JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	RO/SRO
Safety Function:	Conduct of Operations
Validated Time:	23 Minutes
References:	NOP-OP-1002 Rev 7, SOI-N35 Rev 19, SOI-C11(CRDH) Rev 21, IOI-3 Rev 47, and TS 3.4.1
Required Material:	None
Task:	299-687-03-01 Report Abnormal Parameters or Conditions
Task Standard:	Identify system/component discrepancies during hourly walkdown
K/A Data:	2.1.18 Ability to make accurate, clear, and concise logs, records, status boards, and reports. Importance: SRO 3.6 SRO 3.8

1. Setup Instructions: Reset to IC 98. Run Schedule file NRC JPM ADM-027_RO.sch. Acknowledge all alarms. Verify Feedwater deviations are nulled. Check Main Gen voltage agrees with Op Aid. Set markers on flow controllers. Place simulator in FREEZE

2. Location / Method: Simulator / Performance

3. Initial Condition: Plant conditions are as found.

4. Initiating Cue: As the on-coming ATC Operator, perform your pre-shift Control Area (horseshoe) walkdown IAW NOP-OP-1002, Conduct of Operations.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

NOP-OP-1002, Conduct of Operations

4.13 Shift Relief and Turnover

4.5.2 Standards

21. Licensed Operators shall conduct a joint Control Room panel walk-down with their relief prior to assuming the shift. During transient conditions the panel walk-downs may be conducted with another off-going crew member.

Standard: Candidate walks-down horseshoe panels for discrepancies and trends.

Instructor Cue: None

Notes: If the Candidate identifies items other than the 4 out of spec items for this JPM, ask him what the significance of the out of spec item and what he would do to correct it.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Observe discrepancy – CRD Drive Pressure

Critical Step: Candidate observes CRD Drive pressure at 350 psid.

Instructor Cue:
1. What the significance of the out of spec drive pressure?
2. What would you do to correct it?
3. Continue with walkdown.

Notes: Normal CRD Drive pressure should be 250-275 psid.

1. It could result in double notching when moving control rods.
2. It is corrected by throttling open on CRD Drive Pressure Control Valve C11-F003. SOI-C11(CRDH Sect 5, Normal Operations Data

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Observe discrepancy – Reactor Recirc Loop Flow mismatch

Critical Step: Candidate observes Reactor Recirc Loop flow mismatch > 5%.

Instructor Cue:
1. What the significance of the loop flow mismatch?
2. What would you do to correct it?
3. Continue with walk-down.

Notes: Normal Loop Flow mismatch should be < 5%.

1. It is a Tech Spec entry condition.
2. It is corrected by adjusting Reactor Recirc Flow Control Valves to balance flows with-in 5% mismatch. SOI-B33 Sect 7, Normal Operations Data.

SAT ___ UNSAT ___

Comment(s):_____

Step 4

Observe discrepancy – Load Set

Critical Step:	Candidate observes Load Set only slightly > load.
Instructor Cue:	1. What the significance of the Load Set setting? 2. What would you do to correct it? 3. Continue with walk-down.
Notes:	Normal Load Set should be set at 120 MWe > load. (Normally set @ 1450 when at 100% power) 1. Rod Withdrawal Limiter is inoperable if a bypass valve opens and power is above the low power setpoint (TS 3.3.2.1). Rod withdrawal is prohibited if bypass valves open. Additionally, if ambient conditions turned colder the generator could pickup more load causing the BPV's to open. If BPV open verify no rod motion. 2. It is corrected by depressing Load Set INCREASE pushbutton until Load set is ~120 MWE > generator load per IOI-0003, Power Changes

SAT ___ UNSAT ___

Comment(s):_____

Step 4

Observe discrepancy – Generator Hydrogen Purity

Critical Step:	Candidate observes Generator H_2 purity in red zone of meter.
Instructor Cue:	1. What the significance of Hydrogen purity? 2. What would you do to correct it? 3. Continue with walk-down.
Notes:	Normal Hydrogen Purity should be at 90% but >70%. 1. If generator Hydrogen purity falls below the upper explosive limit for hydrogen (75%), an explosion could occur. If it can not be maintained > UEL, the generator must be shutdown and purged with CO2. 2. Hydrogen purity is corrected per SOI-N35 Generator Hydrogen Control System

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Horseshoe walkdown is complete and discrepancies have been correctly identified.

Evaluation Results: **SAT_____ UNSAT_____**

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	Plant conditions are as found.
INITIATING CUE:	As the on-coming ATC Operator, perform your pre-shift Control Area (horseshoe) walkdown IAW NOP-OP-1002, Conduct of Operations.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	RO/SRO
Safety Function:	Conduct of Operations
Validated Time:	25 Minutes
References:	ONI-E12-2 Rev 29, PDB-A019 Rev 8, PDB-A017 Rev 11, & PDB-A016 Rev 12
Required Material:	ONI-E12-2, Loss of Decay Heat Removal PDB-A019, Time to Core Uncovery Curves PDB-A017, Pool Heatup Curves PDB-A016, Decay Heat Curve
Task:	299-827-01-01 Demonstrate the Use of PDB Entries in Tabs A, B, C, D, E, F, G, H, and T
Task Standard:	Determine Time to Boil and Time to Core Uncovery.
K/A:	2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. Importance: RO 3.9 SRO 4.2

1. Setup: Provide copies of PDB-A016, A017, & A019 and ONI-E12-2

2. Location / Method: Class Room / Administrative performance.

3. Initial Condition: It is day 25 of Refueling Outage 14. Reactor vessel reassembly is in progress after refueling was completed. Current Reactor level is being maintained near the vessel flange for setting the vessel head. The backup decay heat removal system is unavailable. Thirty minutes ago RHR B tripped with Reactor water temperature of 90°F. Operations and Maintenance personnel are attempting to determine cause. No decay heat removal systems are in service or currently available.

4. Initiating Cue: The Shift Manager directs you to calculate Time to Boil per ONI-E12-2 Loss OF Decay Heat Removal Step 4.4.7. Additionally, determine Time to Core Uncovery from the time RHR B tripped.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

ONI-E12-2, Loss of Decay Heat Removal

4.0 SUPPLEMENTAL ACTIONS

4.4 IF a loss of reactor decay heat removal has occurred, THEN PERFORM the following:

4.4.7 IF in MODE 5 or At All Times, THEN REFER TO the Perry Work Implementation Schedule (PWIS) OR PDB-A0017 and DETERMINE estimated time to boil.

Standard: Obtains and reviews PDB-A0017.

Instructor Cue: If asked, the PWIS is not available.

Notes: When Candidate identifies the correct PDB, provide him with a copy.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Determine PDB-A0016 and PDB-A0019 are also needed.

Standard: Determines that PDB-A0016 and PDB-A0019 are also needed.

Instructor Cue: None

Notes: When Candidate identifies the correct PDB's, provide him with a copy.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Determine Time to Boil.

Critical Step:	Using PDB-A016 p 5 and PDB-A017 p 9 Candidate determines Time To Boil is 8 hours.
Instructor Cue:	None
Notes:	None
SAT ___	**UNSAT ___**
Comment(s):	_____

Step 4

Determine Time To Core Uncovery.

Critical Step:	Using PDB-A016 p 5 and PDB-A019 p 9 Candidate determines Time To Core Uncovery is approximately 43 hours.
Instructor Cue:	None
Notes:	Due to readability of the graph, 42.5-43.5 hours is acceptable.
SAT ___	**UNSAT ___**
Comment(s):	_____

Terminating Cue: Determines Time to Boil and Time to Core Uncovery.

Evaluation Results: **SAT_____** **UNSAT_____**

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	• It is day 25 of Refueling Outage 14. • Reactor vessel reassembly is in progress after refueling was completed. • Current Reactor level is being maintained near the vessel flange for setting the vessel head. • The backup decay heat removal system is unavailable. • Thirty minutes ago RHR B tripped with Reactor water temperature of 90°F. • Operations and Maintenance personnel are attempting to determine cause. • No decay heat removal systems are in service or currently available.
INITIATING CUE:	• The Shift Manager directs you to calculate Time to Boil per ONI-E12-2 Loss OF Decay Heat Removal Step 4.4.7. • Additionally, determine Time to Core Uncovery from the time RHR B tripped.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	P54, Fire Protection System - Water
Time Critical:	No
Alternate Path:	No
Applicability:	SRO only, RO/SRO
Safety Function:	Administrative
Validated Time:	10 Minutes
References:	SOI-P54 (WTR) Rev 16, PAP-1910 Rev 28, & Dwg 914-001 Rev NN
Required Material:	SOI-P54 & Dwg 914-001
Task:	286-505-01-01 Analyze System Problems 286-506-03-01 Inform Unit Supervisor of Inoperable Fire Protection
Task Standard:	Identify boundary for leaking fire protection system component
K/A Data:	2.2.41 - Ability to obtain and interpret station electrical and mechanical drawings. Importance: RO 3.5 SRO 3.9

1. Setup Instructions: None

2. Location / Method: Simulator / Classroom - Administrative Performance

3. Initial Condition: Reports from the field indicate that P54-F3554, Motor to Diesel Fire Pump Xconn Supply to Ring has a thru wall pipe rupture. The Unit Supervisor has ordered all Fire Pumps shutdown to secured status per SOI-P54 Water.

4. Initiating Cue: The Unit Supervisor directs you to determine how P54-F3554 can be isolated.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F3552 is necessary to isolate P54F3554.
Instructor Cue:	When the Candidate determines the correct 914 drawing to use, then provide the drawing to the Candidate if required.
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F3552 coordinates are H-2.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F6371 is necessary to isolate P54F3554.
Instructor Cue:	None
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F6371 coordinates are C-3.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F3555 is necessary to isolate P54F3554.
Instructor Cue:	None
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F3555 coordinates are F-4.

