A.1.a Admin a RO/SRO Conduct of Operations

TITLE: Determine maximum RHR flowrate and time to saturation for a loss of RHR event.
EVALUATION LOCATION: ____ SIMULATOR ____ CONTROL ROOM __X__ CLASSROOM
PROJECTED TIME: __20 MIN__ SIMULATOR IC NUMBER: __N/A
ALTERNATE PATH ____ TIME CRITICAL ____ PRA_____

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly assess and determine the maximum RHR flowrate for the current RCS level.
- Correctly assess and determine the time to core boiling for the current core conditions.

Examinee:	
Overall JPM Performance: **Satisfactory** ☐	**Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Developer	BR Thornton	Date: 2/10/12
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

FARLEY NUCLEAR PLANT

ABNORMAL OPERATING PROCEDURE

FNP-1-AOP-12.0

RESIDUAL HEAT REMOVAL SYSTEM MALFUNCTION

PROCEDURE USAGE REQUIREMENTS-per FNP-0-AP-6	SECTIONS
Continuous Use	ALL
Reference Use	
Information Use	

SAFETY RELATED

Approved:

_____
Operations Manager

Date Issued:_____

CONDITIONS

When I tell you to begin, you are to DETERMINE MAXIMUM RHR FLOWRATE AND TIME TO SATURATION FOR A LOSS OF RHR EVENT. The conditions under which this task is to be performed are:

a. The Reactor has been shutdown for 350 hours.
b. Refueling is complete, with 53 new fuel assemblies loaded into the core.
c. An RCS leak had occurred, but it has now been isolated.
d. The 1A RHR pump started cavitating and RHR flow has been lowered to stop the cavitation per FNP-1-AOP-12.0, Residual Heat Removal Malfunction.
e. Current RCS level is 122' 8.5" and stable.
f. Current RCS temperature is 120°F.
g. Perform the following per AOP-12.0:
   1) Determine the maximum allowable RHR flowrate.
   2) Determine the time to core saturation for a loss of RHR.

INITIATING CUE: IF you have no questions, you may begin.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
_____ START TIME		
* 1. Evaluate Figure 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing to determine maximum allowable RHR flowrate.	1) Step 7 of AOP-12.0, Maintain RCS level to within the Acceptable Operating Region of Figure 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing for the existing RHR flow. RCS level is 122' 8.5". Determines that maximum RHR flow is $\leq$ 1800 gpm. Allowable tolerance: 1600 -1800 gpm.	S / U

EVALUATION CHECKLIST

	ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*	2. Determine time to core saturation, determine appropriate table of ATTACHMENT 3, TABLE A or TABLE B.	2) ATTACHMENT 3, step 1.1. Determines that Attachment 3, TABLE B is required per ATTACHMENT 3, step 1.1.2, Time to saturation with one third of the spent fuel replaced with new fuel.	S / U
*	3. Determine time to core saturation, determine appropriate table of ATTACHMENT 3 based on initial RCS temperature : Table for 100°F Table for 120°F Table for 140°F	3) ATTACHMENT 3, step 1.3. Determines that page from Attachment 3, TABLE B for ASSUMED INITIAL TEMPERATURE = 120°F is required.	S / U
*	4. Determine time to core saturation, determine appropriate column of ATTACHMENT 3, TABLE B , ASSUMED INITIAL TEMPERATURE = 120°F : Time to Saturation at midloop (mins) Time to Saturation 3' below flange (mins) Time to Saturation full Rx cavity (hours)	4) ATTACHMENT 3, step 1.2. Determines that page from Attachment 3, TABLE B for ASSUMED INITIAL TEMPERATURE = 120°F , column for Time to Saturation at midloop (mins) is required.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
* 5. Determine time to core saturation.	5) Determines that Time After Shutdown (hours) is 350 hours and minutes to boiling is calculated to be 21.35 minutes. 300 hours = 20.2 minutes 400 hours = 22.5 minutes 20.2 + 22.5 = 42.7 42.7/2 = 21.35 minutes After rounding, 21.4 minutes is acceptable. Since the Time After Shutdown chart only shows 300 hours and 400 hours, the candidate may conservatively take the 300 hours after shutdown for time to boil of 20.2 minutes. Allowable tolerance: 20.2 -21.4 minutes.	S / U

____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-AOP-12.0, v24
2. KA: G2.1.25 RO (3.9) SRO (4.2)

GENERAL TOOLS AND EQUIPMENT:

1. FNP-1-AOP-12.0, v24
2. Calculator

Critical ELEMENT justification:

STEP **Evaluation**

1. **Critical:** Task completion: required to properly determine Maximum RHR flowrate.

2-5 **Critical:** Task completion: required to properly determine time to core saturation.

COMMENTS:

KEY

AOP-12	
Maximum allowable RHR flowrate	RCS level is 122' 8.5". Determines that maximum RHR flow is ≤ 1800 gpm. Allowable range: 1600 -1800 gpm
Time to Core Saturation	300 hours = 20.2 minutes 400 hours = 22.5 minutes 20.2 + 22.5 = 42.7 42.7/2 = 21.35 minutes After rounding, 21.4 minutes is acceptable. Since the Time After Shutdown chart only shows 300 hours and 400 hours, the candidate may conservatively take the 300 hours after shutdown for time to boil of 20.2 minutes. Allowable tolerance: 20.2 -21.4 minutes.

CONDITIONS

When I tell you to begin, you are to DETERMINE MAXIMUM RHR FLOWRATE AND TIME TO SATURATION FOR A LOSS OF RHR EVENT. The conditions under which this task is to be performed are:

a. The Reactor has been shutdown for 350 hours.
b. Refueling is complete, with 53 new fuel assemblies loaded into the core.
c. An RCS leak had occurred, but it has now been isolated.
d. The 1A RHR pump started cavitating and RHR flow has been lowered to stop the cavitation per ~~FNP-1-AOP-12.0, Residual Heat Removal Malfunction~~.
e. Current RCS level is 122' 8.5" and stable.
f. Current RCS temperature is 120°F.
g. Perform the following ~~per AOP-12.0~~:
   1) Determine the maximum allowable RHR flowrate.
   2) Determine the time to core saturation for a loss of RHR.

AOP-12	
Maximum allowable RHR flowrate	
Time to Core Saturation	

TABLE OF CONTENTS

A. Purpose

This procedure provides actions for response to a malfunction of the RHR system.

Actions in this procedure for restoring RHR PUMPs assume electrical power is available. During loss of electrical power conditions, FNP-1-AOP-5.0, LOSS OF A OR B TRAIN ELECTRICAL POWER, provides actions for restoration of electrical power which should be performed in addition to continuing with this procedure.

The first part of this procedure deals with the protection of any running RHR pump and isolation of any leakage. If a running train is maintained the procedure is exited. The next portion deals with restoring a train of RHR while monitoring core temperatures. If a train cannot be restored actions are take for protection of personnel, establishing containment closure, and provides alternate methods of decay heat removal while trying to restore a train of RHR. Alternate cooling methods include: establishing a secondary heat sink if steam generators are available; feed and bleed cooling and feed and spill cooling.

The intent of feed and bleed cooling is to regain pressurizer level and allow steaming through a bleed path to provide core cooling. This requires that the RCS be in a configuration that will allow a level in the pressurizer.

The intent of feed and spill cooling is to allow spillage from the RCS and locally throttle injection flow to provide core cooling. This method is used when the reactor vessel head is blocked or RCS loop openings exist.

This procedure is applicable in modes 4, 5 and 6.

Containment closure is required to be completed within 2 hours of the initiating event unless an operable RHR pump is placed in service cooling the RCS AND the RCS temperature is below 180°F.

B. Symptoms or Entry Conditions

1 This procedure is entered when a malfunction of the RHR system is indicated by any of the following:

1.1 Trip of any operating RHR pump

1.2 Excessive RHR system leakage

1.3 Evidence of running RHR pump cavitation

1.4 Closure of loop suction valve

1.5 High RCS or core exit T/C temperature

1.6 Procedure could be entered from various annunciator response procedures.

CF3 1A OR 1B RHR PUMP OVERLOAD TRIP

CF4 1A RHR HX OUTLET FLOW LO

CF5 1B RHR HX OUTLET FLOW LO

CG3 1A OR 1B RHR HX CCW DISCH FLOW HI

EA5 1A OR 1B RHR PUMP CAVITATION

EB5 MID-LOOP CORE EXIT TEMP HI

EC5 RCS LVL HI-LO

Step	Action/Expected Response	Response NOT Obtained

****

CAUTION: Containment closure is required to be completed within 2 hours of the initiating event unless an operable RHR pump is placed in service cooling the RCS AND the RCS temperature is below 180°F.

****

****

CAUTION: Filling the pressurizer to 100% will cause a loss of nozzle dams due to the head of water.

****

NOTE: RCS to RHR loop suction valves will be deenergized if RCS TAVG is less than 180°F.

___ **1** **Check RHR loop suction valves - OPEN.**

RHR PUMP	1A	1B
1C(1A) RCS LOOP TO 1A(1B) RHR PUMP Q1E11MOV	[] 8701A [] 8701B	[] 8702A [] 8702B
1C(1A) RCS LOOP TO 1A(1B) RHR PUMP LOOP SUCTION POWER SUPPLY BREAKERS CLOSED(IF REQUIRED)	[] FU-T5 [] FV-V2	[] FU-G2 [] FV-V3

1 Stop any RHR PUMP with closed loop suction valve(s).

1.1 IF required, THEN adjust charging flow to maintain RCS level.

___ **2** **IF the cause of the RHR malfunction is known AND does not affect the standby RHR train, THEN place the standby RHR train in service per FNP-1-SOP-7.0, RESIDUAL HEAT REMOVAL SYSTEM.**

Step	Action/Expected Response	Response NOT Obtained

NOTE: Rapid flow adjustments may cause more severe pump cavitation.

___ 3 **Check RHR PUMPs - NOT CAVITATING.**

The following parameters should be stable and within normal ranges.
[] RHR flow rate within the Acceptable Operating Region of FIGURE 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing.
[] Discharge pressure
[] Suction pressure
[] RHR motor ammeter readings
[] No unusual pump noise

3 Perform the following:

3.1 Slowly reduce RHR flow rate to eliminate cavitation.

3.2 IF cavitation CANNOT be eliminated, THEN stop the affected RHR pump(s).

___ 4 **Check any RHR PUMP - RUNNING**

4 Proceed to step 13.

___ 5 **Verify RHR flow > 3000 gpm.**

1A(1B)
RHR HDR FLOW
[] FI 605A
[] FI 605B

5 Refer to Technical Specifications 3.9.4 and 3.9.5 for applicability.

Step	Action/Expected Response	Response NOT Obtained

****

CAUTION: Indicated RCS level will rise approximately 1 ft for every 0.5 psi rise in RCS pressure if the indication is not pressure compensated.

