FACILITY NAME: Turkey Point Section 8

REPORT NUMBER: 2009-302

FINAL RO WRITTEN EXAM

CONTENTS:

- ☑ **Final RO Written Exam (75 'as given' questions with changes made during administration annotated)**
- ☑ **Reference Handouts Provided To Applicants**
- ☑ **Answer Key**

Location of Electronic Files:

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Submitted By: _____ Verified By: _____

U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information	
Name:	
Date:	Facility/Unit: Turkey Point Units 3 & 4
Region: I ☐ II X III ☐ IV ☐	Reactor Type: W X CE ☐ BW ☐ GE ☐
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination, you must achieve a final grade of at least 80.00 percent. Examination papers will be collected 6 hours after the examination begins.

Applicant Certification

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

_____
Applicant's Signature

Results	
Examination Value	_____ Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

Turkey Point ILC 25
[redacted]RO KEY

1	C
2	D
3	D
4	B
5	A
6	B
7	B
8	A
9	B
10	D
11	A
12	D
13	A
14	C
15	B
16	A
17	B
18	D
19	A
20	B
21	A
22	B
23	B
24	B
25	D
26	A
27	D
28	B
29	D
30	C
31	B
32	C
33	D
34	B
35	B
36	A
37	B
38	B
39	B
40	D
41	C
42	B
43	A
44	C
45	C
46	C
47	C
48	C
49	D
50	C
51	C
52	D
53	A
54	D
55	C
56	B
57	B
58	C
59	C
60	A
61	D
62	B
63	D
64	B
65	C
66	D
67	A
68	B
69	A
70	D
71	C
72	A
73	D
74	D
75	B
76	D
77	A
78	C
79	A
80	A
81	A
82	C
83	D
84	B
85	D
86	C
87	A
88	A
89	C
90	A
91	B
92	D
93	B
94	A
95	D
96	C
97	A
98	B
99	C
100	B

Question 1

- Unit 3 is at 100% power.
- Pressurizer pressure is decreasing.
- The bottom two rows of LEDs on the acoustic monitor are lit.
- The PORV tailpipe temperature is 220°F.
- The safety valve tailpipe temperatures are 130°F.

What can be determined by these indications?

A The specific PORV that is leaking

B The specific safety valve that is leaking

C A PORV is leaking, but cannot determine which one

D A safety valve is leaking, but cannot determine which one

Question 2

The crew has just entered 4-EOP-E-1, Loss of Reactor or Secondary Coolant, in response to a small break LOCA.

- Containment temperature is 220°F.
- Only the 4A HHSI Pump is running.
- MOV-4-843 A & B, HHSI to Cold Leg MOV, are both closed.
- RCS Subcooling is 40°F.

For the given plant conditions, which one of the following describes RCP operation in accordance with 4-EOP-E-1, and the basis for this action?

The RO should...

A trip the RCPs. This will minimize RCS mass loss.

B trip the RCPs. This will reduce heat input into the RCS.

C NOT trip the RCPs. The RCPs are needed for pressure control.

D NOT trip the RCPs. The RCPs are helping provide RCS heat removal.

Question 3

Unit 3 has experienced a safety injection with the following indications:

- Containment temperature is 225°F
- RCS pressure is 1100 psig and lowering.
- RCS Tcolds are 300°F and lowering.
- Gammametrics NIs are at 8% and decreasing with a negative 0.1 dpm SUR.
- Intermediate Range NIs are at 10^{-6} amps with a positive 0.1 dpm SUR.

The crew is preparing to transition from 3-EOP-E-0, Reactor Trip or Safety Injection.

In accordance with 3-EOP-F-0, Critical Safety Function Status Trees, what is the color of the critical safety function the unit is in and what procedure will the crew implement first?

The plant meets the conditions for a/an ____(1)____ path. The crew will implement ____(2)____ first.

	(1)	(2)
A	Orange	3-EOP-FR-P.1, Response to Imminent Pressurized Thermal Shock Condition
B	Red	3-EOP-FR-P.1, Response to Imminent Pressurized Thermal Shock Condition
C	Orange	3-EOP-FR-S.1, Response to Nuclear Power Generation/ATWS
D	Red	3-EOP-FR-S.1, Response to Nuclear Power Generation/ATWS

Question 4

- Unit 3 is at 35% power.
- The 3A RCP breaker has just tripped.

Which one of the following statements correctly describes how the plant will respond and the reason a reactor trip is necessary?

A The reactor will automatically trip to maintain DNBR within acceptable limits.

B The reactor will NOT automatically trip. It must be manually tripped to maintain DNBR within acceptable limits

C The reactor will automatically trip to maintain power density (kw/ft) within acceptable limits.

D The reactor will NOT automatically trip. It must be manually tripped to maintain power density (kw/ft) within acceptable limits.

Question 5

- Unit 3 is at 100% power.
- The crew is responding to a loss of charging flow.
- The 3A Charging Pump is running with the following indications:
  - FI-3-122, Charging Line Flow Indicator, indicates 10 gpm and decreasing
  - G 1/2, CHARGING PUMPS HI SPEED, is in alarm
  - A 9/3, PZR CONTROL HI/LO LEVEL, is in alarm
  - VCT level is 25% and increasing
  - The SNPO reports abnormal noise coming from the 3A Charging Pump and it is vibrating.

In accordance with 3-ONOP-047.1, Loss of Charging Flow in Modes 1 Through 4, which one of the following is the cause of the above event?

The 3A Charging Pump…

A is becoming gas bound.

B controller has lost Instrument Air.

C suction piping is leaking.

D discharge piping is leaking.

Question 6

Initial conditions:

- Unit 4 operated for 2 effective full power days after a refueling outage.
- The crew has since shutdown and gone on RHR with the following conditions:
  - RCS pressure is 350 psig
  - RCS temperature is 115°F
  - Time since shutdown – 150 hours

Subsequently, RHR has been lost.

In accordance with 0-ADM-051, Figure 1, Outage Risk Assessment and Control, Typical heat Up Rates w/Vessel Full, approximately how long will it be before the RCS reaches 200°F?

Reference provided

Note: 1.3483 (MWD/MTU)/EFPH

A 40 to 45 minutes

B 55 to 60 minutes

C 85 to 90 minutes

D 185 to 190 minutes

Question 7

- Unit 4 has experienced a CCW leak in the Cask Wash Area.
- CCW has been isolated to the Charging Pumps.
- The 4A Charging Pump is running.

In accordance with 4-ONOP-030, Component Cooling Water Malfunction, how will the Charging Pump(s) be operated during this event?

