Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Loss of SDC at Mid-loop operations. New Actions to be taken for a
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 ~~Reason~~ for AFA-P01 low RPM limit. Significant modification actions to take for AFA-P01 running below minimum RPM
Alternate Path		b. P-S05S-061-000-A204, 3.4/3.8 ~~Manual~~ reset of Trip/Throttle valve after control Rm manual trip. New. Optional
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset Criteria for CSAS. Significant modification
Eng. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Pressure limits for CS for SDC. Significant modification
CVCS, - CH005	1	a. P-S01S-004-020-A2-11, 3.3/3.6 Effects of swapping letdown ion exchangers. New
		b. P-S01S-004-010-K6-12, 2.5/3.1 High Temp/Flow limits for Letdown. Signifiant modification
5. E-PLAN, - EP012	3	a. P-P000-194-001-A1-16, 3.1/4.4 EC Relief Bank clone
		b. P-P000-194-001-A1-02, 4.1/3.9 E-Plan declaration for Security Event. Significant modification
6. BOP ESFAS, - SA007	2	a. P-S02S-013-000-K1-01, 4.2/4.4 High radiation gives which BOP ESFAS Actuations. Bank clone (RM-145)
Eng. Safety Feature, Alternate Path		b. P-S02S-013-000-A3-01, 3.7/3.9 Test input trip of CPIAS New
7. DGs,- DG001	7	a. P-S07S-064-000-A1-01, 3.0/3.1 Consequences of low Lube oil temperature. Bank clone
Eng. Safety Feature		b. P-S07S-064-000-K4-04, 3.1/3.7 DG load limits. Significant modification

0/1 A070

8. 125 VDC, - PK001 New	7	a. P-S07S-062-000A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR pressure control on loss of M41/D21 New
9. CVCS, - CH023 New -- RCA	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG to HPSI header piping connection. Bank clone
		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
10. AFW, - EM005 Alternate Path	5 Given	a. P-S05S-061-000-A2-04, 3.4/3.8 Why local reset on Overspeed trip. Bank clone Valid
		b. P-S05S-061-000-K1-03, 3.5/3.9 Certain critical steam traps affecting AFA-P01 operability. out of service, explain actions Significant modification

Examiner: _____ Chief Examiner: _____ Required ~~also~~

Examination Level (Circle One): RO / SRO
Facility: _____ Week of Examination: (Group 1) _____
Examiner's Name (print): _____

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Turnover P-P000-194-001-A1-03, 2.5/3.4	Explain the Shift Turnover process and identify what items you must review prior to taking the shift on your second day of a night shift. New
		Explain how the process would be different if this was your first day back on shift following 2 weeks of vacation. New
	Procedure Modification P-P000-194-001-A1-02, 4.1/3.9	~~Explain TAPA process including the CRS/SS duties and responsibilities.~~ New Identify ~~whether~~ if TAPA can be used for AOP modification
		Explain the Special Variance process including the CRS/~~SS~~ responsibilities. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Maintenance to DG B Fuel Rack (Failed ST) has just been completed. Explain the process of tagout/clearance removal. New
		Explain DG B retest requirements and any associated Admin requirements necessary to declare DG B operable. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Define a LHRA and explain the entry requirements. New
		~~Explain/describe the Emergency Exposure limits and~~ authorization authority. New Given an " " situation, identify
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Explain the affected Unit SS ~~duties~~ responsibilities if there is an E-Plan event. New
		Given a SGTR (200 gpm) with Contaminated Steam release, Classify the event and identify/describe the PAR recommendation. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One):		RO / SRO
Facility:		Week of Examination: (Group 1)
Examiner's Name (print):		

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Turnover P-P000-194-001-A1-03, 2.5/3.4	Explain the Shift Turnover process and identify what items you must review prior to taking the shift on your second day of a night shift. New
		Explain how the process would be different if this was your first day back on shift following 2 weeks of vacation. New
	Procedure Modification P-P000-194-001-A1-02, 4.1/3.9	Identify if a TAPA can be used for AOP modification. New
		Explain the Special Variance process including the CRS responsibilities. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Maintenance to DG B Fuel Rack (Failed ST) has just been completed. Explain the process of tagout/clearance removal. New
		Explain DG B retest requirements and any associated Admin requirements necessary to declare DG B operable. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Define a LHRA and explain the entry requirements. New
		Given an Emergency Exposure situtation, identify authorization authority. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Explain the affected Unit SS responsibilities if there is an E-Plan event. New
		Given a SGTR (200 gpm) with Contaminated Steam release, Classify the event and identify/describe the PAR recommendation. New

Examiner: _____ Chief Examiner: _____

originals

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1.SDC, - SI007	4	a. P-S04E-000-025-A0-07, 3.3/3.5, How to maintain RCS heat removal on loss of SDC. New
Low Mode		b. P-S04E-000-025-A1-03, 3.4/3.3 Actions to take on loss of SDC due to loss of inventory. New
2. SIT, - SI021	2	a. P-S02S-006-020-A3-02, 3.9/4.2 SIT fill status if SIAS occurrs. New
Eng. Safety Feature		b. P-S02S-006-000-A0-03, 3.6/4.2 NR verse WR SIT level indications and Tech Spec compliance. Bank clone
3. CVCS, - CH003	1	a. P-S01S-004-000-K6-01, 3.1/3.3 Concerns of PZR/RCS Boron concentration differences. Bank clone
Alternate Path		b. P-S01S-004-000-K5-20, 3.6/3.7 Affects on CEAs of boration. Bank clone
4. RCPs, - RC029	10	a. P-S04S-003-000-K0-06, 2.7/3.8 Possible RCP Combinations for different Tc. Bank clone
New -- RCA		b. P-S04E-000-015-A1-22, 4.0/4.2 RCP Seal Failure Identification. Bank clone
5. 125 VDC, - PK002	7	a. P-S07E-000-057-A1-01, 3.7/3.7 On a loss of PKC-M43, how do you verify CEA position? New
New		b. P-S07E-000-058-A2-03, 3.5/3.9 How to control SG level on loss of PKC-M43. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One):	RO / SRO
Facility:	Week of Examination: (Group 2)
Examiner's Name (print):	

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5 New
		Explain when you can be less than minimum manning and whose authority and what actions are required. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the duties and responsibilities of the SRO in the CRm during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) and the CRS/SS duties and responsibilities for this work. New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	RWP Discussion / RCA Entry requirements. New
		CRS/SS duties/responsibilities for Rad Waste Gas Release Permit. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	~~Describe the Non-Delegable EC responsibilities.~~ New Can the EC delegate onsite evacuation decisions.
		Following reports of an explosion/fire in the Train "B" Emergency DG Rm, Security reports apprehending unauthorized intruders in the Train "A" 4160 Switchgear Rm with what appears to be another bomb that was about to be placed. Classify the event and identify/describe any PAR recommendations necessary. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One):		RO / SRO
Facility:		Week of Examination: (SRO - I)
Examiner's Name (print):		

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5. New
		~~Explain~~ when you ~~can be~~ less than minimum manning, ~~and whose authority and what actions are required.~~ Given a situation are identify if you agree with actions taken. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the CRS duties and responsibilities ~~of the SRO in the CRm~~ during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) ~~and the CRS/SS duties and responsibilities for this work.~~ New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	~~RWP Discussion / RCA Entry requirements.~~ New Apply Radiation Exposure Permit limitations
		~~CRS/SS duties/responsibilities for Rad Waste Gas Release Permit.~~ New Requirements for Rad Waste Gas Release with RU-12 out of Service
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	JPM #EP012 Bank clone

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Actions to be taken for a loss of SDC at Mid-Loop Ops. New
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 Actions to be taken if AFA-P01 is running below minimum RPM. Significant modification
Alternate Path		b. P-S05S-061-000-A2-04, 3.4/3.8 Explain how to reset the Trip/Throttle valve after Control Room manual trip.. New
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset criteria for CSAS. Significant modification
ng. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Press limits on CS for SDC. Significant modification
4.CVCS, - CH023	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG line to HPSI header piping connection. Bank clone
New-- RCA		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
5. 125 VDC, - PK001	7	a. P-S07S-062-000-A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
New		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR Press control on loss of M41/D21. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1.SDC, - SI007	4	a. P-S04E-000-025-A0-07, 3.3/3.5, How to maintain RCS heat removal on loss of SDC. New
Low Mode		b. P-S04E-000-025-A1-03, 3.4/3.3 Actions to take on loss of SDC due to loss of inventory. New
2. SIT, - SI021	2	a. P-S02S-006-020-A3-02, 3.9/4.2 SIT fill status if SIAS occurrs. New
Eng. Safety Feature		b. P-S02S-006-000-A0-03, 3.6/4.2 NR verse WR SIT level indications and Tech Spec compliance. Bank clone
3. CVCS, - CH003	1	a. P-S01S-004-000-K6-01, 3.1/3.3 Concerns of PZR/RCS Boron concentration differences. Bank clone
Alternate Path		b. P-S01S-004-000-K5-20, 3.6/3.7 Affects on CEAs of boration. Bank clone
4. RCPs, - RC029	10	a. P-S04S-003-000-K0-06, 2.7/3.8 Possible RCP Combinations for different Tc. Bank clone
New -- RCA		b. P-S04E-000-015-A1-22, 4.0/4.2 RCP Seal Failure Identification. Bank clone
5. 125 VDC, - PK002	7	a. P-S07E-000-057-A1-01, 3.7/3.7 On a loss of PKC-M43, how do you verify CEA position? New
New		b. P-S07E-000-058-A2-03, 3.5/3.9 How to control SG level on loss of PKC-M43. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Loss of SDC at Mid-loop operations. New Actions to be taken for a
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 ~~Beacon~~ for AFA-P01 low RPM limit. Significant modification actions to take for AFA-P01 running below minimum RPM
Alternate Path		b. P-S05S-061-000-A204, 3.4/3.8 ~~Manual~~ reset of Trip/Throttle valve after control Rm manual trip. Explain New.
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset Criteria for CSAS. Significant modification
Eng. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Pressure limits for CS for SDC. Significant modification
CVCS, - CH005	1	a. P-S01S-004-020-A2-11, 3.3/3.6 Effects of swapping letdown ion exchangers. New
		b. P-S01S-004-010-K6-12, 2.5/3.1 High Temp/Flow limits for Letdown. Signifiant modification
5. E-PLAN, - EP012	3	a. P-P000-194-001-A1-16, 3.1/4.4 EC Relief Bank clone
		b. P-P000-194-001-A1-02, 4.1/3.9 E-Plan declaration for Security Event. Significant modification
6. BOP ESFAS, - SA007	2	a. P-S02S-013-000-K1-01, 4.2/4.4 High radiation gives which BOP ESFAS Actuations. Bank clone (Rev-145)
Eng. Safety Feature, Alternate Path		b. P-S02S-013-000-A3-01, 3.7/3.9 Test input trip of CPIAS New
7. DGs,- DG001	7	a. P-S07S-064-000-A1-01, 3.0/3.1 Consequences of low Lube oil temperature. Bank clone
Eng. Safety Feature		b. P-S07S-064-000-K4-04, 3.1/3.7 DG load limits. Significant modification

8. 125 VDC, - PK001	7	a. P-S07S-062-000A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
New		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR pressure control on loss of M41/D21 New
9. CVCS, - CH023	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG to HPSI header piping connection. Bank clone
New -- RCA		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
10. AFW, - EM005	5	a. P-S05S-061-000-A2-04, 3.4/3.8 Why local reset on Overspeed trip. Bank clone Valid
Alternate Path	Given	b. P-S05S-061-000-K1-03, 3.5/3.9 Certain critical steam traps affecting AFA-P01 operability. out of service, explain actions Significant modification

Examiner: _____ Chief Examiner: Required ~~also~~

NCW - NC001

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

A loss of Nuclear Cooling Water has occurred due to pump failure. The NCW header is intact. The CRS directs you to align EW Train A to supply the RCPs with a cooling water flow rate of ≥ 500 gpm per pump, in accordance with 41AO-1ZZ05, Section 3.0.

This is a time critical JPM.

REFERENCES: NOT ALLOWED

Why is the normally running charging pump manually stopped, on a loss of nuclear cooling water?

REFERENCES: NOT ALLOWED

Under what two conditions will valves EWA-UV-65 and EWA-UV-145 automatically CLOSE?

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: M. Sharp
REVISION DATE: 08/10//95

REV AUTHOR: M. Sharp
APPROVAL:

TASK #: 1250520301

TASK ELEMENT: Transferring 4.16 KV Bus S03 from Diesel Generator "A" to normal supply, and Shutdown of the Diesel.

KA #: P-S07S-064-050-A4-02 K/A Rating RO: 3.2 SRO: 3.3

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR ___ PLANT ___

TESTING METHOD: SIMULATE ___ PERFORM ___

VALIDATION TIME: 15 min

REFERENCES: 41AO-1ZZ52, Diesel Generator Operations After ESFAS Operations

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY ___ UNSATISFACTORY ___

Time Start _____ Time Stop _____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the Simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

INITIATING CUE:

The Diesel Generator "A" had started due to a LOP only, and is supplying power to PBA-S03. The normal source of power is now available to PBA-S03.

You are to transfer 4160 V Bus PBA-S03 from Diesel Generator "A" to the normal supply and shutdown Diesel Generator "A" to the cooldown cycle, in accordance with 41AO-1ZZ52, Diesel Generator Operations after ESFAS Actuation's.

****

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step UNSAT requires comments

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM

SIMULATOR SETUP:

1. Reset to any at power IC.
2. Go to RUN on the Simulator.
3. Manually open/verify open breakers PBA-S03L and PBA-S03K.
4. Restart Charging pump shed by LOP.
5. After EDG "A" is supplying the bus with loads restored, acknowledge alarms and FREEZE Simulator.
6. Provide Initiating Cue.
7. Go to RUN on Simulator.

STEP	ELEMENT	STANDARD
1	Ensure both of the following conditions exist: - Power has been restored to ESF transformer NBN-X03. - D/G "B" is not paralleled with offsite power.	Examinee verifies power is restored to NBN-X03 and D/G "B" is not paralleled with offsite power.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Ensure the following alarm conditions are reset at DGA B01: NEUTRAL OVERVOLTAGE OVERCURRENT ~~LOAD UNBALANCE~~ NEG SEQ TRIP	Examinee contacts Area Operator for status of local alarms. Provide CUE as appropriate: Alarm conditions are reset.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Take the Diesel Generator "A" "START/STOP" switch, to the START position. Check that the white OVERRIDE light is illuminated.	Examinee takes the DG "A" "START/STOP" switch to START and verifies OVERRIDE light is illuminated.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
4*	Select "DROOP" at the DIESEL GENERATOR "A" SPEED MODE SELECT SWITCH.	Examinee selects DROOP position on DG "A" mode select switch.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5	Ensure control of the Diesel Generator has transferred from the EMERGENCY MODE to OVERRIDE by raising and/or lowering the speed with DIESEL GENERATOR "A" SPEED SWITCH, and observing a corresponding change in generator frequency.	Examinee raises and/or lowers DG "A" speed and observes DG "A" frequency change to verify control.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6*	Select ON at the synchronizing switch for 4.16 KV bus PBA-S03 NORMAL SUPPLY.	Examinee places the Sync switch for PBA-S03L to "ON".

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
7	Using DIESEL GENERATOR "A" SPEED SWITCH, adjust Diesel Generator speed to cause the synchroscope to move slowly in the FAST direction.	Examinee adjusts DG "A" speed to get the Sync scope rotating slow in fast direction.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8	Match the Diesel Generator voltage with ESF Service Transformer voltage using DIESEL GENERATOR "A" VOLTAGE switch.	Examinee matches voltage between the DG and the ESF transformer.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9*	WHEN the synchroscope is at the 12 o'clock position, THEN close 4.16 KV bus PBA-S03 NORMAL SUPPLY BREAKER, PBA-S03L.	Examinee closes PBA-S03L when sync scope is ≅ to 12 o'clock.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
10	Select OFF at the synchronizing switch for the 4.16 KV BUS NORMAL SUPPLY BREAKER.	Examinee places the Sync switch in "OFF".

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
11	Adjust reactive load to less than 0.1 MVAR with DIESEL GENERATOR VOLTAGE ADJUST switch.	Examinee adjusts reactive load to < 0.1 MVAR.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
12	Reduce Diesel Generator "A" load between 0.3 and 0.5 Mw with DIESEL GENERATOR "A" SPEED switch.	Examinee reduces DG "A" load to between 0.3 and 0.5 Mw. NOTE: JPM Steps ~~12~~ 11 and ~~13~~ 12 are to be performed concurrently.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
13*	When DG "A" output is less than 0.5 MW, then open DIESEL GENERATOR "A" 4.16 KV output breaker, PEA-S03B.	Examinee opens PEA-S03B when DG "A" output is less than 0.5 MW.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
14	Select ISOCH at DIESEL GENERATOR "A" SPEED MODE SELECT switch.	Examinee selects ISOCH position on DG "A" mode select switch.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
15	Check essential AHU filter dp on HDA-PDI-21 at the DG HVAC panel.	Examinee directs Operator to check AHU Filter DP. Provide CUE as appropriate: DP is .6 inches H_20.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
16	Ensure frequency at 60 Hz on PEN-SI-G01 AND voltage ~~at~~ ~~4160~~ volts on PEN-EI-G01. between 4180 and 4300	Examinee ensures voltage ~~at~~ between 4180 - 4300 ~~4160 ± 30~~ volts and frequency at 60 ± .5 Hz.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
17*	Take the DIESEL GENERATOR "A" START/STOP switch to STOP.	Examinee places the DG "A" START/STOP switch in Stop to place DG "A" into 5 minute cooldown cycle. NOTE: Provide the following CUE after DG "A" placed in the cooldown cycle: **Another RO will verify 5 minute cooldown cycle operation.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be performed on the Simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

INITIATING CUE:

The Diesel Generator "A" had started due to a LOP only, and is supplying power to PBA-S03. The normal source of power is now available to PBA-S03.

You are to transfer 4160 V Bus PBA-S03 from Diesel Generator "A" to the normal supply and shutdown Diesel Generator "A" to the cooldown cycle, in accordance with 41AO-1ZZ52, Diesel Generator Operations after ESFAS Actuation's.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: W. Stearns
REVISION DATE: 07/24/95

REV AUTHOR: M. Sharp
APPROVAL:

TASK #: 1030011201

TASK ELEMENT: Place BOP ESFAS in Auto Test

KA #: P-S02S-013-000-A0-13 K/A Rating RO: 3.9 SRO: 4.0

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT _

TESTING METHOD: SIMULATE _ PERFORM _

VALIDATION TIME: 10 min

REFERENCES: 40OP-9SA01, BOP ESFAS MODULES OPERATION

Note: Alternate Path

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent and/or Concurrent verification is(are) waived for this JPM.

INITIATING CUE:

I/C is troubleshooting BOP ESFAS modules and needs BOP ESFAS Train "A" in the Auto Test Mode.

The CRS directs you to place BOP ESFAS Train "A" in the Auto Test mode in accordance with 40OP-9SA01.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments on back of page.

* Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to any at power IC.
2. Go to RUN on Simulator.
3. Ensure BOP ESFAS module in Manual with no actuation in progress.
4. Place CREFAS Module "A" in bypass.
5. Provide Initiating Cue.

STEP	ELEMENT	STANDARD
1	Verify no BOP ESFAS module is in the trip condition.	Examinee verifies all module lights are out.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Verify sequencer not in Modes 1, 2, 3, or 4.	Examinee verifies sequencer is not in modes 1, 2, 3, or 4 by using PMS.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3	Verify manual half of Auto/Manual indicator switch is lit.	Examinee verifies that "Manual" half is lit.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4	Verify BOP ESFAS Modules are not being strobed.	Examinee verifies that the BOP ESFAS Modules are not being strobed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5	Verify Stop half of Start/Stop indicator is lit.	Examinee verifies "Stop" half is lit.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
6*	Verify no modules in the train being placed in Auto Test are in bypass.	Examinee identifies CREFAS Module "A" in bypass and informs CRS of status. Provide CUE as appropriate: **Remove CREFAS Module "A" from bypass IAW the procedure and continue.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7	Perform lamp test.	Examinee verifies all lights lit. Provide CUE if necessary: **Assume all lights are lit, continue.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8	Verify BOP ESFAS Module is not tripped.	Examinee verifies that the Module is not tripped.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
9	Check that all lights except bypass light are clear.	Examinee verifies all lights are clear except the bypass light.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10*	Turn bypass key 1/4 turn and remove key	Examinee unbypasses CREFAS "A" and removes key.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
11	Check bypass light not lit.	Examinee verifies bypass light not lit.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
12	Perform lamp test.	Examinee verifies all lights lit. Provide CUE if necessary: **Assume all lights are lit, continue.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
13*	Press the Auto/Manual switch and observe that AUTO indicator lights up and START indicator lights up.	Examinee depresses the Auto/Manual pushbutton and "AUTO" and "START" indicators are lit

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
14	Verify Modules begin strobing.	Examinee verifies that the Modules begin strobing.

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent and/or Concurrent verification is(are) waived for this JPM.

INITIATING CUE:

I/C is troubleshooting BOP ESFAS modules and needs BOP ESFAS Train "A" in the Auto Test Mode.

The CRS directs you to place BOP ESFAS Train "A" in the Auto Test mode in accordance with 40OP-9SA01.

REFERENCES: ALLOWED

You are the Secondary Reactor Operator, when the Fuel Building Exhaust Radiation Monitor (RU-145) exceeds its setpoint. Which BOP ESFAS Modules should have automatically actuated?

REFERENCES: ALLOWED

Maintenance is being performed on the BOB-ESFAS system. Current conditions are as follows:

- CPIAS 'B' is in Bypass
- CPIAS 'B' has a manual test input and the test light is illuminated.
- CREFAS 'A' is in Bypass

Identify what actuations would occur if CPIAS 'B' was removed from "Bypass".

REFERENCES: ALLOWED

Due to equipment failures, letdown heat exchanger outlet temperature is 145°F and stable with a flow rate of 160 gpm. Explain the potential consequence of these conditions.

REFERENCES: NOT ALLOWED

At 100% reactor power, it became necessary to swap the inservice letdown purification ion exchangers. Following the swap, you notice a small but steady increase in RCS temperature and reactor power. What is the most probable cause for this temperature increase?

REFERENCES: ALLOWED

Diesel generator 'A' is running and is observed to be carrying 5.6 MW at a lagging power factor of 0.85. What limitations are there for this condition?

REFERENCES: ALLOWED

During the performance of pre-start checks for 41ST-1DG01, the AO reports that DG lube oil temperature is 95°F, explain the consequences if DG lube oil temperature cannot be raised to at least 100°F.

REFERENCES: ALLOWED

Security reports to you as the on duty Shift Supervisor that a bomb has been discovered in the plant Protected Area. Classify the event.

REFERENCES: NOT ALLOWED

For emergency classifications of ALERT or higher, who shall relieve the Shift Supervisor of the affected unit as Emergency Coordinator?

REFERENCES: NOT ALLOWED

Explain why the A train turbine driven auxiliary feedwater pump must be reset locally following an overspeed trip?

REFERENCES: ALLOWED

Main Steam traps SGN-M23 and SGN-M24 are both valved out for maintenance. With regards to AFA-P01, explain what potential problem exists and what actions should be taken to prevent and/or minimize this concern?

Examination Level (Circle One): RO / SRO	Week of Examination: (Group 1) _____
Facility: _____	
Examiner's Name (print):	_____

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Turnover P-P000-194-001-A1-03, 2.5/3.4	Explain the Shift Turnover process and identify what items you must review prior to taking the shift on your second day of a night shift. New
		Explain how the process would be different if this was your first day back on shift following 2 weeks of vacation. New
	Procedure Modification P-P000-194-001-A1-02, 4.1/3.9	~~Explain TAPA process including the CRS/SS duties and responsibilities.~~ New Identify ~~[illegible]~~ if TAPA can be used for AOP modification
		Explain the Special Variance process including the CRS/~~SS~~ responsibilities. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Maintenance to DG B Fuel Rack (Failed ST) has just been completed. Explain the process of tagout/clearance removal. New
		Explain DG B retest requirements and any associated Admin requirements necessary to declare DG B operable. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Define a LHRA and explain the entry requirements. New
		~~Explain/describe the Emergency Exposure limits and~~ authorization authority. New Given an " " situation, identify
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Explain the affected Unit SS ~~duties~~ responsibilities if there is an E-Plan event. New
		Given a SGTR (200 gpm) with Contaminated Steam release, Classify the event and identify/describe the PAR recommendation. New

Examiner: _____ Chief Examiner: _____

5/4/95

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Turnover (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-709

QUESTION: Exam Validation Comments

You are the incoming Control Room Supervisor and have just arrived for your second of four night shifts.

Demonstrate your review of all items required, to be reviewed for to shift relief/turnover. Differentiate between those items to be reviewed prior to turnover and those items that are normally reviewed after turnover.

REFERENCE ANSWER:

Reviews the following, prior to turnover:

- QSPDS pgs 101 thru 105
- SESS panels
- Active TSCCRs
- Radioactive Effluent Release Permits
- Any Major work in progress
- Items on turnover comment sheet
- RMS Gid Status
- Sts in progress
- Procedures in progress
- Control Room Logs back to previous night shift
- Work Denials

Reviews the following after turnover:

- Unit Log
- Night Order
- CR Data Sheets
- Operations PM Schedule status
- Locked Valve and Breaker Log
- Clearance Activity Report
- ST Performance

EXAMINEE'S ANSWER:

Closed Ref

REFERENCE: 40AC-9OP16, Shift Turnover

NOTE: References may not be used for this question. Passing criteria requires 50% identification of items

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Turnover (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-709

QUESTION:

What would you do differently if this was your first day back on shift following a 2 week vacation?

REFERENCE ANSWER:

Review the previous three days of the Control Room/Unit logs prior to shift relief/turnover. After relief, the logs should be reviewed back to the last shift worked.

EXAMINEE'S ANSWER:

REFERENCE: 40AC-9OP16, Shift Turnover

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Procedure Modification (A.1)
KSA #: P-P000-194-001-A1-02 LP #: NKA01-00-RC-711

QUESTION:

An Auxiliary Operator on your crew has just brought you this Procedure Action Cover Sheet and wants your review/approval signature.

Explain your review process and sign approval if appropriate.

REFERENCE ANSWER:

Candidate identifies to examiner the fact that he can not sign approval for this TAPA because TAPA's are not allowed to be written on Abnormal Operating Procedures.

EXAMINEE'S ANSWER:

REFERENCE: 01AC-0AP02, Review and Approval of Nuclear Administrative and Technical Procedures

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Procedure Modification (A.1)
KSA #: P-P000-194-001-A1-02 LP #: NKA01-00-RC-709

QUESTION:

During backshift weekend coverage, the Primary Operator informs you of the need to make a non-intent change to a procedure to accomplish a unique one-time plant condition/alignment.

Explain what process you as CRS would use to accomplish this task and what your responsibilities would be concerning it.

REFERENCE ANSWER:

Would use the special variance process that allows non-intent changes to procedures to be made for unique one-time conditions.

Responsibilities include: 1) Ensure PO as originator of the special variance (SV) completes all forms properly with required information, 2) Perform review of the SV for technical accuracy and that the activity/alignment is within the design and function of the system, 3) Sign the SV as Technical reviewer and route to another Unit OPS SRO Staff member for Supervisory review.

EXAMINEE'S ANSWER:

REFERENCE: 40AC-9OP02, Conduct of Shift OPS
40DP-9OP25, Special Variances

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearances (A.2)
KSA #: P-P000-194-001-K1-02 LP#: NLR95-01-RC-008

QUESTION:

Maintenance adjustment to Diesel Generator "B" fuel rack for failing it's scheduled Surveillance Test has just been completed. DG "B" has been inoperable for 8 hours. Explain the process of clearance/tagout removal.

REFERENCE ANSWER:

Step 1: Maintenance shall request tag removal

Step 2: The discipline leader/acceptor (Maintenance) shall verify work requiring the clearance is complete, walkdown the DG to ensure status and sign the "released line" on the clearance documentation.

Step 3: Operations SRO as the responsible supervisor will ensure all disciplines involved with clearance are informed of tag removal/restoration. He shall also verify no work in progress and ensure "released lines" are signed on the clearance documentation. He shall also identify tag removal order and IV requirements as necessary, sign for tag removal authorization and assign personal to pull the tags and restore the DG.

Step 4: Authorized Operations tagging personal will review the tag removal package, pull the tags and restore the DG and perform IV as directed.

EXAMINEE'S ANSWER:

REFERENCE: 40DP-9OP30, Clearance Processing

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearances (A.2)
KSA #: P-P000-194-001-K1-02 LP #: NLR95-01-RC-008

QUESTION:

Now that the clearance on Diesel Generator "B" has been removed following the fuel rack work, explain any requirements necessary to declare/demonstrate the operability of ~~the unit AC power sources~~ DG B. DG "B" has been inoperable for 8 hours.

REFERENCE ANSWER:

~~1. Must ensure the 1-hr and 8-hr checks of 41ST-1ZZ02 Inoperable Power Sources have been completed satisfactory as required.~~
~~2. Must test DG "A" per 41ST-1DG01 within 24 hours of start of DG "B" inoperability.~~
3. A maintenance run should be performed on DG "B" to verify correction of the fuel rack problem; followed by a surveillance test run (41ST-1DG02).
4. Update the TSCCR status and make a unit log entry declaring DG "B" operable.

EXAMINEE'S ANSWER:

REFERENCE: 41ST-1ZZ02, Inoperable Power Sources Action Statement Surveillance
41ST-1DG02, Diesel Generator "B" Test

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-K1-03 LP #: NKA01-00-RC-514/GET/RAD

QUESTION:

What posting should you find at the entrance to an area with a 1100 MREM/hr dose rate and what are the entry requirements.

REFERENCE ANSWER:

Shall be posted as a locked High Radiation Area (LHRA)

Requirements of:

- Must be qualified Radiation Worker
- Signed in on correct REP *
- Have the appropriate dosimetry *
- Have a reason to enter
- Need a RP Tech with a dose rate instrument and a key to the lock *

1 2 > Individual items may be included

* Examinee must include these three items to

EXAMINEE'S ANSWER:

Closed Ref

REFERENCE: GET/Radiation Work Training

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: NKA01-00-RC-514 GET/RAD

QUESTION:

An Alert has been declared

During refueling operations, a fuel handling accident has occurred. There are injured personnel still on the fuel handling bridge crane. RP estimates the dose at the crane to be ≈15 R/hr. Assuming that rescue efforts in the radiation field can be completed in 55 minutes, Explain whose authorization is necessary for this rescue attempt.

REFERENCE ANSWER:

The Emergency Coordinator (EC) must authorize this attempt because the dose received would be greater than 10CRF20 limits.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-18, Emergency Exposure Guidelines

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

You are the duty Shift Supervisor. The reactor trips with evidence of a LOCA inside CTMT. You assume the Emergency Coordinators (EC) duties. The work control SRO (EC qualified) from the STA office volunteers to perform the initial event classification and subsequent Emergency Coordinators duties.

Explain if this action is allowed.

REFERENCE ANSWER:

Yes. While it is the responsibility of the affected unit Shift Supervisor to perform initial event classification and Emergency Coordinators duties, he can be relieved of these by an EC qualified individual.

EXAMINEE'S ANSWER:

Closed Ref

REFERENCE: EPIP-01, Emergency Classifications

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4).
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

The unit was at 100% power when a loss of offsite power occurred. Shortly after the trip, a SIAS/CIAS occurred. Indications of a Steam Generator Tube Rupture are evident.

Classify the event and identify/describe any Protective Action Recommendations (PAR) necessary.

REFERENCE ANSWER:

Site Area Emergency based on SGTR with release of contaminated steam to atmosphere. PAR of shelter within a 2 mile radius.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-02, Emergency Classifications and Basis Document
EPIP-04, Alert, SAE, GE Implementing Actions

Examination Level (Circle One): RO / SRO	Week of Examination: (Group 1)
Facility:	
Examiner's Name (print):	

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Turnover P-P000-194-001-A1-03, 2.5/3.4	Explain the Shift Turnover process and identify what items you must review prior to taking the shift on your second day of a night shift. New
		Explain how the process would be different if this was your first day back on shift following 2 weeks of vacation. New
	Procedure Modification P-P000-194-001-A1-02, 4.1/3.9	Identify if a TAPA can be used for AOP modification. New
		Explain the Special Variance process including the CRS responsibilities. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Maintenance to DG B Fuel Rack (Failed ST) has just been completed. Explain the process of tagout/clearance removal. New
		Explain DG B retest requirements and any associated Admin requirements necessary to declare DG B operable. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Define a LHRA and explain the entry requirements. New
		Given an Emergency Exposure situtation, identify authorization authority. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Explain the affected Unit SS responsibilities if there is an E-Plan event. New
		Given a SGTR (200 gpm) with Contaminated Steam release, Classify the event and identify/describe the PAR recommendation. New

Examiner: _____ Chief Examiner: _____

originals

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1.SDC, - SI007	4	a. P-S04E-000-025-A0-07, 3.3/3.5, How to maintain RCS heat removal on loss of SDC. New
Low Mode		b. P-S04E-000-025-A1-03, 3.4/3.3 Actions to take on loss of SDC due to loss of inventory. New
2. SIT, - SI021	2	a. P-S02S-006-020-A3-02, 3.9/4.2 SIT fill status if SIAS occurrs. New
Eng. Safety Feature		b. P-S02S-006-000-A0-03, 3.6/4.2 NR verse WR SIT level indications and Tech Spec compliance. Bank clone
3. CVCS, - CH003	1	a. P-S01S-004-000-K6-01, 3.1/3.3 Concerns of PZR/RCS Boron concentration differences. Bank clone
Alternate Path		b. P-S01S-004-000-K5-20, 3.6/3.7 Affects on CEAs of boration. Bank clone
4. RCPs, - RC029	10	a. P-S04S-003-000-K0-06, 2.7/3.8 Possible RCP Combinations for different Tc. Bank clone
New -- RCA		b. P-S04E-000-015-A1-22, 4.0/4.2 RCP Seal Failure Identification. Bank clone
5. 125 VDC, - PK002	7	a. P-S07E-000-057-A1-01, 3.7/3.7 On a loss of PKC-M43, how do you verify CEA position? New
New		b. P-S07E-000-058-A2-03, 3.5/3.9 How to control SG level on loss of PKC-M43. New

Examiner: _____ Chief Examiner: _____

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Turnover (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-709

QUESTION:

REFERENCES: NOT ALLOWED

You are the incoming Control Room Supervisor and have just arrived for your second of four night shifts.

