U.S. NUCLEAR REGULATORY COMMISSION

REGION I

REPORT NO:	93-26 (OL)
DOCKET NO:	50-220
LICENSE NO:	DPR-63
LICENSEE:	Niagara Mohawk Power Corporation 301 Plainfield Road Syracuse, New York 13212
FACILIITY:	Nine Mile Point Nuclear Station, Unit 1
EXAMINATION DATES:	November 16 - 19, 1993
EXAMINERS:	T. Walker, Senior Operations Engineer R. Miller, Examiner (Sonalysts) D. Odland, Examiner (Sonalysts)

CHIEF EXAMINER: T. E. Walker 1/3/94

T. Walker, Senior Operations Engineer Date
BWR Section, Division of Reactor Safety

APPROVED BY: Richard J. Conte 1/3/94

Richard J. Conte, Chief, BWR Section Date
Division of Reactor Safety

EXAMINATION SUMMARY

Initial examinations were administered to four Senior Reactor Operator (SRO) instant applicants and two Reactor Operator (RO) applicants. Three of the SRO applicants and one of the RO applicants passed all portions of the examinations. One of the SRO applicants did not pass the walkthrough portion of the operating test. One of the RO applicants did not pass the written examination. Generic weaknesses were noted on both the written examination and operating test as feedback to the training program. All of the applicants passed the dynamic simulator portion of the operating test; however, crew performance was weak in response to a loss of all reactor water level indication (Section 3.2).

Several minor mistakes were made by the applicants and NRC examiners during administration of the examinations that resulted in failure to follow the Radiation Work Permit (RWP) procedure. The failure to follow procedures is considered a non-cited violation because the violation was identified by the licensee and prompt, corrective action was taken (Section 4.0).

DETAILS

1.0 INTRODUCTION

The NRC administered initial examinations to four Senior Reactor Operator (SRO) instant applicants and two Reactor Operator (RO) applicants. The examinations were administered in accordance with NUREG-1021, "Examiner Standards," Revision 7.

2.0 PREEXAMINATION ACTIVITIES

The facility reviewed the written examinations in the Region I office during the week of November 1, 1993. The simulator scenarios and Job Performance Measures (JPMs) were validated during the week of November 15, 1993, on the facility's simulator and in the plant. The facility staff who were involved with these reviews signed security agreements to ensure that the initial examinations were not compromised. Several simulator fidelity problems were identified during validation of the examination materials. Licensee personnel were very cooperative and attempted to correct the problems. However, a number of the problems could not be corrected; therefore, the examination materials had to be modified. The most significant simulator fidelity problems are listed in Attachment 5.

3.0 EXAMINATION RESULTS AND RELATED FINDINGS, OBSERVATIONS AND CONCLUSIONS

3.1 Examination Results

The results of the examinations are summarized below:

	SRO Pass/Fail	RO Pass/Fail
Written	4/0	1/1
Operating	3/1	2/0
Overall	3/1	1/1

3.2 Facility Generic Strengths and Weaknesses

The following is a summary of the strengths and weaknesses noted during initial examination administration. This information is being provided to aid the licensee in upgrading their training program.

Written Examination

Strengths:

All of the applicants responded correctly to multiple questions; however, no specific generic strengths were noted.

Weaknesses:

Questions related to the following specific knowledge/ability topics were missed by at least half of the applicants indicating a generic weakness in the subject:

- Knowledge of the proper methodology for removal of protective clothing when evacuating the reactor building
- Understanding of the impact of a PAST DUE surveillance test
- Knowledge of the Technical Specification minimum shift crew composition when in the COLD SHUTDOWN condition
- Ability to diagnose a recirculation pump seal failure
- Knowledge of the Reactor Water Cleanup (RWCU) system response to a low flow condition
- Ability to determine the validity of reactor water level instrumentation with all of the recirculation loops isolated
- Ability to interpret drywell radiation monitor indications
- Ability to predict the impact of a feedwater pump flow element failure
- Knowledge of the main steam isolation valve (MSIV) design features that reduce differential pressure across the valve seats when opening
- Ability to diagnose an instrument line break inside the drywell
- Knowledge of the purpose of the radiation monitor located under the fuel transfer shielding bridge
- Knowledge of log review responsibilities and requirements

Operating Tests: Simulator Portion

Strengths:

The following items were noted as strengths in the performance of all or most of the crew members during the dynamic simulator scenarios:

- Reference to procedures
- SRO crew briefs
- Acknowledgement and repeat back of communications

Weaknesses:

There were no individual failures on the simulator portion of the operating tests; however, all of the applicants contributed to weak crew performance in the following areas:

- Ability to determine the availability and validity of reactor water level indication
- Understanding of plant and system response during a loss of all reactor water level indication
- Verification that alarms were consistent with plant conditions
- Crew communications and teamwork

Operating Tests: Walkthrough Portion

Strengths:

The following items were noted as strengths in the performance of all or most of the applicants on the walkthrough portion of the operating test:

- Understanding of IRM and APRM surveillance testing
- Ability to respond to a loss of a 4160 VAC power board

Weaknesses:

At least half of the applicants evaluated demonstrated weaknesses in the following areas:

- Ability to classify a radiation release event given chemistry sample results

- Ability to verify a primary containment vent and purge valve isolation on high stack gas radiation levels

- Ability to respond to a loss of intake level, specifically restoration of cooling water using Unit 2 fire water

3.3 Procedures

During the examinations and preparation for the examinations, several procedure deficiencies were identified by the NRC staff. In some cases, these deficiencies resulted in difficulties in performance of tasks or incorrect actions. The following items are examples of procedure problems encountered during the examination process:

- The alarm response procedure (ARP) for annunciator K3-2-1, "SHUT DOWN HEAT EXCHAN COOLING WTR OUT TEMP HI," directs action to substitute a shutdown cooling (SDC) loop in accordance with N1-OP-4, section E. Section E of N1-OP-4, "Shutdown Cooling System," provides direction for startup of the entire SDC system, but does not provide clear direction for startup of an additional loop. Section G of N1-OP-4 provides direction for shutdown of the entire SDC system, but does not provide direction for shutdown of a single loop of SDC. In order to substitute a SDC loop, the operator must select the applicable steps from sections E and G of OP-4. During the examinations, two of the applicants shut one of the SDC system isolation valves when attempting to secure one loop of SDC. One of these applicants failed to reopen the isolation valve and caused a complete loss of SDC.

- Annunciators H1-4-5, "LQ PROCESS RAD MON," and K3-2-1 are received if an inservice SDC heat exchanger has a tube leak. The ARP for annunciator H1-4-5 lists a leak into Reactor Building Closed Loop Cooling (RBCLC) as a possible cause and directs action to determine the source of the leak. However, there is no procedural direction to isolate the leak. The ARP for annunciator H1-4-5 directs feed and bleed to control the activity, but does not direct isolation of the identified source. The ARP for annunciator K3-2-1 does not include a heat exchanger tube leak as a possible cause of the alarm and does not direct isolation of the affected SDC loop.

- The ARPs for annunciators A4-1-6, "POWER BOARD 102 BUS VOLTAGE LOW," and A4-4-2, "POWER BD. 16 LOW BUS VOLTAGE," direct action to crosstie PB16 in accordance with N1-OP-30, section H. During validation of the examination materials onsite, the NRC staff identified that section H of N1-OP-30, "4.16 KV, 600V, 480V House Service," provided direction to strip loads from PB16, but did not direct action to crosstie to another source of power. The licensee took prompt corrective action and made an immediate procedure change evaluation (PCE) to correct OP-30.

- Annunciators F1-3-2, "RPS CH 11 MAIN STEAM ISOLATION," and F4-3-7, "RPS CH 12 MAIN STEAM ISOLATION," are received if the Main Steam isolation valves (MSIVs) or the Emergency Condenser (EC) vent and drain valves are closed. However, the ARPs only list faulty manual initiation switch and power supply fuses as the possible causes for the annunciators. The ARPs for these annunciators direct entry into N1-SOP-1 if both annunciators are received. N1-SOP-1, "Reactor Scram," provides direction when a reactor scram has occurred or is required. Both of these annunciators were received during an examination scenario when one of the ECs was isolated. The applicants could not easily verify the cause of the annunciators and interpreted the ARPs to indicate that the reactor should have scrammed. As a result, they unnecessarily initiated a manual scram. A scram would have been necessary if the annunciators had been received because the MSIVs were closed, but was not necessary with only the EC vent and drain valves closed.

4.0 RADIATION WORK PERMITS

A Radiation Work Permit (RWP) is required for all entries into the Radiologically Controlled Area (RCA). During the examinations, one of the applicants failed to sign in on a RWP prior to entering the RCA. However, the applicant recognized his mistake soon after entering the RCA. He immediately exited the RCA and reported his error to Radiation Protection. A Deficiency Event Report (DER) was initiated for the event.

General RWPs are used for general tours, supervisory oversight, and inspection. Standing RWPs are used for routine or repetitive work functions. Personnel are required to record each entry and exit into and from the RCA on the General RWP log. RCA entry and exit is recorded on the Standing RWP log at the frequency prescribed by the Standing RWP. During the examinations, some of the examiners failed to record an exit from the RCA on the General RWP log. The mistake occurred because the applicants accompanying the examiners had signed in on a Standing RWP that required entry and exit to be recorded daily. They told the examiners that it was not necessary to sign out on the RWP log after each exit. The examiners' mistakes were corrected when one of the applicants identified his own mistake.

The failure to follow the RWP procedure constitutes a violation of Technical Specification 6.8.1, which requires that administrative policies be implemented and is considered a noncited violation. The violation is not being cited because the criteria specified in section VII.B.2 of 10 CFR Part 2, Appendix C, are met. The violation was identified by the licensee and prompt corrective action was taken (220/93-26-01).

5.0 EXIT MEETING

An exit meeting was conducted on November 19, 1993. Preliminary generic strengths and weaknesses on the operating tests were presented. The NRC examiners informed the licensee representatives that several procedural deficiencies and simulator fidelity problems had been identified and that they would be discussed in the examination report. The problems with use of RWPs were also discussed.

Persons contacted and attendees at the exit meeting are listed below:

Licensee Personnel

* M. McCormick, General Manager, Safety Assessment, Licensing and Training
* N. Rademacher, Acting Plant Manager
* M. Balduzzi, General Supervisor, Operations
* B. Murtha, Station Shift Supervisor
  R. Seifried, Supervisor, Operations
* R. Smith, Training Manager
  C. Ware, Acting Training Manager
* R. Sanaker, General Supervisor, Operations Training - Unit 1
* R. Slade, General Supervisor, Operations Training - Unit 2
* M. Meier, Training Specialist
* M. Peterson, Training Specialist
  D. DaFoe, Training Specialist
  A. Farrington, Training Specialist
  J. Stewart, Training Specialist
* A. Zallnier, Supervisor, Site Licensing

NRC Personnel

* R. Conte, Chief, BWR Section
* T. Walker, Senior Operations Engineer
* R. Miller, Examiner (Sonalysts)
* D. Odland, Examiner (Sonalysts)
* S. Willoughby, Examiner (EG&G)
* B. Norris, Senior Resident Inspector

* Denotes those present for the exit meeting on November 19, 1993.

ATTACHMENT 1

RO MASTER EXAMINATION AND ANSWER KEY

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
REACTOR OPERATOR LICENSE
REGION 1

CANDIDATE'S NAME: _____

FACILITY: Nine Mile Point 1

REACTOR TYPE: BWR-GE2

DATE ADMINISTERED: 93/11/16

INSTRUCTIONS TO CANDIDATE:

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires a final grade of at least 80%. Examination papers will be picked up four (4) hours after the examination starts.

TEST VALUE	CANDIDATE'S SCORE	%	
100.00	_____	___ %	TOTALS
	FINAL GRADE		

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

MULTIPLE CHOICE

001	a	b	c	d	___	023	a	b	c	d	___	045	a	b	c	d	___
002	a	b	c	d	___	024	a	b	c	d	___						
003	a	b	c	d	___	025	a	b	c	d	___						
004	a	b	c	d	___	026	a	b	c	d	___						
005	a	b	c	d	___	027	a	b	c	d	___						
006	a	b	c	d	___	028	a	b	c	d	___						
007	a	b	c	d	___	029	a	b	c	d	___						
008	a	b	c	d	___	030	a	b	c	d	___						
009	a	b	c	d	___	031	a	b	c	d	___						
010	a	b	c	d	___	032	a	b	c	d	___						
011	a	b	c	d	___	033	a	b	c	d	___						
012	a	b	c	d	___	034	a	b	c	d	___						
013	a	b	c	d	___	035	a	b	c	d	___						
014	a	b	c	d	___	036	a	b	c	d	___						
015	a	b	c	d	___	037	a	b	c	d	___						
016	a	b	c	d	___	038	a	b	c	d	___						
017	a	b	c	d	___	039	a	b	c	d	___						
018	a	b	c	d	___	040	a	b	c	d	___						
019	a	b	c	d	___	041	a	b	c	d	___						
020	a	b	c	d	___	042	a	b	c	d	___						
021	a	b	c	d	___	043	a	b	c	d	___						
022	a	b	c	d	___	044	a	b	c	d	___						

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

046 a b c d ___

MULTIPLE CHOICE

047 a b c d ___
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A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

091 a b c d ___

MULTIPLE CHOICE

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

(********** END OF EXAMINATION **********)

QUESTION: 001 (1.00)

SELECT the choice below that completes the following statement.

A Blue Markup has been applied to condensate transfer system and testing is in progress. If testing is anticipated to be interrupted for greater than _____ hours, then the marked condensate transfer components must be returned to their _____ position.

a. 12; protected

b. 12; normal

c. 24; protected

d. 24; normal

ANSWER: 001 (1.00)

c.

REFERENCE:

GAP-OPS-02, pg 2

294001K102 [3.9/4.5]

294001K102 ..(KA's)

QUESTION: 002 (1.00)

A Blue Markup has been applied to the Containment Spray System.

Which one of the following personnel must walk down the markup before work/testing is started on the system?

a. Controller

b. Markup Man

c. Licensed Operator

d. Designated Maintenance person

ANSWER: 002 (1.00)

b.

REFERENCE:

GAP-OPS-02, Rev 1, 3.1.1.1 pg 2 and Sec. 3.6.2 pg 12

294001K102 [3.9/4.5]

294001K102 ..(KA's)

QUESTION: 003 (1.00)

During a maintenance outage, a 23 year old male worker with a lifetime exposure of 22.5 REM (NRC Form 4 on file) is assigned to work in a 200 mrem/hr radiation field. The worker has received 250 mrem this calendar quarter.

What is the maximum time the worker can be in the radiation area without exceeding any NMPC administrative whole body occupational exposure limit without special authorization?

a. 2.25 hours

b. 3.75 hours

c. 7.50 hours

d. 12.50 hours

ANSWER: 003 (1.00)

b.

REFERENCE:

No reference provided.

294001K103 [3.3/3.8]

294001K103 ..(KA's)

QUESTION: 004 (1.00)

During the current calendar quarter, the CSO has worked the following schedule:

- Substitution for 6 hours as the CSO on October 15.
- Three 12 hour shifts from November 1 through November 5.
- Substitution for 4 hours as the CSO on November 11.

Which one of the following describes the smallest number of additional hours that the CSO must work to satisfy site administrative requirements to maintain an active license?

a. One 10 hour shift.

b. One 14 hour shift.

c. Four 8 hour shifts.

d. Four 12 hour shifts.

ANSWER: 004 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-349-1-01 TO: 1.0
N1-ODP-TQS-0401, Rev 0, pg 2

294001A103 [2.7/3.7]

294001A103 ..(KA's)

QUESTION: 005 (1.00)

An operator has just discovered a manual isolation valve in a pipe line for the Instrument Air system that is not shown on the system P&ID.

Which one of the following would be initiated by the operator for resolution of the discrepancy?

a. Field Change Request

b. Configuration/As-built Change Request

c. Deficiency/Event Report

d. Root Cause Determination Report

ANSWER: 005 (1.00)

c.

REFERENCE:

Lesson Plan: None located.
N1-ODP-DES-0101, Rev 0, pg 4

294001A107 [3.0/3.7]

294001A107 ..(KA's)

QUESTION: 006 (1.00)

A partial loss of reactor recirculation flow has resulted in operation in the STABILITY AWARENESS REGION. While in this region 0.9 is the maximum allowed thermal limit value for _____ because larger values could result in _____.

a. MFLCPR; localized transition boiling

b. MFLCPR; power to flow instabilities

c. APLHGR; localized transition boiling

d. APLHGR; power to flow instabilities

ANSWER: 006 (1.00)

b. or a.

REFERENCE:

Lesson Plan 01-REQ-007-384-1-01 EO-1.0
N1-ODP-OPS-0106, Rev 0, Step 3.1.3, pg 1

294001A115 [3.2/3.4]

294001A115 ..(KA's)

QUESTION: 007 (1.00)

Which one of the following states the MINIMUM level of permission that must be obtained prior to entry into a transient radiation area using a Specific RWP, per GAP-RPP-02, Radiation Work Permit?

a. Radiation Protection Chief Technician on shift AND SSS

b. Radiation Protection Chief Technician on shift OR SSS

c. General Supervisor Radiation Protection Operations AND SSS

d. General Supervisor Radiation Protection Operations OR SSS

ANSWER: 007 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-346-1-01 EO-2.0
GAP-RPP-02, Rev 01, Step 3.7.1.d, pg 6

294001K105 [3.2/3.7]

294001K105 ..(KA's)

QUESTION: 008 (1.00)

An operator is dressed in a single set of protective clothing (PC) and is working in the Reactor Building NE Corner Area at the 198 foot elevation when a Radiation Emergency occurs. The CSO has announced on the PA, "Evacuation of the Reactor Building on and below the 237 foot elevation is urgent due to high area radiation."

Which one of the following is the proper methodology that the operator should use to exit the Reactor Building?

a. Exit the Reactor Building wearing the entire set of PC and undress just outside of the Reactor Building airlock.

b. Exit the Reactor Building wearing the entire set of PC and proceed to the access control corridor in the Unit 1 Admin Building to undress.

c. Remove the shoe covers at the work area step-off pad and proceed to the access control corridor in the Unit 1 Admin Building to undress.

d. Remove the shoe covers at the work area step-off pad then exit the Reactor Building and remove the PC just outside the Reactor Building air lock.

ANSWER: 008 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-346-1-01 EO-None located
Lesson Plan 01-LOT-006-350-1-01 EO-None located
EPIP-EPP-21, pg. 11

294001K104 [3.3/3.6]

294001K104 ..(KA's)

QUESTION: 009 (1.00)

The ASSS has just received a report that the surveillance test for the Core Spray System is PAST DUE.

Which one of the following is the meaning of this statement?

a. The surveillance has not been performed before its assigned late finish date, and the Core Spray System must be considered inoperable.

b. The surveillance has not been performed before its assigned late finish date, but the Core Spray System is still considered operable.

c. The surveillance has not been performed before its assigned best test date, and the Core Spray System must be considered inoperable.

d. The surveillance has not been performed before its assigned best test date, but the Core Spray System is still considered operable.

ANSWER: 009 (1.00)

d.

