1E22-F012, HPCS Pump Min Flow To Suppr Pool opens.
- d) Verify HPCS Pmp Rm Sply Fans, 1VY08CA and B start.

NOTE

To open 1E22-F004 that has closed on Level 8, the RX WTR LEVEL HI SEAL IN RESET push-button must be depressed (when > level 2).

- e) Open 1E22-F004, HPCS To CNMT Outbd Isln Valve,
- f) Restore and maintain level using 1E22-F004, HPCS To CNMT Outbd Isln Valve.

7.0 MATERIAL AND/OR TEST EQUIPMENT

Hoses as necessary to support fill, vent, and drain evolutions.

8.0 PROCEDURE

. . . .

8.1 Normal Performance

8.1.1 STANDBY

HPCS is lined up, ready to automatically initiate on a LOCA signal and inject water from the RCIC storage tank, or the suppression pool to the RPV.

- a) Verify proper operation of HPCS Water Leg Pump, 1E22-C003.
- b) Verify prerequisites (listed in section 5.0) are met.
- c) Perform surveillance testing as specified in Tech Specs.

8.1.2 Automatic Initiation

- a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool: Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and Shuts whenever HPCS flow is ≥ 625 gpm.
- b) Verify following events occur upon HPCS initiation:
 - 1) 1E22-F001, HPCS Storage Tank Suction Valve opens <u>if</u> 1E22-F015, Suppr Pool Suction Valve not open.
 - 2) HPCS Pump, 1E22-C001 starts.
 - 3) HPCS Pmp Rm Sply Fans, 1VY08CA and B start.
 - 4) 1E22-F004, HPCS To CNMT Outbd Isln Valve opens.
 - 5) Diesel Generator 1C starts.
 - 6) SSW Pump 1C, 1SX01PC starts.
- c) Verify shut:
 - 1) 1E22-F010, HPCS First Test Vlv To Storage Tank.
 - 2) 1E22-F011, HPCS Second Test Vlv To Storage Tank.
 - 3) 1E22-F023, HPCS Test Valve To Suppr Pool.

JPM NUMBER: NRC 3	REVISION: 0
TASK TITLE: Emergency Startup of Standby Drywell Co	poling System
TASK NUMBER: 011222C506	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	nceX
Classroom Simulator X	Plant
APPROXIMATE TIME FOR COMPLETION: 6 min	nutes
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 3 REVISION: 0	
READ TO THE OPERATOR	
I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cure. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.	es.
SIMULATOR SET-UP CONDITIONS:	
Initiate to any suitable IC that has a VP in standby.	
TASK STANDARDS:	
Operator actions performed per CPS No. 3320.01, Step 8.2.2	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:	
None	
PROCEDURAL/REFERENCES:	
CPS No. 3320.01, DRYWELL COOLING SYSTEM, Step 8.2.2	
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE:	
An Emergency Condition Exists; perform an emergency startup of the 'A' Drywell Cooling System p CPS No. 3320.01	er
START TIME:	

JPM NUMBER: NRC 3			REVICION: 0
many miles than the large large Land Service Service Common Commo	PERFORMANCE INFO	ORMATION	
letters. Failu	are denoted with a asterisk (*) to the left of tree to meet the standards for a critical step cone sequence of steps is assumed unless denote	stitutes failure of	f the Job Performance
	PERFORMANCE	STEPS	
JPM TITLE:	Emergency Startup of Standby Drywell Coo	ling System	
8.2.2.1	At 1H13-P801, start the standby Drywell C	Cooling System as	s follow:
*8.2.2.1.1	Start Drywell Cooling Fans 1VP01CB ar and 1VP01CC).	nd 1VP01CD (1V	VP01CA
STANDARD):		
Takes handsveach fan.	vitches for Drywell Cooling Fans 1B and 1D	to START and o	bserves RED light ON for
CUE:			
COMMENTS	S:		
		SAT	UNSAT

JPM NUMBER: NRC 3			REVISION:0	
*8.2.2.1.2	Start Chill Water Pump 1VP03 closing discharge valve.	SPB (1VP03PA) without	first	
STANDARD):			
Takes handsv Observes RE	witch for Drywell Chill Water Pump D no flow light ON.	o 1B to START and observ	ves RED light ON.	
CUE:				
COMMENT	S:			
Low flow chi	illed water annunciator clears.	SAT	UNSAT	
8.2.2.1.3	Verify/Place 1SX020B(A), Dryw Valve in AUTO AFTER OPEN.	vell Chiller 1B(1A) Inlet		
STANDARD):			
Verifies 1SX	020B in AUTO AFTER OPEN			
CUE:				
COMMENT	S:			

JPM NUMBI	ER: NRC 3		REVISION: 0
*8.2.2.1.4	Start standby Drywell Chiller 1' on 1H13-P801.	VP04CB (1VP04CA) u	sing the START pushbutton
STANDARD			
Depresses ST	ART pushbutton for standby Drywe	ell Chiller 1B and observ	es RED light ON.
CUE:			
COMMENTS			
		SAT	UNSAT
8.2.2.1.5	Send an area operator to the Dryw as required in accordance with step		
STANDARD:			
Notifies area o	operator to monitor and load the chi	ller as required.	
CUE:			
Area operator	is on the way to the chiller for local	l monitoring	
COMMENTS			
		SAT	UNSAT

JPM NUMB	ER: NRC 3	1	REVISION:0
8.2.2.1.6	If 1VP01CA, 1VP01CC, and 1VP01CB, 1VP open 1VP10Y and 1VP12Y at PNL 1PL43JA	01CD are all g and JB.	oing to be left running, then
STANDARD):		
Notifies area	operator to open the dampers as required.		
CUE:			
Dampers have	e been opened.		
COMMENTS	S:		
		SAT	UNSAT
8.2.2.2	At 1H13-P800-65, transfer Supplemental Dry 1VP02SF to the operating Drywell Cooling Sy	well Cooling C	Coil Units 1VP02SE and
*8.2.2.2.1	Close Supplemental Drywell Cooling Coil U 1VP090A/1VP091A (1VP090B/1VP09091B)		nd Return Isol Valves
STANDARD:			
Takes handsw	vitch for 1VP090A/91A to CLOSE and observer	s GREEN light	ON for both valves
CUE:			
COMMENTS	S:		
		SAT	UNSAT

JPM NUMBI	ER: NRC 3		REVISION:0
*8.2.2.2.2	Open Supplemental Drywell Coolin 1VP090B/1VP091B (1VP090A/1VP0		and Return Isol Valves
STANDARD:			
Takes handsw	itch for 1VP090B/91B to OPEN and ob	bserves RED light ON	for both valves
CUE:			
COMMENTS		SAT	UNSAT
8.2.2.2.3	Verify WO system lineup to suppleme 1VP02SH.	ental drywell cooling of	coil units 1VP02SG and
STANDARD:			
1WO551A/55 1WO551B/55	ystem lineup by observing RED light C 2A CH WTR OUTBD ISOL VLVS 2B CH WTR INBD ISOL VLVS DW Cooling Fans 1G/1H	ON for the following:	
CUE:			
COMMENTS			
		SAT	UNSAT

JPM NUM	BER: NRC 3		REVISION: 0	
8.2.2.3	Locally monitor Drywell Chiller 1A for	proper operation.		
STANDAR Notifies area	D: a operator to monitor the Drywell Chiller 1	A for proper opera	ation	
CUE: Drywell Chi	iller 1A is operating properly			
COMMENT	rs:			
		SAT	UNSAT	_

JPM NUMBER: NRC 3	REVISION: 0
TERMINATING CUES:	
Startup of drywell cooling system is complete.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: __0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.:1
Several Drywell Cooling System (VP) components "Shunt Trip" on a LOCA signal. What VP components do NOT receive a shunt trip signal?
ANSWER:
Supplemental Drywell Cooling Fans (1E, 1F, 1G, and 1H)
REFERENCE(S):
CPS No. 3320.01
RESPONSE:
SAT UNSAT
OrtiOrtoni

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 2
The Plant is operating at 100 % power. A CR has just been delivered to the Control Room which has identified the oil coolers for the Drywell Purge Compressors as being Non-Q. The Shift Manager states that he will declare the Drywell Purge Compressors INOP and must verify the status of the Hydrogen Control Function. What constitutes the Hydrogen Control Function?
ANSWER:
At least ONE (1) Division of Hydrogen Igniters are OPERABLE.
REFERENCE(S):
ITS 3.6.3.3 Action B.1 and Bases
RESPONSE:
SAT INSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER	RO	SRO
223001 223002	K6.11 G2.1.12		3.0 4.0
JTA:			
TASK NUMBER			
ANSWER TIME: Min			
ORIGINATED/REVISED BY: _		/	
REVIEWED BY:		/	
APPROVED BY:	Cupamicar Pagualifaction 1	/	
	Supervisor - Requalification and Operations Training		

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

An Emergency Condition Exists; perform an emergency startup of the 'A' Drywell Cooling System per CPS No. 3320.01

CPS No. 3320.01

- 8.2.2 Emergency Startup of Standby Drywell Cooling System
- 8.2.2.1 At 1H13-P801, start the standby Drywell Cooling System as follow:
- 8.2.2.1.1 Start Drywell Cooling Fans 1VP01CB and 1VP01CD (1VP01CA and 1VP01CC).
- 8.2.2.1.2 Start Chill Water Pump 1VPO3PB (1VPO3PA) without first closing discharge valve.
- 8.2.2.1.3 Verify/Place 1SX020B(A), Drywell Chiller 1B(1A) Inlet Valve in AUTO AFTER OPEN.
 - 8.2.2.1.4 Start standby Drywell Chiller 1VP04CB (1VP04CA) using the START pushbutton on 1H13-P801.
 - 8.2.2.1.5 Send an area operator to the Drywell Chiller to monitor performance and load the chiller as required in accordance with steps 8.1.1.5.7 and 8.1.1.5.8.
 - 8.2.2.1.6 If 1VP01CA, 1V01CC and 1VP01CB, 1VP01CD are all going to be left running, then open 1VP10Y and 1VP12Y at 1PL43JA and JB.
 - 8.2.2.2 At 1H13-P800-65, transfer Supplemental Drywell Cooling Coil Units 1VP02SE and 1VP02SF to the operating Drywell Cooling System as follows:
 - 8.2.2.2.1 Close Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090A/1VP091A (1VP090B/1VP091B).
 - 8.2.2.2.2 Open Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090B/1VP091B (1VP090A/1VP091A).
 - 8.2.2.3 Verify WO system lineup to Supplemental Drywell Cooling Coil Units 1VP02SG and 1VP02SH.
 - 8.2.2.3 Locally, monitor the operating Drywell Chiller to ensure proper operation.

JPM NUMBER: NRC 4	REVISION: 0
TASK TITLE: Manually Start Emergency Diesel Generator 1A	4
TASK NUMBER: 011264C526	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	X
Classroom Simulator X Pl	lant
APPROXIMATE TIME FOR COMPLETION: 20 minute	es
Prepared/Revised by:	Date:
Reviewed by: Instructor - Operations	Date:
Approved by:	Date:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4 REVISION: 0

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

Any suitable IC in which DG 1A is in standby with support systems available. Insert Instructor Override 05A1A5S19_X DG 1A Voltage Regulator switch disabled.

TASK STANDARDS:

Diesel Generator 1A running at rated frequency, DG 1A Voltage Regulator identified as malfunctioning and all post-start verifications are completed.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 3506.01, DIESEL GENERATOR AND SUPPORT SYSTEMS, Section 8.1.3 and 8.3.

CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS

CPS No. 3506.01C002, DIESEL GENERATOR START LOG

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

Manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. A C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

START TI	ME:	

JPM NUMB	BER: NRC 4	REVISION: 0
	PERFORMANCE INFORMATION	ON
CAPITAL le	es are denoted with a asterisk (*) to the left of the step nur etters. Failure to meet the standards for a critical step cor e Measure. The sequence of steps is assumed unless deno	nstitutes failure of the Job
	PERFORMANCE STEPS	
JPM TITLE	Manual Start Emergency Diesel Generator 1A	
8.1.3.7	8.1.3.7 Notify operator in Diesel Generator 1A(1B)(1C) Room of impending diesel start, and ensure the respective Diesel Generator HVAC Room is clear of personnel.	
STANDARD	D:	
Notifies C-Aris clear of per	Area operator of impending diesel start. Dispatches opera ersonnel.	ator to verify DG 1A HVAC Room
CUE:		
As C-Area op	operator, acknowledge that a start of DG1A is impending	and DG 1A HVAC Room is clear.
COMMENT	rs:	
	SAT_	UNSAT

JPM NUMBE	ER: <u>NRC 4</u>	REV	ISION:0
*8.1.3.8	Start Diesel Generator 1A (1B) (1C) with the 1H13-P877 (P601).	DG 1A (1B) (1C) Control switch on
STANDARD:			
Starts DG 1A	using Control switch on 1H13-P877 and observe	s DG 1A light Of	٧.
CUE:			
COMMENTS			
	5	SAT	UNSAT
8.1.3.9	Verify the Fuel Oil Transfer Pump starts at 1H1	3-P877 (P601), o	r locally.
STANDARD:			
Observes RED	D light ON for 1DO01PA.		
CUE:			
COMMENTS			
		SAT	UNSAT

JPM NUM	BER: NRC 4	REVISION:0
8.1.2.10	Verify DG 1A (1B) (1C) Room V or locally.	entilation Fan running on 1H13-P801 (P800),
STANDAR	D:	
Observes RI	ED light ON for 1VD01CA.	
CUE:		
COMMENT	rs:	
		SATUNSAT
8.1.3.11	Verify DG 1A (1B) (1C) Hx Outle	et VIv 1SX063A(B) (1SX006C) open.
STANDAR	D:	
Observes RI	ED light ON for 1SX063A.	
CUE:		
COMMENT	rs:	
		SATUNSAT
-		

JPM NUMBI	ER: NRC 4		REVISION:0
8.1.2.12	IF SX pump 1SX01PA(B)(C) starts, THEN Verify Plant Service Water (WS) isolation valve 1SX014A (B) (C) closed.	to Shutdown Serv	rice Water (SX) header
STANDARD:			
Verifies GRE	EN light ON for 1SX014A if 1SX01PA st	arts	
CUE:			
COMMENTS			
1SX01PA sho	ould not start due to this evolution.	SAT	UNSAT
8.1.3.13	Verify DG 1A (1B) (1C) frequency 58.8-	-61.2 Hz.	
STANDARD:			
Verifies DG 1	A frequency 58.8 to 61.2 on Output Frequ	ency meter.	
CUE:			
COMMENTS			
		SAT	UNSAT

JPM NUMB	ER: NRC 4	REVISION:0	
8.1.2.14		indications) DG1A (1B) (1C) voltage, panel meter t 4015 (4015) (4015), GETARS 3911	
STANDARD			
Verifies DG	1 A voltage < 4200 volts using panel r	meter 4000, computer point 4015, or GETARS 391	1.
CUE:			
COMMENTS	S:		
		SATUNSAT	
*8.1.3.15	Verify remote speed control by v 1A (1B) (1C) Governor control s	arying DG 1A (1B) (1C) frequency with DG witch on 1H13-P877 (P601)	
STANDARD	•		
Alternately so increase and o		e Governor Control Switch. Observes frequency	
CUE:			
COMMENTS	S:		
		SATUNSAT	

JPM NUMB	BER: NRC 4 REVISION:	0
*8.1.2.16	Verify remote voltage control by varying DG 1A (1B) (1C) voltage with I (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P6	DG 1A (01)
STANDARD	D:	
Alternately so no change in manual contr	selects "INCREASE" and "DECREASE" on the voltage regulator control switch n voltage and reports to CRS that the voltage regulator is malfunctioning (not restrol).	n. Observes sponding to
CUE:		
	knowledge the malfunctioning voltage regulator and direct that the remaining stewhile Electrical Maintenance investigates.	p of 8.1.3 be
COMMENTS	TS:	
	SATUNSAT _	
8.1.3.17	Locally check cylinder test valves and handhold covers for leakage and tighte necessary.	en as
STANDARD	dD:	
Directs C Are	area operator to check cylinder test valves and handhole covers for leakage.	
CUE:		
COMMENTS	TS:	
	SATUNSAT	

JPM NUMBER: NRC 4	REVISION: 0
TERMINATING CUES:	
DG 1A is operating at rated frequency and post-start	t verifications are complete.
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.:

signal (LOCA) is received followed 3 minutes later by a loss of voltage on the 1A1 bus. What operator action, if any, is required?
ANSWER:
After the diesel output breaker trips open on the LOCA signal, the operator must take the output breaker control switch to TRIP and then release back to NORMAL to allow the diesel to reenergize the bus.
REFERENCE(S):
CPS No. 3506.01
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 2
The plant is at 100% power with all equipment normal except that 1A Diesel Generator is tagged out for turbocharger repair. Annunciator "HIGH/LOW TEMP DG ROOM 1B" (5052-4A) alarms. the operators note that the temperature in the 1B Diesel Generator room is 48°F and decreasing at approximately 1°F. per minute. What operator action must be taken after declaring the 1B DG inoperable.
ANSWER:
Attempt to restore DG Room Make Up Heater.
REFERENCE(S):
CPS ITS Section 3.8.1 Action E CPS No. 5052.04, page 1 (4A) CPS No. 3403.01
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating K/A SYSTEM NUMBER K/A NUMBER RO SRO 264000 K4.08 3.7 264000 G2.1.12 4.0 JTA: TASK NUMBER ANSWER TIME: Min ORIGINATED/REVISED BY: REVIEWED BY:

Supervisor - Requalification and Operations Training

APPROVED BY:

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

Manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. A C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

NOTE

IF The DG output breaker trips while the DG is the only supply to 4160V Bus 1A1(1B1),

THEN Pressing the Offsite Permissive pushbutton within 15 seconds will allow the RAT/ERAT breaker to automatically close and re-energize the bus (assuming an offsite source is available),

OTHERWISE The RAT/ERAT breaker must be closed manually with the 1H13-P877 (P601) control switch. CPS No. 4200.01, LOSS OF AC POWER has instructions for loss of AC. ITS 3.8.1 & 3.8.2 have LCO guidance.

- 8.1.2.2 Station a C Area qualified operator in the DG 1A(1B)(1C) room until the diesel temperatures have stabilized and then make tours of the room at least once per hour while the diesel is running.
- C 8.1.2.3 Initiate the Diesel Generator 1A (1B) (1C) portion of CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS.
- C 8.1.2.4 Initiate the Diesel Generator 1A (1B) (1C) portion of CPS No. 3506.01C002, DIESEL GENERATOR START LOG.
 - 8.1.3 Manual Starting DG 1A(1B)(1C)
 - 8.1.3.1 Station a C Area qualified operator in the DG 1A(1B)(1C) room during initial DG Startup until the diesel temperatures have stabilized and then make tours of the room at least once per hour while the diesel is running.
 - 1.1.3.2 Initiate the Following Logs Per Section 8.3.
- c 8.1.3.2.1 CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS.
- c 8.1.3.2.2 CPS No. 3506.01C002, DIESEL GENERATOR START LOG.
 - 8.1.3.3 Perform the following prestart checks:
- 6 8.1.3.3.1 Check DG 1A(1B) governor lubricating oil level is at least 1/16" from top of sightglass or higher. For DG 1C check the governor lubricating oil level is at or above mark at the center of sightglass but still visible in upper half of sightglass. If low, contact Electrical Maintenance to add or drain MOBIL 1(5W-30) oil as needed.
 - 8.1.3.3.2 Drain condensate from DG 1A (1B) (1C) air receivers by opening and closing Air Receiver Drain Valves 1DG623 (1DG626) (1DG629) and 1DG624 (1DG627) (1DG630).

- 8.1.3.3.3 Drain condensate from DG LA (1B) (1C) Air Start System by opening and closing the following valves:
 - a) DG 1A (1B) (1C) Air Start Supply Drain 1DG009A (1DG009C) (1DG009E).
 - b) DG 1A (1B) (1C) Air Start Supply Drain 1DG009B (1DG009D) (1DG009F).
 - c) DG 1A Air Receiver Outlet Drain 1DG017A.
 - d) DG 1A Air Receiver Outlet Drain 1DG017B.
 - e) DG 1C Air Receiver A Downstream Drain, 1DG014.
 - f) DG 1C Air Receiver B Downstream Drain, 1DG013.
- 8.1.3.3.4 Check DG 1A (1B) (1C) lubricating oil strainer housing oil level is up to bottom of overflow opening.
- 8.1.3.3.5 Check all associated air start motors are disengaged.
- 8.1.3.?.6 Check all associated in line air lubricators are filled with oil.

NOTE

The DG 1C shall not be started when the oil level is outside the STBY band on the generator bearings sight glasses.

8.1.3.3.7 For DG 1C, check generator bearing oil level is in the top band on the sight glasses. Contact Electrical Maintenance to add or drain oil as needed.

NOTE

The gallery oil level upper sight glass (if installed) may remain full as long as 24 hours when restoring the engine to standby following a cold shutdown period. This is due to the time required to heat the oil and engine to standby temperatures.

8.1.3.3.8 Check Engine (1A)(1B)(1C) gallery oil level upper sightglass empty and lower sight glass is full.

IF Oil levels are not as stated,

THEN Initiate investigation to determine cause.

NOTE

Refer to ITS LCOs 3.8.1 and 3.8.2 prior to performing next step.

CAUTION

The amount of time the DG Engine Control Switch is in LOCKOUT(MAINTENANCE) during engine bar over should be minimized to limit the time the DG is inoperable and would be unavailable for an automatic start.

NOTE

Diesel Generator Pre Start checks are valid for up to 8 hours from the time of completion. If DG has ran in the last 8 hours then section 8.1.3.4 is N/A.

- c 8.1.3.4 Place the Diesel Engine Control Switch at the Local DG Control Panel in the LOCKOUT (MAINTENANCE) position.
 - 8.1.3.4.1 Perform the following for an OPERABLE Diesel Generator:
 - a) Declare the associated DG INOP.

NOTE

If the DG Control Switch is returned to the OPERATE position in less than one hour the following step 8.1.3.4.1 b) need not be performed.

b) Perform section 8.1 of CPS No. 9082.01 if in modes 1, 2, or 3 or NA if not required.

NOTE

Steps 8.1.3.4.2 and 8.1.3.4.3 can be done in any order or concurrently.

- 8.1.3.4.2 Open all DG cylinder test valves.
- 8.1.3.4.3 Remove rear (generator end) oil pan handhole cover and open topdeck covers.

NOTE

The following two steps may be performed individually or concurrently. If performed individually, inspect the test valves for drips or floor skid for liquid discharge from test valves.