Demonstrate your review of all items required, to be reviewed for to shift relief/turnover. Differentiate between those items to be reviewed prior to turnover and those items that are normally reviewed after turnover.

REFERENCE ANSWER:

Reviews the following, prior to turnover:

- QSPDS pgs 101 thru 105
- SESS panels
- Active TSCCRs
- Radioactive Effluent Release Permits
- Any Major work in progress
- Items on turnover comment sheet
- RMS Gid Status
- STs in progress
- Procedures in progress
- Control Room Logs back to previous night shift
- Work Denials

Reviews the following after turnover:

- Unit Log
- Night Order
- CR Data Sheets
- Operations PM Schedule status
- Locked Valve and Breaker Log
- Clearance Activity Report
- ST Performance

EXAMINEE'S ANSWER:

REFERENCE: 40AC-9OP16, Shift Turnover

NOTE: Examinee must identify/demonstrate at least 50% of required items to be considered satisfactory.

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Turnover (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-709

QUESTION:

REFERENCES: NOT ALLOWED

What would you do differently if this was your first day back on shift following a 2 week vacation?

REFERENCE ANSWER:

Review the previous three days of the Control Room/Unit logs prior to shift relief/turnover. After relief, the logs should be reviewed back to the last shift worked.

EXAMINEE'S ANSWER:

REFERENCE: 40AC-9OP16, Shift Turnover

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Procedure Modification (A.1)
KSA #: P-P000-194-001-A1-02 LP #: NKA01-00-RC-709

QUESTION:

REFERENCES: ALLOWED

During backshift weekend coverage, the Primary Operator informs you of the need to make a non-intent change to a procedure to accomplish a unique one-time plant condition/alignment.

Explain what process you as CRS would use to accomplish this task and what your responsibilities would be concerning it.

REFERENCE ANSWER:

Would use the special variance process that allows non-intent changes to procedures to be made for unique one-time conditions.

Responsibilities include: 1) Ensure PO as originator of the special variance (SV) completes all forms properly with required information, 2) Perform review of the SV for technical accuracy and that the activity/alignment is within the design and function of the system, 3) Sign the SV as Technical reviewer and route to another Unit OPS SRO Staff member for Supervisory review.

EXAMINEE'S ANSWER:

REFERENCE: 40AC-9OP02, Conduct of Shift OPS
40DP-9OP25, Special Variances

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Procedure Modification (A.1)
KSA #: P-P000-194-001-A1-02 LP #: NKA01-00-RC-711

QUESTION:

REFERENCES: ALLOWED

An Auxiliary Operator on your crew has just brought you this Procedure Action Cover Sheet and wants your review/approval signature.

Explain your review process and sign approval if appropriate.

REFERENCE ANSWER:

Candidate identifies to examiner the fact that he can not sign approval for this TAPA because TAPA's are not allowed to be written on Abnormal Operating Procedures.

EXAMINEE'S ANSWER:

REFERENCE: 01AC-0AP02, Review and Approval of Nuclear Administrative and Technical Procedures

PROCEDURE ACTION COVER SHEET

PROCEDURE NO:	TAPA #	REV #	NIRM Contact for TAPAs Only TIME (if applicable) (EXT 6633)
41AO-1ZZ04			

PROCEDURE TITLE: Loss of Plant Cooling Water

DESCRIPTION OF ACTION:
Reorder Steps in Section 5 to expidite the ability to cross-tie EW "A" Train to critical NCW Loads.
(Markup Attached)

Affected pg: 9

ELECTRONICALLY AVAILABLE? ☐ YES ☒ NO

T-MOD #

PREPARED BY:	EXT:	STA:	INTENT CHANGE?	See Step	FULL BASIS CHECK DONE?	See Step
I'm an AO	XXXX	XXXX	☐ YES ☒ NO	4.1.10	☐ YES ☐ NO	3.1.4

TYPE OF PROCEDURE ACTION: REVISION ☐ TAPA ☒ NEW PROCEDURE ☐ CANCELLATION ☐ SUPERSEDED ☐

TEMPORARY APPROVAL SIGNATURES (Refer to Section 3.4)

Place a copy of the temporarily approved procedure action in the assigned pickup box immediately upon completion

(PRINT)	MEMBER PLANT SUPERVISORY STAFF (Step 3.4.2.3)	SIGNATURE	DATE
(PRINT)	ASSISTANT/SHIFT SUPERVISOR (SRO) (Step 3.4.2.9)	SIGNATURE	DATE

Total Number of Pages in TAPA Package _____

1. A CATS DATABASE SEARCH IS REQUIRED FOR ALL PROCEDURE ACTIONS. See Appendix H for details on how to perform a search.
2. IF THIS IS AN INTENT CHANGE PROCEDURE ACTION, THEN PERFORM 10CFR50.59 SCREENING AND EVALUATION PER 93AC-0NS01.
3. A YES MARK IN THE FULL BASIS CHECK BOX WILL RESET THE PERIODIC REVIEW CLOCK (Step 3.8.4)

Procedure Action Package Documents (Refer to Section 3.2.1.3)

☐ 50.59 _____

☐ QA Document Review Summary _____

☐ Procedure Pages _____

Total Pages Turned Over to NIRM (include PAC)

PRINT	TECHNICAL REVIEWER	SIGNATURE	DATE	(Refer to Section 3.2.8.4)
PRINT	QA CONCURRENCE (PR and AC only)	SIGNATURE	DATE	(Refer to Section 3.2.9)
PRINT	PROCESS OWNER	SIGNATURE	DATE	(Refer to Section 3.2.10)

Effective Date, if requested

5.0 ENSURE COOLING TO CRITICAL NC LOADS

CAUTION

Maximum time for RCP operation without NC or EW flow is 10 minutes. If NC or EW flow is restored within 10 minutes, the need to stop the affected RCP(s) is based on the limits in 4XAO-XZZ29, Reactor Coolant Pump and Motor Emergency.

NOTE

Cross-connecting NC and EW makes the EW Train inoperable per Tech Spec 3.7.3 and the EC Train inoperable per Tech Spec 3.7.6.

NOTE

The EW system is not capable of providing normal flow to all the EW and NC components. EW flow throttling is necessary to maintain adequate flow to the NC priority loads for continued operations.

NOTE

When EW is cross connected with NC, CHB-UV-523 isolates letdown. Cross-Connecting EW to NC does not re-establish cooling water to the letdown heat exchanger.

___ 5.1 IF the NC priority header is believed to be intact, THEN perform step 5.2 through step 5.6 to cross-connect EW Train A to the NC priority header.

5.2 Ensure BOTH of the nuclear cooling water pumps are in "PULL TO LOCK"

___ NCN-HS-1.

___ NCN-HS-2.

___ 5.3 Close NCN-UV-99, Nuclear Cooling Water Containment Header Return Valve.

___ 5.4 Start BOTH of the following Train A Essential pumps:

~~5.4~~ ___ ~~Start~~ SPA-P01, Essential Spray Pond Pump.

~~5.5~~ ___ ~~Start~~ EWA-P01, Essential Cooling Water Pump.

___ 5.5 Open BOTH of the Train A Essential Cooling Water to Nuclear Cooling Water Cross-Connect Valves:

___ EWA-UV-65.

___ EWA-UV-145.

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearances (A.2)
KSA #: P-P000-194-001-K1-02 LP#: NLR95-01-RC-008

QUESTION:

REFERENCES: ALLOWED

Maintenance adjustment to Diesel Generator "B" fuel rack for failing it's scheduled Surveillance Test has just been completed. DG "B" has been inoperable for 8 hours. Explain the process of clearance/ragout removal.

REFERENCE ANSWER:

Step 1: Maintenance personnel shall request tag removal

Step 2: The discipline leader/acceptor (Maintenance) shall verify work requiring the clearance is complete, walkdown the DG to ensure status and sign the "released line" on the clearance documentation.

Step 3: Operations SRO as the responsible supervisor will ensure all disciplines involved with clearance are informed of tag removal/restoration. He shall also verify no work in progress and ensure "released lines" are signed on the clearance documentation. He shall also identify tag removal order and IV requirements as necessary, sign for tag removal authorization and assign personal to pull the tags and restore the DG.

Step 4: Authorized Operations tagging personal will review the tag removal package, pull the tags and restore the DG and perform IV as directed.

EXAMINEE'S ANSWER:

REFERENCE: 40DP-9OP30, Clearance Processing

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearances (A.2)
KSA #: P-P000-194-001-K1-02 LP #: NLR95-01-RC-008

QUESTION:

REFERENCES: ALLOWED

Now that the clearance on Diesel Generator "B" has been removed following the fuel rack work, explain any requirements necessary to declare/demonstrate the operability of Diesel Generator "B".

REFERENCE ANSWER:

1. A maintenance run should be performed on DG "B" to verify correction of the fuel rack problem; followed by a surveillance test run (41ST-1DG02).
2. Update the TSCCR status and make a unit log entry declaring DG "B" operable.

EXAMINEE'S ANSWER:

REFERENCE: 41ST-1ZZ02, Inoperable Power Sources Action Statement Surveillance
41ST-1DG02, Diesel Generator "B" Test

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-K1-03 LP #: NKA01-00-RC-514/GET/RAD

QUESTION:

REFERENCES: NOT ALLOWED

What posting should you find at the entrance to an area with a 1100 MREM/hr dose rate and what are the entry requirements.

REFERENCE ANSWER:

Shall be posted as a locked High Radiation Area (LHRA)

The following requirements must be included for a satisfactory answer:

- Signed in on correct REP
- Have the appropriate dosimetry
- Need a RP Tech with a dose rate instrument and a key to the lock

These additional requirements may also be included in examinee's answer.

- Must be qualified Radiation Worker
- Have a reason to enter

EXAMINEE'S ANSWER:

REFERENCE: GET/Radiation Work Training

NOTE: Ask this question inside the RCA past the RP desk

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: NKA01-00-RC-514 GET/RAD

QUESTION:

REFERENCES: ALLOWED

During refueling operations, a fuel handling accident has occurred. An Alert has been declared. There are injured personnel still on the fuel handling bridge crane. RP estimates the dose at the crane to be ≈15 R/hr. Assuming that rescue efforts in the radiation field can be completed in 55 minutes, explain whose authorization is necessary for this rescue attempt.

REFERENCE ANSWER:

The Emergency Coordinator (EC) must authorize this attempt because the dose received would be greater than 10CRF20 limits.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-18, Emergency Exposure Guidelines

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

REFERENCES: NOT ALLOWED

You are the duty Shift Supervisor. The reactor trips with evidence of a LOCA inside CTMT. You assume the Emergency Coordinators (EC) duties. The work control SRO (EC qualified) from the STA office volunteers to perform the initial event classification and subsequent Emergency Coordinators duties.

Explain if this action is allowed.

REFERENCE ANSWER:

Yes. While it is the responsibility of the affected unit Shift Supervisor to perform initial event classification and Emergency Coordinators duties, he can be relieved of these by an EC qualified individual.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-01, Emergency Classifications

GROUP # : 1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4).
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

REFERENCES: ALLOWED

The unit was at 100% power when a loss of offsite power occurred. Shortly after the trip, a SIAS/CIAS occurred. Indications of a Steam Generator Tube Rupture are evident.

Classify the event and identify/describe any Protective Action Recommendations (PAR) necessary.

REFERENCE ANSWER:

Site Area Emergency based on SGTR with release of contaminated steam to atmosphere. PAR of shelter within a 2 mile radius.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-02, Emergency Classifications and Basis Document
EPIP-04, Alert, SAE, GE Implementing Actions

Examination Level (Circle One):		RO / SRO
Facility:		Week of Examination: (Group 2)
Examiner's Name (print):		

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5 New
		Explain when you can be less than minimum manning and whose authority and what actions are required. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the duties and responsibilities of the SRO in the CRm during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) and the CRS/SS duties and responsibilities for this work. New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	RWP Discussion / RCA Entry requirements. New
		CRS/SS duties/responsibilities for Rad Waste Gas Release Permit. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	~~Describe the Non-Delegable EC responsibilities.~~ New Can the EC delegate onsite evacuation decisions.
		Following reports of an explosion/fire in the Train "B" Emergency DG Rm, Security reports apprehending unauthorized intruders in the Train "A" 4160 Switchgear Rm with what appears to be another bomb that was about to be placed. Classify the event and identify/describe any PAR recommendations necessary. New

Examiner: _____ Chief Examiner: _____

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Staffing (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-514

QUESTION:

What is the minimum Shift crew composition for Mode 1 and Mode 5?

per Unit

REFERENCE ANSWER:

Mode 1	Mode 5
1 - SS w/SRO	1 - SS w/SRO
1 - SRO	1 - RO
2 - RO	1 - AO
4 - AO	
1 - STA	

EXAMINEE'S ANSWER:

Closed RO

REFERENCE: Tech Spec Section 6.2 and 40AC-9OP02, Conduct of Shift Operations, Section 3.1

NOTE: References may not be used for this question.

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Staffing (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-514

QUESTION:

You are the incoming duty Control Room Supervisor. The unit has been at power for 25 days. Two of your five AO's called-in with a report of car trouble. They will be about 1 hour late. No extra RO/SRO are available.

The off-going SS gave his permission for all of his crew to leave at the normal time because your AO's will be onsite within 2 hours. Explain whether you agree or disagree with his decision.

REFERENCE ANSWER:

Disagree because while there is a 2 hour window when you can have one less than the minimum manning, it does not allow crew positions to be unmanned at shift change due to somebody being late.

EXAMINEE'S ANSWER:

REFERENCE: Tech Spec Section 6.2

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Fuel Handling (A.1)
KSA #: P-S11S-034-000-KO-01 LP #: NKA01-00-XC-702

QUESTION:

Explain the CRS/SS duties and/or responsibilities during core alterations, including core reload operations.

REFERENCE ANSWER:

SS: Maintains overall responsibility for the safe operation of the plant. Gives direct permission to LSRO-Fuel Handling for core alterations' activities.

CRS: Ensures direct communication between Control Room and personnel at refueling station. Ensure NIS startup channels 1 and 2 operating correctly with at least 1 channel audible in the Control Room and CTMT. Ensures routine Mode 5-6 STs are performed.

1 & 2 required

EXAMINEE'S ANSWER:

REFERENCE: 72IC-1RX03, Core Reload
40OP-1ZZ12, Mode 6 Operations
40AC-9OP02, Conduct of Shift Operations

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Fuel Handling (A.1)
KSA #: P-S11E-000-036-AO-07 LP #: NKA01-00-RC-326

QUESTION:

With refueling is in progress, the LSRO-Fuel Handling reports to the Control Room that 1 spent fuel bundle appears to be stuck and will no longer move upward. He also reports more bubbles than normal in the fuel area. There is an increase in CTMT airborne radiation levels.

Explain what your actions as the on duty Shift Supervisor would be.

REFERENCE ANSWER:

- Direct evacuation form CTMT all non-essential personnel
- Direct LSRO to stop attempting to move the fuel bundle and if fuel is in stable configuration, evacuate all personnel from CTMT.
- Notify RP and Rx Engineering
- Review EPIP-02
- Direct the CRS to ensure CPIAS, CREFAS actuation.
- Direct CTMT Coordinator ensure Personnel Airlock and Equipment hatch are closed

EXAMINEE'S ANSWER:

REFERENCE: 41AO-1ZZ26, Irradiated Fuel Damage

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearance (A.2)
KSA #: P-P000-194-K1-02 LP #: NLR95-01-RC-008

QUESTION:

Charging Pump "B" has been identified as needing plunger assembly replacement. A work order has been written and entered into SIMS and a work package has been generated.

Generate a tagout/clearance for this work.

REFERENCE ANSWER:

Clearance generated per 40DP-9OP29 Section 3 and Appendix I

EXAMINEE'S ANSWER:

REFERENCE: 40DP-9OP29, Clearance Generation

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearance (A.2)
KSA #: P-P000-194-001-K1-02 LP#: NLR95-01-RC-008

QUESTION:

Describe the process of authorization for Maintenance to work on the "B" Charging Pump for this plunger assembly replacement. The clearance just generated has not been hung.

REFERENCE ANSWER:

1) 2)
The OPS-SRO Responsible Supervisor will review all clearance documentation and authorize tag placement. He also assigns authorized personnel to remove the charging pump from service and hang the clearance. Following hanging of the clearance, the OPS-SRO Responsible Supervisor will contact the Maintenance group work planner and inform them of clearance hung and request acceptance of clearance by the work group.

EXAMINEE'S ANSWER:

Closed

REFERENCE:

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: GET\RAD Training

QUESTION: Ask this question inside the RCA :

~~Part 2.~~

Explain if we can use this REP to do work in an area with a dose rate of 120 mRem/hr?

REFERENCE ANSWER:

No, 120 mRem/hr is a High Radiation Area (HRA) and this REP does not allow entry into a HRA.

EXAMINEE'S ANSWER:

REFERENCE: GET/Rad Worker Training

Closed Ref

You have just completed your review of a Radioactive Gaseous Release Permit Request for the WGDT "A". The review was determined to be SAT. Assuming that prior to actual Release, RU-12 becomes inoperable. What additional requirements must be completed prior to release of the WGDT "A" contents?

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: NKA01-00-RC-701

QUESTION:

Part 2:

Assuming that RU-12 was inoperable, what would your approval signature also acknowledge?

REFERENCE ANSWER:

That 2 independent valve line-ups are required for this release

EXAMINEE'S ANSWER:

REFERENCE: 74AC-9CY08, Gaseous Radiation Effluent Release Administrative Control
74RM-9EF20, Gaseous Radiation Release Permit and Offsite Dose Assessment

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: GET/RAD Training

QUESTION:

Part 1:

Explain what information can be found on your Radiation Exposure Permit (REP).

REFERENCE ANSWER:

Job location and scope, estimated manhours/manRem and job duration; summary of radiological conditions; tasks allowed; required dosimetry, respiratory and PC requirements; requirements for RP coverage, Pre-job brief and any special requirements; Approval/Review Section.

EXAMINEE'S ANSWER:

REFERENCE: GET/Rad Worker Training

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Staffing (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-514

QUESTION:

REFERENCES: NOT ALLOWED

What is the minimum Shift crew composition (per Unit) for Mode 1 and Mode 5?

REFERENCE ANSWER:

Mode 1	Mode 5
1 - SS w/SRO	1 - SS w/SRO
1 - SRO	1 - RO
2 - RO	1 - AO
4 - AO	
1 - STA	

EXAMINEE'S ANSWER:

originals

REFERENCE: Tech Spec Section 6.2 and 40AC-9OP02, Conduct of Shift Operations, Section 3.1

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Shift Staffing (A.1)
KSA #: P-P000-194-001-A1-03 LP #: NKA01-00-RC-514

QUESTION:

REFERENCES: NOT ALLOWED

You are the incoming duty Control Room Supervisor. The unit has been at power for 25 days. Two of your five AO's called-in with a report of car trouble. They will be about 1 hour late. No extra RO/SRO are available.

The off-going SS gave his permission for all of his crew to leave at the normal time because your AO's will be onsite within 2 hours. Explain whether you agree or disagree with his decision.

REFERENCE ANSWER:

Disagree because while there is a 2 hour window when you can have one less than the minimum manning, it does not allow crew positions to be unmanned at shift change due to somebody being late.

EXAMINEE'S ANSWER:

REFERENCE: Tech Spec Section 6.2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Fuel Handling (A.1)
KSA #: P-S11S-034-000-KO-01 LP #: NKA01-00-XC-702

QUESTION:

REFERENCES: ALLOWED

Explain the CRS duties and/or responsibilities during core alterations, including core reload operations.

REFERENCE ANSWER:

The following items must be included for a satisfactory answer:

- Ensures direct communication between Control Room and personnel at refueling station. Ensure NIS startup channels 1 and 2 operating correctly with at least 1 channel audible in the Control Room and CTMT.

This additional item may also be included in examinee's answer.

- Ensures routine Mode 5-6 STs are performed.

EXAMINEE'S ANSWER:

REFERENCE: 72IC-1RX03, Core Reload
40OP-1ZZ12, Mode 6 Operations
40AC-9OP02, Conduct of Shift Operations

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Fuel Handling (A.1)
KSA #: P-S11E-000-036-AO-07 LP #: NKA01-00-RC-326

QUESTION:

REFERENCES: ALLOWED

With refueling is in progress, the LSRO-Fuel Handling reports to the Control Room that 1 spent fuel bundle appears to be stuck and will no longer move upward. He also reports more bubbles than normal in the fuel area. There is an increase in CTMT airborne radiation levels.

Explain what your actions as the on duty Shift Supervisor would be.

REFERENCE ANSWER:

- Direct evacuation form CTMT all non-essential personnel
- Direct LSRO to stop attempting to move the fuel bundle and if fuel is in stable configuration, evacuate all personnel from CTMT.
- Notify RP and Rx Engineering
- Review EPIP-02
- Direct the CRS to ensure CPIAS, CREFAS actuation.
- Direct CTMT Coordinator ensure Personnel Airlock and Equipment hatch are closed

EXAMINEE'S ANSWER:

REFERENCE: 41AO-1ZZ26, Irradiated Fuel Damage

NOTE: All items required to be considered satisfactory

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearance (A.2)
KSA #: P-P000-194-K1-02 LP #: NLR95-01-RC-008

QUESTION:

REFERENCES: ALLOWED

Charging Pump "B" has been identified as needing plunger assembly replacement. A work order has been written and entered into SIMS and a work package has been generated.

Generate a tagout/clearance for this work.

REFERENCE ANSWER:

Clearance generated per 40DP-9OP29 Section 3 and Appendix I

EXAMINEE'S ANSWER:

REFERENCE: 40DP-9OP29, Clearance Generation

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Tagging and Clearance (A.2)
KSA #: P-P000-194-001-K1-02 LP#: NLR95-01-RC-008

QUESTION:

REFERENCES: NOT ALLOWED

Describe the process of authorization for Maintenance to work on the "B" Charging Pump for this plunger assembly replacement. The clearance just generated has not been hung.

REFERENCE ANSWER:

The OPS-SRO Responsible Supervisor will:

1. Review all clearance documentation
2. Authorize tag placement
3. Assigns personnel to remove pump from service and hang the clearance
4. Contact Maintenance Work Group and inform them of status

EXAMINEE'S ANSWER:

REFERENCE: 40OP-9OP29, Clearance Generation, 40DP-9OP30, Clearance Processing

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: NKA01-00-RC-701

QUESTION:

REFERENCES: ALLOWED

You have just completed your review of a Radioactive Gaseous Release Permit Request for the WGDT "A". The review was determined to be satisfactory. Assuming that prior to actual release, RU-12 becomes inoperable. What additional requirements if any are required prior to release of the WGDT "A" contents?

REFERENCE ANSWER:

Must perform 2 independent valve line-up verifications prior to release.

EXAMINEE'S ANSWER:

REFERENCE: 74AC-9CY08, Gaseous Radiation Effluent Release Administrative Control
74RM-9EF20, Gaseous Radiation Release Permit and Offsite Dose Assessment

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

REFERENCES: ALLOWED

The Unit is at 100% power when following reports of an explosion/fire in the Train "B" Emergency Diesel Generator Room, security reports apprehending 3 unauthorized intruders in the Train "A" 4160 Kv switchgear Room with what appears to be another bomb that was about to be placed. Classify the event and identify/describe any protective action recommendation (PAR) necessary.

REFERENCE ANSWER:

Site Area Emergency (SAE) based on security event in a vital area. PAR of shelter within a 2-mile radius.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-02, Emergency Classifications and Basis Document; EPIP-04, Alert, SAE, GE Implementing Actions.

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP: NKA01-00-RC-601

QUESTION:

REFERENCES: NOT ALLOWED

You are the unit Shift Supervisor (SS) when the reactor trips on low RCS/PZR pressure. RU-6 is in high alarm and the NC surge tank is over flowing. the EOF/TSC are not operational you assume the Emergency coordinators (EC) duties. The work control SRO (EC Qualified) volunteers to help you by taking full responsibility for any onsite evacuation decisions.

Explain if this action is allowed.

REFERENCE ANSWER:

The Emergency Coordinator can not delegate the determination of the need for onsite evacuation.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-02, Emergency Classification

Examination Level (Circle One): RO / SRO
Facility: Week of Examination: (SRO - I)
Examiner's Name (print):

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5. New
		Given a situation where ~~Explain~~ when you ~~can be~~ less than minimum manning, identify if you ~~and whose authority and what actions are required.~~ agree with actions taken. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the ~~,~~ duties and responsibilities ~~of the SRO in the CRm~~ during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage. New
.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) ~~and the CRS/SS duties and responsibilities for this work.~~ New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	~~RWP Discussion / RCA Entry requirements.~~ New Apply Radiation Exposure Permit limitations
		~~GRS/SS duties/responsibilities for Rad Waste Gas Release Permit.~~ New Requirements for Rad Waste Gas Release with RM-12 out of Service
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	JPM #EP012 Bank clone

Examiner: _____ Chief Examiner: _____

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Radiation Control (A.3)
KSA #: P-P000-194-001-K1-03 LP #: GET\RAD Training

QUESTION:

REFERENCES: NOT ALLOWED

Explain if we can use this REP to do work in an area with a dose rate of 120 mRem/hr?

REFERENCE ANSWER:

No, 120 mRem/hr is a High Radiation Area (HRA) and this REP does not allow entry into a HRA.

EXAMINEE'S ANSWER:

REFERENCE: GET/Rad Worker Training

NOTE: Ask this question inside the RCA past the RP desk

Appendix A - Radioactive Gaseous Release Permit Request

PERMIT NUMBER 953009

REQUESTOR C. Millard DEPARTMENT Operations

REQUESTED RELEASE:

START DATE 1-14-95 TIME 0800 STOP DATE 1-15-95 TIME 0800

REASON FOR THE RELEASE Reduce WGDT 'A' Contents

A. CONTINUOUS RELEASE Check here if this section is N/A (✓)

PROCESS FLOW PLANT VENT: ( ) 109000 cfm (without refueling purge)
( ) 146000 cfm (with refueling purge)
FUEL BLDG: ( ) 43500 cfm

B. CONTAINMENT PURGE Check here if this section is N/A (✓)

CHECK EXHAUST FANS TO BE OPERATING DURING CONTAINMENT PURGE:
( ) CPN-J01A (16500 cfm) : ( ) CPN-J01B (16500 cfm) : ( ) CPN-J02 (2200 cfm)

TOTAL PROCESS FLOW RATE _____ cfm

Reason for purge verified with the Requestor. Shift Supervisor approved continuation of purge:

Tech Init _____ Date/Time _____ Tech Init _____ Date/Time _____
Tech Init _____ Date/Time _____ Tech Init _____ Date/Time _____
Tech Init _____ Date/Time _____ Tech Init _____ Date/Time _____
Tech Init _____ Date/Time _____ Tech Init _____ Date/Time _____

C. NON STANDARD CONTAINMENT PURGE Check here if this section is N/A (✓)

PROCESS FLOW RATE = 2200 cfm INITIAL CONTAINMENT PRESSURE _____ psig

DURATION = 1.34 x (CONTAINMENT PRESSURE) = _____ hours

D. WGDT RELEASE Check here if this section is N/A ( )

TANK A INITIAL PRESSURE 305 psig: FINAL PRESSURE 0 psig

FIC-33 SETTING 50 cfm

E. BAC RELEASE Check here if this section is N/A (✓)

MAXIMUM RELEASE RATE _____ lbm/hour

OF FEET OF HUT TO BE RELEASED _____ ft

F. OTHER RELEASES Check here if this section is N/A (✓)

DESCRIPTION _____

RELEASE POINT _____ FLOW RATE AT RELEASE POINT _____

PREPARED BY: [signature] DATE: 1-13-95

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS TRACKING SYSTEM

PERMIT REVIEW

Reviewed By: Henry D Hinds 1/20/95

TODAY'S DATE = 01-15-1995
CURRENT TIME = 06:15:41
REVISION #: GASREL 1.6

PERMIT # 953009 UPDATE # 1

DATE OF RELEASE:01-14-95 STOP:01-15-95
TIME OF RELEASE:0930 STOP:0600
QUARTER: 1 TYPE: WGDT A
DURATION BASED ON START & STOP TIMES AND DATES: 20.50 (HRS)

ISOTOPE	uCi/cc	TOTAL uCi	uCi/sec	ISOTOPE	uCi/cc	TOTAL uCi	uCi/sec
Ar-41	0.00E+00	0.00E+00	0.00E+00	Ba-140	0.00E+00	0.00E+00	0.00E+00
Kr-85	2.47E-05	1.14E+04	2.91E-01	Ce-141	0.00E+00	0.00E+00	0.00E+00
Kr-85m	0.00E+00	0.00E+00	0.00E+00	Ce-144	0.00E+00	0.00E+00	0.00E+00
Kr-87	0.00E+00	0.00E+00	0.00E+00	Co-58	0.00E+00	0.00E+00	0.00E+00
Kr-88	0.00E+00	0.00E+00	0.00E+00	Co-60	0.00E+00	0.00E+00	0.00E+00
Xe-133	1.21E-05	5.60E+03	1.43E-01	Cs-134	0.00E+00	0.00E+00	0.00E+00
Xe-133m	0.00E+00	0.00E+00	0.00E+00	Cs-137	0.00E+00	0.00E+00	0.00E+00
Xe-135	0.00E+00	0.00E+00	0.00E+00	Fe-59	0.00E+00	0.00E+00	0.00E+00
Xe-135m	0.00E+00	0.00E+00	0.00E+00	I-131	2.95E-09	1.37E+00	3.48E-05
Xe-138	0.00E+00	0.00E+00	0.00E+00	I-133	0.00E+00	0.00E+00	0.00E+00
Kr-[redacted]m	0.00E+00	0.00E+00	0.00E+00	Mn-54	0.00E+00	0.00E+00	0.00E+00
Kr-[redacted]	0.00E+00	0.00E+00	0.00E+00	Zn-65	0.00E+00	0.00E+00	0.00E+00
Kr-90	0.00E+00	0.00E+00	0.00E+00	Cr-51	0.00E+00	0.00E+00	0.00E+00
Xe-131m	1.62E-06	7.50E+02	1.91E-02	Zr-95	0.00E+00	0.00E+00	0.00E+00
Xe-137	0.00E+00	0.00E+00	0.00E+00	Sb-124	0.00E+00	0.00E+00	0.00E+00
Br-82	0.00E+00	0.00E+00	0.00E+00	H-3	1.70E-07	7.87E+01	2.01E-03
Rb-88	0.00E+00	0.00E+00	0.00E+00	Sr-89	0.00E+00	0.00E+00	0.00E+00
				Sr-90	0.00E+00	0.00E+00	0.00E+00
SUB TOTALS:	3.84E-05	1.78E+04	4.53E-01	SUB TOTALS:	1.73E-07	8.01E+01	2.04E-03
				TOTALS:	3.86E-05	1.79E+04	4.55E-01

RELEASE FLOW RATE: 25.00 CFM
DURATION (CALCULATED): 10.90 HRS.
TOTAL VOLUME RELEASED: 4.63E+08 cc

INITIAL TANK PRESSURE: 305.00 PSIG
FINAL TANK PRESSURE: 0.00 PSIG

AGE GROUP SUMMARY (mREM)

GROUP	W. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
INFANT:	1.47E-07	9.21E-08	1.17E-07	2.23E-07	2.46E-07	4.48E-05	8.75E-08	8.80E-08
CHILD :	2.43E-07	2.04E-07	8.31E-08	2.78E-07	3.30E-07	2.71E-05	1.97E-07	1.97E-07
TEEN :	1.71E-07	1.51E-07	4.34E-08	1.98E-07	2.39E-07	1.69E-05	1.41E-07	1.41E-07
ADULT :	1.50E-07	1.36E-07	3.08E-08	1.67E-07	1.96E-07	1.35E-05	1.27E-07	1.27E-07

[redacted]IR DOSE (mRAD)	GAMMA	BETA
	6.47E-07	8.19E-06

DOSE RATE (mREM/YR)	WHOLE BODY	SKIN	ORGAN
	4.31E-04	4.52E-03	5.05E-03

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS TRACKING SYSTEM

PERMIT REVIEW

TODAY'S DATE = 01-14-1995
CURRENT TIME = 00:05:06
REVISION #: GASREL 1.6

PERMIT # 953009 UPDATE # 0

DATE OF RELEASE:01-14-95
TIME OF RELEASE:0800
QUARTER: 1

STOP:01-15-95
STOP:0800
TYPE: WGDT A

ISOTOPE	uCi/cc	TOTAL uCi	uCi/sec	ISOTOPE	uCi/cc	TOTAL uCi	uCi/sec
Ar-41	0.00E+00	0.00E+00	0.00E+00	Ba-140	0.00E+00	0.00E+00	0.00E+00
Kr-85	2.47E-05	1.14E+04	5.83E-01	Ce-141	0.00E+00	0.00E+00	0.00E+00
Kr-85m	0.00E+00	0.00E+00	0.00E+00	Ce-144	0.00E+00	0.00E+00	0.00E+00
Kr-87	0.00E+00	0.00E+00	0.00E+00	Co-58	0.00E+00	0.00E+00	0.00E+00
Kr-88	0.00E+00	0.00E+00	0.00E+00	Co-60	0.00E+00	0.00E+00	0.00E+00
Xe-133	1.21E-05	5.60E+03	2.86E-01	Cs-134	0.00E+00	0.00E+00	0.00E+00
Xe-133m	0.00E+00	0.00E+00	0.00E+00	Cs-137	0.00E+00	0.00E+00	0.00E+00
Xe-135	0.00E+00	0.00E+00	0.00E+00	Fe-59	0.00E+00	0.00E+00	0.00E+00
Xe-135m	0.00E+00	0.00E+00	0.00E+00	I-131	2.95E-09	1.37E+00	6.96E-05
Xe-138	0.00E+00	0.00E+00	0.00E+00	I-133	0.00E+00	0.00E+00	0.00E+00
Kr-83m	0.00E+00	0.00E+00	0.00E+00	Mn-54	0.00E+00	0.00E+00	0.00E+00
K[redacted]	0.00E+00	0.00E+00	0.00E+00	Zn-65	0.00E+00	0.00E+00	0.00E+00
K[redacted]	0.00E+00	0.00E+00	0.00E+00	Cr-51	0.00E+00	0.00E+00	0.00E+00
Xe-131m	1.62E-06	7.50E+02	3.82E-02	Zr-95	0.00E+00	0.00E+00	0.00E+00
Xe-137	0.00E+00	0.00E+00	0.00E+00	Sb-124	0.00E+00	0.00E+00	0.00E+00
Br-82	0.00E+00	0.00E+00	0.00E+00	H-3	1.70E-07	7.87E+01	4.01E-03
Rb-88	0.00E+00	0.00E+00	0.00E+00	Sr-89	0.00E+00	0.00E+00	0.00E+00
				Sr-90	0.00E+00	0.00E+00	0.00E+00
SUB TOTALS:	3.84E-05	1.78E+04	9.07E-01	SUB TOTALS:	1.73E-07	8.01E+01	4.08E-03
				TOTALS:	3.86E-05	1.79E+04	9.11E-01

RELEASE FLOW RATE: 50.00 CFM
DURATION (CALCULATED): 5.45 HRS.
TOTAL VOLUME RELEASED: 4.63E+08 cc

INITIAL TANK PRESSURE: 305.00 PSIG
FINAL TANK PRESSURE: 0.00 PSIG

AGE GROUP SUMMARY (mREM)

GROUP	W. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
INFANT:	1.47E-07	9.21E-08	1.17E-07	2.23E-07	2.46E-07	4.48E-05	8.75E-08	8.80E-08
CHILD :	2.43E-07	2.04E-07	8.31E-08	2.78E-07	3.30E-07	2.71E-05	1.97E-07	1.97E-07
TEEN :	1.71E-07	1.51E-07	4.34E-08	1.98E-07	2.39E-07	1.69E-05	1.41E-07	1.41E-07
ADULT :	1.50E-07	1.36E-07	3.08E-08	1.67E-07	1.96E-07	1.35E-05	1.27E-07	1.27E-07

AIR DOSE (mRAD)	GAMMA	BETA
	6.47E-07	8.19E-06

DOSE RATE (mREM/YR)	WHOLE BODY	SKIN	ORGAN
	8.63E-04	9.05E-03	1.01E-02

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS TRACKING SYSTEM

RADIOACTIVE RELEASE PERMIT

TODAY'S DATE = 01-14-1995
CURRENT TIME = 00:05:06
REVISION #: GASREL 1.6

UNIT #: 3
PERMIT #:953009

RELEASE CONSTRAINTS

RELEASE TYPE: WGDT A

PERMIT BEGINS: 01-14-95 0800
PERMIT EXPIRES:01-15-95 0800

1.) Inform Chemistry if the ventilation alignment is changed
2.) The release shall be within the time constraints listed above
3.) Inform Chemistry when release begins.
4.) FOR WGDT DISCHARGES
    a.) Maximum allowable discharge rate: 50.00 CFM
    b.) Do not reduce tank pressure to less than: 0.00 psig.