REFERENCE:

Lesson Plan: None located.
GAP-SAT-01, Rev 01, pg 7

294001A106 [3.4/3.6]

294001A106 ..(KA's)

QUESTION: 010 (1.00)

Which one of the following describes the MINIMUM shift crew composition of ROs and Nonlicensed Operators required to meet Technical Specifications when in the COLD SHUTDOWN CONDITION?

	ROs	NONLICENSED OPERATORS
a.	1	1
b.	1	2
c.	2	1
d.	2	2

ANSWER: 010 (1.00)

a.

REFERENCE:

Lesson Plan: None located.
N1-ODP-TQS-0401, Rev 0, pg 3

294001A103 [2.7/3.7]

294001A103 ..(KA's)

QUESTION: 011 (1.00)

SELECT the choice below that completes the following statement.

Prior to assuming the shift, the oncoming CSO will _____.

a. read and sign the CSO log book, perform a panel walkdown, and review the Equipment Checklist.

b. read and sign the CSO and SSS log book, perform a panel walkdown, and review the Equipment Checklist.

c. read and sign the CSO log book, perform a panel alarm test, and review the Equipment Checklist and the Alarm Summary Edit.

d. read and sign the CSO and SSS log book, perform a panel alarm test, and review the Equipment Checklist and the Alarm Summary Edit.

ANSWER: 011 (1.00)

a.

REFERENCE:

Lesson Plan: None located.
N1-ODP-OPS-0101, Rev 7, pg 2

294001A106 [3.4/3.6]

294001A106 ..(KA's)

QUESTION: 012 (1.00)

Which one of the following defines an area of the Control Room that is outside of the "At-the-Controls Area" and may be entered by the "At-the-Controls" operator for emergency or nonroutine response only?

a. The area between the front and back panels.

b. The area behind the fire panel.

c. The SSS office area.

d. The back panel area.

ANSWER: 012 (1.00)

d.

REFERENCE:

N1-ODP-OPS-0101, Rev 7, Attachment 8.

294001A109 [3.3/4.2]

294001A109 ..(KA's)

QUESTION: 013 (1.00)

A fire has just been reported in the area of PB 16A.

Which one of the following describes the proper response of on-shift licensed Nuclear Operators?

a. In-Plant E reports to the scene of the fire and provide technical advice regarding current plant operating status to the Nuclear Fire Chief.

b. Licensed Nuclear Operators assigned to the Reserve Fire Brigade report to the Nuclear Fire Chief at the scene of the fire and provide status reports to the SSS.

c. CSO activates the station fire alarm and immediately initiates a station evacuation.

d. CSO activates the station fire alarm and immediately notifies off-site fire departments of the fire's status.

ANSWER: 013 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-006-350-1-01 EO: 2.1
EPIP-EPP-28, Rev 0, pg 4

294001K116 [3.5/3.8]

294001K116 ..(KA's)

QUESTION: 014 (1.00)

Following a LOCA, the Core Spray System initiates. A loss of all offsite power then occurs and the Emergency Diesels respond as expected.

Which one of the following describes the response of the Core Spray Pumps when the Diesels have repowered the emergency busses?

a. The pumps will NOT automatically start.

b. The pump automatic start sequence will begin immediately.

c. The pump automatic start sequence will be delayed by 10 seconds.

d. The pump automatic start sequence will be delayed by 50 seconds.

ANSWER: 014 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-209-01 EO-8
Ops Tech Chapter 17, pg 18

209001K601 [3.4/3.4]

209001K601 ..(KA's)

QUESTION: 015 (1.00)

Which one of the following defines a CRAM ROD?

a. Any rod, excluding the peripheral rods, positioned between 00 and 24 that are inserted in groups starting with the shallowest group.

b. Any rod, excluding the peripheral rods, positioned between 00 and 24 that are inserted in groups starting with the deepest group.

c. Any rod, including the peripheral rods, positioned between 00 and 24 that are inserted with EMERGENCY ROD IN mode starting with the deepest rod.

d. Any rod, including the peripheral rods, positioned between 00 and 24 that are inserted with CONTINUOUS IN mode starting with the shallowest rod.

ANSWER: 015 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-101-01 EO-Not located
N1-OP-43, Rev 36, pg 39

201003G009 [3.6/3.3]

201003G009 ..(KA's)

QUESTION: 016 (1.00)

An ACCUMULATOR light on the full core display has illuminated.

Which one of the following describes the action required to determine the cause of this alarm?

a. Depress the test button on the local HCU panel. If the light remains lit, water has leaked into the gas side. If the light goes out, the gas pressure is low.

b. Depress the test button on the local HCU panel. If the light goes out, water has leaked into the gas side. If the light remains lit, the gas pressure is low.

c. Depress the test button on the HCU located below the gas pressure gage. If the light remains lit, water has leaked into the gas side. If the light goes out, the gas pressure is low.

d. Depress the test button on the HCU located below the gas pressure gage. If the light goes out, water has leaked into the gas side. If the light remains lit, the gas pressure is low.

ANSWER: 016 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-01 EO-17 (related, but not specific)
Ops Tech Chapter 5a, pg 24
Modified NMP1 Bank Question

201001A106 [3.4/3.4]

201001A106 ∴(KA's)

QUESTION: 017 (1.00)

During a refueling outage, plant conditions are as follows:

- Reactor mode switch is in REFUEL.
- ONE control rod is withdrawn to position 12 for testing.
- Refuel platform is over the Spent Fuel Pool.
- Refuel platform grapple is in the fully raised position and UNLOADED.

Which one of the following describes the effect of the refueling interlocks?

a. RMCS will prevent the selection of any other control rod from the reactor control panel.

b. Power to refuel platform grapple will be interrupted if the platform travels over the core.

c. Refuel platform is blocked from traveling over the core.

d. Control rod block will prevent withdrawal of another rod.

ANSWER: 017 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-02 EO-7
Ops Tech Chapter 37a, pg 13
Tech Spec Bases 3.5.2, pg 187

234000K402 [3.3/4.1]

234000K402 ..(KA's)

QUESTION: 018 (1.00)

Select the choice below that completes the following statement.

With the normal water level in the Spent Fuel Pool, when a fuel bundle is fully raised for movement in the Spent Fuel Pool, the top of the bundle will be covered by at least _____ of water. If a fuel bundle is seated in a Spent Fuel Pool rack and the pool is inadvertently drained to the level of the lowest penetration, the top of the seated bundle will be _____.

a. 8 feet; uncovered

b. 8 feet; covered by 1 foot of water

c. 1 foot; covered by 8 feet of water

d. 1 foot; uncovered

ANSWER: 018 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01 EO-2.0
Ops Tech Chapter 37a, pg 10

233000K302 [3.1/3.2]

233000K302 ..(KA's)

QUESTION: 019 (1.00)

During an outage, the Refuel Platform Operator is loading the fourth fuel assembly into a fuel cell in the core.

Which one of the following indicates that the fuel assembly has been loaded in the correct position?

a. The fuel orientation boss on the fuel assembly bail handle points toward the outside of the four bundle array.

b. The gadolinium rods are aligned along an axis that points from the outside to the center of the four bundle array.

c. The fuel assembly "dog ear" boss is located at the center of the four bundle array.

d. The fuel channel spacer buttons are located on the inside surfaces of the four bundle array.

ANSWER: 019 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01, pg 16, EO-6
Ops Tech Chapter 37a, pg 10 and 11
Ops Tech Chapter 2, Fig. 2-4

234000K505 [3.0/3.7]

234000K505 ..(KA's)

QUESTION: 020 (1.00)

An ATWS has occurred and the following conditions exist:

- Reactor power 35% on APRMs.
- Recirculation pumps are off.
- Reactor water level is 20 inches.
- Drywell pressure is 1.2 psig.
- All MSIVs are closed.
- Reactor pressure is being controlled between 900 and 1000 psig.
- Mode switch is in SHUTDOWN.
- SDV High Level scram has been bypassed.
- RPS scram relays are inaccessible and cannot be jumpered out.

Which one of the following describes the effect of plant conditions on the operators' ability to reset the scram?

a. Can be reset after the Mode Selector Switch has been in SHUTDOWN for greater than 10 seconds.

b. Can be reset because reactor power is below the APRM High Flux scram setpoint.

c. Cannot be reset because power is above the Turbine Stop Valve and Generator Load Reject scram setpoint.

d. Cannot be reset since the MSIV closure scram signal is still active.

ANSWER: 020 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-212-1-01 EO-1.12 and 1.15
Ops Tech Chapter 10, Sec. C.2, C.3, C.5

212000A414 [3.8/3.8]

212000A414 ..(KA's)

QUESTION: 021 (1.00)

Select the choice below that completes the following statement.

When motor-operated Raw Water Discharge Valve #111 or #122 is closed, the associated _____.

a. Raw Water pump will trip

b. Core Spray pump will trip

c. Raw Water supply valve to Core Spray will open

d. Core Spray suction valve from the torus will open

ANSWER: 021 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-5
Ops Tech Chapter 18, pg 6

209001A301 [3.6/3.6]

209001A301 ..(KA's)

QUESTION: 022 (1.00)

During a transient the CRAM RODS are inserted.

Which one of the following describes how the operator will recover from the insertion of the CRAM rods?

a. Use information from the 3-D Monicore Predictor Case to re-establish the original rod pattern.

b. Reduce recirc flow to less than 45% to prevent high local flux peaks when blade tips cross during withdrawal of the CRAM RODS.

c. Obtain the rod withdrawal sequence from the Reactor Engineering Supervisor to prevent high local flux or abnormal flux patterns.

d. Station a "Human" Rod Worth Minimizer to ensure proper rod withdrawal sequence to prevent abnormal flux patterns with high local powers.

ANSWER: 022 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-006-341-01 EO-Not located
N1-OP-43, Rev 36, Precaution 3.0 pg 7, Caution pg 40

201003G010 [3.2/3.2]

201003G010 ..(KA's)

QUESTION: 023 (1.00)

The operator is withdrawing rods during a startup. Reactor power is approximately 2%. Rod Group 13 (06-35, 46-35, 46-19, and 06-19) is currently displayed on the RWM. Each rod of Group 13 is inserted 2 CRDM notches beyond its current withdraw limit.

Which one of the following will occur if the operator depresses the rod select pushbutton for a rod in Group 14?

a. RMCS selects the rod, a select error light illuminates, and the operator can withdraw the rod resulting in a withdraw error.

b. RWM latches to group 14, an insert error is displayed, and the operator can withdraw the rod.

c. RWM remains latched to group 13, a withdraw error is displayed, and the operator is blocked from withdrawing the rod.

d. A select error light illuminates, RWM prevents RMCS from selecting the rod, and the operator is prevented from withdrawing the rod.

ANSWER: 023 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-03 EO-2.0 and 4.0
Ops Tech Chapter 5, pg 22

201006K403 [3.3/3.4]

201006K403 ..(KA's)

QUESTION: 024 (1.00)

The reactor is operating at 100% power. All reactor recirculation pumps are in service. The following alarms and indications have just been observed for reactor recirculation pump #14. (Refer to attached Figure 4-2, Reactor Recirc Pump Seals.)

- Seal Water Flow High alarm.
- Seal Leak Detector Flow High alarm.
- Outer seal (seal #2) pressure (P-2) is 850 psig.
- Inner seal (seal #1) pressure (P-1) is 850 psig.

Which one of the following describes the reactor recirculation pump seal condition?

a. Seal #1 has completely failed and seal #2 has partially failed.

b. Seal #1 has completely failed and seal #2 is fully operable.

c. Seal #2 has completely failed and seal #1 has partially failed.

d. Seal #2 has completely failed and seal #1 is fully operable.

ANSWER: 024 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01, pg 6, EO-1.3
Ops Tech Chapter 4, Figure 4-2
NOTE: Attach Fig. 4-2 without notes on seal pressures.

202001A109 [3.3/3.3]

202001A109 ..(KA's)

QUESTION: 025 (1.00)

When a reactor recirculation pump is started, the GEMAC controller is placed in MANUAL and set at 20%.

Which one of the following is the reason for this action?

a. To decrease the recirc MG speed from 50% to 20% speed when the MG field breaker closes.

b. To provide a bumpless transfer and maintain the recirc MG at 20% speed when the recirc pump discharge valve is opened.

c. To ensure the recirc MG scoop tube positioner will increase to a maximum of 25% when the MG drive breaker is closed.

d. To prevent a recirc MG trip at 15% speed by an incomplete starting sequence due to a mismatch in speed controllers when the MG field breaker closes.

ANSWER: 025 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01 EO-1.7 and 1.9
Ops Tech Chapter 4, pg 17
N1-OP-1, Rev. 39, Step 2.2.2, pg. 17 and caution, pg. 18.

202002A101 [3.2/3.2]

202002A101 ..(KA's)

QUESTION: 026 (1.00)

RWCU is operating normally with the reactor at 100% power when RWCU flow rate suddenly decreases to 100 gpm.

Which one of the following describes the response of the RWCU system and the reason for this response?

a. RWCU isolates because low flow is indicative of a system leak.

b. RWCU isolates to prevent loss of demineralizer filter cake.

c. RWCU pumps trip to prevent overheating the pumps.

d. RWCU pumps trip to prevent overheating the demineralizer resin.

ANSWER: 026 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-204-01 EO-7
Ops Tech Chapter 7, pg 25

204000K404 [3.5/3.6]

204000K404 ..(KA's)

QUESTION: 027 (1.00)

SELECT the choice below that completes the following statement.

Shutdown Cooling (SDC) is in service with pump #12 in operation. Instrument air compressor #13 is inoperable. If a loss of PB 17B occurs, Shutdown Cooling will be lost because _____.

a. RPS Bus #12 de-energizes causing the SDC flow control valve #12 to fail closed

b. Instrument Air pressure will bleed off causing the SDC flow control valve #12 to fail closed

c. the SDC recirculation valves open

d. SDC Pump #12 will lose power

ANSWER: 027 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-205-01 EO-9.0
Ops Tech Chapter 20a, Table 20a-2, pg 6
Ops Tech Chapter 33b, Fig. 33B-1
Ops Tech Chapter 30, Table 30-3, pg 7
Ops Tech Chapter 10, Fig. 10-1

205000K601 [3.3/3.4]

205000K601 ..(KA's)

QUESTION: 028 (1.00)

The HPCI system is in operation following a transient resulting in a scram from 100% power, when a loss of all off-site power occurs. Power is subsequently made available for the preferred HPCI components from Bennets Bridge.

Which one of the following describes the action required to ensure proper long term operation of HPCI?

a. Start and stop HPCI pumps, within temperature constraints, only as necessary to control reactor water level.

b. Restart Instrument Air compressors from EDG power to restore air to the feedwater flow control valves.

c. Locally pin the feedwater flow control valve(s) and use local manual control to throttle feed flow.

d. Manually reset the preferred HPCI component "anti-pumping" breaker interlocks to place HPCI in operation.

ANSWER: 028 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-206-01 EO-7.0 and 12
N1-OP-16, Rev 21, pg 44 and 45
NMP-1 Bank (modified)

206000A402 [4.0/3.8]

206000A402 ..(KA's)

QUESTION: 029 (1.00)

SELECT the choice below that completes the following statement.

If the normal power supply to the HPCI initiation logic circuitry is lost, power is restored to the HPCI logic by _____.

a. automatic transfer to MG 167 computer panel board

b. automatic transfer to RPS MG 131

c. manual transfer to MG 167 computer panel board

d. manual transfer to RPS MG 131

ANSWER: 029 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-206-01 EO-8.0
Ops Tech Chapter 16, pg 21

206000A414 [4.2/4.1]

206000A414 ..(KA's)

QUESTION: 030 (1.00)

Plant conditions and the alarm status for the Emergency Cooling (EC) System are as follows:

- Reactor is at 100% power.
- CONDENSER INLET STEAM PRESSURE LOW is in alarm.
- CONDENSER INLET STEAM TEMPERATURE LOW is in alarm.
- CONDENSER SHELL TEMPERATURE HIGH alarm is clear.
- CONDENSER WATER LEVEL HIGH/LOW alarm is clear.
- STEAM LEAK/HIGH AREA TEMPERATURE is clear.

Which one of the following Emergency Cooling System conditions could result in the above indications?

a. Condensate Return valve seat leakage.

b. Steam Supply valve closed.

c. Accumulation of noncondensible gases in the EC tubes.

d. EC tube to shell leakage.

ANSWER: 030 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-207-01 EO-None located.
Ops Tech Chapter 14, pg 10 and 12

207000A207 [3.5/3.5]

207000A207 ..(KA's)

QUESTION: 031 (1.00)

SELECT the choice below that completes the following statement.

The Liquid Poison System has been initiated by taking the Control Room control switch to the System 11 position. Liquid Poison System conditions are as follows:

- Liquid Poison pumps have responded as designed.
- Squib #11 continuity monitor light is OFF.
- Squib #12 continuity monitor light is ON.

The Liquid Poison System injection flow rate to the reactor vessel will be _____.

a. 50% of rated capacity at 15 gpm

b. 50% of rated capacity at 30 gpm

c. 100% of rated capacity at 15 gpm

d. 100% of rated capacity at 30 gpm

ANSWER: 031 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01 EO-1.2 and 1.7 and 1.10
Ops Tech Chapter 8, pg 7 and 10

211000K504 [3.1/3.2]

211000K504 ..(KA's)

QUESTION: 032 (1.00)

N1-OP-43, Startup, Normal Operation, and Shutdown Procedure, directs that the APRM gains be set to MAXIMUM prior to commencing a reactor startup.

Which one of the following is the reason for this action?

a. Ensures the APRMs are accurately indicating reactor core power.

b. Ensures APRM/IRM overlap on only the IRMs NOT pinned below range 10.

c. Ensures that the plant computer will conservatively calculate the margin to the thermal limits.

d. Ensures a high power scram would occur before exceeding design limits.

ANSWER: 032 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-215-01 EO-related to 1.10
Ops Tech Chapter 9d, pg 26

215005G010 [3.4/3.4]

215005G010 ..(KA's)

QUESTION: 033 (1.00)

The plant is operating at 100% power when a station blackout occurs. The reactor mode switch is in RUN and reactor pressure has decreased to 800 psig.

Which one of the following describes the expected response of the MSIVs?

a. Inboard MSIVs OPEN; outboard MSIVs OPEN

b. Inboard MSIVs OPEN; outboard MSIVs SHUT

c. Inboard MSIVs SHUT; outboard MSIVs OPEN

d. Inboard MSIVs SHUT; outboard MSIVs SHUT

ANSWER: 033 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-7.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 10
Ops Tech Chapter 21, pg 7

239001K601 [3.1/3.3]

239001K601 ..(KA's)

QUESTION: 034 (1.00)

SELECT the choice below that completes the following statements.

The Electromatic Relief Valve (ERV) solenoids are powered from _____. If reactor pressure is 1100 psig when a loss of power to the ERV solenoids occurs, the ERVs will _____.

a. 125 VDC; remain open

b. 125 VDC; shut

c. I&C Bus 130A; remain open

d. I&C Bus 130A; shut

ANSWER: 034 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-218-01 EO-6.0
Ops Tech Chapter 21, pg 3

239002K201 [2.8/3.2]

239002K201 ..(KA's)

QUESTION: 035 (1.00)

The plant is operating at 100% power. The power selector switch in ARI Cabinet #3 is selected to division 11.