The 4A Charging Pump will be ____(1)____ and Emergency Cooling Water will be aligned to ____(2)____.

	(1)	(2)
A	run at max speed	all Charging Pumps
B	run at max speed	one Charging Pump
C	run at min speed	all Charging Pumps
D	run at min speed	one Charging Pump

Question 8

- Unit 3 is stable at 70% power.
- PC-3-444J, Pressurizer Pressure Controller, fails to 0% demand.

How will the Pressurizer liquid and vapor space temperatures respond within the first minute?

	Liquid space	Vapor space
A	Increase	Increase
B	Increase	Decrease
C	Decrease	Decrease
D	Decrease	Increase

Question 9

- Unit 4 has experienced a Steam Generator tube rupture.
- Off-site power has been lost and will not be restored for 24 hours.

In accordance with 4-EOP-E-3, Steam Generator Tube Rupture, how will the RCS cooldown and depressurization to terminate safety injection be conducted?

The crew will dump steam to__(1)__ and depressurize the RCS using ___(2)___.

	(1)	(2)
A	atmosphere	auxiliary spray
B	atmosphere	a PORV
C	the condenser	auxiliary spray
D	the condenser	a PORV

Question 10

- Unit 4 was initially at 100% power.
- A Feedline break developed to the 4A S/G inside Containment at the Containment penetration.
- 4A S/G pressure is 400 psig at the moment of S/G isolation.

Which one of the following describes the effect of this event?

A RCS temperatures lower prior to reactor trip.
4A S/G pressure stabilizes at approximately 400 psig.

B RCS temperatures lower prior to reactor trip.
4A S/G pressure continues to depressurize after S/G Isolation.

C RCS temperatures rise prior to reactor trip.
4A S/G pressure stabilizes at approximately 400 psig.

D RCS temperatures rise prior to reactor trip.
4A S/G pressure continues to depressurize after S/G Isolation.

Question 11

- Unit 3 has experienced a loss of all AC power.
- The crew has determined that a source of power is not available.

In accordance with 3-EOP-ECA-0.0, Loss of All AC Power, why are RCP Seal Manual Isolation Valves (3-297 A/B/C) and the RCP Seal Cooling Water Outlet Valve (MOV-3-626) closed?

3-297 A/B/C are closed to prevent __(1)___ and MOV-3-626 is closed to prevent ___(2)___.

A (1) thermal shocking the RCPs
(2) steam introduction into the CCW System

B (1) steam introduction into the RCP Seal Return
(2) steam introduction into the CCW System

C (1) steam introduction into the RCP Seal Return
(2) thermal shocking the RCPs

D (1) thermal shocking the RCPs
(2) thermal shocking the RCPs

Question 12

- Unit 3 experienced a loss of offsite power.
- The 3A and 3B EDGs started and loaded their respective busses.
- An Unusual Event was declared.

In accordance with the Turkey Point Radiological Emergency Plan, which one of the following is the emergency action level threshold that was met for this event?

Events are in process or have occurred which…

A involve actual or likely major failures of plant functions needed for protection of the public.

B involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

C involve an actual or potential substantial degradation of the level of safety of the plant.

D indicate a potential degradation of the level of safety of the plant.

Question 13

Initial conditions:
- 45 gpm letdown orifice is in service.
- Makeup is set for 75 gpm.

Subsequently:
- Unit 3 has lost 120 Volt Vital Instrument Panel 3P07.
- VCT level indicator LI-3-112 indicates 25%.
- VCT level indicator LI-3-115 indicates zero level.
- Annunciator A 4/6, VCT HI/LO LEVEL, is in alarm.

Which of the following is correct for the given conditions?

VCT auto makeup...

A initiates and charging pump suction remains aligned to the VCT.

B initiates and charging pump suction automatically swaps to the RWST.

C is disabled and charging pump suction remains aligned to the VCT.

D is disabled and charging pump suction automatically swaps to the RWST.

Question 14

- Turkey Point has experienced a long-term total loss of Instrument Air.

In accordance with 0-ONOP-013, Loss of Instrument Air, how is CV-3-2046A, 3A EDG Level Control Valve, opened to fill the 3A EDG day tank?

CV-3-2046A is opened using…

A a hand loader and a compressed air cylinder.

B normal level controller and a compressed air cylinder.

C a hand loader and a compressed nitrogen cylinder.

D normal level controller and a compressed nitrogen cylinder.

Question 15

The crew is performing 3-EOP-ECA-1.2, LOCA outside Containment.

In accordance with 3-EOP-ECA-1.2 which one of the following leak paths outside Containment will be isolated first?

A SI Hot Leg Injection Valves

B RHR Suction Valves

C RHR Discharge to Cold Legs

D SI to Cold Leg Isolation Valves

Question 16

Initial conditions:
- Unit 3 is in Mode 3.
- The 3B Steam Generator Feedpump not available.

Subsequently:
- The Unit 3 Startup Transformer locks out.
- The Auxiliary Feedwater Pumps are not available.
- The Main Feedwater Pumps are not available.

In accordance with 3-EOP-FR-H.1, Response to Loss of Secondary Heat Sink, what is the availability of the Standby Steam Generator Feedpumps (SSGFPs)?

A	A SSGFP	available
	B SSGFP	available
B	A SSGFP	NOT available
	B SSGFP	available
C	A SSGFP	available
	B SSGFP	NOT available
D	A SSGFP	NOT available
	B SSGFP	NOT available

Question 17

- Unit 3 has experienced a loss of emergency coolant recirculation.
- RWST level is 59,000 gallons.

In accordance with 3-EOP-ECA-1.1, Loss of Emergency Coolant Recirculation, what action will the crew take and why?

Immediately stop…

A all pumps taking suction from the RWST.
There is insufficient suction head to run any pumps.

B all pumps taking suction from the RWST except the Charging Pumps.
There is insufficient suction head to run any pumps except the Charging Pumps.

C only the RHR and Containment Spray Pumps.
This will extend the availability of the RWST.

D only the Charging Pumps and Containment Spray Pumps.
This will extend the availability of the RWST.

Question 18

- Unit 3 has experienced a reactor trip and safety injection.
- The crew has entered 3-EOP-E-2, Faulted Steam Generator Isolation.
- The 3A S/G is faulted and its wide range level is 8% and lowering.

Which one of the following is correct?

In accordance with E-2, the crew will stabilize ____(1)____ temperatures using steam dumps. This is to minimize RCS ___(2)____.