****

****

CAUTION: Only borated water should be added to the RCS to maintain adequate shutdown margin.

****

___ **6** **Check RCS level ADEQUATE**

6.1 Compare any available level indications.

[] LT 2965A&B/level hose
[] LI-2384 1B LOOP RCS NR LVL
[] LI-2385 1C LOOP RCS NR LVL
[] Temporary remote level indicator off of a RCS FT on A or C loop

6.2 Check RCS level within the Acceptable Operating Region of FIGURE 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing.

6.2 Raise RCS level.

6.2.1 Notify personnel in containment that RCS level will be raised.

6.2.2 Align Technical Requirements Manual boration flow path.

6.2.3 Raise RCS level to within the Acceptable Operating Region of FIGURE 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing for the existing RHR flow.

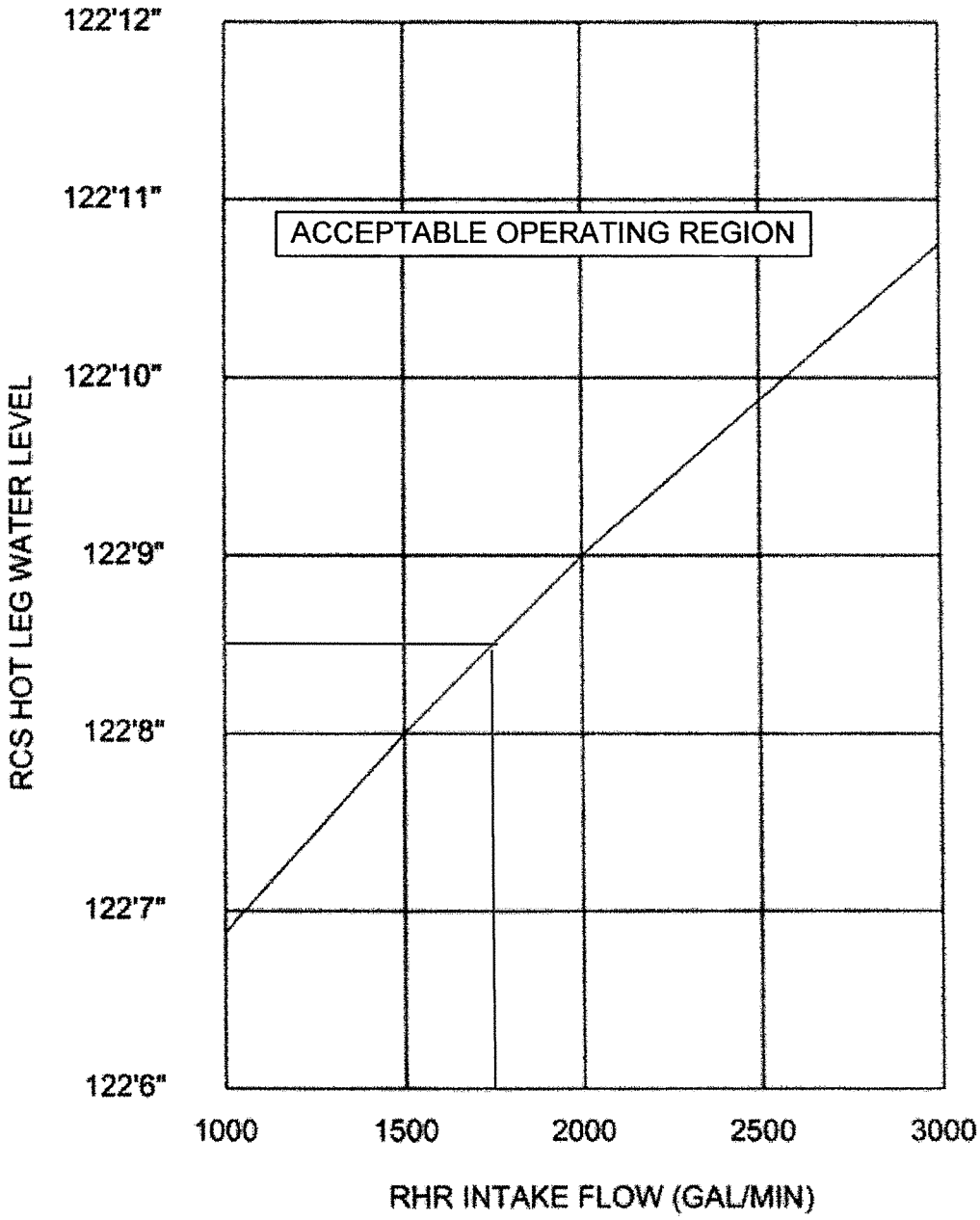
Step	Action/Expected Response	Response NOT Obtained
___ 7	**Maintain RCS level within the following limits:** [] Maintain RCS level to within the Acceptable Operating Region of FIGURE 1, RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing for the existing RHR flow. [] Maintain RCS level less than 123 ft 4 in if personnel are in the channel heads without nozzle dams installed. [] Maintain RCS level less than 123 ft 9 in if primary manways are removed without nozzle dams installed. [] Maintain RCS level less than 123 ft 9 in if seal injection is not established and RCPs are not backseated. [] Maintain RCS level less than 124 ft if safety injection check valves are disassembled.	7 Verify RHR PUMP(s) stopped AND proceed to step 13.

Here the candidate will have to determine the max RHR flow

FIGURE 1

RCS HOT LEG LEVEL vs RHR INTAKE FLOW To Minimize Vortexing

RCS HOT LEG LEVEL vs RHR INTAKE FLOW
To Minimize Vortexing



ATTACHMENT 3

Time to Core Saturation

TABLE B---POWER UPRATED UNIT

TIME TO SATURATION: ONE THIRD NEW FUEL

ASSUMED INITIAL TEMPERATURE=120° F

Time After Shutdown (hours)	Time to Saturation at midloop (mins)	Time to Saturation 3' below flange (mins)	Time to Saturation full Rx cavity (hours)
100	12.8	17.5	9.2
200	17.1	23.4	12.4
300	20.2	27.6	14.6
400	22.5	30.8	16.3
500	25.4	34.8	18.4
600	28.3	38.7	20.5
700	30.5	41.7	22.1
800	33.0	45.2	23.9

VOLUME REFERENCE TABLE

MIDLOOP VOLUME(FT^3)	945		
VOLUME 3FT BELOW FLANGE(FT^3)	348	TOTAL=	1293
VOLUME FULL REACTOR CAVITY(FT^3)	39750	TOTAL=	41043

A.1.b RO Conduct of Operations

G2.1.5
TITLE: IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.
EVALUATION LOCATION: ☐ **SIMULATOR** ☐ CONTROL ROOM ☒ CLASSROOM
PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
☐ ALTERNATE PATH ☐ TIME CRITICAL ☐ PRA

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly determine if an oncoming Operations crew satisfies the minimum Operations shift staffing requirements of EIP-0.0
- Correctly state the minimum required Reactor Operators per FNP-0-SOP-0.0 (TS 5.2.2(a))
- Correctly identify the required actions if minimum shift staffing requirements are not satisfied per EIP-0.0 step 4.8.2 AND/OR TS 5.2.2.C.

Examinee:	
Overall JPM Performance:	**Satisfactory** ☐ **Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to **IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.** The conditions under which this task is to be performed are:

a. Both Units are at 100% power.
b. It is Night shift on a holiday, and the Operations Manager has authorized maximizing time off.
c. The table below represents the Operations shift complement that has arrived to receive turnover and their license level/status.

PERSON	LICENSE status/qual
Adam	ACTIVE Dual Unit- SRO SM
Bob Charlie	ACTIVE Dual Unit- SRO SS
Doug Eugene Frank	ACTIVE Dual Unit RO
Gary	INACTIVE Dual Unit- SRO SSS-STA
Harry	INACTIVE Dual Unit- SRO SSS-Fire
Jack Kelly Lisa Mike Nick Oscar Pam	Not licensed SO
Roger	Not Licensed Fire Protection Administrator Qualified Shift Communicator

d. **PROVIDE a written response** to the following **in accordance with SOP-0.0, General Instruction to Operations Personnel, and EIP-0.0, Emergency Organization**:

- **IDENTIFY** whether or not the operations crew shown in the table above satisfies the requirements to take the shift without any additional action or personnel?
- **STATE** the minimum number of on-shift Reactor Operators required by Technical Specifications.
- **Identify** the required actions anytime the requirements for minimum on-shift staffing are NOT met.

INITIATING **CUE**: "You may begin."

EVALUATION CHECKLIST

ELEMENTS:	**STANDARDS:**	**RESULTS: (CIRCLE)**
START TIME: _____		
* 1. REVIEW shift Staffing levels per SOP-0.0 & EIP-0.0.	***IDENTIFY** the MINIMUM shift staffing is satisfied by circling : **YES**	S / U
* 2. REVIEW shift Staffing levels per SOP-0.0.	***IDENTIFY** the MINIMUM number of Reactor Operators necessary to satisfy TS by writing : **THREE (3)**	S / U
* 3. REVIEW required actions for falling below minimum shift Staffing levels per EIP-0.0 AND OR TS 5.2.2.c.	* **IDENTIFY** that the required action is to: " IMMEDIATELY INITIATE action to fill the vacant position within two HOURS." **OR** **LISTS** the TS requirement 5.2.2.(c) AND/OR the procedural step EIP-0.0 paragraph 4.8.2.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)

ANSWER KEY:

1. Does the crew shown in the table satisfy the MINIMUM shift staffing requirements of SOP-0.0 and EIP-0.0? (YES) NO .

2. The Technical Specification minimum required number of Plant/Reactor Operators required on-shift is ONE OATC FOR EACH UNIT AND ONE UO SHARED BETWEEN THE UNITS for a total of THREE (3) ;
   it is EQUALLY acceptable simply state: THREE (3).