Which one of the following describes the response of the ARI system upon a loss of battery #11?

a. Both ARI valves will remain closed because solenoid power is automatically transferred to battery #12.

b. One ARI valve opens because power to ARI logic system 11 is lost.

c. ARI valves will remain closed and will not open because power to both ARI solenoid valves has been lost.

d. Both ARI valves open and cannot be closed until power to the ARI solenoid valves is manually transferred to battery #12.

ANSWER: 035 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02 EO-5.0
Ops Tech Chapter 5a, pg 29 and 30

201001K205 [4.5/4.5]

201001K205 ..(KA's)

QUESTION: 036 (1.00)

SELECT the choice below that completes the following statement.

The reactor is in COLD SHUTDOWN with the suction and discharge valves of all the reactor recirculation loops SHUT. Reactor Vessel Instrumentation will indicate water level INSIDE the shroud if vessel level is _____.

a. 95 inches on the Narrow Range GEMACS and Shutdown Cooling is continuously in service

b. 95 inches on the Narrow Range GEMACS and the vessel head and the steam dryer are removed

c. 17 feet 5 inches on the Wide Range GEMAC and the vessel head is removed

d. 6 feet 5 inches on the Wide Range GEMAC and Shutdown Cooling is continuously in service

ANSWER: 036 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-216-01 TO-1.0
N1-OP-1, Rev 39, pg 14

216000K501 [3.1/3.2]

216000K501 ..(KA's)

QUESTION: 037 (1.00)

A reactor startup is in progress for the initial criticality of a new core. Plant conditions are as follows:

- RPS Non-Coincident Bypass switches are in the NON-COINCIDENT position.
- SRMs are partially inserted.
- SRMs #11 and #12 indicate 3 x 10E5 cps.
- SRMs #13 and #14 indicate 7 x 10E5 cps.
- IRMs #11, #12, #13, and #14 are on Range 7 indicating 32.
- IRMs #15, #16, #17, and #18 are on Range 8 indicating 38.

Which one of the following describes the plant response?

a. Rod Block

b. Half scram

c. Full scram

d. No rod block or scram signal

ANSWER: 037 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-215-1-06 EO-4.1
Ops Tech Chapter 10, pg 16
Ops Tech Chapter 9a, pg 2, 14, and 15

215004K402 [3.4/3.5]

215004K402 ..(KA's)

QUESTION: 038 (1.00)

A transient from 100% power has resulted in the following plant conditions.

- Reactor water level decreased to -20 inches and is increasing slowly.
- Drywell pressure increased to 4.5 psig and is decreasing.
- ADS white timer light has been illuminated for 45 seconds.

Which one of the following conditions would PREVENT the ERVs from opening and depressurizing the reactor vessel when the timer times out?

a. Reactor level increases and remains at -5 inches.

b. Drywell pressure decreases and stabilizes at 2.8 psig.

c. One ADS inhibit switch is placed in BYPASS.

d. Loss of 125 VDC Battery Board 11.

ANSWER: 038 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-218-1-01 EO-7.0 and 8.0
Ops Tech Chapter 15, pg 8

218000A206 [4.2/4.3]

218000A206 ..(KA's)

QUESTION: 039 (1.00)

A primary containment isolation has occurred due to low reactor water level.

Which one of the following can be operated when the Vessel Isolation Bypass Switch on the K Panel is placed in BYPASS?

a. Reactor sample valves

b. Reactor Water Cleanup for reactor pressure control

c. Shutdown cooling isolation valves

d. Reactor head vents for emergency RPV depressurization

ANSWER: 039 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-001-223-1-01 EO-3.0 and 5.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 18

223002A209 [3.6/3.7]

223002A209 ..(KA's)

QUESTION: 040 (1.00)

Following a small break LOCA resulting in a peak drywell pressure of 5.0 psig, the operator observes that BOTH the Drywell Radiation Monitors are reading approximately 1 R/hr.

Which one of the following describes the condition indicated by the Drywell Radiation Monitors?

a. Significant fuel damage has resulted in a large release of fission products.

b. The internal source for each detector is maintaining an on-scale indication.

c. A Drywell Radiation downscale alarm would be initiated.

d. A Drywell Radiation high alarm would be initiated.

ANSWER: 040 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-272-1-01 TO-2.0
Ops Tech Chapter 12a, pg 7

272000A402 [3.0/3.0]

272000A402 ..(KA's)

QUESTION: 041 (1.00)

Which one of the following conditions would challenge the integrity of containment due to exceeding a containment design rating? (Reactor Building is at atmospheric pressure.)

	DRYWELL PRESSURE	TORUS PRESSURE
a.	28.5 psig	30.75 psig
b.	52.5 psig	32.5 psig
c.	- 1.5 psig	- 0.75 psig
d.	- 0.5 psig	- 1.5 psig

ANSWER: 041 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-223-02 EO-1.0 (related)
Ops Tech Chapter 12a, pg 4 and 5

NOTE: Facility verified choice "a" should result in failure of internal piping and headers due to excessive torus-drywell dp but not containment failure.

223001K401 [3.7/3.8]

223001K401 ..(KA's)

QUESTION: 042 (1.00)

Containment Spray pump 111 has been placed in the Torus Cooling Mode of operation.

- 80-16, Containment Spray Discharge IV 111, is shut.
- 80-40, Containment Spray Bypass BV 111, is open.
- Spray pump 111 is running.
- 80-118, Containment Spray Test to Torus FCV, is open.

Which one of the following describes the response of the Containment Spray System 111 if a containment spray automatic initiation signal is received?

a. Spray pump 111 will continue to run, 80-16 will remain shut, 80-118 and 80-40 will remain open.

b. Spray pump 111 will continue to run, 80-16 will open, 80-118 and 80-40 will remain open.

c. Spray pump 111 will trip but restart after its time delay, 80-16 will open, 80-118 will shut and 80-40 will remain open.

d. Spray pump 111 will trip but restart after its time delay, 80-16 will open, 80-118 and 80-40 will shut.

ANSWER: 042 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6.0
Ops Tech Chapter 18, pg 14, 15, and 16

219000A214 [4.1/4.3]

219000A214 ..(KA's)

QUESTION: 043 (1.00)

Containment Spray must be manually initiated to reduce drywell pressure.

Which one of the following combinations would satisfy the requirements of N1-OP-14, Containment Spray System, for manual initiation of Containment Spray?

a. Spray pump 112

b. Spray pump 122

c. Spray pumps 111 and 121

d. Spray pumps 112 and 121

ANSWER: 043 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-9.0 (related)
N1-OP-14, Rev 37, Step 7.2, pg 21

226001A401 [3.5/3.4]

226001A401 ..(KA's)

QUESTION: 044 (1.00)

The reactor is operating at 30% power when the following annunciators are received.

- TURB ELECTRICAL PRESS. REG. (PRESS-VOLTS) (A2-4-5)
- TURBINE BYPASS VALVES OPEN (A1-4-6)

Reactor pressure is 900 psig and DECREASING.

Which one of the following would be the required operator response to stop the reactor pressure decrease?

a. Manually adjust the MPR setpoint to shut the bypass valves.

b. Manually operate the Bypass Opening Jack to shut the bypass valves.

c. Manually scram the reactor and shut the MSIVs.

d. Manually trip the #2 vacuum trip pushbutton and shut the bypass valves.

ANSWER: 044 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-248-01 EO-5.0 and 6.0
N1-ARP-A1-4-6, Rev 0
N1-OP-31, Rev 15, Section H.2.0, pg 39

241000A203 [4.1/4.2]

241000A203 ..(KA's)

QUESTION: 045 (1.00)

The plant is at 35% power when an electrical offsite power transient causes the generator output breakers R915 and R925 to open and lock out.

Which one of the following describes the expected plant response?

a. Control valves rapidly close and then reopen to control reactor pressure and the reactor remains at power.

b. Control valves rapidly close and the reactor scrams. The bypass valves operate to control reactor pressure and the main generator trips on reverse power.

c. The turbine trips, all turbine valves close, bypass valves operate to control reactor pressure, and the reactor remains at power.

d. The turbine trips, all turbine valves close, the reactor scrams, and bypass valves operate to control reactor pressure

ANSWER: 045 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-247-01 EO-None located.
Ops Tech Chapter 27, Section C
Modified NMP1 Bank Question

245000A312 [3.3/3.5]

245000A312 ..(KA's)

QUESTION: 046 (1.00)

Which one of the following describes how cooling is provided when operating with the turbine bypass valves open?

a. Condensate cooling spray is manually aligned locally to cool the bypass steam if bypass valves will be open greater than 15 minutes.

b. Condensate cooling spray is manually aligned from the Control Room to cool the bypass steam if bypass valves will be open with the turbine at or above 15% load.

c. Condensate cooling spray is automatically aligned to cool the bypass steam if bypass valves have been off their close seat for 15 minutes.

d. Condensate cooling spray is automatically aligned to cool the bypass steam if bypass valves come off their close seat and the generator is at or above 15% load.

ANSWER: 046 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-256-01 EO-1.4
Ops Tech Chapter 22a, pg 23

256000K125 [3.0/3.1]

256000K125 ..(KA's)

QUESTION: 047 (1.00)

The reactor is operating at 80% power with reactor level in the normal band. Feedwater Pumps #12 and #13 are running with Feedwater Level Control in 3-ELEMENT AUTOMATIC MODE.

Which one of the following is the plant response if Feedwater Pump #12 flow element fails downscale? (Assume no operator actions are taken.)

a. Reactor level decreases approximately 4 inches and stabilizes.

b. Reactor level increases approximately 4 inches and stabilizes.

c. Reactor level decreases below the low level scram setpoint.

d. Reactor level increases above the high level turbine trip setpoint.

ANSWER: 047 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-259-02 TO-1.0
Ops Tech Chapter 23a, pg 8 and 9
Ops Tech Chapter 21, pg 2
Ops Tech Chapter 23b, pg 11 and 12

259002A202 [3.3/3.4]

259002A202 ..(KA's)

QUESTION: 048 (1.00)

Emergency Ventilation (EVS) train #12 filter bank must be aligned for decay heat cooling.

Which one of the following lineups would provide decay heat cooling to filter bed #12 in accordance with N1-OP-10, Reactor Building Heating, Cooling and Ventilation? (Figure 13c-1 is attached for reference.)

a. EVS fan #12 running, #12 inlet blocking valve closed, cooling valve open, tie valve closed.

b. Reactor Building Exhaust fan #11 running, #12 inlet blocking valve open, cooling valve open, tie valve closed.

c. EVS fan #11 running, #12 inlet blocking valve closed, cooling valve open, tie valve open.

d. Reactor Building Exhaust fan #12 running, #12 inlet blocking valve open, cooling valve open, tie valve open.

ANSWER: 048 (1.00)

c. or a.

REFERENCE:

Lesson Plan 01-LOT-1-001-261-01 TO-2.0
Ops Tech Chapter 13c, pg 5
N1-OP-10, Rev 11, Section H.3.0, pg 14

NOTE: Add Fig 13c-1 to exam package.
261000A407 [3.1/3.2]

261000A407 ..(KA's)

QUESTION: 049 (1.00)

Which one of the following describes the effect of an undervoltage lockout on Powerboard 16?

a. Liquid Poison pump #11 breaker opens.

b. Computer Panel Board 167 supply breaker opens.

c. Reactor Building Cooling Water pump #13 breaker shuts.

d. Control Rod Drive pump #11 breaker shuts.

ANSWER: 049 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-262-1-01 EO-1.2
Ops Tech Chapter 33b, pg 10

262001K301 [3.5/3.7]

262001K301 ..(KA's)

QUESTION: 050 (1.00)

Emergency Diesel Generator (DG) #102 has received an automatic start signal but has failed to reach 200 rpm in 5 seconds.

Which one of the following describes the automatic response of the DG and the manual operator actions required to start the DG?

a. The DG shuts down immediately. The operator must correct the incomplete start condition and depress the local 48X pushbutton, then a start attempt can be made.

b. The DG shuts down immediately. The operator must correct the incomplete start failure condition and place the engine control switch to FAST STOP, a start attempt can be made.

c. The DG attempts a second start. If the start fails, the operator must correct the start and failure condition and depress the local 48X pushbutton, then a start attempt can be made.

d. The DG attempts a second start. If the start fails, the operator must correct the incomplete start failure condition and place the engine control switch to FAST STOP, then a start attempt can be made.

ANSWER: 050 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-264-1-01 TO-21.0
Ops Tech Chapter 34, Attachment 1 of 01-LOT-001-264-1-01, pg 37

264000A404 [3.7/3.7]

264000A404 ..(KA's)

QUESTION: 051 (1.00)

Which one of the following describes when single notch control rod withdrawal is required during a reactor startup?

a. For all rod movement starting with RWM rod group 3 until criticality is achieved.

b. For all rod movement starting with RWM rod group 2 until criticality is achieved.

c. For all rod movement between notch positions 4 and 12 starting with RWM rod group 3 until criticality is achieved.

d. For all rod movement between notch positions 4 and 12 starting with RWM rod group 2 until criticality is achieved.

ANSWER: 051 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-1-02 EO-14 (related)
N1-ODP-OPS-0106, Rev 0, Step 3.2.2, pg 2

201002G010 [3.9/3.9]

201002G010 ..(KA's)

QUESTION: 052 (1.00)

The reactor is operating at 100% power. All five reactor recirculation pumps are in MASTER MANUAL control, which is set at 100% speed. Core flow is 67.5 x 10E6 lbm/hr.

Which one of the following describes the response of core flow rate if the MASTER MANUAL controller fails rapidly to its MINIMUM output signal?

a. Core flow decreases to 16 x 10E6 lbm/hr.

b. Core flow decreases to 31 x 10E6 lbm/hr.

c. Core flow decreases to 45 x 10E6 lbm/hr.

d. Core flow decreases slightly and stabilizes near 67 x 10E6 lbm/hr.

ANSWER: 052 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01 EO-1.9
Ops Tech Chapter 4, pg 2 and 17
N1-OP-43, Rev 36, pg 29 and 42

202002A407 [3.3/3.2]

202002A407 ..(KA's)

QUESTION: 053 (1.00)

Which one of the following describes the operation and configuration of the backup scram valves?

a. Both RPS channels must trip to de-energize either backup scram valve but only one valve must open to scram the reactor.

b. Both RPS channels must trip to energize either backup scram valve but only one valve must be energized to scram the reactor.

c. Each RPS channel trip energizes only one backup scram valve but both valves must be energized to scram the reactor.

d. Each RPS channel trip de-energizes only one backup scram valve but both valves must be de-energized to scram the reactor.

ANSWER: 053 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-01 EO-1.8
Ops Tech Chapter 10, pg 11
Note: Facility ensure "RPS Channel" is the best terminology for choices.

212000A220 [4.1/4.2]

212000A220 ..(KA's)

QUESTION: 054 (1.00)

Shutdown Cooling is in service when reactor level decreases to +5 inches and continues to decrease.

Which one of the following describes the response of the Shutdown Cooling (SDC) System?

a. Two suction header isolation valves close, one discharge isolation valve closes, and the SDC pumps continue to run.

b. One suction header isolation valve closes, two discharge isolation valves close, and the SDC pumps continue to run.

c. Two suction header isolation valves close, one discharge isolation valve closes, and the SDC pumps trip.

d. One suction header isolation valve closes, two discharge isolation valves close, and the SDC pumps trip.

ANSWER: 054 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-205-01, pg 11 EO-8.0
Ops Tech Chapter 20a, pg 4 AND 16

205000A209 [3.6/3.8]

205000A209 ..(KA's)

QUESTION: 055 (1.00)

Which one of the following describes the flow path which provides minimum cooling water flow for the feedwater pumps following a HPCI initiation?

a. Through the long path recirc valves

b. Through the two inch recirc valves

c. Through the six inch recirc valves

d. Through both the two inch and the six inch recirc valves

ANSWER: 055 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-206-01 EO-2.0 (related)
Ops Tech Chapter 16, pg 12 and 14

206000K418 [3.2/3.3]

206000K418 ..(KA's)

QUESTION: 056 (1.00)

Emergency Condensers have just been placed into service following a scram from 100% power.

Which one of the following indicates that Emergency Condenser Loop #12 condensate return isolation valve has only partially opened?

a. High differential pressure across the steam supply line elbow flow detector.

b. After 5 minutes the EC vent radiation detector is stable at background count rate.

c. After 10 minutes the shell side water temperature has increased to 145 deg. F.

d. Shell side water level is stable or slightly decreasing.

ANSWER: 056 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-207-01 EO-None located
N1-OP-13, Rev 25, Step H.2.3, pg 11
Modified NMP-1 Bank Question

207000A204 [3.8/4.0]

207000A204 ..(KA's)

QUESTION: 057 (1.00)

Plant conditions are as follows:

- ATWS in progress.
- ERVs are controlling reactor pressure.
- Liquid Poison System was initiated by taking the Control Room control switch to System 11.
- Initial Liquid Poison Storage Tank level was 1550 gallons.
- Liquid Poison System has been running for 5 minutes.

Which one of the following indicates that the Liquid Poison System is IMPROPERLY operating?

a. Liquid Poison Pump suction temperature is 75 deg. F.

b. Liquid Poison discharge header pressure is 1500 psig.

c. Liquid Poison Storage Tank low level alarm and level is 1400 gallons.

d. Liquid Poison System Pump #12 is not running.

ANSWER: 057 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01 EO-1.10
Ops Tech Chapter 8, pg 4 and 11

211000A301 [3.5/3.5]

211000A301 ..(KA's)

QUESTION: 058 (1.00)

Which one of the following describes the Main Steam System design for preventing core uncovery during any main steam line rupture at 100% power?

a. Steam line flow restrictors limit steam flow to 200% and the MSIVs must close within 3 seconds on a 120% steam flow signal.

b. Steam line flow restrictors limit steam flow to 120% and the MSIVs must close within 3 seconds on a 120% steam flow signal.

c. Steam line flow restrictors limit steam flow to 200% and the MSIVs must close within 10 seconds on a 120% steam flow signal.

d. Steam line flow restrictors limit steam flow to 120% and the MSIVs must close within 10 seconds on a 120% steam flow signal.

ANSWER: 058 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-3.0, 6.0, and 7.0.
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 10
Ops Tech Chapter 21, pg 3
N1-OP-1, Rev 39, pg 10

239001K404 [3.4/3.5]

239001K404 ..(KA's)

QUESTION: 059 (1.00)

SELECT the choice below that completes the following statements.

A normal reactor shutdown is in progress. While inserting the IRMs into the core, the IRMs must be _____.

a. continuously ranged downward to the lowest range to monitor the power decrease

b. placed on the lowest range to ensure the most conservative scram setpoints are in service

c. placed on the highest range to prevent the insertion of a scram signal

d. continuously ranged upward to the highest range to allow for the increased neutron detection

ANSWER: 059 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-215-1-06 EO-6.3
N1-OP-43, Rev 36, Step 4.2, pg 7

215003A403 [3.6/3.4]

215003A403 ..(KA's)

QUESTION: 060 (1.00)

A reactor startup is in progress with six of the eight IRMs on range 6 and indicating 95%. The condition of the other two IRMs is as follows:

- IRM #12 is on range 6 and indicating 115%.
- IRM #16 is on range 7 and indicating 4%.