	(1)	(2)
A	cold leg	cooldown
B	cold leg	pressure increase
C	hot leg	cooldown
D	hot leg	pressure increase

Question 19

- Rod M-8 in Bank D Group 1 dropped into the core earlier.
- The crew is recovering rod M-8.

Which lift coil disconnect switches will the crew place to disconnect in order to retrieve M-8 and why will the RO record the Bank D Group 1 step counter position?

The crew will place the lift coil disconnect switches for ___(1)___ to the disconnect position (toggle switch down). The RO will record Bank D Group 1 step counter position as a reference point to _____(2)____.

	(1)	(2)
A	all rods in Bank D except M-8	withdraw M-8
B	all rods in Bank D except M-8	reset the pulse analog converter
C	only M-8	withdraw M-8
D	only M-8	reset the pulse analog converter

Question 20

In accordance with 3-ONOP-046.1, Emergency Boration, which one of the following events requires emergency boration and why?

A A reactor trip without SI occurred 15 minutes ago and Tcolds have decreased to 530°F. Shutdown margin is not assured.

B A reactor trip without SI occurred 15 minutes ago and two rods remained fully withdrawn. Shutdown margin is not assured.

C Bank D rods went below the extra low limit 15 minutes ago. Rod ejection accident analysis assumptions are no longer valid.

D Bank D rods went below the extra low limit 15 minutes ago. $F_{\Delta H}$ could exceed design limits.

Question 21

Initial conditions:
- Unit 4 is at 3% power.
- All Pressurizer controls are in automatic.

Subsequently
- I&C is performing 4-SMI-041.11, Pressurizer Level Protection Loops Quarterly Test.
- Pressurizer level control switch is in position 3.
- I&C placed Loop L-459 for LT-4-459 in the tripped condition.
- Concurrently, LT-4-461 fails high.

How will the unit initially respond to the event?

A Backup heaters will energize

B The unit will trip

C No immediate effect because LT-4-461 is selected for backup

D No immediate effect because LT-4-459 is bypassed for testing

Question 22

- A core reload is in progress on Unit 4.
- N-31 and N-32, Source Range Nuclear Instruments, are at 10 cps before the reload starts.

Complete the following:

In accordance with, 4-OSP-059.1, Source Range Nuclear Instrument Analog Channel Operational Test, the Source Range High Flux at Shutdown Alarm is set at __(1)__. If the high flux at shutdown alarm actuates, the Containment evacuation alarm _____(2).

	(1)	(2)
A	32 cps	must be manually actuated
B	32 cps	will automatically actuate
C	50 cps	must be manually actuated
D	50 cps	will automatically actuate

Question 23

The A Monitor Tank (MT) is being released when the following occurred:

- Annunciator H 1/4 PRMS HI RADIATION is received in the Control Room.
- PRMS-R-18, Waste Disposal Liquid Effluent Monitor, high alarm is validated.
- MT A level is 75% and slowly lowering.
- RCV-018, Liquid Waste Discharge Valve, indicates as follows:
  - Red light - on
  - Green light - on

In accordance with 3-ONOP-067, Radioactive Effluent Release, which of the following is correct?

A RCV-018 is open. Close RCV-018 from VPB with keyswitch.

B RCV-018 is open. Close RCV-018 from the waste boron panel.

C RCV-018 is closed. Flush R-18 and re-initiate the release.

D RCV-018 is closed. If R-18 alarm clears, re-initiate the release.

Question 24

In accordance with 0-ONOP-105, Control Room Evacuation, which of these actions is the Unit 3 RO expected to perform before leaving the Control Room?

A Trip the reactor
Close the MSIVs
Verify RCPs running

B Trip the reactor
Trip the RCPs
Close PORV block valves

C Trip the Steam Generator Feedwater Pumps
Close MSR Steam Stops
Close PORV block valves

D Trip the main turbine
Close the MSIVs
Start 3B Charging Pump

Question 25

Initial Conditions:
- Unit 4 was at 100% power.
- 4A QSPDS has been declared inoperable because of a PT-4-404 failure.

Subsequently:
- Unit 4 experienced a LOCA with Safety Injection.
- 50 gpm is indicated on FI-4-943, Safety Injection Flow.
- RWST level is also decreasing at 50 gpm.
- The crew entered 4-EOP-FR-C.2, Degraded Core Cooling.

QSPDS Train B now indicates the following:
- Thots are all approximately 525°F.
- RCS subcooling is 126°F.

Which of the following correctly describes QSPDS Train B indication and required action(s)?

PT-4-404/PT-4-406 RCS Hot Leg Pressure Transmitters

A QSPDS Train B is indicating properly.
Complete 4-EOP-FR-C.2 then return to procedure and step in effect.

B QSPDS Train B is indicating properly.
Stop performance of 4-EOP-FR-C.2 and return to procedure and step in effect.

C QSPDS Train B is NOT indicating properly. Thots are affected by the Safety Injection flow.
Manually calculate subcooling.

D QSPDS Train B is NOT indicating properly. PT-4-406 has failed to approximately 2210 psig.
Manually calculate subcooling.

Question 26

- Unit 3 has experienced a steam line break on the common steam header.
- Safety injection (SI) actuated.
- The steam line break has been isolated.
- The crew terminated SI in accordance with 3-EOP-ES-1.1, SI Termination.
- All SI actuation signals have cleared.

The unit subsequently experiences a steam generator tube rupture and RCS pressure drops to 1200 psig.

What is the status of the HHSI Pumps?

The HHSI Pumps are...

A running. They auto started when Pressurizer pressure dropped below 1730 psig.

B running. They auto started when Pressurizer pressure dropped below 1835 psig.

C NOT running. The sequencer must be reset before it can see another SI signal.

D NOT running. SI reset blocked their auto start from any subsequent SI signal.

Question 27

- A Containment purge was in progress on Unit 3.
- A LOCA occurred.
- The crew is responding to high containment radiation level.
- POV-3-2603, Containment Purge Exhaust Isolation Valve, will not close manually.

In accordance with 3-EOP- FR-Z.3, Response to High Containment Radiation Level, how will POV-3-2603 be closed?

A Dispatch an operator to close POV-3-2603 from the Alternate Shutdown Panel.

B Dispatch an operator to locally close POV-3-2603.

C Fail POV-3-2603 closed by pulling its fuse behind VPA.

D Fail POV-3-2603 closed by pulling its fuse behind VPB.

Question 28

- Safety Injection and Phase A have occurred on Unit 3.
- The Phase A signal has NOT been reset.