SAT ___ UNSAT ___

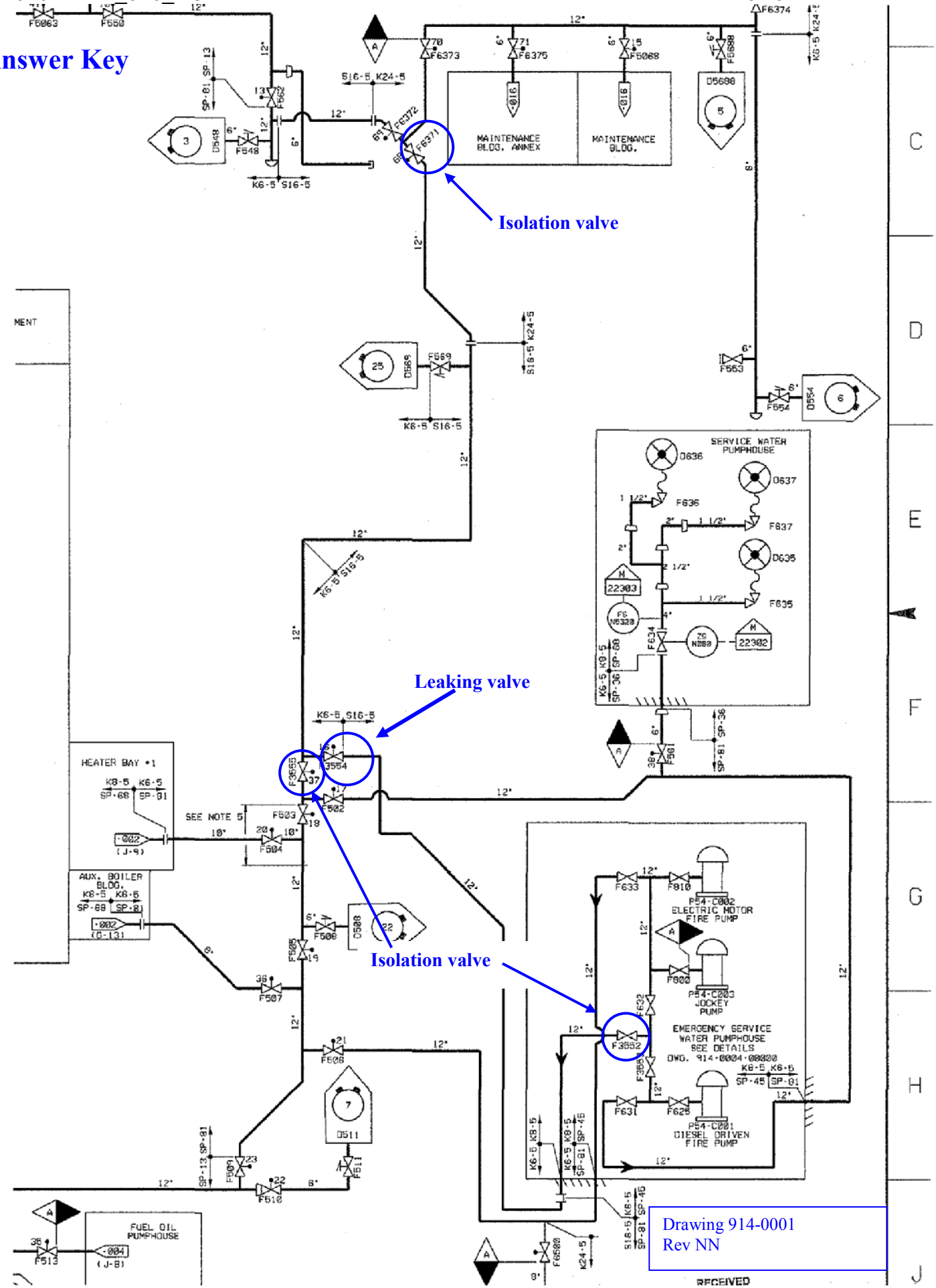
Comment(s):_____

Terminating Cue: The valves needed to isolate the leak have been correctly identified.

Evaluation Results: **SAT_____ UNSAT_____**

End Time _____

Answer Key


Isolation valve
Leaking valve
Isolation valve
MAINTENANCE BLDG. ANNEX
MAINTENANCE BLDG.
SERVICE WATER PUMPHOUSE
HEATER BAY #1
AUX. BOILER BLDG.
FUEL OIL PUMPHOUSE
SEE NOTE 5
P54-C002 ELECTRIC MOTOR FIRE PUMP
P54-C003 JOCKEY PUMP
EMERGENCY SERVICE WATER PUMPHOUSE SEE DETAILS DWG. 914-0004-00000
P54-C001 DIESEL DRIVEN FIRE PUMP
Drawing 914-0001 Rev NN
RECEIVED

JPM CUE SHEET

INITIAL CONDITIONS:	• Reports from the field indicate that P54-F3554, Motor to Diesel Fire Pump Xconn Supply to Ring has a thru wall pipe rupture. • The Unit Supervisor has ordered all Fire Pumps shutdown to secured status per SOI-P54 Water.
INITIATING CUE:	Unit Supervisor directs you to determine how P54-F3554 can be isolated.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	RO/ SRO
Safety Function:	Radiation Control
Validated Time:	14 Minutes
References:	Dwg 304-625 Rev J VSDS IB-599 Survey Map
Required Material:	IB-599 Survey Map, Calculator
Task:	299-502-03-01 Maintain Radiation Exposure as Low as Reasonably Achievable (ALARA) 299-848-01-01 Comply with the Administrative Requirements for the Perry Plant Radiation Dose Control Program
Task Standard:	Determine radiological conditions and calculate dose.
K/A:	2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. Importance: RO 3.5 SRO 3.6

1. Simulator Setup: N/A

2. Location / Method: Class Room / Administrative performance.

3. Initial Condition: While investigating a leak in the FPCC Heat Exchanger Room, an NLO became incapacitated against the east wall near the "A" HX. He is unable to move. Another NLO was unable to move him, but stated that he is directly below the P42-F440 valve. The NLO has suffered unknown injuries. You and a Fire Brigade member will stabilize and rescue the NLO.

4. Initiating Cue: Review the survey map for the FPCC HX Room and determine the following using the most direct route to get to the injured person:
   1. What is the highest contamination level?
   2. What is the highest contact radiation level?
   3. What is the highest general area dose rate level?
   4 What is the estimated dose if it takes you 8 minutes to stabilize and prepare to remove the NLO? (Disregard dose for traveling to and from door to the NLO.)

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

Determine the highest contamination level on travel route.

Critical Step: Determines the highest contamination level is 5000 DPM/100 cm^2 at smear location 3.

Instructor Cue: None

Notes: None

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Determine the highest contact radiation level.

Critical Step: Determines the highest contact radiation level is 80 mr/hr at DR-7.

Instructor Cue: None

Notes: The contact dose readings are lower than the 30 cm readings due to the 30 cm reading being taken closer to the HX.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Determine the highest general area dose rate level.

Critical Step:	Determines the highest general area dose rate level is 350 mr/hr at DR-5.
Instructor Cue:	None
Notes:	None

SAT ___ UNSAT ___

Comment(s):_____

Step 4

Determine the estimated dose to stabilize and prepare to remove NLO Roberts.

Critical Step:	Calculates the dose to stabilize and prepare to remove NLO.
Instructor Cue:	None
Notes:	Dose 30 cm from P42-F440 is 100 mr/hr @ 8 min = 13.3 mr each. (13 to 14 mr is acceptable)

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Determines highest contamination level, contact dose rate, general area dose, and dose received.

Evaluation Results: **SAT_____ UNSAT_____**

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	• While investigating a leak in the FPCC Heat Exchanger Room, an NLO became incapacitated against the east wall near the "A" HX. • He is unable to move. • Another NLO was unable to move him, but stated that he is directly below the P42-F440 valve. • The NLO has suffered unknown injuries. • You and a Fire Brigade member will stabilize and rescue the NLO.
INITIATING CUE:	Review the survey map for the FPCC HX Room and determine the following using the most direct route to get to the injured person: 1. What is the highest contamination level? 2. What is the highest contact radiation level? 3. What is the highest general area dose rate level? 4 What is the estimated dose if it takes you 8 minutes to stabilize and prepare to remove the NLO? (Disregard dose for traveling to and from door to the NLO.)

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	SRO only
Safety Function:	N/A
Validated Time:	20 Minutes
References:	PAP-1604 Rev 24
Required Material:	PAP-1604, Reports Management
Task:	341-640-03-02 Evaluate each Event or Condition under the Notification Requirements specified in Attachment 1 of PAP-1604 for Reportability
Task Standard:	Perform a reportability evaluation of an RPS actuation
K/A:	2.1.18 Ability to make accurate, clear, and concise logs, records, status boards, and reports. Importance SRO 3.8

1. Setup Instructions: None

2. Location / Method: Classroom / Administrative Performance

3. Initial Condition: Plant shutdown for a refuel outage was in progress. The shutdown schedule called for power to be reduced to 20% and then a manual reactor scram was to be inserted. Thirty minutes ago while shifting reactor feed pumps, a problem with Digital Feedwater Control System resulted in an excessive feed rate and a rising RPV level. The ATC inserted a manual reactor scram prior to reaching Level 8. Reactor power at the time of the scram was 30%. Manual control of DFWCS was regained following the scram and plant conditions are now stable.