3. **ANYTIME** the minimum on-shift staffing requirements are NOT met the actions required are: "IMMEDIATELY INITIATE ACTION TO FILL THE VACANT POSITION(s) within 2 hours." *it is EQUALLY acceptable simply state*: EIP-0.0, v27 para 4.8.2 or TS 5.2.2.c

   EIP-0.0, v27 paragraph 4.8.2 states:

   *"The shift crew composition **may be one less than** the table 1 requirements **for a period of time not to exceed 2 hours in order** to accommodate unexpected absence of on-duty shift crew members [...]**provided immediate action is taken to restore the shift crew composition** to within the Table 1 requirements"*

   TS 5.2.2.c states:

   *"Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period **of time not to exceed 2 hours** in order to accommodate unexpected absence of on-duty shift crew members **provided immediate action is taken to restore the shift crew composition to within the minimum requirements**."*

____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-EIP-0.0, V 27
2. FNP-0-SOP-0.0, V 149.1
2. KA: G2.1.5 RO 2.9 SRO 3.9

GENERAL TOOLS AND EQUIPMENT:

Provide/Acquire:

1. FNP-0-EIP-0.0, V 27
2. FNP-0-SOP-0.0, V 149.1

Critical ELEMENT justification:

STEP	**Evaluation**
1. CRITICAL: TASK objective	
2. CRITICAL: TASK objective	
3. CRITICAL: TASK objective	

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.** The conditions under which this task is to be performed are:

a. Both Units are at 100% power.
b. It is Night shift on a holiday, and the Operations Manager has authorized maximizing time off.
c. The table below represents the Operations shift complement that has arrived to receive turnover and their license level/status.

PERSON	LICENSE status/qual
Adam	ACTIVE Dual Unit- SRO SM
Bob Charlie	ACTIVE Dual Unit- SRO SS
Doug Eugene Frank	ACTIVE Dual Unit RO
Gary	INACTIVE Dual Unit- SRO SSS-STA
Harry	INACTIVE Dual Unit- SRO SSS-Fire
Jack Kelly Lisa Mike Nick Oscar Pam	Not licensed SO
Roger	Not Licensed Fire Protection Administrator Qualified Shift Communicator

d. **PROVIDE a written response** to the following **in accordance with SOP-0.0, General Instruction to Operations Personnel, and EIP-0.0, Emergency Organization**:

- **IDENTIFY** whether or not the operations crew shown in the table above satisfies the requirements to take the shift without any additional action or personnel?
- **STATE** the minimum number of on-shift Reactor Operators required by Technical Specifications.
- **Identify** the required actions anytime the requirements for minimum on-shift staffing are NOT met.

1. Does the crew shown in the table satisfy the MINIMUM Operations shift staffing requirements of SOP-0.0 and EIP-0.0? YES / NO .

2. The Technical Specification minimum required number of Reactor Operators required on-shift is: _____.

3. **ANYTIME** the minimum on-shift staffing requirements are NOT met the actions required are: _____
_____
_____
_____
_____.

A.1.b SRO-only Conduct of Operations

G2.1.5
TITLE: IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.
EVALUATION LOCATION: ☐ **SIMULATOR** ☐ CONTROL ROOM ☒ CLASSROOM
PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A
☐ ALTERNATE PATH ☐ TIME CRITICAL ☐ PRA

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM; it is intended that the examinees be logged into a computer using the EXAM LOGIN and accessing the EXAM REFERENCE DISK to obtain/review the required references.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly identify whether or not a shift compliment satisfies the minimum operations shift staffing requirements per EIP-0.0 (TS 5.2.2(a))
- Correctly assess that EIP-0.0 does NOT permit voluntarily reducing minimum shift staffing any further than one (1) below minimum.
- Correctly identify the Actions required by FNP-0-EIP-0.0 step 4.8.2 AND/OR TS 5.2.2.C if Operations shift staffing falls below minimum.

Examinee:		
Overall JPM Performance:	**Satisfactory** ☐	**Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)		

EXAMINER: _____

Developer	Howard Fitzwater	Date: 2/10/2012
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

CONDITIONS

When I tell you to begin, you are to **IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.** The conditions under which this task is to be performed are:

a. Both Units are at 100% power.
b. It is Night shift on a holiday, and The Operations Manager has authorized maximizing time off.
c. The table below represents the Operations shift complement that has arrived to receive turnover and their license level/status.

PERSON	LICENSE status/qual
Adam	ACTIVE Dual Unit- SRO SM
Bob Charlie	ACTIVE Dual Unit- SRO SS
Doug Eugene Frank	ACTIVE Dual Unit RO
Gary	INACTIVE Dual Unit- SRO SSS-STA
Harry	INACTIVE Dual Unit- SRO SSS-Fire
Jack Kelly Lisa Mike Nick Oscar Pam	Not licensed SO
Roger	Not Licensed Fire Protection Administrator Qualified Shift Communicator

d. **PROVIDE a written response** to the following **in accordance with SOP-0.0, General Instruction to Operations Personnel, and EIP-0.0, Emergency Organization**:

- **IDENTIFY** whether or not the crew shown in the table above satisfies the requirements to take the shift without any additional action or personnel,
- **Consider a minimally staffed crew,** and a Reactor Operator experiences chest pains requiring him/her to be transported to the hospital. **Determine** if the SSS-Fire is permitted to escort the Reactor Operator to the hospital per EIP-0.0, and
- **Identify** the required actions anytime the requirements for minimum on-shift staffing are NOT met.

INITIATING **CUE**: "You may begin."

EVALUATION CHECKLIST

ELEMENTS:	**STANDARDS:**	**RESULTS: (CIRCLE)**
START TIME: _____		
* 1. REVIEW shift Staffing levels per SOP-0.0 & EIP-0.0.	***IDENTIFY** the MINIMUM shift staffing is satisfied by circling : **YES**	S / U
* 2. REVIEW shift Staffing levels per EIP-0.0.	***IDENTIFY** the requirements of EIP-0.0, v27 paragraph 4.8.2 would not allow the crew to fall below ONE below voluntarily by circling: **IS NOT**	S / U
* 3. REVIEW required actions for falling below minimum shift Staffing levels per EIP-0.0 AND OR TS 5.2.2.c.	* **IDENTIFY** that the required action is to: " IMMEDIATELY INITIATE action to the vacant position within two HOURS." **OR** **LISTS** the TS requirement 5.2.2.(c) AND/OR the procedural step EIP-0.0 paragraph 4.8.2.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)

ANSWER KEY:

1. Does the crew shown in the table satisfy the MINIMUM shift staffing requirements of SOP-0.0 and EIP-0.0? (YES) / NO .

2. IF a Reactor Operator experiences chest pains and is required to be transported to the hospital, the SSS-FIRE IS / (IS NOT) permitted to escort the Reactor Operator to the hospital while a crew is at minimum shift staffing per EIP-0.0. *(SEE paragraph 4.8.2 below; This would put staffing **TWO (2) less than TABLE 1 requirements**)*

3. **ANYTIME** the minimum on-shift staffing requirements are NOT met the actions required are: "IMMEDIATELY INITIATE ACTION TO FILL THE VACANT POSITION(s) within 2 hours." *it is EQUALLY acceptable simply state*: EIP-0.0, v27 para 4.8.2 or TS 5.2.2.c

EIP-0.0, v27 paragraph 4.8.2 states:

*"The shift crew composition **may be one less than** the table 1 requirements **for a period of time not to exceed 2 hours in order** to accommodate unexpected absence of on-duty shift crew members [...]**provided immediate action is taken to restore the shift crew composition** to within the Table 1 requirements"*

TS 5.2.2.c states:

*"Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period **of time not to exceed 2 hours** in order to accommodate unexpected absence of on-duty shift crew members **provided immediate action is taken to restore the shift crew composition to within the minimum requirements**."*

_____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-EIP-0.0, V 27
2. FNP-0-SOP-0.0, V 149.1
2. KA: G2.1.5 RO 2.9 SRO 3.9

GENERAL TOOLS AND EQUIPMENT:

Provide/Acquire:

1. FNP-0-EIP-0.0, V 27
2. FNP-0-SOP-0.0, V 149.1

Critical ELEMENT justification:

STEP	**Evaluation**
1. CRITICAL: TASK objective	
2. CRITICAL: TASK objective	
3. CRITICAL: TASK objective	

COMMENTS:

CONDITIONS

When I tell you to begin, you are to **IDENTIFY THE TECHNICAL SPECIFICATION AND EMERGENCY ORGANIZATION ON-SHIFT MANNING REQUIREMENTS FOR THE CONDITIONS PROVIDED.** The conditions under which this task is to be performed are:

a. Both Units are at 100% power.
b. It is Night shift on a holiday, and The Operations Manager has authorized maximizing time off.
c. The table below represents the Operations shift complement that has arrived to receive turnover and their license level/status.

PERSON	LICENSE status/qual
Adam	ACTIVE Dual Unit- SRO SM
Bob Charlie	ACTIVE Dual Unit- SRO SS
Doug Eugene Frank	ACTIVE Dual Unit RO
Gary	INACTIVE Dual Unit- SRO SSS-STA
Harry	INACTIVE Dual Unit- SRO SSS-Fire
Jack Kelly Lisa Mike Nick Oscar Pam	Not licensed SO
Roger	Not Licensed Fire Protection Administrator Qualified Shift Communicator

d. **PROVIDE a written response** to the following **in accordance with SOP-0.0, General Instruction to Operations Personnel, and EIP-0.0, Emergency Organization**:

- **IDENTIFY** whether or not the crew shown in the table above satisfies the requirements to take the shift without any additional action or personnel,
- **Consider a minimally staffed crew,** and a Reactor Operator experiences chest pains requiring him/her to be transported to the hospital. **Determine** if the SSS-Fire is permitted to escort the Reactor Operator to the hospital per EIP-0.0, and
- **Identify** the required actions anytime the requirements for minimum on-shift staffing are NOT met.

1. Does the crew shown in the table satisfy the MINIMUM Operations shift staffing requirements of SOP-0.0 and EIP-0.0? YES / NO .

2. IF a Reactor Operator experiences chest pains and is required to be transported to the hospital, the SSS-FIRE IS / IS NOT permitted to escort the Reactor Operator to the hospital while a crew is at minimum shift staffing per EIP-0.0.

3. **ANYTIME** the minimum on-shift staffing requirements are NOT met the actions required are: _____
_____
_____
_____
_____.

A.2 RO Conduct of Operations ADMIN G2.2.12

Modified CRO-035
TITLE: Perform STP-9.0, RCS Leakage Test
EVALUATION LOCATION: ____ SIMULATOR ____ CONTROL ROOM __X__ CLASSROOM
PROJECTED TIME: __20 MIN__ SIMULATOR IC NUMBER: __N/A
ALTERNATE PATH ____ TIME CRITICAL ____ PRA_____

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly assess and determine RCS leakrate.
- Correctly assess and determine if STP-9.0 Acceptance Criteria is met.