PROJECTED DOSE SUMMARY

1.0 ACCUMULATED AIR AND ORGAN DOSE

	NOBLE GAS AIR DOSE				IODINE AND PARTICULATE INDIVIDUAL DOSE	
	THIS QTR(mRAD)		THIS YR(mRAD)		THIS QTR(mREM)	THIS YR(mREM)
	GAMMA	BETA	GAMMA	BETA	MAX ORGAN	MAX ORGAN
DOSE:	4.36E-05	2.39E-05	4.36E-05	2.39E-05	4.95E-05	4.95E-05
LCO:	5	10	10	20	7.50	8.33
% LCO:	0.001	2.39E-04	4.36E-04	1.19E-04	0.001 (INFANT THYROID)	0.001 (INFANT THYROID)

2.0 DOSE RATE

Total Dose Rate for Unit
mREM/yr (INCLUDES SIMULTANEOUS RELEASES)

	WHOLE BODY	SKIN	ORGAN
This release:	8.63E-04	9.05E-03	1.01E-02
Permit #953006:	0.00E+00	0.00E+00	0.00E+00
Permit #953007:	0.00E+00	0.00E+00	0.00E+00
Total:	8.63E-04	9.05E-03	1.01E-02
LCO:	166.00	1000.00	500.00
%LCO:	0.001	0.001	0.002

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS
TRACKING SYSTEM

RADIOACTIVE RELEASE PERMIT

TODAY'S DATE = 01-14-1995
CURRENT TIME = 00:05:06
REVISION #: GASREL 1.6
PERMIT #:953009

UNIT #: 3

3.0 Is the release expected to exceed:

ADMINISTRATIVE LIMITS?(80% OF LCO) NO

LIMITING CONDITION FOR OPERATION? NO
(FRACTION ALLOTTED TO THIS UNIT)

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS
TRACKING SYSTEM

RADIOACTIVE RELEASE PERMIT PAGE 3

TODAY'S DATE = 01-14-1995
CURRENT TIME = 00:05:06
REVISION #: GASREL 1.6
PERMIT #:953009

UNIT #: 3

DOSE APPROVAL

Sample Nos: T3-95-0077 G3-95-0078 P3-95-0079 I3-95-0080

Prepared by: Theresa Nelson

APPROVED: JM Fillers Title: U-3 Chem Sup.

WGDT DISCHARGE

1.0 On Radiation Monitor RU-12 Perform the following Channel and Functional checks

GAS CHANNEL	(CIRCLE ONE)	Signature	Date/Time
Channel check:	SAT/UNSAT		
Source check :	SAT/UNSAT		
Channel Functional Test (1)	SAT/UNSAT		
Setpoint Restored			
Setpoint Verified			

2.0 On the Process Flow Rate Monitor perform the following Channel and Functional checks

FLOW RATE MONITOR	(CIRCLE ONE)	Signature	Date/Time
Channel check: (1)	SAT/UNSAT		
Channel Functional Test	SAT/UNSAT		

(1) See REMARKS SECTION

3.0 Release Authorization

Approved by : _____/____
Shift Supervisor Date/Time

PALO VERDE NUCLEAR GENERATING STATION
GASEOUS RADIOACTIVE EFFLUENTS TRACKING SYSTEM

RADIOACTIVE RELEASE PERMIT PAGE 4

TODAY'S DATE = 01-14-1995
CURRENT TIME = 00:05:06
REVISION #: GASREL 1.6
PERMIT #:953009

UNIT #: 3

RELEASE INFORMATION

1.0 Fill-in appropriate information:

	DATE	TIME	FLOW(units)	PRESSURE (psig)
START	1-14-95	0930	25(CFM)	305
FINISH	1-15-95	0900	25(CFM)	0

Remarks: ① Channel checks/Functional checks/Flow Rate Monitor and RAD Monitors SAT per 74ST-9SQ006. RU-12 reading 1.48E-4 uC/cc @ start NOTE: WGDT "A" released instead of B or C due to its lower activity for decay even though it had not decayed a full 45 days. Henry Hurley approved this release. Ru-12 Reading 1.44E-04 uCi/cc @ 1-14-95/1855.

Terminated BY: M. Nelson Title: Effluent Chemist

(TRANSMIT TO CHEMISTRY)

RECORDS UPDATE

UPDATE #	SAMPLE #	SAMPLE TYPE	UPDATE REASON	ETS UPDATE PERFORMED BY	DATE
#1	N/A	N/A	Change start time, stop time, AVG flow rate	M Nelson	1-15-95

Effluent Sample Data Sheet (Sample)

OPN533D

PERMIT # 95-3-009 UNIT 1 2 (3) (CIRCLE ONE) RU - WGDT A

SAMPLE NUMBER	PARTICULATE N/A	IODINE N/A	
	GAS 3-95-00078	TRITIUM N/A	

SAMPLE DESCRIPTION gas grab for WGDT A permit generation

Gas Channel Reading: N/A µCi/cc Grab Sample Results: N/A µCi/cc

Gas Channel to Grab Sample Ratio (Gas Channel Reading / Grab Sample Results) = N/A (0.6 to 1.4 is acceptable)

MONITOR VACUUM: BEFORE FILTER CHANGE N/A in Hg AFTER FILTER CHANGE N/A in Hg

LEAK TEST (CIRCLE ONE) SAT / UNSAT SIGNATURE N/A DATE / TIME N/A

INITIATION	TERMINATION	VOLUME
Rautela (STARTED BY)	Rautela (STOPPED BY)	NOBLE GAS 1220 cc
DATE 1-13-95	DATE 1-13-95	PARTICULATE N/A cc
TIME 1455	TIME 1500	IODINE N/A cc
FLOW 5.0 cfm/lpm/ccm	FLOW 5.0 cfm/lpm/ccm	TRITIUM N/A cc
M&TE # EG6118	TOTALIZER VALUE N/A ft³	
M&TE CAL DUE DATE 3-10-95	DURATION 5 min.	AVG. FLOW 5.0 cfm/lpm/ccm

PLATE OUT FACTORS: PARTICULATE N/A IODINE N/A

TRITIUM BUBBLER: EFFICIENCY 95% WATER VOLUME N/A cc

PARTICULATE VOLUME =	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR
(OR)	TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
IODINE VOLUME =	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR
(OR)	TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
NOBLE GAS VOLUME =	CONTAINER VOLUME (cc)
TRITIUM VOLUME =	AVERAGE FLOW RATE (cc/min) X DURATION

SAVE PARTICULATE FILTER FOR COMPOSITE: YES (NO) (CIRCLE ONE)

SPECIAL INSTRUCTIONS:

ANALYZED BY: Rautela	REVIEWED BY: [signature]
DATE: 1-13-95	DATE: 1-13-95

Nuclide LLD Report Generated [illegible]-1995 [illegible]

configuration	: MDA0:[UNIT[illegible]]		
Analyst	: [illegible] PEAKEFF V0.2		
Sample title	: SAF [illegible]... [illegible] A ✓		
Sample ID	: 95-00078-[illegible] ✓	sample date	✓ 13-JAN-1995 1[illegible]:00:00.0[illegible]
detector name	: [illegible] ✓	acquisition time	: 13-JAN-1995 [illegible]:02.[illegible]
dep. correction	: No	deposition date	:
detector geometry	: [illegible] ✓	sample geometry	: FLUSH ✓
sample type	: [illegible] ✓	sample quantity	: 1.00000E+00 [illegible] ✓
confidence limit	: 90.00000	elapsed live time	: 0 00:30:00.00 ✓
Half life ratio	: 12.00000	elapsed real time	: 0 00:30:00.00
sensitivity	: 4.00000	dead time	: 0.0% ✓
pw width (FWHM)	: 5.00000	energy tolerance	: 1.25000

Completed By: [signature] Reviewed By: [signature]

[illegible]

Pk	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclide
[illegible]	[illegible]0.99	85[illegible]	[illegible]	2.0[illegible]	[illegible]	155	15	[illegible]		XE-13[illegible]
[illegible]	[illegible]4.99	58	72	1.71	3[illegible].49	[illegible]	1[illegible]	[illegible]		XE-1[illegible]
[illegible]	537.[illegible]	2[illegible]	[illegible]4	[illegible] (circled)	675.0[illegible]	367	15	[illegible]3.2		NO PEAK
[illegible]	[illegible]	67	[illegible]	2.[illegible]	[illegible].45	[illegible]	[illegible]4	21.5		KR-[illegible]

Sample ID : 95-[illegible]79-80-6 Acquisition date : 1[illegible]-[illegible]-1995 15:10:[illegible]

Total number of lines in spectrum 4
[illegible]ber of unidentified lines 1
[illegible]ber of lines tentatively identified by NID 3 75.00%

Nuclide Type : FISSION GAS

Nuclide	Hlife	Decay	Uncorrected uCi/CC	Decay Corr uCi/CC	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
KR-85	10.72Y	1.00	2.4[illegible]E-05	2.466E-05	0.[illegible]54E-05	[illegible].45	
XE-131M	11.84D	1.00	1.6[illegible]4E-06	1.615E-06	0.562E-06	34.[illegible]7	
XE-133	5.24D	1.00	1.20[illegible]E-05	1.207E-05	0.[illegible]02E-05	8.4[illegible]	
		Total Activity :	3.[illegible]E-05	3.835E-05			
		[illegible] of Total Activity :	[illegible]	[illegible]E-05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

[illegible] LLD Report [illegible] on: [illegible]

Sample ID : 95-00078-00-C Acquisition date : 13-[illegible]-1995 [illegible]

[illegible]

[illegible] MDA are [illegible] to [illegible]

[illegible] Activity Report

Nuclide	Bkgnd Sum	Energy (keV)	MDA (uCi/CC)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
XE-[illegible]	[illegible]	233.2[illegible]	1.884[illegible]-07
[illegible]	37	[illegible]	2.[illegible]-0[illegible]
XE-[illegible]	[illegible]	[illegible]	1.[illegible]E-0[illegible]
XE-[illegible]	[illegible]	[illegible]	[illegible]

VAX/VMS Nuclide LLD Report Generated 10-JAN-1995 22:00:26.58

configuration	: $DISK1:[UNIT2.CONFIG]DET1_ENBKG.CNF;826		
A[illegible]yses	: PEAK V16.3 PEAKEFF V2.2		
s[illegible]e title	: ENV BACKGROUND MAR$___		
sample ID	: DET1_ENBKG	sample date	: 10-JAN-1995 21:24:00.00
detector name	: DET1	acquistion time	: 10-JAN-1995 21:29:25.27
dep.correction	: No	deposition date	:
detector geometry	: 1GMAR1L	sample geometry	: SHELF$
sample type	: BKGD	sample quantity	: 1.22000E+03 CC
abundance limit	: 60.00000	elapsed live time	: 0 00:30:00.00
Half life ratio	: 12.00000	elapsed real time	: 0 00:30:00.18
sensitivity	: 4.66000	dead time	: 0.0%
mda width (FWHM)	: 5.00000	energy tolerance	: 1.25000

Completed By: N/A Reviewed By: N/A

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	295.15	16	2	1.07	589.29	586	6	27.4		NAT PB-214

Effluent Sample Data Sheet (Sample)

OPN533D

PERMIT # 95 - 3 - ____ UNIT 1 2 (3) (CIRCLE ONE) RU - WGDT A

SAMPLE NUMBER		
	PARTICULATE 3-95-00079	IODINE 3-95-00080
	GAS N/A	TRITIUM N/A

SAMPLE DESCRIPTION P&I grab samples for WGDT A permit gen.

Gas Channel Reading: N/A µCi/cc Grab Sample Results: N/A µCi/cc

Gas Channel to Grab Sample Ratio (Gas Channel Reading / Grab Sample Results) = N/A (0.6 to 1.4 is acceptable)

MONITOR VACUUM: BEFORE FILTER CHANGE N/A in Hg AFTER FILTER CHANGE N/A in Hg

LEAK TEST (CIRCLE ONE) SAT / UNSAT SIGNATURE N/A DATE / TIME N/A

INITIATION	TERMINATION	VOLUME
Rathbo (STARTED BY)	Rathbo (STOPPED BY)	NOBLE GAS N/A cc
DATE 1-13-95	DATE 1-13-95	PARTICULATE 3.50E+5 cc
TIME 1-13-95 1500	TIME 1610	IODINE 3.36E+5 cc
FLOW 5.0 cfm/lpm/ccm	FLOW 5.0 cfm/lpm/ccm	TRITIUM N/A cc
M&TE # EG6118	TOTALIZER VALUE N/A ft³	
M&TE CAL DUE DATE 3-6-95	DURATION 70 min.	AVG. FLOW 5.0 cfm/lpm/ccm

PLATE OUT FACTORS: PARTICULATE 1.0 IODINE 0.96

TRITIUM BUBBLER: EFFICIENCY 95% WATER VOLUME N/A cc

PARTICULATE VOLUME = (OR)	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
IODINE VOLUME = (OR)	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
NOBLE GAS VOLUME =	CONTAINER VOLUME (cc)
TRITIUM VOLUME =	AVERAGE FLOW RATE (cc/min) X DURATION

SAVE PARTICULATE FILTER FOR COMPOSITE: YES (NO) (CIRCLE ONE)

SPECIAL INSTRUCTIONS: ____

ANALYZED BY: Rathbo	REVIEWED BY: Norman Nelson
DATE: 1-13-95	DATE: 1-13-95

VAX/VMS [illegible] LLD Report Generated 13-JAN-1995 17:[illegible]:21.02

configuration	: [illegible]		
analyst	: [illegible]		
sample title	: [illegible] A PATT. 95B070		
sample ID	: 95-00079-50-5	sample date	: 13-JAN-1995 16:10:10.00
detector name	: [illegible]	acquisition time	: 13-JAN-1995 16:30:33.62
dep. correction	: Yes	deposition date	: 13-JAN-1995 15:00:[illegible] 00
detector geometry	: [illegible]	sample geometry	: [illegible]
sample type	: PAREIL_LID	sample quantity	: 0.50000E+00 [illegible]
[illegible] limit	: 30.00000	elapsed live time	: 0 00:30:00.[illegible]
half life ratio	: 12.00000	elapsed real time	: 0 00:30:00.17
sensitivity	: 4.66000	dead time	: 0.0[illegible]
[illegible] (FWHM)	: 5.00000	energy tolerance	: 1.25000

Completed By: ____________ Reviewed By: ____________

[illegible] Search Report

Pk	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	511.[illegible]	[illegible]22	0	1.27	1022.36	1017	11	21.8		ANNRAD

Sample ID : 9[illegible]-[illegible]079-[illegible]-S   Acquisition date : 1[illegible]-J[illegible]-[illegible] [illegible]

Total number of lines in spectrum [illegible]
Number of unidentified lines [illegible]
Number of lines tentatively identified by NID [illegible] 100.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found   "M" = Manually accepted
       "E" = Manually edited   "A" = Nuclide specific abn. limit

[illegible] Report [illegible] on [illegible]-JAN-[illegible]

Sample ID : [illegible] Acquisition date : [illegible]-JAN-[illegible]

[illegible]

[illegible]

Minimum Detectable Activity Report

Nuclide	[illegible] SL	Energy [illegible]	MDA [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
CR-51	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
ZN-65	[illegible]	[illegible].52	[illegible]
[illegible]	[illegible]	[illegible].50	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]-10
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1.9885E-10
[illegible]	[illegible]	[illegible].41	3.[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
CE-144	74.	[illegible]	[illegible]-10
[illegible]	[illegible]	[illegible]	1.3215E-10

[illegible] Unidentified [illegible] Report Generated [illegible] 1:32:[illegible]

configuration	: [illegible]		
[illegible]yses	: [illegible] V2		
[illegible] title	: [illegible] 750002 ✓		
sample ID	: 95-000[illegible]-90-9 ✓	sample date	✓ : 13-JAN-1995 10:10:00.[illegible]
detector type	: [illegible] ✓	acquisition date	: 13-JAN-1995 14:32:25.[illegible]
dep. correction	: Yes ✓	deposition date	✓ : 13-JAN-1995 15:[illegible]
detector geometry	: 20DAFT1 ✓	sample geometry	: SHELF#1 ✓
sample type	: [illegible] ✓	sample quantity	: 0.35000E-15 C[illegible] ✓
[illegible]	: 30.09000	elapsed live time	: 0 00:30:[illegible].00 ✓
half life ratio	: 12.00000	elapsed real time	: 0 00:30:00.93
sensitivity	: 4.00000	dead time	: 0.2% ✓
[illegible] (FWHM)	: 5.00000	energy tolerance	: 1.25000

[illegible] By: [signature] Reviewed By: [signature]

[illegible] Report

Pk	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclide
0	[illegible].32	7[illegible]25	7595	0.99	181.20	159	10	[illegible]		[illegible]-16
[illegible]	1[illegible]	10[illegible]	[illegible]	[illegible].35	2[illegible].10	[illegible]	[illegible]	30.0	[illegible]	~~Xe-131m~~ [illegible] ①
[illegible]	[illegible]	10[illegible]	7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		Xe-131m
[illegible]	[illegible]	[illegible]	[illegible]	[illegible].10	[illegible]	[illegible]	[illegible]	15.[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible] 27	45	[illegible]	[illegible]	102[illegible] 32	[illegible]	[illegible]	[illegible].9		NO PEAK
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	127[illegible].05	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible].11	[illegible]	[illegible]	[illegible].34	[illegible]	[illegible]	9	2[illegible]		[illegible]-131
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]-58

① No visual peak at this energy on the spectrum.

Sample ID : 25-[illegible]   Acquisition date : 13-JAN-1995 16:0[illegible]:35

Total number of lines in spectrum [illegible]
Number of unidentified lines [illegible]
Number of lines tentatively identified by NID 6 [illegible]

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected [illegible]	Decay Corr [illegible]	Decay Corr 2-Sigma Error	2-Sigma %Error Flags
[illegible]	70.78D	[illegible]	[illegible]	9.05[illegible]E-11	3.62[illegible]E-11	[illegible]
	Total Activity		[illegible]	9.05[illegible]E-11		

Nuclide Type : HALOGEN

Nuclide	Hlife	Decay	Uncorrected [illegible]	Decay Corr [illegible]	Decay Corr 2-Sigma Error	2-Sigma %Error Flags
[illegible]	8.0[illegible]D	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Total Activity		[illegible]	[illegible]		

Nuclide Type : [illegible]

Nuclide	Hlife	Decay	Uncorrected [illegible]	Decay Corr [illegible]	Decay Corr 2-Sigma Error	2-Sigma %Error Flags
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]E-07	[illegible] 07	[illegible]
	Total Activity		[illegible]	[illegible]E-07		

Grand Total Activity : [illegible]E-07   2.42[illegible]E-07

Flags: "K" = Keyline not found   "M" = Manually accepted
"E" = Manually edited   "A" = Nuclide specific abn. limit

[illegible] IXF Report Generated on [illegible]-JAN-[illegible]

Sample ID : 95-0[illegible]80-S2-[illegible]   Acquisition Date : [illegible]-JAN-[illegible] 16:20:[illegible]

[illegible]

[illegible] listed as "[illegible]" are equivalent to LLD

[illegible] Detectable Activity Report

Nuclide	[illegible] Pu	Energy (keV)	MDA (Ci/CC)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1[illegible]	[illegible]36.[illegible]	[illegible].115[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5[illegible]	6.[illegible]
[illegible]	[illegible]	[illegible].61	[illegible]
[illegible]	[illegible]	[illegible]49.7[illegible]	5.[illegible]
[illegible]	1[illegible]	[illegible]	[illegible].4629E-10

Effluent Sample Data Sheet (Sample)

OPN533D

PERMIT # 95-3-009 UNIT 1 2 (3) (CIRCLE ONE) RU - WGDT A

SAMPLE NUMBER	PARTICULATE N/A	IODINE N/A
	GAS N/A	TRITIUM 3-95-00077

SAMPLE DESCRIPTION H3 grab sample, for WGDT A permit gen.

Gas Channel Reading: N/A µCi/cc Grab Sample Results: N/A µCi/cc

Gas Channel to Grab Sample Ratio (Gas Channel Reading / Grab Sample Results) = N/A (0.6 to 1.4 is acceptable)

MONITOR VACUUM: BEFORE FILTER CHANGE N/A in Hg AFTER FILTER CHANGE N/A in Hg

LEAK TEST (CIRCLE ONE) SAT / UNSAT SIGNATURE N/A DATE / TIME N/A

INITIATION	TERMINATION	VOLUME
Rautolo (STARTED BY)	Rautolo (STOPPED BY)	NOBLE GAS N/A cc
DATE 1-13-95	DATE 1-13-95	PARTICULATE N/A cc
TIME 1413	TIME 1453	IODINE N/A cc
FLOW 250 cfm/lpm/ccm	FLOW 250 cfm/lpm/ccm	TRITIUM 10,000 cc
M&TE # EG6118	TOTALIZER VALUE N/A ft³	
M&TE CAL DUE DATE 3-6-95	DURATION 40 min.	AVG. FLOW 250 cfm/lpm/ccm

PLATE OUT FACTORS: PARTICULATE N/A IODINE N/A

TRITIUM BUBBLER: EFFICIENCY 95% WATER VOLUME T22 1/13/95 ~~N/A~~ 100 cc

PARTICULATE VOLUME = (OR)	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
IODINE VOLUME = (OR)	AVERAGE FLOW (CFM) X DURATION X 2.83 E4 X PLATE OUT FACTOR TOTALIZER X 2.83 E4 X PLATE OUT FACTOR
NOBLE GAS VOLUME =	CONTAINER VOLUME (cc)
TRITIUM VOLUME =	AVERAGE FLOW RATE (cc/min) X DURATION

SAVE PARTICULATE FILTER FOR COMPOSITE: YES (NO) (CIRCLE ONE)

SPECIAL INSTRUCTIONS: _____

ANALYZED BY: Rautolo	REVIEWED BY: M.M. Mahon
DATE: 1-13-95	DATE: 1-13-95

Airborne Tritium Calculation
Data Sheet
Unit THREE

Sample Information

Description: WGDT A Date: 1-13-95

Number: T3-95-0077 Time: 1453

C_s	Sample Count Rate, DPM	208.46
R_b	Background Count Rate, DPM	65.20
	Net DPM ($C_s - R_b$)	143.26
R_c	Background Count Rate, CPM	29.00
E_s	Efficiency of Sample	0.4195
t	Background Count Time, in minutes	20
V_s	Volume of Sample, ml	4
V_f	Initial Volume In Bubbler Flask, ml	100
V_{air}	Volume of Air Sampled, cc	10,000
E_b	Efficiency of Bubbler Flask	0.95
	Tritium LLD, uCi/ml	$\leq 1.59E^{-8}$
	Reportable Tritium Activity, uCi/ml	$1.70E^{-7}$

Calculation:

$$\text{Lower Limit of Detection (LLD)} = \frac{4.66\sqrt{R_c/t}\ (V_f)}{(2.22E6)\ (V_s)\ (V_{air})\ (E_b)\ (E_s)}$$

$$\text{Air Activity, uCi/cc} = \frac{(C_s - R_b)\ (V_f)}{(2.22E6)\ (V_s)\ (V_{air})\ (E_b)}$$

Remarks:	Completed by: Routed
	Reviewed by:

SAMPLE

Appendix D - Waste Gas Decay Tank Monitor (RU-12) Alarm Setpoint Worksheet

UNIT # 3 TANK A PERMIT # 953009

RLF = Radiation Level Conversion Factor = 9.07E-6 (µCi/cc/CPM)

PF_x = Plant Vent Process Flow Rate = 1.01E+5 (CFM)

Q_{PV} = Allowable release rate from plant vent = 6.78E+3 (µCi/sec)

H = Plant Vent Monitor Noble Gas Channel Reading = 3.40E-7 (µCi/cc)

C_s = Current Tank Total Noble Gas Concentration = 3.84E-5 (µCi/cc)

SECTION 1: RELEASE RATE DETERMINATION

A. ALLOWABLE RELEASE RATE (Q_A):

$Q_A = [(Q_{PV})(0.9)] - [(H)(PF_x)(471.9)] =$ 6.09E+3 (µCi/cc)

B. MAXIMUM DISCHARGE FLOWRATE (F_{MAX}):

$F_{MAX} = \frac{(Q_A)}{(C_s)(471.9)} =$ 50 CFM (F_{MAX} NOT TO EXCEED 50 CFM)

C. EXPECTED RELEASE RATE (QR) DETERMINATION:

$Q_R = (C_s)(F_{MAX})\ 471.9 =$ 9.06E-1 (µCi/sec)

D. VERIFY $Q_R/Q_A \leq 1.0$*: [signature] SIGNATURE 1-13-95 DATE

* If not, stop and contact the Unit RMS/Effluents Supervisor.

SECTION 2: ALARM SETPOINT DETERMINATION

A. HIGH ALARM SETPOINT (S_H) DETERMINATION:

$S_H = \frac{(Q_A)}{(F_{MAX})(471.9)} =$ 2.58E-1 (µCi/cc)

B. ALERT ALARM SETPOINT (S_A) DETERMINATION:

$S_A =$ 2.0E-3 (µCi/cc) ~~NOT TO~~ EXCEED S_H. Refer to Procedure)

CALCULATIONS PREPARED BY: [signature] DATE 1-13-95

VERIFIED BY: [signature] DATE 1-13-95

ALERT AND HIGH ALARM SETPOINTS CHANGED FOR RELEASE

ENTERED INTO RMS BY: [signature] DATE/TIME 1-13-95/2325

VERIFIED BY: [signature] DATE/TIME ~~1-14-95~~ RZ 1/14/95 0635

ALERT AND HIGH ALARM SETPOINTS RESTORED TO STAND-BY VALUE OF 2.00E-03 µCu/cc

ENTERED INTO RMS BY: [signature] DATE/TIME 1-15-95/0919

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP #: NKA01-00-RC-601

QUESTION:

The Unit is at 100% power when following reports of an explosion/fire in the Train "B" Emergency Diesel Generator Room, security reports apprehending 3 unauthorized intruders in the Train "A" 4160 Kv switchgear Room with what appears to be another bomb that was about to be placed. Classify the event and identify/describe any protective action recommendation (PAR) necessary.

REFERENCE ANSWER:

Site Area Emergency (SAE) based on security event in a vital area. PAR of shelter within a 2-mile radius.

EXAMINEE'S ANSWER:

REFERENCE: EPIP-02, Emergency Classifications and Basis Document; EPIP-04, Alert, SAE, GE Implementing Actions.

GROUP # : 2

ADMINISTRATIVE TOPIC/SUBJECT DESCRIPTION: Emergency Plan (A.4)
KSA #: P-P000-194-001-A1-16 LP: NKA01-00-RC-601

QUESTION:

You are the unit Shift Supervisor (SS) when the reactor trips on low RCS/PZR pressure. RU-6 is in high alarm and the NC surge tank is over flowing. the EOF/TSC are not operational you assume the Emergency coordinators (EC) duties. The work control SRO (EC Qualified) volunteers to help you by taking full responsibility for any onsite evacuation decisions.

Explain if this action is allowed.

REFERENCE ANSWER:

The Emergency Coordinator can not delegate the determination of the need for onsite evacuation.

EXAMINEE'S ANSWER:

Closed Ref

REFERENCE: EPIP-02, Emergency Classification

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Actions to be taken for a loss of SDC at Mid-Loop Ops. New
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 Actions to be taken if AFA-P01 is running below minimum RPM. Significant modification
Alternate Path		b. P-S05S-061-000-A2-04, 3.4/3.8 Explain how to reset the Trip/Throttle valve after Control Room manual trip.. New
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset criteria for CSAS. Significant modification
Ing. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Press limits on CS for SDC. Significant modification
4.CVCS, - CH023	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG line to HPSI header piping connection. Bank clone
New-- RCA		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
5. 125 VDC, - PK001	7	a. P-S07S-062-000-A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
New		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR Press control on loss of M41/D21. New

Examiner: _____ Chief Examiner: _____

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: G. Box REV AUTHOR: M. Sharp
REVISION DATE: 07/24/95 APPROVAL:

TASK #: 0139030401

TASK ELEMENT: Parallel operations of Train "A" on Shutdown Cooling

KA #: P-S04S-005-000-A0-13 K/A Rating RO: 3.3 SRO: 3.4

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR___ PLANT __

TESTING METHOD: SIMULATE __ PERFORM ___

VALIDATION TIME: 15 min

REFERENCES: 41OP-1SI01, Shutdown Cooling Initiation

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY __

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to parallel Containment Spray Pump "A" with the LPSI Pump "A". Maintain RCS temperature steady (± 10°F).

The Prestart Checklist is complete for the "A" Containment Spray Pump. Boron Concentration in the CS piping is unacceptable for SDC.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments on back of page. * Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

PVNGS JOB PERFORMANCE MEASURE

SIMULATOR SETUP:

1 Reset to IC-04

2 Caution tags hung on SIA-HS-669 and 664. "Caution, opening of this valve during SDC may cause pumping down of the RCS to RWT".

3 Go to RUN on the simulator

4 Close both of the following:
   a. CHA-HV-531 (RWT supply to the CS pump)
   b. SIA-UV-664 (CS pump recirc)

5 Verify SIA-HV-635 and SIA-UV-645 are fully open.

6 Acknowledge alarms and FREEZE the simulator

7 Provide the initiating CUE

8 Go to RUN on simulator

9 SIA-V184 and SIA VI05 will need to be cycled during the performance of the JPM (see steps #12 and 13). The valves are in the required position for JPM steps #2 and 4. Remote function Rh06 (V105) and Rh07 (V184) is used to accomplish valve operation. .

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
1*	Close SIA-HV-688, containment spray -S/D CLG HX "A" bypass valve.	Examinee closes SIA-HV-688. After SIA-HV-688 is closed CUE: Boron concentration in the CS piping is unacceptable for SDC

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Direct a nuclear operator to close SIA-V184, CS pump "A" suction from SDC Vlv.	Examinee directs area operator to close SIA-V184. Provide CUE as appropriate: SIA-V184 is closed. NOTE: No Simulator driver action needed at this step due to valve being in correct position.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Open CHA-HV-531, RWT to SI Train "A" suction Vlv.	Examinee opens CHA-HV-531..

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
4	Direct a nuclear operator to open SIA-V105, CS pump "A" normal suction Vlv.	Examinee directs area operator to open SIA-V105. Provide CUE as appropriate: SIA-V105 is open. NOTE: No Simulator driver action needed at this step due to valve being in correct position.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5*	Open SIA-UV-664, CS pump "A" recirc Vlv.	Examinee opens SIA-UV-664 NOTE: Caution tag warning not applicable in this alignment.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6	Open SIA-UV-660, Train "A" pumps combined recirc to RWT Vlv.	Examinee verifies SIA-UV-660 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
7	Close SIA-HV-684, CS pump "A" discharge to S/D Hx "A" Vlv.	Examinee verifies SIA-HV-684 is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8*	Close SIA-HV-678, CS pump "A" discharge to S/D HX "A" Vlv.	Examinee closes SIA-HV-678

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9*	Start CS pump "A" and verify pump amps within limits. (<95).	Examinee starts CS "A" Pump and verifies Amps are <95. NOTE: After examinee verifies pump amps within limits (<95), Provide CUE as appropriate: 15 minutes have elapsed. NOTE: Verification of amps not critical.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10*	Stop CS pump "A".	Examinee stops CS pump "A".