4. Initiating Cue: As the Shift Manager, assess the situation and perform the required off-site notifications.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

PAP-1604, Reports Management

4.2 Immediate Notifications

4.2.1 Shift Manager

1. Ensure that each event or condition is evaluated under the notification requirements specified in Attachment 1.

Critical Step:	Evaluate PAP-1604, Attachment 1, and determines that a Four Hour (10CFR50.72 Non-Emergency) Notification is required due to the RPS actuation (when the reactor is critical).
Instructor Cue:	After Candidate determines that a Four Hour Notification is necessary tell him to perform any required notifications to the NRC Operations Center.
Notes:	The Candidate must determine that the manual reactor scram was not part of the pre-planned shutdown sequence. The 4-hour Notifications should be documented on the form.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

2. Ensure that the required notifications are made within the specified time requirements to the NRC Operations Center via the Emergency Notification System (ENS) unless otherwise specified in Attachment 1.

Critical Step: Determine that the notification is due four hours from the time of the manual reactor scram.

Instructor Cue: What is the latest time the Notification can be made?

Notes: The limiting Notification is the 4-hour Notification

SAT ___ UNSAT ___

Comment(s):_____

Step 3

3. Ensure that information provided to the NRC is recorded on an Event Notification form PNPP No. 6912 including any additional information requested by the NRC Duty Officer.

Critical Step: Fill in Form PNPP No. 6912, Initial Notification.

Instructor Cue: If asked, inform the Candidate that the Condition Report (CR) has not yet been written.

Notes:

- Only the RPS Actuation box is the critical step for the completion of the form.
- See attached copy of completed Form PNPP No. 6912, Event Notification, in order to verify proper completion of the Form.
- When Candidate identifies the need for Form PNPP No. 6912 and where he can obtain it, hand the Candidate a blank form.
- The Candidate is only required to complete Form PNPP No. 6912 through the completion of the Description block.

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Form PNPP No. 6912, Event Notification, is properly filled out through the completion of the Description block.

Evaluation Results: **SAT_____** **UNSAT_____**

End Time _____

Answer Key

EVENT NOTIFICATION

Perry Nuclear Power Plant

PNPP No. 6912 Rev. 6/22/12 Unit 1 Page 1 of 2 PAP-1604

Caller's Name/Signature	Title **Shift Manager**	Time/Date of Call

Event Time & Zone	Event Date	Power/Mode Before	Power/Mode After
Eastern	**/ /2013**	**Mode 1**	**Mode 3**

	EVENT CLASSIFICATION	
	General Emergency	GEN/AAEC
	Site Area Emergency	SIT/AAEC
	Alert	ALE/AAEC
	Unusual Event	UNU/AAEC
X	50.72 Non-Emergency (see next columns)	
	Physical Security (73.71)	DDDD
	Material/Exposure	B???
	Fitness for Duty	HFIT
	Other (see last column)	
	Information Only	NNF

	1-Hr Non-Emergency 10 CFR 50.72 (b)(1)		
	TS Deviation		ADEV
	4-Hr Non-Emergency 10 CFR 50.72(b)(2)		
	(i)	TS Required S/D	ASHU
	(iv)(A)	ECCS Discharge to RCS	ACCS
X	(iv)(B)	RPS Actuation (scram)	ARPS
	(xi)	Offsite Notification	APRE
	8-Hr Non-Emergency 10 CFR 50.72(b)(3)		
	(ii)(A)	Degraded Condition	ADEG
	(ii)(B)	Unanalyzed Condition	AUNA
	(iv)(A)	Specified System Actuation	AESF

	(v)(A)	Safe S/D Capability	AINA
	(v)(B)	RHR Capability	AINB
	(v)(C)	Control of Rad Release	AINC
	(v)(D)	Accident Mitigation	AIND
	(xii)	Offsite Medical	AMED
	(xiii)	Lost Comm/Asmt/Resp	ACOM
	60-Day Optional 10 CFR 50.73(a)(1)		
		Invalid Specified System Actuation	AINV
	Other Unspecified Requirement (Identify)		
		10 CFR 50.72(c)	NONR
			NONR

DESCRIPTION

Include: Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

CR No.

Manual actuation of the Reactor Protection System (RPS) due to a failure of the feedwater level control system.

NOTIFICATIONS	YES	NO	WILL BE
NRC Resident			
State(s)			
Local			
Other Gov Agencies			
Media/Press Release			

Anything unusual or not understood?	Yes *(Explain above)*	No
Did all systems function as required?	Yes	No *(Explain above)*
Mode of operation until corrected:	Estimated Restart Date:	Additional info on back? ☐ Yes ☐ No

Other Information Requested by NRC:

Name of Individual Contacted:	ENF No.

Answer Key

EVENT NOTIFICATION

PNPP No. 6912 Rev. 6/22/12 — ADDITIONAL INFORMATION — Page 2 of 2 — PAP-1604

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS *(specific details/explanations should be covered in event description)*

Liquid Release	Gaseous Release	Unplanned Release	Planned Release	Ongoing	Terminated
Monitored	Unmonitored	Offsite Release	T.S. Exceeded	RM Alarms	Areas Evacuated
Personnel Exposed or Contaminated		Offsite Protective Actions Recommended		*State release path in description	

	Release Rate (Ci/sec)	% T.S. Limit	HOO Guide	Total Activity (Ci)	% T.S. Limit	HOO Guide
Noble Gas			0.1 Ci/sec			1000 Ci
Iodine			10 uCi/sec			0.01 Ci
Particulate			1 uCi/sec			1 mCi
Liquid *(excluding tritium & dissolved noble gases)*			10 uCi/min			0.1 Ci
Liquid (tritium)			0.2 Ci/min			5 Ci
Total Activity						

	Plant Stack	Condenser/Air Ejector	Main Steam Line	Other
RAD Monitor Readings:				
Alarm Setpoints:				
% T.S. Limit *(if applicable)*				

RCS TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS: *(specific details/explanations should be covered in event description)*

Location of the Leak *(e.g., valve, pipe, etc.)*:

Leak Rate:	Units: gpm/gpd	T.S. Limits:	Sudden or Long Term Development:
Leak Start Date:	Time:	Coolant Activity & Units:	

List of Safety Related Equipment Not Operational:

EVENT DESCRIPTION *(Continued from front)*

JPM CUE SHEET

INITIAL CONDITIONS:	• Plant shutdown for a refuel outage was in progress. • The shutdown schedule called for power to be reduced to 20% and then a manual reactor scram was to be inserted. • Thirty minutes ago while shifting reactor feed pumps, a problem with Digital Feedwater Control System resulted in an excessive feed rate and rising RPV level. • The ATC inserted a manual reactor scram prior to reaching Level 8. Reactor power at the time of the scram was 30%. • Manual control of DFWCS was regained following the scram and plant conditions are now stable.
INITIATING CUE:	As the Shift Manager, assess the situation and perform the required off-site notifications.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Applicability:	SRO
Safety Function:	Conduct Of Operations
Setting:	Classroom / Simulator
Validated:	15 minutes
References:	SOI-F15 Rev. 16
Required Material	SOI-F15 - Refueling And 360 Platforms
Tasks:	234-521-04-02 Operate the Refueling Platform In Interlock Override 046-550-04-04 Respond to Alarms Associated With the Refuel Bridge and Fuel Handling Bridge
Task Standard:	Determine actions required for Refuel Bridge PLC failure with fuel suspended and identify the safe location for the fuel.
K/A Data:	2.1.36 Knowledge of procedures and limitations involved in core alterations. Importance Rating: SRO 4.1 2.1.42 Knowledge of new and spent fuel movement procedures. Importance Rating: SRO 3.4

1. Instructions: Ensure "Required Material" available at JPM site.

2. Location / Method: Simulator or Control Room / Administrative performance.

3. Initial Condition: Plant is in Mode 5 with refueling operations in progress. A new fuel bundle is being moved from IFTS to Reactor location 17-38 IAW Fuel Movement Checklist Step 306. IFTS carriage is now located in the FHB. A Refuel Platform PLC failure occurs and the Refuel Platform has stopped in the position shown on the attached drawing.

4. Initiating Cue: As the Refueling Supervisor, determine the actions required.

Start Time _____ **End Time** _____

Candidate _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

Determine the actions are required to move the Refuel Platform and authorization.

SOI-F15, Refueling And 360 Platforms

7.15 Operating The Refueling Platform In Interlock Override

NOTE
Except for testing, the Interlock Override Key Switch shall only be used in the event of a PLC failure to move the bridge and grappled components. The Interlock Override Key Switch shall only be used as directed by the Refueling Supervisor or Control Room Supervisor.

Critical Step: Operator determines that SOI-F15 Section 7.15 Operating The Refueling Platform In Interlock Override is appropriate. And the

Refueling Supervisor or the Unit Supervisor must authorize override.

Instructor Cue: Who can authorize going to interlock override?

Notes: None

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Determine where the new fuel bundle can be placed.

7.15 Operating The Refueling Platform In Interlock Override

NOTE
The following conditions of the Fuel or Core Components are defined as 'safe' for the purposes of this instruction:
- Properly seated in the reactor vessel (only if all refueling interlocks are available).
- Properly seated in a designated storage location.
- Properly seated in the IFTS carriage with the carriage at the "AT CONTAINMENT" position with the Upender inclined.
- Properly seated in the IFTS carriage with the carriage at the "AT FUEL BUILDING" position with the Upender inclined.
- Fuel bundles in the Fuel Preparation Machines to their full down position.

7.15.3 IF a fuel bundle OR any other core component is hoisted, THEN PLACE the hoisted component to a safe condition as directed by the Refueling Supervisor.