Examinee:	
Overall JPM Performance: **Satisfactory** ☐	**Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Developer	Billy Thornton	Date: 2/10/2012
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

CONDITIONS

When I tell you to begin, you are to PERFORM STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

a. Unit 1 is stable at 100% power.
b. The RCS leakrate program is unavailable.
c. The plant computer data has been provided on the HANDOUT.
d. Previous RCS leakrate has been 0.00 gpm.
e. You are directed by the Shift Supervisor to
   1) Determine RCS leakage per STP-9.0, APPENDIX A
      - When APPENDIX A is complete, another operator will perform the remainder of the steps in STP-9.0.
   2) Determine whether or not RCS leakage Acceptance Criteria is met.

INITIATING CUE: IF you have no questions, you may begin.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
1. Appendix A, step 2.1 - Read and record initial readings on data sheet 1.	1) Records initial readings on data sheet 1.	S / U
2. Appendix A, step 2.2 - Read and record final values on data sheet 1.	2) Records final values on data sheet 1.	S / U

CUE IF REQUESTED: "Other leakage is 0 gpm".

NOTE: [IF applicant inquires about any "other leakage" it is 0 gpm. This is information that is obtainable in the plant from turnover, and since there is no "other known leakage" provided, it may be assumed to be 0 gpm OR it may be requested. Either is acceptable].

EVALUATION CHECKLIST

	ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*	3. Appendix A, step 2.4 - Calculate identified and unidentified leakages using the formulas on STP-9.0 data sheet 1.	3) Calculation shows: Identified RCS leakage = 0.05 gpm Unidentified RCS leakage = Acceptable range 1.16 – 1.17 gpm	S / U
*	4. Compares actual Leak rates with the Acceptance Criteria, and determines that the Unidentified Leakage does not meet Acceptance Criteria.	4) Determines that: Identified RCS leakage = 0.05 gpm Acceptance Criteria is $\leq$ 10 gpm and is met. Unidentified RCS leakage = Acceptable range 1.16 – 1.17 gpm Acceptance Criteria is $\leq$ 1 gpm and is NOT met.	S / U

_____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-STP-9.0, v50.0
2. Plant tank curves 27A, 27B, 27C, 28A, & 28B
3. KA: G2.2.12 Knowledge of surveillance procedures.
   (CFR: 41.10 / 45.13)
   IMPORTANCE RO 3.7 SRO 4.1

GENERAL TOOLS AND EQUIPMENT:

1. Copy of FNP-1-STP-9.0, v50.0 that is signed off, up to the step required.
2. Plant tank curves 27A, 27B, 27C, 28A, & 28B
3. Calculator
4. Plant Conditions at 10:00 & 12:00

Critical ELEMENT justification:

STEP	Evaluation
1-2	**Not Critical:** this task will be performed to document the data on Data Sheet 1, but is not critical to performing the RCS leakrate calculation.
3	**Critical:** Task completion: required to properly determine Identified and Unidentified RCS leakage rate.
4	**Critical:** Task completion: required to properly determine if Acceptance Criteria of STP-9.0 is met.

COMMENTS:

KEY: STP-9.0, DATA SHEET 1, RCS Leakage

All tolerances based on differences in rounding. One calc was performed rounding to the least significant digits at each step of the calculation, and one was performed using all digits in the calculator until the end of each step of the calculations to round to the least significant digits.

INSTRUMENT	NAME	INITIAL	FINAL	FINAL – INITIAL
Computer (MCB)	TIME	*1000*	*1200*	A = *120* Minutes
NC1100A (N-41B, N-42B, N-43B, N-44B)	PR AVG FLUX	*100.0%*	*100.0%*	No significant change (< 0.1%)
TE0453 (TI0453)	LIQ PRZR TEMP	*650.8* °F	*650.8* °F	No significant change (≤ 1 °F)
PC0482, PT0455, PT0456 or PT0457 (PI 455, PI 456 or PI 457)	PRZR PRESS (Note 1)	*2239.4* psig	*2239.4* psig	No significant change (≤5 psig)
TC0484 (preferred), OR TY0412K, OR TY0422K, OR TY0432K (Note 7) (Average of TI 412D, 422D & 432D)	RCS TAVG (Note 1)	*571.9* °F	*571.9* °F	ΔT = *0* °F Maximum change of 0.3°F allowed if TAVG is 545°F or greater, 0.1°F if TAVG is less than 545°F.
RCS Temperature Correction Factor	CF (Note 5)	*99.7* OR *NA*	N/A	B = ΔT × CF = *0* Gal.
LC 1600 OR Average of LT0459, LT0460 & LT0461 (LI-459, 460, 461)	PRZR LVL	*47.8* %	*47.8* %	C = 56.3 × *0* % = *0* Gal.
LT0115 (LI 115)	VCT LVL	*51.0* %	*40.7* %	D = 14.18 × *(–)10.3* % = *(–)146.0 to 146.1* Gal.
LI 1003 Waste Pnl or BOP LS261 Pos 6	RCDT LVL	*36.4* % *127.69* *Gal	*38.1* % *133.71* *Gal	E = *6.01 to 6.02* Gal. (Enter 0 if negative)
LT0470 (LI 470)	PRT LVL (Note 2)	*69.7* % *NA* *Gal	*69.7* % *NA* *Gal	F = *0* Gal. (Enter 0 if negative)
FIS 168	TOTAL FLOW BATCH INTEG	*3489* Gal. *NA* Gal.	*3489* Gal. *NA* Gal.	G = *0* Gal. Dilution and Blended Makeup

*From Tank Curve Book

KEY (continued): STP-9.0, DATA SHEET 1, RCS Leakage

Total Leakage

$$= \frac{B - C - D + G}{A} = \frac{(\ 0\ ) - (\ 0\ ) - (\ (-)146.0 \text{ to } (-)146.1\ ) + (\ 0\ )}{(\ 120\ )} = (+1.21) \text{ to } (+1.22) \text{ GPM}$$

$$\text{Identified Leakage} = \frac{E + F}{A} = \frac{(\ 6.00 \text{ to } 6.03\ ) + (\ 0\ )}{(\ 120\ )} + \frac{0}{\text{Other leakage}} = 0.05 \text{ GPM}$$

Other Leakage:	Source	Rate (GPM)
	0	*0*

Total Other 0.0 gpm

$$\text{Unidentified Leakage} = \frac{1.21 \text{ to } 1.22}{\text{Total Leakage}} - \frac{0.050 \text{ no tolerance}}{\text{Identified Leakage}} = 1.16 \text{ to } 1.17 \text{ GPM}$$

ACCEPTANCE CRITERIA:
- Identified Leakage ≤ 10 gpm
- Unidentified Leakage ≤ 1 gpm

Identified RCS Leakage is .050 gpm.

Unidentified RCS Leakage is 1.16 to 1.17 gpm.

STP-9.0 Acceptance Criteria IS NOT met .

CONDITIONS

When I tell you to begin, you are to PERFORM STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

a. The unit is in Mode 1 at 100% power.
b. The RCS leakrate program is unavailable.
c. The plant computer data has been provided on the HANDOUT.
d. Previous RCS leakrate has been 0.00 gpm.
e. You are directed by the Shift Supervisor to
   1) Determine RCS leakage per STP-9.0, APPENDIX A
      - When APPENDIX A is complete, another operator will perform the remainder of the steps in STP-9.0.
   2) Determine whether or not RCS leakage Acceptance Criteria is met.

Identified RCS Leakage is _____ gpm.

Unidentified RCS Leakage is _____ gpm.

STP-9.0 Acceptance Criteria IS met / IS NOT met .

Plant Conditions at 1000:

INSTRUMENT Computer Points	**NAME**		
N/A	TIME	*10:00*	
NC1100A	PR AVG FLUX	*100.0*	%
TE0453	LIQ PRZR TEMP	*650.8*	°F
PC0482	PRZR PRESS	*2239.4*	psig
TC0484	RCS TAVG	*571.9*	°F
LC 1600	PRZR LVL	*47.8*	%
LT0115	VCT LVL	*51.0*	%
BOP LS261 Pos 6	RCDT LVL	*36.4*	%
LT0470	PRT LVL	*69.7*	%
FIS 168	TOTAL FLOW BATCH INTEG	*3489*	Gal.

Plant Conditions at 1200:

INSTRUMENT Computer Points	**NAME**		
N/A	TIME	*12:00*	
NC1100A	PR AVG FLUX	*100.0*	%
TE0453	LIQ PRZR TEMP	*650.8*	°F
PC0482	PRZR PRESS	*2239.4*	Psig
TC0484	RCS TAVG	*571.9*	°F
LC 1600	PRZR LVL	*47.8*	%
LT0115	VCT LVL	*40.7*	%
BOP LS261 Pos 6	RCDT LVL	*38.1*	%
LT0470	PRT LVL	*69.7*	%
FIS 168	TOTAL FLOW BATCH INTEG	*3489*	Gal.

A.2 SRO Conduct of Operations ADMIN G2.2.12

Modified CRO-035
TITLE: Perform STP-9.0, RCS Leakage Test
EVALUATION LOCATION: ____ SIMULATOR ___ CONTROL ROOM __X__ CLASSROOM
PROJECTED TIME: __25 MIN__ SIMULATOR IC NUMBER: __N/A
ALTERNATE PATH ___ TIME CRITICAL ___ PRA_____

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly assess and determine RCS leakrate.
- Correctly assess and determine if STP-9.0 Acceptance Criteria is met.

Examinee:		
Overall JPM Performance:	**Satisfactory** ☐	**Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)		

EXAMINER: _____

CONDITIONS

When I tell you to begin, you are to PERFORM STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

a. Unit 1 is stable at 100% power.
b. The RCS leakrate program is unavailable.
c. The plant computer data has been provided on the HANDOUT.
d. Previous RCS leakrate has been 0.00 gpm.
e. You are directed by the Shift Supervisor to
   1) Determine RCS leakage per STP-9.0, APPENDIX A
      - When APPENDIX A is complete, another operator will perform the remainder of the steps in STP-9.0.
   2) Determine whether or not RCS leakage Acceptance Criteria is met. & any required actions
   3) Evaluate Tech Specs.

INITIATING CUE: IF you have no questions, you may begin.