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
11*	Close SIA-UV-664, CS pump "A" recirc Vlv.	Examinee closes SIA-UV-664

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
12*	Direct a nuclear operator to unlock and close SIA-V105, CS pump "A" normal suction Vlv.	Examinee directs area operator to unlock and close SIA-VI05. Provide CUE as appropriate: SIA-V105 is closed. NOTE: Simulator driver action required.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
13*	Direct a nuclear operator to unlock and open SIA-V184, CS pump "A" suction from S/D cooling Vlv.	Examinee directs area operator to unlock and open SIA-V184. Provide CUE as appropriate: SIA-V184 is open. NOTE: Simulator driver action required.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
14*	Open SIA-HV-684, CS pump "A" discharge to S/D HX "A".	Examinee opens SIA-HV-684.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
15*	Open, to 10% SIA-HV-678, CS pump "A" discharge to S/D HX "A".	Examinee opens SIA-HV-678 to ≈ 10% NOTE: After step completed, Provide CUE as appropriate: Venting of CS pump "A" not required.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
16*	Start CS pump "A".	Examinee starts CS pump "A"

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
17*	Jog Open SIA-HV-678 and maintain: - Total SDC flow rate less than 8500 gpm - CS pump "A" flow rate less than 5000 gpm - Total flow > CS pump "A" flow by at least 150 gpm.	Examinee opens SIA-HV-678 and maintains: total SDC flow rate less than 8500 gpm, CS pump "A" flow rate less than 5000 gpm, total flow > CS pump "A" flow by at least 150 gpm. NOTE: Total flow indicated on FI306. CS "A" flow will be indicated on SIA-FI-338.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
18*	Adjust SIA-HV-657 and SIA-HV-306 as necessary to: - Obtain approximately 8500 gpm flow - Maintain calculated RCS cooldown.	Examinee adjusts SIA-HV-657 and SIA-HV-306 to obtain ≈ 8500 GPM and maintains RCS temperature steady. (Initial temperature for JPM same as when JPM completed ± 10°F.) 8000 - 8500

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
19	Directs the area operator to perform periodic venting of the SDC header per Appendix D.	Examinee directs Operator to perform venting as per Appendix D. Provide CUE as appropriate: **Venting is complete.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

~~INITIATING CUE:~~

INITIATING CUE:

The CRS directs you to parallel Containment Spray Pump "A" with the LPSI Pump "A". Maintain RCS temperature steady ($\pm 10^{\circ}F$).

The Prestart Checklist is complete for the "A" Containment Spray Pump. Boron Concentration in the CS piping is unacceptable for SDC.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: M. Sharp
REVISION DATE: 07/19/95

REV AUTHOR: Mark Sharp
APPROVAL:

TASK #:0060010401

TASK ELEMENT: Align the Essential Auxiliary Feedwater System for Auto Operation

KA #: P-S05S-061-000-A0-01 K/A Rating RO:3.8 SRO:3.9

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR_X_ PLANT _

TESTING METHOD: SIMULATE X PERFORM X

VALIDATION TIME: 15 Minutes

REFERENCES: 41OP-1AF01, Essential Auxiliary Feedwater System

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY ___ UNSATISFACTORY ___

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

AFA-P01 was out for maintenance. The clearance has been removed and the CRS is directing you to align the Essential Auxiliary Feedwater System for Automatic Operation IAW 41OP-1AF01, Section 4.0. All Prerequisites have been completed.

SGA-UV-134 and -138 have been locally verified in the Closed position and the AO is standing by to assist as directed.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments on back of page.
* Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examine has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to any at power IC.
2. Enter the following Malfunctions:
   a. imf mv01:sgauv134 (Removes power to SGA-UV-134)
   b. imf mv01:sgauv138 (Removes power to SGA-UV-138)
3. Go to run on simulator.
4. Acknowledge alarms.
5. Freeze simulator.
6. Provide initiating cue.
7. Go to run on simulator.
8. SIM Driver actions are required at JPM Step 4.

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
1.	Examinee determines the need to perform the following: Appendix A Appendix B Appendix C	Examinee addresses the need to perform Appendices A, B, C. After examinee addresses the need to complete the Appendices, provide the following CUE: **The Appendices A, B, C have been completed SAT.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2.	Verify CST level is greater than a minimum of 29.5 ft on CTA-LI-35A or CTB-LI-36A.	Examinee verifies CST level greater than 29.5 ft.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3. *	Close AFA-HV-54, turbine Trip/Throttle Valve.	Examinee closes AFA-HV-54

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
4. *	Direct the AO to close breakers PKA-M4115 AND PKA-M4116.	AO is directed to close breakers PKA-M4115 and -M4116. NOTE: SIM Driver must perform the following actions: dmf mv01:sgauv134 dmf mv01:sgauv138 imf mv02:sgauv138 dmf mv02:sgauv138

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5. *	Close SGA-UV-138	Examinee closes SGA-UV-138 after inadvertent opening.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6. *	Open AFA-HV-54, Turbine Trip/Throttle valve.	Examinee opens AFA-HV-54.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7.	Verifies status of AFA-P01	Examinee verifies AFA-P01 not rolling (stopped).

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
8.	Directs AO to ensure that AFA-HV-54 is reset and open.	AO directed to ensure that AFA-HV-54 is reset and open After AO directed, provide the following CUE: AFA-HV-54 is reset and open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9.	Examinee determines the need to perform Appendix D and directs AO to perform.	AO is directed to perform Appendix D. After AO directed, provide the following CUE: Appendix D is completed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10.	Verifies SESS Panel Status.	Examinee verifies SESS Panel clear and no SEIS Alarms on FW SG #1 and #2 windows.

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments:

_____

_____

_____

PVNGS JOB PERFORMANCE MEASURE

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

AFA-P01 was out for maintenance. The clearance has been removed and the CRS is directing you to align the Essential Auxiliary Feedwater System for Automatic Operation IAW 41OP-1AF01, Section 4.0. All Prerequisites have been completed.

SGA-UV-134 and -138 have been locally verified in the Closed position and the AO is standing by to assist as directed.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: J. Shannon REV AUTHOR: M. Sharp
REVISION DATE: 07/26/95 APPROVAL:

TASK #: 0149010201

TASK ELEMENT: Perform Containment Spray Pumps ASME Sect XI Tests

KA #:	K/A Rating	RO:	SRO:
P-S06S-026-000-K0-01		3.6	3.7
P-S06S-026-000-A0-13		3.5	3.7

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT _

TESTING METHOD: SIMULATE __ PERFORM _

VALIDATION TIME: 10 min

REFERENCES: 41ST-1SI03, Containment Spray Pump Operability Test 4.6.2.1.b

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to perform the Train "A" Containment Spray Pump operability test during normal operations with system aligned for containment spray in accordance with 41ST-1SI03.

All prerequisites and prestart checklists have been completed. Maintenance personnel and an Auxiliary Operator are in place in the plant.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments on back of page. * Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to IC-20.
2. Provide initiating cue.
3. Go to run on simulator.
4. Stop watch needed for performance of this JPM.

STEP	ELEMENT	STANDARD
1	Record RWT level and temperature.	Examinee determines and records the RWT level (≈ 93%) and RWT temp (≈ 90°F).

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Calculate the target discharge pressure to be used as the reference pressure to determine ESF Response time by: Determine CS pump suction pressure from Appendix C and add 260 psig.	Examinee uses Appendix C to calculate the reference pressure as ≈ 305 psig. (Based on 93% level = 45 psig + 260 psig ≅ 305 psig). **NOTE:** Based on graph interpretation, ± 5 psig should be allowed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3	Test the Safety Equipment Status for Train "A" by:. 1) Press and hold the "STATUS DISPLAY" switch 2) Verify that component window ES2A 16J, "CS PMP A P03" is illuminated blue. 3) Release "Status Display" switch.	Examinee tests the "A" Train SEAS panel.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
4*	Measure CS "A" ESF Response time by performing the following concurrently with CS pump "A" start: 1) Start the stop watch when pump started. 2) Stop the watch when discharge pressure reaches pressure calculated earlier.	Examinee uses stop watch to measure the CS "A" ESF response time. as indicated on SIN-PI-303X

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5*	Start CS Pump A, SIA-P03, and: 1) Observe normal recirc motor current of approximately 35 amps. 2) Observe discharge pressure on SIN-PI-303X above 310 psig.	Examinee starts CS Pump "A" and verifies amps and discharge pressure. NOTE: Verification of amps and discharge pressure not critical in this step.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
6	Record the ESF Response time from the stop watch and verify acceptance criteria met.	Examinee records time and verifies acceptance criteria met SAT.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7	Direct AO to open discharge press gauge isol. valve, SI-V841	Examinee directs operator to open valve SI-V841 Provide CUE as appropriate: Local discharge pressure gauge isolation valve, SI-V841, is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8	Direct AO to verify CS pump room fan HAA-203 has started. or Sees 16K shut	Examinee directs operator to verify CS pump room fan started. Provide CUE as appropriate: The CS pump room fan started with the CS pump.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
9	Run the pump for 5 minutes under stable condition and record the data per Appendix A.	Examinee discusses running the CS "A" pump for 5 minutes for data collection: Provide CUE as appropriate: **Five minutes has elapsed and the data for Appendix A has been obtained.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
10	Test the Safety Equipment Status system for Train "A" by performing the following: 1) Press and hold "STATUS DISPLAY" switch. 2) Verify window ES2A 16J, "CS PMP A P03" is NOT illuminated blue. 3) Release the "STATUS DISPLAY" switch.	Examinee tests the "A" Train SEAS panel. At the completion of this step, Provide the following CUE: **In plant personnel report data is recorded and vibration testing completed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
11*	Stop CS pump "A".	Examinee stops CS Pump "A". After pump is stopped, Provide the following CUE: 5 minutes has elapsed and the CS pump "A" room fan HAA-Z03 has stopped. After Examinee discusses Data requirements, Provide the following CUE: Data has been transferred from Appendix A to Appendix B and is being evaluated by another RO.

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to perform the Train "A" Containment Spray Pump operability test during normal operations with system aligned for containment spray in accordance with 41ST-1SI03.

All prerequisites and prestart checklists have been completed. Maintenance personnel and an Auxiliary Operator are in place in the plant.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: Mark Sharp REV AUTHOR:
REVISION DATE: 07/17/95 APPROVAL:

TASK #: 1240021201

TASK ELEMENT: Perform Charging Pump Alternate Discharge ~~Restoration~~

KA #: P-P01E-000-024-A1-20 K/A Rating RO: 3.2 SRO: 3.3

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Plant

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT __

TESTING METHOD: SIMULATE__ PERFORM __

VALIDATION TIME: 15 minutes

REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 14

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY __

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be Simulated only, DO NOT operate any equipment.

Inform the control room staff of any discovered deficiencies.

You may use any source of information normally available.

Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

Independent verification is waived for this JPM.

INITIATING CUE:

The Control Room Supervisor directs you to perform the in-plant actions necessary to align the discharge flowpath of all three of the Charging Pumps to the HPSI "A" Header using Attachment 14-B of 40EP-9EO10, Standard Appendix 14.

All three of the Charging Pumps are currently in Pull-to-Lock.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments

*** Denotes Critical Step**

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.

Locked valves will be involved. No attempt will be made to actually operate <u>any</u> valves.

STEP	ELEMENT	STANDARD
1*	Open SIE-V508, CHG to HPSI HDR A.	Examinee simulates opening SIE-V508. Provide CUE as appropriate: SIE-V508 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2*	Open CHE-V796, "A" CHG PMP DISCH X-CONN.	Examinee simulates opening CHE-V796. Provide CUE as appropriate: CHE-V796 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Close CHE-V339, "A" CHG PMP DISCH ISOL.	Examinee simulates closing CHE-V339. Provide CUE as appropriate: CHE-V339 is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
4	Inform the CR operator that CHG Pump "A" is aligned to HPSI Hdr "A".	Examinee informs Control Room of CHG Pump "A" realignment. Provide CUE as appropriate: Control Room has been notified.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
5*	Open CHE-V797, "B" CHG PMP DISCH X-CONN.	Examinee simulates opening CHE-V797. Provide CUE as appropriate: CHE-V797 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6*	Close CHE-V337, "B" CHG PMP DISCH ISOL.	Examinee simulates closing CHE-V337. Provide CUE as appropriate: CHE-V337 is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
7	Inform the CR operator that CHG Pump "B" is aligned to HPSI Hdr "A".	Examinee informs Control Room of CHG Pump "B" realignment. Provide CUE as appropriate: **Control Room has been notified.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8*	Open CHE-V798, "E" CHG PMP DISCH X-CONN.	Examinee simulates opening CHE-V798. Provide CUE as appropriate: **CHE-V798 is open.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9*	Close CHE-V335, "E" CHG PMP DISCH ISOL.	Examinee simulates closing CHE-V335. Provide CUE as appropriate: **CHE-V335 is closed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
10	Inform the CR operator that CHG Pump "E" is aligned to HPSI Hdr "A".	Examinee informs Control Room of CHG Pump "E" realignment. Provide CUE as appropriate: Control Room has been notified.

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments:

_____

_____

_____

Additional Comments:

Comments:

_____

_____

_____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be Simulated only, DO NOT operate any equipment.

Inform the control room staff of any discovered deficiencies.

You may use any source of information normally available.

Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

Independent verification is waived for this JPM.

INITIATING CUE:

The Control Room Supervisor directs you to perform the In-plant actions necessary to align the discharge flowpath of all three of the Charging Pumps to the HPSI "A" Header using Attachment 14-B of 40EP-9EO10, Standard Appendix 14.

All three of the Charging Pumps are currently in Pull-to-Lock.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: Mark Sharp
REVISION DATE: 07/17/95

REV AUTHOR:
APPROVAL:

TASK #:1240029201

TASK ELEMENT: Energize PKA-M41 From the "A" Battery Charger.

KA #: P-P07E-000-058-A1-01 K/A Rating RO: 3.4 SRO: 3.5

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Plant

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT __

TESTING METHOD: SIMULATE__ PERFORM _

VALIDATION TIME: 15 Minutes

REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 94

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be Simulated only, DO NOT operate any equipment.

Inform the control room staff of any discovered deficiencies.

You may use any source of information normally available.

Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

Independent verification is waived for this JPM.

INITIATING CUE:

Following a Reactor Trip, PKA-M41 was de-energized due to a fault on the battery bank. The battery supply breaker, PKA-M4102 has been racked out. The Control Room Supervisor now directs you to energize PKA-M41 from the "A" Battery Charger using Attachment 94-A of 40EP-9EO10, Standard Appendix 94.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments

* Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.

Locked valves will be involved. No attempt will be made to actually operate any valves.

STEP	ELEMENT	STANDARD
1*	Perform ALL of the following on Battery Charger "A", PKA-H11:	Examinee ensures Battery Charger "A" is aligned properly.
		NOTE: Provide the following initial CUES as appropriate then after Examinee simulates actions to realign; Re-CUE as appropriate
	a. Ensure the AC POWER input breaker is in "OFF".	AC POWER input breaker is in "ON".
		AC POWER input breaker is in "OFF".
	b. Ensure the DC POWER output breaker is in "OFF".	DC POWER output breaker is in "ON".
		DC POWER output breaker is in "OFF".
	c. Ensure that the mode selector switch is in "FLOAT".	Mode selector switch is in "FLOAT".

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
2	Ensure that breaker PHA-M3523, "Battery Charger "A" E-PKA-H11" is "ON" and the contactor is closed.	Examinee ensures breaker PHA-M3523 is on and the contactor is closed. After Examinee dicusses check of PHA-M3523, Provide the following CUE as appropriate: **Breaker PHA-M3523 is "ON" and the contactor is closed.** NOTE: Breaker is located at 120' W Aux Bldg.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3	Ensure that breaker PKA-M4106, "INVERTER "A" E-PNA-N11", is open.	Examinee ensures breaker PKA-M4106 is open (OFF) Provide CUE as appropriate: **Breaker PKA-M4106 is open.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4	Ensure that breaker PKA-M4105, "125V DC BACK-UP BAT CHGR "AC" E-PKA-H15", is open.	Examinee ensures breaker PKA-M4105 is open. (OFF) Provide CUE as appropriate: **Breaker PKA-M4105 is open.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
5	Ensure that breaker PKA-M4104, "125V DC NORM BAT CHGR "A" E-PKA-H11", is closed.	Examinee ensures breaker PKA-M4104 closed. Provide **CUE** as appropriate: **Breaker PKA-M4104 is closed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6*	Close the "DC POWER" output breaker.	Examinee simulates closing the "DC POWER" output breaker. Provide **CUE** as appropriate: **DC POWER output breaker is closed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7*	Close the "AC POWER" input breaker.	Examinee simulates closing the "AC POWER" input breaker. Provide **CUE** as appropriate: **AC POWER input breaker is closed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
8	Check that battery charger voltage indicates 130 - 140 VDC.	Examinee verifies battery charger voltage indicates between 130 and 140 VDC. Provide CUE as appropriate: **Battery charger voltage is 136 VDC.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9	Inform the CR operator that this attachment is complete.	Examinee simulates contacting the Control Room and informing them that attachment is complete. Provide CUE as appropriate: **Control Room has been informed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments:

_____

_____

_____

Additional Comments:

Comments:

_____

_____

_____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be Simulated only, DO NOT operate any equipment.

Inform the control room staff of any discovered deficiencies.

You may use any source of information normally available.

Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

Independent verification is waived for this JPM.

INITIATING CUE:

Following a Reactor Trip, PKA-M41 was de-energized due to a fault on the battery bank. The battery supply breaker, PKA-M4102 has been racked out. The Control Room Supervisor now directs you to energize PKA-M41 from the "A" Battery Charger using Attachment 94-A of 40EP-9EO10, Standard Appendix 94.

REFERENCES: ALLOWED

During full power operation, alarm "125V IE CC M41 CHGR A/AC PNL D21 TRBL" (1A04A) is received and a loss of PKA-D21 is indicated.

What action would be required to correct a high pressurizer pressure condition (2300 psi) and why would this action be necessary? All pressurizer heaters are de-energized.

REFERENCES: ALLOWED

Following a Loss of PNA-D25 at 100% power, PNA-D25 was placed on its voltage regulator. How will this action affect the ability to remain at 100% power?

REFERENCES: NOT ALLOWED

Explain why the VCT outlet valve CH-UV-501 must be closed when aligning for emergency boration flowpath through CHV-536.

REFERENCES: ALLOWED

With regards to this JPM, explain the other purpose that this alternate charging system connection to the HPSI system is used for.

REFERENCES: ALLOWED

The plant is in the mid-loop operating conditions with the Reactor Vessel head installed, hot and cold leg nozzle dams installed and water level at 102 feet 8 inches as indicated on RWLIS. Operators observe a slow decrease in RWLIS on both channels followed by fluctuating amps and flow every 50 seconds on the operating LPSI pump supplying SDC flow.

What actions (if any) should be taken to correct this condition?

REFERENCES: NOT ALLOWED

If you were going to operate LPSI and CS in parallel, why is it necessary to have the CS pump recirc valve closed before the shutdown cooling loop is aligned to the RCS?

REFERENCES: ALLOWED

During a cooldown, RCS T_{cold} is 250°F and pressure is 285 psia. Explain whether you would place a CS pump or a LPSI pump inservice on SDC and why.

REFERENCES: ALLOWED

A Small Break LOCA occurred 20 minutes ago. All required ESF systems and equipment actuated properly and are still in automatic mode. Maximum CTMT pressure was 12 psig and is currently 4.5 psig and decreasing.

What actions must be taken/verified prior to resetting the CSAS Signal?

REFERENCES: ALLOWED

Following a valid AFAS-1 signal, AFA-P01 only indicates 850 rpm and has low discharge pressure. You are unable to raise the pump speed. With regards to AFA-P01, explain what action is required and why?

REFERENCES: ALLOWED

If a manual trip of the Aux Feed Pump Turbine from the Control Room were to occur, explain how the trip/throttle valve AFA-HV-54 would be reset.

Examination Level (Circle One): RO / SRO (I) / SRO (U)
Facility: _____ Week of Examination: _____
Examiner's Name (print): _____

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1.SDC, - SI007	4	a. P-S04E-000-025-A0-07, 3.3/3.5, How to maintain RCS heat removal on loss of SDC. New
Low Mode		b. P-S04E-000-025-A1-03, 3.4/3.3 Actions to take on loss of SDC due to loss of inventory. New
2. SIT, - SI021	2	a. P-S02S-006-020-A3-02, 3.9/4.2 SIT fill status if SIAS occurrs. New
Eng. Safety Feature		b. P-S02S-006-000-A0-03, 3.6/4.2 NR verse WR SIT level indications and Tech Spec compliance. Bank clone
3. CVCS, - CH003	1	a. P-S01S-004-000-K6-01, 3.1/3.3 Concerns of PZR/RCS Boron concentration differences. Bank clone
Alternate Path		b. P-S01S-004-000-K5-20, 3.6/3.7 Affects on CEAs of boration. Bank clone
4. RCPs, - RC029	10	a. P-S04S-003-000-K0-06, 2.7/3.8 Possible RCP Combinations for different Tc. Bank clone
New -- RCA		b. P-S04E-000-015-A1-22, 4.0/4.2 RCP Seal Failure Identification. Bank clone
5. 125 VDC, - PK002	7	a. P-S07E-000-057-A1-01, 3.7/3.7 On a loss of PKC-M43, how do you verify CEA position? New
New		b. P-S07E-000-058-A2-03, 3.5/3.9 How to control SG level on loss of PKC-M43. New

Examiner: _____ Chief Examiner: _____

REFERENCES: ALLOWED

Following a Rx Trip AFA-P01 is the only source of FW available to the S/G's and is controlling S/G levels. A loss of PKC-M43 now occurs. Explain how S/G levels would be controlled in this condition.

REFERENCES: ALLOWED

The Unit is at 100% power, when alarm "125VDC IE CC M43 CHRG C PNL D23 TRBL" (1A05A) is received. Operators observe that the associated DC Bus voltmeter indicates zero volts. The reactor subsequently trips. Explain how you would verify all CEAs inserted.

REFERENCES: ALLOWED

Why is RCP operation limited to two RCPs with Tc ≤ 200°F and three RCPs with Tc between 200°F and 500°F?

REFERENCES: ALLOWED

While operating at 100% power, RCP 2A No. 2 Seal Inlet pressure alarm comes in and No. 2 Seal Inlet pressure indicates 1850 psig. No. 2 Seal Outlet pressure indicates 450 psig, and staging flow is 5.0 gpm. Evaluate RCP 2A seal performance and determine which seal(s) has (have) failed.

REFERENCES: ALLOWED

Narrow range level indication for SIT 1B is lost during full power operation. How can you verify that the Technical Specification on contained borated water level is met?

REFERENCES: NOT ALLOWED

High Pressure Safety Injection (HPSI) pump "B" is filling Safety Injection Tank (SIT) 1A when a inadvertent Safety Injection Actuation Signal (SIAS) occurs.

Explain how the HPSI flow path to the SIT 1A is affected.

REFERENCES: NOT ALLOWED

With the plant in Mode 5 the following conditions exist:

- RCS temperature is 150°F.
- RCS pressure is 180 psia.
- S/Gs are in long term wet layup recirculation.
- All Shutdown Cooling is lost.

What method should be used to maintain RCS heat removal?

REFERENCES: ALLOWED

With the plant in reduced inventory condition and the LPSI pump 'A' is providing shutdown cooling, operators determine that a loss of inventory is occurring. LPSI pump 'B' is started and is providing makeup. However, flow oscillations for LPSI pump 'A' are observed to be occurring every twenty seconds.

What actions should be taken?

REFERENCES: NOT ALLOWED

Explain why a difference in Boron concentration of 75 ppm between the pressurizer and the RCS is a concern.

REFERENCES: NOT ALLOWED

The plant is at 100% power, with CEAs in Automatic Sequential and other parameters held constant with Group 5 at 120 inches. Explain what the affect will be on the CEAs if you borate the RCS and why?

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: J. Shannon REV AUTHOR: M. Sharp
REVISION DATE: 07/24/95 APPROVAL:

TASK #: 0139220401

TASK ELEMENT: Operating SDC Train "A" by using Train "B" Auxiliaries

KA #:	K/A Rating	RO:	SRO:
P-S04E-000-025-A1-10		3.1	2.9
P-S04E-000-025-A1-03		3.4	3.3
P-S04E-000-025-A0-07		3.3	3.5

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR___ PLANT __

TESTING METHOD: SIMULATE __ PERFORM __

VALIDATION TIME: 15 min

REFERENCES: 41AO-1ZZ22, Loss of Shutdown Cooling, Appendix Q

Old

Shows changes made at validation 10/12/95

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The plant is in Mode 5 at ≈ 120°F. The RCS is on shutdown cooling using Train "A" LPSI. Due to the "A" Essential Cooling Water Pump tripping, the CRS directs you to operate SDC Train "A" by using Train "B" Auxiliaries per 41AO-1ZZ22, Loss of Shutdown Cooling.

"B" Train Auxiliary pumps (SP, EW, EC) have been started in preparation for system re-alignment

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments. * Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to IC-04
2. imf cc04a EW Train "A" pump trip
3. Place red tags on the hand switches for "B" Train LPSI and CS with control power off.
   mrf b201:sibp01 open and mrf b201:sibp03 open
4. Go to RUN on the Simulator.
5. Start the "B" Train SP, EW, EC pumps/chillers.
6. Acknowledge alarms and FREEZE the simulator
7. Provide initiating CUE
8. Go to RUN on simulator
9. SIA-V460 and SIB-V464 will need to be opened during the performance of the JPM (see steps 10 and 11). Use mrf rh31 100 and mrf rh09 100 to swap valve positions.

STEP	ELEMENT	STANDARD
1	Close SIB-HV-679, "B" CS Pump Discharge to SDHX "B".	Examinee verifies SIB-HV-679 is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Direct a nuclear operator to unlock and close SIB-V447, "B" LPSI Pump Discharge Isolation.	Examinee directs Operator to unlock and close SIB-V447. Provide CUE as appropriate: **SIB-V447 is unlocked and closed.** NOTE: Valve 447 not modeled.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Close SIB-HV-690-SDC Loop "B" warmup bypass valve.	Examinee closes SIB-HV-690.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4	Check closed SIB-HV-658, SDHX "B" Outlet.	Examinee verifies SIB-HV-658 is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
5	Open SIB-HV-696, SDHX "B" Outlet.	Examinee verifies SIB-HV-696 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6 STEPS REVERSED	Open SIB-HV-694, "B" LPSI/CS to SDHX "B".	Examinee verifies SIB-HV-694 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7*	Throttle to 5% open SIB-HV-307, SDHX "B" Bypass.	Examinee throttles SIB-HV-307 to ≈ 5% open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
8	Direct a nuclear operator to close/Check closed SIE-V298, Recirc to RWT Manual Isolation.	Examinee directs operator to close/check closed SIE-V298. Provide CUE as appropriate: SIE-V298 has been checked closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
9	Check closed SIB-HV-695, LPSI/CS from SDHX "B" Cross-tie.	Examinee verifies SIB-HV-695 closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10*	Direct a nuclear operator to unlock and open SIA-V460, "A" Full Flow to RWT.	Examinee directs operator to unlock and open SIA-V460 Provide CUE as appropriate: SIA-V460 is open. NOTE: Simulator driver action required.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
11*	Direct a nuclear operator to unlock and open SIB-V464, Full Flow to RWT.	Examinee directs operator to unlock and open SIB-V464. Provide CUE as appropriate: SIB-V464 is open. NOTE: Simulator driver action required

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
12	Place RCN-HS-752-1 in the "none" position.	Examinee verifies HS-752-1 is in the none position.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
13	Monitor refueling water level with RCN-LI-752, A & B.	Examinee locates and checks Refueling Water Level Instrument RCN-LI-752A and RCN-LI-752B

SAT ___ UNSAT ___ (UNSAT requires comments) Candidate should concur with CRS to N/A step.

STEP	ELEMENT	STANDARD
14*	Throttle open SIB-UV-615, LPSI "B" to loop 2A to match the position of SIA-UV-635, LPSI "A" to Loop 1A.	Examinee throttles SIB-UV-615 open to match position of SIA-UV-635.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
15*	Throttle open SIB-UV-625, LPSI "B" to loop 2B to match the position of SIA-UV-645, LPSI "A" to Loop 1B.	Examinee throttles SIB-UV-625 open to match position of SIA-UV-645.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
16*	Slowly close SIA-HV-657 while opening SIB-HV-307 to warm up the "B" SDHX.	Examinee throttles SIA-HV-657 closed and SIB-HV-307 open while maintaining a total flow (per SIB-FI-307 and SIA-FI-306) of > 3780 gpm and < 4550 gpm.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
17*	When SIA-HV-657 is closed, use SIA-HV-306 and SIB-HV-307 to maintain SDC flow and temperature.	Examinee maintains SDC flow and temperature using SIA-HV-306 and SIB-HV-307. Provide CUE as appropriate: **Another RO will transfer SDC purification from Train "A" to Train "B".**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The plant is in Mode 5 at ≈ 120°F. The RCS is on shutdown cooling using Train "A" LPSI. Due to the "A" Essential Cooling Water Pump tripping, the CRS directs you to operate SDC Train "A" by using Train "B" Auxiliaries per 41AO-1ZZ22, Loss of Shutdown Cooling.

"B" Train Auxiliary pumps (SP, EW, EC) have been started in preparation for system re-alignment

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for JPM performance.

INITIATING CUE:

During I & C testing CHB-UV-523 was inadvertently shut, isolating letdown flow 5 minutes ago. Testing is complete.

The CRS directs you to restore letdown per 41AO-1ZZ37 "Loss of Letdown Flow", section 7.0.

****

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

UNSAT requires comments.

SIMULATOR SETUP:

1. Reset to any at power IC.
2. Go to Run on Simulator.
3. Shut CHB-UV-523 and place the normally running CHG Pump to P-T-L.
4. FREEZE Simulator.
5. Provide Initiating CUE.
6. Go to Run on Simulator.

Mark RCD-LIC-110 to manual and close L/D control valves

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: Mark Sharp
REVISION DATE: 07/17/95

REV AUTHOR:
APPROVAL:

TASK #: 1240023401

TASK ELEMENT: Energize RCP HP Seal Cooler Breakers

KA #: P-S10S-008-000-A2-02 K/A Rating RO: 3.3 SRO: 3.1

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Plant

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT __

TESTING METHOD: SIMULATE__ PERFORM _

VALIDATION TIME: 15 minutes

REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 36

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: W. Stearns REV AUTHOR: M. Sharp
REVISION DATE: 08/07/95 APPROVAL:

TASK #: 0129040101

TASK ELEMENT: Fill the 1A Safety Injection Tank.

KA #: P-S02S-006-000-A4-01	K/A Rating	RO: 4.1	SRO: 3.9
P-S02S-006-000-A4-02	K/A Rating	RO: 4.0	SRO: 3.8
P-S02S-006-020-A1-07	K/A Rating	RO: 3.5	SRO: 3.7

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT _

TESTING METHOD: SIMULATE __ PERFORM _

VALIDATION TIME: 15 min

REFERENCES: 41OP-1SI03, Safety Injection Tank Operations

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY ___ UNSATISFACTORY ___

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to line up and fill the "1A" Safety Injection Tank to 55% on the narrow range instrument IAW 41OP-1SI03. All prerequisites are met.

Following level restoration, the CRS will assign another operator to return affected systems to normal status IAW 41OP-1SI03

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments on back of page. * Denotes Critical Step

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to IC-20. 40
2. Drain 1A SIT to 20% NR. per 41OP-1SI03.
3. Modify the following Remote Functions:
   a. SI03 OPEN (SI-V-463)
   b. SI05 OPEN (SI-V-400)
   c. SI02 100% (SI-V-219)
   d. MRF MV09:SIBUV667 37.
4. Acknowledge any alarms
5. Provide Initiating Cue.
6. Go to Run on Simulator.

STEP	ELEMENT	STANDARD
1	Ensure SIN-HS-661 closed.	Examinee verifies valve is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2	Ensure SIA-UV-682 closed.	Examinee verifies valve is closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Direct AO to unlock and open SIE-V463.	Examinee directs operator to unlock and open SIE-V463. Provide **CUE** as appropriate: **SIE-V463 unlocked and open.** **NOTE:** Valve operation part of Sim Setup.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4	Insert manual SESS Containment Isolation alarm during time SIE-V463 is open..	Examinee inserts manual SESS Containment Isolation alarm during time SIE-V463 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
5	Assign an AO to close SIE-V463 per 40AC-9OP02.	Examinee assigns operator to close SIE-V463 if needed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6	Direct AO to perform HPSI B prestart checklist.	Examinee directs operator to perform HPSI "B" prestart checklist. Provide **CUE** as appropriate: **Prestart checklist completed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7*	Direct AO to unlock and throttle open SIB-V400.	Examinee directs operator to unlock and throttle open SIB-V400. Provide **CUE** as appropriate: **SIB-V400 unlocked and throttled open.** **NOTE:** Valve opened as part of Sim Setup.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
8*	Direct AO to unlock and open SIB-V219, minimum flow recirculation orifice bypass valve.	Examinee directs operator to unlock and open SIB-V219. Provide **CUE** as appropriate: **SIB-V219 is unlocked and open.** **NOTE:** Valve opened as part of Sim Setup.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9	Note the time HPSI Pump "B" is inoperable.	Examinee notes the time SIB-V219 was opened and HPSI "B" inoperable.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
10	Inform the Assistant Shift Supervisor of HPSI "B" status.	Examinee informs the Assistant Shift Supervisor (CRS) of HPSI "B" inoperable. Provide **CUE** as appropriate: **Assistant Shift Supervisor has been informed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
11	Insert a manual SESS alarm for the HPSI "B" pump.	Examinee inserts a manual SESS alarm for "B" HPSI pump.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
12*	Direct AO to unlock and fully open SIB-UV-667.	Examinee directs operator to unlock and fully open SIB-UV-667. Provide CUE as appropriate: SIB-UV-667 is full open. NOTE: Valve position set in throttled position in Sim Setup.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
13*	Direct AO to close SIB-UV-667 fully counting turns to the nearest 1/8 turn.	Examinee directs operator to close SIB-UV-667 counting turns tot he nearest 1/8 turn. Provide CUE as appropriate: SIB-UV-667 is fully closed, taking 28 turns. NOTE: Valve position set in throttled position in Sim Setup

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
14*	Direct AO to open SIB-UV-667 14 turns.	Examinee directs operator to open SIB-UV-667 14 turns. Provide CUE as appropriate: SIB-UV-667 is 14 turns open. NOTE: Valve position set in throttled position in Sim Setup

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
15	Open SIA-UV-637 Train "A" HPSI injection valve for SIT/Loop 1A.	Examinee opens SIA-UV-637.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
16*	Start HPSI pump "B" on Recirc to RWT.	Examinee starts HPSI pump "B".