Critical Step:	Operator determines that the fuel bundle must be properly seated in a designated storage location (RP-1)
Instructor Cue:	• Where can the new fuel bundle be placed? • If Candidate contacts Unit Supervisor about bridge operability, respond that the US will evaluate Tech Specs.
Notes:	When the Operator has identified the correct SOI Section, authorization requirements, and proper storage location, terminate the JPM

SAT ___ UNSAT ___

Comment(s):_____

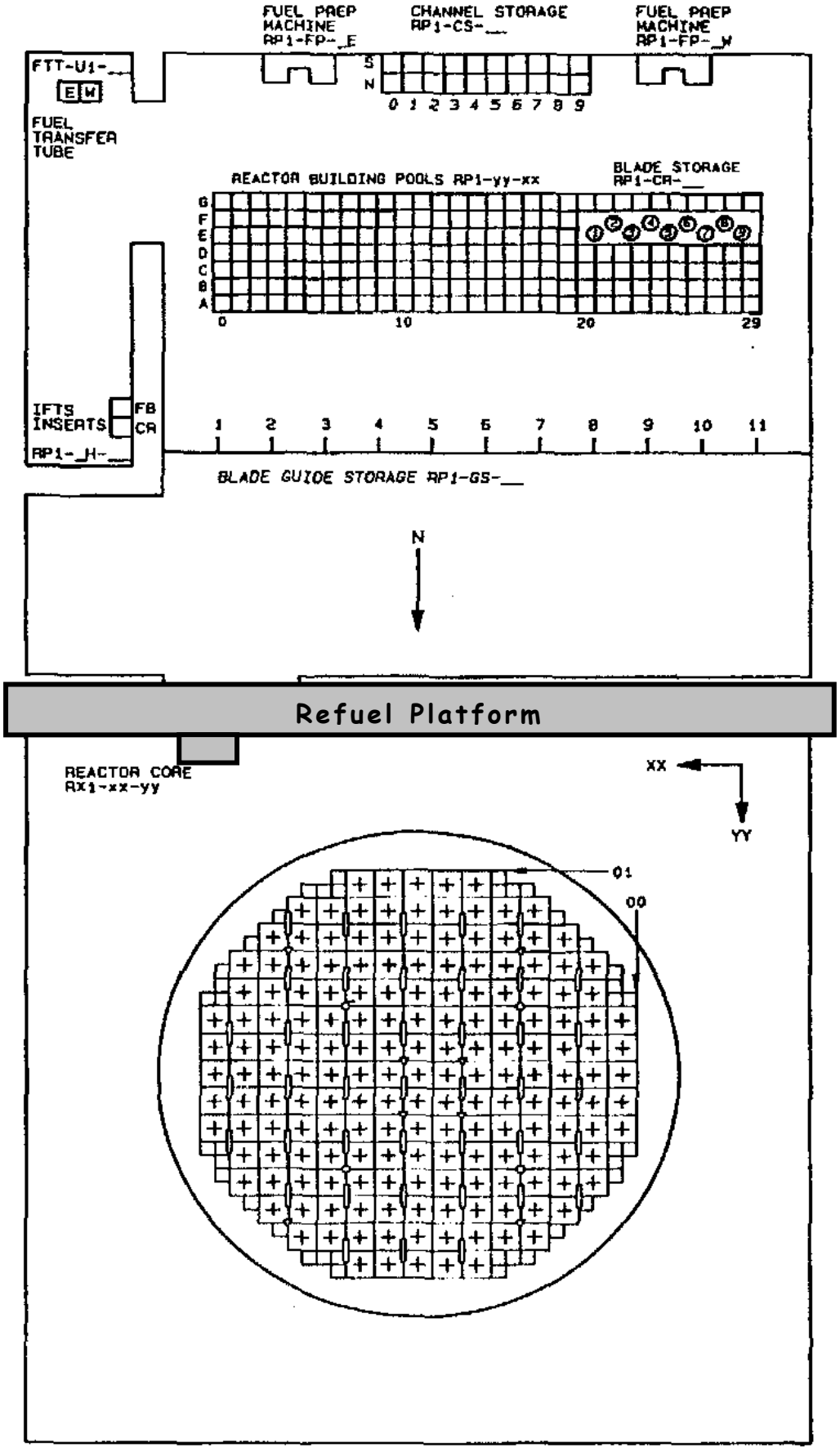
Terminating Cue: Operator determines that SOI-F15 section 7.15 has the steps to perform the movement and the Refueling Supervisor or Control Room Unit Supervisor can authorize the override and the bundle can be place in RP-1 or designated storage location.

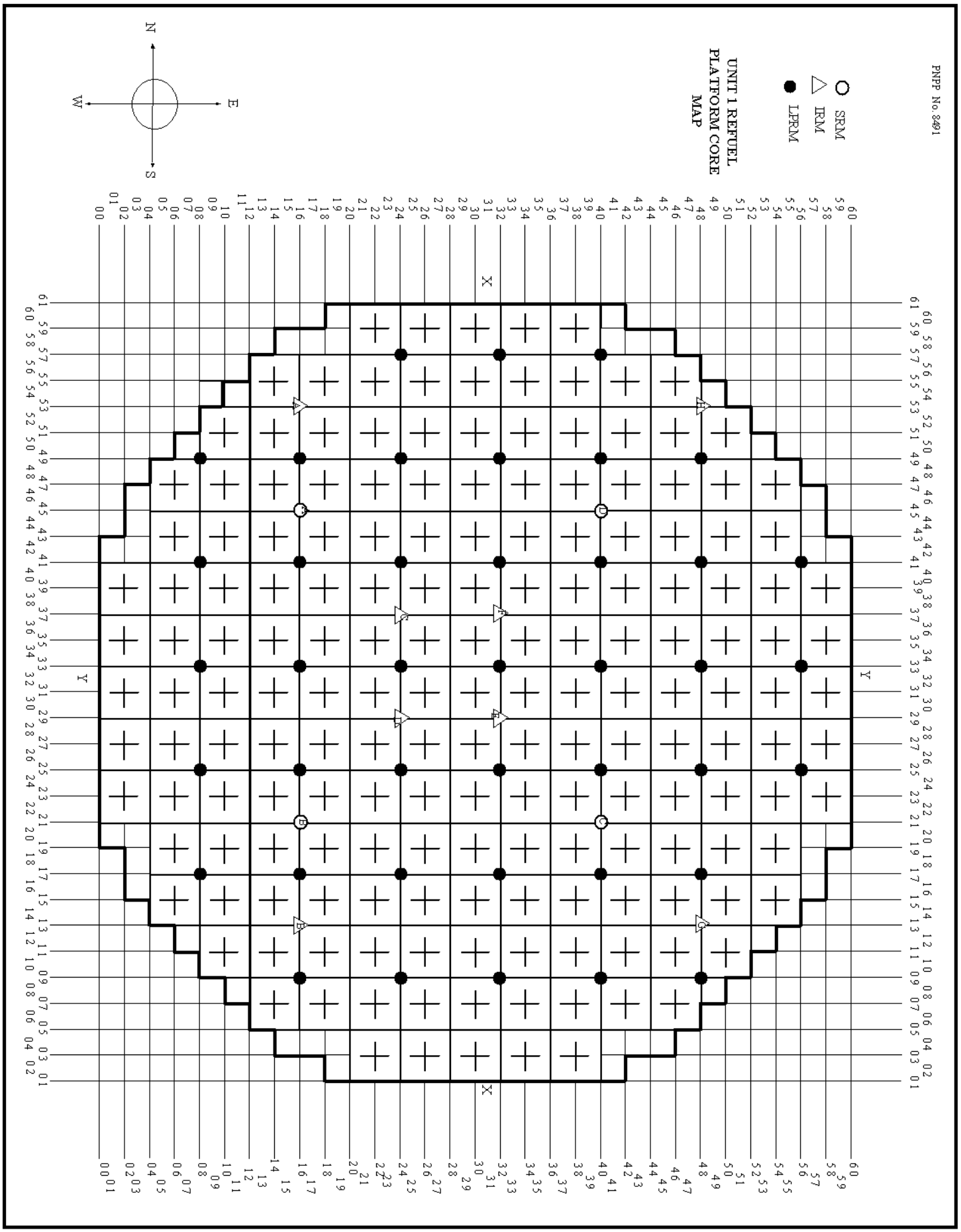
Evaluation Results: **SAT_____** **UNSAT_____**

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	• Plant is in Mode 5 with refueling operations in progress. • A new fuel bundle is being moved from IFTS to Reactor location 17-38 IAW Fuel Movement Checklist Step 306. • IFTS carriage is now located in the FHB. • A Refuel Platform PLC failure occurs and the Refuel Platform has stopped in the position shown on the attached drawing.
INITIATING CUE:	As the Refueling Supervisor, determine the actions required.


FUEL PREP MACHINE RP1-FP-_E
CHANNEL STORAGE RP1-CS-__
FUEL PREP MACHINE RP1-FP-_W
FTT-U1-_
E W
FUEL TRANSFER TUBE
S
N
0 1 2 3 4 5 6 7 8 9
REACTOR BUILDING POOLS RP1-yy-xx
BLADE STORAGE RP1-CR-__
G F E D C B A
0 10 20 29
IFTS INSERTS
FB CR
RP1-_H-__
1 2 3 4 5 6 7 8 9 10 11
BLADE GUIDE STORAGE RP1-GS-__
N
Refuel Platform
REACTOR CORE RX1-xx-yy
XX
YY
01
00


PNPP No. 8491
UNIT 1 REFUEL
PLATFORM CORE
MAP
SRM
IRM
LPRM
N
S
E
W
X
Y

FUEL MOVEMENT CHECKLIST

REFUEL FLOOR CHECKLIST
PAGES 1 TO 182
STEPS 2 TO 1860
Yesterday 15:01

The purpose of this FMC is to support refueling activities in 1R13. It shall be executed in accordance with FTI-D0009, SOI-F0015, SOI-F0042, and 101-0009.