Which one of the following states what effect this will have on RCP Number 1 seal leak off flow and why?

Number 1 seal leak off flow will...

A decrease because VCT pressure has increased.

B decrease because the backpressure has increased.

C go to and remain at zero because the RCP Seal Return to VCT is closed.

D go to and remain at zero because #1 Seal Leakoff Isolation Valves are closed.

Question 29

- Annunciator G 2/1, RCP A STANDPIPE HI LEVEL, has alarmed.
- 3A RCP #1 seal leakoff flow has decreased from 2 gpm to 1 gpm.

In accordance with 3-ONOP-041.1, Reactor Coolant Pump Off-Normal, which of the following is the cause of the above conditions?

A RV-3-382 , Seal Return Relief Valve, leaking by

B CV-3-303A, 3A RCP Seal Leakoff Isolation Valve failed closed

C 3A RCP number 1 seal failure

D 3A RCP number 2 seal failure

Question 30

- Unit 3 is at 100% power.
- Annunciator A 6/6, SEAL WATER INJ FILTER HI DP, actuates.
- The standby filter is not available.
- Local seal injection flows indicate about 2 gpm to each RCP.

In accordance with 3-ONOP-041.1, Reactor Coolant Pump Off-Normal, which one of the following describes required action(s)?

A Immediately trip the reactor and stop all RCPs

B Bypass the RCP seal injection filters

C Maintain CCW flow to the RCP thermal barriers

D Shutdown the unit and stop all RCPs within 48 hours

Question 31

- Unit 3 is in Mode 6.
- The crew is preparing to drain the refueling cavity to the RWST.
- One RHR Pump is running.

What effect will fully opening 3-887, RHR to RWST Hdr Isol Valve, have on the RHR System?

Flow indicated on FI-3-605, RHR Hx Outlet Flow Indicator, will __(1)____. Flow to the core will ____(2)____.

	(1)	(2)
A	decrease	remain the same
B	decrease	decrease
C	increase	remain the same
D	increase	decrease

Question 32

Unit 4 has received a LOOP/LOCA.

Which one of the following correctly lists the order for sequencer loading?

A Load Centers
ECCs
RHR and HHSI Pumps

B RHR and HHSI Pumps
ECCs
Load Centers

C Load Centers
RHR and HHSI Pumps
ECCs

D RHR and HHSI Pumps
Load Centers
ECCs

Question 33

Unit 3 is at 100% with the following 3A Safety Injection (SI) Accumulator values:

- Level - 6560 gallons
- Pressure - 670 psig
- Boron concentration - 1925 ppm
- The discharge MOV breaker is locked open

Which of the following identifies the operability of the 3A SI Accumulator and why?

The 3A SI accumulator is…

A OPERABLE. All Tech Spec limits are met.

B INOPERABLE. The water level is out of specification.

C INOPERABLE. The cover gas pressure is out of specification.

D INOPERABLE. The boron concentration is out of specification.

Question 34

- Unit 3 is in Mode 3.
- PRT temperature, pressure, and level are increasing.
- It is determined that PORV PCV-3-456 has 12.0 gpm leakage past its seat and is INOPERABLE.

Based on the above conditions what is/are the MINIMUM action(s) required to be taken in accordance with Technical Specifications?

A Restore PORV to OPERABLE status AND close the associated block valve with power maintained to the block valve.

B Restore PORV to OPERABLE status OR close the associated block valve with power maintained to the block valve.

C Restore PORV to OPERABLE status AND close the associated block valve with power removed to the block valve.

D Restore PORV to OPERABLE status OR close the associated block valve with power removed to the block valve.

Question 35

Which one of the following describes the operation of 3D 4kV bus feeder breakers 3AB19 and 3AD06?

Note: 3AB19 is 3B Bus Supply to 3D Bus
3AD06 is Feeder to 4.16 kV Bus 3B

A 3AB19 must be closed first.
3AD06 will trip if 3AB19 is opened.

B 3AD06 must be closed first.
3AB19 will trip if 3AD06 is opened.

C 3AB19 must be closed first.
3AD06 will remain closed if 3AB19 is opened.

D 3AD06 must be closed first.
3AB19 will remain closed if 3AD06 is opened.

Question 36

The red label on TI-3-467, Safety Tailpipe Temperature, means it is powered from…

A 3P06

B 3P07

C 3P08

D 3P09

Question 37

What are the setpoints for the Pressurizer Backup Heaters energization (1) and Letdown isolation (2)?

	(1) PZR press of:	(2)PZR level of:
A	2210 psig	12%
B	2210 psig	14%
C	2220 psig	12%
D	2220 psig	14%

Question 38

Initial conditions:

- Unit is at 2% power.
- Train 4B RPS testing is in progress. has just been
- The 4B Reactor Trip Bypass Breaker is racked in and closed.

Subsequently:

- 125V DC Bus 4D01 is lost.

What is the status of the reactor trip breakers and will the reactor trip as a direct result of the 4D01 failure?

A Only the 4A Reactor Trip Breaker will open.
The reactor will NOT trip.

B Only the 4B Reactor Trip Breaker will open.
The reactor will NOT trip.

C The 4A Reactor Trip Breaker and 4B Reactor Trip Bypass Breakers will open.
The reactor will trip.

D The 4B Reactor Trip Breaker and 4B Reactor Trip Bypass Breakers will open.
The reactor will trip.

Question 39

Unit 3 is at 100% power when the following occurs:
- Multiple annunciators simultaneously alarm.
- The top two rows of bistable lights on VPB go out.

Which one of the following procedures will the crew implement?

A 3-ONOP-003.6, Loss of 120V Vital Instrument Panel 3P06

B 3-ONOP-003.7, Loss of 120V Vital Instrument Panel 3P07

C 3-ONOP-003.8, Loss of 120V Vital Instrument Panel 3P08

D 3-ONOP-003.9, Loss of 120V Vital Instrument Panel 3P09

Question 40

- The 3A, 3B, and 4A HHSI Pumps are running.
- MOV-3-843A and B, HHSI Cold Leg Injection Valves, are both closed.
- The 3A and 3B RHR Pumps are NOT running.

The event is a safety injection on Unit ___(1)___. The Unit 3 HHSI Pumps' suction will be aligned in accordance with _____(2)___, Reactor Trip or Safety Injection.

	(1)	(2)
A	Unit 3	3-EOP-E-0
B	Unit 3	4-EOP-E-0
C	Unit 4	3-EOP-E-0
D	Unit 4	4-EOP-E-0

Question 41

- Unit 3 has experienced a spurious safety injection.
- The RO has just commenced performance of 3-EOP-E-0, Attachment 3, Reactor Trip or Safety Injection, Prompt Action Verifications.
- RCPs are running.