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
17	Check for the following expected indications: Motor amps less than 138 amps. Flow on SI-FIT-304 (reads in KGPM) greater than 85 gpm.(local indication)	Examinee verifies HPSI "B" Amps < 138 and directs operator to read flow locally on suction line. Provide **CUE** as appropriate: **Flow on SI-FIT-304 is 100 gpm.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
18	Direct AO to throttle SIB-UV-667 to bring discharge pressure to 1400 psig as seen on SI-PI-309.	Examinee directs operator to throttle SIB-UV-667 as necessary to achieve 1400 psig discharge pressure. **NOTE:** Valve was set in throttled position in Sim Setup for ≈ 1400 psig. If directed to throttle, Sim Driver action will be necessary and Evaluator must CUE as appropriate.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
19*	Open SIA-UV-682.	Examinee opens SIA-UV-682.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
20*	Commence filling the SIT by: 1) Note the beginning SIT level for Chemistry, 2) Opening the SIT fill and drain valve SI-UV-631.	Examinee notes beginning SIT level and opens SIB-UV-631. NOTE: Opening of SIB-UV-631 is critical portion of step.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
21	Check that all available SIT indications track properly.	Examinee verifies Level and pressure increasing on SIT 1A.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
22*	WHEN the desired SIT level is reached (55% NR), THEN close SI-UV-631.	Examinee closes SI-UV-631 when SIT level is ≅ 55% NR (level > 28% and < 72% NR) NOTE: IF necessary, provide the following CUE: **Another RO has been assigned to return Train "B" HPSI to normal.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to line up and fill the "1A" Safety Injection Tank to 55% on the narrow range instrument IAW 41OP-1SI03. All prerequisites are met.

Following level restoration, the CRS will assign another operator to return affected systems to normal status IAW 41OP-1SI03

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: J. Sherrer
REVISION DATE: 07/24/95

REV AUTHOR: M. Sharp
APPROVAL:

TASK #: 0150030801

TASK ELEMENT: Perform a Boration of the RCS.

KA #:	K/A Rating	RO:	SRO:
P-S01S-004-020-A4-06		3.6	3.7
P-S01S-004-020-A4-01		3.8	3.3

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Simulator

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT _

TESTING METHOD: SIMULATE __ PERFORM _

VALIDATION TIME: 15 min

REFERENCES: 41OP-1CH01 CVCS Normal Operations
41AL-1RK3A, Panel B03A Alarm Response

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to borate the RCS by using 41OP-1CH01. The quantity to be added has been determined to be 75 gallons from the RWT at a rate of 25 gpm. Use CHN-FIC-210Y in automatic to the Charging Pump Suction.

All Prerequisites are complete.

****

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step UNSAT requires comments.

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

SIMULATOR SETUP:

1. Reset to IC-20.
2. Provide Initiating Cue.
3. Go to RUN on Simulator.
4. Place Rods in MS and then decrease Turbine load until CEA insertion light is lit on CEDMCS.

.4. After Examinee increases setpoint on CHN-FIC-210Y to 25 gpm (JPM Step 7), enter: IMF CV09 100 30 (This clogs the Boron injection filter)

5. When Examinee requests NO to open filter bypass valve CHN-V164 (JPM Step 10), then [MMF CV09 0 1:00] (This simulates opening CHN-V164 slowly so CH-527 and CH-512 don't close on high D/P.

STEP	ELEMENT	STANDARD
1	Set Boric Acid makeup flow controller CHN-FIC-210Y to "0" gpm and place controller to AUTOMATIC.	Examinee verifies controller setpoint ≤ 0 and "Auto" selected.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2*	Set Boric Acid flow totalizer to desired volume (75 gallons).	Examinee sets the totalizer to 75 gals.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
3*	Select "BORATE" on makeup mode selector switch, CHN-HS-210.	Examinee selects "Borate".

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4	Verify BAMP pump starts.	Examinee verifies BAMP Pump running.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
5	Verify CHN-FV-210X is closed.	Examinee verifies CHN-FV-210X is closed and no flow indicated.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6	Verify CHN-UV-527 is open.	Examinee verifies CHN-UV-527 is open.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
7*	Adjust CHN-FIC-210Y to the desired flow rate (25 gpm).	Examinee adjusted the Auto setpoint to 25 gpm (± 5 gpm). NOTE: Simulator driver action required to plug BA Filter.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
8	Verify the proper flow rate is indicate.	Examinee identifies that the flow is not responding properly and informs the CRS. Provide CUE as appropriate: **Respond to plant conditions. Boration is still required.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
9	Verify Alarm 3A06A; by directing Operator to read Boric Acid Filter differential pressure locally on CHN-PDIS-260.	Examinee directs Operator to check local filter differential pressure. Provide CUE as appropriate: **Filter DP is pegged high.**

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
10*	Direct Operator to open Filter Bypass Valve CHN-V164 and close CHN-V161.	Examinee directs Operator to open CHN-V164 and close CHN-V161. Provide **CUE** as appropriate: **CHN-V164 is open, CHN-V161 is closed.** **The operator will remove the BA filter from service as directed by procedure.** NOTE: Simulator driver action required.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
11	When the desired amount of acid has been added, ensure FIC-210Y is closed.	Examinee ensures FIC-210Y is closed and no excessive flow indicated after desired 75 gals of acid is added.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
12	Selects Auto on makeup mode select switch, CHN-HS-210.	Examinee selects Auto on the Makeup Mode Select Switch.

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments: _____

STEP	ELEMENT	STANDARD
13	Verify that CHN-UV-527 closes.	Examinee verifies CHN-UV-527 closed.

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
14	Ensure boric acid pump stops.	Examinee ensures BAMP Pump stops. Provide CUE as appropriate: **Steps to flush, sample, change set points and realign system are not necessary at this time.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments: _____

Additional Comments:

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

Operation of equipment is to be performed on the simulator.

The examiner will provide all responses and indications required from outside the control room.

You may use any source of information normally available.

Independent verification is waived for this JPM.

INITIATING CUE:

The CRS directs you to borate the RCS by using 41OP-1CH01. The quantity to be added has been determined to be 75 gallons from the RWT at a rate of 25 gpm. Use CHN-FIC-210Y in automatic to the Charging Pump Suction.

All Prerequisites are complete.

PVNGS JOB PERFORMANCE MEASURE

OPERATOR'S NAME: _____
(print)

AUTHOR: Mark Sharp REV AUTHOR:
REVISION DATE: 07/17/95 APPROVAL:

TASK #: 1240028801

TASK ELEMENT: Energize PKC-M43 From the "C" Battery.

KA #: P-P07E-000-058-A1-03 K/A Rating RO: 3.1 SRO: 3.3

POSITION: RO

SUGGESTED TESTING ENVIRONMENT: Plant

ACTUAL TESTING ENVIRONMENT: SIMULATOR__ PLANT __

TESTING METHOD: SIMULATE__ PERFORM _

VALIDATION TIME: 10 minutes

REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 90

THE PERFORMANCE PORTION OF THIS JPM IS DETERMINED TO BE:

SATISFACTORY __ UNSATISFACTORY _

Time Start _____ Time Stop _____

PVNGS JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

Operation of equipment is to be Simulated only, DO NOT operate any equipment.

Inform the control room staff of any discovered deficiencies.

You may use any source of information normally available.

Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

Independent verification is waived for this JPM.

INITIATING CUE:

Following a Reactor Trip, a fault on the battery bank resulted in PKC-M43 being de-energized. The affected battery cell has been jumpered out by Electricians and PKC-M43 has been cleared for restoration. The Control Room Supervisor now directs you to energize PKC-M43 from the "C" Battery using Appendix 90 of 40EP-9EO10, Standard Appendices.

****

INFORMATION FOR EVALUATOR'S USE:

UNSAT requires comments

*** Denotes Critical Step**

At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Elements and Standards are met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.

Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.

Locked valves will be involved. No attempt will be made to actually operate <u>any</u> valves.

STEP	ELEMENT	STANDARD
1	Ensure that breaker PKC-M4302. "125V DC BATTERY "C" E-PKC-F13 SUPPLY BREAKER" is racked in.	Examinee ensures PKC-M4302 is racked in. Provide CUE as appropriate: **PKC-M4302 is racked in and in the open position.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
2*	Ensure that breaker PKC-M4306, "INVERTER "C" E-PNC-N13". is "OFF".	Examinee ensures PKC-M4306 is "OFF". NOTE: Provide the following initial CUE, then after Examinee simulates actions to realign; Re-CUE as appropriate: Breaker PKC-M4306 is "ON'. Breaker PKC-M4306 is "OFF".

SAT ___ UNSAT ___ (UNSAT requires comments)

Comments:

_____

_____

_____

STEP	ELEMENT	STANDARD
3	Ensure that breaker PKC-M4311, "SHUTDOWN COOLING ISOLATION VALVE J-SIC-UV-653" is "OFF".	Examinee ensures PKC-M4311 is "OFF". Provide CUE as appropriate. PKC-M4311 is "OFF".

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
4*	Close breaker PKC-M4302, "125V DC BATTERY "C" E-PKC-F13 SUPPLY BREAKER.	Examinee simulates closing PKC-M4302. Provide CUE as appropriate: Breaker PKC-M4302 is closed. NOTE:

SAT ___ UNSAT ___ (UNSAT requires comments)

Explain how to close

Comments:

PVNGS JOB PERFORMANCE MEASURE

STEP	ELEMENT	STANDARD
5	Perform both of the following:	Examinee ensures VOLTMETER SWITCH on cubicle PKC-M4301 is in the 'POS TO NEG' position and that there is BUS VOLTAGE indicated on cubicle PKC-M4301. Provide CUE as appropriate:
	a. Ensure that the VOLTMETER SWITCH on cubicle PKC-M4301 is in the 'POS TO NEG' position.	**VOLTMETER SWITCH is in the "POS TO NEG" position.**
	b. Check that PKC-M43 is energized as indicated on "BUS VOLTAGE" on cubicle PKC-M4301.	**"BUS VOLTAGE" indicates that PKC-M43 is energized.**

SAT ___ UNSAT ___ (UNSAT requires comments)

STEP	ELEMENT	STANDARD
6	Inform the CR operator that this appendix is complete.	Examinee simulates contacting the Control Room and informing them that attachment is complete. Provide CUE as appropriate: **Control Room has been informed.**

SAT ___ UNSAT ___ (UNSAT requires comments)

NORMAL TERMINATION POINT

Comments:

_____

_____

_____

Additional Comments:

Comments:

_____

_____

_____

APS
Arizona Public Service Company
P.O. BOX 53999 • PHOENIX, ARIZONA 85072-3999

Sept. 26, 1995

Mr. Ryan Lance
Lead Examiner
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Tx. 76011-8064

Subject: Senior Reactor Operator License Examination

Please find the following enclosed:

- Revised Sample Plan
- Proposed JPM cover sheets (per your request)
- Proposed SRO exam with key
- Computer Disk w/proposed exam/key in Microsoft Word application

If you have any questions regarding the enclosed, please call me at (602) 393-6827

Sincerely,

Mike Baughman

TLR/tlr

Enclosures

US NUCLEAR REGULATORY COMMISSION
SENIOR REACTOR OPERATOR LICENSE EXAMINATION
REGION 4

FACILITY: PALO VERDE

REACTOR TYPE: PWR-CE

DATE ADMINISTERED: 10/23/95

CANDIDATE: _____

INSTRUCTIONS TO CANDIDATE:

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parenthesis after the question.

To pass this examination, you must achieve an overall grade of at least 80%. Examination papers will be picked up four hours after the examination starts.

RESULTS

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
100	100		

All work done on this examination is my own. I have neither given nor received aid.

_____
Candidate's Signature

POLICIES AND GUIDELINES FOR TAKING NRC WRITTEN EXAMINATIONS

1. Cheating on the examination will result in a denial of your application and could result in more severe penalties.
2. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.
3. To pass the examination, you must achieve a grade of 80 percent or greater.
4. The point value for each question is indicated in parenthesis after the question number.
5. There is a time limit of 4 hours for competing the examination.
6. Use only black ink or dark pencil to ensure legible copies.
7. Print your name in the blank provided on the examination cover sheet and the answer sheet.
8. Mark your answers on the answer sheet provided and do not leave any question blank.
9. If the intent of a question is unclear, ask questions of the examiner only.
10. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.
11. When you complete the examination, assemble a package including the examination questions, examination aids, and answer sheets and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet.
12. After you have turned in your examination, leave the examination area as defined by the examiner.

Question 1. (1.00)

Which ONE of the following is the Technical Specification basis for the Transient Insertion CEA Limits and the Shutdown CEA Insertion Limits?

The insertion limits ensure that...

a. the minimum SHUTDOWN MARGIN is maintained and the potential effects of a CEA ejection accident are limited to acceptable levels.

b. the minimum SHUTDOWN MARGIN is maintained and the potential effects of CEA Rod Shadowing is limited to acceptable levels.

c. the minimum SHUTDOWN MARGIN is maintained and the potential effects of a Steam Line Break Accident with a single stuck out full length CEA are limited to acceptable levels.

d. SHUTDOWN MARGIN is maximized for all analyzed accidents.

Question 2. (1.00)

The following plant conditions exist:

- The plant is operating at 100% power.
- NCW Pump 'A' is tagged out for bearing replacement.
- A loss of PBB-S04 occurs due to an 86 Lockout on the normal supply breaker.

WHICH ONE of the following is correct concerning the operation of the Reactor Coolant Pumps?

a. The Reactor Coolant Pumps must be tripped within ONE minute or motor winding damage will occur.

b. The Reactor Coolant Pumps may be run indefinitely provided seal injection flow is maintained and the seal bleedoff valves remain open.

c. Nuclear Cooling Water must be restored within 20 minutes or seal damage will occur.

d. The Reactor Coolant Pumps may be operated without Nuclear Cooling Water flow for a maximum of 10 minutes, provided seal injection flow is maintained.

Question 3. (1.00)

WHICH ONE of the following correctly describes the physical connection between the CVCS Charging Pumps and the Safety Injection System?

a. Upstream of the Charging Pump Discharge Valves to the Low Pressure Safety Injection lines to RC Loops 1A and 1B.

b. Downstream of the Charging Pump Discharge Valves to the High pressure safety injection lines to RC Loops 1A, 1B, 2A, 2B.

c. Downstream of the Charging Pump Discharge Valves to the Discharge Valves to the Low Pressure Safety Injection lines to RC Loops 1A and 1B.

d. Upstream of the Charging Pump Discharge Valves to the High Pressure Safety Injection lines to RC Loops 1A, 1B, 2A, 2B.

Question 4. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- SIAS is actuated.
- Pressurizer level is 10% and lowering.
- Hi Hi CTMT Press Alarm is in.
- Containment pressure is 9.0 psig on Channel 'A'; 8.5 psig on Channel 'B'; 8.0 psig on Channel 'C'; and 8.0 psig on Channel 'D'.

WHICH ONE of the following should be performed ?

a. When Channels C and D reach the CSAS setpoint, then manually initiate CSAS.

b. Manually initiate CSAS due to the CSAS setpoint being met or exceeded.

c. When all 4 channels reach the CSAS setpoint, then ensure CSAS automatically initiates.

d. CSAS may be initiated now based on trend, but is NOT required.

Question 5. (1.00)

The following plant conditions exist:

- The reactor is operating at 67% power. Power is being reduced at 20% per hour.
- All available charging pumps are operating.
- Letdown is isolated.
- Estimated RCS leakage is 92 gpm.
- Containment pressure is 2.8 psig.
- Containment temperature is 158F.
- Pressurizer level is 32% and lowering.
- RCS pressure is 1910 psia and lowering.

WHICH ONE of the following should be performed?

a. Continue to reduce power to 20% and then trip the reactor and enter the EOPs.

b. Implement 41AO-1ZZ14, "EXCESSIVE RCS LEAKRATE" and maintain steady state power for 15 minutes to get an accurate leakrate determination.

c. Manually trip the reactor, and perform the Standard Post Trip Actions.

d. Perform 41AO-1ZZ56, "RAPID SHUTDOWN" to reduce power and place the plant in Mode 3 in less than one hour.

Question 6. (1.00)

WHICH ONE of the following will cause a CWP "CEA WITHDRAWAL PROHIBIT" alarm due to a CEA misalignment generated from the CPC/CEAC?

a. Subgroup deviation greater than 2.00 inches.

b. PLCEAs less than 30 inches withdrawn.

c. Greater than 7.5 inch deviation between groups.

d. CEA deviation within a subgroup less than or equal to 3.00 inches.

Question 7. (1.00)

WHICH ONE of the following describes ALL of the trips produced from the Excore Nuclear Instruments Safety Channels to the Plant Protection System?

a. LPD, DNBR, VOPT, Hi Log power trips.

b. LPD, DNBR, VOPT.

c. LPD and DNBR.

d. Hi Log power and VOPT.

Question 8. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- A Small Break LOCA is in progress.
- Both HPSI pumps are inoperable.
- Containment temperature is 190F.
- RCS pressure is 1600 psia.

WHICH ONE of the following would indicate fuel uncovery on QSPDS CETs?

a. Highest CET temperature indicates 610 degrees F.

b. 30 degrees F superheat and steady.

c. 10 degrees F superheat and is now becoming more superheated.

d. 20 degrees F superheat and steady.

Question 9. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- A feed line break has occurred inside containment.
- Containment pressure is 1.2 psig and rising slowly.
- 86 Lockout on PBB-S04K, "PBB-S04 Normal Supply Breaker".
- SIAS/CIAS were manually initiated.
- Train 'A' SIAS load shed panels are re-energized.

WHICH ONE of the following components is NOT available due to these conditions?

a. CTMT Normal ACU Fan, HCN-A01D.

b. Normal Chiller,WCN-E01C.

c. Non Essential Aux Feed Pump, AFN-P01.

d. Condensate Pump, CDN-P01B.

Question 10. (1.00)

WHICH ONE of the following is expected for a high alarm on RU-7, "AUXILIARY STEAM CONDENSATE RECEIVER TANK" monitor?

a. Post filter blower shifts to the "THRU FILTER MODE".

b. Auxiliary Steam Condensate diverts to the Liquid Radwaste System.

c. No AUTO functions are associated with this monitor.

d. Auxiliary Steam Condensate diverts to the High TDS sump.

Question 11. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- SIAS is actuated.
- A steam line break is occurring in the containment.
- Containment pressure is 10 psig and rising.
- A loss of PBA-S03 has occurred.

WHICH ONE of the following is correct concerning the Containment Spray System?

a. Containment Spray Pump, SIA-P03 is on. Containment Spray Pump, SIB-P03 is on. SIA-UV-672 open. SIB-UV-671 open.

b. Containment Spray Pump, SIA-P03 is off. Containment Spray Pump, SIB-P03 is on. SIA-UV-672 closed. SIB-UV-671 open.

c. Containment Spray Pump, SIA-P03 is off. Containment Spray Pump, SIB-P03 is on. SIA-UV-672 closed. SIB-UV-671 closed.

d. Containment Spray Pump, SIA-P03 is off. Containment Spray Pump, SIB-P03 is on. SIA-UV-672 open. SIB-UV-671 open.

Question 12. (1.00)

Given the following plant conditions:

- The plant is operating at 100% power.
- Level in Hotwell 1C is 29 inches.
- Level in Hotwell 2C is 35 inches.
- Condensate pump 'B' suction valve is open on Hotwell 2C.

WHICH ONE of the following describes the effect on the condensate system?

a. Condensate pump 'A' will trip.

b. Condensate pumps 'A' and 'B' will trip.

c. Condensate pumps 'A' and 'C' will trip.

d. All condensate pumps will trip.

Question 13. (1.00)

WHICH ONE of the following indicates a condition that will AUTOMATICALLY trip a Main Feedwater Pump Turbine?

a. A single pump discharge high pressure switch actuates.

b. Two pump suction low pressure switches actuate for 5 seconds.

c. A single turbine exhaust vacuum switch actuates.

d. A single bearing low oil pressure switch actuates.

Question 14. (1.00)

The following plant conditions exist:

- The reactor has tripped on low Steam Generator Level in #1 SG.
- AFAS 1 and AFAS 2 initiated.
- SG 1 level - 27% WR.
- SG 2 level - 32% WR.
- SG 1 pressure - 940 psia.
- SG 2 pressure - 1150 psia.

WHICH ONE of the following is correct in regards to the Aux Feedwater Valves to the Steam Generators.

	SG 1 AFW Isolation Valves	SG 1 AFW Regulating Valves	SG 2 AFW Isolation Valves	SG 2 AFW Regulating Valves
a.	CLOSED	CLOSED	OPEN	OPEN
b.	OPEN	OPEN	OPEN	OPEN
c.	CLOSED	CLOSED	CLOSED	CLOSED
d.	CLOSED	OPEN	OPEN	OPEN

Question 15. (1.00)

Given the following conditions:

- The plant is operating at 100% power.
- Diesel Generator 'A' is paralleled with offsite power.

WHICH ONE of the following indicates the effect on Diesel Generator 'A' to a loss of PKA-M41?

a. DG 'A' remains running, but its output breaker PBA-S03B trips open.

b. DG 'A' trips and its output breaker PBA-S03B trips.

c. DG 'A' trips, but its output breaker remains closed.

d. DG 'A' remains running, and its output breaker PBA-S03B remains closed.

Question 16. (1.00)

Given the following conditions:

- A planned Waste Gas (WG) Decay Tank release is in progress.
- A valid high alarm is received on RU-12, "WASTE GAS DECAY TANK" Discharge in the Control Room.

WHICH ONE of the following describes the automatic actions as a result of this alarm?

a. CH-UV-540, RDT to Waste Gas Valve will automatically close.

b. Waste Gas Discharge Valves, GRN-UV-34A and GRN-UV-34B automatically close.

c. Initiates a FBEVAS.

d. Initiates a CREFAS.

Question 17. (1.00)

Given the following plant conditions:

- The plant is operating at 100% power.
- COLSS is out of service.
- Linear Heat Rate is 14 kW/ft.
- An adverse trend exists on Linear Heat Rate.

WHICH ONE of the following actions should be performed to comply with Technical Specifications?

a. Restore Linear Heat Rate to within the LCO limits within 4 hours.

b. Within 15 minutes, initiate corrective action to restore Linear Heat Rate to within the LCO limits within 1 hour.

c. Reduce thermal power to less than or equal to 20% RATED THERMAL POWER within the next 6 hours.

d. Within 1 hour, commence a shutdown to place the plant in MODE 2 over the next 6 hours and cold shutdown within the following 30 hours.

Question 18. (1.00)

The following plant conditions exist:

- The reactor was manually tripped.
- 3 Full Length CEAs are fully stuck out.
- RWT level is 70%.
- RCS pressure is 1950 psia.

WHICH ONE of the following is a correct Emergency Boration Flowpath?

a. CH-HV-536 to the Charging Pumps.

b. CH-V164 via CH-UV-514 to the Charging Pumps.

c. CH-V327 to the Charging Pumps.

d. RWT to the Low Pressure Safety Injection Pumps.

Question 19. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- An inadvertent CSAS Train 'A' has occurred.
- A SIAS has NOT actuated.
- Containment Spray Pump 'A' has been stopped.

WHICH ONE of the following would have to be performed if it is required to restart Containment Spray Pump 'A'?

a. Place the handswitch in the start position to override and then release the switch. The pump will auto start.

b. Place the handswitch in the start position to override and then release the switch. Place the handswitch in the start position again and the pump will start.

c. Place the handswitch in the stop position to override and then release the switch. The pump will auto start.

d. Momentarily turn off control power to the pump breaker. With control power restored, the pump will start.

Question 20. (1.00)

WHICH ONE of the following is the reason for maintaining pressurizer level below the upper limit of the Pressurizer level programmed band?

a. The water volume is limited to allow the reactor to be maneuvered at design rates at low load values.

b. The water volume is limited to ensure the heaters remain covered on a reactor trip.

c. The steam volume should be sufficient to accept a coolant insurge without the water level reaching the safety valve nozzles.

d. Sufficient steam volume is maintained to prevent a Safety Injection Actuation Signal (SIAS) on a reactor trip.

Question 21. (1.00)

Given the following plant conditions:

- A LOCA has occurred inside containment.
- Containment temperature is 205 degrees F.
- Containment pressure is 2.8 psig.
- RCS pressure is 1050 psia.
- Containment H_2 concentration is 0.7%.
- RU-16 is in Alert Alarm.

WHICH ONE of the following criteria must be met in order to reset the CIAS actuation and restore CIAS actuated equipment?

a. Containment H_2 concentration must be reduced to less than 0.3%.

b. Containment temperature must be reduced to less than 150 degrees F.

c. Containment pressure must be less than 2.5 psig.

d. RU-16 not in Alert or High alarm.

Question 22. (1.00)

Given the following plant conditions:

- The plant is operating at 100% power.
- RCS pressure is 2250 psia.
- Pressure control channel selector, RCN-HS-100 is positioned to "100X".
- Pressurizer heater control level trip channel selector, RCN-HS-100-3 is selected to "BOTH".

WHICH ONE of the following describes a consequence of PZR Pressure Transmitter 100Y failing high?

a. SBCS valves will receive an auto modulation signal.

b. SBCS valves will receive an auto permissive signal.

c. All pressurizer heaters will energize.

d. All pressurizer heaters will de-energize.

Question 23. (1.00)

Given the following plant conditions:

- The plant is operating at 100% power.
- PZR level control system is in Remote Auto.
- PZR level setpoint is 50%.
- PZR actual level reached 59% and is lowering slowly.
- Charging Pump Mode Selector Switch is in 2-3-1.

WHICH ONE of the following describes the response of the Pressurizer Level Control system to these conditions?

a. Charging Pump # 1 will stop until actual PZR level gets to 50%.

b. Charging Pump # 2 will stop until actual PZR level gets to 52.5%.

c. Charging Pump # 3 will stop until actual PZR level gets to 53%.

d. PZR Backup Heaters will turn off if they were energized by Hi level deviation.

Question 24. (1.00)

WHICH ONE of the following describes the basis for the High Steam Generator Level Trip Setpoint?

a. Provided to protect the turbine from excessive moisture carryover.

b. Provides protection against a loss of feedwater flow incident.

c. Provides protection in the event of an increase in heat removal by the secondary system and subsequent cooldown of the reactor coolant.

d. Provides Steam Generator overpressure protection.

Question 25. (1.00)

WHICH ONE of the following states the power level at which the FWCS will shift from single element control to three element control?

a. 15%

b. 20%

c. 50%

d. 65%

Question 26. (1.00)

WHICH ONE of the following is the hydrogen concentration inside containment that would require operation of the hydrogen recombiner to reduce hydrogen levels following a LOCA?

a. 0.3%

b. 0.7%

c. 2.9%

d. 4.0%

Question 27. (1.00)

Given the following plant conditions:

- The plant is in mode 6.
- Containment Refueling Purge is in service.
- RU-37, "Power Access Purge - Train A" monitor is in alarm.

WHICH ONE of the following states the BOP ESFAS actuation(s) which should be initiated for these conditions?

a. CPIAS with a cross trip to CREFAS.

b. CPIAS only.

c. CPIAS with a cross trip to FBEVAS.

d. CPIAS with a cross trip to CREFAS and FBEVAS.

Question 28. (1.00)

Given the following plant conditions:

- A low level alarm has occurred in the spent fuel pool.
- Level is being restored by makeup from the RWT.
- Spent Fuel Pool Level is 138 feet 2 inches.

WHICH ONE of the following is a consequence of allowing the spent fuel pool to be filled higher according to 41AO-1ZZ53, "LOSS OF REFUELING POOL AND/OR SPENT FUEL POOL LEVEL"?

a. Flooding of the fuel elevator cable tray causing damage to the elevator motor.

b. Continued makeup will result in an unacceptable dilution of the spent fuel pool boron concentration.

c. Overfilling the spent fuel pool will result in gravity flow to the RWT when the BAM Pump is stopped.

d. Contamination of the spent fuel pool due to chemicals in the RWT water.

Question 29. (1.00)

WHICH ONE of the following describes how to complete a fuel transfer if during automatic transfer of fuel, the sequence is halted due to winch overload?

a. The transfer should be restarted in automatic to preserve the proper sequence.

b. Complete the transfer through individual commands because carriage location will be reset in the automatic transfer mode.

c. The transfer should be restarted in automatic to ensure all interlocks remain in effect.

d. Complete the transfer through individual commands because the automatic sequence can not be restarted.

Question 30. (1.00)

Given the following plant conditions:

- The reactor is tripped following a Steam Generator Tube Rupture.
- RCS pressure is 895 psia.
- RCS subcooling is 55 degrees F.
- Steam Generator #1 pressure is 890 psia.
- RU-4 is in high alarm.
- Steam generator #1 is isolated.
- Steam Generator #1 level is 78% NR and rising slowly.
- Steam Generator #2 level is 50% NR and steady.

WHICH ONE of the following is the preferred method to control level in the isolated steam generator?

a. Bypass the MSIV and steam #1 Steam Generator to the condenser.

b. Steam #1 Steam Generator to atmosphere via the ADVs.

c. Lineup high rate blowdown to the condenser from #1 Steam Generator.

d. Lower RCS pressure below #1 Steam Generator pressure and allow backflow to the RCS.

Question 31. (1.00)

Given the following plant conditions:

- Hot and cold leg injection are in service.
- Steam Generator #1 level 92% WR and steady.
- Steam Generator #2 level 91% WR and steady.
- Steam Generator #1 Pressure 600 psia and lowering.
- Steam Generator #2 Pressure 610 psia and lowering.
- Containment Pressure 8.5 psig and lowering.
- Containment H_2 Concentration 1.3% and steady.
- RCS Pressure 300 psia.
- RWT level 10% and lowering.

WHICH ONE of the following states the safety signals that should have initiated?

a. SIAS/CIAS/CSAS

b. SIAS/CIAS/MSIS/AFAS

c. SIAS/CIAS/MSIS/CSAS

d. SIAS/CIAS/MSIS/RAS

Question 32. (1.00)

The following plant conditions exist:

- The reactor is operating at 75% power.
- Operators are performing the actions of 41AO-1ZZ08, "STEAM GENERATOR TUBE LEAK.
- RU-142, "MAIN STEAM LINE N-16" monitors, Channels 1,2,3,4 are in High Alarm.
- RU-141, "CONDENSER VACUUM/GLAND SEAL EXHAUST" monitor is in High Alarm.
- RU-4, "STEAM GENERATOR #1 BLOWDOWN" monitor is in Alert alarm and trending up.
- Air Removal Post Filter Blower Mode Select is in the "THRU FILTER MODE".

WHICH ONE of the following is the cause of the Post Filter Blower automatically shifting modes?

a. Alert alarm on RU-141.

b. High alarm on RU-142.

c. Alert alarm on RU-4.

d. High alarm on RU-141.

Question 33. (1.00)

Given the following plant conditions:

- The reactor is operating at 100% power.
- A loss of offsite power occurs.
- NBN-X03 Sudden pressure fault.

WHICH ONE of the following correctly describes the Diesel Generator 'A' start mode and the effect on the Diesel Generator 'A' output breaker?

a. Mode 3, and the output breaker will close.

b. Mode 2, and the output breaker will remain open.

c. Mode 1, and the output breaker will remain open.

d. Mode 4, and the output breaker will close.

Question 34. (1.00)

Given the following plant conditions:

- DG 'A' has automatically started due to AFAS 1.
- Jacket Water Temperature is 450 degrees F and rising.
- Turbocharger oil pressure is 1 psig and lowering.
- The engine is vibrating excessively.
- Generator Differential Alarm is actuated.

WHICH ONE of the following describes the effect on the Diesel Generator?

a. Continue to run until a high priority alarm is received.

b. Immediately trip due to the Generator Differential.

c. Immediately trip due to low Turbocharger Oil Pressure.

d. Immediately trip due to high Jacket Water Temperature.

Question 35. (1.00)

WHICH ONE of the following classifications is correct for an electrical fire on the 100' level of the Control Bldg. and what is the method of protection?

a. Class A Fire, extinguished with water.

b. Class B Fire, extinguished with Dry Chemical Extinguisher.

c. Class C Fire, extinguished with CO^2.

d. Class D Fire, extinguished with water.

Question 36. (1.00)

WHICH ONE of the following is the basis for maintaining containment vessel structural integrity?

a. Ensures that the containment will withstand the maximum pressure of 49.5 psig in the event of a LOCA.

b. Ensures that the containment will withstand the maximum of 60 psig in the event of a Steam Line Break Accident.

c. Ensures that Site Boundary Dose Limits will not exceed 10 CFR 100 limits regardless of penetration leakage.

d. Ensures that combustible gases will not exceed explosive concentrations in the event of a large break LOCA.

Question 37. (1.00)

Given the following plant conditions:

- The plant is in Mode 5.
- RCS temperature is 205 degrees F.

WHICH ONE of the following is required to provide overpressure protection for the RCS?

a. One operable SDC suction line relief valve.

b. Two operable SDC suction line relief valves.

c. A minimum of one pressurizer code safety valve shall be operable with a lift setting of 2500 psia ± 1%.

d. All pressurizer code safety valves shall be operable with a lift setting of 2500 psia ± 1%.

Question 38. (1.00)

Given the following plant conditions:

- The plant is at 100% power.
- PZR safety valve, PSV-203 has seat leakage.
- RDT level is rising.
- RDT pressure is 9.8 psig and rising slowly.

WHICH ONE of the following automatic actions will occur if no operator action is taken?

a. The RDT vent to waste gas header valve, CHN-UV-540 will close and the RDT rupture disc, CHN-PSE-12 will rupture.

b. The RDT vent to waste gas header valve, CHN-UV-540 will open and the RDT outlet containment isolation valve, CHA-UV-560 will close.

c. The RDT vent to waste gas header valve, CHN-UV-540 will close and the RDT outlet containment isolation valve, CHA-UV-560 will close.

d. The RDT vent to waste gas header valve, CHN-UV-540 will open and the RDT rupture disc, CHN-PSE-12 will rupture.

Question 39. (1.00)

Given the following plant conditions:

- The Main Turbine is at load with the Load Limiter limiting and the Load Set Reference at SET LOAD.
- The operator moves the Load Limiter in the increase direction.
- RCS temperature begins to decrease and reactor power begins to increase.

WHICH ONE of the following statements describes what has occurred?

a. The Load Set Reference is at SET LOAD, therefore an EHC malfunction is indicated.

b. The Load Set Reference value was greater than the Load Limit value and the rate of increase is determined by the rate the operator moved the Load Limit Potentiometer.

c. The Load Set Reference value was greater than the Load Limit value and the rate of increase is determined by the rate set in the Loading Rate Limit.

d. The Load Set Reference value was equal to the Load Limit value and the rate of increase is determined by the rate the operator moved the Load Limit Potentiometer.