The Maintenance Window for control rod blades and drive mechanisms, and SRM and IRM visual inspections is reached when Step 495 is completed and stays open through Step 1071.

Steps 1072 through 1074 (which move only single blade guides) may be completed any time after the SRM and IRM dry tube inspections have been completed but must be completed before the LPRM dry tube replacements begin.

Phase 2 commences with Step 1075 and ends with Step 1845.

Steps 1854 through 1860 configure the half blade guides in RPI. Since these half blade guides are not used during the outage, these steps may be completed at any convenient time.

In Phase 1, if any SRM becomes inoperable, contact Reactor Engineering to determine if fuel moves may be continued in another quadrant, and any limitations to changing quadrants. No changes are permitted in Phase 2.

Phase 2 peripheral camera inspections for uncontrolled bundle seating are noted on the FMC. Seating checks are performed after step has been completed.

The quadrants for I RI 3 are defined by the North/South line along coordinate 30 and the East/West line along coordinate 31. This makes control rod 30-3 1 the center of the core. This is a change from 1 RI 2.

If a planned location in the containment pool (RP1) is not usable, any unused location in RP1 may be used for a FREE MOVE. Note that the furthest East column is designated 00 (not 01).

FUEL MOVEMENT CHECKLIST

REFUEL FLOOR CHECKLIST
PAGES 1 TO 182
STEPS 2 TO 1860
Yesterday 15:01

Notify Reactor Engineering any time a Free Move is used and cleared.

Orientation in RP1 is in accordance with the direction of the bridge supervisor.

Transfer Tube steps may be performed any time the appropriate component is loaded in the carriage.

☐ Fuel movement does not involve invessel fuel moves.
☐ Fuel movement only removes fuel from core.
☐ Fuel movement only reloads core to BOC pattern.
☒ Fuel movement involves a shuffle through intermediate loading patterns.
Minimum SDM = 1.0 % dk/k

Reference Tech Spec SR 3.1.1.1 concerning the above requirements.

PREPARED BY: *Chuck R. Enginer*
REVIEWED BY: *Pat B. Peer*
APPROVED BY: *P. J. Supe* DATE: *Yesterday*

FMC COMPLETE: _____ DATE: _____

CHANGE HISTORY:

FENOC - - PNPP
NUCLEAR FUEL ACCOUNTING
FUEL MOVEMENT CHECKLIST – Refuel Floor FMC

14-Apr-2011 15:01 Page 65

STEP	COMPONENT	FROM LOCATION	FREE MOVE INIT/DATE	TO LOCATION	ORIENT	INIT	DATE
295	12P400	FTT U1-E	_____ / _____	RX1 45-36	SE	RJO	Today
296	12P499	RX1 05-14	_____ / _____	RX1 55-14	NW	RJO	Today
306	14P046	FTT U1-E	_____ / _____	RX1 17-38	SE	____	_____
306.5		TRANSFER FUEL CARRIAGE DOWN TO FHB				RJO	Today
307	14P038	RP1 B-01	_____ / _____	RX1 47-34	NW	____	_____
311	13P907	RX1 43-30	_____ / _____	RX1 43-20	SW	____	_____
311	13P911	RX1 41-18	_____ / _____	RX1 43-20	NE	____	_____
315	FBG	RX1 41-20 RX1 42-18		RX1 37-56 RX1 39-54		____	_____
316	14P046	RX1 59-24	_____ / _____	FTT U1-W		____	_____
317	14P046	FTT U1-E	_____ / _____	RX1 45-36	SE	____	_____

JOB PERFORMANCE MEASURE SETUP SHEET

System:	P54, Fire Protection System - Water
Time Critical:	No
Alternate Path:	No
Applicability:	SRO only, RO/SRO
Safety Function:	Administrative
Validated Time:	22 Minutes
References:	SOI-P54 (WTR) Rev 16, PAP-1910 Rev 28, & Dwg 914-001 Rev NN
Required Material:	SOI-P54 & Dwg 914-001
Task:	286-505-01-01 Analyze System Problems 286-506-03-01 Inform Unit Supervisor of Inoperable Fire Protection 343-684-03-02 Determine Required Actions for an Unplanned Fire Impairment / Barrier Removal When the P54 RSE is not Available
Task Standard:	Identify boundary for leaking fire protection system component and determine Required Actions for an Unplanned Fire Impairment.
K/A Data:	2.2.41 - Ability to obtain and interpret station electrical and mechanical drawings. Importance SRO 3.9 2.2.38 - Knowledge of conditions and limitations in the facility license. |Importance SRO 4.5

1. Setup Instructions: None

2. Location / Method: Simulator / Classroom - Administrative Performance

3. Initial Condition: The Plant is at rated power. Reports from the field indicate that P54-F3554, Motor to Diesel Fire Pump Xconn Supply to Ring has a thru wall pipe rupture. The Unit Supervisor has ordered all Fire Pumps shutdown to secured status per SOI-P54 Water.

4. Initiating Cue: As the Unit Supervisor, determine:
   1) How P54-F3554 can be isolated.
   2) What Fire Protection Functional Specification(s) is the plant currently in per PAP-1910?

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F3552 is necessary to isolate P54F3554.
Instructor Cue:	When the Candidate determines the correct 914 drawing to use, then provide the drawing to the Candidate if required
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F3552 coordinates are H-2.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F6371 is necessary to isolate P54F3554.
Instructor Cue:	None
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F6371 coordinates are C-3.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Evaluate Leak Isolation, Drawing 914-0001-0000 Rev NN, Fire Service Yard Area

Critical Step:	Candidate obtains drawing and determines that closing P54-F3555 is necessary to isolate P54F3554.
Instructor Cue:	None
Notes:	JPM Steps 1, 2, & 3 can be performed in any order. P54-F3554 coordinates are F-4 and P54-F3555 coordinates are F-4.

SAT ___ UNSAT ___

Comment(s):_____

Step 4

PAP-1910 Fire Protection Program

Attachment 3, Section 3.A Fire Suppression Water Supply

Determine Fire Protection Functional Specifications: Current Specification, prior to isolation and restoration:

Critical Step:	Candidate determines that both fire pumps are not functional and determines Actions for Not Functional are: D.2).a.(1) 24 hours to establish backup system or D.2)a.(2) Enter LCO 3.0.3.
Instructor Cue:	Plant is in Mode 1
Notes:	PAP 1910 page 67, with both pumps in secured status, pumps are not capable of auto starting, therefore, not functional.

SAT ___ UNSAT ___

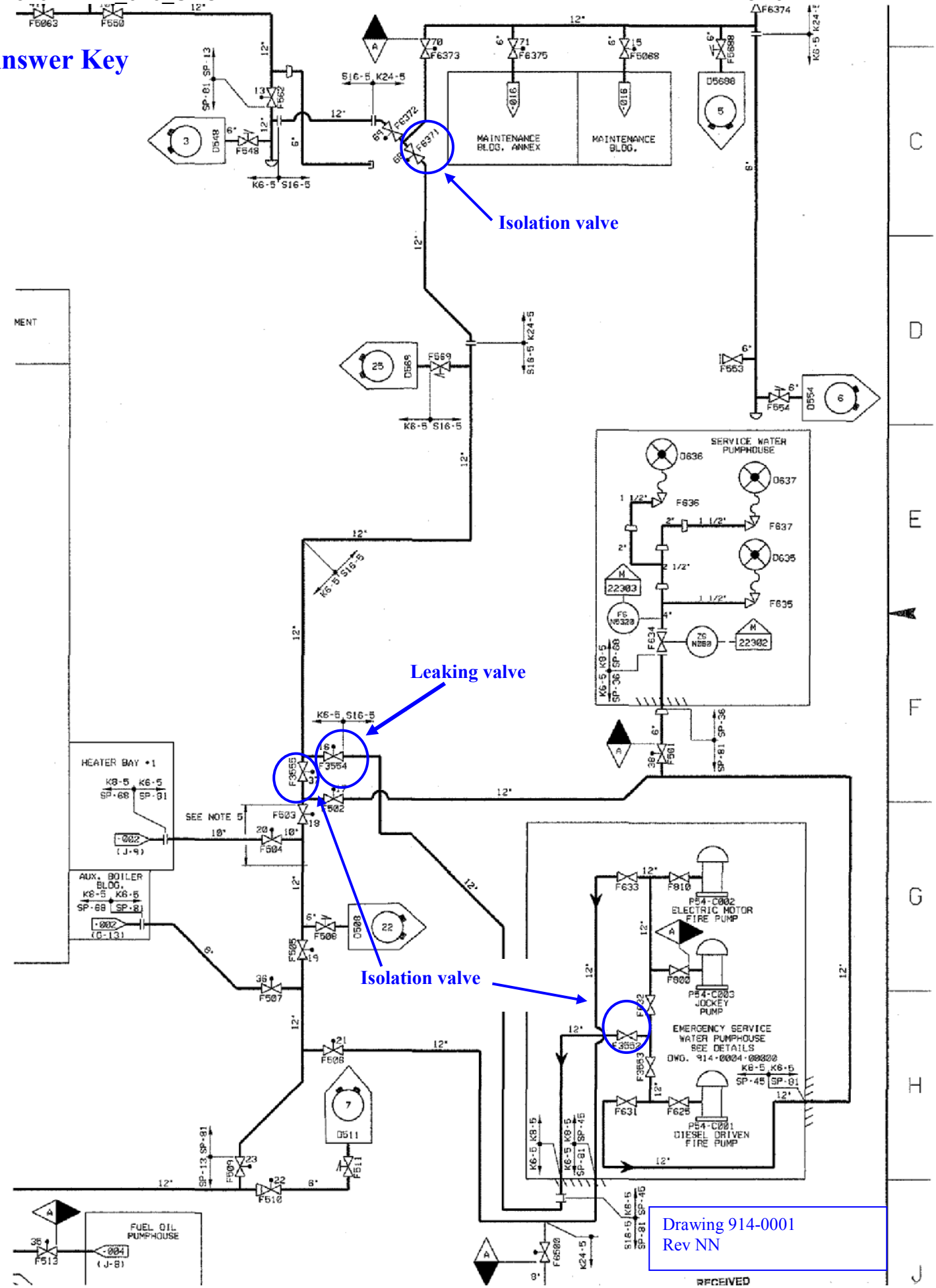
Comment(s):_____

Terminating Cue: The valves needed to isolate the leak have been correctly identified and the correct Functional Specifications for the loss of Fire Suppression Equipment have been identified.