8.1.3.4.4 Bar over DG one to two revolutions.

- 8.1.3.4.5 Verify no leakage from test valves. If any fluid discharge is observed, then initiate investigation and repairs.
- 8.1.3.4.6 Close all cylinder test valves.
- 8.1.3.4.7 Verify no oil flow is observed at the camshaft bearings and rocker arms. Inspect rocker arm assemblies and valve train push rods. Initiate investigation and repair if abnormality is found.
- 8.1.3.4.8 Observe proper lubrication at the crankshaft bearings and rear gear train.

 IF Oil flow is not observed,

 THEN Initiate investigation and repair.
- 8.1.3.4.9 Replace and securely close handhole cover and engine topdeck covers.
- 8.1.3.4.10 Place DG 1A (1B) (1C) Control Switch at Local DG 1A (1B) (1C) Control Panel in OPERATE (AUTO) position.

NOTE

Setting the DG 1C Governor Speed Droop to 50% INOPS the DG. Refer to ITS LCOs 3.8.1 or 3.8.2.

- 8.1.3.5 IF Starting DG 1C for parallel operations,
 THEN set DG 1C Governor Speed Droop at 50%.
 - a) IF Div 3 DG is OPERABLE, THEN Declare associated DG INOP.
 - b) IF Div 3 DG is OPERABLE,

 THEN Perform or verify current section 8.1 of CPS No.

 9082.01 if in Modes 1, 2, or 3.

NOTE

The following step should only be performed for PMT run following Fuel System maintenance. Refer to 4.15.

8.1.3.6 IF Maintenance was performed on the fuel system,

THEN Prime the engine using the Manual Fuel Prime
pushbutton located on the local control panel for DG
1A(1B), prime each engine until the pump discharge pressure
has been stable for at least one minute, then continue
priming for several more minutes.

CAUTION

When Diesel Generator room ventilation fan starts personnel could become trapped in HVAC Room.

- 8.1.3.7 Notify operator in Diesel Generator 1A(1B)(1C) Room of impending diesel start, and ensure the respective Diesel Generator HVAC Room is clear of personnel.
- 8.1.3.8 Start Diesel Generator 1A (1B) (1C) with the DG 1A (1B) (1C) Control switch on 1H13-P877 (P601).
- 8.1.3.9 Verify the Fuel Oil Transfer Pump starts at 1H13-P877 (P601), or locally.
- 8.1.3.10 Verify Diesel Generator 1A (1B) (1C) Room Ventilation Fan running on 1H13-P801 (P800), or locally.
- 8.1.3.11 Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX063A(B) (1SX006C) open.

NOTE

SX System A(B) may not start if WS System pressure does not drop below 79.6 psig.

- 8.1.3.12 IF SX pump 1SX01PA(B)(C) starts,
 - THEN Verify Plant Service Water (WS) to Shutdown Service Water (SX) header isolation valve 1SX014A(B)(C) closed.
- 8.1.3.13 Verify DG 1A(1B)(1C) frequency 58.8-61.2 Hz.
- © C 8.1.3.14 Verify (using one of the following indications) DG 1A (1B) (1C) voltage, panel meter 4000(4000)(4000), computer point 4015(4015)(3978), GETARS 3911(3911)(3902) to <4200 volts.

NOTE

For smoother diesel adjustments of voltage and load during operation, the following two steps should be used to adjust the frequency and voltage to "Wipe the Pots". This action will prevent a buildup of dirt and moisture.

- 8.1.3.15 Verify remote speed control by varying DG 1A (1B) (1C) frequency with DG 1A (1B) (1C) Governor control switch on 1H13-P877 (P601).
- 8.1.3.16 Verify remote voltage control by varying DG 1A (1B) (1C) voltage with DG 1A (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P601).
- 8.1.3.17 Locally check cylinder test valves and handhole covers for leakage and tighten as necessary.

益

JPM NUMBER: NRC 5	REVISION:0_
TASK TITLE: Equalize Around and Open MSIVs per CPS No.	. 4411.09
TASK NUMBER: 015200C643	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance_	X
Classroom Simulator X Pla	int
APPROXIMATE TIME FOR COMPLETION: 30 minutes	s
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 5	REVISION:0_
READ TO THE OPERAT	TOR
I will explain the initial conditions, which step(s) to simulate or When you complete the task successfully, the objective of this satisfied.	r discuss, and provide the initiating cues. Job Performance Measure will be
SIMULATOR SET-UP CONDITIONS:	
Any IC with the reactor shutdown, RPV pressurized, and MSIV condenser vacuum pump is lined up and running on the Main Colose Turbine Drains.	Vs/MSL drains shut. Establish/verify a Condenser. Reset the Main Turbine and
TASK STANDARDS:	
Operator actions performed per CPS No. 4411.09	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREME	INTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 4411.09, RPV PRESSURE CONTROL SOURCES	
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE:	
A loss of IA resulted in closure of the MSIVs. IA has been recoassist in RPV pressure control you are directed to reopen the M	
START TIME:	

JPM NUM	BER: NRC 5			REVISION:0_
		PERFORMANCE IN	FORMATION	
letters. Fail	ure to meet the	ith a asterisk (*) to the left of standards for a critical step costeps is assumed unless denot	onstitutes failure of	f the Job Performance
		PERFORMANC	E STEPS	
JPM TITLE	: Equalize Arou	und and Open MSIVs per CP	S No. 4411.09	
		NOT	ΓΕ	
		guidance for normal operation EAM (MS, IS & ADS).	ng modes is in CPS	S No. 3101.01,
2.2.2 a	<u>IF</u> This	step was entered from EOP-	2, EOP-3, or EOP-	-4,
	THEN 1)	OK to defeat isolations per CPS No. 4410.00C007, DI PRESSURE CONTROL S	EFEATING RPV	OCKS.
	2)	OK to exceed 100°F/hr cod	oldown.	
2.2.2 b	Reset any cle	eared GROUP 1 isolations.		
STANDARI	D:			
Determines reset.	that no pressure	control system interlocks ne	ed to be defeated a	and that Group 1 isolation is
CUE:				
COMMENT	rs:			
			SAT	UNSAT
				AND AND ADDRESS OF THE PARTY OF

JPM NUMBI	ER: NI	REVISION: 0
2.2.2 c	Regard	lless if Circ Water (CW) is available or not: OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to BYPASS to clear Gr 1 interlocks.
	1)	Establish vacuum per CPS No. 3112.01, CONDENSER VACUUM (CA), or
	2)	If vacuum cannot be established, open 1CA007, Condenser Vacuum Breaker Valve.
2.2.2 d		id inadvertent bypass valve operation, maintain Pressure Set Point at least 50 psig pressure.
STANDARD:		
Determines the	at Cond	enser vacuum is already established
CUE:		
COMMENTS	:	
		SATUNSAT

JPM NUMBE	CR: NRC 5		REVISION: 0
*2.2.2 e	Open 1B21-F098A(B, C, & D), Main	Steam Shutoff Va	alves.
STANDARD:			
Takes handswi	tches for 1B21-F098A(B,C,&D) to OPE	N and observes R	ED light ON for each valve.
CUE:			
COMMENTS:			
		SAT	UNSAT
*2.2.2 f	Open 1B21-F028A(B, C, & D), Main and OK to open following drains to 1B21-F067A(B, C, & D) Seat Drn Vlvs. 1B21-F068, Outbd MSIV 1B21-F069, Outbd MSIV	assist in the attem , MSL Outbd MSI V Before Seat War	pt. IV Before mup Drn VIv.
STANDARD:			
Takes handswi	tches for 1B21-F)28A(B, C, & D), to OI	PEN and observes	RED light ON for each valve.
CUE:			
COMMENTS:			
May open drain	n valves to assist in equalizing		
		SAT	UNSAT

	NRC 5		REVISION: _0_
Equ	alize around the MSIVs by	opening:	
1)	1B21-F016, MS Drn & N	ASIV Byp Inbd Isol Va	lve.
2) 3)			
D:			
switches	for 1B21-F016, 19, and 20 to	OPEN and observes RE	ED light ON for each valve.
rs:			
		SAT	UNSAT
	1) 2) 3) D:	1) 1B21-F016, MS Drn & M 2) 1B21-F019, MS Drn & M 3) 1B21-F020, MSIV Byp M D: switches for 1B21-F016, 19, and 20 to	2) 1B21-F019, MS Drn & MSIV Byp Outbd Isol V 3) 1B21-F020, MSIV Byp VIv For MS Line Warm D: switches for 1B21-F016, 19, and 20 to OPEN and observes RE

JPM NUME	BER: NRC 5	REVISION: 0
*2.2.2 h	Establish a	$\Delta P \le 200$ psid across the MSIVs.
	OK t	o shut following drains to assist in the attempt. 1B21-F015, MS Low Points Drn Shutoff Valve. 1B21-F021, Inbd MSIV Before Seat Warmup Drn Valve. 1B21-F033, Inbd MSIV Before Seat Warmup Drn Valve. 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv. 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv. 1B21-F070, MS Low Point Warm Up Drn Vlv. 1B21-F071, MS Low Point Normal Drn Vlv. 1TD-SV1(3,5,7), Mn Turb Stop Vlv #1(2,3,4) Drn Vlv (TG needs to be reset to shut).
STANDARI);	
Establishes <	200 psid acros	s MSIVs. Shuts drain valves as necessary.
CUE:		
COMMENT	S:	
		SATUNSAT

JPM NUMBE	R: NRC 5	RE	VISION:0_
*8.2.2.2 i	Open 1B21-F022A(B, C, & D), Main Steam	n Line Inbd MSIV	Vs.
STANDARD:			
Takes handswi	tches for 1B21-FO22A(B, C, & D) to OPEN,	and observes RED	light ON for each valve.
CUE:			
COMMENTS:			
		SAT	_UNSAT
SERVICE CONTRACTOR OF STREET		THE RESIDENCE OF THE PROPERTY AND ADDRESS OF THE PROPERTY OF T	

JPM NUMBER: NRC 5	REVISION: 0
TERMINATING CUES:	
MSIVs are reopened.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 1
The plant operating at 96% power. A C&I tech is performing a surveillance on Group One closure signals and currently has one of the channels tripped to perform the surveillance. The plant experiences a transient that results in the other channel tripping and causing an MSIV closure and a resultant SCRAM. The operators perform the immediate actions for the SCRAM. When the turbine generator tripped off line, one of the bypass valves came open about 50% and stuck open. The MSL pressure dropped quickly (<300 psig), while reactor vessel pressure is being controlled by the relief valves 51C and 51D.
Determine how you would recover (unisolate and open MSIVs) from this situation.
ANSWER:
Shut the open bypass valve, Using CPS No. 3101.01 step 8.1.1, open all the MSIVs except the inboards, Bypass the Inboard MSIVs and reduce dP to less than 100 psid, open Inboard MSIVs and watch level to minimize a level increase.
REFERENCE(S):
CPS No. 3101.01, MAIN STEAM (MS, IS & ADS)
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 2
You are the CRS and the plant has been operating at near rated power for several weeks. The BCRO announces that temperatures in the main steam line tunnels are increasing, currently at 140°F and that the differential temperature in the tunnel, currently at 45°F, is also increasing.
What actions need to be taken.
ANSWER:
Ensure Aux Building HVAC operating, Determine if it is a RCIC or Main Steam Line leak.
(At 151°F 5067-2F will annunciate, and at 156°F 5067-1D will annunciate, and also Groups 1, 4, 5 & 6 will isolate).
REFERENCE(S):
CPS No. 5067.01D CPS No. 5067.02F
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
239001 239001	A2.03 K4.01			4.2 3.8
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY:		/		
REVIEWED BY:		1		
APPROVED BY:	Supervisor - Requalification and	/		
	Operations Training			

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

A loss of IA resulted in closure of the MSIVs. IA has been recovered. EOP-1 has been entered and to assist in RPV pressure control you are directed to reopen the MSIVs per CPS No. 4411.09

CPS No. 4411.09

2.2 NORMAL MCR SYSTEM LINEUP/OPERATION

2.2.1 BYPASS VALVES TO MAIN CONDENSER

- a) If necessary, open the MSIVs per step 2.2.2.
- b) Open Main Turbine Bypass Valves as necessary to establish and maintain the desired pressure by using either of the following methods:
 - Depress Bypass Valve Opening Jack INCREASE push-button to open bypass valves as needed.
 - Fastest method, but no auto pressure control is available when using the Jack.
 - When Pressure Set control is desired/obtained, return the jack to full down.
 - Depress Pressure Set Point DECREASE push-button and lower the setpoint to below RPV pressure.
 - Slower method, but provides auto pressure control.
 - Lowering Pressure Set maximizes Bypass Valve availability, and causes the SRVs to close.