How many CCW loads will be attached to the CCW System as it relates to the "Rule of 5" before the BOP commences Attachment 3 and after Attachment 3 has been completed?

	Before	After
A	Two	Two
B	Three	Three
C	Two	Three
D	Three	Four

Question 42

Initial conditions
- Unit 4 Containment temperature at 110°F
- All Steam Generator narrow range levels on program at 60%

Subsequently:
- CCW flow to the NCCs is lost
- Containment temperature has increased to 125°F
- All Steam Generator narrow range levels on program at 60%

Steam Generator secondary system mass with the Containment at 125°F is _____(1)_____ than at 110°F. This is because the __(2)____ leg density has decreased.

	(1)	(2)
A	less	variable
B	less	reference
C	greater	variable
D	greater	reference

Question 43

- Unit 4 experienced a LOCA.
- The BOP is verifying Feedwater Isolation in accordance with 4-EOP-E-0, Attachment 3, Reactor Trip or Safety Injection, Prompt Action Verification, when Containment pressure exceeds 20 psig.

How will the Containment Spray Pumps (CSPs) and their discharge valves (MOV-4-880 A & B) respond?

A The CSPs will start.
MOV-4-880 A & B will open.

B The CSPs will start.
MOV-4-880 A & B will NOT open.

C The CSPs will NOT start.
MOV-4-880 A & B will open.

D The CSPs will NOT start.
MOV-4-880 A & B will NOT open.

Question 44

Initial conditions:
- Unit 3 is at 100% power.
- The RO has recently performed a dilution to compensate for fuel burnup.

Subsequently, the following indications are noted in Control Room:
- Power Range NIs are increasing slowly.
- Tavg is decreasing slowly.
- Reactor power is 100.3% and rising slowly.

Which one of the following describes the event in progress and the action required in accordance with 0-ADM-200, Conduct of Operations?

A Excessive RCS dilution
Reduce power by reducing turbine load.

B Excessive RCS dilution
Reduce power by inserting control rods.

C Main steam line leak
Reduce power by reducing turbine load.

D Main steam line leak
Reduce power by inserting control rods.

Question 45

- Unit 3 was at 100% when 3P06 was lost.
- 3A S/G level is increasing slowly.
- The BOP is reducing feed to the 3A S/G when the following actuate:
  - Annunciator C 2/1, SG A NARROW RANGE HI LEVEL
  - Annunciator C 5/1, SG A STEAM > FEED
  - Bistable status light STM-FW FLOW DEV FC 478 B1
- The reactor is still at 100% power.

In accordance with 3-ONOP-003.6, Loss of 120V Vital Instrument Panel 3P06, how should the crew respond to the above event?

A A reactor trip is NOT required. The BOP should continue reducing feed flow.

B A reactor trip is NOT required. The BOP should stop reducing feed flow.

C The RO should trip the reactor. SI is NOT required.

D The RO should trip the reactor. SI is required.

Question 46

- Unit 3 is at 100% power.
- The steam pressure input into the 3A S/G level control system fails high.

Which of the following actions will occur?

Initially, feedwater flow to the 3A S/G will...

A decrease due to lower indicated steam flow.
Eventually, the level error signal will reduce the total error signal.

B decrease due to lower indicated steam flow.
The level error signal will NOT reduce the total error signal.

C increase due to higher indicated steam flow.
Eventually, the level error signal will reduce the total error signal.

D increase due to higher indicated steam flow.
The level error signal will NOT reduce the total error signal.

Question 47

Unit 4 has experienced a small break LOCA.
- RCS pressure is 800 psig and decreasing.
- S/G pressures are 900 psig and steady.

How is core cooling being provided and is core cooling more or less than decay heat production?

Core cooling is currently being provided by…

A AFW to the S/Gs and break flow.
Core cooling is greater than decay heat production.

B AFW to the S/Gs and break flow.
Core cooling is less than decay heat production.

C break flow. AFW to the S/Gs is NOT providing core cooling.
Core cooling is greater than decay heat production.

D break flow. AFW to the S/Gs is NOT providing core cooling.
Core cooling is less than decay heat production.

Question 48

Initial conditions:
- Unit 3 is at 100% power.
- Unit 4 is in Mode 3 at normal operating temperature and pressure.

Subsequently:
- Unit 4 Startup Transformer lockout relay trips and both Unit 4 EDGs fail to start.
- Power is restored to the 4B 4kV Bus using the Station Blackout (SBO) Tie.
- The Turkey Point switchyard subsequently deenergizes.
- The 3A and 3B EDGs start.

What is the status of the Unit 3 4kV Buses?

	3A 4kV Bus	3B 4kV Bus
A	Deenergized	Deenergized
B	Deenergized	Energized
C	Energized	Deenergized
D	Energized	Energized

Question 49

- The PTN switchyard deenergized.
- Only the 3B EDG started.
- The Unit 4 crew is performing 4-EOP-ECA-0.0, Loss of All AC Power.
- The Station Blackout Tie will not close.

What is the minimum time before the Unit 4 125 VDC busses will be less than 105 Volts as indicated on DCS?

	4D01	4D23
A	2 hours	2 hours
B	2 hours	greater than 24 hours
C	greater than 24 hours	2 hours
D	greater than 24 hours	greater than 24 hours

Question 50

Both units are at 100% power.
The ANPO reports the following EDG lube oil temperatures:

- 4A EDG 160°F
- 4B EDG 80°F

Which one of the following correctly identifies the operability of the Unit 4 EDGs?

	4A EDG	4B EDG
A	OPERABLE	OPERABLE
B	INOPERABLE	OPERABLE
C	OPERABLE	INOPERABLE
D	INOPERABLE	INOPERABLE

Question 51

- Unit 3 is at 100% power.
- The 3A Emergency Diesel Fuel Oil Transfer Pump is out of service.

Which one of the following statements is correct?

With local actions, the 3A EDG Fuel Oil Day Tank...

A can be filled by the 3B Emergency Diesel Fuel Oil Transfer Pump.
The 3A EDG is OPERABLE in accordance with Tech Specs.

B can **NOT** be filled by the 3B Emergency Diesel Fuel Oil Transfer Pump.
The 3A EDG is OPERABLE in accordance with Tech Specs.

C can be filled by the 3B Emergency Diesel Fuel Oil Transfer Pump.
The 3A EDG is **NOT** OPERABLE in accordance with Tech Specs.