Question 40. (1.00)

Given the following plant conditions:

- INST/SERV AIR SYS TRBL alarm is in.
- INST AIR HDR PRESS LO alarm is in.
- INST AIR N_2 BKUP VLV OPEN alarm is in.
- Instrument Air Header Pressure is 60 psig and lowering.

WHICH ONE of the following is correct concerning these indications?

a. Main Steam Isolation Valves fail AS-IS. The Backup Accumulator will allow 5 fast closure valve operations.

b. Steam Generator Economizer Feedwater Control Valves fail AS-IS. The Backup Accumulator will allow 5 fast closure valve operations.

c. Feedwater Economizer Isolation Valves fail AS-IS. Manual operation of these valves is available, as necessary.

d. Feedwater Downcomer Control Valves fail AS-IS. Manual operation of these valves is available, as necessary.

Question 41. (1.00)

While performing 41AO-1ZZ35, "CONTINUOUS CEA WITHDRAWAL", the Control Room Supervisor (CRS) directs that the MODE SELECT at the CEDM control panel be placed in SB (standby). The CEA motion stops. Operators determine that 2 CEAs have an inward subgroup deviation of 10 inches. WHICH ONE of the following actions should now be performed?

a. The CRS should perform 41AO-1ZZ11, "DROPPED OR SLIPPED CEA" to recover the rods.

b. Emergency borate to ensure adequate Shutdown Margin.

c. Manually trip the reactor and GO TO 40EP-9EO01, "SPTAs".

d. Commence a rapid shutdown to be within Cold Shutdown in the next 6 hours.

Question 42. (1.00)

WHICH ONE of the following is the reason for a slow recovery of a CEA that has been misaligned greater than one (1) hour per 41AO-1ZZ11, 'DROPPED OR SLIPPED CEA"?

a. To prevent unequal power levels in different loops.

b. To ensure that peaking induced by xenon will not cause a high power reactor trip.

c. To prevent fuel damage from occurring.

d. To ensure that an ASI pretrip is not received from the excore channel nearest the dropped CEA.

Question 43. (1.00)

WHICH ONE of the following specifies the MAXIMUM allowed misalignment limit for CEAs within its group according to Technical Specification 3.1.3, "MOVABLE CONTROL ASSEMBLIES"?

a. 6.6 inches.

b. 19 inches.

c. 9.9 inches.

d. 7.5 inches.

Question 44. (1.00)

WHICH ONE of the following states the reason for cooling down the Steam Generators in a large break LOCA?

a. Minimizes two phase flow.

b. Prevents the offsite dose rate from exceeding 10CFR100 criteria.

c. Improves RCS heat removal by enhancing natural circulation and reflux boiling.

d. Prevents the RCS from exceeding P/T limits.

Question 45. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- RCP 1A Controlled Bleedoff flow is 6.0 gpm.
- RCP 1A Seal injection flow is 6.8 gpm.
- RCP 1A HP Cooler Inlet Temperature is 225 degrees F.
- RU-6 is in Alert Alarm.
- NCW supply temperature is 95 degrees F.

WHICH ONE of the following actions is required per 41AO-1ZZ29, "RCP AND MOTOR EMERGENCY"?

a. Trip the reactor, stop the affected RCP and perform the Standard Post Trip Actions (SPTAs).

b. Trip the reactor, concurrently perform the Standard Post Trip Actions, stop all RCPs.

c. Adjust NCW supply temperature by means of heat exchanger bypass valve NC-HCV-102.

d. Unlock and close the power supply breakers for the high pressure cooler isolation valves on the affected RCP.

Question 46. (1.00)

WHICH ONE of the following states when boration may be discontinued per 41AO-1ZZ01, "EMERGENCY BORATION"?

a. Anytime pressurizer level will exceed the program band.

b. When RWT level drops to 73%.

c. A plant cooldown has been directed by an Emergency Operating Procedure.

d. When the required boron concentration is reached.

Question 47. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- NCN-P01A is Red Tagged Out for repairs.
- NCN-P01B has an overcurrent relay and 86 device actuated.
- Essential Cooling Water (EW) Train 'A' is cross connected to Nuclear Cooling Water.
- Spent Fuel Pool temperature is 125 degrees F.

WHICH ONE of the following actions should be performed per 41AO-1ZZ05, "LOSS OF NUCLEAR COOLING WATER"?

a. Align Train 'B' of EW to the Fuel Pool Heat Exchanger.

b. Close EW to NCW cross connect valves EWA-HV-65 and EWA-HV-145.

c. Align Train 'A' of EW to the Fuel Pool Heat Exchanger.

d. Open Train 'B' EW to NCW cross connect valves EWB-HCV-66 and EWB-HCV-146.

Question 48. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- PPS Channel 'A' low Steam Generator 2 level is in Bypass due to a failed Channel 'A' level detector.
- PPS Channel 'B' low Steam Generator 2 level is in Trip.
- PPS Channel 'B' DNBR is in Trip.
- PPS Channel 'C' low Steam Generator 2 level is in Trip.
- PPS Channel 'D' low Steam Generator 2 level is in pretrip.

WHICH ONE of the following states the correct action for these conditions?

a. Manually trip the reactor.

b. Perform a rapid shutdown.

c. Maintain stable power while the correct Technical Specifications are entered.

d. Maintain power and determine if the plant auto trips when Channel 'D' goes into trip.

Question 49. (1.00)

WHICH ONE of the following discriminates between a steamline rupture inside containment and a small break LOCA?

a. RCS temperature.

b. RCS pressure.

c. Containment temperature.

d. Containment pressure.

Question 50. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- Condenser backpressure is increasing rapidly.

WHICH ONE of the following is the condenser absolute pressure at which a Steam Bypass Control System Condenser Interlock will occur?

a. 4.0 inches HgA

b. 5.0 inches HgA

c. 7.5 inches HgA

d. 13.5 inches HgA

Question 51. (1.00)

Given the following plant conditions:

- A Station Blackout has occurred.
- Offsite power is not available.
- Steaming is being controlled by the ADVs.
- Steam Generators are being fed via AFA-P01.

WHICH ONE of the following actions should be performed to minimize loads on NKN-M46?

a. Open the supply breaker to the plant computer and allow it to automatically transfer to the backup power supply.

b. Open the breaker to the Main Generator Primary Protection Unit Tripping Power.

c. Open the breaker to the Emergency Seal Oil Pump.

d. Open the breaker to FWPT 'A' Emergency Oil Pump.

Question 52. (1.00)

WHICH ONE of the following is the reason for setting the CEAC 1 inoperable flag in ALL CPC channels prior to restoring power to PNA-D25 according to 41AO-1ZZ15, "LOSS OF CLASS IE INSTRUMENT AC POWER"?

a. Prevent a possible reactor trip due to erroneous high penalty factors from the CEAC.

b. Prevent an actual reactor trip due to valid high penalty factors from the CEAC.

c. CEAC 1 and CEAC 2 are inoperable due to the loss of PNA-D25.

d. Ensures that RTSG breakers 'A' and 'C' remain closed, preventing a reactor trip.

Question 53. (1.00)

Given the following plant conditions:

- The plant is in Mode 3 following a steam line break.
- 40EP-9EO05, Excess Steam Demand is in progress.
- SG #2 is isolated.
- SG #2 is completely blowndown.
- Loop 1 T_C is 510 degrees F and stable.
- Loop 2 T_C is 500 degrees F and stable.
- All Safety Injection Valves are throttled closed.
- PZR level is 40% and lowering.
- The Primary Operator reports that SI flow has to be re-initiated.
- RU-5 is in alert alarm.
- RU-16 is in alert alarm.
- SG #2 pressure is 20 psig and rising.

WHICH ONE of the following events is indicated?

a. PZR steam space LOCA

b. SGTR induced by the ESD.

c. Letdown line break inside containment.

d. Re-initiation of feed flow to #2 SG.

Question 54. (1.00)

Given the following plant conditions:

- A fire has occurred in the control room.
- The control room has been evacuated.

WHICH ONE of the following must be performed within 12 minutes of a fire in the control room to limit the loss of RWT inventory and/or initiation of an undesired RAS according to 41AO-1ZZ44, "CONTROL ROOM FIRE".

a. Open HPSI Pump 'A' Breaker, PBA-S03E.

b. Open CS Pump 'A' Breaker, PBA-S03D.

c. Locally close LPSI Pump 'A' Suction Valve, SIA-HV-683.

d. Locally close CS Pump 'A' Suction Valve, SIA-V105.

Question 55. (1.00)

Given the following plant conditions:

- The reactor is at 90% power.
- The control room is being evacuated due to threat of toxic gas.

WHICH ONE of the following actions must be performed prior to leaving the control room and transferring control to the remote shutdown panel according to 41AO-1ZZ27, "SHUTDOWN OUTSIDE CONTROL ROOM"?

a. Trip all RCPs.

b. Trip RCPs 1A and 2A.

c. Place the letdown control valve selector switch to the "BOTH" position.

d. Shift Charging Pump suction to the RWT by opening CHN-HV-536 and closing the VCT outlet valve, CHN-UV-501.

Question 56. (1.00)

Given the following plant conditions:

- The reactor has been manually tripped.
- A SGTR has occurred in SG 1 at 300 gpm.
- NAN-S01 and NAN-S02 failed to fast transfer to offsite power.
- Safety valves lifted on BOTH Steam Generators.
- A safety valve on SG 1 has failed to reseat.
- All other systems have responded normally.
- The CRS is performing Safety Function Tracking Page of 40EP-9EO09, "Functional Recovery"

WHICH ONE of the following correctly indicates which safety functions are in jeopardy?

a. MVAC, HR, CI.

b. HR, CI

c. HR

d. CI

Question 57. (1.00)

WHICH ONE of the following indicates how decay heat is removed from the core during a large break LOCA?

a. Single phase natural circulation.

b. Break flow and two phase natural circulation.

c. Steam Generator steaming.

d. Break flow and single phase natural circulation.

Question 58. (1.00)

WHICH ONE of the following is the Technical Specification basis for the limits of primary coolant specific activity per 3.4.7, "RCS SPECIFIC ACTIVITY"?

a. Ensure that site boundary doses will not exceed a small fraction of 10 CFR 100 limits in the event of a SGTR with concurrent Loss of Offsite Power.

b. Ensure that site boundary doses will not exceed a small fraction of 10 CFR 100 limits in the event of a SGTR with concurrent failed open ADV.

c. Reduces the potential for Reactor Coolant System leakage due to neutron embrittlement.

d. Ensures that personnel access to Safe Shutdown Equipment is not hampered due to excessive radiation levels.

Question 59. (1.00)

WHICH ONE of the following is the reason for placing all Charging Pumps in "PULL TO LOCK" when RWT level lowers to 7.4% during a large break LOCA?

a. There is insufficient NPSH to run the Charging Pumps in this condition.

b. The Charging Pumps will interfere with hot and cold leg injection flowpaths.

c. This minimizes the amount of radioactive containment sump inventory pumped outside the containment wall.

d. This ensures there is adequate suction available for the LPSI Pumps.

Question 60. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- 40EP-9EO09, Excess Steam Demand is in use.
- SG 1 is isolated.

WHICH ONE of the following indicates when the first Main Steam Safety Valve will lift on the operating steam generator if heat removal is not maintained?

a. 1200 psig.

b. 1250 psig.

c. 1290 psig.

d. 1315 psig.

Question 61. (1.00)

WHICH ONE of the following is the reason that the GTGs are NOT used to energize switchyard loads in the event of a blackout if thunderstorm activity is present in the vicinity of PVNGS.

a. Ensure the continued availability of ESF transformer NAN-X03.

b. Ensure the continued availability of ESF transformer NBN-X04.

c. Ensure that switchyard breaker control power remains available.

d. Ensure that Startup transformer NAN-X01 remains available for offsite power restoration.

Question 62. (1.00)

WHICH ONE of the following is the reason that L03 and L10 Breakers are opened for a MINIMUM of 5 seconds when performing the Reactivity Control Safety Function of Standard Post Trip Actions if the reactor did not trip automatically and the manual trip pushbuttons on B05 were not successful?

a. Allows time for the trip coils to actuate to open L03 and L10 breakers.

b. Allows time for the motor generator contactors to open.

c. Allows time for the motor generator stop contact to close.

d. Allows time for the effects of the flywheel to taper off interrupting power to the CEAs.

Question 63. (1.00)

Given the following plant conditions:

- The reactor is at 28% power.
- Steam bypass control valves are all closed.
- Condenser backpressure is 5.5 inches HgA.

WHICH ONE of the following indicates the actions that should be taken according to 41AO-1ZZ07, "LOSS OF CONDENSER VACUUM"?

a. Decrease main turbine load until backpressure stabilizes at < 5 inches HgA.

b. Trip the main turbine and REFER to 4XAO-XZZ02, "LOAD REJECTION".

c. Trip the reactor and main turbine and Perform 40EP-9EO01, "SPTAs".

d. Reduce power to prevent a steam bypass control system actuation.

Question 64. (1.00)

Given the following plant conditions:

- A large break LOCA is in progress.
- RCS pressure is 40 psia.
- REP CET is 380 degrees F.
- T_h is 220 degrees F.
- Containment temperature is 195 degrees F.

WHICH ONE of the following is correct concerning the status of the Core Heat Removal Safety Function?

a. Met due to T_h being less than 610 degrees F.

b. Met due to adequate subcooling.

c. NOT met, due to inadequate subcooling.

d. NOT met, due to containment temperature > 170 degrees F.

Question 65. (1.00)

WHICH ONE of the following states the required feedflow while performing 40EP-9EO01, "Standard Post Trip Actions"?

The minimum required feedwater flow is...

a. at least a total feedwater flow of 250 gpm.

b. at least a total feedwater flow of 500 gpm.

c. a minimum of 200 gpm to each Steam Generator.

d. a minimum of 500 gpm to each Steam Generator.

Question 66. (1.00)

WHICH ONE of the following is the reason that the RCS is checked for subcooling of 24 degrees F during the RCS Inventory Control Safety Function of the Standard Post Trip Actions?

a. Ensures that adequate RCS fluid in an appropriate state is available for removal of decay heat.

b. Ensures that the heat removal safety function is satisfied.

c. To determine if Safety Injection flow should be throttled.

d. To ensure that single phase natural circulation flow is adequate.

Question 67. (1.00)

Given the following plant conditions:

- The reactor has been manually tripped.
- A PZR steam space LOCA is in progress.
- PZR level is 70% and increasing.
- RCS pressure is 1750 psia and decreasing.
- CET Subcooling is 25 degrees F and decreasing.
- All RCPs are off.
- SG levels are 10% NR and increasing, being fed by AFB-P01.
- SIAS/CIAS are initiated.
- Containment temperature is 160 degrees F.
- RVUH level indicates 67%.

WHICH ONE of the following indicates what should be done in regards to Safety Injection flow?

a. Safety Injection flow should be throttled because all throttle criteria are met and indications are that they will continue to be met.

b. Safety Injection flow should be throttled because all throttle criteria are met and PZR level is greater than the Technical Specification limit.

c. Safety Injection flow should NOT be throttled because Steam Generator levels are less than the throttle criteria.

d. Safety Injection flow should NOT be throttled because it will be necessary to fill the PZR solid to maintain subcooling.

Question 68. (1.00)

Given the following plant conditions:

- A small break LOCA is in progress.
- The leak is NOT isolable.
- 2 hours have elapsed from the start of the LOCA.

WHICH ONE of the following conditions would NOT require simultaneous hot and cold leg injection to be established?

a. One RCP running in each loop.

b. At least one SG available for RCS heat removal.

c. Subcooled margin is 20 degrees F and lowering.

d. Pressurizer level 10% and steady.

Question 69. (1.00)

WHICH ONE of the following would require tripping the RCP(s) according to 40EP-9EO03, "LOCA"?

a. RCS subcooling of 38 degrees F.

b. RCP motor amps of 450A.

c. RCP Controlled Bleedoff flow of 8.5 gpm.

d. RCP Upper Thrust Bearing temperature of 275 degrees F.

Question 70. (1.00)

WHICH ONE of the following is the reason that all RCPs are stopped if subcooling is inadequate during a LOCA?

a. Ensures that the RCS will not be depressurized by Main Spray.

b. Prevents damage to the RCP seals.

c. Minimizes heat input to the RCS.

d. Ensures that RCS heat removal capability is not challenged.

Question 71. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- Pressurizer parameters are normal.
- No radiation alarms.
- CHG HDR SYS TRBL alarm is lit.
- Charging Pumps to Regenerative Heat Exchanger Pressure Low computer alarm is in.

WHICH ONE of the following is the cause of this situation?

a. Regenerative Heat Exchanger Tube Leak.

b. Charging Header Leak.

c. RCS Leak.

d. Letdown Heat Exchanger Leak.

Question 72. (1.00)

Given the following plant conditions:

- The plant is in Mode 5.
- RCS inventory is being lost.
- SDC flow oscillations are occurring at intervals less than one minute apart.

WHICH ONE of the following is the reason that RCS level should be monitored only if boiling has NOT occurred?

a. Boiling pressurizes the RCS under the RV head causing RWLIS inaccuracies.

b. Boiling results in RWLIS inaccuracies due to higher temperature.

c. Boiling prevents flow past the level instrumentation making it inaccurate.

d. RCS level is not a priority with boiling occurring.

Question 73. (1.00)

Given the following plant conditions:

- The plant is in Mode 5.
- A total loss of SDC flow has occurred.
- PZR Once Through Cooling is selected as the heat removal method.

WHICH ONE of the following is the correct concerning where RCS temperature should be maintained according to 41AO-1ZZ22, "LOSS OF SHUTDOWN COOLING"?

a. CET temperature 190 - 200 degrees.

b. T_h temperature 200 - 210 degrees.

c. T_c less than 210 degrees.

d. T_h less than 210 degrees.

Question 74. (1.00)

WHICH ONE of the following signals will automatically deenergize the Pressurizer Proportional Heaters?

a. Pressurizer level of 25%.

b. Pressurizer level deviation of +3%.

c. Safety Injection Actuation Signal.

d. Pressurizer pressure at the AUTO setpoint.

Question 75. (1.00)

Given the following plant conditions:

- The reactor has automatically tripped.
- SUR is negative.
- Two full length CEAs failed to fully insert.
- Boration is in progress from the RWT via CH-HV-536.

WHICH ONE of the following satisfies the reactivity control safety function per 40EP-9EO04, "Standard Post Trip Actions"?

a. Reactor power stable at less than 1×10^{-5}%.

b. Adequate shutdown margin established.

c. Reactor power dropping.

d. L03 and L10 Supply Breakers opened.

Question 76. (1.00)

Given the following plant conditions:

- The plant is at 100% power.
- A Steam Generator Tube leak is occurring in SG #1.
- Primary to secondary leakrate is 15 gallons/day.

WHICH ONE of the following radiation monitors would detect this size break first?

a. RU-4, "SG Blowdown Monitor".

b. RU-139, "Main Steam Line Monitor".

c. RU-141, "Condenser Offgas Monitor".

d. RU-142, "Main Steam Line N-16 Monitor".

Question 77. (1.00)

WHICH ONE of the following is the reason for cooling down the RCS to a T_h of less than 550 degrees F prior to isolating the affected Steam Generator in 40EP-9EO04, "Steam Generator Tube Rupture"?

a. Ensure that the pressurizer safety valves do not lift following Steam Generator isolation.

b. Prevents SBCVs 1007 and 1008 from opening when using the SBCS.

c. Ensures Steam Generator Safety Valves do not lift following Steam Generator isolation.

d. Along with Steam Generator level of 40 - 60% NR, ensures that the core heat removal safety function is met.

Question 78. (1.00)

Given the following plant conditions:

- The plant has tripped from 100% power.
- 40EP-9EO06, "Loss of all Feedwater" is in progress.
- Feed has been restored to #1 SG via AFB-P01.
- SG 1 level is 40% WR.
- SG 2 level is 50% WR.

WHICH ONE of the following is the MAXIMUM feed limitation following restoration of feedwater?

a. 500 gpm.

b. 1000 gpm.

c. 1600 gpm.

d. 2000 gpm.

Question 79. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- A loss of PKA-M41 has occurred.
- RDT level is increasing.

WHICH ONE of the following correctly describes why RDT level is increasing?

a. CHA-UV-516, "Letdown Containment Isolation Valve" fails closed causing letdown relief valve CHN-PSV-354 to lift.

b. CHA-UV-560, "RDT Outlet Valve" fails closed. CHA-UV-580, "RDT makeup valve" fails open.

c. CHE-FV-241,242,243,244, "Seal Injection Flow Control Valves" fail open on the loss of instrument air to containment causing seal injection relief valve CHN-PSV-865 to lift.

d. CHA-UV-506, "RCP Controlled Bleedoff to VCT Valve" fails closed causing RCP seal bleedoff relief valve CHN-PSV-199 to lift.

Question 80. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- All instrument air compressors are running.
- IA header pressure is 88 psig and gradually decreasing.

WHICH ONE of the following states when the reactor should be tripped and the Emergency Operations procedures implemented according to 41AO-1ZZ06, "LOSS OF INSTRUMENT AIR"?

a. If instrument air pressure can not be regained before the plant exhibits unstable operations.

b. If instrument air pressure can not be maintained above 70 psig.

c. If instrument air pressure can not be maintained above 85 psig with the Nitrogen Backup Valve open.

d. If instrument air pressure decreases to 65 psig and the Front Standard Turbine Trip Air Relay Dump Valve actuates its low pressure switches.

Question 81. (1.00)

Given the following plant conditions:

- The reactor is at 100% power.
- "PZR TRBL" alarm is in.
- "PZR LVL HI-LO" alarm is in.
- "RCP SEAL INJ FLOW HI-HI OR LO-LO" alarm is in.
- PZR level (RCN-LI-110X) - Off Scale High.
- PZR level (RCN-LI-110Y) - 50%.
- PZR pressure - 2260 psia.
- ALL PZR Backup heaters are energized.
- Charging Header flow - 44 gpm.
- Letdown Header flow - 90 gpm and increasing.

WHICH ONE of the following operator actions is required to stabilize the plant?

a. Stop the running charging pump and decrease charging flow, then restore the running charging pump after PZR level is restored.

b. Switch to the unaffected channel and if unable to restore level in auto, then take manual control of PZR Level Control System with RCN-LIC-110 and restore level by decreasing letdown flow.

c. Switch to the unaffected channel and if unable to restore level in auto, then take manual control of PZR Level Control System with RCN-LIC-110 and restore level by increasing letdown flow.

d. Manually start another charging pump and take manual control of the RCP seal injection flow controllers and restore seal injection to the normal range.

Question 82. (1.00)

Given the following plant conditions:

- The plant is in Mode 6.
- Fuel movement is in progress.
- An irradiated fuel element is suspended above the core.
- Area radiation levels become HIGH and a Containment evacuation is necessary.
- Radiation levels allow placement of the fuel in a safe position.

WHICH ONE of the following is the preferred location for storing the irradiated fuel assembly?

The irradiated fuel assembly should be stored in the...

a. upender in the vertical position.

b. upender in the horizontal position.

c. core in any available location.

d. core in the designated location.

Question 83. (1.00)

Given the following plant conditions:

- A Loss of Offsite Power has occurred.
- All offsite transmission lines are damaged and deenergized.
- NBN-X03 and NAN-S06 are faulted to ground.
- DG 'A' has tripped and cannot be restored.
- No feedwater is available to the Steam Generators.

WHICH ONE of the following success paths must be implemented to restore feed capability using AFN-P01?

a. MVAC-1, "Offsite Power".

b. MVAC-2, "Diesel Generators".

c. MVAC-3, "Gas Turbine Generators".

d. MVAC-4, "Second Unit DG".

Question 84. (1.00)

WHICH ONE of the following is correct in regards to performance of electrical lineups?

a. Breakers/switches should be cycled to verify position.

b. All available indications of position and control power availability should be checked.

c. Lockouts and protective relay targets should be checked actuated.

d. Breakers should be visually checked only if in the racked-out position.

Question 85. (1.00)

WHICH ONE of the following is true in accordance with 40AC-9OP15, "STATION TAGGING AND CLEARANCE" procedure?

a. A yellow Caution tag may hang with a MIP tag provided there are no tagging conflicts. The MIP tag overrides the yellow Caution tag.

b. A yellow Caution tag may hang with a blue Men-At-Work tag provided there are no tagging conflicts. The yellow Caution tag overrides the blue Men-At-Work tag.

c. A yellow Caution tag may hang with a red Danger tag even if there are tagging conflicts. The red Danger tag overrides the yellow Caution tag.

d. A yellow Caution tag may hang with a blue Men-At-Work tag even if there are tagging conflicts, provided the instructions on the Caution tag are understood prior to operating the affected equipment.

Question 86. (1.00)

WHICH ONE of the following is a requirement of the Site Fire Team according to 40AC-9OP02, "CONDUCT OF SHIFT OPERATIONS"?

a. A Site Fire Team of at least 5 members shall be maintained on site at all times. Operations shall provide an advisor to the Site Fire Team and as a minimum will be an Auxiliary Operator.

b. A Site Fire Team of at least 4 members shall be maintained on site at all times. Operations shall provide an advisor to the Site Fire Team and as a minimum will be a Reactor Operator.

c. A Site Fire Team of at least 5 members shall be maintained on site at all times. Operations shall provide an advisor to the Site Fire Team and as a minimum will be a Reactor Operator.

d. A Site Fire Team of at least 4 members shall be maintained on site at all times. Operations shall provide an advisor to the Site Fire Team and as a minimum will be a Senior Reactor Operator

Question 87. (1.00)

WHICH ONE of the following responsibilities may be delegated by the Emergency Coordinator during performance of EPIP-02, "EMERGENCY CLASSIFICATION"?

a. Authorization for emergency workers to exceed 10CFR20 exposure limits.

b. Determination of the necessity for onsite evacuation.

c. Initiate activation of onsite and offsite emergency response organizations for an ALERT or higher level of classification.

d. Site boundary dose assessments.

Question 88. (1.00)

Given the following plant conditions:

- The plant has tripped from 100% power.
- A large break LOCA has occurred.
- QSPDS Subcooled Margin indicates 2 degrees of superheat and steady.
- Containment Systems have responded normally.

WHICH ONE of the following is the required classification for this event per EPIP-02, "EMERGENCY CLASSIFICATION"?

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

Question 89. (1.00)

WHICH ONE of the following correctly states the PVNGS Administrative Hold Points for Whole Body radiation exposure?

a. Total Effective Dose Equivalent (TEDE) at 1.5 rem/year, 2.0 rem /year, 2.5 rem/year, 4.0 rem/year.

b. Total Effective Dose Equivalent (TEDE) at 2.0 rem/year, 2.5 rem/year, 3.0 rem/year, 4.0 rem/year.

c. Deep Dose Equivalent (DDE) at 2.0 rem/year, 3.0 rem/year, 4.0 rem/year, 5.0 rem/year.

d. Committed Effective Dose Equivalent (CEDE) at 1.0 rem/year, 2.0 rem/year, 3.0 rem/year, 4.0 rem/year.

Question 90. (1.00)

A point source in the auxiliary building is reading 500 mrem/hr at distance of Two (2) feet. Two options exist to complete rework on a valve near this radiation source.

Option 1: Operator X can perform the assignment in thirty minutes working at a distance of four feet from the point source.

Option 2: Operators Y and Z, who have been trained in the use of a special extension tool can perform the same task in 75 minutes at a distance of eight feet from the point source.

WHICH ONE of the following options is preferable and consistent with the ALARA program?

a. Option 1 as X's exposure is 31.25 mrem.

b. Option 1 as X's exposure is 62.5 mrem.

c. Option 2 as the exposure per person is 125 mrem.

d. Option 2 as the exposure per person is 156 mrem.

Question 91. (1.00)

Given the following plant conditions:

- The plant is in mode 5.
- Condensate Pump 'A' breaker is to be racked out.

WHICH ONE of the following is required personnel protective equipment to rack out this breaker?

a. Low voltage rubber gloves.

b. Hard hat.

c. Leather glove protectors.

d. Safety goggles covered by a face shield.

Question 92. (1.00)

WHICH ONE of the following is required for operation of the Main Generator according to 41OP-1GH01, "GENERATOR HYDROGEN"?

a. Hydrogen purity must be a minimum of 75%.

b. Hydrogen gas pressure must be a minimum of 30 psig.

c. Seal oil pressure must be a minimum of 8 psig greater than machine gas pressure.

d. Hydrogen temperature must be less than 30 degrees C.

Question 93. (1.00)

Given the following plant conditions:

- A Loss of Offsite Power has occurred.
- A Site Wide PA announcement is made that "An oxygen deficient atmosphere may exist in Unit 1 in valve galleries and rooms below the 100 ft elevation. Oxygen monitors shall be used in or near these rooms".

WHICH ONE of the following Oxygen concentrations would indicate an actual oxygen deficient atmosphere?

a. 19%

b. 21%

c. 23%

d. 25%

Question 94. (1.00)

Given the following plant conditions:

- The reactor is tripped.
- RCS pressure is 1830 psia.
- T_C is 560 degrees F.
- RCS temperature is being controlled by the ADVs.
- SG levels are 50% WR, being restored by AFB-P01 at 400 gpm to each SG.
- The CRS has completed Standard Post Trip Actions and diagnosed the SGTR procedure.
- The crew is stopping 1 RCP in each loop following a SIAS actuation as directed by the SGTR procedure.
- The STA reports to the CRS that the RCS heat removal safety function is not being met.

WHICH ONE of the following correctly describes what procedure steps the CRS should follow?

a. Go back to the SPTAs and rediagnose the event.

b. Exit the SGTR procedure and implement the Functional Recovery procedure due to the lost safety function.

c. Exit the SGTR procedure and implement the Functional Recovery procedure due a dual event in progress.

d. Continue the SGTR procedure because the SGTR procedure will recover the safety function.

Question 95. (1.00)

WHICH ONE of the following describes the proper action to take if a procedure in progress cannot be performed as written?

The operator should stop performing the procedure and...

a. note the problem with an ICR and then continue on with the procedure.

b. have a second operator review the deviation that you want to perform and continue on with the procedure.

c. ensure that the system is in a safe condition, advise your supervisor and resolve the problem per the administrative control procedures before continuing.

d. mark up the procedure the way you actually want to perform it, continue on with the procedure and have your supervisor review the procedure after completion.

Question 96. (1.00)

During an abnormal event, the CRS directs an operator to place a controller in the MANUAL position.

WHICH ONE of the following is correct in regards to taking a controller from AUTO to MANUAL?

a. The operation should normally be performed at the individual component controller, rather than at the master controller.

b. The operation should be done from the highest effective level available. (i.e., master controller)

c. After placing the controller in manual, minimal operator attention is required to monitor the system response during normal operation.

d. The CRS and the operator performing the controller operation are the only ones that need to be aware of the controller position.

Question 97. (1.00)

Given the following plant indications:

- The plant has tripped due to a Loss of All Feedwater event.
- The CRS directs the Area Operator to perform Appendix 40, "Local Operation of AFN-P01" to locally close the AFN-P01 Breaker.

WHICH ONE of the following is correct regarding the communication with the Area Operator?

a. The phonetic alphabet does not have to be used when communicating in the EOPs.

b. As a minimum, the Control Room should tell the Area Operator to "Perform Appendix 40".

c. It is the Area Operators responsibility to ensure he performs what the Control Room intends.

d. The Area Operator shall report back the component to be manipulated and the desired state.

Question 98. (1.00)

Given the following plant conditions:

- The plant is in Mode 3 following a Reactor Trip on Low DNBR.
- AFAS 1 actuated.
- AFAS 2 NOT actuated.
- AFB-P01 handswitch is in Red flag and the pump is not running.
- AFB-P01 Stop light indicates bright green on switch AFB-HS-10 on BO6.
- SG 1 level is 38% WR and increasing.
- SG 2 level is 30% WR and lowering.
- A white SEIS light is lit for AFB-P01.

WHICH ONE of the following is the cause of the white SEIS indication?

a. AFAS 1 is actuated and AFB-P01 is not in its required initiation condition.

b. Loss of control power to AFB-P01.

c. 786 Lockout on AFB-P01 breaker.

d. AFAS 2 failed to actuate as required.

Question 99. (1.00)

Given the following plant conditions:

- 77OP-9RJ04, "COLSS FUNCTIONAL VERIFICATION" is in progress.
- All rod positions need to be inserted.

WHICH ONE of the following is correct with regards to the restoration of rod positions and the reason for using this method?

a. Restoration should be performed in the UNSCHEDULED MODE because with COLSS running the unusual rod configuration during this evolution can cause problems with COLSS and other programs monitoring rod position.

b. Restoration should be performed in the SCHEDULED MODE because as the rod positions are individually restored, the Radial Peaking Factor will update so that when the rod position insertion is complete, COLSS will calculate valid power and Power Operating Limits sooner.

c. Restoration should be performed in the SCHEDULED MODE because it is important to keep COLSS running while inserting the rod positions to determine if the computer accepted the rod position by observing the Radial Peaking Factor Calculation Bypassed Flag (NKPRPFLG) reset.

d. Restoration should be performed in the UNSCHEDULED MODE because the COLSS program will not accept any changes to point Ids that are currently being used for calculation unless the calculation is halted during the change.

Question 100. (1.00)

Given the following plant conditions:

- The plant is operating at 98% power.
- Steam Generator Tube leakage is estimated at 90 gpm in #1 SG.
- The CRS directs a Reactor Trip, Manual SIAS/CIAS and stopping of two RCPs.

WHICH ONE of the following indicates the correct order in which these directions should be carried out?

a. Trip the reactor, verify the reactivity control safety function, initiate SIAS/CIAS, stop 2 RCPs, complete the remaining SPTAs.