EVALUATION CHECKLIST

ELEMENTS:	**STANDARDS:**	**RESULTS: (CIRCLE)**
____ START TIME		
1. Appendix A, step 2.1 - Read and record initial readings on data sheet 1.	1) Records initial readings on data sheet 1.	S / U
2. Appendix A, step 2.2 - Read and record final values on data sheet 1.	2) Records final values on data sheet 1.	S / U

CUE IF REQUESTED: "Other leakage is 0 gpm".

NOTE: [IF applicant inquires about any "other leakage" it is 0 gpm. This is information that is obtainable in the plant from turnover, and since there is no "other known leakage" provided, it may be assumed to be 0 gpm OR it may be requested. Either is acceptable].

EVALUATION CHECKLIST

	ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
*	3. Appendix A, step 2.4 - Calculate identified and unidentified leakages using the formulas on STP-9.0 data sheet 1.	3) Calculation shows: Identified RCS leakage = 0.05 gpm Unidentified RCS leakage = Acceptable range 1.16 – 1.17 gpm	S / U
*	4. Compares actual Leak rates with the Acceptance Criteria, and determines that the Unidentified Leakage does not meet Acceptance Criteria.	4) Determines that: Identified RCS leakage = 0.05 gpm Acceptance Criteria is $\leq$ 10 gpm and is met. Unidentified RCS leakage = Acceptable range 1.16 – 1.17 gpm Acceptance Criteria is $\leq$ 1 gpm and is NOT met.	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
* 5. Perform Tech Spec evaluation.	5) Determines that Tech Spec 3.4.13 RAS is entered for unidentified LEAKAGE > 1 gpm. CONDITION A is in effect for "RCS operational LEAKAGE not within limits". REQUIRED ACTION: Reduce LEAKAGE to within limits in 4 hours. If LEAKAGE is not within limits in 4 hours, Then - Be in MODE 3 in 6 hours AND BE in MODE 5 in 36 hours is required.	

_____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-1-STP-9.0, v50.0
2. Plant tank curves 27A, 27B, 27C, 28A, & 28B
3. Tech Specs and Bases, v186 / v53
4. KA: G2.2.12 Knowledge of surveillance procedures.
   (CFR: 41.10 / 45.13)
   IMPORTANCE RO 3.7 SRO 4.1

GENERAL TOOLS AND EQUIPMENT:

1. Copy of FNP-1-STP-9.0, v50.0 that is signed off, up to the step required.
2. Plant tank curves 27A, 27B, 27C, 28A, & 28B
3. Tech Specs and Bases
4. Calculator
5. Plant Conditions at 10:00 & 12:00

Critical ELEMENT justification:

STEP	Evaluation
1-2	**Not Critical:** this task will be performed to document the data on Data Sheet 1, but is not critical to performing the RCS leakrate calculation.
3	**Critical:** Task completion: required to properly determine Identified and Unidentified RCS leakage rate.
4	**Critical:** Task completion: required to properly determine if Acceptance Criteria of STP-9.0 is met.
5	**Critical:** Task completion: required to properly determine Tech Spec requirements.

COMMENTS:

This Admin task was evaluated for performing notifications per EIP-8.0 for the SRO's. The Corporate Duty Manager is required to be notified, but that is the only requirement. After discussion it was determined that there was little discriminatory value in the EIP-8.0 notification requirements. The Corporate DM is required to be notified, but Corporate DM notification is required for **any** off normal occurrence: Step 20.9 – "Other events which are considered at the time of their occurrence to be of possible concern to upper management including but not limited to (AI2008204673)" – basically any off normal event. In addition, it is a procedural requirement to make Corporate DM notifications, but it is open to interpretation as to what is required. If the Corporate DM is not notified, there is no significant consequence.

KEY: STP-9.0, DATA SHEET 1, RCS Leakage

All tolerances based on differences in rounding. One calc was performed rounding to the least significant digits at each step of the calculation, and one was performed using all digits in the calculator until the end of each step of the calculations to round to the least significant digits.

INSTRUMENT	NAME	INITIAL	FINAL	FINAL – INITIAL
Computer (MCB)	TIME	*1000*	*1200*	A = *120* Minutes
NC1100A (N-41B, N-42B, N-43B, N-44B)	PR AVG FLUX	*100.0%*	*100.0%*	No significant change (< 0.1%)
TE0453 (TI0453)	LIQ PRZR TEMP	*650.8* °F	*650.8* °F	No significant change (≤ 1 °F)
PC0482, PT0455, PT0456 or PT0457 (PI 455, PI 456 or PI 457)	PRZR PRESS (Note 1)	*2239.4* psig	*2239.4* psig	No significant change (≤5 psig)
TC0484 (preferred), OR TY0412K, OR TY0422K, OR TY0432K (Note 7) (Average of TI 412D, 422D & 432D)	RCS TAVG (Note 1)	*571.9* °F	*571.9* °F	ΔT = *0* °F Maximum change of 0.3°F allowed if TAVG is 545°F or greater, 0.1°F if TAVG is less than 545°F.
RCS Temperature Correction Factor	CF (Note 5)	*99.7* OR *NA*	N/A	B = ΔT × CF = *0* Gal.
LC 1600 OR Average of LT0459, LT0460 & LT0461 (LI-459, 460, 461)	PRZR LVL	*47.8* %	*47.8* %	C = 56.3 × *0* % = *0* Gal.
LT0115 (LI 115)	VCT LVL	*51.0* %	*40.7* %	D = 14.18 × *(–)10.3* % = *(–)146.0 to 146.1* Gal.
LI 1003 Waste Pnl or BOP LS261 Pos 6	RCDT LVL	*36.4* % *127.69* *Gal	*38.1* % *133.71* *Gal	E = *6.01 to 6.02* Gal. (Enter 0 if negative)
LT0470 (LI 470)	PRT LVL (Note 2)	*69.7* % *NA* *Gal	*69.7* % *NA* *Gal	F = *0* Gal. (Enter 0 if negative)
FIS 168	TOTAL FLOW BATCH INTEG	*3489* Gal. *NA* Gal.	*3489* Gal. *NA* Gal.	G = *0* Gal. Dilution and Blended Makeup

*From Tank Curve Book

KEY (continued): STP-9.0, DATA SHEET 1, RCS Leakage

Total Leakage

$$= \frac{B - C - D + G}{A} = \frac{(\ 0\ ) - (\ 0\ ) - (\ \text{(-)146.0 to (-)146.1}\ ) + (\ 0\ )}{(\ 120\ )} = \text{(+1.21) to (+1.22) GPM}$$

$$\text{Identified Leakage} = \frac{E + F}{A} = \frac{(\ \text{6.00 to 6.03}\ ) + (\ 0\ )}{(\ 120\ )} + \frac{0}{\text{Other leakage}} = \text{0.05 GPM}$$

Other Leakage:

Source	Rate (GPM)
0	***0***

Total Other 0.0 gpm

$$\text{Unidentified Leakage} = \frac{\text{1.21 to 1.22}}{\text{Total Leakage}} - \frac{\text{0.050 no tolerance}}{\text{Identified Leakage}} = \text{1.16 to 1.17 GPM}$$

ACCEPTANCE CRITERIA:
- Identified Leakage ≤ 10 gpm
- Unidentified Leakage ≤ 1 gpm

Identified RCS Leakage is .050 gpm.

Unidentified RCS Leakage is 1.16 to 1.17 gpm.

STP-9.0 Acceptance Criteria IS NOT met .

Tech Spec Evaluation TS 3.4.13 , Cond A .

CONDITIONS

When I tell you to begin, you are to PERFORM STP-9.0, RCS LEAKAGE TEST. The conditions under which this task is to be performed are:

a. Unit 1 is stable at 100% power.
b. The RCS leakrate program is unavailable.
c. The plant computer data has been provided on the HANDOUT.
d. Previous RCS leakrate has been 0.00 gpm.
e. You are directed by the Shift Supervisor to
   1) Determine RCS leakage per STP-9.0, APPENDIX A
      - When APPENDIX A is complete, another operator will perform the remainder of the steps in STP-9.0.
   2) Determine whether or not RCS leakage Acceptance Criteria is met.
   3) Evaluate Tech Specs.

Identified RCS Leakage is _____ gpm.

Unidentified RCS Leakage is _____ gpm.

STP-9.0 Acceptance Criteria IS met / IS NOT met .

Tech Spec Evaluation _____ .

Plant Conditions at 1000:

INSTRUMENT Computer Points	**NAME**		
N/A	TIME	*10:00*	
NC1100A	PR AVG FLUX	*100.0*	%
TE0453	LIQ PRZR TEMP	*650.8*	°F
PC0482	PRZR PRESS	*2239.4*	psig
TC0484	RCS TAVG	*571.9*	°F
LC 1600	PRZR LVL	*47.8*	%
LT0115	VCT LVL	*51.0*	%
BOP LS261 Pos 6	RCDT LVL	*36.4*	%
LT0470	PRT LVL	*69.7*	%
FIS 168	TOTAL FLOW BATCH INTEG	*3489*	Gal.

Plant Conditions at 1200:

INSTRUMENT Computer Points	**NAME**		
N/A	TIME	*12:00*	
NC1100A	PR AVG FLUX	*100.0*	%
TE0453	LIQ PRZR TEMP	*650.8*	°F
PC0482	PRZR PRESS	*2239.4*	Psig
TC0484	RCS TAVG	*571.9*	°F
LC 1600	PRZR LVL	*47.8*	%
LT0115	VCT LVL	*40.7*	%
BOP LS261 Pos 6	RCDT LVL	*38.1*	%
LT0470	PRT LVL	*69.7*	%
FIS 168	TOTAL FLOW BATCH INTEG	*3489*	Gal.

A.3 ADMIN RO Radiation Control

TITLE: **Determine the Correct RWP, Total Projected Dose And Determine if an Oil Addition and venting can be Performed to the 2A RHR pump without exceeding limits defined.**

EVALUATION LOCATION: ☐ SIMULATOR ☐CONTROL ROOM ☒CLASSROOM

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A

☐ ALTERNATE PATH ☐ TIME CRITICAL ☐ PRA

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.
2. Requiring the examinee to acquire the required materials may or may not be included as part of the JPM.

TASK STANDARD: Upon successful completion of this JPM, the examinee will review an RWP, Radiological Survey Map and perform the following for adding oil to the 2A RHR pump and venting the suction:

- Identify the correct RWP.
- Calculate the total projected dose for the job.
- Determine if the task can or cannot be performed without exceeding Administrative Limits or RWP limits on a single entry, and if NOT then state the reason.