2.2.2 OPENING MSIVs

NOTE

Additional guidance for normal operating modes is in CPS No. 3101.01, MAIN STEAM (MS, IS & ADS).

- a) IF This step was entered from EOP-2, EOP-3, or EOP-4,
 - THEN 1) OK to defeat isolations per CPS No. 4410.00C007, DEFEATING RPV PRESSURE CONTROL SYSTEM INTERLOCKS.
 - 2) OK to exceed 100°F/hr cooldown.
- b) Reset any cleared GROUP 1 isolations.
- c) Regardless if Circ Water (CW) is available or not:
 - OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to BYPASS to clear Gr 1 interlocks.
 - 1) Establish vacuum per CPS No. 3112.01, CONDENSER VACUUM (CA), or
 - 2) If vacuum cannot be established, open 1.CA007, Condenser Vacuum Breaker Valve.
- d) To avoid inadvertent bypass valve operation, maintain Pressure Set Point at least 50 psig > RPV pressure.

2.2.2 OPENING MSIVs (cont'd)

- e) Open 1B21-F098A(B, C, & D), Main Steam Shutoff Valves.
- f) Open 1B21-F028A(B, C, & D), Main Steam Line Outbd MSIVs.
 - OK to open following drains to assist in the attempt.
 - ° 1B21-F067A(B, C, & D), MSL Outbd MSIV Before Seat Drn Vlvs.
 - ° 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
 - ° 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
- g) Equalize around the MSIVs by opening:
 - 1) 1B21-F016, MS Drn & MSIV Byp Inbd Isol Valve.
 - 2) 1B21-F019, MS Drn & MSIV Byp Outbd Isol Valve.
 - 3) 1B21-F020, MSIV Byp Vlv For MS Line Warm Up.
- h) Establish a $\Delta P \leq 200$ psid across the MSIVs.
 - TOK to shut following drains to assist in the attempt.
 - ° 1B21-F015, MS Low Points Drn Shutoff Valve.
 - ° 1B21-F021, Inbd MSIV Before Seat Warmup Drn Valve.
 - ° 1B21-F033, Inbd MSIV Before Seat Warmup Drn Valve.
 - ° 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
 - ° 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
 - ° 1B21-F070, MS Low Point Warm Up Drn Vlv.
 - ° 1B21-F071, MS Low Point Normal Drn Vlv.
 - ° 1TD-SV1(3,5,7), Mn Turb Stop Vlv #1(2,3,4) Drn Vlv (TG needs to be reset to shut).
- i) Open 1B21-F022A(B, C, & D), Main Steam Line Inbd MSIVs.

2.2.3 SRVs

No unique lineups or operating modes exist when using the SRVs for pressure control.

Operate the SRVs in accordance with CPS No. 3101.01, MAIN STEAM (MS, IS & ADS) and within the guidelines specified in the entry EOPs.

JPM NUMBER: NRC 6	REVISION: 0
TASK TITLE: Shutdown RCIC - Initiation Signal Clear	
TASK NUMBER: 011217C005	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Perform	ance X
Classroom Simulator X	Plant
APPROXIMATE TIME FOR COMPLETION: 5 mi	inutes
Prepared/Revised by:	Date:
Reviewed by:Instructor - Operations	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 6	REVISION: 0
READ TO THE	OPERATOR
I will explain the initial conditions, which step(s) to si When you complete the task successfully, the objective satisfied.	mulate or discuss, and provide the initiating cue we of this Job Performance Measure will be
SIMULATOR SET-UP CONDITIONS:	
100% power with RCIC operating in the tank to tank	mode.
TASK STANDARDS:	
RCIC shutdown per CPS No. 3310.01, Section 8.1.6	
TOOLS, EQUIPMENT, OTHER SPECIAL REQU	UIREMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3310.01, REACTOR CORE ISOLATION C	OOLING (RI), Section 8.1.6
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE	
RCIC is currently operating in tank to tank mode. She	utdown RCIC per CPS No. 3310.01.
STADT TIME.	

JPM NUN	MBER: NRC 6		REVISION:0
	PERFORMANC	E INFORMATION	
letters. Fa	eps are denoted with a asterisk (*) to the lilure to meet the standards for a critical s. The sequence of steps is assumed unless.	tep constitutes failure o	f the Job Performance
	PERFORM	ANCE STEPS	
JPM TITL	E: Shutdown RCIC - Initiation Signal C	lear	
	N	OTE	
	Do not secure or place RCIC in manu		ted to per the
	EOPs, or by at least two independent a) misoperation in automatic mode		
	b) adequate core cooling is assured.		
	Minimize time on RCIC Min flow pe	r Limitation 6.2.5.	
8.1.6.1	If necessary, depress RCIC SEAL II	N RESET push-button.	The second secon
STANDA	RD:		
Determine	s RESET is not necessary. WHITE light	is extinguished.	
CUE:			
COMMEN	VTS:		

JPM NUMBER: NRC 6	REVISION: 0
*8.1.6.2 Shut (if open) 1F.51-F022, RCIC Pmp First Test Valve To Stor Tank.	
STANDARD:	
Takes han switch for 1E51-F022 to CLOSE and observes GREEN	light ON.
CUE:	
COMMENTS:	
	UNSAT
*8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Va	lve.
STANDARD:	
Takes handswitch for 1E51-F095 to SHUT and observes GREEN light	ht ON.
CUE:	
COMMENTS:	
SAT_	UNSAT

JPM NUM	BER: NRC 6 REVISION: 0
*8.1.6.4	Trip RCIC turbine from 1H13-P601 by depressing the RCIC TURBINE REMOTE TRIP push-button.
STANDARI	D:
	CIC turbine by depressing the trip pushbutton and observes GREEN light ON for trip/throttlene speed decreasing
CUE:	
COMMENT	TS:
	SATUNSAT
*8.1.6.5	Shut (if open) 1E51-F059, RCIC Pmp Second Test Valve To Stor Tank.
STANDARI	D:
Takes hands	switch for 1E51-F059 to close and observes GREEN light ON.
CUE:	
COMMENT	rs:
	SATUNSAT

JPM NUMI	BER: _N	NRC 6 REVISION: _	0
*8.1.6.6		t/verify shut 1E51-F045, CIC Turb Stm Supp Shutoff Valve.	
STANDARI):		
Takes hands	witch fo	or 1E51-F045 to CLOSE and observes GREEN light ON.	
CUE:			
COMMENT	S:		
		SATUNSAT	
		E 1-F005 is normally closed and opens as required by a level signal fron ine exhaust drain pot.	n the
8.1.6.7		r 1E51-F045 closes, by the following valves open automatically:	
	a)	1E51-F004, RCIC Turb Exh Drn To RF First Isol VIv.	
	b)	1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve. 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.	
STANDARI):		
After 1E51-I for each valv		SHUT, verifies 1E51-F004, F025, and F026 SHUT by observing GR	EEN light ON
CUE:			
COMMENT	S:		
		SATUNSAT	

JPM NUMBER: NRC 6		NRC 6 REVISION: 0
8.1.6.8	Verif	fy following valves shut:
	a) b)	1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve. 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool.
STANDAR	D:	
Verifies 1E	51-F013	and 1E51-F019 SHUT by observing GREEN light ON for each valve.
CUE:		
COMMENT	ΓS:	
		SATUNSAT
8.1.6.9	Resera)	t the RCIC Turbine Trip & Throttle Valve as follows: Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch to CLOSE to reset the RCIC Turbine Trip & Throttle Valve. Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).
STANDAR	D:	
		or 1E51-C002 to CLOSE and verifies GREEN light ON. Takes handswitch for N and verifies RED light ON.
CUE:		
COMMENT	ΓS:	
		SATUNSAT

JPM NUMBER: NRC 6	REV	/ISION:0
8.1.6.10 Stop the Gland Seal Air Compressor		
STANDARD:		
Takes handswitch for Gland Seal Compressor to STOP and o	bserves GREEN Ii	ght ON.
CUE:		
COMMENTS:		
	SAT	UNSAT
8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb L	ube Oil Clr.	
STANDARD:		
Takes handswitch for 1E51-F046 to CLOSE and verifies GR	EEN light ON.	
CUE:		
COMMENTS:		
	SAT	UNSAT
8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 se	et to 600 gpm/AUT	°O.
STANDARD:		
Verifies 1E51-R600 set to 600 gpm and in AUTO.		
CUE:		
COMMENTS:		
	SAT	UNSAT

JPM NUMBER: NRC 6	REVISION:0	
TERMINATING CUES:		
RCIC is shutdown		
STOP TIME:		

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 1
The plant was operating at ~54% power with the 'B' TDRFP having been shutdown for troubleshooting following a trip. A small break LOCA occurred causing a high drywell pressure condition. Subsequently, RPV level dropped to Level 2 and RCIC auto started. Shortly thereafter, RCIC tripped and isolated. Why did RCIC trip and isolate and what caused the condition that led to the trip and isolation?
ANSWER:
RCIC isolated on a high area temperature which caused the trip. The high temperature was caused by the failure of the gland seal air compressor to auto start on an initiation signal because it had been shunt tripped on the high drywell pressure signal.
REFERENCE(S):
CPS 3310.01
RESPONSE:
SAT INSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.: 2
What is the response of the RCIC system if aligned in the CST to CST mode to an increasing Suppression Pool Level?
ANSWER: 1E51-F031, RCIC Suppr Pool Suction Valve, opens 1E51-F010, RCIC Storage Tank Suction Valve, closes 1E51-F022, RCIC Pmp First Test Valve to Stor Tank, closes 1E51-F059, RCIC Pmp Second Test Valve to Stor Tank, closes Pump runs on minimum flow
REFERENCE(S):
CPS No. 3310.01
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating K/A SYSTEM NUMBER K/A NUMBER RO SRO 217000 A2.01 3.7 217000 A2.12 3.4 JTA: TASK NUMBER ANSWER TIME: Min ORIGINATED/REVISED BY: REVIEWED BY: APPROVED BY:

Supervisor - Requalification and Operations Training

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

RCIC is currently operating in tank to tank mode. Shutdown RCIC per CPS No. 3310.01

8.1.6 Shutdown - Initiation Signal Clear

NOTE

Do not secure or place RCIC in manual override unless directed to per the EOPs, or by at least two independent indications:

- a) misoperation in automatic mode is confirmed,
- b) adequate core cooling is assured.

Minimize time on RCIC Min flow per Limitation 6.2.5.