Which one of the following describes the existing trip actuation and the reason for the trip?

a. Rod Block only due to IRM #12 upscale trip.

b. Rod Block only due to IRM #16 downscale trip.

c. Half scram and rod block due to IRM #12 upscale high trip.

d. Half scram and rod block due to IRM #16 downscale/inop trip.

ANSWER: 060 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-001-215-1-06 EO-6.3
Ops Tech Chapter 9b, pg 18 and 19

215003A304 [3.5/3.5]

215003A304 ..(KA's)

QUESTION: 061 (1.00)

SELECT the choice below that completes the following statement.

Each APRM receives inputs from designated LPRMs that are distributed over _____.

a. one quadrant of the core.

b. two core quadrants that are opposite each other

c. two core quadrants that are adjacent each other

d. the four quadrants of the core

ANSWER: 061 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-215-1-04 TO-1.0
Ops Tech Chapter 9d, pg 20 and Fig. 9d-2

215005K104 [3.6/3.6]

215005K104 ..(KA's)

QUESTION: 062 (1:00)

SELECT the choice below that completes the following statement.

The plant is operating at 90% power when an ERV inadvertently lifts and sticks open. As a result, indicated main steam flow in the associated steam line will _____ and reactor pressure will _____.

a. increase and then return to near its initial value; decrease and then return to near its initial value

b. increase and then return to near its initial value; decrease until stabilizing at a lower pressure

c. increase by 0.6 x 10E6 lbm/hr and stabilize; decrease until stabilizing at a lower pressure

d. increase by 0.6 x 10E6 lbm/hr and stabilize; decrease and then return to near its initial value

ANSWER: 062 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-248-01 EO-3.0
Ops Tech Chapter 15, pg 4

241000K104 [3.7/3.7]

241000K104 ..(KA's)

QUESTION: 063 (1.00)

The plant is operating with DC power aligned for normal operations.

Which one of the following describes Battery Bus (BB) #11 system and Static Battery Charger (SBC) #161 operation following a loss of power on PB 16B?

a. BB #11 charging supply will transfer to MG #161 and must be manually transferred back to SBC #161 when its AC input is restored.

b. BB #11 charging supply will transfer to MG #161 and automatically transfers, after a time delay, back to SBC #161 when its AC input is restored.

c. BB #11 charging supply is lost until manually transferred back to SBC #161 when its AC input is restored.

d. BB #11 charging supply is lost until SBC #161 is automatically reconnected, after a time delay, when its AC input is restored.

ANSWER: 063 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-263-1-01 EO-1.3 and 1.4 TO-1.0
Ops Tech Chapter 33c, pg 5
N1-OP-47A, Rev 14, pg 4

263000K102 [3.2/3.3]

263000K102 ..(KA's)

QUESTION: 064 (1.00)

The reactor is operating at 100% power. All systems are aligned for normal power operations. No work is in progress on the Refueling Floor.

Which one of the following will cause the Reactor Building Ventilation System to isolate?

a. Refueling Bridge radiation monitor detects 1000 mr/hr.

b. Loss of power to RPS Bus #11.

c. Reactor Building Exhaust fan trips.

d. Reactor Building to atmospheric differential pressure reaches 0 inches of water.

ANSWER: 064 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-288-01 EO-None located.
Ops Tech Chapter 13b, pg 13
Ops Tech Chapter 13c, pg 11

288000K402 [3.7/3.8]

288000K402 ..(KA's)

QUESTION: 065 (1.00)

When a Reactor Recirc Pump is shutdown at power, N1-OP-1, Nuclear Steam Supply System, requires the operator to reopen the Recirc Pump discharge valve for approximately 15 seconds and maintain it in that position for at least 30 minutes.

Which one of the following is the purpose of this requirement?

a. To prevent excessive thermal cooldown stresses on the recirc loop piping

b. To prevent thermal binding between the recirc pump impeller and casing

c. To allow water in the bonnet of the discharge valve to reach thermal equilibrium

d. To allow reverse flow through the loop to cool the discharge and suction valve seats and disks

ANSWER: 065 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-201-1-01 EO-1.9
N1-OP-1, Rev 39, Step 2.7, pg 23
Modified NMP1 Bank Question

202001G010 [3.5/3.7]

202001G010 ..(KA's)

QUESTION: 066 (1.00)

The RWCU system is aligned for normal reactor power operations when a complete loss of all AC power occurs followed by the receipt of a RWCU isolation signal.

Which one of the following describes the valve alignment that isolates RWCU?

a. Inboard and outboard inlet valves (33-02 and 33-04) and the return isolation valve (33-01) close.

b. Inboard inlet valve (33-02) and the return isolation valve (33-01) close.

c. Inboard inlet valve (33-02) and the return line check valve close.

d. Outboard inlet valve (33-04) and the return line check valve close.

ANSWER: 066 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-204-01, pg 5 EO-3
Ops Tech Chapter 7, Fig. 7.1

295003K306 [3.7/3.7]

295003K306 .:(KA's)

QUESTION: 067 (1.00)

An ATWS is in progress and Liquid Poison has been initiated. EOP 3.0, Step RQ-23, requires the operator to inject the entire contents of the Liquid Poison Tank if control rods cannot be inserted. The initial tank level was 1600 gallons, but the Control Room tank level indicator is inoperable. Reactor pressure is controlled between 950 and 1050 psig.

Which one of the following Liquid Poison System indications could be used to verify that the entire volume of the Liquid Poison Tank has been injected to the reactor vessel?

a. The running pump amps steadily decreased to near 0 amps.

b. The running pump amps steadily increased to full scale.

c. Discharge pressure is fluctuating between 1100 and 1450 psig.

d. Discharge pressure is fluctuating between 800 and 1050 psig.

ANSWER: 067 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01, pg 13 EO-1.5 and 1.12
Modified NMP1 Bank Question

295037A104 [4.5/4.5]

295037A104 ..(KA's)

QUESTION: 068 (1.00)

The reactor is operating with AC and DC power aligned for normal operation except that Battery Board #12 has just lost power.

Which one of the following lists the Power Boards (PB) that still have breaker control power available?

a. PB 103, PB 12, PB 17A, PB 17B

b. PB 101, PB 102, PB 11, PB 16A, PB 16B

c. PB 102, PB 103, PB 11, PB 16A, PB 16B, PB 17B

d. PB 101, PB 12, PB 17A, PB 16B

ANSWER: 068 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-263-1-01 TO-1.0
Ops Tech Chapter 33b, Fig. 33b-1
N1-OP-47A, Rev 14, pg 48 and Attachment 3
Modified NMP1 Bank Question

295004A103 [3.4/3.6]

295004A103 (KA's)

QUESTION: 069 (1.00)

EOP-5, Secondary Containment Control is being implemented. EOP-5, Step SCT-6 asks if a primary system is discharging into the Reactor Building.

Which one of the following is considered a primary system discharge? (Assume each of the following systems is in operation.)

a. Emergency Cooling Condensate return line rupture.

b. Containment Spray discharge header rupture.

c. HPCI pump casing rupture.

d. A rupture in the Torus structure.

ANSWER: 069 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-07 EO-1.3
EOP Bases for EOP-5, Section G, pg 3 (Effective 8/9/93)

295032G012 [3.6/4.4]

295032G012 ..(KA's)

QUESTION: 070 (1.00)

The reactor is operating at 100% power and OGESMS is lined up to sample the stack.

Which one of the following actions will occur if the operator places the OGESMS/RAGEMS selector switch on Panel J to the RAGEMS position?

a. The OGESMS stack monitor shuts down and the RAGEMS stack monitor starts up.

b. The RAGEMS stack monitor is selected to provide the stack gas high radiation alarm function.

c. The RAGEMS stack monitor receives a permissive for manual startup while the OGESMS monitor remains on line.

d. The RAGEMS stack monitor sample block valves will isolate without any alarms to warn the operator.

ANSWER: 070 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-273-1-01 EO-1.0, 3.0 and 5.0
Ops Tech Chapter 31b, Attachment 1 of 01-OPS-001-273-1-01, pg 26

NOTE: Facility review indicates that the training material on page 26 of sited reference is not completely accurate.

295038K204 [3.9/4.2]

295038K204 ..(KA's)

QUESTION: 071 (1.00)

SELECT the choice below that completes the following statement.

Secondary Containment differential pressure is maintained by _____.

a. running one exhaust fan and one supply fan at the same speed with a modulating flow control valve in the supply fan suction line.

b. running one exhaust fan and one supply fan at the same speed with a modulating flow control valve in the exhaust fan discharge line.

c. running two exhaust fans and one supply fan at the same speed and the supply flow control valve set at the desired flow rate.

d. running one exhaust fan in fast speed and one supply fan in slow speed with the exhaust flow control valve set at the desired flow rate.

ANSWER: 071 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-288-01 EO-6.0
Ops Tech Chapter 13b, pg 4 and 5

295035K201 [3.6/3.6]

295035K201 ..(KA's)

QUESTION: 072 (1.00)

SELECT the choice below that completes the following statement.

One of the entry conditions for EOP-2, RPV Control, is that all control rods are inserted to or beyond position 04. By verifying that all rods are inserted to or beyond this banked position, under the most reactive core conditions with NO boron injected, the reactor is assured to be shutdown by at least the _____.

a. cold shutdown margin with reactor coolant at 70 deg. F and xenon at -3.0% dk/k

b. cold shutdown margin with reactor coolant at 70 deg. F and xenon at 0.0% dk/k

c. hot shutdown margin with reactor coolant at 212 deg. F and xenon at -3.0% dk/k

d. hot shutdown margin with reactor coolant at 212 deg. F and xenon at 0.0% dk/k

ANSWER: 072 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-006-344-04, pg 6, EO-3.0

295006K102 [3.4/3.7]

295006K102 ..(KA's)

QUESTION: 073 (1.00)

During a transient, the plant conditions are as follows:

- RPV level is -85 inches and decreasing.
- RPV pressure is 450 psig.
- Torus level is 13.5 feet.
- Torus water temperature is 130 deg F.
- Core spray is running.
- CRD is injecting into the RPV.
- HPCI has tripped and cannot be started.
- One Emergency Condenser has isolated.

In accordance with EOP-2, Step RL-20, the SSS orders Emergency RPV Depressurization.

Which one of the following is the reason for this action?

a. To reduce the heat load on the operable Emergency Condenser.

b. To ensure the Torus can accept the heat load of a reactor depressurization.

c. To minimize the inventory loss from any RPV breach.

d. To maximize the effectiveness of steam cooling.

ANSWER: 073 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-04, pg 28 - 31, EO-3.0
EOP-2 Bases, pg. 36.

295031K305 [4.2/4.3]

295031K305 ..(KA's)

QUESTION: 074 (1.00)

The plant is initially operating at 100% power when a loss of Offsite AC power occurs and a HPCI initiation signal is received.

Which one of the following describes the response of Feedwater Booster Pump 11 if Feedwater Booster Pump 13 fails to start when power is restored to PB 11 and PB 12?

a. Will automatically start as long as its control switch is NOT in pull-to-lock position.

b. Will automatically start when its control switch is taken to the trip position then returned to the neutral position.

c. Can be manually started only after resetting the pump motor breaker at the local MCC.

d. Cannot be manually or automatically started due to low suction pressure.

ANSWER: 074 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-259-01 EO-3.0
NI-OP-16, pg 11
Ops Tech Chapter 23a, pg 26 and 27

295003A203 [3.7/3.9]

295003A203 ..(KA's)

QUESTION: 075 (1.00)

Select the choice that completes the following statements.

Following a complete loss of Instrument Air to the Containment Spray Inlet Isolation Valves (80-15, 80-16, 80-35, and 80-36), the Containment Spray system receives an initiation signal. Containment Spray will _____.

a. initiate, because the inlet isolation valves fail to the open position from the normally closed position

b. initiate, because the inlet isolation valves fail in the normally open position.

c. NOT initiate, because the inlet isolation valves fail to the closed position from the normally open position

d. NOT initiate, because the inlet isolation valves fail in the normally closed position

ANSWER: 075 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6
Ops Tech Chapter 18, pg 5

295019K209 [3.3/3.3]

295019K209 ..(KA's)

QUESTION: 076 (1.00)

The reactor has been placed into cold shutdown following extended high power operations. A loss of shutdown cooling occurs 36 hours after reactor shutdown. Plant conditions immediately after the loss of shutdown cooling are as follows:

- The coolant temperature in the unisolated recirculation loops is approximately 150 deg. F.
- Vessel metal temperatures just below the vessel water level are 155 to 165 deg. F

Which one of the following is positive indication that thermal stratification is occurring?

a. Unisolated recirc loop temperature is steady. Vessel metal temperatures just below the vessel level are 155 to 165 deg. F and decreasing.

b. Unisolated recirc loop temperature is steady. Vessel metal temperatures just below the vessel water level are 135 to 145 deg. F and decreasing.

c. Unisolated recirc loop temperature is increasing. Vessel metal temperatures just below the vessel water level are 155 to 165 deg. F and increasing.

d. Unisolated recirc loop temperature is decreasing. Vessel metal temperatures just below the vessel water level are 175 to 185 deg. F and increasing.

ANSWER: 076 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-205-01 TO-4.0
Ops Tech Chapter 20a, pg 8 and 9

295021K102 [3.3/3.4]

295021K102 ..(KA's)

QUESTION: 077 (1.00)

SELECT the choice below that completes the following statement.

Following a transient and the automatic initiation of the Emergency Cooling (EC) System, EC has isolated. The isolation has been verified to be spurious and has been bypassed. The reactor high pressure initiation signal is still active. When the EC isolation signal is bypassed, the steam isolation valves _____ and the condenser return isolation valve _____ to restore EC.

a. must be manually opened; will automatically open

b. must be manually opened; must be manually opened

c. will automatically open; will automatically open

d. will automatically open; must be manually opened

ANSWER: 077 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-207-01 EO-related to 6.0 and 7.0
N1-OP-13, Rev 25, Step D.8.0, pg 5

295025K202 [4.2/4.5]

295025K202 ..(KA's)

QUESTION: 078 (1.00)

SELECT the choice below that completes the following statement.

The reactor is operating at 100% power when the Closed Loop Cooling Makeup Tank ruptures and level cannot be maintained in the tank. The system pressure will decrease in _____.

a. RBCLC and TBCLC, and TBCLC to the recirc MG set coolers will be threatened

b. RBCLC and TBCLC, and TBCLC to feedwater pumps #11 and #12 will be threatened

c. RBCLC only, and RBCLC to the drywell coolers will be threatened

d. RBCLC only, and RBCLC to the condensate pumps will be threatened

ANSWER: 078 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-208-01, EO-4
Ops Tech Chapter 29a, pg 3; and 29b, Fig. 29a-2 and 29b-2

295018K101 [3.5/3.6]

295018K101 ..(KA's)

QUESTION: 079 (1.00)

The reactor is operating at 100% power. APRM #12 has just failed upscale and is NOT bypassed.

Which one of the following describes the final condition of RPS if Powerboard 141C trips on a ground fault?

a. Half scram because one auto reactor trip channel of RPS trip system 131 has actuated.

b. Half scram because RPS trip bus 141 has lost power.

c. Full scram because auto reactor trip channels have actuated on RPS trip busses 131 and 141.

d. Full scram because one auto reactor trip channel of RPS trip system 131 has actuated and RPS system #12 has lost power.

ANSWER: 079 (1.00)

c. or d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-01 EO-1.11
Ops Tech Chapter 10, pg 7 to 9 and Fig. 10-1

295006K201 [4.3/4.4]

295006K201 ..(KA's)

QUESTION: 080 (1.00)

The reactor is operating at 100% power. The operator has discovered on Panel F that the right-hand white light for RPS Trip System 11 is OFF and the light bulb is good. (The other 3 white lights for RPS Trip System 11 are ON.)

Which one of the following describes the response of the control rods if a RPS trip results in the loss of all 4 white lights for RPS Trip System 12 on Panel F?

a. None of the rods will insert into the core.

b. Approximately 25 percent of the rods will insert into the core.

c. Approximately 50 percent of the rods will insert into the core.

d. All of the rods will insert into the core.

ANSWER: 080 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-01 EO-1.15
Ops Tech Chapter 10, pg 10

295015K204 [4.1/4.1]

295015K204 ..(KA's)

QUESTION: 081 (1.00)

An ATWS is in progress and all control rods have failed to insert. All neutron monitoring instrumentation is de-energized.

Which one of the following would indicate that reactor power is approximately 65% of rated?

a. MSIVs shut and two ERVs are open with a third cycling open and closed maintaining reactor pressure steady at approximately 900 psig.

b. Main turbine on line and main condenser vacuum is less than 29 inches of Hg vacuum.

c. Feedwater flow rate is 5.2 x 10E6 lbm/hr maintaining reactor water level in the normal band.

d. Main turbine on line and the TURBINE FIRST STAGE BOWL PRESSURE LOW alarm is received.

ANSWER: 081 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-006-344-1-05 EO-1.0
Ops Tech Chapter 10, pg 18
Ops Tech Chapter 23a, pg 2 and 5
Ops Tech Chapter 21, pg 2 and 3
Ops Tech Chapter 9d, pg 24 and 25

295037A201 [4.2/4.3]

295037A201 ..(KA's)

QUESTION: 082 (1.00)

Following an inadvertent MSIV closure at 100% power, reactor pressure increases to 1220 psig. The operator observes the following Relief and Safety valve response:

- 5 ERVs are open.
- 1 Safety valve is open.

Which one of the following describes the proper evaluation of the Relief and Safety valve response?

a. ERVs responded correctly, but 1 Safety valve inadvertently opened.

b. ERVs responded correctly, but 1 Safety valve failed to open.

c. 1 ERV failed to open, and 3 Safety valves failed to open.

d. 1 ERV failed to open, and the Safety valves responded correctly.

ANSWER: 082 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-4.0
Ops Tech Chapter 21, pg 6

295007A104 [3.9/4.1]

295007A104 ..(KA's)

QUESTION: 083 (1.00)

Following an inadvertent MSIV isolation, the operator is directed to reopen the MSIVs with the reactor pressurized.

Which one of the following describes the design of the MSIVs that reduces the differential pressure (d/p) across the valve seats during reopening?

a. Only the inboard MSIVs have a balancing orifice that allows pressure to equalize across the MSIV seat.

b. Only the inboard MSIVs have a pilot valve that is opened when the valve stem first begins to move to equalize d/p across the MSIV seat.

c. The inboard and outboard MSIVs have a balancing orifice that allows pressure to equalize across the MSIV seat.

d. The inboard and outboard MSIVs have a pilot valve that is opened when the valve stem first begins to move to equalize d/p across the MSIV seat.

ANSWER: 083 (1.00)

d. or c.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-None located
Ops Tech Chapter 21, pg 4

295020K201 [3.6/3.7]

295020K201 ..(KA's)

QUESTION: 084 (1.00)

Following a transient with a failure of RPS auto trip channels to scram the reactor, TWO ATWS/ARI LOW-LOW reactor water level signals in CHANNEL #12 are received. Channel #11 has received no initiation signals.

Which one of the following describes the response of the ATWS/ARI valves and the control rods?

a. 1 ATWS/ARI valve opens and the scram air header remains pressurized.

b. 1 ATWS/ARI valve opens and the scram air header depressurizes.

c. Both ATWS/ARI valves remain shut and the scram air header remains pressurized.

d. Both ATWS/ARI valves open and the scram air header depressurizes.