D can **NOT** be filled by the 3B Emergency Diesel Fuel Oil Transfer Pump.
The 3A EDG is **NOT** OPERABLE in accordance with Tech Specs.

Question 52

- Chemistry reports an increase in gross equivalent iodine and 100/Ebar activity.

Based on the above report, complete the following.

Process Radiation Monitor PRMS-3-20, Reactor Coolant Letdown Monitor, will display increased ____(1)____ due to increased ____(2)____.

	(1)	(2)
A	cpm	Crud
B	cpm	Fission products
C	mR/hr	Crud
D	mR/hr	Fission products

Question 53

- Unit 3 is at 100% with the 3C ICW Pump out of service.
- A massive grass influx has resulted in ICW/CCW and ICW/TPCW basket strainer clogging.
- The following conditions exist:
  - CCW Heat Exchanger outlet temperature is currently 118°F and stable.
  - Annunciator E 2/2, TURB BEARING HI TEMP, is in alarm.
  - Turbine bearing temperatures are 181°F and slowly increasing.
  - 3A and 3B TPCW Heat Exchangers are at 4200 gpm ICW flow.
  - 3A, 3B, and 3C CCW Heat Exchangers are at 3000 gpm ICW flow each.

Which one of the following describes the actions that should be taken in accordance with 3-ONOP-019, Intake Cooling Water Malfunction, due to the above conditions?

A Trip the reactor and turbine and enter 3-EOP-E-0, Reactor Trip or Safety Injection.

B Reduce turbine load as necessary to return temperatures within bands and implement 3-ONOP-011, Screen Wash System/Intake Malfunction.

C Increase cooling water flow to the turbine oil cooler and implement 3-ONOP-011, Screen Wash System/Intake Malfunction.

D Enter into Technical Specifications 3.0.3 and commence a reactor shutdown per 3-ONOP-100, Fast Load Reduction.

Question 54

- PTN has experienced a dual-unit loss of off-site power. — the switchyard is de-energized.
- The 3B EDG did not start.

What is the availability of the following air compressors?

A 3CM, Unit 3 Instrument Air Motor Compressor, is available
0CM1, Service Air Compressor, is available

B 3CM, Unit 3 Instrument Air Motor Compressor, is available
0CM1, Service Air Compressor, is NOT available

C 3CM, Unit 3 Instrument Air Motor Compressor, is NOT available
0CM1, Service Air Compressor, is available

D 3CM, Unit 3 Instrument Air Motor Compressor, is NOT available
0CM1, Service Air Compressor, is NOT available

Question 55

- Unit 3 is in Mode 1.
- Containment temperature is 118°F.
- Containment pressure is a negative 2.2 psig.

Which one of the following is required to meet Technical Specifications LCO?

A Containment temperature should be reduced.
Containment pressure should be increased.

B Containment temperature should be reduced.
Containment pressure is within limits at the present value.

C Containment temperature is within limits at the present value.
Containment pressure should be increased.

D Containment temperature is within limits at the present value.
Containment pressure is within limits at the present value.

Question 56

- HCV-4-121, Charging Flow to Regen Heat Exchanger Control Valve, is full open.

How is the controller for HCV-4-121 adjusted to decrease charging line flow under normal conditions and how does HCV-4-121 fail on loss of Instrument Air?

The demand on the controller for HCV-4-121 is ___(1)___ to decrease charging line flow. HCV-4-121 fails ___(2)___ on loss of Instrument Air.

	(1)	(2)
A	decreased from 100%	Open
B	increased from 0%	Open
C	decreased from 100%	Closed
D	increased from 0%	Closed

Question 57

In accordance with 0-ADM-209, Equipment Tagging and Labeling, how can post-accident instrumentation be identified?

A Red vinyl tape

B Purple vinyl tape

C Red placard with white letters

D Purple placard with white letters

Question 58

Initial conditions:
- Unit 3 is in Mode 5.
- A Containment purge has been initiated in accordance with 3-NOP-053, Containment Purge System.
- The following fans are started:
  - 4V20, Unit 4 Containment Purge Exhaust Fan
  - 3V9, Unit 3 Containment Purge Supply Fan

Subsequently:
- H 1/4, PRMS HI RADIATION, alarms due to PRMS-R-3-11, Particulate Radiation Monitor.

In accordance with 3-NOP-053, what is the effect of the R-11 alarm?

A Both fans will trip. Containment isolation is achieved when the purge isolation valves close.

B Both fans will trip. Containment isolation is achieved if one purge isolation valve fails to close.

C Only 3V9 will trip. Containment isolation is achieved by the purge isolation valves.

D Only 3V9 will trip. 4V20 must be stopped to achieve Containment isolation.

Question 59

- Spent Fuel Pit (SFP) boron is 2000 ppm
- H 1/1 SFP LO LEVEL actuates

In accordance with 3-OP-033, Spent Fuel Pit Cooling System, what is the preferred method of making up to the SFP for the above conditions?

A Demin Water System

B Primary Water Storage Tank

C Refueling Water Storage Tank

D CVCS Holdup Tanks

Question 60

- The Unit 3 crew is performing 3-EOP-FR-H.1, Response to Loss of Secondary Heat Sink.
- The BOP is preparing to feed the S/Gs using the B Standby Steam Generator Feedpump.
- All wide range S/G levels are less than 3% and steady.
- RCS hot leg temperatures are 580°F and increasing.

How should the BOP control feed flow to the Steam Generators?

The BOP should initially...

A use change in Thots.
Main Feed flow indication is not accurate in the range required.

B use change in Thots.
Bypass Feed flow is not seen by the Main Feed flow transmitters.

C establish less than 100 gpm flow to each S/G using AFW flow indication.
Main Feed flow indication is not accurate in the range required.

D establish less than 100 gpm flow to each S/G using AFW flow indication.
Bypass Feed flow is not seen by the Main Feed flow transmitters.

Question 61

- Unit 3 is steady at 40% power.
- Turbine First Stage Pressure Transmitter PT-3-447 has just failed high.
- The turbine subsequently trips.
- Tavg is 558°F.

How will the Steam Dump to Condenser Valves operate based on the above conditions?

A None of the valves will open.

B All four valves will trip full open.

C Two valves will trip full open and two valves will remain shut.

D Two valves will trip full open and two valves will modulate open.

Question 62

Unit 3 is at 100% power when the steam jet air ejector common steam supply valve, 3-30-020, is inadvertently closed.

Which one of the following describes the effect of closing valve 3-30-020?