- 8.1.6.1 If necessary, depress RCIC SEAL IN RESET push-button.
- 8.1.6.2 Shut (if open) 1E51-F022, RCIC Pmp First Test Valve To Stor Tank.
 - 8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Valve.
 - 8.1.6.4 Trip RCIC turbine from 1H13-P601 by depressing the RCIC TURBINE REMOTE TRIP push-button.
- 0 8.1.6.5 Shut (if open) 1E51-F059, RCIC Pmp Second Test Valve To Stor Tank.
 - 8.1.6.6 Shut/verify shut 1E51-F045, RCIC Turb Stm Supp Shutoff Valve.

NOTE

1E51-F005 is normally closed and opens as required by a level signal from the turbine exhaust drain pot.

- 8.1.6.7 After 1E51-F045 closes, verify the following valves open automatically:
 - a) 1E51-F004, RCIC Turb Exh Drn To RF First Isol Vlv.
 - b) 1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve.
 - c) 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.
- 8.1.6.8 Verify following valves shut:
 - a) 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve.
 - b) 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool.
- 0 8.1.6.9 Reset the RCIC Turbine Trip & Throttle Valve as follows:
 - a) Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch to CLOSE to reset the RCIC Turbine Trip & Throttle Valve.
 - b) Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).
 - 8.1.6.10 Stop the Gland Seal Air Compressor.
 - 8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb Lube Oil Clr.
 - 8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 set to 600 gpm/AUTO.

0

JPM NUMBER: NRC 7	REVISION: 0
TASK TITLE: Purge Primary Containment Using VG	
TASK NUMBER: 011261C505	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance Actual Performance	mance X
Classroom Simulator X	Plant
APPROXIMATE TIME FOR COMPLETION: 15	minutes
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7	REVISION: 0
READ TO THE OPERATOR	
I will explain the initial conditions, which step(s) to simulate or discuss. When you complete the task successfully, the objective of this Job Perfesatisfied.	, and provide the initiating cues. formance Measure will be
SIMULATOR SET-UP CONDITIONS:	
Any suitable IC with VG trains in standby and containment pressure < 2	2.6 psig.
TASK STANDARDS:	
Primary Containment purged using SGTS per CPS No. 3319.01	
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:	
None	
PROCEDURAL/REFERENCES:	
CPS No. 3319.01, STANDBY GAS TREATMENT (VG), Section 8.2.5	5
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM steps.	
INITIAL CONDITIONS AND INITIATING CUE:	
It has been decided to purge primary containment following completion you to purge primary containment using Stanby Gas Treatment.	of painting. The CRS directs

START TIME:

JPM NUMBI	ER. NRC 7 REVISION: 0
	PERFORMANCE INFORMATION
letters. Failur	are denoted with a asterisk (*) to the left of the step number and appear in BOLDED to meet the standards for a critical step constitutes failure of the Job Performance exequence of steps is assumed unless denoted in the comments section of the JPM.
	PERFORMANCE STEPS
JPM TITLE:	Purge Primary Containment Using Standby Gas Treatment (VG)
	CAUTION
	SBGT should not be used if area being ventilated is > 212°F.
	NOTE
	CNMT purge is <u>not</u> available if CNMT pressure is ≥ 2.6 psid. This interlock shall <u>not</u> be defeated to run VG for CNMT purge. (Actual setpoint 2.56 psid, SPDS reads only to tenths).
8.2.5.1	Verify CNMT pressure < 2.6 psid by observing HI CNMT PRESS white indicating light (above 1VG01YA/B switch) OFF.
STANDARD:	
Verifies conta	inment pressure < 2.6 psid by observing HI CNMT PRESS WHITE light OFF.
CUE:	
COMMENTS	
	SATUNSAT

JPM NUMB	ER: N	IRC 7		REVISION:0
8.2.5.2	Notify Radiation Protection to verify 0PR03S or 0PR04S in service and Chemistry Department should be notified immediately after establishing flow.			
STANDARD	:			
Notifies RP to	verify	0PR03S or 0PR04S in service		
CUE:				
0PR03S is in	service			
COMMENTS	S:			
			SAT	UNSAT
*8.2.5.3		on the selected train's 1VG02YA(h to CLOSE and verify:	B), Fuel Buildin	ng Isolation Damper control
	a)	1VG02YA(B) closes. (if open)		
	b)	1VG04YA(B), SGTS TRN A(B)	Pmp Rms Suction	on Damper closes.
	c)	1VG05YA(B), SGTS TRN A(B)	Fuel Bldg Suct I	Ompr closes (if open)
	d)	1VG06YA(B), SGTS TRN A (B)	ECCS Rms Suc	t Dmpr closes.
STANDARD				
Takes handsw 1VG05YA, ar		r 1VG02YA to CLOSE and verifies 606YA.	GREEN light O	N for 1VG02YA, 1VG04YA,
CUE:				
COMMENTS):			
			SAT	UNSAT

JPM NUM	BER: NRC 7 REVISION: 0
	c <u>NOTE</u>
	In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.
☞ Obtain	n Shift/Assistant Shift Supervisors approval to perform the following step.
*8.2.5.4	Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.
STANDARI	D:
	rmission to complete step 8.2.5.4 and open 1VQ006A and 1VQ006B. ing permission, takes handswitch for 1VQ006A/6B to OPEN and observes RED light for
CUE:	
Open 1VQ0	06A and 1VQ006B
COMMENT	rs:
	SATUNSAT

JPM NUM	BER: NRC 7 REVISION: 0			
	NOTE			
	Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.			
*8.2.5.5	Place the selected train in service by starting its respective Exhaust Fan, 0VG02CA(B).			
STANDAR	D:			
Takes hands	witch for 0VG02CA Exhaust Fan to START and observes RED light ON.			
CUE:				
COMMENT	'S:			
	SAT INCAT			
	SAIUNSAI			
	SATUNSAT			

JPM NUM	BER: NRC 7 REVISION: 0
	NOTE
	The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.
	For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.
*8.2.5.6	If the white Permissive light is unlit (indicating less than 2.6 psid Containment pressure), then open 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.
STANDARI	D:
Verifies WH observes RE	ITE Permissive light is UNLIT and takes handswitch for 1VG01YA to PURGE and D light ON.
CUE:	
COMMENT	S:
	SAT UNSAT

JPM NUMB	ER: NRC 7 REVISION: 0
	c <u>NOTE</u>
	In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, &3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.
T Obtain	Shift/Assistant Shift Supervisors approval to perform the following step.
*8.2.5.7	When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
STANDARD	
When Contain	nission to open 1VR002A and 1VR002B when containment pressure becomes negative. ument pressure becomes negative, takes handswitch for 1VR002A and 1VR002B to OPEN RED light ON for each damper.
CUE:	
Open 1VR002	2A and 1VR002B when containment pressure becomes negative.
COMMENTS	
	SATUNSAT

JPM NUMB	BER: NRC 7 RE	REVISION:0		
*8.2.5.8	When Containment Purge with SGTS is no longer desired, 1VR002B, Containment Building Supply Isolation Bypass d	close 1VR002A and lampers.		
STANDARD	D:			
Takes handsw damper.	switch for 1VR002A and 1VR002B to CLOSE and observes GREE	EN light ON for each		
CUE:				
Containment	at purge using SGTS is no longer needed.			
COMMENTS	TS:			
	SATUN	SAT		
*8.2.5.9	Close 1VQ006A and 1VQ006B, Containment Building Exhadampers	aust Isolation Bypass		
STANDARD	D:			
Takes handsw damper.	switch for 1VQ006A and 1VQ006B to CLOSE and observes GREI	EN light ON for each		
CUE:				
COMMENTS	rs:			
	SATUN	SAT		

JPM NUMB	ER: NRC 7		REVISION: 0
*8.2.5.10	Close 1VG01YA(B), SGTS Trn A(B) its handswitch to NORMAL.	DW Purge Isolati	on Damper by positioning
STANDARD			
Takes handsw	vitch for IVG01YA to NORMAL and obs	serves GREEN ligh	nt ON.
CUE:			
COMMENTS	S:		
		SAT	UNSAT
8.2.5.11	Verify Chemistry has performed sample CHEMISTRY SURVEILLANCE LOG shutdown.		
STANDARD	:		
Contacts Cher	mistry to verify samples have been perfor	med per CPS 9199	40.01
CUE:			
Samples Lave	been performed per CPS 919940.01		
COMMENTS	3:		
		SAT	UNSAT

	NOTE
	1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when the Exhaust Fan is stopped.
*8.2.5.12	Shutdown the operating SGTS train by stopping its respective Exhaust Fan, 0VG02CA(B) by returning its control switch to AUTO.
STANDAR	D:
Takes hands	witch for 0VG02CA to AUTO and observes GREEN light ON.
CUE:	
COMMENT	'S:

JPM NUM	BER: _!	NRC 7		REVISION: 0		
8.2.5.13	in the	the SGTS TRN A(B) STANDI inue to operate the fan until such heat he charcoal absorber has decrease led. (Refer to section 8.2.2.2 for	th time that it has be	een determined that the decay		
*8.2.3.1	Star	Start Cooling Fan, 0VG03CA(B), and verify that the following dampers open:				
	a)	0VG03YA(B), SGTS TRN	A(B) Cont. Bldg Is	sol Damper		
	b)	0VG04YA(B), SGTS TRN	A(B) Clg Fan 3CA	(B) Exh Damper		
	c)	0VG05YA(B), SGTS TRN	A(B) Exh Fan (Sta	ck) Damper		
STANDAR	D:					
Takes hands dampers 0V	switch for	or 0VG03CA to START and ob., 0VG04YA, and 0VG05YA.	serves RED light (ON. Verifies RED light ON for		
CUE:						
COMMEN	TS:					
			SAT	UNSAT		

JPM NUMBER: NRC 7		REVISION:0		
*8.2.5.14	Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed)			
STANDARD	D:			
Takes handsv GREEN light	witch 1VG02YA to AUTO and verifies R at ON.	ED light ON for	1VG04YB. Verifies 1VG04YA	
CUE:				
COMMENT	`S:			
		SAT	UNSAT	
8.2.5.15	If desired, establish Containment Build CONTAINMENT BUILDING/DRYW			
STANDARD	D:			
Requests dire	ection to establish Containment Building	ventilation.		
CUE:				
Will not be e	established at this time.			
COMMENT	S:			
		SAT	UNSAT	

JPM NUMBER: NRC 7	REVISION:0
TERMINATING CUES:	
Containment Purge using SGTS has been completed.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

THIS IS A CLOSED BOOK QUESTION

QUESTION NO.:
Given the following conditions:
 A complete Standby Gas Treatment System initiation signal was received. Both Standby Gas Treatment Trains started as designed. The "A" Standby Gas Treatment Train was manually secured by the BCRO. The "B" Standby Gas Treatment Train is currently operating.
What condition will automatically start the "A" Standby Gas Treatment Train?
ANSWER:
Low flow in the operating train (Standby Gas Treatment Train).
REFERENCE(S):
CPS No. 3319.01
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 2
Describe how the Standby Gas Treatment System (SGTS) and ventilations systems will respond to a CCP Exhaust High Radiation Signal.
ANSWER:
All SGTS controlled ventilation systems (Fuel Building, Containment Building, Containment/Drywell Purge, and CCP HVAC) are secured. Both trains of SGTS will start.
REFERENCE(S):
CPS No. 3319.01 CPS No. 3404.01 CPS No. 3408.01
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating K/A SYSTEM NUMBER K/A NUMBER RO SRO 261000 K4.01 3.8 261000 K6.04 3.1 JTA: TASK NUMBER ANSWER TIME: Min ORIGINATED/REVISED BY: REVIEWED BY: APPROVED BY: Supervisor - Requalification and

Operations Training

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

It has been decided to purge primary containment following completion of painting. The CRS directs you to purge primary containment using Stanby Gas Treatment.