ANSWER: 084 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02 EO-1.0 and 3.0
Ops Tech Chapter 5, Fig. 5a-6 and Fig. 5a-5

295015A102 [4.0/4.2]

295015A102 ..(KA's)

QUESTION: 085 (1.00)

Select the choice below that completes the following statements.

A complete loss of power to the ATWS/ARI logic and valve solenoids has occurred. One minute later a transient results in reactor pressure increasing to 1150 psig. If reactor pressure is above 1150 psig when power is restored to the ATWS/ARI logic and valve solenoids, the reactor recirculation pumps will trip _____.

a. immediately

b. 9 seconds after power is restored

c. 9 seconds after depressing the LOV reset button on the F panel

d. immediately after depressing the LOV reset button on the F panel.

ANSWER: 085 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02, pg 8 EO-1.0

295009K203 [3.1/3.2]

295009K203 ..(KA's)

QUESTION: 086 (1.00)

A reactor transient has resulted in a scram with 30 rods stuck out. Reactor water level cannot be determined by level instrumentation. The SRMs have been fully inserted into the core when the operator observes a drastic decrease in count rate.

Which one of the following describes the reactor vessel level indicated by the SRMs?

a. 16 inches below top of active fuel

b. 28 inches below top of active fuel

c. 16 inches above the core midplane

d. 28 inches below the core midplane

ANSWER: 086 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-215-1-06 EO-2.8
Ops Tech Chapter 9a, pg 3

295031A201 [4.6/4.6]

295031A201 ..(KA's)

QUESTION: 087 (1.00)

EOP-2, RPV Control, Step RP-1 directs the operator to lockout Core Spray pumps before reducing RPV pressure if drywell pressure is at or above 3.5 psig and Core Spray pumps are not required for adequate core cooling.

Which one of the following is the reason for this action?

a. To prevent an uncontrolled cooldown of the reactor vessel wall

b. To prevent fuel cladding damage by the rapid injection of cold water

c. To prevent complicating operator actions to control reactor level

d. To prevent an uncontrolled reactor depressurization

ANSWER: 087 (1.00)

c.

REFERENCE:

01-LOT-001-209-01, LO-5
EOP-2 Bases, pg 44
EOP-2, RPV Control, RP-1

295008G007 [3.2/3.3]

295008G007 ..(KA's)

QUESTION: 088 (1.00)

Following a LOCA, plant conditions are as follows:

- All Core Spray pumps are injecting.
- FZWLMS is inoperable.
- RPV pressure is 55 psig.
- Drywell temperature near all instrument runs is 195 deg. F.
- Lo-Lo-Lo Rosemount Channel #11 indicates -6 inches.
- Lo-Lo-Lo Rosemount Channel #12 indicates -3 inches.
- Wide Range GEMAC indicates +.1 foot.
- Narrow Range GEMAC #11 indicates +2 inches.
- Narrow Range GEMAC #12 indicates 0 inches.
- Hi/Lo-Lo/Lo Rosemount Channel #11 indicates 0 inches.
- Hi/Lo-Lo/Lo Rosemount Channel #12 indicates 0 inches.

Which one of the following lists the accurate reactor water level instruments?

a. Wide Range GEMAC.
Narrow Range GEMAC #12.
Lo-Lo-Lo Rosemount Channel #11 and #12.

b. Narrow Range GEMAC #11 and #12.
Hi/Lo-Lo/Lo Rosemount Channel #11 and 12

c. Narrow Range GEMAC #11.
Lo-Lo-Lo Rosemount Channel #11 and #12.
Hi/Lo-Lo/Lo Rosemount Channel #11 and #12.

d. Wide Range GEMAC.
Narrow Range GEMAC #11.

ANSWER: 088 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-216-1-01 TO-1.0
Ops Tech Chapter 3
EOP-2, RPV Control, Table 2.1

295028A203 [3.7/3.9]

295028A203 ..(KA's)

QUESTION: 089 (1.00)

The reactor is operating at 100% power, when the following plant indications are observed:

- Drywell pressure and temperature are increasing.
- Drywell floor drain sump leakage rate has increased.
- Core differential pressure indication rapidly increased to full upscale.
- Core Spray break detection d/p indicators are downscale.
- The Core Spray break detection alarm is out of service.

Which one of the following components has broken inside the drywell?

a. Core Spray injection line.

b. Liquid Poison injection line.

c. FZWLMS variable instrument leg.

d. Wide range GEMAC reference instrument leg.

ANSWER: 089 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-216-1-01 EO-1.6 (related)
Ops Tech Chapter 3, pg 25 and 26

295009A201 [4.2/4.2]

295009A201 ..(KA's)

QUESTION: 090 (1.00)

Which one of the following signals provides automatic isolation of the vent and purge valves to prevent the release of radioactive materials to the atmosphere?

a. Drywell Continuous Air Monitor high

b. Drywell Area Radiation Monitor high

c. Reactor Building Ventilation Exhaust Radiation Monitor high-high

d. Stack Radiation Monitor high-high

ANSWER: 090 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-223-1-01 EO-5.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 20
Ops Tech Chapter 31b

295017K205 [3.4/3.5]

295017K205 ..(KA's)

QUESTION: 091 (1.00)

Torus level has decreased due to a crack in the Torus structure. Torus conditions are as follows:

- Torus level has decreased to 6 feet and has stabilized.
- Torus temperature is 85 deg. F.
- Torus pressure is 1.75 psig.

Which one of the following describes the effect of this decrease in Torus level?

a. The ERV tailpipes are covered and the drywell downcomers are covered by about 0.5 feet of water.

b. Both the ERV tailpipes and the drywell downcomers are completely uncovered.

c. Both ERV tailpipes and drywell downcomers are uncovered and Core Spray NPSH limit has been exceeded.

d. Only the ERV tailpipes are uncovered and the Core Spray Vortex Limit has been exceeded.

ANSWER: 091 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-01 EO-1.0
EOP-4, PCC
Ops Tech Chapter 12a, pg 5

295030K207 [3.5/3.8]

295030K207 ..(KA's)

QUESTION: 092 (1.00)

EOP-2 and EOP-4 are being executed. The operating crew has started all Core Spray pumps to maintain RPV water level above TAF per EOP-2, Step RL-4. Plant conditions are as follows:

- Torus temperature is 180 deg. F.
- Torus level is 15 feet.
- Torus pressure is 1.0 psig.
- RPV pressure is 125 psig.

Which one of the following is the maximum Core Spray flow rate allowed with both subsystems injecting?

a. Limit flow to 3.1 x 10E6 lbm/hr.

b. Limit flow to 3.25 x 10E6 lbm/hr.

c. Limit flow to 4.4 x 10E6 lbm/hr.

d. Maximize injection flow at 5.0 x 10E6 lbm/hr.

ANSWER: 092 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-04 EO-2.0
EOP-2 and EOP-4, Fig. 2.4 and 2.5

295026K101 [3.0/3.4]

295026K101 ..(KA's)

QUESTION: 093 (1.00)

Which one of the following is the reason for operating within the ERV Tail Pipe Level Limit curve?

a. To ensure complete ERV discharge condensation to prevent Torus overpressurization.

b. To ensure the reactor is depressurized before a LOCA would exceed the energy absorbing capability of the Torus.

c. To prevent Torus failure due to the increased Torus level that occurs during Emergency Depressurization from high pressures.

d. To prevent inducing excessive hydraulic stresses on the Torus structure.

ANSWER: 093 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-01 EO-3.0
EOP-4 Bases, Section F, pg 63 (Effective 8/9/93)

295029K302 [3.6/4.0]

295029K302 ..(KA's)

QUESTION: 094 (1.00)

Which one of the following is the reason that the MAXIMUM Primary Containment Water level is limited to 100 feet?

a. This level loads the bottom of the torus to its maximum yield strength.

b. This level loads the floor of the drywell to its maximum yield strength.

c. This level maintains the containment spray nozzles in the drywell uncovered and capable of primary containment pressure control.

d. This level maintains the highest primary containment vent penetration uncovered and capable of rejecting decay heat.

ANSWER: 094 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-06 EO-3.0
EOP-4 Bases, Section F, pg 68 (Effective 8/9/93)

295029G007 [3.6/3.9]

295029G007 ..(KA's)

QUESTION: 095 (1.00)

During a LOCA, two low-low reactor level signals and two high drywell pressure signals are received, and Containment Spray responds as designed. Shortly afterwards power is lost to PB 102 and PB 103. When power is restored to PB 102 and PB 103, two high drywell pressure signals are still present but the two low-low level signals have cleared and Core Spray pump 111 fails to start.

Which one of the following is the response of the Containment Spray System?

a. Spray pump 111 starts after 5 seconds and pump 121 starts after 10 seconds.

b. Spray pump 111 starts after 50 seconds and pump 121 starts after 10 seconds.

c. Spray pump 111 starts after 50 seconds and pump 121 starts after 60 seconds.

d. Neither Spray subsystem will start.

ANSWER: 095 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6.0 and 7.0
Ops Tech Chapter 18, pg 2,14, and Fig 18-2

295010A107 [3.2/3.4]

295010A107 ..(KA's)

QUESTION: 096 (1.00)

The plant is operating at 75% load when main condenser vacuum begins to decrease. Following a turbine trip, vacuum decreases to 12 inches of Hg vacuum.

Which one of the following describes the expected plant response? (Assume no operator actions are taken during this transient.)

a. Turbine low vacuum trip 1 alarm and shaft feedpump clutch trips.

b. Turbine low vacuum trip 2 alarm and turbine bypass valves are prevented from opening.

c. Turbine low vacuum trip 1 and 2 alarms, MSIVs close, and turbine bypass valves are prevented from opening.

d. Turbine low vacuum trip 1 and 2 alarms, MSIVs close, and shaft feedpump clutch trips.

ANSWER: 096 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-239-1-01 EO-7
Lesson Plan 01-LOT-1-001-248-01 EO-7
Ops Tech Chapter 21, pg 21
Ops Tech Chapter 23a, pg 26
Ops Tech Chapter 27, pg 24, Fig. 27-9 and 27-10
N1-OP-31, Rev 15, pg 7

295002K204 [3.2/3.3]

295002K204 ..(KA's)

QUESTION: 097 (1.00)

Following a complete loss of offsite power with the reactor at power, the Emergency Diesel Generators (DG) respond as designed.

Which one of the following describes the expected response of the 600 Volt AC loads?

a. Non-essential and essential 600 volt load breakers trip; then the essential loads automatically sequence on after the DG breaker closes.

b. Non-essential and essential 600 volt load breakers trip; then the essential loads are manually restored after the DG breaker closes as DG loading allows.

c. Non-essential 600 volt load breakers trip and essential load breakers remain closed; the essential loads automatically re-energize when the DG breaker closes.

d. Non-essential and essential 600 volt load breakers remain closed; the non-essential and essential loads automatically re-energize when the DG breaker closes.

ANSWER: 097 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-264-1-01 EO-7.0
N1-OP-45, Rev 21, pg 6

295003A101 [3.7/3.8]

295003A101 ..(KA's)

QUESTION: 098 (1.00)

Which one of the following is the reason that N1-EOP-6, Radioactivity Release Control, Step RR2 directs the operator to restart the Turbine Building Ventilation if it is shutdown?

a. To provide a filtered, elevated release to reduce offsite radioactivity releases.

b. To provide a positive Turbine Building pressure to reduce the influx of radioactive contaminants.

c. To prevent damage to accident mitigation equipment from excessive Turbine Building temperatures.

d. To prevent an unmonitored ground release of radioactivity to the environment.

ANSWER: 098 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-06 EO-3.0
NMP1 EOP Bases, Section H, for Step RR-2, pg 4
Modified NMP1 Bank Question

295038K203 [3.6/3.8]

295038K203 ..(KA's)

QUESTION: 099 (1.00)

The reactor is operating at 60% power on the 100% rod line with Reactor Recirc Pump #11 secured. An electrical spike on the grid causes Reactor Recirc pump #14 to trip and the operator observes the following plant conditions:

- The reactor is operating in the restricted zone.
- Periodic LPRM downscale alarms are occurring.
- LPRMs are oscillating a maximum of 12%.

Which one of the following is the operator action that is required to correct this condition?

a. Restart Reactor Recirc pump #14 and ensure recirc flow increases above 30.4 mlb/hr.

b. Increase recirc flow using the running reactor recirc pumps to at least 30% of rated flow.

c. Insert cram rods to reduce reactor power to below the 80% rod line.

d. Insert rods by initiating a manual scram of the reactor.

ANSWER: 099 (1.00)

c.

REFERENCE:

SOP-13, Rev 1, pg 1 and 2

295001K102 [3.3/3.5]

295001K102 ..(KA's)

QUESTION: 100 (1.00)

Which one of the following is the purpose of the Radiation Monitor located under the Fuel Transfer Shielding Bridge (Japanese Bridge)?

a. To warn drywell personnel to evacuate above the 259 foot elevation due to fuel transfer between the core and the spent fuel pool.

b. To warn drywell personnel to evacuate the drywell for a fuel drop accident.

c. To warn Operations and Radiation Protection that access above the 259 foot Drywell elevation must be restricted.

d. To warn Operations and Radiation Protection that additional shielding must be positioned to protect drywell personnel.

ANSWER: 100 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01 EO-None located.
N1-FHP-25, Rev 10, Step C.11, pg 3

295023K203 [3.4/3.6]

295023K203 ..(KA's)

(********** END OF EXAMINATION **********)

A N S W E R K E Y

MULTIPLE CHOICE

001	c
002	b
003	b
004	c
005	c
006	b or a
007	c
008	c
009	d
010	a
011	a
012	d
013	a
014	b
015	b
016	b
017	d
018	b
019	d
020	d
021	c
022	c
023	a
024	a
025	b
026	b
027	d
028	b
029	a
030	b
031	d
032	d
033	b
034	b
035	c
036	c
037	c
038	a
039	a
040	b
041	d
042	a
043	c
044	c
045	c

A N S W E R K E Y

046 d

MULTIPLE CHOICE

047 b

048 c or a

049 d

050 c

051 b

052 a

053 d

054 c

055 b

056 c

057 b

058 c

059 c

060 a

061 a

062 a

063 d

064 b

065 c

066 d

067 d

068 b

069 a

070 b

071 a

072 b

073 c

074 b

075 b

076 d

077 a

078 a

079 c or d

080 b

081 c

082 c

083 d or a

084 d

085 d

086 c

087 c

088 d

089 c

090 d

A N S W E R K E Y

091 b

MULTIPLE CHOICE

092 c

093 d

094 d

095 d

096 a

097 c

098 d

099 c

100 b

(********** END OF EXAMINATION **********)

ATTACHMENT 2

SRO MASTER EXAMINATION AND ANSWER KEY

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
SENIOR OPERATOR LICENSE
REGION 1

CANDIDATE'S NAME: _____

FACILITY: Nine Mile Point 1

REACTOR TYPE: BWR-GE2

DATE ADMINISTERED: 93/11/16

INSTRUCTIONS TO CANDIDATE:

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires a final grade of at least 80%. Examination papers will be picked up four (4) hours after the examination starts.

TEST VALUE	CANDIDATE'S SCORE	%
100.00	_____	___ % TOTALS
	FINAL GRADE	

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

MULTIPLE CHOICE

001	a	b	c	d	___	023	a	b	c	d	___
002	a	b	c	d	___	024	a	b	c	d	___
003	a	b	c	d	___	025	a	b	c	d	___
004	a	b	c	d	___	026	a	b	c	d	___
005	a	b	c	d	___	027	a	b	c	d	___
006	a	b	c	d	___	028	a	b	c	d	___
007	a	b	c	d	___	029	a	b	c	d	___
008	a	b	c	d	___	030	a	b	c	d	___
009	a	b	c	d	___	031	a	b	c	d	___
010	a	b	c	d	___	032	a	b	c	d	___
011	a	b	c	d	___	033	a	b	c	d	___
012	a	b	c	d	___	034	a	b	c	d	___
013	a	b	c	d	___	035	a	b	c	d	___
014	a	b	c	d	___	036	a	b	c	d	___
015	a	b	c	d	___	037	a	b	c	d	___
016	a	b	c	d	___	038	a	b	c	d	___
017	a	b	c	d	___	039	a	b	c	d	___
018	a	b	c	d	___	040	a	b	c	d	___
019	a	b	c	d	___	041	a	b	c	d	___
020	a	b	c	d	___	042	a	b	c	d	___
021	a	b	c	d	___	043	a	b	c	d	___
022	a	b	c	d	___	044	a	b	c	d	___
						045	a	b	c	d	___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

046	a	b	c	d	___	068	a	b	c	d	___
MULTIPLE CHOICE						069	a	b	c	d	___
047	a	b	c	d	___	070	a	b	c	d	___
048	a	b	c	d	___	071	a	b	c	d	___
049	a	b	c	d	___	072	a	b	c	d	___
050	a	b	c	d	___	073	a	b	c	d	___
051	a	b	c	d	___	074	a	b	c	d	___
052	a	b	c	d	___	075	a	b	c	d	___
053	a	b	c	d	___	076	a	b	c	d	___
054	a	b	c	d	___	077	a	b	c	d	___
055	a	b	c	d	___	078	a	b	c	d	___
056	a	b	c	d	___	079	a	b	c	d	___
057	a	b	c	d	___	080	a	b	c	d	___
058	a	b	c	d	___	081	a	b	c	d	___
059	a	b	c	d	___	082	a	b	c	d	___
060	a	b	c	d	___	083	a	b	c	d	___
061	a	b	c	d	___	084	a	b	c	d	___
062	a	b	c	d	___	085	a	b	c	d	___
063	a	b	c	d	___	086	a	b	c	d	___
064	a	b	c	d	___	087	a	b	c	d	___
065	a	b	c	d	___	088	a	b	c	d	___
066	a	b	c	d	___	089	a	b	c	d	___
067	a	b	c	d	___	090	a	b	c	d	___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

091 a b c d ___

MULTIPLE CHOICE

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

(********** END OF EXAMINATION **********)

QUESTION: 001 (1.00)

During a refueling outage, plant conditions are as follows:

- Reactor mode switch is in REFUEL.
- ONE control rod is withdrawn to position 12 for testing.
- Refuel platform is over the Spent Fuel Pool.
- Refuel platform grapple is in the fully raised position and UNLOADED.

Which one of the following describes the effect of the refueling interlocks?

a. RMCS will prevent the selection of any other control rod from the reactor control panel.

b. Power to refuel platform grapple will be interrupted if the platform travels over the core.

c. Refuel platform is blocked from traveling over the core.

d. Control rod block will prevent withdrawal of another rod.

ANSWER: 001 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-02 EO-7
Ops Tech Chapter 37a, pg 13
Tech Spec Bases 3.5.2, pg 187

234000K402 [3.3/4.1]

234000K402 ..(KA's)

QUESTION: 002 (1.00)

Select the choice below that completes the following statement.