Examinee:	
Overall JPM Performance:	**Satisfactory** ☐ **Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Developer	GT Ohmstede	Date: 2/9/2012
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

CONDITIONS

When I tell you to begin, you are to **Determine the Correct RWP, Total Projected Dose And Determine if an Oil Addition and venting can be Performed to the 2A RHR pump without exceeding limits defined.**

The conditions under which this task is to be performed are:

1. You are a trainee on shift and will be accomplishing the following task under instruction.
2. You will be draining and adding oil to the 2A RHR Pump Motor upper and lower reservoirs and venting the suction of the RHR pump near the encapsulation.
3. All needed tools, oil, and equipment have been staged outside the 2A RHR Pump room.
4. All necessary briefings to perform the task have been completed.
5. Your accumulated dose for this year to date is 1260 mRem.
6. Contamination levels: All areas are less than ALPHA 3 levels and < 200 dpm/100 cm^2.
7. The following tasks are required to be performed:

#	TASK	TIME REQUIRED	DOSE RATE
1	Drain and fill the RHR pump motor (upper reservoir)	5 min	25 mR/hr
2	Drain and fill the RHR pump motor (lower reservoir)	15 min	60 mR/hr
3	Remove pipe cap, attach hose to vent valve and open the valve until air free water issues from the vent.	25 min	120 mR/hr

Note: Assume no dose received while traveling between tasks.

8. Using the attached RWPs, you are to DETERMINE and DOCUMENT your conclusions for yourself ONLY on the table below:
   a. The correct RWP to use for this task.
   b. Total projected dose for this task.
   c. Whether you can or cannot perform the task without exceeding Administrative Dose Limits or RWP limits. If the task cannot be performed, then state the reason.

INITIATING CUE: **"IF you have no questions, you may begin."**

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
* 1. Determines RWP to use.	Reviews the dose rates and identifies that the highest General Area dose rate for the jobs to be performed is 120 mR/hr. Determines that the task will require a High Radiation Area entry. References the RWPs and determines that RWP 12-0101 is a Training RWP, but it cannot be used for a High Radiation Area entry. Determines that RWP 12-0503 has allowance for OPS Training in High Radiation Areas, and is the correct RWP to use.	S / U
* 2. Calculates total projected dose.	Calculates dose received while performing the job. **Documents the total of 67 mRem**	S / U

Total dose from task calculation:

Dose-upper oil addition + Dose-lower oil addition + Dose-venting = Total dose for the task

1. 5 minutes * 25 mRem/ hr * 1 hr/60 minutes = **2.08 mRem (dose at jobsite) {2 – 2.1}**
2. 15 minutes * 60 mRem/ hr * 1 hr/60 minutes = **15 mRem (dose at jobsite) { no range }**
3. 25 minutes * 120 mRem/ hr * 1 hr/60 minutes = **50 mRem (dose at jobsite) { no range }**

2.08 + 15 + 50 = Total Dose = **67 to 67.1 mRem total**

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
* 3. Determine if any dose limits will be exceeded by performing the task.	Determines if allowable dose limits will be exceed: — **Admin dose limit** Total dose = 1260 + 67.1 = 1327.1 mR 1327.1 mR < Admin dose limit of 2000 mR. — **RWP Task dose limit** 67.1 mR < RWP 12-0503 Task dose limit of 90 mR — **RWP Task dose rate limit** 120 mR/hr < RWP 12-0503 Task dose rate limit of 140 mR/hr. **Documents** that dose limits will not be exceeded.	S / U

Total ANNUAL dose:

(1260 accumulated) + 67.1 = 1327.1 mR {1327 – 1327.1}

FNP Administrative Annual Dose limit from FNP-0-M-001, Southern Nuclear Company Joseph M. Farley Nuclear Plant Health Physics Manual, is 2000 mR for a Fully Documented Radiation worker.

* 4. States the task is permitted	IDENTIFIES that the task actions can be completed as assigned.	S / U

_____ STOP TIME

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-M-001, v18.0
2. KA: G2.3.14 RO 3.4 SRO 3.8

GENERAL TOOLS AND EQUIPMENT:

Calculator
RWP 12-0503 and 12-0101 (For Training USE ONLY)
Health Physics Manual, FNP-0-M-001, v18.0.

Critical ELEMENT justification:

STEP	Evaluation
1.	**Critical:** Task completion: required to determine proper Radiation Work Permit for the task given.
2.	**Critical:** Task completion: required to determine the total projected dose.
3.	**Critical:** Task completion: required to determine if any dose limits will be exceeded.
4.	**Critical:** Task completion: required to identify that the task can be done within limits permitting task completion.

KEY

Determination of Task Performance	
CORRECT RWP to use (CIRCLE the correct RWP)	**12-0101** **12-0503** (12-0503 circled)
Projected dose for this task	*67 to 67.1 mRem {range of 67-67.1 mRem}
Can you complete this task without exceeding limits?	**(CIRCLE ONE)** YES (circled) *NO
REASON, if applicable:	NA

CONDITIONS

When I tell you to begin, you are to **Determine the Correct RWP, Total Projected Dose And Determine if an Oil Addition and venting can be Performed to the 2A RHR pump without exceeding limits defined.**

The conditions under which this task is to be performed are:

1. You are a trainee on shift and will be accomplishing the following task under instruction.
2. You will be draining and adding oil to the 2A RHR Pump Motor upper and lower reservoirs and venting the suction of the RHR pump near the encapsulation.
3. All needed tools, oil, and equipment have been staged outside the 2A RHR Pump room.
4. All necessary briefings to perform the task have been completed.
5. Your accumulated dose for this year to date is 1260 mRem.
6. Contamination levels: All areas are less than ALPHA 3 levels and < 200 dpm/100 cm^2.
7. The following tasks are required to be performed:

#	TASK	TIME REQUIRED	DOSE RATE
1	Drain and fill the RHR pump motor (upper reservoir)	5 min	25 mR/hr
2	Drain and fill the RHR pump motor (lower reservoir)	15 min	60 mR/hr
3	Remove pipe cap, attach hose to vent valve and open the valve until air free water issues from the vent.	25 min	120 mR/hr

Note: Assume no dose received while traveling between tasks.

8. Using the attached RWPs, you are to DETERMINE and DOCUMENT your conclusions for yourself ONLY on the table below:
   d. The correct RWP to use for this task.
   e. Total projected dose for this task.
   f. Whether you can or cannot perform the task without exceeding Administrative Dose Limits or RWP limits. If the task cannot be performed, then state the reason.

Determination of Task Performance		
CORRECT RWP to use (CIRCLE the correct RWP)	**12-0101**	**12-0503**
Projected dose for this task		
Can you complete this task without exceeding limits?	**(CIRCLE ONE)** YES	NO
REASON, if applicable:		

Radiation Work Permit	Plant Farley 12-0101 FOR TRAINING USE ONLY	REV 99	UNIT 0

Job Description	Administration;This RWP is designated for administrative departments to include Executive & Senior Management, Security, Information Technology, Fleet Oversight, Safety and Health, Training, Performance Improvement, and Work Control that involve radiological work categorized as 'Low Risk' AND not specifically addressed by other RWPs. Caution: This RWP cannot be used for entries into Containment, work in High Radiation Areas, Airborne Areas, or posted Alpha Level 2 or Level 3 Contaminated Areas.
Location	RADIATION CONTROL AREAS

HP Coverage	Authorization	Briefing
INTERMITTENT	ALL	ALL

Start Date	1/1/2012 12:00 AM	End Date	12/31/2012 11:59 PM
Job Supv.	G. Ohmstede	EXT	4758

Radiological Conditions

AIRBORNE LEVELS: < 0.3 DAC PART AND IODINE, <1.0 DAC NOBLE GAS/TRITIUM

CONTAMINATION: < 200,000 DPM/100CM2 BETA GAMMA, LESS THAN ALPHA LEVEL 1

RAD LEVELS: LESS < 100 MREM/HR

Dosimetry

TLD and DAD

Protective Clothing Requirements

DRESS REQUIRMENTS AS HP DIRECTS

Respirators

Usage is Prohibited

TASKS

Description	DAD Alarms Dose (mr)	DAD Alarms Rate(mr/h)
NRC, INPO, ETC. ACTIVITIES	10	50
FLEET OVERSIGHT ACTIVITIES	10	50
TRAINING AND EP ACTIVITIES	25	50
WORK CONTROL ACTIVITIES	25	50
SECURITY ACTIVITIES	10	50

INSTRUCTIONS

There are certain worker instructions that are applicable to ALL RWPs. These instructions are provided at the Main RCA entrance.

Worker MUST ensure they understand and comply with these instructions at all times while working in RCAs

ENTRY INTO AREAS WITH KNOWN RADIOLOGICAL CONDITIONS GREATER THAN THOSE SPECIFIED ABOVE IS PROHIBITED AND REQUIRES AUTHORIZATION AND BRIEFING ON THE APPROPRIATE RWP.

Contact Health Physics Prior to entering any Radiation Area posted as Neutron Monitoring Required.

Exposure limits for Neutron is as follows: 10 mrem per entry and 50 mrem/hour.

The following special instructions may be deviated from with SNC HP ANSI 3.1 or higher qualified individual's permission.

___ Dressout requirements for areas >50,000 dpm/100cm2 beta/gamma: Double coveralls, or 1 set of Ultra Orex or equivalent, two sets of booties, two sets rubber shoecovers, and two sets gloves.

FOR TRAINING USE ONLY

Prepared	NRC EXAM TEAM	APPROVED	6/18/2012 12:00:00 AM **by NRC EXAM WRITER**

Radiation Work Permit	Plant Farley 12-0503 **FOR TRAINING USE ONLY**	Rev 99	UNIT 0

Job Description	Operations: This RWP is designated for Operations Activities involving work in High Radiation Areas and other work classified as "Medium Radiological Risk" not specifically addressed by other RWPs. CAUTION: This RWP cannot be used for entries into Containment, Locked High Radiation Areas, OR work in Alpha Level 3 Areas.
Location	RADIATION CONTROL AREAS

HP Coverage	Authorization	Briefing
INTERMITTENT	INDIVIDUAL	INDIVIDUAL

Start Date	1/1/2012 12:00 AM	End Date	12/31/2012 11:59 PM
Job Supv.	G. Ohmstede	EXT	4758

Radiological Conditions

AIRBORNE LEVELS: LESS THAN 4 DAC HOURS PER ENTRY

CONTAMINATION: < 500,000 DPM/100CM2 BETA GAMMA, LESS THAN ALPHA LEVEL 3

RAD LEVELS: LESS < 1000 MREM/HR

Dosimetry

TLD and DAD

Protective Clothing Requirements

DRESS REQUIRMENTS AS HP DIRECTS

Respirators

Usage is Conditional per HP

TASKS

Description	DAD Alarms Dose (mr)	DAD Alarms Rate(mr/h)
OPS ACTIVITIES (NON HIGH RAD AREAS)	20	70
OPS TRAINING & JPM ACTIVITIES (NON HIGH RAD AREAS)	20	70
OPS ACTIVITIES (HIGH RAD AREAS)	90	140
OPS TRAINING & JPM ACTIVITIES (HIGH RAD AREAS)	90	140

INSTRUCTIONS

There are certain worker instructions that are applicable to ALL RWPs. These instructions are provided at the Main RCA entrance.