8.2.5 Using Standby Gas Treatment To Purge Primary Containment

CAUTION

SBGT should not be used if area being ventilated is > 212°F.

NOTE

CNMT purge is <u>not</u> available if CNMT pressure is \geq 2.6 psid. This interlock shall <u>not</u> be defeated to run VG for CNMT purge. (Actual setpoint 2.56 psid, SPDS reads only to tenths).

- 8.2.5.1 Verify CNMT pressure < 2.6 psid by observing HI CNMT PRESS white indicating light (above 1VG01YA/B switch) OFF.
- 8.2.5.2 Notify Radiation Protection to verify OPRO3S or OPRO4S in service and Chemistry Department should be notified immediately after establishing flow.
- 8.2.5.3 Position the selected train's 1VG02YA(B), Fuel Building Isolation Damper control switch to CLOSE and verify:
 - a) 1VG02YA(B) closes. (if open)
 - b) 1VG04YA(B), SGTS TRN A(B) Pmp Rms Suction Damper closes.
 - c) 1VG05YA(B), SGTS TRN A(B) Fuel Bldg Suct Dmpr closes. (if open)
 - d) 1VG06YA(B), SGTS TRN A (B) ECCS Rms Suct Dmpr closes.

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

- Obtain Shift/Assistant Shift Supervisors approval to perform the following step.
- 8.2.5.4 Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.

NOTE

Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.

8.2.5.5 Place the selected train in service by starting its respective Exhaust Fan, OVGO2CA(B).

NOTE

The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.

For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.

8.2.5.6 If the white Permissive light is unlit (indicating less than 2.6 psid Containment pressure), then open 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, &3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

- Obtain Shift/Assistant Shift Supervisors approval to perform the following step.
- 8.2.5.7 When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
- 8.2.5.8 When Containment Purge with SGTS is no longer desired, close 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
- 8.2.5.9 Close 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.
- 8.2.5.10 Close 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its handswitch to NORMAL.

C

C 8.2.5.11 Verify Chemistry has performed samples as required per CPS 919940.01, WEEKLY CHEMISTRY SURVEILLANCE LOG and ODCM 3.2.2/ TBL 3.4-1 ITEM B prior to shutdown.

NOTE

1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when the Exhaust Fan is stopped.

- 8.2.5.12 Shutdown the operating SGTS train by stopping its respective Exhaust Fan, OVGO2CA(B) by returning its control switch to AUTO.
- 8.2.5.13 Start the SGTS TRN A(B) STANDBY CLG FAN, OVGO3CA(B) per 8.2.2.1 and continue to operate the fan until such time that it has been determined that the decay heat in the charcoal absorber has decreased to the point where the Cooling Fan is no longer needed. (Refer to section 8.2.2.2 for shutting down the fan.)
- 8.2.5.14 Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed).
- 8.2.5.15 If desired, establish Containment Building ventilation/purge per CPS No. 3408.01, CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ).
- 8.3 Abnormal Operation

None

9.0 ACCEPTANCE CRITERIA

None

10.0 FINAL CONDITIONS

None

JPM NUMBER: NRC 8	REVISION: 0
TASK TITLE: Startup a Steam Bypass Hydraulic Power Unit	
TASK NUMBER: 041248C517	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance X Actual Performance	
Classroom Simulator Plan	ntX
APPROXIMATE TIME FOR COMPLETION: 20 minutes	
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by: Supervisor - Operations Training	Date:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8	REVISION:0_	

READ TO THE OPERATOR

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

SIMULATOR SET-UP CONDITIONS:

None

TASK STANDARDS:

Operator actions performed per CPS No. 3105.04

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

None

PROCEDURAL/REFERENCES:

CPS No. 3105.04, STEAM BYPASS AND PRESSURE REGULATOR (SB)

EVALUATOR INSTRUCTIONS:

Amplifying cues are provided within the JPM steps.

INITIAL CONDITIONS AND INITIATING CUE:

A plant is currently in an outage. You are directed to start the 'A' Steam Bypass HPU for testing . The standby pump is unavailable.

START TIME:	

JPM NUMBER: NRC 8			REVISION:0_
	PERFORMANCE II	NFORMATION	- Charle and the last was not considered and the last was a last of the last o
letters. Failu	s are denoted with a asterisk (*) to the left or are to meet the standards for a critical step he sequence of steps is assumed unless den	constitutes failure of	the Job Performance
	PERFORMAN	CE STEPS	
JPM TITLE:	Startup a Steam Bypass Hydraulic Power	r Unit	
	No	OTE	
	The following startup refers to the HP valves. The operation of the Steam B system will be per the plant startup/sh	ypass and Pressure I	Regulation (SB)
	Temperature of the fluid must be ≥ 90	°F before the pumps	s are started.
8.1.1 a)	IF: Fluid temperature is < 90°F,		
	THEN: Turn on space heaters 1A and/	or 1B to increase flu	id
b)	temperature. IF: Temperature is $\geq 90^{\circ}F$,		
	THEN: Verify/Place space heaters 1A	and 1B in Auto.	
STANDARI	D:		
If temperatur heaters 1A in	re is < 90, simulates turning space heater 1 n Auto.	A ON, if temperatur	e is ≥ 90, verifies space
CUE:			
COMMENT	S:		
		SAT	UNSAT

JPM NUMBI	ER: NRC 8 REVISION: 0
	NOTE
	Following maintenance on the suction piping, the hydraulic pump or extended shutdown, the hydraulic pumps must be filled with oil before starting in order to prevent damage to the pumps.
c)	IF: This will be a startup following maintenance on the suction piping, hydraulic pump or an extended shutdown.
	<u>THEN</u> :Perform the following steps to fill the pump(s):
	1) Isolate and remove from service the EHC pump(s) per CPS No. 1014.01, SAFETY TAGGING.
	2) Clean the area around the case vent connection.
	3) Fill/verified filled the EHC pump(s) with fluid through the case vent connection located on top of the pump housing.
	4) Re-install the case vent connection
	5) Remove the tagout that was installed in step 1.
*d)	Open 1C85-FV01, Supply HDR Bypass Valve one-half turn
STANDARD:	
	ening 1C85-FV01 one-half turn by turning the valve handwheel in the LOCKWISE direction
CUE:	
The handwhee	el is turning
COMMENTS	:
	SATUNSAT

JPM NUMBER: NRC 8		REVISION: 0
*e) START Hydraulic Pump 1A (1B) by	placing control sw	ritch to RUN.
STANDARD:		
Simulates placing Hydraulic Pump 1A control switch	to RUN	
CUE:		
Switch is in RUN		
COMMENTS:		
	SAT	UNSAT
STANDARD:		
Verifies pump discharge pressure increasing		
CUE:		
Pressure is increasing		
COMMENTS:		

JPM NUMBI	ER: NI	RC 8		REVISION:0_
g)	<u>IF</u> :	Motor current > 50 amps,		
	THEN	Shut slightly 1C85-FV01, current amps.	Supply HDR Bypass V	alve to reduce motor
STANDARD				
Checks motor	current	< 50 amps		
CUE:				
Motor current	is 40 an	nps		
COMMENTS	l:			
			SAT	UNSAT
*h)		arize system by <u>slowly</u> oper caneously <u>slowly</u> shutting 1		
STANDARD	:			
Simulates sim	ultaneo	usly slowly opening 1C85-F	FV23 and slowly shuttin	g 1C85-FV01.
CUE:				
Handwheels a	re turnir	ng.		
COMMENTS	: :			
			SAT	UNSAT

JPM NUMBER: NRC 8	REVISI	ON: _0_
i) <u>IF</u> : Pump discharge pressure is not between	en 1600 - 1650 psig,	
THEN: Adjust the compensator on the pump within the band.	o as necessary to maintai	n pressure
STANDARD:		
Verifies pump discharge pressure is between 1600 - 1650 p	sig	
CUE:		
Pressure is 1625 psig		
COMMENTS:		
	SATU	NSAT
j) Place Control Switch for Hydraulic Purp no	ot started in AUTO.	
STANDARD:		
Simulates placing the control switch for Hydraulic Pump 11	B in AUTO.	
CUE:		
Switch is in AUTO		
COMMENTS:		
	SATU	NSAT

JPM NUME	BER: NRC 8 REVISION: 0
	NOTE
	Step k is not required if the system was started up for testing during a outage or the standby pump is unavailable.
k)	Perform Section 8.2.5 Testing Pumps Auto Start Features.
STANDARD	D:
No action. S	System was started for testing.
CUE:	
COMMENT	S:
	SATUNSAT
	NOTE
	Fuller's Earth Filter System should be in operation as much as possible.
1)	If desired place the Fuller's Earth Filter in service per section 8.2.3.
STANDARD):
No action.	
CUE:	
The Fuller's	Earth Filter system will not be put in operation.
COMMENT	S:
	SATUNSAT

JPM NUMBER: NRC 8	REVISION: 0
TERMINATING CUES:	
The 'A' Steam Bypass HPU has been started for testing.	
STOP TIME:	

JOB PERFORMANCF MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: _0_

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 1
The plant is operating at full power and all conditions are stable. The following changes in plant parameters are observed: Main Generator Mwe increasing Reactor Power increasing Turbine Control Valves closing RGLTR ERROR indicating light illuminated MODULE 1(2,3) TRIPPED indicating light on 1H13-P637 illuminated What has occurred?
ANSWER:
Pressure Regulator failure LOW
REFERENCE(S):
EHC System System Flow Path
RESPONSE:

SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

OUESTION NO .

QUESTION NO.
The plant is operating with one of the Steam Bypass & Pressure Control pressure regulators in TEST when the remaining pressure regulator fails HIGH. Plant pressure begins to decrease due to the Bypass Valves opening. What SB&PC control can be used to close the Bypass Valves?
ANSWER:
Maximum Combined Flow Limiter
REFERENCE(S):
EHC System Signal Flow Path
RESPONSE:
SAT INSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
241000 241000	A2.01 A2.03			3.7 4.2
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY:		1		
REVIEWED BY:				
APPROVED BY:		/	Tata dala dala padagi kampanan kalanga	
	Supervisor - Requalification and Operations Training			

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

A plant is currently in an outage. You are directed to start the 'A' Steam Bypass HPU for testing . The standby pump is unavailable

CPS No. 3105.04

- 8.0 FROCEDURE
- 8.1 Normal Operation
- 8.1.1 Startup

NOTE

The following startup refers to the HPU associated with the steam Lipass valves. The operation of the Steam Bypass and Pressure Regulation (SB) system will be per the plant startup/shutdown integrated 300X.01 series.

Temperature of the fluid must be \geq 90°F before the pumps are started.

a) IF: Fluid temperature is < 90°F,

THEN: Turn on space heaters 1A and/or 1B to increase fluid temperature.

b) <u>IF</u>: Temperature is ≥ 90°F,

THEN: Verify/Place space heaters 1A and 1B in Auto.

NOTE

Following maintenance on the suction piping, the hydraulic pump or extended shutdown, the hydraulic pumps must be filled with oil before starting in order to prevent damage to the pumps.

c) IF: This will be a startup following maintenance on the suction piping, the hydraulic pump or an extended shutdown.

THEN: Perform the following steps to fill the pump(s):

- Isolate and remove from service the EHC pump(s) per CPS No. 1014.01, SAFETY TAGGING.
- Clean the area around the case vent connection.
- 3) Fill/verified filled the EHC pump(s) with fluid through the case vent connection located on top of the pump housing.
- 4) Re-install the case vent connection.
- 5) Remove the tagout that was installed in step 1.