Evaluation Results: SAT_____ UNSAT_____

End Time _____

Answer Key


Isolation valve
Leaking valve
Isolation valve
MAINTENANCE BLDG. ANNEX
MAINTENANCE BLDG.
SERVICE WATER PUMPHOUSE
HEATER BAY #1
AUX. BOILER BLDG.
FUEL OIL PUMPHOUSE
SEE NOTE 5
P54-C002 ELECTRIC MOTOR FIRE PUMP
P54-C003 JOCKEY PUMP
EMERGENCY SERVICE WATER PUMPHOUSE SEE DETAILS DWG. 914-0004-00000
P54-C001 DIESEL DRIVEN FIRE PUMP
Drawing 914-0001 Rev NN
RECEIVED

JPM CUE SHEET

INITIAL CONDITIONS:	• The Plant is at rated power. • Reports from the field indicate that P54-F3554, Motor to Diesel Fire Pump Xconn Supply to Ring has a thru wall pipe rupture. • The Unit Supervisor has ordered all Fire Pumps shutdown to secured status per SOI-P54 Water.
INITIATING CUE:	As the Unit Supervisor, determine: 1) How P54-F3554 can be isolated. 2) What Fire Protection Functional Specification(s) is the plant currently in per PAP-1910?

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	SRO only
Safety Function:	Radiation Control
Validated Time:	15 Minutes
References:	HPI-B0003 Rev 27 Form 10136 Rev 7/26/01
Required Material:	HPI-B0003, Processing of Personnel Dosimetry Form PNPP 10136, Emergency Dose Authorization
Task:	344-511-05-03 Request and Authorize increased exposure limits for emergency responders during emergency events. 451-656-05-50 Discuss TSC or CR EC responsibilities for authorization plans personnel to receive dose in excess of 10CFR20 limits under emergency situations.
Task Standard:	Determine if an Operator can perform an emergency evolution due to radiation levels and complete an Emergency Dose Authorization if evolution can be performed.
K/A:	2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. Importance: SRO 3.7

JOB PERFORMANCE MEASURE SETUP SHEET Cont

1. Setup: Ensure "Required Material" available at JPM site.

2. Location / Method: Class Room / Administrative performance.

3. Initial Condition: The plant is in an Unusual Event due to lowering Spent Fuel Pool level. No facilities are currently activated and Emergency Coordinator duties remain in the Control Room. While investigating a leak in the FPCC Heat Exchanger Room, an NLO (Roberts) became pinned against the east wall near the "A" HX when a scaffold supporting lead blankets collapsed. Due to the weight of the blankets he is unable to move, but is shielded. He has suffered potentially life threatening injuries. You must assign two operators to rescue NLO Roberts. RP Supervision informs you that travel path dose rates are 3 REM/hr to NLO Roberts and 60 REM/hr where NLO Roberts is located. It is estimated that total travel time to and from NLO Roberts is 5 minutes (2&½ minutes each way) and it will take 30 minutes to move the blankets and rescue NLO Roberts.

   The four operators available for this assignment are Bob Smith, Bill Johnson, and Ray Jones.

   Bob Smith is 52 years old and has a life time dose of 7.2 Rem. Bob has a year to date dose of 20 mrem. Bob has not volunteered for this assignment.

   Bill Johnson is 34 years old and has a life time dose of 16.5 Rem. Bill has a year to date dose of 200 mrem. Bill has volunteered for this assignment.

   Ray Jones is 28 years old and has a life time dose of 700 mrem. Ray has a year to date dose of 100 mrem. Ray has volunteered for this assignment.

   Tom Bell is 21 years old and has a lifetime dose of 128 mrem. Tom has a year to date dose of 23 merm. Tom has not volunteered for this assignment.

4. Initiating Cue: Assign two of these operators to rescue the NLO Roberts and complete and approve the Perry Emergency Dose Authorization form PNPP 10136.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

Determine the radiation dose that will be received.

Critical Step: Determine dose to be received by the rescue operators.

Instructor Cue: None

Notes: 3 REM/60 min*5 min=0.25 REM.
60 REM/60 min* 30 min =30 REM
Total dose = 30.25 REM per rescuer

SAT ___ UNSAT ___

Comment(s):_____

Step 2

Determine that the rescuers may receive greater than 25 REM for lifesaving if he is a volunteer.

Critical Step: Determines that Bill Johnson and Ray Jones will rescue the NLO Roberts.

Instructor Cue: None

Notes: Do not give Dose Authorization Form to Candidate until after he determines who can perform rescue.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Complete Emergency Dose Authorization (Form # - PNPP 10136)

Critical Step:	Fill in NAME, CURRENT YEAR DOSE, LIFETIME DOSE, & LEVEL APPROVED on form PNPP 10136. Approve the Emergency Dose Authorization
Instructor Cue:	If asked, Jones' SSN is 555-55-5551 and Johnson's SSN is 555-55-5552 If asked, acting as Jones & Johnson, sign for Jones & Johnson.
Notes:	Level approved needs to be ≥ 30.25 Rem. No signatures are required in the REQUEST block, but if requested, sign as RP supervisor.

SAT ___ UNSAT ___

Comment(s):_____

Step 4

Approve Emergency Dose Authorization (Form # - PNPP 10136) as Shift Manager acting as Emergency Coordinator.

Critical Step:	Approve the Emergency Dose Authorization form PNPP 10136 in the APPROVAL Section
Instructor Cue:	None
Notes:	None

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Assigns Ray Jones & Bill Johnson to rescue the NLO ROBERTS and approve the Emergency Dose Authorization.

Evaluation Results: **SAT_____ UNSAT_____**

End Time _____

EMERGENCY DOSE AUTHORIZATION

PNPP No. 10136 Rev. 7/26/01 HPI B-0003

REQUEST

INCREASE IS REQUIRED TO SUPPORT THE FOLLOWING EMERGENCY OPERATIONS: _____

Rescue NLO Roberts from FPCC HX Room

Name	SSN	Current Year – All Facilities	Lifetime required to exceed 5 rem	Signature Required to exceed 5 rem	Level Approved
Ray Jones	**555-55-5551**	**100 mRem**	**700 mRem**		**(≥) 30.25 Rem**
Bill Johnson	**555-55-5552**	**200 mRem**	**16.5 Rem**		**(≥) 30.25 Rem**

OSC Support Supervisor/*Operations Shift Manager*:

N/A_____
Print / Signature *Date*

Health Physics Support Supervisor/*Shift Health Physics Supervisor*:

N/A_____
Print / Signature *Date*

LIMITS TEDE:

10CFR20 – 5 rem Services – 5 rem Valuable Property – 10 rem Large Pop. or Lifesaving – 25 rem*

* If persons have volunteered to perform lifesaving activities or protect large populations and are fully aware of the risks involved the above dose limits may be exceeded. Doses should be limited to the lowest practicable.

Operations Shift Manager and Shift Health Physics Supervisor should submit Emergency Dose Authorizations prior to OSC activation.

APPROVAL

TSC Operations Manager/*Operations Shift Manager*:

_____ _____
Print / Signature *Date*

Radiation Protection Coordinator/*Supervision, RP*:

_____
Print / Signature *Date*

Operations Shift Manager and Supervision, RP should approve Emergency Dose Authorizations prior to TSC activation.

JPM CUE SHEET

INITIAL CONDITIONS:	The plant is in an Unusual Event due to lowering Spent Fuel Pool level. No facilities are currently activated and Emergency Coordinator duties remain in the Control Room. While investigating a leak in the FPCC Heat Exchanger Room, an NLO (Roberts) became pinned against the east wall near the "A" HX when a scaffold supporting lead blankets collapsed. Due to the weight of the blankets he is unable to move, but is shielded. He has suffered potentially life threatening injuries. You must assign two operators to rescue NLO Roberts. RP Supervision informs you that travel path dose rates are 3 REM/hr to NLO Roberts and 60 REM/hr where NLO Roberts is located. It is estimated that total travel time to and from NLO Roberts is 5 minutes (2&½ minutes each way) and it will take 30 minutes to move the blankets and rescue NLO Roberts. The four operators available for this assignment are Bob Smith, Bill Johnson, Ray Jones, and Tom Bell Bob Smith is 52 years old and has a life time dose of 7.2 Rem. Bob has a year to date dose of 20 mrem. Bob has <u>not</u> volunteered for this assignment. Bill Johnson is 34 years old and has a life time dose of 16.5 Rem. Bill has a year to date dose of 200 mrem. Bill has volunteered for this assignment. Ray Jones is 28 years old and has a life time dose of 700 mrem. Ray has a year to date dose of 100 mrem. Ray has volunteered for this assignment. Tom Bell is 21 years old and has a lifetime dose of 128 mrem. Tom has a year to date dose of 23 merm. Tom has <u>not</u> volunteered for this assignment.
INITIATING CUE:	Assign two of these operators to rescue the NLO Roberts and complete and approve the Perry Emergency Dose Authorization form PNPP 10136.