Worker MUST ensure they understand and comply with these instructions at all times while working in RCAs

All workers must receive an Initial RWP Briefing prior to using this RWP for the FIRST time.

Prior to commencing work, individuals will receive a High Rad briefing for every posted High Radiation Area to be entered.

Prior to commencing any work in Neutron Radiation Areas, individuals will contact Health Physics to ensure appropriate Neutron monitoring is performed.

Exposure limits for Neutron is as follows: 10 mrem per entry and 50 mrem/hour.

Health Physics Technician must give approval before any tool or piece of equipment is raised such that the item comes out of the water.

Health Physics Technician must give approval before any activated or high dose object is brought near the surface of the water.

When there is extended work evolutions in the SFP Room, the Operations Refueling Supervisor should consider placing the SFP on recirc to the demin.

Notify HP prior to moving any fuel or irradiated components so that HP can ensure the movement will not cause any possible streaming from the light poles in the SFP Transfer canal.

Identified Irradiated FME must have a retrieval plan approved by the HP Supervisor and can not be vacuumed to a filter without approval of HP Radwaste

DAD alarm values may be adjusted by a SNC HP ANSI 3.1 or higher qualified individual based on expected conditions but can not exceed the limits listed for this RWP.

The following special instructions may be deviated from with a SNC HP ANSI 3.1 or higher qualified individual's permission.

___ Dressout requirements for areas >50,000 dpm/100cm2 beta/gamma: Double coveralls, or 1 set of Ultra Orex or equivalent, two sets of booties, two sets rubber shoecovers, and two sets gloves.

FOR TRAINING USE ONLY

Prepared	NRC EXAM TEAM	APPROVED	6/18/2012 12:00:00 AM **by NRC EXAM WRITER**

A.3 ADMIN SRO Radiation Control

TITLE: **Calculate the Maximum Dose an individual will receive to operate local equipment, if the individual will exceed Emergency Dose Limits, and then determine if the individual is required to receive a volunteer brief prior to performing the emergency actions.**

EVALUATION LOCATION: ☐ SIMULATOR ☐CONTROL ROOM ☒CLASSROOM

PROJECTED TIME: 20 MIN SIMULATOR IC NUMBER: N/A

☐ ALTERNATE PATH ☐ TIME CRITICAL ☐ PRA

JPM DIRECTIONS:

1. Initiation of task may be in group setting, evaluation performed individually upon completion.

TASK STANDARD: Upon successful completion of this JPM, the examinee will calculate the Maximum dose an individual will receive to operate equipment for the Safety and Health of the public, then determine if the EDLs have been exceeded and if a volunteer brief is required.

Examinee:	
Overall JPM Performance:	**Satisfactory** ☐ **Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Developer	GT Ohmstede	Date: 2/9/2012
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

CONDITIONS

When I tell you to begin, you are to **Calculate the Maximum Dose an individual will receive to operate local equipment, if the individual will exceed Emergency Dose Limits, and then determine if the individual is required to receive a volunteer brief prior to performing the emergency actions.**

The conditions under which this task is to be performed are:

1. 1B Steam Generator (SG) has a SGTR, 1A and 1C SGs have tube leaks and there is fuel failure indicated.
2. 1A, 1B and 1C Atmospheric Relief Valves have failed open and are required to be closed to protect the Safety and Health of the Public.
3. Emergency Dose Limits are in effect and there is only one SO available to accomplish the task.
4. SO "A" has received 1.26 Rem TEDE this year.
5. The following tasks are required to be performed:

#	TASK	TIME ~~REQUIRED~~ (estimated)	DOSE RATE
1	Close PCV-3371A	20 min	12.0 R/hr
2	Close PCV-3371B	24 min	40.0 R/hr
3	Close PCV-3371C	21 min	12.0 R/hr

Note: Assume no dose received while traveling between tasks.

Refer to the above information and **answer the questions below:**

6. **IF** SO "A" completes **ALL tasks in the time required**:
   - What will be the total dose for the actions performed?
   - Will SO "A" exceed the Emergency Dose Limits in effect?
   - Is this individual required to receive a volunteer brief?

Determine whether the individual exceed the 25 rem emergency dose limit.

INITIATING CUE: **"IF you have no questions, you may begin."**

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START TIME		
* 1. Determine dose received while performing task 1 12.0 R/hr X 1hr/60 min X 20 min = 4.0 R	Determine dose received while performing task 1 4.0 Rem	S / U
* 2. Determine dose received while performing task 2 40.0 R/hr X 1hr/60 min X 24 min = 16.0 R	Determine dose received while performing task 2 16.0 Rem	S / U
* 3. Determine dose received while performing task 3 12 R/hr X 1hr/60 min X 21 min = 4.2 R	Determine dose received while performing task 3 4.2 Rem	
* 4. Determine TOTAL dose received	24.2 Rem	

Total dose calculation: Dose-task 1 + Dose- task 2 + Dose- task 3 = Total dose
4.0 + 16.0 + 4.2 = Total Dose = 24.2 **Rem total**

* 5. Determine if Emergency Dose Limits will be exceeded by performing the task per EIP-14.0 step 7.12. — **Emergency Dose Limits that can be REQUIRED (non volunteer) to be received is up to 25 Rem TEDE for protection of large populations.** EIP-14.0 - Emergency doses received do not have to take into account the annual dose to date.	Determines if Emergency Dose Limits will be exceeded. **24.2 Rem projected < 25 Rem for Protection of Large Populations** Answer is **NO .**	S / U
* 6. Is this individual required to receive a volunteer brief?	Checks volunteer requirements and determines a volunteer brief is NOT required.	
____ STOP TIME		

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. FNP-0-EIP-14.0, VER 26.0
2. KA: G2.3.14 RO 3.4 SRO 3.8

GENERAL TOOLS AND EQUIPMENT:

Calculator
FNP-0-EIP-14.0, VER 26.0

Comments:

CAUTION EMERGENCY EXPOSURE LIMITS SHALL ONLY BE AUTHORIZED BY THE ED
7.12 Emergency situations may transcend the normal requirement of maintaining personnel exposures below 10CFR20 limits, as noted in step 7.10. Emergency exposures shall be minimized to every degree practicable. FNP personnel who have completed the onsite radiation protection training may be required to receive an exposure up to 25 Rem TEDE for the activity and conditions described below. For those same personnel to receive in excess of 25 Rem, they must voluntarily agree to receive an emergency dose in excess of 25 Rem, but less than 100 Rem. Emergency doses received do not have to take into account the annual dose to date. Persons volunteering to receive in excess of 25 Rem must be made fully aware of the risks involved.
Emergency exposure limits are as follows:

TEDE Dose	Activity	Condition
10 Rem	Protecting Valuable Property	Lower Dose Not Practical
25 Rem	Life Saving or Protection of Large Populations	Lower Dose Not Practical
>25 Rem <100 Rem	Life Saving or Protection of Large Populations	Volunteers Only That Are Fully Aware of The Risks Involved

Critical ELEMENT justification: 1-3 are critical since if done incorrectly the answer could be correct for the wrong reason.

STEP	Evaluation
1.	**Critical: calculation is** required to calculate if EDLs will be exceeded and then to determine correctly if a volunteer will be required.
2.	**Critical: calculation is** required to calculate if EDLs will be exceeded and then to determine correctly if a volunteer will be required.
3.	**Critical: calculation is** required to calculate if EDLs will be exceeded and then to determine correctly if a volunteer will be required.
4.	**Critical: calculation is** required to calculate if EDLs will be exceeded and then to determine correctly if a volunteer will be required.
5.	**Critical:** EIP-14.0 EDLs for this task are up to 25 Rem, not including dose received to date. If EDL of 10 Rem for Protecting Valuable Property is used then the person could NOT do the task since 24.2 Rem will be received.
6.	**Critical:** EIP-14.0 requires a volunteer to be used if 25 Rem or greater doses are to be received. If the dose received to date is added in then the person would be required to be a volunteer and receive extra briefings per EIP-14.0.

KEY

EDLs	
What will be the total dose for the actions performed?	**24.2 Rem** {No Range}
Will SO "A" exceed the Emergency Dose Limits in effect?	**(CIRCLE ONE)** YES NO
Is this individual required to receive a volunteer brief?	**(CIRCLE ONE)** YES NO

CONDITIONS

When I tell you to begin, you are to **Calculate the Maximum Dose an individual will receive to operate local equipment, if the individual will exceed Emergency Dose Limits, and then determine if the individual is required to receive a volunteer brief prior to performing the emergency actions.**

The conditions under which this task is to be performed are:

1. 1B Steam Generator (SG) has a SGTR, 1A and 1C SGs have tube leaks and there is fuel failure indicated.
2. 1A, 1B and 1C Atmospheric Relief Valves have failed open and are required to be closed to protect the Safety and Health of the Public.
3. Emergency Dose Limits are in effect and there is only one SO available to accomplish the task.
4. SO "A" has received 1.26 Rem TEDE this year.
5. The following tasks are required to be performed:

#	TASK	TIME REQUIRED	DOSE RATE
1	Close PCV-3371A	20 min	12.0 R/hr
2	Close PCV-3371B	24 min	40.0 R/hr
3	Close PCV-3371C	21 min	12.0 R/hr

Note: Assume no dose received while traveling between tasks.

Refer to the above information and **answer the questions below:**

6. **IF** SO "A" completes **ALL tasks in the time required**:
   - What will be the total dose for the actions performed?
   - Will SO "A" exceed the Emergency Dose Limits in effect?
   - Is this individual required to receive a volunteer brief?

EDLs	
What will be the total dose for the actions performed?	
Will SO "A" exceed the Emergency Dose Limits in effect?	**(CIRCLE ONE)** YES NO
Is this individual required to receive a volunteer brief?	**(CIRCLE ONE)** YES NO

A.4 Admin SRO only - Emergency Plan

TITLE: Classify an Emergency Event per NMP-EP-110, Emergency Classification Determination and Initial Action, and complete Checklist 1, Classification Determination.