With the normal water level in the Spent Fuel Pool, when a fuel bundle is fully raised for movement in the Spent Fuel Pool, the top of the bundle will be covered by at least _____ of water. If a fuel bundle is seated in a Spent Fuel Pool rack and the pool is inadvertently drained to the level of the lowest penetration, the top of the seated bundle will be _____.

a. 8 feet; uncovered

b. 8 feet; covered by 1 foot of water

c. 1 foot; covered by 8 feet of water

d. 1 foot; uncovered

ANSWER: 002 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01 EO-2.0
Ops Tech Chapter 37a, pg 10

233000K302 [3.1/3.2]

233000K302 ..(KA's)

QUESTION: 003 (1.00)

During an outage, the Refuel Platform Operator is loading the fourth fuel assembly into a fuel cell in the core.

Which one of the following indicates that the fuel assembly has been loaded in the correct position?

a. The fuel orientation boss on the fuel assembly bail handle points toward the outside of the four bundle array.

b. The gadolinium rods are aligned along an axis that points from the outside to the center of the four bundle array.

c. The fuel assembly "dog ear" boss is located at the center of the four bundle array.

d. The fuel channel spacer buttons are located on the inside surfaces of the four bundle array.

ANSWER: 003 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01, pg 16, EO-6
Ops Tech Chapter 37a, pg 10 and 11
Ops Tech Chapter 2, Fig. 2-4

234000K505 [3.0/3.7]

234000K505 ..(KA's)

QUESTION: 004 (1.00)

SELECT the choice below that completes the following statement.

A Blue Markup has been applied to condensate transfer system and testing is in progress. If testing is anticipated to be interrupted for greater than _____ hours, then the marked condensate transfer components must be returned to their _____ position.

a. 12; protected

b. 12; normal

c. 24; protected

d. 24; normal

ANSWER: 004 (1.00)

c.

REFERENCE:

GAP-OPS-02, pg 2

294001K102 [3.9/4.5]

294001K102 ..(KA's)

QUESTION: 005 (1.00)

A Blue Markup has been applied to the Containment Spray System.

Which one of the following personnel must walk down the markup before work/testing is started on the system?

a. Controller

b. Markup Man

c. Licensed Operator

d. Designated Maintenance person

ANSWER: 005 (1.00)

b.

REFERENCE:

GAP-OPS-02, Rev 1, 3.1.1.1 pg 2 and Sec. 3.6.2 pg 12

294001K102 [3.9/4.5]

294001K102 ..(KA's)

QUESTION: 006 (1.00)

During a maintenance outage, a 23 year old male worker with a lifetime exposure of 22.5 REM (NRC Form 4 on file) is assigned to work in a 200 mrem/hr radiation field. The worker has received 250 mrem this calendar quarter.

What is the maximum time the worker can be in the radiation area without exceeding any NMPC administrative whole body occupational exposure limit without special authorization?

a. 2.25 hours

b. 3.75 hours

c. 7.50 hours

d. 12.50 hours

ANSWER: 006 (1.00)

b.

REFERENCE:

No reference provided.

294001K103 [3.3/3.8]

294001K103 ..(KA's)

QUESTION: 007 (1.00)

SELECT the choice below that completes the following statement.

One of the entry conditions for EOP-2, RPV Control, is that all control rods are inserted to or beyond position 04. By verifying that all rods are inserted to or beyond this banked position, under the most reactive core conditions with NO boron injected, the reactor is assured to be shutdown by at least the _____.

a. cold shutdown margin with reactor coolant at 70 deg. F and xenon at -3.0% dk/k

b. cold shutdown margin with reactor coolant at 70 deg. F and xenon at 0.0% dk/k

c. hot shutdown margin with reactor coolant at 212 deg. F and xenon at -3.0% dk/k

d. hot shutdown margin with reactor coolant at 212 deg. F and xenon at 0.0% dk/k

ANSWER: 007 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-006-344-04, pg 6, EO-3.0

295006K102 [3.4/3.7]

295006K102 ..(KA's)

QUESTION: 008 (1.00)

During a transient, the plant conditions are as follows:

- RPV level is -85 inches and decreasing.
- RPV pressure is 450 psig.
- Torus level is 13.5 feet.
- Torus water temperature is 130 deg F.
- Core spray is running.
- CRD is injecting into the RPV.
- HPCI has tripped and cannot be started.
- One Emergency Condenser has isolated.

In accordance with EOP-2, Step RL-20, the SSS orders Emergency RPV Depressurization.

Which one of the following is the reason for this action?

a. To reduce the heat load on the operable Emergency Condenser.

b. To ensure the Torus can accept the heat load of a reactor depressurization.

c. To minimize the inventory loss from any RPV breach.

d. To maximize the effectiveness of steam cooling.

ANSWER: 008 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-04, pg 28 - 31, EO-3.0
EOP-2 Bases, pg. 36.

295031K305 [4.2/4.3]

295031K305 ..(KA's)

QUESTION: 009 (1.00)

An ATWS has occurred and the following conditions exist:

- Reactor power 35% on APRMs.
- Recirculation pumps are off.
- Reactor water level is 20 inches.
- Drywell pressure is 1.2 psig.
- All MSIVs are closed.
- Reactor pressure is being controlled between 900 and 1000 psig.
- Mode switch is in SHUTDOWN.
- SDV High Level scram has been bypassed.
- RPS scram relays are inaccessible and cannot be jumpered out.

Which one of the following describes the effect of plant conditions on the operators' ability to reset the scram?

a. Can be reset after the Mode Selector Switch has been in SHUTDOWN for greater than 10 seconds.

b. Can be reset because reactor power is below the APRM High Flux scram setpoint.

c. Cannot be reset because power is above the Turbine Stop Valve and Generator Load Reject scram setpoint.

d. Cannot be reset since the MSIV closure scram signal is still active.

ANSWER: 009 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-212-1-01 EO-1.12 and 1.15
Ops Tech Chapter 10, Sec. C.2, C.3, C.5

212000A414 [3.8/3.8]

212000A414 ..(KA's)

QUESTION: 010 (1.00)

The plant is initially operating at 100% power when a loss of Offsite AC power occurs and a HPCI initiation signal is received.

Which one of the following describes the response of Feedwater Booster Pump 11 if Feedwater Booster Pump 13 fails to start when power is restored to PB 11 and PB 12?

a. Will automatically start as long as its control switch is NOT in pull-to-lock position.

b. Will automatically start when its control switch is taken to the trip position then returned to the neutral position.

c. Can be manually started only after resetting the pump motor breaker at the local MCC.

d. Cannot be manually or automatically started due to low suction pressure.

ANSWER: 010 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-259-01 EO-3.0
NI-OP-16, pg 11
Ops Tech Chapter 23a, pg 26 and 27

295003A203 [3.7/3.9]

295003A203 ..(KA's)

QUESTION: 011 (1.00)

Select the choice below that completes the following statement.

When motor-operated Raw Water Discharge Valve #111 or #122 is closed, the associated _____.

a. Raw Water pump will trip

b. Core Spray pump will trip

c. Raw Water supply valve to Core Spray will open

d. Core Spray suction valve from the torus will open

ANSWER: 011 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-5
Ops Tech Chapter 18, pg 6

209001A301 [3.6/3.6]

209001A301 ..(KA's)

QUESTION: 012 (1.00)

Select the choice that completes the following statements.

Following a complete loss of Instrument Air to the Containment Spray Inlet Isolation Valves (80-15, 80-16, 80-35, and 80-36), the Containment Spray system receives an initiation signal. Containment Spray will _____.

a. initiate, because the inlet isolation valves fail to the open position from the normally closed position

b. initiate, because the inlet isolation valves fail in the normally open position

c. NOT initiate, because the inlet isolation valves fail to the closed position from the normally open position

d. NOT initiate, because the inlet isolation valves fail in the normally closed position

ANSWER: 012 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6
Ops Tech Chapter 18, pg 5

295019K209 [3.3/3.3]

295019K209 ..(KA's)

QUESTION: 013 (1.00)

During a transient the CRAM RODS are inserted.

Which one of the following describes how the operator will recover from the insertion of the CRAM rods?

a. Use information from the 3-D Monicore Predictor Case to re-establish the original rod pattern.

b. Reduce recirc flow to less than 45% to prevent high local flux peaks when blade tips cross during withdrawal of the CRAM RODS.

c. Obtain the rod withdrawal sequence from the Reactor Engineering Supervisor to prevent high local flux or abnormal flux patterns.

d. Station a "Human" Rod Worth Minimizer to ensure proper rod withdrawal sequence to prevent abnormal flux patterns with high local powers.

ANSWER: 013 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-006-341-01 EO-Not located
N1-OP-43, Rev 36, Precaution 3.0 pg 7, Caution pg 40

201003G010 [3.2/3.2]

201003G010 ..(KA's)

QUESTION: 014 (1.00)

The operator is withdrawing rods during a startup. Reactor power is approximately 2%. Rod Group 13 (06-35, 46-35, 46-19, and 06-19) is currently displayed on the RWM. Each rod of Group 13 is inserted 2 CRDM notches beyond its current withdraw limit.

Which one of the following will occur if the operator depresses the rod select pushbutton for a rod in Group 14?

a. RMCS selects the rod, a select error light illuminates, and the operator can withdraw the rod resulting in a withdraw error.

b. RWM latches to group 14, an insert error is displayed, and the operator can withdraw the rod.

c. RWM remains latched to group 13, a withdraw error is displayed, and the operator is blocked from withdrawing the rod.

d. A select error light illuminates, RWM prevents RMCS from selecting the rod, and the operator is prevented from withdrawing the rod.

ANSWER: 014 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-03 EO-2.0 and 4.0
Ops Tech Chapter 5, pg 22

201006K403 [3.3/3.4]

201006K403 ..(KA's)

QUESTION: 015 (1.00)

The reactor is operating at 100% power. All reactor recirculation pumps are in service. The following alarms and indications have just been observed for reactor recirculation pump #14. (Refer to attached Figure 4-2, Reactor Recirc Pump Seals.)

- Seal Water Flow High alarm.
- Seal Leak Detector Flow High alarm.
- Outer seal (seal #2) pressure (P-2) is 850 psig.
- Inner seal (seal #1) pressure (P-1) is 850 psig.

Which one of the following describes the reactor recirculation pump seal condition?

a. Seal #1 has completely failed and seal #2 has partially failed.

b. Seal #1 has completely failed and seal #2 is fully operable.

c. Seal #2 has completely failed and seal #1 has partially failed.

d. Seal #2 has completely failed and seal #1 is fully operable.

ANSWER: 015 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01, pg 6, EO-1.3
Ops Tech Chapter 4, Figure 4-2
NOTE: Attach Fig. 4-2 without notes on seal pressures.

202001A109 [3.3/3.3]

202001A109 ..(KA's)

QUESTION: 016 (1.00)

When a reactor recirculation pump is started, the GEMAC controller is placed in MANUAL and set at 20%.

Which one of the following is the reason for this action?

a. To decrease the recirc MG speed from 50% to 20% speed when the MG field breaker closes.

b. To provide a bumpless transfer and maintain the recirc MG at 20% speed when the recirc pump discharge valve is opened.

c. To ensure the recirc MG scoop tube positioner will increase to a maximum of 25% when the MG drive breaker is closed.

d. To prevent a recirc MG trip at 15% speed by an incomplete starting sequence due to a mismatch in speed controllers when the MG field breaker closes.

ANSWER: 016 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01 EO-1.7 and 1.9
Ops Tech Chapter 4, pg 17
N1-OP-1, Rev. 39, Step 2.2.2, pg. 17 and caution, pg. 18.

202002A101 [3.2/3.2]

202002A101 ..(KA's)

QUESTION: 017 (1.00)

RWCU is operating normally with the reactor at 100% power when RWCU flow rate suddenly decreases to 100 gpm.

Which one of the following describes the response of the RWCU system and the reason for this response?

a. RWCU isolates because low flow is indicative of a system leak.

b. RWCU isolates to prevent loss of demineralizer filter cake.

c. RWCU pumps trip to prevent overheating the pumps.

d. RWCU pumps trip to prevent overheating the demineralizer resin.

ANSWER: 017 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-204-01 EO-7
Ops Tech Chapter 7, pg 25

204000K404 [3.5/3.6]

204000K404 ..(KA's)

QUESTION: 018 (1.00)

The reactor has been placed into cold shutdown following extended high power operations. A loss of shutdown cooling occurs 36 hours after reactor shutdown. Plant conditions immediately after the loss of shutdown cooling are as follows:

- The coolant temperature in the unisolated recirculation loops is approximately 150 deg. F.
- Vessel metal temperatures just below the vessel water level are 155 to 165 deg. F

Which one of the following is positive indication that thermal stratification is occurring?

a. Unisolated recirc loop temperature is steady. Vessel metal temperatures just below the vessel level are 155 to 165 deg. F and decreasing.

b. Unisolated recirc loop temperature is steady. Vessel metal temperatures just below the vessel water level are 135 to 145 deg. F and decreasing.

c. Unisolated recirc loop temperature is increasing. Vessel metal temperatures just below the vessel water level are 155 to 165 deg. F and increasing.

d. Unisolated recirc loop temperature is decreasing. Vessel metal temperatures just below the vessel water level are 175 to 185 deg. F and increasing.

ANSWER: 018 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-205-01 TO-4.0
Ops Tech Chapter 20a, pg 8 and 9

295021K102 [3.3/3.4]

295021K102 ..(KA's)

QUESTION: 019 (1.00)

SELECT the choice below that completes the following statement.

Shutdown Cooling (SDC) is in service with pump #12 in operation. Instrument air compressor #13 is inoperable. If a loss of PB 17B occurs, Shutdown Cooling will be lost because _____.

a. RPS Bus #12 de-energizes causing the SDC flow control valve #12 to fail closed

b. Instrument Air pressure will bleed off causing the SDC flow control valve #12 to fail closed

c. the SDC recirculation valves open

d. SDC Pump #12 will lose power

ANSWER: 019 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-205-01 EO-9.0
Ops Tech Chapter 20a, Table 20a-2, pg 6
Ops Tech Chapter 33b, Fig. 33B-1
Ops Tech Chapter 30, Table 30-3, pg 7
Ops Tech Chapter 10, Fig. 10-1

205000K601 [3.3/3.4]

205000K601 ..(KA's)

QUESTION: 020 (1.00)

The HPCI system is in operation following a transient resulting in a scram from 100% power, when a loss of all off-site power occurs. Power is subsequently made available for the preferred HPCI components from Bennets Bridge.

Which one of the following describes the action required to ensure proper long term operation of HPCI?

a. Start and stop HPCI pumps, within temperature constraints, only as necessary to control reactor water level.

b. Restart Instrument Air compressors from EDG power to restore air to the feedwater flow control valves.

c. Locally pin the feedwater flow control valve(s) and use local manual control to throttle feed flow.

d. Manually reset the preferred HPCI component "anti-pumping" breaker interlocks to place HPCI in operation.

ANSWER: 020 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-206-01 EO-7.0 and 12
N1-OP-16, Rev 21, pg 44 and 45
NMP-1 Bank (modified)

206000A402 [4.0/3.8]

206000A402 ..(KA's)

QUESTION: 021 (1.00)

SELECT the choice below that completes the following statement.

If the normal power supply to the HPCI initiation logic circuitry is lost, power is restored to the HPCI logic by _____.

a. automatic transfer to MG 167 computer panel board

b. automatic transfer to RPS MG 131

c. manual transfer to MG 167 computer panel board

d. manual transfer to RPS MG 131

ANSWER: 021 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-206-01 EO-8.0
Ops Tech Chapter 16, pg 21

206000A414 [4.2/4.1]

206000A414 ..(KA's)

QUESTION: 022 (1.00)

Plant conditions and the alarm status for the Emergency Cooling (EC) System are as follows:

- Reactor is at 100% power.
- CONDENSER INLET STEAM PRESSURE LOW is in alarm.
- CONDENSER INLET STEAM TEMPERATURE LOW is in alarm.
- CONDENSER SHELL TEMPERATURE HIGH alarm is clear.
- CONDENSER WATER LEVEL HIGH/LOW alarm is clear.
- STEAM LEAK/HIGH AREA TEMPERATURE is clear.

Which one of the following Emergency Cooling System conditions could result in the above indications?

a. Condensate Return valve seat leakage.

b. Steam Supply valve closed.

c. Accumulation of noncondensible gases in the EC tubes.

d. EC tube to shell leakage.

ANSWER: 022 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-207-01 EO-None located.
Ops Tech Chapter 14, pg 10 and 12

207000A207 [3.5/3.5]

207000A207 ..(KA's)

QUESTION: 023 (1.00)

SELECT the choice below that completes the following statement.

Following a transient and the automatic initiation of the Emergency Cooling (EC) System, EC has isolated. The isolation has been verified to be spurious and has been bypassed. The reactor high pressure initiation signal is still active. When the EC isolation signal is bypassed, the steam isolation valves _____ and the condenser return isolation valve _____ to restore EC.

a. must be manually opened; will automatically open

b. must be manually opened; must be manually opened

c. will automatically open; will automatically open

d. will automatically open; must be manually opened

ANSWER: 023 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-207-01 EO-related to 6.0 and 7.0
N1-OP-13, Rev 25, Step D.8.0, pg 5

295025K202 [4.2/4.5]

295025K202 ..(KA's)

QUESTION: 024 (1.00)

SELECT the choice below that completes the following statement.

The reactor is operating at 100% power when the Closed Loop Cooling Makeup Tank ruptures and level cannot be maintained in the tank. The system pressure will decrease in _____.

a. RBCLC and TBCLC, and TBCLC to the recirc MG set coolers will be threatened

b. RBCLC and TBCLC, and TBCLC to feedwater pumps #11 and #12 will be threatened

c. RBCLC only, and RBCLC to the drywell coolers will be threatened

d. RBCLC only, and RBCLC to the condensate pumps will be threatened

ANSWER: 024 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-208-01, EO-4
Ops Tech Chapter 29a, pg 3; and 29b, Fig. 29a-2 and 29b-2

295018K101 [3.5/3.6]

295018K101 ..(KA's)

QUESTION: 025 (1.00)

SELECT the choice below that completes the following statement.

The Liquid Poison System has been initiated by taking the Control Room control switch to the System 11 position. Liquid Poison System conditions are as follows:

- Liquid Poison pumps have responded as designed.
- Squib #11 continuity monitor light is OFF.
- Squib #12 continuity monitor light is ON.

The Liquid Poison System injection flow rate to the reactor vessel will be _____.

a. 50% of rated capacity at 15 gpm

b. 50% of rated capacity at 30 gpm

c. 100% of rated capacity at 15 gpm

d. 100% of rated capacity at 30 gpm

ANSWER: 025 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01 EO-1.2 and 1.7 and 1.10
Ops Tech Chapter 8, pg 7 and 10

211000K504 [3.1/3.2]

211000K504 ..(KA's)

QUESTION: 026 (1.00)

The reactor is operating at 100% power. APRM #12 has just failed upscale and is NOT bypassed.

Which one of the following describes the final condition of RPS if Powerboard 141C trips on a ground fault?

a. Half scram because one auto reactor trip channel of RPS trip system 131 has actuated.

b. Half scram because RPS trip bus 141 has lost power.

c. Full scram because auto reactor trip channels have actuated on RPS trip busses 131 and 141.

d. Full scram because one auto reactor trip channel of RPS trip system 131 has actuated and RPS system #12 has lost power.