EMERGENCY DOSE AUTHORIZATION

REQUEST

INCREASE IS REQUIRED TO SUPPORT THE FOLLOWING EMERGENCY OPERATIONS: _____

_____

_____

_____

Name	SSN	Current Year – All Facilities	Lifetime required to exceed 5 rem	Signature Required to exceed 5 rem	Level Approved

OSC Support Supervisor/*Operations Shift Manager*:

_____

Print / Signature *Date*

Health Physics Support Supervisor/*Shift Health Physics Supervisor*:

_____

Print / Signature *Date*

LIMITS TEDE:

10CFR20 – 5 rem Services – 5 rem Valuable Property – 10 rem Large Pop. or Lifesaving – 25 rem*

* If persons have volunteered to perform lifesaving activities or protect large populations and are fully aware of the risks involved the above dose limits may be exceeded. Doses should be limited to the lowest practicable.

Operations Shift Manager and Shift Health Physics Supervisor should submit Emergency Dose Authorizations prior to OSC activation.

APPROVAL

TSC Operations Manager/*Operations Shift Manager*:

_____

Print / Signature *Date*

Radiation Protection Coordinator/*Supervision, RP*:

_____

Print / Signature *Date*

Operations Shift Manager and Supervision, RP should approve Emergency Dose Authorizations prior to TSC activation.

NOTE: Normally, planned doses during an emergency should be controlled to within <10CFR20> limits. However, under emergency circumstances these limits may be waived by TSC Operations Manager along with the Radiation Protection Coordinator, or the Operations Shift Manager, acting as Emergency Coordinator, if the TSC is not activated, to allow personnel to perform valuable emergency actions. Due to the urgent nature of emergency dose requirements, completion of the Emergency Dose Authorization can be accomplished subsequent to receiving dose if situations warrant. The doses received should be voluntary and commensurate with the significance of the objective and held to the lowest practicable level that the emergency permits.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	No
Alternate Path:	No
Applicability:	SRO
K/A:	2.3.12 – Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc. Importance: SRO 3.7
Safety Function:	Radiation Control
Validated Time:	15 Minutes
References:	NOP-OP-4101 Rev 9
Required Material:	NOP-OP-4101, Access Controls For Radiologically Controlled Areas
Task:	341-519-01-03 Perform the Daily Inventory of all HRS Keys Assigned to the Control Room HRS Key Locker
Task Standard:	Perform the Daily Inventory of all HRS Keys Assigned to the Control Room and perform actions for any missing keys.

1. Setup Instructions: None

2. Location / Method: Control Room / Administrative Performance

3. Initial Condition: Plant operating at near rated power due to coast down. Preparation for the next refuel outage is in progress.

4. Initiating Cue: As the Shift Manager, conduct the daily inventory of the HRS Keys assigned to the Control Room HRS Key Locker, in accordance with NOP-OP-4101, Access Controls For Radiologically Controlled Areas.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

NOP-OP-4101, Access Controls For Radiologically Controlled Areas

4.12 Control and Inventory of LHRA/VHRA Key

4.12.8 LHRA keys located in the Control Room, shall be limited to emergency entries and shall be maintained by the Operations Shift Manager.

1. This provision allows for the emergency access to LHRA areas. In the case of emergency entry being required and at the direction of the Operations Shift Manager, Operations personnel may utilize the emergency key to gain access to the LHRA.
2. IF utilized, THEN RPS and RPM shall be notified that the key was used AND a CR will be initiated.
3. The emergency entry LHRA key issued to the Operations Shift Manager shall be inventoried daily by the Operation Shift Manager or designee utilizing form NOP-OP-4101-03.

Critical Step: Using a copy of the HRS Barricade List conduct an inventory of the HRS Keys and Locks assigned to the Control Room HRS Key Locker.

Instructor Cue: While performing steps below, inform candidate that key 7-9" is not in the locker

Notes:
1. Obtains key for HRS Key Locker from the Control Room Key Locker (located inside the horseshoe).
2. Obtains copy of HRS Barricade List. (located next to HRS Key Locker)
3. Checks keys against the HRS Barricade List.

SAT ___ UNSAT ___

Comment(s):_____

Step 2

4.12.8 An inventory of the ready for issue keys will be performed together by oncoming and off going RP Technicians and documented on NOP-OP-4101-03.

1. IF any key is not accounted for, THEN make a RP Log entry (i.e., SOMS) AND contact RPS Supervision.
2. RPS will make a determination as to whether LHRA door(s)/padlock(s) will be re-keyed and new key(s) issued.
3. Initiate a Condition Report.

Critical Step: Candidate contacts RP Supervision.

Instructor Cue: Acknowledge notification that key 7-9" is not accounted for.

Notes: The SM would follow the same steps for missing keys as RP Techs.

SAT ___ UNSAT ___

Comment(s):_____

Step 3

Document the results of the HRS Key inventory on the HRS Key Locker Inventory (PNPP No. 8861, Attachment 4).

Standard: Candidate completes HRS Key Locker Inventory form.

Instructor Cue: None

Notes: None

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Candidate inventories HRS keys and notifies RP Supervision upon discovery of missing key.

Evaluation Results: **SAT_____ UNSAT_____**

End Time _____

HIGH RADIATION SERIES BARRICADE LIST

PNPP No. 8860 Rev. 9/7/07 HPI-D4

Location: **CONTROL ROOM LHRA LOCKBOX**

Tag #	ROOM NUMBER	DOOR NUMBER	KEY #	ROOM DESCRIPTION
M-05	Various	Various	4-05	LHRA Master Key
58	Various	Various	58	HRA Master Key
V-01	X630 IFTS	Shield Door	7-01	IFTS Valve Room (key 7-02 issued via RPS) (UNLK)
V-08	FHB IFTS	Floor Plug	7-08	FHB IFTS Plug (key 7-10 issued via RPS)
V-09	DW A/L	Shield Door	7-09	Drywell Shield (key 7-07 issued via RPS)
V-12	X-ANNU IFTS	Floor Plug	7-12	X Annulus IFTS Plug room (key 7-11 issued via RPS) (UNLK)

(**UNLK**) = indicates Barricade is unlocked

Updated 05/03/2008 Page 1 of 1

HIGH RADIATION SERIES KEY LOCKER INVENTORY

NOP-OP-4101-03 Rev. 03

Locker# / Location : Shift Managers Office

DATE	TIME	PRINTED NAME	SIGNATURE	ALL KEYS ACCOUNTED FOR
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

Remarks:

REVIEWED BY: (RP Supervision or Lead Technician)	DATE:

* NOTE: This form shall be reviewed within a week of completion.

JPM CUE SHEET

INITIAL CONDITIONS:	Plant operating at near rated power due to coast down. Preparation for the next refuel outage is in progress.
INITIATING CUE:	As the Shift Manager, conduct the daily inventory of the HRS Keys assigned to the Control Room HRS Key Locker, in accordance with NOP-OP-4101, Access Controls For Radiologically Controlled Areas.

JOB PERFORMANCE MEASURE SETUP SHEET

System:	Administrative
Time Critical:	Yes
Applicability:	SRO
Safety Function:	Emergency Procedures / Plan
Setting:	Classroom / Simulator
Validated:	15 minutes
References:	EPI-A1 Rev. 25, EPI-A2 Rev. 17, EPI-B1 Rev. 23, & EPI-B8 Rev. 14
Required Material	EPI-A1 - Emergency Action Levels EPI-A2 - Emergency Actions Based On Event Classification EPI-B1 - Emergency Notification System EPI-B8, Protective Actions And Guides
Tasks:	344-532-05-02 Prepare Emergency Plan Initial Notification Form
Task Standard:	Classify the emergency and complete Initial Notifications IAW appropriate E-plan procedures.
K/A Data:	295017 AK3.03 Implementation of site emergency plan. Importance: SRO 4.5 295038 EK3.01 Implementation of site emergency plan. Importance: SRO 4.5 2.4.41 Knowledge of the emergency action level thresholds and classifications. Importance: SRO 4.6

1. Setup Instructions: **Evaluator: This JPM contains 2 Cue Sheets.** Read 2nd cue (in JPM Step 1) to candidate 2 minutes after starting time critical clock.

2. Location / Method: Simulator / Classroom

3. Initial Condition: The plant was operating at rated power. A Containment Isolation occurred due to high Aux Building Steam Tunnel Temperatures. A successful scram was initiated. Currently, RPV Water Level 0" and lowering.