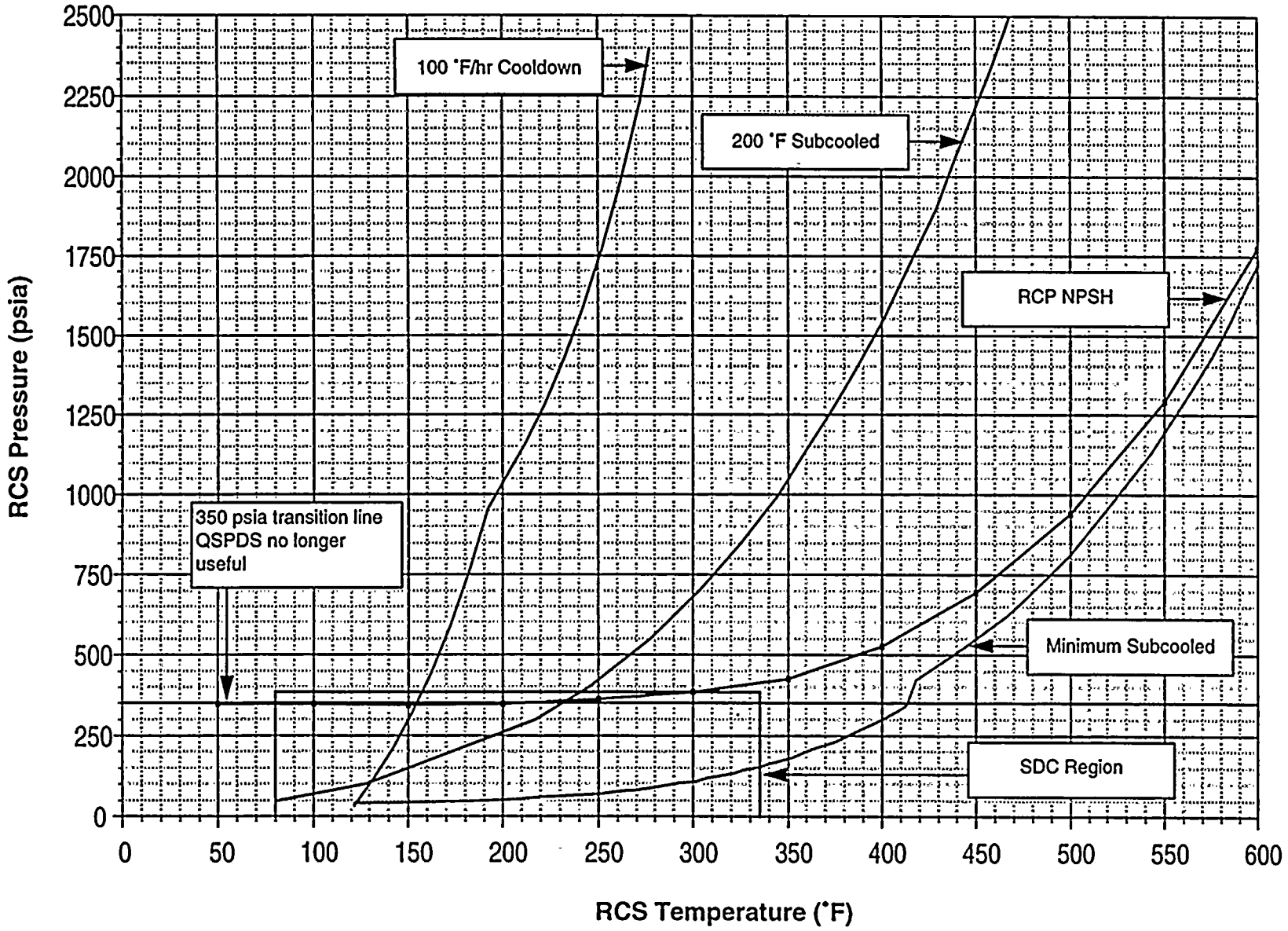
b. Trip the reactor, initiate SIAS/CIAS, stop 2 RCPs, verify the reactivity control safety function, complete the remaining SPTAs.

c. Trip the reactor, perform SPTAs in any order, initiate SIAS/CIAS, stop 2 RCPs.

d. Any order, as long as the manual reactor trip pushbuttons are depressed first.

END OF EXAMINATION

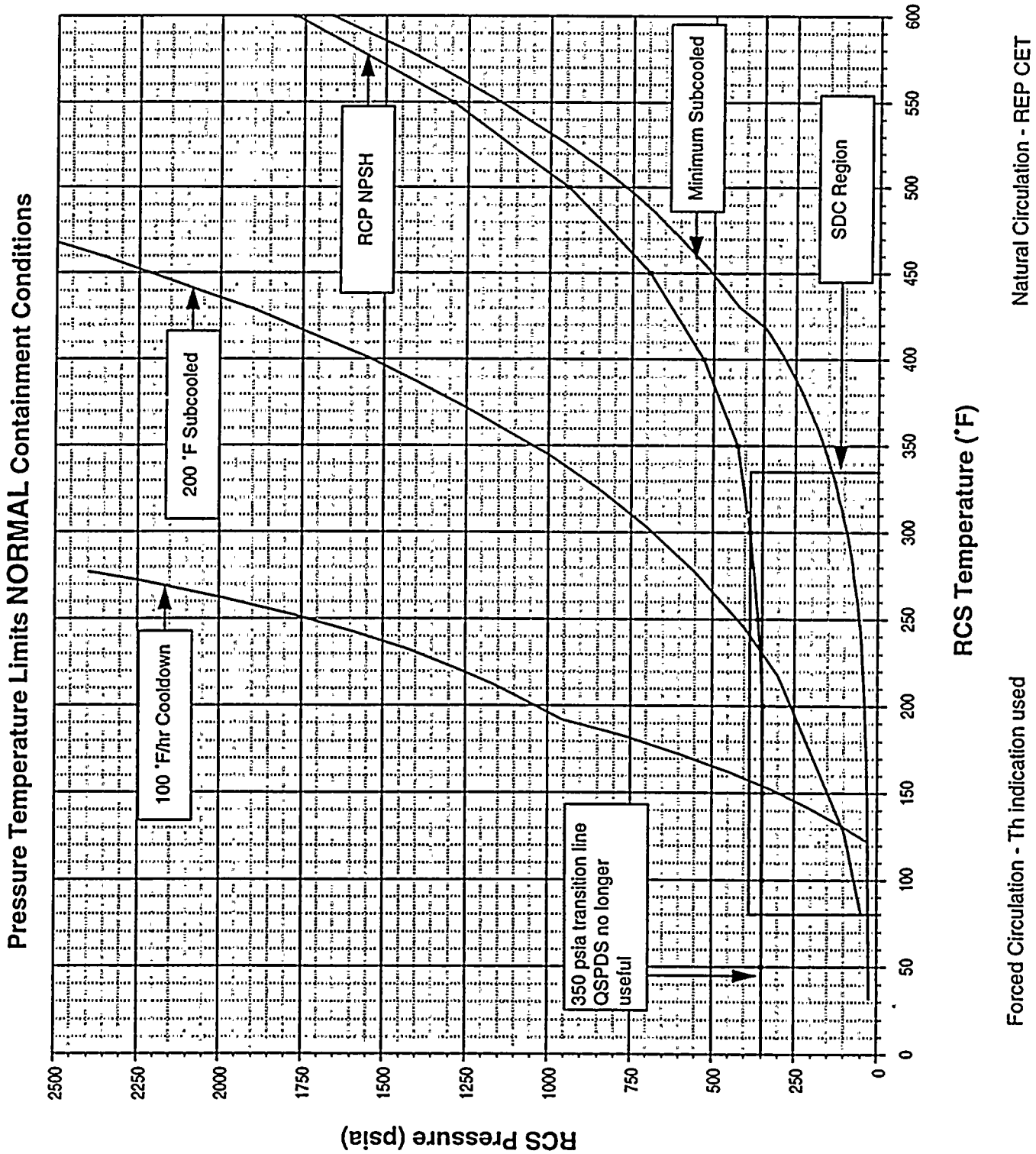
Pressure Temperature Limits HARSH Containment Conditions



Forced Circulation - Th indication used

Natural Circulation - REP CET used

Appendix 2,
Figures



ANSWER 1. (1.00)

a.

REFERENCE: Tech Spec Basis, Page 3/4 1-6

KA: 001 K5.08 Reasons for rod insertion limits and the affect on shutdown margin (4.4)

ANSWER 2. (1.00)

d.

REFERENCE: 41AO-1ZZ05, Loss of NCW, page 3 of 19

KA: 003 K4.04 Knowledge of adequate cooling of RCP motor and seals (3.1)

ANSWER 3. (1.00)

d.

REFERENCE: 13-M-CHP-001 - 005 CVCS

KA: 004 K1.15 Knowledge of the physical connection between CVCS and ECCS (4.0)

ANSWER 4. (1.00)

b.

REFERENCE: 40DP-9AP16, EOP Users Guide, page 16 of 18

KA: 013 A4.03 Ability to manually operate and/or monitor ESFAS initiation (4.7)

ANSWER 5. (1.00)

c.

REFERENCE: 41AO-1ZZ14, Excess RCS Leakrate, page 4 of 13

KA: 013 SG15 Ability to recognize abnormal indications for system operating parameters which are entry level conditions for EOPs/AOPs. (4.2)

ANSWER 6. (1.00)

b.

REFERENCE: 41AL-1RK4A, CEA Withdraw Prohibit, page 132 of 148

KA: 014 AI.02 Predict/Monitor changes in parameters assoc with control rod position on control room panels. (3.6)

ANSWER 7. (1.00)

a.

REFERENCE: PVNGS Simplified Control System Drawings, page 85

KA: 015 K3.01 Knowledge of the effect a loss of NIs will have on RPS (4.3)

ANSWER 8. (1.00)

c.

REFERENCE: 40EP-9EO03 LOCA, page 52 of 61

KA: 017 A2.02 Ability to predict the impact of core damage on in core temp monitoring. (4.1)

ANSWER 9. (1.00)

a.

REFERENCE: 41AO-1ZZ12, Degraded Electrical Power, page 62 of 138

KA: 022 K2.01 Knowledge of power supplies to the CTMT cooling fans (3.1)

ANSWER 10. (1.00)

b.

REFERENCE: 74RM-9EF41, RMS Alarm Response, page 16 of 67

KA: 068 K6.10 Performance and design attributes of radiation monitors. (2.9)

ANSWER 11. (1.00)

b.

REFERENCE: 41AO-1ZZ12, Degraded Electrical Power, page 28, 108 of 138

KA: 026 A3.01 Monitor automatic operation of CS pump starts and correct MOV position (4.5)

ANSWER 12. (1.00)

a.

REFERENCE: 01-E-CDB-001, 002, 003 Elementary Condensate Pump Diagrams

KA: 056 A2.04 Predict the impact of loss of condensate pumps on the condensate system. (2.8)

ANSWER 13. (1.00)

d.

REFERENCE: 41OP-1FT01, FWPT 'A' page 7 of 60; 41OP-1FT02, FWPT 'B' page 7 of 60

KA: 059 K4.16 Knowledge of system features which provide for MFP trips (3.2)

ANSWER 14. (1.00)

a.

REFERENCE: 41AL-1RK5B,SG 2 > SG 1 PRESS CH TRIP, page 81 of 139

KA: 061 A3.04 Monitor auto operation of AFW system for auto AFW isolation (4.2)

ANSWER 15. (1.00)

c.

REFERENCE: 41AO-1ZZ17, Loss of 125 VDC Class IE Power, page 6 of 54.

KA: 063 K3.01 Knowledge of the effect of a loss of DC on EDG. (4.1)

ANSWER 16. (1.00)

b.

REFERENCE: 74RM-9EF41 RMS Alarm Response, page 18 of 67

KA: 071 A4.09 Ability to monitor in the control room waste gas release rad monitor. (3.5)

ANSWER 17. (1.00)

b.

REFERENCE: Tech Specs, 3.2.1, Linear Heat Rate, page 3/4 2-1

KA: 017 SG.11 Recognize indications for parameters which are entry level for Tech Specs (3.3)

ANSWER 18. (1.00)

c.

REFERENCE: 41AO-9ZZ01, Emergency boration, page 14 of 66

KA: 004 K6.09 Knowledge of flow paths for emergency boration. (4.6)

ANSWER 19. (1.00)

d.

REFERENCE: 41AO-1ZZ30, Inadvertent CSAS, page 7 of 15

KA: 026 SG.9 Ability to locate and operate controls, including local controls. (3.6)

ANSWER 20. (1.00)

c.

REFERENCE: PVNGS System Description Manual, PLCS, page 6 of 35

KA: 002 K5.05 Knowledge of why PZR level should be kept in the programmed band. (3.8)

ANSWER 21. (1.00)

d.

REFERENCE: 40EP-9EO10, Standard Appendices, Appendix 26, page 177 of 744

KA: 006 K4.01 Knowledge of resetting safety injection systems. (4.2)

ANSWER 22. (1.00)

b.

REFERENCE: PVNGS Simplified Conrol System Diagrams, page 38

KA: 010 SG.14 Ability to operate controls as identified in the alarm response manual (3.6)

ANSWER 23. (1.00)

c.

REFERENCE: PVNGS Simplified Conrol System Diagrams, page 35

KA: 011 A1.01 Ability to predict changes in parameters associated with operating the PLCS and the charging system. (3.5)

ANSWER 24. (1.00)

a.

REFERENCE: Tech Specs, SG level High, page B 2-6

KA: 012 K4.02 Knowledge of the basis of RPS setpoints. (4.3)

ANSWER 25. (1.00)

a.

REFERENCE: PVNGS Simplified Conrol System Diagrams, page 42

KA: 016 K3.04 Knowledge of the effect a loss of Nis will have on MFW system. (2.7)

ANSWER 26. (1.00)

b.

REFERENCE: 40EP-9EO03, LOCA, page 9 of 61

KA: Knowledge of the performance attributes of the H2 Recombiners. (3.1)

ANSWER 27. (1.00)

a.

REFERENCE: 74RM-9EF41, RMS Alarm Response, page 27 of 67

KA: 029 SG.15 Abormal indications for system operating parameters which are entry level for AOPs. (3.6)

ANSWER 28. (1.00)

a.

REFERENCE: 41AO-1ZZ53, Loss of Spent Fuel Pool Level, page 19 of 31

KA: 033 A2.02 Predict the impact of abnormal spent fuel pool level. (3.5)

ANSWER 29. (1.00)

d.

REFERENCE: NKL01-01-XC-042-000, Refueling systems, page 36 of 78

KA: 034 A3.02 Ability to monitor auto operation of fuel handling load limits. (3.1)

ANSWER 30. (1.00)

d.

REFERENCE: 40EP-9EO04, SGTR, page 13 of 42

KA: 035 A4.06 Ability to manually operate/monitor SG isolation on SGTR (4.6)

ANSWER 31. (1.00)

c.

REFERENCE: PVNGS Simplified Control System Drawings, pages 1-3

KA: 039 K4.05 Knowledge of design features which provide for auto isolation. (3.7)

ANSWER 32. (1.00)

d.

REFERENCE: 74RM-9EF41, RMS Alarm Response, page 32 of 67

KA: 055 A3.03 Ability to monitor auto diversion of CARS exhaust. (2.7)

ANSWER 33. (1.00)

a.

REFERENCE: 40AL-9MA01, ESF SERVICE TRANSFORMER NBN-X03, page 54 of 70

KA: 062 K3.03 Knowledge of the effect a loss of AC will have on EDG. (4.4)

ANSWER 34. (1.00)

b.

REFERENCE: NKL01-01-XC-052, Emergency Diesel Generator

KA: 064 K4.02 Knowledge of the trips for EDG while operating. (4.2)

ANSWER 35. (1.00)

c.

REFERENCE: Site Access Training Handout, page D9.

KA: 086 K5.04 Knowledge of the hazards to personnel as aresult of fire type and methods of protection. (3.5)

ANSWER 36. (1.00)

a.

REFERENCE: Tech Spec Basis, Containment Structural Integrity, page 3/4 6-2

KA: 103 K1.02 Knowledge of the relationship between containment and containment isolation (4.1)

ANSWER 37. (1.00)

b.

REFERENCE: Tech Spec Basis, Overpressure Protection Systems, page 3/4 4-32

KA: 005 A2.02 Pressure transient protection during cold shutdown. (3.7)

ANSWER 38. (1.00)

c.

REFERENCE: 41AL-1RK3A, RDT pressure Hi, page 115 of 127

KA: 007 K3.01 Knowledge a loss of PRTS will have in containment. (3.6)

ANSWER 39. (1.00)

b.

REFERENCE: 41OP-1MB01, Main Generation and Excitation, page 9 of 46

KA: 045 K4.07 Knowledge of EHC response to load changes. (2.5)

ANSWER 40. (1.00)

a.

REFERENCE: 41AO-1ZZ06, Loss of IA, page 10 of 128

KA: 078 A3.01 Ability to monitor auto operations including air pressure. (3.2)

ANSWER 41. (1.00)

c.

REFERENCE: 41A)-1ZZ35, Continuous CEA Withdrawal, page 3 of 7

KA: 000001 EA2.03 Proper actions to be taken if auto safety functions have not taken place. (4.8)

ANSWER 42. (1.00)

c.

REFERENCE: 41AO-1ZZ11, Dropped or Slipped CEA, page 6 of 14

KA: 000003 EK3.08 Knowledge of criteria for inoperable control rods. (4.2)

ANSWER 43. (1.00)

a.

REFERENCE: Tech Spec 3.1.3, Movable Control Assemblies, page 3/4 1-15

KA: 000005 SG.8 Recognize indications for parameter which are entry conditions for Tech Specs. (3.8)

ANSWER 44. (1.00)

c.

REFERENCE: 40DP-9AP09, LOCA Tech Guide, page 31 of 126

KA: 000011 EK1.01 Knowledge of natural circ and cooling including reflux boiling.

ANSWER 45. (1.00)

d.

REFERENCE: 41AO-1ZZ29, RCP and Motor Emergency, page 11 of 35

KA: 000015 EK3.03 knowledge of sequence of events for manually tripping reactor and RCP as a result of an RCP malfunction. (4.0)

ANSWER 46. (1.00)

d.

REFERENCE: 41AO-1ZZ01, Emergency Boration, page 6 of 66

KA: 000024 EK3.02 Knowledge of the actions contained in the AOP for emergergency boration. (4.4)

ANSWER 47. (1.00)

a.

REFERENCE: 41AO-1ZZ05, Loss of NCW, page 9 of 19

KA: 000026 EA1.03 Essential cooling water as abackup to NCW. (3.6)

ANSWER 48. (1.00)

a.

REFERENCE: 40EP-9EO01, SPTAs, page 2 of 16

KA: 000029 EK2.02 Knowledge of sensors and detectors. (2.5)

ANSWER 49. (1.00)

a.

REFERENCE: 40EP-9EO05, ESD, page 2 of 43

KA: 000040 EA2.03 Difference between steam line rupture and LOCA. (4.7)

ANSWER 50. (1.00)

b.

REFERENCE: 41AL-1RK6A, SBCS COND INTLK, page 122 of 147

KA: 000051 EK3.01 Loss of steam dump capability on loss of vacuum (3.1)

ANSWER 51. (1.00)

d.

REFERENCE: 40EP-9EO10, Standard Appendices, Appendix 62, page 527 of 744

KA: 000055 EA1.04 Reduction of loads on the battery. (3.9)

ANSWER 52. (1.00)

a.

REFERENCE: 41AO-1ZZ15, Loss of Class 1E AC Power, page 6 of 43

KA: 000057 EK3.01 Actions in AOP for loss of vital AC. (4.4)

ANSWER 53. (1.00)

b.

REFERENCE: 40DP-9AP10,ESD Tech Guide, page 92 of 101

KA: 000040 EA2.04 Conditions requiring ESFAS initiation. (4.7)

ANSWER 54. (1.00)

b.

REFERENCE: 41AO-1ZZ44, Control Room Fire, page 111 of 133

KA: 000067 EA2.17 Systems that may be affected by the fire (4.1)

ANSWER 55. (1.00)

c.

REFERENCE: 41AO-1ZZ27, Shutdown Outside the Control Room, page 6 of 94

KA 000068 EA1.21 Transfer of controls from CR to RSP (4.1)

ANSWER 56. (1.00)

d.

REFERENCE: 40EP-9EO09, FRP, page 7 of 303

KA: 000069 EA2.02 Verification of automatic and manual means of restoring containment integrity. (4.4)

ANSWER 57. (1.00)

b.

REFERENCE: 40EP-9EO03, LOCA, page 20 of 61

KA: 000074 EK1.03 Knowledge of processes for removing decay heat from the core. (4.9)

ANSWER 58. (1.00)

a.

REFERENCE: Tech Spec 3.4.7, RCS Specific Activity, page 3/4 4-5

KA: 000076 SG.4 Knowledge of basis in Tech Specs for LCOs and safety limits. (3.5)

ANSWER 59. (1.00)

a.

REFERENCE: 40DP-9AP08, LOCA Tech Guide, page 61 of 126

KA: 000011 EK3.12 Knowledge of actions contained in EOPs for large break LOCA.

ANSWER 60. (1.00)

b.

REFERENCE: 40DP-9AP10, ESD Tech Guide, page 81 of 87

KA: 000040 EA1.09 Knowledge of setpoints of MSSVs (3.4)

ANSWER 61. (1.00)

a.

REFERENCE: 40DP-9AP13, Blackout Tech Guide, page 33 of 64

KA: 000055 EK3.02 Actions contained in EOP for Station Blackout. (4.6)

ANSWER 62. (1.00)

d.

REFERENCE: 40DP-9AP06, SPTA Tech Guide, page 9 of 48

KA: 000029 EK3.12 Actions contained in EOP for ATWS. (4.7)

ANSWER 63. (1.00)

b.

REFERENCE: 41AO-1ZZ07, Loss of Condenser Vacuum, page 4 of 7

KA: 000051 EA2.02 Conditions requiring reactor and/or turbine trip. (4.1)

ANSWER 64. (1.00)

c.

REFERENCE: 40EP-9EO03, LOCA, page 52 of 61; Steam Tables

KA: 000074 EA2.01 Determine/interpret subcooloing margin.

ANSWER 65. (1.00)

b.

REFERENCE: 40EP-9EO01, SPTAs, page 8 of 16

KA: 000007 EK1.06 Relationship of emergency feed flow to SG and decay heat removal following a reactor trip. (4.1)

ANSWER 66. (1.00)

a.

REFERENCE: 40DP-9AP06, SPTA Tech Guide, page 14 of 48

KA: 000007 EK3.01 Actions contained in EOP for reactor trip. (4.6)

ANSWER 67. (1.00)

d.

REFERENCE: 40EP-9EO03, LOCA, page 12 of 61

KA: 000008 EA2.23 Criteria for throttling HPSI after a small LOCA. (4.3)

ANSWER 68. (1.00)

a.

REFERENCE: 40DP-9AP08, LOCA Tech Guide, page 81 of 145

KA: 000009 EK2.03 Knowlegde of SGs. (3.3)

ANSWER 69. (1.00)

d.

REFERENCE: 40EP-9EO10, Standard Appendices, Appendix 16, page 85 of 744

KA: 000009 EK3.23 RCP tripping requiremnts. (4.3)

ANSWER 70. (1.00)

d.

REFERENCE: 40DP-9AP08, LOCA Tech Guide, page 12 of 126

KA: 000009 EK3.21 Actions contained in EOP for SBLOCA. (4.5)

ANSWER 71. (1.00)

b.

REFERENCE: 41AL-1RK3a, CHG HDR SYS TRBL, page 60 of 127

KA: 000022 EA2.02 Ability to determine charging pump problems. (3.7)

ANSWER 72. (1.00)

a.

REFERENCE: 41AO-1ZZ22, Loss of SDC, page 11 of 79

KA: 000025 EK3.03 Actions in EOP for loss of SDC. (4.1)

ANSWER 73. (1.00)

a.

REFERENCE: 41AO-1ZZ22, Loss of SDC, page 25 of 79

KA: 000025 EA1.12 Ability to monitor RCS temperature indicators. (3.5)

ANSWER 74. (1.00)

a.

REFERENCE: PVNGS Simplified Control System Drawings, page 35

KA: 000027 SG.5 Knowledge of alarms and indications. (3.3)

ANSWER 75. (1.00)

c.

REFERENCE: 40EP-9EO01, SPTAs, page 3 of 16

KA: 000032 EA2.06 Confirmation of reactor trip. (4.1)

ANSWER 76. (1.00)

d.

REFERENCE: 40DP-9AP09, SGTR Tech Guide, page 20 of 98

KA: 000037 EA1.06 Ability to monitor main steam line rad monitors. (3.9)

ANSWER 77. (1.00)

c.

REFERENCE: 40DP-9AP09, SGTR Tech Guide, page 16 of 98

KA: 000038 EK3.06 Actions contained in EOP for SGTR. (4.5)

ANSWER 78. (1.00)

b.

REFERENCE: 40DP-9AP11, LOAF Tech Guide, page 15 of 75

KA: 000054 SG.7 Ability to apply all system limits. (3.0)

ANSWER 79. (1.00)

d.

REFERENCE: 41AO-1ZZ17, Loss of 125 VDC Class 1E Power, page 7 of 54

KA: 000058 EA2.03 Determine ability to operate/monitor. (3.9)

ANSWER 80. (1.00)

a.

REFERENCE: 41AO-1ZZ06, Loss of IA, page 6 of 128

KA: 000065 EA2.06 When to trip reactor if IA pressure is decreasing. (4.2)

ANSWER 81. (1.00)

b.

REFERENCE: PVNGS Simplified Control System Drawings, page 35

KA: 000028 EA2.02 PZR level malfunction. (3.8)

ANSWER 82. (1.00)

d.

REFERENCE: NKL01-01-XC-042-000, Refueling Systems, page 49

KA: 000036 EK3.03 Guidance in AOP for fuel handling incident. (4.1)

ANSWER 83. (1.00)

b.

REFERENCE: 40EP-9EO09, FRP, page 7 of 303

KA: 0000056 EA2.44 Ability to determine/interpret indications of a LOOP. (4.5)

ANSWER 84. (1.00)

b.

REFERENCE: 40AC-9OP02, Conduct of Shift Operations, page 36 of 50

KA: 294001 K1.01 Knowledge of how to conduct lineups. (3.7)

ANSWER 85. (1.00)

a.

REFERENCE: 40AC-9OP15, Station Tagging and Clearance, page 5 of 16

KA: 294001 K1.02 Knowledge of tagging and clearance procedures. (4.1)

ANSWER 86. (1.00)

c.

REFERENCE: 40AC-9OP02, Conduct of Shift Operations, page 15 of 50

KA: 294001 K1.16 Knowledge of facility protection requirements including fire brigade. (4.2)

ANSWER 87. (1.00)

d.

REFERENCE: EPIP-02, Emergency Classification, page 7 of 20

KA: 294001 A1.16 Ability to take actions called for in the Facility Emergency Plan. (4.4)

ANSWER 88. (1.00)

b.

REFERENCE: EPIP-02, Emergency Classification, page 9 of 20

KA: 294001 A1.16 Ability to take actions called for in the Facility Emergency Plan. (4.4)

ANSWER 89. (1.00)

a.

REFERENCE: Radiological Work Practices Handout.

KA: 294001 K1.03 Knowledge of 10CFR20 and related facility radiation control requiremnts. (3.5)

ANSWER 90. (1.00)

a.

REFERENCE: Radiological Work Practices Handout

KA: 294001 K1.04 Knowledge of the facility ALARA program. (3.5)

ANSWER 91. (1.00)

d.

REFERENCE: PVNGS Safety Manual

KA: 294001 K1.07 Knowledge of safety procedures related electrical equipment. (3.7)

ANSWER 92. (1.00)

b.

REFERENCE: PVNGS Safety Manual; 41OP-1MB01, Main Generation and Excitation, page 5 of 46

KA: 294001 K1.15 Knowledge of safety procedures related to hydrogen. (3.8)

ANSWER 93. (1.00)

a.

REFERENCE: PVNGS Safety Manual

KA: 294001 K1.13 Knowledge of safety procedures related to oxygen deficient environment. (3.6)

ANSWER 94. (1.00)

d.

REFERENCE: 40DP-9AP16, EOP Users Guide

KA: 294001 A1.11 Ability to direct personnel activities inside the control room. (4.1)

ANSWER 95. (1.00)

c.

REFERENCE: 40AC-9OP02, Conduct of Shift Operations

KA: 294001 A1.10 Ability to coordinate personnel activities outside the control room. (3.9)

ANSWER 96. (1.00)

a.

REFERENCE: 40AC-9OP02, Conduct of Shift Operations, page 41 of 50

KA: 294001 A1.13 Ability to locate control room switches, controls, and indications, and to determine that they are correctly reflecting the desired plant lineup. (4.1)

ANSWER 97. (1.00)

d.

REFERENCE: 40AC-9OP02, Conduct of Shift Operations, page 41 of 50

KA: 294001 A1.05 Ability to make accurate, clear and concise verbal reports. (3.8)

ANSWER 98. (1.00)

c.

REFERENCE: 41AL-1ES2B, AUX FW SG 2, page 135 of 278

KA: 294001 A1.13 Ability to locate control room switches, controls, and indications, and to determine that they are correctly reflecting the desired plant lineup. (4.1)

ANSWER 99. (1.00)

a.

REFERENCE: 77OP-9RJ04

KA: 294001 A1.15 Ability to use the plant compuer to obtain and evaluate information. (3.4)

ANSWER 100. (1.00)

a.

REFERENCE: 40DP-9AP16, EOP Users Guide, page 12 of 18

KA: 294001 A1.02 Ability to execute procedural steps.

Examination Level (Circle One): ~~RO~~ SRO U
Facility: PV
Week of Examination: 10/23/95
Examiner's Name (print): CHARLES, ARBUCKLE, OAKLEY

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Turnover P-P000-194-001-A1-03, 2.5/3.4	Explain the Shift Turnover process and identify what items you must review prior to taking the shift on your second day of a night shift. New
		Explain how the process would be different if this was your first day back on shift following 2 weeks.of vacation. New
	Procedure Modification P-P000-194-001-A1-02, 4.1/3.9	Explain TAPA process including the CRS/SS duties and responsibilities. New
		Explain the Special Variance process including the CRS/SS responsibilities. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Maintenance to DG B Fuel Rack (Failed ST) has just been completed. Explain the process of tagout/clearance removal. New
		Explain DG B retest requirements and any associated Admin requirements necessary to declare DG B operable. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Define a LHRA and explain the entry requirements. New
		Explain/describe the Emergency Exposure limits and authorization authority. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Explain the affected Unit SS duties if there is an E-Plan event. New
		Given a SGTR (200 gpm) with Contaminated Steam release, Classify the event and identify/describe the PAR recommendation. New

Examiner: _____ Chief Examiner: Ben Chg

A010

Examination Level (Circle One): ~~RO~~ / SRO U
Facility: PV
Week of Examination: (Group 2) 10/23/95
Examiner's Name (print): KUSLUCH, COATES, POVID, JOHNSTON,

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5 New
		Given a situation when you are less than minimum manning, identify if you agree with actions taken. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the CRS duties and responsibilities during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) . New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Apply Radiation Exposure Permit (REP) limitations. New
		Identify requirements for Rad Waste Gas release with RU-12 out of service. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	Can the EC delegate onsite evacuation decisions? New
		Following reports of an explosion/fire in the Train "B" Emergency DG Rm, Security reports apprehending unauthorized intruders in the Train "A" 4160 Switchgear Rm with what appears to be another bomb that was about to be placed. Classify the event and identify/describe any PAR recommendations necessary. New

Examiner: _____ Chief Examiner: Dan Chs

Examination Level (Circle One): ~~RO / SRO (I)~~ / SRO (U)
Facility: PV
Week of Examination: 10/23/95
Examiner's Name (print): CHARLES, ARBUCKLE, OAKLEY

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1.SDC, - SI007	4	a. P-S04E-000-025-A0-07, 3.3/3.5, How to maintain RCS heat removal on loss of SDC. New
Low Mode		b. P-S04E-000-025-A1-03, 3.4/3.3 Actions to take on loss of SDC due to loss of inventory. New
2. SIT, - SI021	2	a. P-S02S-006-020-A3-02, 3.9/4.2 SIT fill status if SIAS occurrs. New
Eng. Safety Feature		b. P-S02S-006-000-A0-03, 3.6/4.2 NR verse WR SIT level indications and Tech Spec compliance. Bank clone
3. CVCS, - CH003	1	a. P-S01S-004-000-K6-01, 3.1/3.3 Concerns of PZR/RCS Boron concentration differences. Bank clone
Iternate Path		b. P-S01S-004-000-K5-20, 3.6/3.7 Affects on CEAs of boration. Bank clone
4. RCPs, - RC029	10	a. P-S04S-003-000-K0-06, 2.7/3.8 Possible RCP Combinations for different Tc. Bank clone
New -- RCA		b. P-S04E-000-015-A1-22, 4.0/4.2 RCP Seal Failure Identification. Bank clone
5. 125 VDC, - PK002	7	a. P-S07E-000-057-A1-01, 3.7/3.7 On a loss of PKC-M43, how do you verify CEA position? New
New		b. P-S07E-000-058-A2-03, 3.5/3.9 How to control SG level on loss of PKC-M43. New

Examiner: _____ Chief Examiner: RamCha

Examination Level (Circle One): ~~RO / SRO (I)~~ / SRO (U)
Facility: PV
Week of Examination: 10/23/95
Examiner's Name (print): KUSWCH, COATES, POVID, JOHNSTON

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Loss of SDC at Mid-Loop Ops. New
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 Reason for AFA-P01 low RPM limit. Significant modification
Alternate Path		b. P-S05S-061-000-A2-04, 3.4/3.8 Manual reset of Trip/Throttle valve. New
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset criteria for CSAS. Significant modification
ng. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Press limits on CS for SDC. Significant modification
4.CVCS, - CH023	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG line to HPSI header piping connection. Bank clone
New-- RCA		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
5. 125 VDC, - PK001	7	a. P-S07S-062-000-A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
New		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR Press control on loss of M41/D21. New

Examiner: _____ Chief Examiner: _____

Examination Level (Circle One): ~~RO / SRO~~
Facility: PV
Week of Examination: (SRO - I) 10/23/95
Examiner's Name (print): WILEY

	Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift Staffing P-P000-194-001-A1-03, 2.5/3.4	Explain the minimum staffing levels for both Mode 1 and Mode 5. New
		Given a situation when you are less than minimum manning, identify if you agree with actions taken. New
	Fuel Handling P-S11S-034-000-K0-01, 2.3/2.9	Explain the CRS duties and responsibilities during Core Alterations, including Fuel Handling. New
	P-S11E-000-036-A0-07, 3.2/3.4	Describe actions required during a fuel handling accident with Irradiated Fuel Damage. New
A.2	Tagging and Clearances P-P000-194-001-K1-02, 3.7/4.1	Describe the process of authorization for work on CHG pump B (plunger repair) . New
		Demonstrate manual tagout/clearance generation for this CHG pump work. New
A.3	Radiation Control P-P000-194-001-K1-03, 2.8/3.4	Apply Radiation Exposure Permit (REP) limitations. New
		Requirements for Rad Waste Gas Release with RU-12 out of service. New
A.4	Emergency Plan P-P000-194-001-A1-16, 3.1/4.4	JPM #EP012 Bank clone

Examiner: _____ Chief Examiner: Ben Chg

Examination Level (Circle One): ~~RO~~ / ~~SRO (I)~~ / SRO ~~(U)~~ I
Facility: PV Week of Examination: 10/23/95
Examiner's Name (print): WILEY

System / JPM	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. SDC, - SI010	4	a. P-S04E-000-025-A1-02, 3.8/3.9 Actions to be taken for a loss of SDC at Mid-loop operations. New
Low Mode		b. P-S04S-005-000-A0-05, 3.3/3.4 CS/LPSI parallel operation valve alignments. Bank clone
2. AFW, - AF016	5	a. P-S05S-061-000-A2-05, 3.1/3.4 Actions to take for AFA-P01 running below minimum RPM. Significant modification
Alternate Path		b. P-S05S-061-000-A204, 3.4/3.8 Explain how to reset the Trip/Throttle valve after Control Room manual trip. New.
3. CS, - SI034	6	a. P-S03E-000-009-A0-07, 4.1/4.3 Reset Criteria for CSAS. Significant modification
Eng. Safety Feature		b. P-S04S-005-000-A0-02, 3.3/3.5 Temp/Pressure limits for CS for SDC. Significant modification
CVCS, - CH005	1	a. P-S01S-004-020-A2-11, 3.3/3.6 Effects of swapping letdown ion exchangers. New
		b. P-S01S-004-010-K6-12, 2.5/3.1 High Temp/Flow limits for Letdown. Signifiant modification
5. NCW, - NC001	10	a. P-S10E-000-062-K3-02, 4.0/4.2 Why stop normally running CHG pump on loss of NCW? Bank clone
Time Critical		b. P-S10E-000-026-K3-01, 3.2/3.5 Identify the EW - NC cross tie valves auto closure signals. Bank clone
6. BOP ESFAS, - SA007	2	a. P-S02S-013-000-K1-01, 4.2/4.4 High radiation (RU-145) gives which BOP ESFAS Actuations. Bank clone
Alternate Path Eng. Safety Feature		b. P-S02S-013-000-A3-01, 3.7/3.9 Test input trip of CPIAS New
7. DGs,- DG001	7	a. P-S07S-064-000-A1-01, 3.0/3.1 Consequences of low Lube oil temperature. Bank clone
Eng. Safety Feature		b. P-S07S-064-000-K4-04, 3.1/3.7 DG load limits. Significant modification

8. [illegible] VDC, - PK001 New	7	a. P-S07S-062-000A0-03, 3.1/3.7 Loss of PNA-D25 affect on 100% power operations. Bank clone
		b. P-S07E-000-058-A2-03, 3.5/3.9 PZR pressure control on loss of M41/D21 New
9. CVCS, - CH023 New -- RCA	1	a. P-S01S-004-000-K1-15, 3.8/4.0 Alternate purpose of CHG to HPSI header piping connection. Bank clone
		b. P-S01E-000-024-K3-02, 4.2/4.4 Why close CH-501 when align CH-536 for Emergency boration. Bank clone
10. AFW, - EM005 Alternate Path	5	a. P-S05S-061-000-A2-04, 3.4/3.8 Why local reset on valid Overspeed trip. Bank clone
		b. P-S05S-061-000-K1-03, 3.5/3.9 Given that certain critical steam traps affecting AFA-P01 operability are out of service, explain required actions. Significant modification

Examiner: _____ Chief Examiner: _____

Simulation Facility: PVNGS
Scenario No.: SCN 1 OF 3, SCN SET 1
Examiners:
Applicants: CRS - Frank Kusluch
SO - Steve Coates
PO - Nick Povio

Initial Conditions: 3% Power during plant startup following trip 50 hrs previous. Rods in Manual. "A" MFWP in service.