8.1.1 Startup (cont'd)

- d) Open 1C85-FV01, Supply HDR Bypass Valve one-half turn.
- e) START Hydraulic Pump 1A (1B) by placing control switch to RUN.
- f) Verify pump discharge pressure increases.
- g) IF: Motor current > 50 amps,

THEN: Shut slightly 1C85-FV01, Supply HDR Bypass Valve to reduce motor current amps.

- h) Pressurize system by slowly opening 1C85-FV23, Supply HDR Isol Valve, and simultaneously slowly shutting 1C85-FV01, Supply HDR Bypass Valve.
- i) <u>IF</u>: Pump discharge pressure is not between 1600 1650 psig,

THEN: Adjust the compensator on the pump as necessary to maintain pressure within the band.

j) Place Control Switch for Hydraulic Pump rot started in AUTO.

NOTE

Step k is not required if the system was started up for testing during a outage or the standby pump is unavailable.

k) Perform Section 8.2.5 Testing Pumps Auto Start Features.

NOTE

Fuller's Earth Filter System should be in operation as much as possible.

 If desired place the Fuller's Earth Filter in service per section 8.2.3.

0

JPM NUMBER: NRC 9 REVISION: 0		
TASK TITLE: Respond to a Failed Transponder		
TASK NUMBER: 011201C529		
APPLICABILITY: RO X SRO X		
TRAINEE	DATE	
EVALUATOR		
METHOD OF TESTING:		
Simulated Performance X Actual Performa	ince	
Classroom Simulator	Plant X	
APPROXIMATE TIME FOR COMPLETION: 45 min	nutes	
Prepared/Revised by:	Date:	
Reviewed by: Instructor - Operations	Date:	
Approved by:Supervisor - Operations Training	Date:	

JOB PERFORMANCE MEASURE WORKSHEET

REVISION: 0

JPM NUMBER: NRC 9

READ TO THE OPERATOR
I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.
SIMULATOR SET-UP CONDITIONS:
Not Applicable.
TASK STANDARDS:
Rod Drive bypassed, directional control valves disarmed, and RCIS reset per CPS No. 3304.02
TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:
None
PROCEDURAL/REFERENCES:
CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RCIS)
EVALUATOR INSTRUCTIONS:
Amplifying cues are provided within the JPM steps.
INITIAL CONDITIONS AND INITIATING CUE:
Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. You are directed to bypass control rod 20-25 and reset RCIS.
START TIME:

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9	REVISION: 0
AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	

PERFORMANCE INFORMATION

Critical steps are denoted with a asterisk (*) to the left of the step number and appear in **BOLDED**, letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the comments section of the JPM.

PERFORMANCE STEPS

JPM TITLE: Respond to a Failed Transponder

TOM NITIMORED. NIDGO

NOTE

The required position of the control rod/drive is specified in ITS LCOs 3.1.3 and 3.9.4.

Only one rod can be bypassed at a time at the RGDC.

The bypassed rod's normal drive motion is inhibited when bypassed.

- 8.2.10.1 IF A failed transponder card is present, and RCIS is needed to support current plant conditions/surveillances,
 - **THEN** To prevent inadvertent rod motion when resetting RCIS,
 - a) <u>First:</u> Perform section 8.2.10.3 to electrically disarm the directional control valve.
 - b) Second: Perform section 8.2.10.2 to bypass the drive's transponder card & reset RCIS

JPM NUMBE	R: NRC 9 REVISION: 0	
NOTE Electrically disarming a second INOP control rod will shut down RCIS.		
8.2.10.3	To electrically disarm the directional control valves of the subsequent INOP control rods as governed by ITS LCO 3.1.3, or for Transponder Card Failures:	
*a)	Remove the amphenol connectors, and place CAUTION TAGS on the directional control valves disconnected at the transponder card (CNMT 755') for the INOP control rod drive(s): • JIE (insert exhaust) • JWE (withdraw exhaust) • JWS (withdraw supply) • JIS (insert supply)	
STANDARD:		
	oving amphenol connectors JIE, JWE, JWS, and JIS. Simulates placing Caution Tags on ed directional control valves.	
CUE:		
Amphenol con	nectors are removed and caution tags placed.	
COMMENTS		
	SATUNSAT	

JPM NUMBI	ER: NRC 9 REVISION: 0
b)	To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
	 Clear CAUTION TAGS Reconnect the amphenols to the transponder card.
STANDARD	
Continues to 8	.2.10.2
CUE:	
COMMENTS	
	SATUNSAT
8.2.10.2	To bypass the directional control valves for the <u>first</u> INOP control rod, or for Transponder Card failures:
* a)	Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card faulure location will have an illuminated area for the Transponder that has a fault.
STANDARD:	
Locates drive	to be disarmed/bypassed on RGDC Fault Map Legend.
CUE:	
After rod iden	tified, cue that area is illuminated.
COMMENTS	
	SATUNSAT

JPM NUMBER: NRC 9		REVISION: 0
* b) Using the legend data on the right an values for the drive to be disarmed/by	d bottom of the leg ypassed.	gend, identify the binary
STANDARD:		
Identifies the binary values for the drive to be disarmed	d/bypassed	
CUE:		
COMMENTS:		
	SAT	UNSAT
* c) On the analyzer card of the RGDC, s TOGGLE SWITCHES (1 = Switch u found on the Fault Map Legend.	et the ten BYPASS p, 0 = Switch down	SED ROD IDENTITY n) using the binary values
STANDARD:		
Simulates setting toggle switches either up or down in from the Fault Map Legend	accordance with the	e binary value determined
CUE:		
Toggle switch up (or down)		
COMMENTS:		
	SAT	UNSAT

ER: NRC 9	REVISI	ON:0
Have a second licensed operator verify that selected.	the correct rod identity is	
):		
a second licensed operator verify the correct	od identity is selected.	
d licensed operator, if the correct rod identity	s selected, cue that the id	lentity is correct.
S:		
	SATUN	NSAT
Position the rod BYPASS toggle switch "	up" to bypass the rod.	
:		
icing the rod BYPASS toggle switch "up"		
S:		
SA	TUNSAT	
, i	Have a second licensed operator verify that is selected. a second licensed operator verify the correct is licensed operator, if the correct rod identity is: Position the rod BYPASS toggle switch "is: cing the rod BYPASS toggle switch "up"	Have a second licensed operator verify that the correct rod identity is selected. a second licensed operator verify the correct rod identity is selected. licensed operator, if the correct rod identity is selected, cue that the identity is selected.

JPM NUMBI	ER: NRC 9		REVISION: 0	
8.2.9.3	Reset RCIS per 8.2.9.3 and 8.2.9.4 To reset RCIS Verify POWER GATE breaker CB2 if found to be OFF, then with SS/ASST. System configuration may need to be ch	SS permission, p	lace breaker CB2 requisites.	to ON.
STANDARD				
Verifies POW	ER GATE breaker CB2 is ON.			
CUE:				
COMMENTS	l:			
		SAT	_UNSAT	
* b)	Depress the RGDS STATUS INOPER P653 until the INOPERATIVE, SCAN extinguish.			
STANDARD				
Simulates dep	ressing RGDS Status Inoperative Reset p	ushbutton.		
CUE:				
Inoperative, so	can error, and master error lights are extin	guished.		
COMMENTS	e:			
		SAT	_UNSAT	

JPM NU	MBI	ER: NRC 9	REVISION: 0
8.2.9.4	c)	IF THEN After PCIS	RCIS does <u>not</u> properly RESET after the initial attempt in 'b' above, Wait ~ 20 seconds before trying to RESET the system a second blow.
0.2.7.4			S has been reset, perform an OD-7 Option 2 (or Option 4) and compare to od position information.
STANDA	ARD:		
Requests	an O	D-7 Option	2
CUE:			
Rod posi	tions	have been c	compared to previous rod position information.
COMME	ENTS	:	
			SATUNSAT
	g)	Depress Di was bypass	RIVE BYPASSED pushbutton to display on the OCM that the correct rod sed
STANDA	ARD:		
Simulate	s dep	ressing Driv	ve Bypassed pushbutton
CUE:			
OCM dis	splay	indicates the	e correct rod.
COMME	ENTS	:	
			SATUNSAT

	CAUTION
	In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.
h)	Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INVALID DRIVE" position, and provide information about the possible effect of using gang mode
STANDARD	
Simulates pla	acing Caution Tags on Drive Mode select pushbutton.
CUE:	
Caution Tags	are hung
COMMENT	S:
	SAT UNSAT

PM NUM	BER: _	NRC 9 REVISION: 0	
i)		estore the drive when the control rod is OPERABLE (OK to defer while inuing on in procedure. Clear CAUTION TAGS. At the RGDC, position the rod BYPASS toggle switch, "down" to unbypass the rod. On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down (0) position. Depress DRIVE BYPASSED push-button to display on the OCM that the rod in no longer bypassed.	
TANDAR	D:		
o action re	equired		
UE:			
rive will n	ot be re	stored.	
OMMEN'	rs:		
		SATUNSAT	

JPM NUMBER: NRC 9	REVISION: 0
TERMINATING CUES:	
Control rod 20-25 is bypassed and RCIS is reset.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 1
A reactor startup is in progress. During the performance of CPS No. 9014.02, ROD PATTERN CONTROL SYSTEM ROD SEQUENCE CHECK, an out of sequence control rod was selected and moved one notch. What is the effect on the reactor startup?
ANSWER:
The reactor startup must stop immediately due to the Rod Pattern Controller not performing its intended function. Rod movement is ONLY by scram.
REFERENCE(S):
CPS No. 9014.02 CPS ITS 3.3.2.1 Action B.1
RESPONSE:
SATUNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

THIS IS A CLOSED BOOK QUESTION TO BE ANSWERED PRIOR TO THE JPM

QUESTION NO.: 2
What affect does bypassing a control rod in the Rod Gang Drive System have on the ability to move the bypassed control rod, individually and in gang mode?
ANSWER:
The bypassed control rod if selected will not move. (The RCIS System does not know
the control rod is even there). If gang mode is selected and another control rod in the
gang is selected the bypassed control rod will move with the rest of the gang.
REFERENCE(S): CPS No. 3304.02
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
201005 201005	K3.02 K1.06			3.5 3.3
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY: _		/	PROGRAMMENT THE STREET AND A STREET WAS ASSESSED.	
REVIEWED BY:		/		
APPROVED BY:		1		
	Supervisor - Requalification and Operations Training			

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. You are directed to bypass control rod 20-25 and reset RCIS.

8.2.9 AUTOMATIC SYSTEM SHUTDOWN/RCIS RESET

8.2.9.1 If C&I is available, contact them for an evaluation of system shutdown.

If C&I is not available, record any Red LED's that are energized at 1H13-P653, Rod Gang Drive Cabinet on CPS No. 3304.02F001, RCIS FAULT MAPS.

If an MWR is written, attach the F001 form to the MWR.

0

NOTE

When RCIS is INOP (Annunciator 5006-3G), the accumulator trouble alarms are not functional. ORM OR 2.1.2 Action 3.3.1.a changes ITS SR 3.1.5.1/3.9.5.2 frequency from 7 days to every 24 hours.

c 8.2.9.2 IF RCIS power is out and CNMT ventilation is secured (e.g., during an outage) concurrently for > 8 hours,

THEN Contact C&I to inspect at least 10% of the BJMs for moisture prior to resetting RCIS.