ANSWER: 026 (1.00)

c. or d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-01 EO-1.11
Ops Tech Chapter 10, pg 7 to 9 and Fig. 10-1

295006K201 [4.3/4.4]

295006K201 ..(KA's)

QUESTION: 027 (1.00)

The reactor is operating at 100% power. The operator has discovered on Panel F that the right-hand white light for RPS Trip System 11 is OFF and the light bulb is good. (The other 3 white lights for RPS Trip System 11 are ON.)

Which one of the following describes the response of the control rods if a RPS trip results in the loss of all 4 white lights for RPS Trip System 12 on Panel F?

a. None of the rods will insert into the core.

b. Approximately 25 percent of the rods will insert into the core.

c. Approximately 50 percent of the rods will insert into the core.

d. All of the rods will insert into the core.

ANSWER: 027 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-01 EO-1.15
Ops Tech Chapter 10, pg 10

295015K204 [4.1/4.1]

295015K204 ..(KA's)

QUESTION: 028 (1.00)

An ATWS is in progress and all control rods have failed to insert. All neutron monitoring instrumentation is de-energized.

Which one of the following would indicate that reactor power is approximately 65% of rated?

a. MSIVs shut and two ERVs are open with a third cycling open and closed maintaining reactor pressure steady at approximately 900 psig.

b. Main turbine on line and main condenser vacuum is less than 29 inches of Hg vacuum.

c. Feedwater flow rate is 5.2 x 10E6 lbm/hr maintaining reactor water level in the normal band.

d. Main turbine on line and the TURBINE FIRST STAGE BOWL PRESSURE LOW alarm is received.

ANSWER: 028 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-006-344-1-05 EO-1.0
Ops Tech Chapter 10, pg 18
Ops Tech Chapter 23a, pg 2 and 5
Ops Tech Chapter 21, pg 2 and 3
Ops Tech Chapter 9d, pg 24 and 25

295037A201 [4.2/4.3]

295037A201 ..(KA's)

QUESTION: 029 (1.00)

N1-OP-43, Startup, Normal Operation, and Shutdown Procedure, directs that the APRM gains be set to MAXIMUM prior to commencing a reactor startup.

Which one of the following is the reason for this action?

a. Ensures the APRMs are accurately indicating reactor core power.

b. Ensures APRM/IRM overlap on only the IRMs NOT pinned below range 10.

c. Ensures that the plant computer will conservatively calculate the margin to the thermal limits.

d. Ensures a high power scram would occur before exceeding design limits.

ANSWER: 029 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-215-01 EO-related to 1.10
Ops Tech Chapter 9d, pg 26

215005G010 [3.4/3.4]

215005G010 ..(KA's)

QUESTION: 030 (1.00)

The plant is operating at 100% power when a station blackout occurs. The reactor mode switch is in RUN and reactor pressure has decreased to 800 psig.

Which one of the following describes the expected response of the MSIVs?

a. Inboard MSIVs OPEN; outboard MSIVs OPEN

b. Inboard MSIVs OPEN; outboard MSIVs SHUT

c. Inboard MSIVs SHUT; outboard MSIVs OPEN

d. Inboard MSIVs SHUT; outboard MSIVs SHUT

ANSWER: 030 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-7.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 10
Ops Tech Chapter 21, pg 7

239001K601 [3.1/3.3]

239001K601 ..(KA's)

QUESTION: 031 (1.00)

Following an inadvertent MSIV closure at 100% power, reactor pressure increases to 1220 psig. The operator observes the following Relief and Safety valve response:

- 5 ERVs are open.
- 1 Safety valve is open.

Which one of the following describes the proper evaluation of the Relief and Safety valve response?

a. ERVs responded correctly, but 1 Safety valve inadvertently opened.

b. ERVs responded correctly, but 1 Safety valve failed to open.

c. 1 ERV failed to open, and 3 Safety valves failed to open.

d. 1 ERV failed to open, and the Safety valves responded correctly.

ANSWER: 031 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-4.0
Ops Tech Chapter 21, pg 6

295007A104 [3.9/4.1]

295007A104 ..(KA's)

QUESTION: 032 (1.00)

Following an inadvertent MSIV isolation, the operator is directed to reopen the MSIVs with the reactor pressurized.

Which one of the following describes the design of the MSIVs that reduces the differential pressure (d/p) across the valve seats during reopening?

a. Only the inboard MSIVs have a balancing orifice that allows pressure to equalize across the MSIV seat.

b. Only the inboard MSIVs have a pilot valve that is opened when the valve stem first begins to move to equalize d/p across the MSIV seat.

c. The inboard and outboard MSIVs have a balancing orifice that allows pressure to equalize across the MSIV seat.

d. The inboard and outboard MSIVs have a pilot valve that is opened when the valve stem first begins to move to equalize d/p across the MSIV seat.

ANSWER: 032 (1.00)

d. or c.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-None located
Ops Tech Chapter 21, pg 4

295020K201 [3.6/3.7]

295020K201 ..(KA's)

QUESTION: 033 (1.00)

SELECT the choice below that completes the following statements.

The Electromatic Relief Valve (ERV) solenoids are powered from _____. If reactor pressure is 1100 psig when a loss of power to the ERV solenoids occurs, the ERVs will _____.

a. 125 VDC; remain open

b. 125 VDC; shut

c. I&C Bus 130A; remain open

d. I&C Bus 130A; shut

ANSWER: 033 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-218-01 EO-6.0
Ops Tech Chapter 21, pg 3

239002K201 [2.8/3.2]

239002K201 ..(KA's)

QUESTION: 034 (1.00)

The plant is operating at 100% power. The power selector switch in ARI Cabinet #3 is selected to division 11.

Which one of the following describes the response of the ARI system upon a loss of battery #11?

a. Both ARI valves will remain closed because solenoid power is automatically transferred to battery #12.

b. One ARI valve opens because power to ARI logic system 11 is lost.

c. ARI valves will remain closed and will not open because power to both ARI solenoid valves has been lost.

d. Both ARI valves open and cannot be closed until power to the ARI solenoid valves is manually transferred to battery #12.

ANSWER: 034 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02 EO-5.0
Ops Tech Chapter 5a, pg 29 and 30

201001K205 [4.5/4.5]

201001K205 ..(KA's)

QUESTION: 035 (1.00)

Following a transient with a failure of RPS auto trip channels to scram the reactor, TWO ATWS/ARI LOW-LOW reactor water level signals in CHANNEL #12 are received. Channel #11 has received no initiation signals.

Which one of the following describes the response of the ATWS/ARI valves and the control rods?

a. 1 ATWS/ARI valve opens and the scram air header remains pressurized.

b. 1 ATWS/ARI valve opens and the scram air header depressurizes.

c. Both ATWS/ARI valves remain shut and the scram air header remains pressurized.

d. Both ATWS/ARI valves open and the scram air header depressurizes.

ANSWER: 035 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02 EO-1.0 and 3.0
Ops Tech Chapter 5, Fig. 5a-6 and Fig. 5a-5

295015A102 [4.0/4.2]

295015A102 ..(KA's)

QUESTION: 036 (1.00)

Select the choice below that completes the following statements.

A complete loss of power to the ATWS/ARI logic and valve solenoids has occurred. One minute later a transient results in reactor pressure increasing to 1150 psig. If reactor pressure is above 1150 psig when power is restored to the ATWS/ARI logic and valve solenoids, the reactor recirculation pumps will trip _____.

a. immediately

b. 9 seconds after power is restored

c. 9 seconds after depressing the LOV reset button on the F panel

d. immediately after depressing the LOV reset button on the F panel.

ANSWER: 036 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-212-02, pg 8 EO-1.0

295009K203 [3.1/3.2]

295009K203 ..(KA's)

QUESTION: 037 (1.00)

SELECT the choice below that completes the following statement.

The reactor is in COLD SHUTDOWN with the suction and discharge valves of all the reactor recirculation loops SHUT. Reactor Vessel Instrumentation will indicate water level INSIDE the shroud if vessel level is _____.

a. 95 inches on the Narrow Range GEMACS and Shutdown Cooling is continuously in service

b. 95 inches on the Narrow Range GEMACS and the vessel head and the steam dryer are removed

c. 17 feet 5 inches on the Wide Range GEMAC and the vessel head is removed

d. 6 feet 5 inches on the Wide Range GEMAC and Shutdown Cooling is continuously in service

ANSWER: 037 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-216-01 TO-1.0
N1-OP-1, Rev 39, pg 14

216000K501 [3.1/3.2]

216000K501 ..(KA's)

QUESTION: 038 (1.00)

A reactor startup is in progress for the initial criticality of a new core. Plant conditions are as follows:

- RPS Non-Coincident Bypass switches are in the NON-COINCIDENT position.
- SRMs are partially inserted.
- SRMs #11 and #12 indicate 3 x 10E5 cps.
- SRMs #13 and #14 indicate 7 x 10E5 cps.
- IRMs #11, #12, #13, and #14 are on Range 7 indicating 32.
- IRMs #15, #16, #17, and #18 are on Range 8 indicating 38.

Which one of the following describes the plant response?

a. Rod Block

b. Half scram

c. Full scram

d. No rod block or scram signal

ANSWER: 038 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-215-1-06 EO-4.1
Ops Tech Chapter 10, pg 16
Ops Tech Chapter 9a, pg 2, 14, and 15

215004K402 [3.4/3.5]

.215004K402 ..(KA's)

QUESTION: 039 (1.00)

A reactor transient has resulted in a scram with 30 rods stuck out. Reactor water level cannot be determined by level instrumentation. The SRMs have been fully inserted into the core when the operator observes a drastic decrease in count rate.

Which one of the following describes the reactor vessel level indicated by the SRMs?

a. 16 inches below top of active fuel

b. 28 inches below top of active fuel

c. 16 inches above the core midplane

d. 28 inches below the core midplane

ANSWER: 039 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-215-1-06 EO-2.8
Ops Tech Chapter 9a, pg 3

295031A201 [4.6/4.6]

295031A201 ..(KA's)

QUESTION: 040 (1.00)

EOP-2, RPV Control, Step RP-1 directs the operator to lockout Core Spray pumps before reducing RPV pressure if drywell pressure is at or above 3.5 psig and Core Spray pumps are not required for adequate core cooling.

Which one of the following is the reason for this action?

a. To prevent an uncontrolled cooldown of the reactor vessel wall

b. To prevent fuel cladding damage by the rapid injection of cold water

c. To prevent complicating operator actions to control reactor level

d. To prevent an uncontrolled reactor depressurization

ANSWER: 040 (1.00)

c.

REFERENCE:

01-LOT-001-209-01, LO-5
EOP-2 Bases, pg 44
EOP-2, RPV Control, RP-1

295008G007 [3.2/3.3]

295008G007 ..(KA's)

QUESTION: 041 (1.00)

Following a LOCA, plant conditions are as follows:

- All Core Spray pumps are injecting.
- FZWLMS is inoperable.
- RPV pressure is 55 psig.
- Drywell temperature near all instrument runs is 195 deg. F.
- Lo-Lo-Lo Rosemount Channel #11 indicates -6 inches.
- Lo-Lo-Lo Rosemount Channel #12 indicates -3 inches.
- Wide Range GEMAC indicates +.1 foot.
- Narrow Range GEMAC #11 indicates +2 inches.
- Narrow Range GEMAC #12 indicates 0 inches.
- Hi/Lo-Lo/Lo Rosemount Channel #11 indicates 0 inches.
- Hi/Lo-Lo/Lo Rosemount Channel #12 indicates 0 inches.

Which one of the following lists the accurate reactor water level instruments?

a. Wide Range GEMAC.
Narrow Range GEMAC #12.
Lo-Lo-Lo Rosemount Channel #11 and #12.

b. Narrow Range GEMAC #11 and #12.
Hi/Lo-Lo/Lo Rosemount Channel #11 and 12

c. Narrow Range GEMAC #11.
Lo-Lo-Lo Rosemount Channel #11 and #12.
Hi/Lo-Lo/Lo Rosemount Channel #11 and #12.

d. Wide Range GEMAC.
Narrow Range GEMAC #11.

ANSWER: 041 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-216-1-01 TO-1.0
Ops Tech Chapter 3
EOP-2, RPV Control, Table 2.1

295028A203 [3.7/3.9]

295028A203 ..(KA's)

QUESTION: 042 (1.00)

The reactor is operating at 100% power, when the following plant indications are observed:

- Drywell pressure and temperature are increasing.
- Drywell floor drain sump leakage rate has increased.
- Core differential pressure indication rapidly increased to full upscale.
- Core Spray break detection d/p indicators are downscale.
- The Core Spray break detection alarm is out of service.

Which one of the following components has broken inside the drywell?

a. Core Spray injection line.

b. Liquid Poison injection line.

c. FZWLMS variable instrument leg.

d. Wide range GEMAC reference instrument leg.

ANSWER: 042 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-216-1-01 EO-1.6 (related)
Ops Tech Chapter 3, pg 25 and 26

295009A201 [4.2/4.2]

295009A201 ..(KA's)

QUESTION: 043 (1.00)

A transient from 100% power has resulted in the following plant conditions.

- Reactor water level decreased to -20 inches and is increasing slowly.
- Drywell pressure increased to 4.5 psig and is decreasing.
- ADS white timer light has been illuminated for 45 seconds.

Which one of the following conditions would PREVENT the ERVs from opening and depressurizing the reactor vessel when the timer times out?

a. Reactor level increases and remains at -5 inches.

b. Drywell pressure decreases and stabilizes at 2.8 psig.

c. One ADS inhibit switch is placed in BYPASS.

d. Loss of 125 VDC Battery Board 11.

ANSWER: 043 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-218-1-01 EO-7.0 and 8.0
Ops Tech Chapter 15, pg 8

218000A206 [4.2/4.3]

218000A206 ..(KA's)

QUESTION: 044 (1.00)

A primary containment isolation has occurred due to low reactor water level.

Which one of the following can be operated when the Vessel Isolation Bypass Switch on the K Panel is placed in BYPASS?

a. Reactor sample valves

b. Reactor Water Cleanup for reactor pressure control

c. Shutdown cooling isolation valves

d. Reactor head vents for emergency RPV depressurization

ANSWER: 044 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-001-223-1-01 EO-3.0 and 5.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 18

223002A209 [3.6/3.7]

223002A209 ..(KA's)

QUESTION: 045 (1.00)

Which one of the following signals provides automatic isolation of the vent and purge valves to prevent the release of radioactive materials to the atmosphere?

a. Drywell Continuous Air Monitor high

b. Drywell Area Radiation Monitor high

c. Reactor Building Ventilation Exhaust Radiation Monitor high-high

d. Stack Radiation Monitor high-high

ANSWER: 045 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-223-1-01 EO-5.0
Ops Tech Chapter 11, Attachment 1 of 01-OPS-001-223-1-01, pg 20
Ops Tech Chapter 31b

295017K205 [3.4/3.5]

295017K205 ..(KA's)

QUESTION: 046 (1.00)

Following a small break LOCA resulting in a peak drywell pressure of 5.0 psig, the operator observes that BOTH the Drywell Radiation Monitors are reading approximately 1 R/hr.

Which one of the following describes the condition indicated by the Drywell Radiation Monitors?

a. Significant fuel damage has resulted in a large release of fission products.

b. The internal source for each detector is maintaining an on-scale indication.

c. A Drywell Radiation downscale alarm would be initiated.

d. A Drywell Radiation high alarm would be initiated.

ANSWER: 046 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-272-1-01 TO-2.0
Ops Tech Chapter 12a, pg 7

272000A402 [3.0/3.0]

272000A402 ..(KA's)

QUESTION: 047 (1.00)

Which one of the following conditions would challenge the integrity of containment due to exceeding a containment design rating? (Reactor Building is at atmospheric pressure.)

	DRYWELL PRESSURE	TORUS PRESSURE
a.	28.5 psig	30.75 psig
b.	52.5 psig	32.5 psig
c.	- 1.5 psig	- 0.75 psig
d.	- 0.5 psig	- 1.5 psig

ANSWER: 047 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-223-02 EO-1.0 (related)
Ops Tech Chapter 12a, pg 4 and 5

NOTE: Facility verified choice "a" should result in failure of internal piping and headers due to excessive torus-drywell dp but not containment failure.

223001K401 [3.7/3.8]

223001K401 ..(KA's)

QUESTION: 048 (1.00)

Torus level has decreased due to a crack in the Torus structure. Torus conditions are as follows:

- Torus level has decreased to 6 feet and has stabilized.
- Torus temperature is 85 deg. F.
- Torus pressure is 1.75 psig.

Which one of the following describes the effect of this decrease in Torus level?

a. The ERV tailpipes are covered and the drywell downcomers are covered by about 0.5 feet of water.

b. Both the ERV tailpipes and the drywell downcomers are completely uncovered.

c. Both ERV tailpipes and drywell downcomers are uncovered and Core Spray NPSH limit has been exceeded.

d. Only the ERV tailpipes are uncovered and the Core Spray Vortex Limit has been exceeded.

ANSWER: 048 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-01 EO-1.0
EOP-4, PCC
Ops Tech Chapter 12a, pg 5

295030K207 [3.5/3.8]

295030K207 ..(KA's)

QUESTION: 049 (1.00)

EOP-2 and EOP-4 are being executed. The operating crew has started all Core Spray pumps to maintain RPV water level above TAF per EOP-2, Step RL-4. Plant conditions are as follows:

- Torus temperature is 180 deg. F.
- Torus level is 15 feet.
- Torus pressure is 1.0 psig.
- RPV pressure is 125 psig.

Which one of the following is the maximum Core Spray flow rate allowed with both subsystems injecting?

a. Limit flow to 3.1 x 10E6 lbm/hr.

b. Limit flow to 3.25 x 10E6 lbm/hr.

c. Limit flow to 4.4 x 10E6 lbm/hr.

d. Maximize injection flow at 5.0 x 10E6 lbm/hr.

ANSWER: 049 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-04 EO-2.0
EOP-2 and EOP-4, Fig. 2.4 and 2.5

295026K101 [3.0/3.4]

295026K101 ..(KA's)

QUESTION: 050 (1.00)

Which one of the following is the reason for operating within the ERV Tail Pipe Level Limit curve?

a. To ensure complete ERV discharge condensation to prevent Torus overpressurization.

b. To ensure the reactor is depressurized before a LOCA would exceed the energy absorbing capability of the Torus.

c. To prevent Torus failure due to the increased Torus level that occurs during Emergency Depressurization from high pressures.

d. To prevent inducing excessive hydraulic stresses on the Torus structure.

ANSWER: 050 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-01 EO-3.0
EOP-4 Bases, Section F, pg 63 (Effective 8/9/93)

295029K302 [3.6/4.0]

295029K302 ..(KA's)

QUESTION: 051 (1.00)

Which one of the following is the reason that the MAXIMUM Primary Containment Water level is limited to 100 feet?

a. This level loads the bottom of the torus to its maximum yield strength.

b. This level loads the floor of the drywell to its maximum yield strength.

c. This level maintains the containment spray nozzles in the drywell uncovered and capable of primary containment pressure control.

d. This level maintains the highest primary containment vent penetration uncovered and capable of rejecting decay heat.

ANSWER: 051 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-06 EO-3.0
EOP-4 Bases, Section F, pg 68 (Effective 8/9/93)

295029G007 [3.6/3.9]

295029G007 ..(KA's)

QUESTION: 052 (1.00)

Containment Spray pump 111 has been placed in the Torus Cooling Mode of operation.