EVALUATION LOCATION: ☐ SIMULATOR ☐CONTROL ROOM ☒CLASSROOM

PROJECTED TIME: 15 MIN SIMULATOR IC NUMBER: N/A

☐ ALTERNATE PATH ☒ TIME CRITICAL ☐ PRA

JPM DIRECTIONS:

1. This task can be conducted individually or in a group setting in which all the necessary references are available.
2. Provide the candidate the HANDOUT page and a copy of Checklist 1, Classification Determination, to allow for familiarization with the task for the event in progress. Since this is a Time Critical task, allow the candidate time to review and understand the task.
3. When the candidate understands his task, provide the candidate a copy of the procedure NMP-EP-110 AND NMP-EP-110-GL001, and allow the candidate to begin. This starts the time critical time.
4. Ensure a clock is in the room in which this task will be conducted.
5. This task is TIME CRITICAL.

CAUTION: A KEY is included and precedes the student handout. CARE must be taken when providing the Student HANDOUT as to not also include the KEY.

TASK STANDARD: Upon successful completion of this JPM, the examinee will:

- Correctly assess the Classification and correctly fill out Checklist 1; which includes line 5; Name, Date and Time. The time is required to be within 15 minutes of the Start Time.

Examinee:	
Overall JPM Performance: **Satisfactory** ☐	**Unsatisfactory** ☐
Evaluator Comments (attach additional sheets if necessary)	

EXAMINER: _____

Developer	GT Ohmstede	Date: 2/6/2012
NRC Approval	SEE NUREG 1021 FORM ES-301-3	

CONDITIONS

When I tell you to begin, you are to **Classify an Emergency Event per NMP-EP-110, Emergency Classification Determination and Initial Action, and complete Checklist 1, Classification Determination.**

The conditions under which this task is to be performed are:

a. The Site Security Captain reports that there are three people with guns in the Unit 2 Turbine Building and there is an on-going exchange of gunfire with security officers.
b. AOP-49.0, Imminent Security Threat, has been entered.
c. Unit 1 was tripped from 100% power from the MCB Handswitches.
d. Unit 2 attempted to trip the reactor using the MCB trip switches unsuccessfully.
e. The OATC then successfully opened the CRDM MG set supply breakers and the rods fell into the core.
f. Both units are currently in ESP-0.1, Reactor Trip Response.
g. Subsequently, the following conditions are reported on **Unit 2**:
   - An RCS leak of 150 gpm has developed.
   - R-2 is reading 40 mr/hr and R-7 is reading 100 mr/hr and BOTH radiation monitors are rising.
h. As the extra SRO on shift, you have been assigned the task of classifying the event and completing NMP-EP-110, Checklist 1 for the Shift Manager per NMP-EP-110 step 6.2.
i. The current MET Tower data is as follows:
   - Wind Direction from 125 degrees.
   - Wind Speed 4.5 mph.
   - Precipitation none.
   - Stability Class E.
j. This task has **TIME CRITICAL** elements.

INITIATING **CUE**: "IF you have no questions, you may begin."

Ensure the CANDIDATE understands the task and has no further questions, THEN have the CANDIDATE place the START TIME on the HANDOUT SHEET. Put that same time in the START CRITICAL TIME block below.

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
____ START CRITICAL TIME		
(step 1 of NMP-EP-110, Checklist 1) 1. **Determine** the appropriate Initiating Condition Matrix for classification of the event based on the current operating mode.	☐ Candidate will use Figure 2, HOT INITIATING CONDITION MATRIX for evaluation. ☐ (**GO** to Step **2**)	S / U

EVALUATION CHECKLIST

ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
(step 2a) 2. **Evaluate** the status of the fission product barrier using Figure 1 FPB Evaluation.	Candidate will evaluate: ☐ **RCS Leak Rate**-Non-isolable RCS leak greater than120 GPM = potential loss ☐ **Containment Radiation Monitoring** - CTMT Rad Monitor RE-2 greater than 100 mR/hr OR CTMT Radiation Monitor RE-7 greater than 200 mR/hr = not a LOSS ☐ **This meets FA1 criteria for ANY Loss or ANY Potential Loss of EITHER Fuel Clad OR RCS** ☐ **Line 2a should be filled out as below:**	S / U

	LOSS	POTENTIAL LOSS	INTACT
Fuel Cladding Integrity	☐	☐	☒
Reactor Coolant System	☐	☒	☐
Containment Integrity	☐	☐	☒

(step 2b) 3. **Determine** the highest applicable fission product barrier Initiating Condition (IC):	☐ FA1 selected	S / U
(step 3) 4. **Evaluate** and **determine** the highest applicable IC/EAL using the Matrix Evaluation Chart identified in step 1 **THEN GO** to step **4**	Using the TOP down approach, the security event will be evaluated as a Site Area emergency –HS4 The Rx trip issue should be evaluated and determined to be an ALERT classification- SA2 ☐ **Places HS4 in block 3**	S / U
(step 4) * 5. **Check** the highest emergency classification level identified above:	☐ **Site-Area block checked** ☐ **HS4 placed in blank provided next to Site-Area**	S / U

EVALUATION CHECKLIST

	ELEMENTS:	STANDARDS:	RESULTS: (CIRCLE)
	(step 5)		S / U
*	6. **Declare** the event by approving the Emergency declaration.	☐ Name placed in blank provided for Emergency Director ☐ Date placed in blank provided ☐ Time placed in blank provided	
	(step 6)		S / U
	7. **Obtain** Meteorological Data (not required prior to event declaration):	☐ Wind Direction (from) 125° ☐ Wind Speed 4.5 ☐ Stability Class E ☐ Precipitation none	

____ STOP CRITICAL TIME (Stop Critical Time is the time from Block 5)

Terminate when all elements of the task have been completed.

CRITICAL ELEMENTS: Critical Elements are denoted with an asterisk (*) before the element number.

GENERAL REFERENCES:

1. NMP-EP-110 Version 3.0
2. NMP-EP-110-GL01, Version 2.0
3. KA: G2.4.41 SRO (4.6)

GENERAL TOOLS AND EQUIPMENT:

NMP-EP-110
NMP-EP-110-GL01

Critical ELEMENT justification:

STEP	Evaluation
1	Not critical: using the correct matrix is vital to get the correct answer but if the task was completed with the wrong matrix, the classification would still be correct.
2	Not critical: evaluating the FPB correctly is important but the correct classification is a SITE AREA so this being classified as an ALERT is not critical. The Critical Task will show up in block 5.
3	Not critical: filling out this block is important but the Critical Task will show up in block 5.
4	Not critical: filling out this block is important but the Critical Task will show up in block 5.
5	**Critical:** Task completion; information provided is essential for correct classification and Emergency Notification form being correctly filled out and transmitted.
6	**Critical:** The time and approval name is required to correctly fill out the Emergency Notification form and provide approval to allow transmitting the form.

COMMENTS:

Checklist 1 – Classification Determination (page 1 of 1)

NOTE

Key Parameters should be allowed to stabilize to accurately represent plant conditions prior to classifying an event.

Initial Actions Completed by

1. **Determine** the appropriate Initiating Condition Matrix for classification of the event based on the current operating mode: _____
   - ☐ HOT IC/EAL Matrix Evaluation Chart (**GO** to Step **2)** to evaluate the Barriers)
   - ☐ COLD IC/EAL Matrix Evaluation Chart (**GO** to Step **3**)
2. Evaluate the status of the fission product barrier using Figure 1, Fission Product Barrier Evaluation.

   a. Select the condition of each fission product barrier: _____

	LOSS	POTENTIAL LOSS	INTACT
Fuel Cladding Integrity	☐	☐	X
Reactor Coolant System	☐	X	☐
Containment Integrity	☐	☐	X

FA1 - ALERT classification for 150 gpm leak.

   b. Determine the highest applicable fission product barrier Initiating Condition (IC): _____

   (select one) ☐ FG1 ☐ FS1 X FA1 ☐ FU1 ☐ None

SA2 - ALERT classification on Unit 2 for Rx Trip issue

3. **Evaluate** and **determine** the highest applicable IC/EAL using the Matrix Evaluation Chart identified in step 1 **THEN GO** to step **4**. _____

   IC#_____ HS4 _____ or ☐ None

HS4 - Site Area emergency for BOTH units due to the security event.

4. **Check** the **highest** emergency classification level identified from either step 2b or 3: _____

Classification	Based on IC#	Classification	Based on IC#
☐ General		☐ Alert	
X Site-Area	HS4	☐ NOUE	
		☐ None	N/A

Remarks (Identify the specific EAL, as needed):_____

5. **Declare** the event by approving the Emergency Classification. _____

   Name of candidate _____ Date: 6/19/2012 Time: current time

   Emergency Director

6. **Obtain** Meteorological Data (not required prior to event declaration): _____

   Wind Direction (from) 125 Wind Speed 4.5 Stability Class E Precipitation none

7. **Initiate** Checklist 2, Emergency Plan Initiation. _____

CONDITIONS

When I tell you to begin, you are to **Classify an Emergency Event per NMP-EP-110, Emergency Classification Determination and Initial Action, and complete Checklist 1, Classification Determination.**

The conditions under which this task is to be performed are:

a. The Site Security Captain reports that there are three people with guns in the Unit 2 Turbine Building and there is an on-going exchange of gunfire with security officers.
b. AOP-49.0, Imminent Security Threat, has been entered.
c. Unit 1 was tripped from 100% power from the MCB Handswitches.
d. Unit 2 attempted to trip the reactor using the MCB trip switches unsuccessfully.
e. The OATC then successfully opened the CRDM MG set supply breakers and the rods fell into the core.
f. Both units are currently in ESP-0.1, Reactor Trip Response.
g. Subsequently, the following conditions are reported on **Unit 2**:
   - An RCS leak of 150 gpm has developed.
   - R-2 is reading 40 mr/hr and R-7 is reading 100 mr/hr and BOTH radiation monitors are rising.
h. As the extra SRO on shift, you have been assigned the task of classifying the event and completing NMP-EP-110, Checklist 1 for the Shift Manager per NMP-EP-110 step 6.2.
i. The current MET Tower data is as follows:
   - Wind Direction from 125 degrees.
   - Wind Speed 4.5 mph.
   - Precipitation none.
   - Stability Class E.
j. This task has **TIME CRITICAL** elements.

_____ START TIME