A. Condenser vacuum will decrease
Turbine exhaust hood temperatures will decrease
Turbine efficiency will decrease

B. Condenser vacuum will decrease
Main generator megawatts will decrease
Turbine exhaust hood temperatures will increase

C. Tavg will increase
Turbine exhaust hood temperatures will decrease
Turbine efficiency will decrease

D. Tavg will increase
Main generator megawatts will increase
Turbine exhaust hood temperatures will increase

Question 63

- A liquid release and a gas release are in progress.
- The power supply breaker to PRMS Rack 3QR66 is opened due to a clearance error.
- The Shift Manager authorizes reclosure of the breaker to reenergize the rack.

How will RCV-014 and RCV-018 respond when the RO resets the Hi Alarm on the respective PRMS drawers?

NOTE: RCV-014 is Gaseous Release Header Isolation Valve
RCV-018 is Liquid Release Header Isolation Valve

	RCV-014	RCV-018
A	Re-opens	Re-opens
B	Remains closed	Remains closed
C	Re-opens	Remains closed
D	Remains closed	Re-opens

Question 64

How will high alarms on RAD-6643, Control Room Ventilation Radiation Monitor, and R-12, Containment Air Radiation Monitor, impact Control Room Ventilation Isolation and Containment Ventilation Isolation?

CR HVAC is Control Room Ventilation
CVI is Containment Ventilation Isolation

A RAD-6643 will actuate CR HVAC isolation and CVI.
R-12 will actuate CVI and CR HVAC isolation.

B RAD-6643 will actuate CR HVAC isolation only.
R-12 will actuate CVI and CR HVAC isolation.

C RAD-6643 will actuate CR HVAC isolation and CVI.
R-12 will actuate CVI only.

D RAD-6643 will actuate CR HVAC isolation only.
R-12 will actuate CVI only.

Question 65

Initial conditions:
- Unit 3 is at 100% power.
- 3A and 3C ICW Pumps are running.

Subsequently:
- Unit 3 experiences a safety injection actuation with a loss of voltage on the 3B 4kV Bus.

How will the ICW Pumps be affected?

A 3A and 3C ICW Pumps will be stripped.
3A and 3B ICW Pumps will receive start signals from the Sequencers.

B 3A and 3C ICW Pumps will be stripped.
3A and 3C ICW Pumps will receive start signals from the Sequencers.

C Only 3C ICW Pump will be stripped.
3A and 3B ICW Pumps will receive start signals from the Sequencers.

D Only 3C ICW Pump will be stripped.
3A and 3C ICW Pumps will receive start signals from the Sequencers.

Question 66

- The Turbine Operator (TO) is performing valve lineups in accordance with 3-OP-081.1, Feedwater Heaters, Extraction Steam Vents, and Drains Valve Alignment.
- The TO has performed the initial OTSC check for 3-OP-081.1.

Complete the following:

In accordance with 0-ADM-100, Preparation, Revision, Review, Approval and Use of Procedures, if the valve lineup exceeds ____(1)____ hours, the TO is required to perform a second OTSC check by use of ____(2)____.

	(1)	(2)
A	8	Document Control Hard Copy Index
B	8	Lotus Notes
C	24	Document Control Hard Copy Index
D	24	Lotus Notes

Question 67

Operators are performing core off-load on Unit 4.

- Core off-load started at 0600.
- Three assemblies were moved between 0600 and 0645.
- No assemblies were moved between 0645 and 0700.
- It is 0745 and seven assemblies have been off-loaded since 0700.

In accordance with 4-NOP-040.02, Refueling Core Shuffle, may the core off-load continue?

A Yes; one more assembly may be sent over before 0800.

B Yes; two more assemblies may be sent over before 0800.

C No; the cumulative average fuel transfer rate will be violated.

D No; the number of assemblies moved in one hour will be violated.

Question 68

In accordance with 0-ADM-503, Temporary System Alteration, which one of the following requires a Temporary System Alteration (TSA) for configuration control?

A Hose installed to direct flow from a drain line to a floor drain

B Installing temporary air conditioning unit to provide ventilation in the 4B MCC Room to maintain its temperature below design limits

C A temporary electrical heater plugged into a 120V outlet to maintain the Unit 3 Charging Pump Room above 65°F

D Bistables tripped in accordance with 3/4-ONOP-049.1, Deviation or Failure of Safety Related or Reactor Protection Channels, for greater than one shift

Question 69

Units 3 and 4 have both simultaneously lost 120V Panel P08.

How will the Feed Regulating Valves (FRVs) respond on each unit?

		Unit 3	Unit 4
A	A S/G	Lock up	Auto
	B S/G	Auto	Auto
	C S/G	Manual	Manual
B	A S/G	Auto	Lock up
	B S/G	Auto	Auto
	C S/G	Manual	Manual
C	A S/G	Auto	Lock up
	B S/G	Lock up	Lock up
	C S/G	Auto	Lock up
D	A S/G	Lock up	Auto
	B S/G	Lock up	Lock up
	C S/G	Lock up	Auto

Question 70

- A plant cooldown is in progress on Unit 4.
- RCS temperature is 290°F and lowering.
- RCS pressure is 370 psig and lowering.
- When the OMS switches are placed in LO PRESS OPS the following alarm is received:
  - A 3/1, OMS LO PRESS OPERATION

Which one of the following is the cause of the above alarm?

A PORV-4-456 is open

B RCS pressure is too high to place OMS in service

C RCS temperature is too high to place OMS in service

D MOV-4-535, PORV Block Valve, is de-energized

Question 71

A Waste Monitor Tank is to be released.

In accordance with 0-OP-061.11, Waste Disposal System Controlled Radiological Liquid Release, how will PRMS-R-18, Waste Disposal Liquid Effluent Monitor, be set and how will the flow rate be established?

A The Chemistry Technician will set the High and Warning values for PRMS-R-18. The SNPO will locally adjust he flow rate using a manual throttle valve.

B The Chemistry Technician will set the High and Warning values for PRMS-R-18. RCV-018, Liquid Waste Discharge Valve, will control the flow rate at a value set by the SNPO.

C The RCO will set the High and Warning values for PRMS-R-18. The SNPO will locally adjust the flow rate using a manual throttle valve.

D The RCO will set the High and Warning values for PRMS-R-18. RCV-018, Liquid Waste Discharge Valve, will control the flow rate at a value set by the SNPO.

Question 72

- An OSP is to be performed in the Auxiliary Building.
- The general area dose rate is 100 mrem/hr.