4. Initiating Cue: As the Shift Manager, with the information provided, declare the Emergency Action Level and complete Initial Notifications and other required actions. **Task is Time Critical**

Start Time: _____ **End Time**: _____

Name: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc… before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1

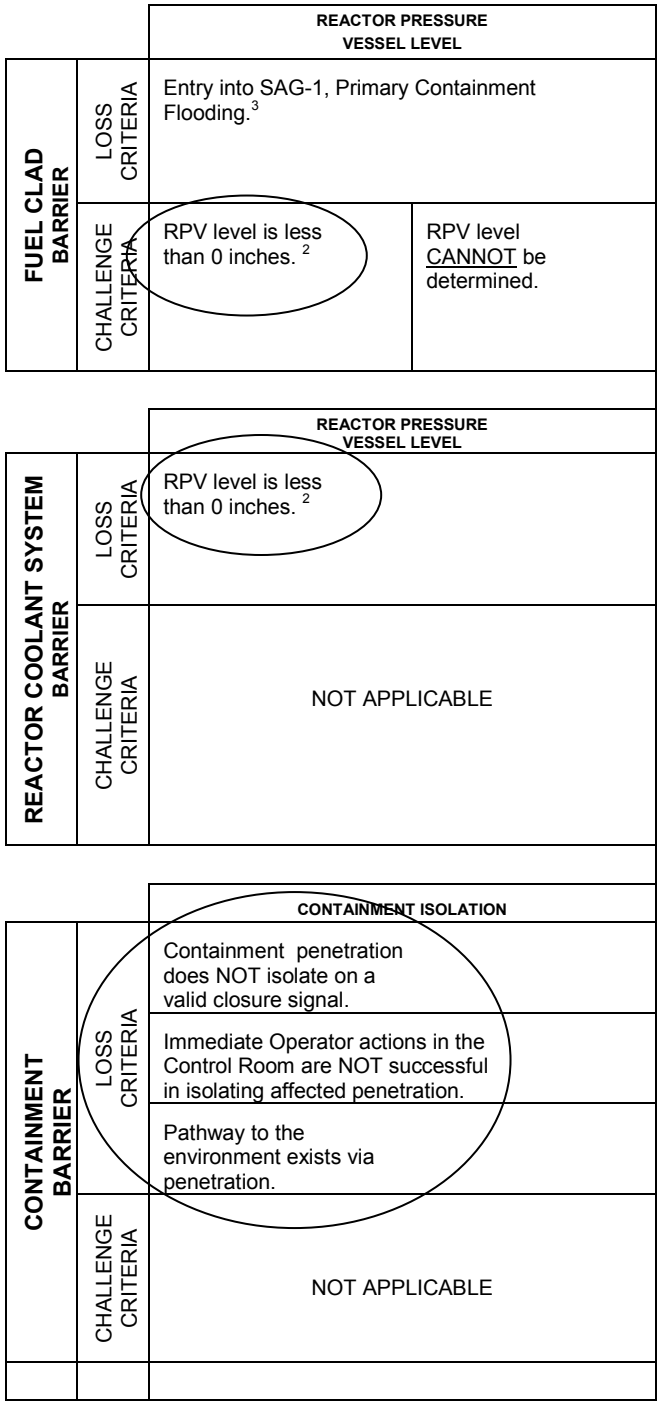
EPI-A1, Emergency Action Levels

5.1 Event Assessment and Event Classification

5.1 Classify the emergency as follows:

1. Using Initiating Condition Index (PNPP No. 8852, Attachment 1), identify the emergency by event category and determine the most appropriate Initiating Condition
2. Refer to Attachment 2 for the applicable Initiating Condition(s) to determine whether the criteria are met for the operating mode(s) listed.
3. Declare an emergency class when all the conditions listed in at least one EAL column have been met, and implement <EPI-A2>.
    a. When several Initiating Conditions are met, declare the most severe emergency class.

FISSION PRODUCT BARRIER MATRIX



INSTRUCTIONS

1. For each of the three barriers, determine if any LOSS or CHALLENGE criteria have been met.

2. Compare the barrier LOSS(es) and CHALLENGE(s) to the initiating conditions listed, and make the appropriate event declaration.

INITIATING CONDITIONS

UNUSUAL EVENT

AU3 Any loss or challenge to the Containment barrier.
Modes: 1 2 3

ALERT

AA1 Any loss or challenge to Fuel Clad barrier.
Modes: 1 2 3

AA2 Any loss or challenge to the Reactor Coolant System barrier.
Modes: 1 2 3

SITE AREA EMERGENCY

AS2 Either a challenge or loss of both the Fuel Clad barrier AND Reactor Coolant System barrier.
Modes: 1 2 3

AS3 Challenge to either the Fuel Clad barrier OR Reactor Coolant System barrier, AND the loss of any additional barrier.
Modes: 1 2 3

GENERAL EMERGENCY

AG1 Loss of two barriers, AND a loss or challenge to the third barrier.
Modes: 1 2 3

Critical Step:	Candidate determines: FC Barrier challenge on RPV level < 0" , RCS Barrier loss on RPV level < 0", and Containment Barrier loss on Containment Isolation occurred and classifies event as AG-1 (Loss of two barriers, AND a loss or challenge to the third barrier), **15 minutes to classify**.
Instructor Cue:	Notify the operator that **time critical** action starts after the first read of initial conditions and he is given initiating cue. **Two minutes after starting time critical clock, give the following cue:** RPV level currently is (minus) –10" and stable. While verifying Isolations and Actuations, 1B21-F016 and 1B21-F019 were found open. Neither valve will shut from the control room. The Steam Tunnel Temperature is 198° F and stable.
Notes:	Based on conditions in Initiating Cue, AG-1 conditions are met. **Start Time** _____ **Classification Time** _____

SAT ___ **UNSAT** ___

Comment(s):_____

Step 2

4. Complete the EVENT CLASSIFICATION CHECKLIST (PNPP No. 7983A), contained in <EPI-A2>.

Standard:	Operator uses Event Classification Checklist to assist with required actions.
Instructor Cue:	Give Operator E-Plan Packet, when he identifies where to obtain. I&C has been contacted and is en route.
Notes:	Checklist completed through line A.6.

SAT ___ **UNSAT** ___

Comment(s):_____

Step 3

EPI-A2, Emergency Actions Based On Event Classification
Attachment 1 - Event Classification Checklist

Note: For a General Emergency, ensure that PAR is included using EPI-B8, Attachment 1 Par Decision Flow Chart

4. Complete an Initial Notification form (PNPP No. 7794) and forward to communicators within 10 minutes of decision to classify event

Critical Step:	Initial Notification **Completed within 15 minutes of classification**. Block 3.a is checked for General Emergency AG-1. Blocks 5.a and 6.a are also checked.
Instructor Cue:	If asked, the wind is from 182°
Notes:	**Time Given to Communicator** _____ The goal is to get the Initial Notification to the I&C Communicator within 10 minutes of classification. The Critical Steps for marking the Initial Notification Form are : • Identifying Classification is a General Emergency • EAL is AG1 • PARS Sub-area 1 and Lake

SAT ___ UNSAT ___

Comment(s):_____

Step 4

6. Complete the Pager Messages form (PNPP No. 9100), approve, and forward to the SAS within 10 minutes of decision to classify event or revise PARs.

Standard:	Pager Message completed, Scenario ID No. 4
Instructor Cue:	None
Notes:	None

SAT ___ UNSAT ___

Comment(s):_____

Step 5

EPI-B8, Protective Actions and Guides

5.1.3 Emergency Coordinator

1. DETERMINE if the appropriate method was used to determine the PAR using the PAR Decision Flow Chart (Attachment 1).
2. APPROVE PARs for the general public developed utilizing Attachment 1 and ensure that the State of Ohio, local counties, and the NRC are notified per <EPI-B1>.
   - IF a dose projection cannot be completed within 10 minutes of the declaration of the General Emergency, THEN use the PAR decision flowchart using the "UNKNOWN" decision path per Attachment 1.

Critical Step:	Determine Subareas 1 and Lake to be evacuated.
Instructor Cue:	If asked, the wind is from 182° If asked, a dose projection cannot be completed within 10 minutes.
Notes:	None

SAT ___ UNSAT ___

Comment(s):_____

Terminating Cue: Event Classified within 15 minutes and Initial Notification given to communicator 5 minutes prior to notification due time.

Evaluation Results: SAT_____ UNSAT_____

End Time: _____

FENOC NUCLEAR POWER PLANT INITIAL NOTIFICATION FORM
Perry
PNPP No. 7794 Rev. 6/8/11 EPI-B1

USE FOR:
- **INITIAL CLASSIFICATIONS,**
- **CHANGES IN CLASSIFICATIONS,**
- **CHANGES IN PROTECTIVE ACTION RECOMMENDATIONS.**
- **EVENT TERMINATION**

STATE / COUNTY USE ONLY
DATE: _____ TIME: _____
MESSAGE NO: _____

1. This is the: Perry Nuclear Power Plant

2. This is: ☐ An Actual Emergency ☒ A Drill

3. ☒ a. A(n) ☒ GENERAL ☐ SITE AREA EMERGENCY ☐ ALERT ☐ UNUSUAL EVENT
was declared at: Now (TIME) on Today (DATE) based on EAL: AG1

☐ b. The Emergency situation has been terminated at: _____ (TIME) on _____ (DATE)

☐ c. The Protective Action Recommendation is being changed at: _____ (TIME) on _____ (DATE)

4. Brief non-technical description of event: Loss of two barriers, AND a loss or challenge to the third barrier.

5. The radiological conditions are:
☒ a. A non-routine release of radioactive material, as a result of this event, is in progress.
☐ b. The release of radioactive material associated with this event has been terminated.
☐ c. NO Radiological Release in progress as a result of this event.

6. Utility Protective Action Recommendations (PAR's):
☒ a. Evacuation:
(check applicable subareas)
☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☒ LAKE
AND that potassium iodide (KI) be administered to the general public in accordance with State procedures.
The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ b. Sheltering:
(check applicable subareas)
☐ 1 ☐ 2 ☐ 3
AND Evacuate the Lake
AND that potassium iodide (KI) be administered to the general public in accordance with State procedures.
The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ c. None

For Utility Use Only

Approved: _____

JPM CUE SHEET

INITIAL CONDITIONS:	• Currently, RPV Water Level is (minus) –10" and stable. • While verifying Isolations and Actuations, 1B21-F016 and 1B21-F019 were found open. • Neither valve will shut from the control room. The Steam Tunnel Temperature is 198° F and stable.
INITIATING CUE:	With this additional information provided, declare the emergency action level, complete initial notifications and other required actions. **Task is Time Critical**

JPM CUE SHEET

INITIAL CONDITIONS:	• The plant was operating at rated power. • A Containment Isolation occurred due to high Aux Building Steam Tunnel Temperatures. • A successful scram was initiated. • Currently, RPV Water Level 0" and lowering.
INITIATING CUE:	As the Shift Manager, with the information provided, declare the emergency action level, complete initial notifications and other required actions. **Task is Time Critical**