Turnover: AFA-P01 OOS for governor assembly repair with return to service in 12 hrs. 40OP-9ZZ04 is completed up through step 4.3.15. Plant Management directs you to continue with the power increase. Turbine shell warming is not required at this time. FW Long Path recirc has been secured. "A"MFWP has just been placed in service and is operating correctly. AFN-P01 has been shut down IAW 41OP-1AF02.

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N/R	Increase power.
2	NI04A	I	NIS Log Power Channel "A" failure.
3	FW04A FW17A	C	"A" MFWP shaft shear followed by overspeed after power increase.
4	MS07	M	Main steam line break in the turbine bldg. on common steam header.
5	ED11C	C	PBB-S04 feeder breaker -S04K trips open on 86 LOC protection. Damage to PBB-S04 will be evident.
5	RD03L and RD03M	C	Two CEAs fail to insert on the trip (stuck at 100% withdrawn).
6	FW21A	C	AFN-P01 ground fault with 86 LOC protection.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Examiner:
Chief Examiner:

Scenario No.: 1 of 3, Set 1 Event No.: 1 Page 1 of 6

Event Description: Increase power.

Time	Position	Applicant's Actions or Behavior
	CRS	Directs PO to raise Reactor power to 5% as indicated on CPCs.
		Directs PO to monitor ASI using CPC Pt. 266 on all channels and maintain within +0.4 to -o.4 band.
	SO	Monitors FWCS for proper operation.
	PO	Initiates dilution and/or withdraws CEAs to raise power to 5% after "A" MFWP inservice.
		Monitors ASI.

Scenario No.: 1 of 3, Set 1 Event No.: 2 Page 2 of 6
Event Description: NIS Log Power channel A fails high (imf ni04a 200)

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognizes and identifies to crew indications of NIS system failure by B05 NIS and CPC indications and alarms.
		Stabilizes plant conditions
	SO	Bypass PPS parameters 1 thru 4 on channel "A" when directed.
	CRS	Directs PO/SO to stabilize plant conditions.
		Refers to 41AO-1ZZ24, NIS System Malfunction for guidence.
		Directs PO/SO refer to Alarm Response procedures.
		Refers to Tech specs 3.3.1, 3.3.3.5, 3.3.3.6 for requirements and directs SO to bypass PPS parameters 1 thru 4 on channel "A".

Scenario No.: 1 of 3, Set 1 Event No.: 3 Page 3 of 6

Event Description: "A" MFWP shaft shear (imf fw04a). If attempted, "B" MFWP will be unable to be reset (ior zdftnhs78 normal).

Time	Position	Applicant's Actions or Behavior
	SO	Recognizes and identifies to crew "A" MFWP trip
	CRS	Directs PO to reduce reactor power to < 3% by insering CEAs.
		Directs SO to re-align AFW feedflow to both steam generators (AFN-P01 perferred).
	PO	Inserts CEAs to reduce reactor power to < 3%.
	SO	Starts AFN-P01 and aligns flow to both steam generators.

Scenario No.: 1 of 3, Set 1 Event No.: 4 Page 4 of 6

Event Description: Main steam pipe rupture in Turbine Bldg on common steam header (imf ms07 25 5:00)

Time	Position	Applicant's Actions or Behavior
	SO/PO	Recognizes and identifies to crew indications of steam leak based on: 1) RCS temperature decrease. 2) Rx power increase. 3) Steam generator pressure decrease.
		Recommends manual reactor trip and manual MSIS based on plant trends.
	CRS	Directs AO to investigate Turbine Bldg.
		Directs manual reactor trip and manual MSIS based on plant trends.
		Directs crew to perform Standard Post Trip Actions (SPTAs).
	SO/PO	Recognizes and identifies to crew indications of two stuck CEAs.

Scenario No.: 1 of 3, Set 1 Event No.: 5 Page 5 of 6

Event Description: Loss of PBB-S04 feeder breaker with damage to the bus (imf ed11c) and AFN-P01 ground fault trip with 86 LOC (imf fw21a).

Time	Position	Applicant's Actions or Behavior
	CRS	Directs crew performance through SPTAs. 1) Directs PO to initiate Boration for stuck CEAs
		Directs PO/SO to emergency stop DG "B".
		Goes to Loss of All Feedwater (LOAF) procedure and directs performance of Safety Function Status Checks for LOAF.
		Directs PO to stop all RCPs.
		Determines which steam generator to feed with condensate.
		Directs PO/SO to perform steps of Appendix 44 to feed with condedsate pumps.
		1) SO to ensure FW valve alignment.
		2) SO to verify CD pump operation.
		3) PO to start all CHG pumps, minimize L/D, start 1 HPSI pump and open 1 HPSI injection valve.
		4) PO to reset SIAS setpoints.
		5) SO to reduce selected steam generator pressure to < CD discharge pressure.
		6) SO to establish CD flow to selected steam generator.

Scenario No.: 1 of 3, Set 1 Event No.: 5 Page 6 of 6

Event Description: Loss of PBB-S04 feeder breaker with damage to the bus (imf ed11c) and AFN-P01 ground fault trip with 86 LOC (imf fw21a).

Time	Position	Applicant's Actions or Behavior
	PO	Initiates Boration at >26 gpm for two stuck CEAs.
		Stops all RCPs when directed.
		Starts all CHG pumps and minimizes L/D while monitoring PZR level.
		Starts 1 HPSI pump and opens 1 injection valve. Resets SIAS setpoints during cooldown/depressurization.
	PO/SO	Direct AO to emergency stop DG "B".
	SO	Ensures CD/FW valve alignments and verifies CD pump operation.
		Reduces selected steam generator pressure by using at least 1 ADV on the steam generator to lower pressure to < CD discharge pressure.
		Maintains non-selected steam generator pressure < 1200 psia.
		Establishes CD flow to selected steam generator.
		Scenario maybe terminated when adequate CD flow is established or as deemed appropriate by the exam team.

Simulation Facility: PVNGS Scenario No.: SCN 2 OF 3, SCN SET 1
Examiners: Applicants: CRS - Steve Coates
SO - Nick Povio
PO - Frank Kusluch
Initial Conditions: 75% power, MOC, following completion of maintenance to "B" MFWP (Vibrations)

Turnover: "E" CHG pump OOS for plunger repair, return to service in 20 hrs. Plant Management directs power ascension to 100% power per 41OP-1ZZ05. 41OP-1ZZ05 is complete up to Step 4.3.18.

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N/R	Increase power.
2	CV03A	C	L/D flow control valve failed closed (Loss of L/D)
3	TH06B	M	SGTR #2 SG (500 gpm)
	CAE ATWS	C	ATWS
4	TR01:SGN PT1024	I	Main Steam PT (PT-1024) fails low at trip.
5	RP07A	C	Train "A" Sequencer failure.
	CP05:SIAP 02	C	HPSI Pump "A" fail to Auto start.
	CP05:SIBP 02	C	HPSI Pump "B" fail to Auto start.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Examiner:
Chief Examiner:

Scenario No.: 2 of 3, Set 1 Event No.: 1 Page 1 of 7

Event Description: Increase Reactor power

Time	Position	Applicant's Actions or Behavior
	CRS	Directs PO/SO to coordinate the power to 100% per 41OP-1ZZ05. 1) Maintain Tave +/- 2 deg of Tref. 2) Maintain Turbine Generator within limits.
		Inform chemistry of power increase and direct sampling and monitoring of secondary chemistry.
	PO	Calculate dilution per 41OP-1CH01.
		Operate VCT Makeup Controls to perform dilution per 41OP-1CH01.
	SO	Increase Turbine load to maintain Tave +/- 2 deg of Tref while maintaining main generator limits.
		Monitors FWCS.

Scenario No.: 2 of 3, Set 1 Event No.: 2 Page 2 of 7

Event Description: LD flow control valve fails closed (Loss of LD) (imf cv03a 0)

Time	Position	Applicant's Actions or Behavior
	PO	Recognizes and identifies to crew loss of LD by B03 alarms and indications.
		Places Normally running CHG pump in P-T-L
		Takes manual control of RCN-LIC-110- and sends close signal to LD control valves
		Lines up other LD control valve for operations (uses 41OP-1CH01 for reference).
		Isolates Seal Injection and stops all CHG pumps when PZR level reaches 55%
		Restores LD flow per Section 7 of 41AO-1ZZ37.
	CRS	Directs AO to investigate LD line/valves in Aux. Bldg.
		Directs PO to remove CHG pumps from service.
		Directs PO to align other LD flow control valve and restore LD per 41AO-1ZZ37.
		Directs PO to isolate Seal Injection and stop all CHG pumps if PZR level reaches 55% and refers to Tech Spec 3.4.3.1.
		Directs PO restore LD per 41AO-1ZZ37.

Scenario No.: 2 of 3, Set 1 Event No.: 3 Page 3 of 7

Event Description: SGTR #2 SG at 500 gpm ramping over 5 minutes (imf th06b 75 5:00) with ATWS (cae I atws). CEAs will insert after load centers L03 and L10 are de-energized at B01.

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognizes and identifies to crew indication of SGTR based on: 1) PZR level and pressure trends 2) FW/Stm flow mismatch 3) Radiation Monitoring alarms
	SO	Isolates SG blowdown
		Contacts Chemistry, Effluents, RP for sampling and monitoring.
		Takes action to minimize release to the environment per App. B of 41AO-1ZZ08.
	PO	Starts all CHG pumps and isolates LD.
	CRS	Directs Chemistry, Effluents, and RP notification.
		Directs PO start of all CHG pumps and isolation of LD
		Directs SO to perform App. B of 41AO-1ZZ08 to minimize release to the environment.
		Directs PO/SO manual trip with SIAS, CIAS based on leakrate and PZR level and pressure trends.

Scenario No.: 2 of 3, Set 1 Event No.: 3 Page 4 of 7

Event Description: SGTR #2 SG at 500 gpm ramping over 5 minutes (imf th06b 75 5:00) with ATWS (cae I atws). CEAs will insert after load centers L03 and L10 are de-energized at B01.

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identifies to crew failure of Manual Reactor trip PBs and auto trip circuitry to cause trip.
		De-energizes L03 and L10, then re-energizes them after CEA insertion
		Ensure SIAS/CIAS actuations.
	CRS	Directs L03 and L10 de-energization.
		Directs crew to perform Standard Post Trip Actions (SPTAs).

Scenario No.: 2 of 3, Set 1 Event No.: 4 Page 5 of 7
Event Description: Main Steam PT-1024 fails to 900 psia after CEA insertion (imf tr01:sgnpt1024 900)

Time	Position	Applicant's Actions or Behavior
	CRS	Directs crew performance of SPTAs.
	SO	Recognizes and identifies to crew failure of SBCS to function properly and takes action to restore RCS heat removal by using SBCS in manual (preferred) or by using ADVs.
		Identifies failure of PT-1024.
	PO	Stops 2 RCPs (1 per loop) based on RCS pressure < 1837 psia.

Scenario No.: 2 of 3, Set 1 Event No.: 5 Page 6 of 7

Event Description: Train "A" Sequencer failure (imf rp07a) and failure of HPSI "A" and "B" to auto start. (imf cp05:siap02 and imf cp05:sibp02)

Time	Position	Applicant's Actions or Behavior
	CRS	Directs crew performance of SPTAs
	PO	Recognizes and identifies to crew failure of both HPSI pumps to start and failure of Train "A" sequencer.
		Manually start all required Train "A" ESF equipment and Train "B" HPSI pump.
	CRS	Directs PO to start Train "A" and "B" ESF equipment.
		Goes to SGTR procedure.
		Directs performance of Safety Function Status Checks (SFSC) for SGTR.
		Directs rapid RCS cooldown to < 550 deg Thot.
		Directs isolation of SG #2.
		Directs RCS depressurization.
		Directs continued RCS cooldown at rate not to exceed 100 deg per hr.
	PO/SO	Perform SFSC for SGTR.

Scenario No.: 2 of 3, Set 1 Event No.: 5 Page 7 of 7

Event Description: Train "A" Sequencer failure (imf rp07a) and failure of HPSI "A" and "B" to auto start, (imf cp05:siap02 and imf cp05:sibp02)

Time	Position	Applicant's Actions or Behavior
	SO	Performs rapid cooldown to RCS Thot of <550 deg then reduces rate to maintain <100 deg per hr.
		Resets MSIS setpoints to prevent MSIS from occurring.
		Isolate SG #2 when Thot <550 deg.
		Maintain isolated SG pressure < 1135 psia.
	PO	Depressurizes RCS using Main or Aux spray to maintain within PT curve and: 1) < 1135 psia, 2) +/- 50 psi of affected SG pressure.
		Throttle HPSI when throttle criteria met.
		Scenario maybe terminated when SG #2 is isolated and RCS depressurization in underway or as deemed appropriate by the exam team.

Simulation Facility: PVNGS
Scenario No.: SCN 3 OF 3, SCN SET 1
Examiners:
Applicants: CRS - Nick Povio
SO - Frank Kusluch
PO - Steve Coates

Initial Conditions: 100% power MOC, DG "A" parallel to the grid for performance of 41ST-1DG01, loaded at 4.0 MW

Turnover: Emergency Diesel "B" OOS for fuel rack work, estimated back in 12 hrs. DG "A" is running for 41ST-1ZZ02 per 41ST-1DG01 and has just completed 30 minute load at 4.0 MW. Plant management directs continuation of 41ST-1DG01 at step 8.18.4.6.

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N	Perform 41ST-1DG01 and increase DG "A" load.
2	RD02F	C/R	CEA #89 drops 100% into the core.
3	TR03:SGN FT1011 and TR01:SGN FT1011	I	FWCS #1 Steam Flow transmitter fails erratically to 50%
4	ED02	M	Loss of Offsite Power.
5	TH01A	M	SBLOCA
	SI02A	C	HPSI "A" Pump degraded performance.

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Examiner:
Chief Examiner:

Scenario No.: 3 of 3, Set 1 Event No.: 1 Page 1 of 7

Event Description: Perform 41ST-1DG01 and increase DG "A" MW load.

Time	Position	Applicant's Actions or Behavior
	CRS	Review 41ST-1DG01 then directs PO to increase MW load on DG "A".
	PO	Increases MW load on DG "A" from 4.0 to between 5.2 and 5.4 MW.

Scenario No.: 3 of 3, Set 1 Event No.: 2 Page 2 of 7

Event Description: CEA #89 drops 100% into the core (imf rd02f 100)

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identify to crew indications of CEA 89 drop based on Rod Bottom lites, CEAC screen, RCS temp and pressure trends, B04 and B05 alarms.
	PO	Places CEDMCS in Standby
	SO	Reduces Main Turbine load to maintain Tave +/- 2 deg of Tref.
	CRS	Directs plant stabilization.
		Directs power reduction per App. A of 41AO-1ZZ11, Dropped or Slipped CEA.
		Reviews Tech Spec 3.1.3.1.
		Directs performance of 77OP-9RJ04, COLSS Functional Verification.
		Directs STA/Rx Eng. to check SDM per 72ST-1RX09.
		Contact system Eng. and Maintenance for support.
		Contacts Ops Management and Rx Eng. for support.
		Direct attempt to recover dropped CEA.

Scenario No.: 3 of 3, Set 1 Event No.: 2 Page 3 of 7

Event Description: CEA #89 drops 100% into the core (imf rd02f 100)

Time	Position	Applicant's Actions or Behavior
	PO	Initiates Boration of RCS per 41OP-1CH01
		Attempt CEA recovery when directed by CRS.
	SO	Reduces turbine load to maintain Tave +/- 2 deg of Tref and meet 41AO-1ZZ11 App. A power reduction.

Scenario No.: 3 of 3, Set 1 Event No.: 3 Page 4 of 7

Event Description: FWCS #1 Steam Flow transmitter fails to 50% over 10 minute period (imf tr01:sgnft1011 2 10:00 4) with 100% noise (imf tr03:sgnft1011 100) one minute after dropped CEA.

Time	Position	Applicant's Actions or Behavior
	SO	Recognize and identify to crew failure of steam flow transmitter based on B06 indications.
		Places FWCS #1 master controller in manual and controls SG #1 level within normal band.
	CRS	Directs placing FWCS #1 in manual for SG #1 level control system.
		Directs PO investigate FWCS test panel for indications of failure.
		Contacts I&C maintenance for support and to initiate repairs.

Scenario No.: 3 of 3, Set 1 Event No.: 4 Page 5 of 7

Event Description: Loss of Offsite Power (imf ed02).

Time	Position	Applicant's Actions or Behavior
	CRS	Directs crew to perform Standard Post Trip Actions (SPTAs)
	SO	Starts AFA-P01 or AFN-P01 for RCS heat removal and SG level control.
		Uses ADVs for RCS heat removal and SG pressure control.
	PO	Closes RCP seal bleedoff valves
		Restores CHG pump(s) to service
		Verifies DG "A" operation.
	CRS	Goes to Loss of Offsite Power/Loss of Forced Circulation procedure.
		Directs performance of Safety Function Status Checks (SFSC) for LOOP/ LOFC procedure.

:enario No.: 3 of 3, Set 1 Event No.: 5 Page 6 of 7

Event Description: SBLOCA (imf th01a .3) with HPSI "A" pump degraded performance (imf si02a 100 5:00).

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identify to crew indications of RCS leak based on: 1) RCS/PZR level and/or pressure trends. 2) CTMT pressure/temperature/humidity/sump level trends. 3) Radiation Monitoring.
	CRS	Transitions to Loss of Coolant Accident (LOCA) procedure.
		Directs performance of SFSC for LOCA.
	PO	Recognize failure of HPSI "A" pump and informs CRS
	CRS	Transitions to Functional Recovery Procedure (FRP).
		Directs Hydrogen Analyzers to be placed inservice.
		Performs Safety Function Tracking page and identifies jeopardized safety functions.
		Directs performance of SFSC for the FRP.
		Goes to MVAC-2 and directs performance of Standard Appendix 59 to Cross-tie DG "A" to PBB-S04.

Scenario No.: 3 of 3, Set 1 Event No.: 5 Page 7 of 7

Event Description: SBLOCA (imf th01a .3) with HPSI "A" pump degraded performance (imf si02a 100 5:00).

Time	Position	Applicant's Actions or Behavior
	CRS	Directs AO performance of Attachment 59A to disable PBB-S04 breakers.
		Directs PBA-S03/PBB-S04 breaker alignments.
		Directs AO to align "B" Train Class DC chargers.
		Direct starting of HPSI "B" pump when power restored to PBB-S04.
	PO/SO	Perform FRP SFSC.
		Perform B01 PBA-S03/PBB-S04 breaker alignments
		Start HPSI "B" when power restored to PBB-S04
		Scenario maybe terminated when PBB-S04 re-powered from DG "A" and HPSI "B" started with adequate flow or as deemed appropriate by the exam team.

Simulation Facility: PVNGS
Scenario No.: SCN 1 OF 2, SCN SET 2
Examiners:
Applicants: CRS - Jordan Johnston
PO - Pat Wiley
SO - John Aronson (Surrogate)

Initial Conditions: 100% power, MOC

Turnover: AFB-P01 OOS for bearing repair. Return to service in 12 hrs.

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N/R	"B" MFWP high vibrations forcing downpower.
2	TR01:RCAL T110X	I	PZR LT110X fails low.
3	MS01A	M	Small steam line break inside CTMT (linked to RPCB/"B" MFWP trip).
	CAE ATWS	C	ATWS
	RD03I and RD03J	C	Two CEAs fail to insert on the trip (stuck at 100% withdrawn)
4	CP06:SIAP 03	C	CS pump "A" trip.
	MV06:SIBU V671 and MV01:SIBU V671	C	CS Train "B" header valve SIB-UV-671 sticks then blows control fuse.

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Examiner:
Chief Examiner:

Scenario No.: 1 of 2, Set 2 Event No.: 1 Page 1 of 5

Event Description: High vibrations on "B" MFWP forcing reactor downpower (imf fw15b 22 25:00 12) - will require pump trip at end of ramp period.

Time	Position	Applicant's Actions or Behavior
	SO	Recognizes and identifies to crew indication of "B" MFWP high vibrations based on alarms on B06, B07 and B07 trend recorder.
		Contacts AO to investigate locally for evidence of vibration.
		Refers to Alarm Response 6A09B for vibration action level chart.
	CRS	Directs Alarm Response implementation.
		Contacts Vibration group for monitoring and System Eng. for support.
		Directs PO/SO plant downpower based on vibration readings, with direction to stay within Main Generator limits and Tave +/- 2 deg of Tref.
		Contacts Ops Management and informs of plant status.
	PO	Performs boration of the RCS per 41OP-1CH01
	PO/SO	Coordinates downpower to maintain operating limits.
	SO	Reduces main turbine load to maintain Tave +/- 2 deg of Tref.
	CRS	When valid high vibration of > 5 mils, directs SO to trip "B" MFWP and PO/SO to verify RPCB actions as appropriate.

Scenario No.: 1 of 2, Set 2 Event No.: 2 Page 2 of 5

Event Description: Pressurizer LT-110X fails low (imf tr01:rcalt110x 0) during MFWP "B" investigation/downpower (five minutes after "B" MFWP Hi Vib alarm).

Time	Position	Applicant's Actions or Behavior
	PO	Recognizes and identifies to crew indications of PZR LT-110x failure based on B04 alarms and indications.
		Selects the unaffected PZR LT (LT-110y) for Level and Heater control per alarm 4A02B.
		Verifies proper operations of PLCS.
	CRS	Directs alarm response implementation.
		Contacts I&C for support and initiation of repairs.
		Reviews Tech Specs 3.3.3.5, 3.3.3.6 for applicability.

Scenario No.: 1 of 2, Set 2 Event No.: 3 Page 3 of 5

Event Description: Following trip of MFWP "B", small steam leak develops inside CTMT (imf ms01a 10 10:00), ATWS will occur (cae ! atws), CEAs will insert following L03 and L10 de-energization at B01. Two CEAs will fail to insert.

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identify to crew indications of steam leak inside of CTMT based on B05, B06, and B07 alarms and indications for Rx power, CTMT temperature/pressure/humidity and/or sump level trend, SG pressures.
	SO	Initiate Main Turbine load reduction to maintain Rx power stable.
	PO/SO	Recommend manual trip with SIAS/CIAS/MSIS based on CTMT and SG trends.
	CRS	Directs SO to reduce turbine load to maintain Rx power stable.
		Directs manual trip with SIAS/CIAS/MSIS.
	PO/SO	Recognize failure of manual PBs and Auto Trip circuitry to trip the reactor.
		De-energize load centers L03 and L10, then re-energizes them after CEA insertion.
		Recognize and indentifies to crew indications of two stuck CEAs.

enario No.: 1 of 2, Set 2 Event No.: 3 Page 4 of 5

Event Description: Following trip of MFWP "B", small steam leak develops inside CTMT (imf ms01a 10 10:00). ATWS will occur (cae ! atws). CEAs will insert following L03 and L10 de-energization at B01. Two CEAs will fail to insert.

Time	Position	Applicant's Actions or Behavior
	CRS	Directs load centers L03 and L10 de-energized.
		Directs crew to perform Standard Post Trip Actions (SPTAs).
		Directs PO to initiate boration at >26 gpm for two stuck CEAs.
		Goes to Excessive Steam Demand procedure.
		Directs performance of Safety Function Status Checks (SFSC).
	PO	Initiates boration at > 26 gpm for stuck CEAs.

Scenario No.: 1 of 2, Set 2 Event No.: 4 Page 5 of 5

Event Description: Failure of CSAS to properly actuate, CS "A" pump trips (imf cp06:siap03) and CS train "B" header valve sticks (imf mv06:sibuv671) then blow control fuse (imf mv01:sibuv671). Valve will be unable to operate locally.

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognizes and identifies to crew failure of CSAS to properly actuate: 1) CS "A" pump trip, 2) CS "B" train header valve sticks then loss of indication
		Stops all RCPs and closes all Seal Bleedoff valves
	CRS	Directs AO to investigate SIB-UV-671 locally at the valve and at the valve breaker.
		Transitions to the Functional Recovery Procedure (FRP).
		Directs Hydrogen Analyzers to be placed inservice.
		Performs Safety Function Tracking Page and identifies jeopardized safety functions.
		Directs performance of SFSC for the FRP.
		Directs performance of CTPC-2 actions to align LPSI "A" to CS "A" header.
	PO	Perform actions necessary to align LPSI "A" to CS "A" header per CTPC-2.
		Scenario maybe terminated when LPSI "A" is supplying CS "A" header or as deemed appropriate by the exam team.

Simulation Facility: PVNGS _____ Scenario No.: SCN 2 OF 2, SCN SET 2 _____
Examiners: _____ Applicants: CRS - Pat Wiley _____
_____ SO - Jordan Johnston _____
_____ PO - John Aronson (Surrogate) _____
Initial Conditions: 12% power, MOC, Main Generator excited, Rods at group 5 at 83". _____
_____
_____
Turnover: AT 12% power ready for Main Generator synchronization, 40OP-9ZZ04 is completed up through step 4.3.33. Plant management directs you to sync the main generator to the grid using "Comp-Manual" mode and continue with the power increase, 41OP-1MB01 is complete up to step 4.3.15. _____
_____

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N	Synchronize the Main Generator onto the grid.
2	TR01:RCA PT101A	I	PZR WR PT-101A failure.
3	FW05	M	MFW line break on common header.
4	ED16A	C	Loss of PKA-M41/PNA-D25 (PK bus damage).
5	FW25B and FW21B	C	AFB-P01 suction line break/pump motor failure due to water intrusion.
	FW21A	C	AFN-P01 failure due to breaker flash over during manual operations.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Examiner: _____
Chief Examiner: _____

Scenario No.: 2 of 2, Set 2 Event No.: 1 Page 1 of 6

Event Description: Main Generator Synchronization to the grid.

Time	Position	Applicant's Actions or Behavior
	CRS	Review Appendix I of 40OP-9ZZ04 with the crew to ensure understanding.
		Review appropriate sections of 40OP-9ZZ04 for generator sync and load.
		Direct main transformer cooling fans racked in.
		Contact Energy Control Center (ECC) and inform them of plant status.
		Direct main generator be placed inservice per 41OP-1MB01 section 4.3.15.
		Directs actions to close second main generator breaker.
	PO	Adjust CEAs as necessary for reactor power stability and RCS temperature control.
	SO	Set up turbine load limit pot to prevent excessive loading.
		Sync main generator to the grid per 41OP-1MB01 by: 1) Adjusting voltage so incoming and running match, 2) Adjust frequency so sync scope is going slow in fast direction, 3) Close breaker at 12 o'clock position, 4) Pick up required generator load.
		Monitor RCS Temperature and adjust turbine load/SBCS/ and/or steam line drains to maintain RCS temperature at 565 deg.

Scenario No.: 2 of 2, Set 2 Event No.: 2 Page 2 of 6

Event Description: Pressurizer PT-101A fails high (imf tr01:rcapt101a 2500).

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identify to crew failure of PT-101A based on B05 alarms and indications.
	CRS	Directs crew to stabilize plant.
		Direct crew to implement alarm response procedures.
		Reviews Tech Specs 3.3.1 for applicability and determines need to bypass PPS channel "A" parameters 3, 4, and 5.
		Directs PO/SO bypass PPS channel "A" parameters 3, 4, and 5.
	PO/SO	Obtain key and bypasses PPS channel "A" parameters 3, 4, and 5.

Scenario No.: 2 of 2, Set 2 Event No.: 3 Page 3 of 6

Event Description: MFW line break on common header in Turbine Bldg. (imf fw05 100).

Time	Position	Applicant's Actions or Behavior
	SO	Recognize and identifies to crew FWCS trouble/MFW leak based on B07 Turbine Bldg. alarms and B06 FW indications.
		Recommend manual trip based on SG level trends.
	CRS	Directs manual Rx trip based on SG level trends.
		Directs crew to perform Standard Post Trip Actions (SPTAs).
		Directs AO to investigate Turbine Bldg. indications.

Scenario No.: 2 of 2, Set 2 Event No.: 4 Page 4 of 6

Event Description: Loss of PKA-M41/PNA-D25 (PK bus damage - PN Bus recoverable) (imf ed16a).

Time	Position	Applicant's Actions or Behavior
	PO/SO	Recognize and identify to crew loss of PKA/PNA.
		Performs SPTAs
	SO	Recognize and identify to crew loss of AFA-P01 and AFN-P01 and aligns AFB-P01 for RCS heat removal and SG level control.
		Uses "B/D" train ADVs for RCS heat removal.
	CRS	Directs SO to start and align AFB-P01 for RCS heat removal and SG level control.

Scenario No.: 2 of 2, Set 2 Event No.: 5 Page 5 of 6

Event Description: AFB-P01 suction line break (imf fw25b) causing a trip of AFB-P01 due to motor moisture intrusion (imf fw21b 1:00). If local operation attempted, AFN-P01 will have a breaker failure (imf fw21a).

Time	Position	Applicant's Actions or Behavior
	SO	Recognize and identify to crew improper AFB-P01 operation based on pump indications and reports to CRS when AFB-P01 trips.
	CRS	Transitions to Loss of All Feedwater (LOAF) procedure.
		Directs performance of Safety Function Status Checks (SFSC) for LOAF.
		Directs all RCPs be stopped.
		Directs PO/SO to perform steps of Appendix 40 to operate AFA-P01 locally.
		Direct AO to perform Appendix 40 steps and Attachment 40-A.
		Directs PO/SO to perform steps of Appendix 41 to align alternate control power to and then operate AFN-P01 breaker locally.
		When informed of AFN-P01 failure, focuses crew resources on AFA-P01.
		When informed of AFA-P01 operation, directs SO to establish 250 to 1000 gpm AFW flow to each SG.

Scenario No.: 2 of 2, Set 2 Event No.: 5 Page 6 of 6

Event Description: AFB-P01 suction line break (imf fw25b) causing a trip of AFB-P01 due to motor moisture intrusion (imf fw21b 1:00). If local operation attempted, AFN-P01 will have a breaker failure (imf fw21a).

Time	Position	Applicant's Actions or Behavior
	SO	Coordinate with AO for local operation of AFA-P01.
		Requests AO locally open AFA-HV-32 and AFA-HV-37.
		Directs AO to establish AFA-P01 discharge pressure higher than SG pressure.
		Coordinates with AO for local operations of AFN-P01: 1) Alternate control power from PKA-H11, 2) Manual breaker close attempt.
		Scenario maybe terminated when AFA-P01 is providing adequate AFW feed flow to each SG or as deemed appropriate by the exam team.