In accordance with 0-ADM-600, Radiation Protection Manual, which one of the following will maintain station exposure as low as reasonably achievable and comply with station administrative requirements?

A A qualified worker who has previously performed this task and can complete the job in 20 minutes. This worker has 800 mrem of exposure this year.

B A qualified worker who has previously performed this task and can complete the job in 30 minutes. This worker has 500 mrem of exposure this year.

C A team of a male and a female worker, both qualified to perform the task. The female is NOT a declared pregnant worker. The team will need 15 minutes to complete the task. Each worker has 100 mrem this year.

D A team of a female worker who is qualified to perform the task and a male worker who needs to qualify to this task. The female is a declared pregnant worker. The team will need 20 minutes to complete the task. The female has no dose and the male worker has 200 mrem for the year.

Question 73

- Unit 3 is at 100% power.
- Power Range N-44 is out of service.
- All required actions have been taken in accordance with 3-ONOP-059.8, Power Range Nuclear Instrumentation Malfunction.

For the above conditions, which one of the following conditions requires immediate entry into the EOP network?

A Containment Isolation Phase A on Trains A and B

B Loss of 120 VAC Panel 3P09

C Channel 3 OPΔT actuation

D Loss of 120 VAC Panel 3P08

Question 74

Unit 3 is operating at 100% power when the following alarms occur:

- A 9/2, PZR CONTROL HI/LO PRESS
- B 6/3, POWER RANGE OVERPOWER ROD STOP
- B 6/4, POWER RANGE CHANNEL DEVIATION
- C 6/2, SG B LEVEL DEVIATION
- G 4/3, RCS METAL IMPACT
- G 5/2, AXIAL FLUX ADMIN LIMIT EXCEEDED

What action should the crew take based on the above alarms?

A Transfer 1st Stage Pressure Controller to operable channel

B Place Pressurizer Pressure Controller in MANUAL

C Place 3B FRV in MANUAL

D Place rods in MANUAL

Question 75

- The Unit 4 reactor has tripped due to a faulted 4A S/G.
- SI has actuated.

When should the BOP initially isolate AFW to the 4A S/G?

A In 4-EOP-E-0, Reactor Trip or Safety Injection, during performance of the main body of the procedure.

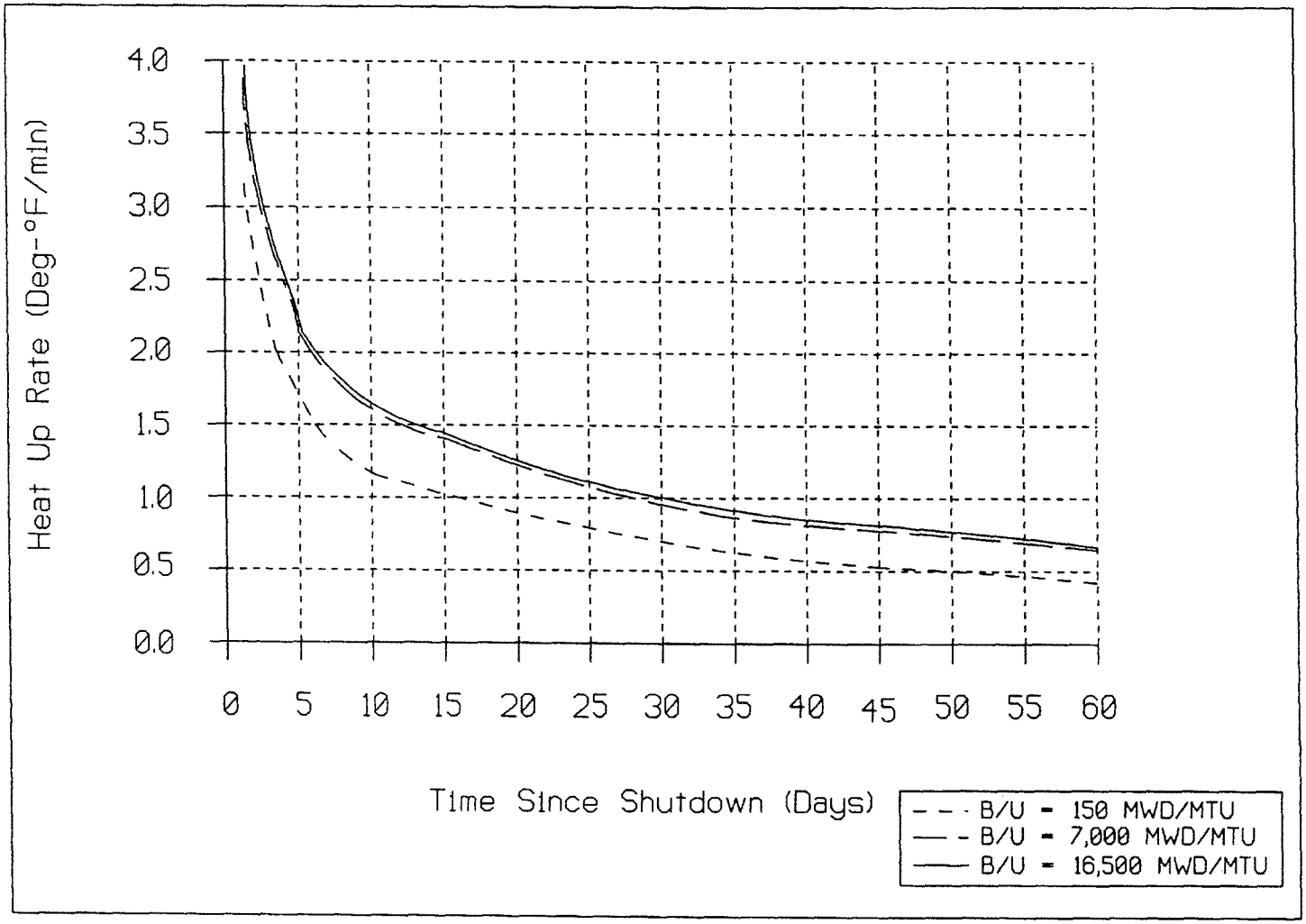
B In 4-EOP-E-0, Reactor Trip or Safety Injection, when the Fold Out Page is directed.

C In 4-EOP-E-2, Faulted Steam Generator Isolation, during performance of the main body of the procedure.

D In 4-EOP-E-2, Faulted Steam Generator Isolation, when the Fold Out Page is directed.

FIGURE 1
(Page 1 of 1)

TYPICAL HEAT UP RATES W/VESSEL FULL



W97:DJT/ln/nw/ln