CAUTION

Do not reset the RCIS INOP if a failed transponder card is known or suspected, unless the rod has been disarmed & bypassed per 8.2.10.1.

Inadvertent rod motion may occur otherwise.

8.2.9.3 To reset RCIS:

- a) Verify POWER GATE breaker CB2 is ON.

 If found to be OFF, then with SS/ASST.SS permission, place breaker CB2 to ON. System configuration may need to be checked per 5.0 Prerequisites.
- b) Depress the RGDS STATUS INOPERATIVE RESET push-button in 1H13-P653 until the INOPERATIVE, SCAN ERROR, and MASTER ERROR lights extinguish.
- c) IF RCIS does not properly RESET after the initial attempt in 'b' above,
 - THEN Wait ~ 20 seconds before trying to RESET the system a second time. Failure to wait may cause fuse in UPS circuit 903 to blow.
- 8.2.9.4 After RCIS has been reset, perform an OD-7 Option 2 (or Option 4) and compare to previous rod position information.

NOTE

The required position of the control rod/drive is specified in ITS LCOs 3.1.3 and 3.9.4.

Only one rod can be bypassed at a time at the RGDC. The bypassed rod's normal drive motion is inhibited when bypassed.

8.2.10 ROD DRIVE BYPASS/DISARMING DIRECTIONAL CONTROL VALVES

8.2.10.1 IF A failed transponder card is present, and RCIS is needed to support current plant conditions/surveillances,

THEN To prevent inadvertent rod motion when resetting RCIS,

- a) First: Perform section 8.2.10.3 to electrically disarm the directional control valve.
- b) Second: Perform section 8.2.10.2 to bypass the drive's transponder card & reset RCIS.
- 8.2.10.2 To bypass the directional control valves for the <u>first</u> INOP control rod, or for Transponder Card failures:
 - a) Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card failure location will have an illuminated area for the Transponder that has a Fault.
 - b) Using the legend data on the right and bottom of the legend, identify the binary values for the drive to be disarmed/bypassed.
 - c) On the analyzer card of the RGDC, set the ten BYPASSED ROD IDENTITY toggle switches (1 = Switch up, 0 = Switch down) using the binary values found on the Fault Map Legend.
 - d) Have a second licensed operator verify that the correct rod identity is selected.
 - e) Position the rod BYPASS toggle switch "up" to bypass the rod.
 - f) Reset RCIS per 8.2.9.3 and 8.2.9.4.
 - g) Depress DRIVE BYPASSED push-button to display on the OCM that the correct rod was bypassed.

(more)

0 c

CPS No. 3304.02

8.2.10 ROD DRIVE BYPASS/DISARMING DIRECTIONAL CONTROL VALVES (cont'd)

CAUTION

In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.

- 8.2.10.2 h) Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INDIVID DRIVE" position, and provide information about the possible effect of using gang mode.
 - i) To restore the drive when the control rod is OPERABLE (OK to defer while continuing on in procedure):
 - 1) Clear CAUTION TAGS.
 - 2) At the RGDC, position the rod BYPASS toggle switch "down" to unbypass the rod.
 - 3) On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down" (0) position.
 - 4) Depress DRIVE BYPASSED push-button to display on the OCM that the rod in no longer bypassed..

NOTE

Electrically disarming a second INOP control rod will shut down RCIS.

- 8.2.10.3 To electrically disarm the directional control valves of the subsequent INOP control rods as governed by ITS LCO 3.1.3, or for Transponder Card failures:
 - a) Remove the amphenol connectors, and place CAUTION TAGS on the directional control valves disconnected at the transponder card (CNMT 755') for the INOP control rod drive(s):
 - JIE (insert exhaust)
 - · JWE (withdraw exhaust)
 - JWS (withdraw supply)
 - · JIS (insert supply)
 - b) To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
 - 1) Clear CAUTION TAGS.
 - 2) Reconnect the amphenols to the transponder card.

JPM NUMBER: NRC 10	REVISION:0_
TASK TITLE: Re ond To Abnormal Level in CCW Expans	sion Tank
TASK NUMBER: 044208C505	
APPLICABILITY: RO X SRO X	
TRAINEE	DATE
EVALUATOR	
METHOD OF TESTING:	
Simulated Performance X Actual Performance	
Classroom Simulator F	Plant X
APPROXIMATE TIME FOR COMPLETION: minutes	
Prepared/Revised by:	Date:
Reviewed by:	Date:
Approved by:Supervisor - Operations Training	Date:

JPM NUMBER: NRC 10	REVISION:0_
READ TO T	HE OPERATOR
I will explain the initial conditions, which step(s) t When you complete the task successfully, the obje satisfied.	o simulate or discuss, and provide the initiating cue ctive of this Job Performance Measure will be
SIMULATOR SET-UP CONDITIONS:	
None	
TASK STANDARDS:	
Operator actions performed per CPS No. 3203.01	
TOOLS, EQUIPMENT, OTHER SPECIAL RE	QUIREMENTS:
None	
PROCEDURAL/REFERENCES:	
CPS No. 3203.01, COMPONENT COOLING WA	TER (CC)
EVALUATOR INSTRUCTIONS:	
Amplifying cues are provided within the JPM step	s.
INITIAL CONDITIONS AND INITIATING C	UE:
There is a high level in the CCW Expansion Tank. Return CCW Expansion Tank level to normal.	The source of the in-leakage has been isolated.
START TIME:	

JPM NUMB	ER: <u>NRC 10</u>	REVISION:0_
Mark the a cold major than the a fill of the days the	PERFORMANCE IN	FORMATION
letters. Failur	are denoted with a asterisk (*) to the left or re to meet the standards for a critical step of e sequence of steps is assumed unless deno	of the step number and appear in BOLDED constitutes failure of the Job Performance oted in the comments section of the JPM.
	PERFORMANO	CE STEPS
JPM TITLE:	Respond To Abnormal Level in CCW Ex	pansion Tank
*8.2.2.21	Verify 1CC90, CCW Expansion Tank Expansion Tank Makeup Valve Bypass,	Makeup Valve, is isolated and 1CC092, CCW is shut.
STANDARD	:	
	90 isolated by simulating turning valve har E direction. Verifies 1CC092 shut by simu E direction.	
CUE:		
For each valv turning.	re operated, cue that the valve handwheel is	s turning, then cue the valve handwheel stops
COMMENTS	S:	
		SATUNSAT

JPM NUMBI	ER: NRC 10 REVISION: 0			
8.2.2.2.2	Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.			
STANDARD:				
No action. Ini	tial Conditions had the source isolated.			
CUE:				
COMMENTS				
	SATUNSAT			
	NOTE			
	If necessary, place alternate system load on service, whenever possible.			
8.2.2.2.3	If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.			
STANDARD:				
No action. Ini	tial Conditions had the source isolated.			
CUE:				
COMMENTS				
	SATUNSAT			

JPM NUMB	ER: NRC 10 REVISION: 0
	NOTE When the source of inleakage is isolated, the CCW Expansion Tank level
	should stabilize.
*8.2.2.2.4	Lower CCW Expansion Tank level as follows:
	a) Open 1TE083, CCW Exp Tk Drain
	b) Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117"
STANDARD	
	ENING 1TE083 by turning handwheel in the COUNTERCLOCKWISE direction. ottling OPEN 1CC253 by turning handwheel in the COUNTERCLOCKWISE direction.
CUE:	
For each valve stops turning.	e operated, cue that the valve handwheel is turning. For 1TE083, cue the valve handwheel
COMMENTS	
	SATUNSAT

JPM NUMB	ER: <u>NRC 10</u>	REV	ISION: 0
*8.2.2.2.5	When desired level is reached		
	a) Close 1CC253, CCW Expansion Tank Auto Drai	n Valve	
	b) Close 1TE083, CCW Exp Tk Drain		
STANDARD			
After receivin	g cue that level is 115", simulates closing 1CC253 and 1 the CLOCKWISE direction.	TE083 by	turning valve
CUE:			
As examinee monitors expansion tank level, cue that level is 115". For each valve operated, cue that the valve handwheel is turning then the valve handwheel has stopped.			
COMMENTS			
	SAT		UNSAT
8.2.2.2.6	Check pump suction pressure, adjust per 8.1.1.1.b, if ne	cessary.	
STANDARD			
Checks pump	suction pressure and determines that no adjustment is ne	cessary.	
CUE:			
COMMENTS	:		
Pump suction	pressure should be approximately 14 psig.		
	SAT		UNSAT

JPM NUMI	BER: NRC 10	REVISION:0_
8.2.2.2.7	If possible, leave the component that is the so until it is repaired.	ource of inleakage off service and isolated,
STANDARI	D:	
No action.		
CUE:		
The compon	ent will be left isolated until repaired.	
COMMENT	S:	
		SATUNSAT

JPM NUMBER: NRC 10	REVISION: 0
TERMINATING CUES:	
CCW Expansion Tank level has been returned to normal.	
STOP TIME:	

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER RO SRO

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

QUESTION NO.: 1
The plant was at 100% power when main condenser vacuum began to decrease due to air in-leakage. CCW Heat Exchanger temperature regulating valves are also malfunctioning causing CCW temperature to increase. As CCW temperature continues to increase, what option will be available for LONG TERM RPV pressure control?
ANSWER:
Only SRVs on compressed gas will be available
REFERENCE(S):
CPS No. 4004.01
RESPONSE:
SAT UNSAT

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

OUESTION NO .

JOB PERFORMANCE MEASURE QUESTION DOCUMENTATION

Importance Rating

K/A SYSTEM NUMBER	K/A NUMBER		RO	SRO
400000 400000	K3.01 A2.01			3.3 3.4
JTA:				
TASK NUMBER				
ANSWER TIME: Min				
ORIGINATED/REVISED BY:		/		
REVIEWED BY:		/	e niewowiał do terminalnie an de v mar de	
APPROVED BY:	Supervisor - Requalification and	_/		
	Operations Training			

JOB PERFORMANCE MEASURE OPERATOR COPY

INITIATING CUE

There is a high level in the CCW Expansion Tank. The source of the in-leakage has been isolated. Return CCW Expansion Tank level to normal.

- 8.2.2.2 High Level in CCW Expansion Tank
- 8.2.2.2.1 Verify 1CC090, CCW Expansion Tank Makeup Valve, is isolated and 1CC092, CCW Expansion Tank Makeup Valve Bypass, is SHUT.
- 8.2.2.2.2 Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.

NOTE

If necessary, place alternate system load on service, whenever possible.

8.2.2.3 If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.

NOTE

When the source of inleakage is isolated, the CCW Expansion Tank level should stabilize.

- 8.2.2.2.4 Lower CCW Expansion Tank level as follows:
 - a) Open 1TE083, CCW Exp Tk Drain
 - b) Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117".
- 8.2.2.2.5 When desired level is reached
 - a) Close 1CC253, CCW Expansion Tank Auto Drain Valve.
 - b) Close 1TE083, CCW Exp Tk Drain
- 8.2.2.2.6 Check pump suction pressure, adjust per 8.1.1.1.b, if necessary.
- 8.2.2.2.7 If possible, leave the component that is the source of inleakage off service and isolated, until it is repaired.
- 8.2.3 Containment Isolation/Recovery
- 8.2.3.1 For operation of the components inside the containment without CCW flow, refer to the following:
 - a) Reactor Recirculation Pumps, CPS No. 3302.01, REACTOR RECIRCULATION (RR), (8.3.4).
 - b) Reactor Water Cleanup System, CPS No. 3303.01, REACTOR WATER CLEANUP (RT), (8.3.3).