- 80-16, Containment Spray Discharge IV 111, is shut.
- 80-40, Containment Spray Bypass BV 111, is open.
- Spray pump 111 is running.
- 80-118, Containment Spray Test to Torus FCV, is open.

Which one of the following describes the response of the Containment Spray System 111 if a containment spray automatic initiation signal is received?

a. Spray pump 111 will continue to run, 80-16 will remain shut, 80-118 and 80-40 will remain open.

b. Spray pump 111 will continue to run, 80-16 will open, 80-118 and 80-40 will remain open.

c. Spray pump 111 will trip but restart after its time delay, 80-16 will open, 80-118 will shut and 80-40 will remain open.

d. Spray pump 111 will trip but restart after its time delay, 80-16 will open, 80-118 and 80-40 will shut.

ANSWER: 052 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6.0
Ops Tech Chapter 18, pg 14, 15, and 16

219000A214 [4.1/4.3]

219000A214 ..(KA's)

QUESTION: 053 (1.00)

During a LOCA, two low-low reactor level signals and two high drywell pressure signals are received, and Containment Spray responds as designed. Shortly afterwards power is lost to PB 102 and PB 103. When power is restored to PB 102 and PB 103, two high drywell pressure signals are still present but the two low-low level signals have cleared and Core Spray pump 111 fails to start.

Which one of the following is the response of the Containment Spray System?

a. Spray pump 111 starts after 5 seconds and pump 121 starts after 10 seconds.

b. Spray pump 111 starts after 50 seconds and pump 121 starts after 10 seconds.

c. Spray pump 111 starts after 50 seconds and pump 121 starts after 60 seconds.

d. Neither Spray subsystem will start.

ANSWER: 053 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-6.0 and 7.0
Ops Tech Chapter 18, pg 2,14, and Fig 18-2

295010A107 [3.2/3.4]

295010A107 ..(KA's)

QUESTION: 054 (1.00)

Containment Spray must be manually initiated to reduce drywell pressure.

Which one of the following combinations would satisfy the requirements of N1-OP-14, Containment Spray System, for manual initiation of Containment Spray?

a. Spray pump 112

b. Spray pump 122

c. Spray pumps 111 and 121

d. Spray pumps 112 and 121

ANSWER: 054 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-9.0 (related)
N1-OP-14, Rev 37, Step 7.2, pg 21

226001A401 [3.5/3.4]

226001A401 ..(KA's)

QUESTION: 055 (1.00)

The reactor is operating at 30% power when the following annunciators are received.

- TURB ELECTRICAL PRESS. REG. (PRESS-VOLTS) (A2-4-5)
- TURBINE BYPASS VALVES OPEN (A1-4-6)

Reactor pressure is 900 psig and DECREASING.

Which one of the following would be the required operator response to stop the reactor pressure decrease?

a. Manually adjust the MPR setpoint to shut the bypass valves.

b. Manually operate the Bypass Opening Jack to shut the bypass valves.

c. Manually scram the reactor and shut the MSIVs.

d. Manually trip the #2 vacuum trip pushbutton and shut the bypass valves.

ANSWER: 055 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-248-01 EO-5.0 and 6.0
N1-ARP-A1-4-6, Rev 0
N1-OP-31, Rev 15, Section H.2.0, pg 39

241000A203 [4.1/4.2]

241000A203 ..(KA's)

QUESTION: 056 (1.00)

The plant is at 35% power when an electrical offsite power transient causes the generator output breakers R915 and R925 to open and lock out.

Which one of the following describes the expected plant response?

a. Control valves rapidly close and then reopen to control reactor pressure and the reactor remains at power.

b. Control valves rapidly close and the reactor scrams. The bypass valves operate to control reactor pressure and the main generator trips on reverse power.

c. The turbine trips, all turbine valves close, bypass valves operate to control reactor pressure, and the reactor remains at power.

d. The turbine trips, all turbine valves close, the reactor scrams, and bypass valves operate to control reactor pressure

ANSWER: 056 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-247-01 EO-None located.
Ops Tech Chapter 27, Section C
Modified NMP1 Bank Question

245000A312 [3.3/3.5]

245000A312 ..(KA's)

QUESTION: 057 (1.00)

The plant is operating at 75% load when main condenser vacuum begins to decrease. Following a turbine trip, vacuum decreases to 12 inches of Hg vacuum.

Which one of the following describes the expected plant response? (Assume no operator actions are taken during this transient.)

a. Turbine low vacuum trip 1 alarm and shaft feedpump clutch trips.

b. Turbine low vacuum trip 2 alarm and turbine bypass valves are prevented from opening.

c. Turbine low vacuum trip 1 and 2 alarms, MSIVs close, and turbine bypass valves are prevented from opening.

d. Turbine low vacuum trip 1 and 2 alarms, MSIVs close, and shaft feedpump clutch trips.

ANSWER: 057 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-239-1-01 EO-7
Lesson Plan 01-LOT-1-001-248-01 EO-7
Ops Tech Chapter 21, pg 21
Ops Tech Chapter 23a, pg 26
Ops Tech Chapter 27, pg 24, Fig. 27-9 and 27-10
N1-OP-31, Rev 15, pg 7

295002K204 [3.2/3.3]

295002K204 . . ..(KA's)

QUESTION: 058 (1.00)

Which one of the following describes how cooling is provided when operating with the turbine bypass valves open?

a. Condensate cooling spray is manually aligned locally to cool the bypass steam if bypass valves will be open greater than 15 minutes.

b. Condensate cooling spray is manually aligned from the Control Room to cool the bypass steam if bypass valves will be open with the turbine at or above 15% load.

c. Condensate cooling spray is automatically aligned to cool the bypass steam if bypass valves have been off their close seat for 15 minutes.

d. Condensate cooling spray is automatically aligned to cool the bypass steam if bypass valves come off their close seat and the generator is at or above 15% load.

ANSWER: 058 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-256-01 EO-1.4
Ops Tech Chapter 22a, pg 23

256000K125 [3.0/3.1]

256000K125 ..(KA's)

QUESTION: 059 (1.00)

The reactor is operating at 80% power with reactor level in the normal band. Feedwater Pumps #12 and #13 are running with Feedwater Level Control in 3-ELEMENT AUTOMATIC MODE.

Which one of the following is the plant response if Feedwater Pump #12 flow element fails downscale? (Assume no operator actions are taken.)

a. Reactor level decreases approximately 4 inches and stabilizes.

b. Reactor level increases approximately 4 inches and stabilizes.

c. Reactor level decreases below the low level scram setpoint.

d. Reactor level increases above the high level turbine trip setpoint.

ANSWER: 059 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-259-02 TO-1.0
Ops Tech Chapter 23a, pg 8 and 9
Ops Tech Chapter 21, pg 2
Ops Tech Chapter 23b, pg 11 and 12

259002A202 [3.3/3.4]

259002A202 ..(KA's)

QUESTION: 060 (1.00)

Emergency Ventilation (EVS) train #12 filter bank must be aligned for decay heat cooling.

Which one of the following lineups would provide decay heat cooling to filter bed #12 in accordance with N1-OP-10, Reactor Building Heating, Cooling and Ventilation? (Figure 13c-1 is attached for reference.)

a. EVS fan #12 running, #12 inlet blocking valve closed, cooling valve open, tie valve closed.

b. Reactor Building Exhaust fan #11 running, #12 inlet blocking valve open, cooling valve open, tie valve closed.

c. EVS fan #11 running, #12 inlet blocking valve closed, cooling valve open, tie valve open.

d. Reactor Building Exhaust fan #12 running, #12 inlet blocking valve open, cooling valve open, tie valve open.

ANSWER: 060 (1.00)

c. or a.

REFERENCE:

Lesson Plan 01-LOT-1-001-261-01 TO-2.0
Ops Tech Chapter 13c, pg 5
N1-OP-10, Rev 11, Section H.3.0, pg 14

NOTE: Add Fig 13c-1 to exam package.
261000A407 [3.1/3.2]

261000A407 ..(KA's)

QUESTION: 061 (1.00)

Which one of the following describes the effect of an undervoltage lockout on Powerboard 16?

a. Liquid Poison pump #11 breaker opens.

b. Computer Panel Board 167 supply breaker opens.

c. Reactor Building Cooling Water pump #13 breaker shuts.

d. Control Rod Drive pump #11 breaker shuts.

ANSWER: 061 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-262-1-01 EO-1.2
Ops Tech Chapter 33b, pg 10

262001K301 [3.5/3.7]

262001K301 ..(KA's)

QUESTION: 062 (1.00)

Following a complete loss of offsite power with the reactor at power, the Emergency Diesel Generators (DG) respond as designed.

Which one of the following describes the expected response of the 600 Volt AC loads?

a. Non-essential and essential 600 volt load breakers trip; then the essential loads automatically sequence on after the DG breaker closes.

b. Non-essential and essential 600 volt load breakers trip; then the essential loads are manually restored after the DG breaker closes as DG loading allows.

c. Non-essential 600 volt load breakers trip and essential load breakers remain closed; the essential loads automatically re-energize when the DG breaker closes.

d. Non-essential and essential 600 volt load breakers remain closed; the non-essential and essential loads automatically re-energize when the DG breaker closes.

ANSWER: 062 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-264-1-01 EO-7.0
N1-OP-45, Rev 21, pg 6

295003A101 [3.7/3.8]

295003A101 ..(KA's)

QUESTION: 063 (1.00)

Emergency Diesel Generator (DG) #102 has received an automatic start signal but has failed to reach 200 rpm in 5 seconds.

Which one of the following describes the automatic response of the DG and the manual operator actions required to start the DG?

a. The DG shuts down immediately. The operator must correct the incomplete start condition and depress the local 48X pushbutton, then a start attempt can be made.

b. The DG shuts down immediately. The operator must correct the incomplete start failure condition and place the engine control switch to FAST STOP, a start attempt can be made.

c. The DG attempts a second start. If the start fails, the operator must correct the start and failure condition and depress the local 48X pushbutton, then a start attempt can be made.

d. The DG attempts a second start. If the start fails, the operator must correct the incomplete start failure condition and place the engine control switch to FAST STOP, then a start attempt can be made.

ANSWER: 063. (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-001-264-1-01 TO-21.0
Ops Tech Chapter 34, Attachment 1 of 01-LOT-001-264-1-01, pg 37

264000A404 [3.7/3.7]

264000A404 ..(KA's)

QUESTION: 064 (1.00)

Which one of the following is the reason that N1-EOP-6, Radioactivity Release Control, Step RR2 directs the operator to restart the Turbine Building Ventilation if it is shutdown?

a. To provide a filtered, elevated release to reduce offsite radioactivity releases.

b. To provide a positive Turbine Building pressure to reduce the influx of radioactive contaminants.

c. To prevent damage to accident mitigation equipment from excessive Turbine Building temperatures.

d. To prevent an unmonitored ground release of radioactivity to the environment.

ANSWER: 064 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-06 EO-3.0
NMP1 EOP Bases, Section H, for Step RR-2, pg 4
Modified NMP1 Bank Question

295038K203 [3.6/3.8]

295038K203 ..(KA's)

QUESTION: 065 (1.00)

The reactor is operating at 60% power on the 100% rod line with Reactor Recirc Pump #11 secured. An electrical spike on the grid causes Reactor Recirc pump #14 to trip and the operator observes the following plant conditions:

- The reactor is operating in the restricted zone.
- Periodic LPRM downscale alarms are occurring.
- LPRMs are oscillating a maximum of 12%.

Which one of the following is the operator action that is required to correct this condition?

a. Restart Reactor Recirc pump #14 and ensure recirc flow increases above 30.4 mlb/hr.

b. Increase recirc flow using the running reactor recirc pumps to at least 30% of rated flow.

c. Insert cram rods to reduce reactor power to below the 80% rod line.

d. Insert rods by initiating a manual scram of the reactor.

ANSWER: 065 (1.00)

c.

REFERENCE:

SOP-13, Rev 1, pg 1 and 2

295001K102 [3.3/3.5]

295001K102 ..(KA's)

QUESTION: 066 (1.00)

Which one of the following is the purpose of the Radiation Monitor located under the Fuel Transfer Shielding Bridge (Japanese Bridge)?

a. To warn drywell personnel to evacuate above the 259 foot elevation due to fuel transfer between the core and the spent fuel pool.

b. To warn drywell personnel to evacuate the drywell for a fuel drop accident.

c. To warn Operations and Radiation Protection that access above the 259 foot Drywell elevation must be restricted.

d. To warn Operations and Radiation Protection that additional shielding must be positioned to protect drywell personnel.

ANSWER: 066 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-234-01 EO-None located.
N1-FHP-25, Rev 10, Step C.11, pg 3

295023K203 [3.4/3.6]

295023K203 ..(KA's)

QUESTION: 067 (1.00)

SELECT the choice below that completes the following statement.

Secondary Containment differential pressure is maintained by _____.

a. running one exhaust fan and one supply fan at the same speed with a modulating flow control valve in the supply fan suction line.

b. running one exhaust fan and one supply fan at the same speed with a modulating flow control valve in the exhaust fan discharge line.

c. running two exhaust fans and one supply fan at the same speed and the supply flow control valve set at the desired flow rate.

d. running one exhaust fan in fast speed and one supply fan in slow speed with the exhaust flow control valve set at the desired flow rate.

ANSWER: 067 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-288-01 EO-6.0
Ops Tech Chapter 13b, pg 4 and 5

295035K201 [3.6/3.6]

295035K201 ..(KA's)

QUESTION: 068 (1.00)

During the current calendar quarter, the CSO has worked the following schedule:

- Substitution for 6 hours as the CSO on October 15.
- Three 12 hour shifts from November 1 through November 5.
- Substitution for 4 hours as the CSO on November 11.

Which one of the following describes the smallest number of additional hours that the CSO must work to satisfy site administrative requirements to maintain an active license?

a. One 10 hour shift.

b. One 14 hour shift.

c. Four 8 hour shifts.

d. Four 12 hour shifts.

ANSWER: 068 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-349-1-01 TO: 1.0
N1-ODP-TQS-0401, Rev 0, pg 2

294001A103 [2.7/3.7]

294001A103 ..(KA's)

QUESTION: 069 (1.00)

An operator has just discovered a manual isolation valve in a pipe line for the Instrument Air system that is not shown on the system P&ID.

Which one of the following would be initiated by the operator for resolution of the discrepancy?

a. Field Change Request

b. Configuration/As-built Change Request

c. Deficiency/Event Report

d. Root Cause Determination Report

ANSWER: 069 (1.00)

c.

REFERENCE:

Lesson Plan: None located.
N1-ODP-DES-0101, Rev 0, pg 4

294001A107 [3.0/3.7]

294001A107 ..(KA's)

QUESTION: 070 (1.00)

Which one of the following describes when single notch control rod withdrawal is required during a reactor startup?

a. For all rod movement starting with RWM rod group 3 until criticality is achieved.

b. For all rod movement starting with RWM rod group 2 until criticality is achieved.

c. For all rod movement between notch positions 4 and 12 starting with RWM rod group 3 until criticality is achieved.

d. For all rod movement between notch positions 4 and 12 starting with RWM rod group 2 until criticality is achieved.

ANSWER: 070 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-1-02 EO-14 (related)
N1-ODP-OPS-0106, Rev 0, Step 3.2.2, pg 2

201002G010 [3.9/3.9]

201002G010 ..(KA's)

QUESTION: 071 (1.00)

A partial loss of reactor recirculation flow has resulted in operation in the STABILITY AWARENESS REGION. While in this region 0.9 is the maximum allowed thermal limit value for _____ because larger values could result in _____.

a. MFLCPR; localized transition boiling

b. MFLCPR; power to flow instabilities

c. APLHGR; localized transition boiling

d. APLHGR; power to flow instabilities

ANSWER: 071 (1.00)

b. or a.

REFERENCE:

Lesson Plan 01-REQ-007-384-1-01 EO-1.0
N1-ODP-OPS-0106, Rev 0, Step 3.1.3, pg 1

294001A115 [3.2/3.4]

294001A115 ..(KA's)

QUESTION: 072 (1.00)

Which one of the following states the MINIMUM level of permission that must be obtained prior to entry into a transient radiation area using a Specific RWP, per GAP-RPP-02, Radiation Work Permit?

a. Radiation Protection Chief Technician on shift AND SSS

b. Radiation Protection Chief Technician on shift OR SSS

c. General Supervisor Radiation Protection Operations AND SSS

d. General Supervisor Radiation Protection Operations OR SSS

ANSWER: 072 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-346-1-01 EO-2.0
GAP-RPP-02, Rev 01, Step 3.7.1.d, pg 6

294001K105 [3.2/3.7]

294001K105 ..(KA's)

QUESTION: 073 (1.00)

An operator is dressed in a single set of protective clothing (PC) and is working in the Reactor Building NE Corner Area at the 198 foot elevation when a Radiation Emergency occurs. The CSO has announced on the PA, "Evacuation of the Reactor Building on and below the 237 foot elevation is urgent due to high area radiation."

Which one of the following is the proper methodology that the operator should use to exit the Reactor Building?

a. Exit the Reactor Building wearing the entire set of PC and undress just outside of the Reactor Building airlock.

b. Exit the Reactor Building wearing the entire set of PC and proceed to the access control corridor in the Unit 1 Admin Building to undress.

c. Remove the shoe covers at the work area step-off pad and proceed to the access control corridor in the Unit 1 Admin Building to undress.

d. Remove the shoe covers at the work area step-off pad then exit the Reactor Building and remove the PC just outside the Reactor Building air lock.

ANSWER: 073 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-346-1-01 EO-None located
Lesson Plan 01-LOT-006-350-1-01 EO-None located
EPIP-EPP-21, pg. 11

294001K104 [3.3/3.6]

294001K104 ..(KA's)

QUESTION: 074 (1.00)

The ASSS has just received a report that the surveillance test for the Core Spray System is PAST DUE.

Which one of the following is the meaning of this statement?

a. The surveillance has not been performed before its assigned late finish date, and the Core Spray System must be considered inoperable.

b. The surveillance has not been performed before its assigned late finish date, but the Core Spray System is still considered operable.

c. The surveillance has not been performed before its assigned best test date, and the Core Spray System must be considered inoperable.

d. The surveillance has not been performed before its assigned best test date, but the Core Spray System is still considered operable.

ANSWER: 074 (1.00)

d.

REFERENCE:

Lesson Plan: None located.
GAP-SAT-01, Rev 01, pg 7

294001A106 [3.4/3.6]

294001A106 ..(KA's)

QUESTION: 075 (1.00)

Which one of the following describes the MINIMUM shift crew composition of SROs, ROs, and SROs performing the Shift Technical Advisor Function required to meet Technical Specifications when in the COLD SHUTDOWN CONDITION?

	SROs	ROs	SHIFT TECHNICAL ADVISOR FUNCTION
a.	1	1	0
b.	1	1	1
c.	2	2	0
d.	2	2	1

ANSWER: 075 (1.00)

a.

REFERENCE:

Lesson Plan: None located
Technical Specifications Table 6.2.1, pg 350

294001A103 [2.7/3.7]

294001A103 ..(KA's)

QUESTION: 076 (1.00)

A Site Area Emergency has been declared by the SSS, who is acting as the Site Emergency Director (SED). The TSC and the EOF have both been activated.

Which one of the following describes the transfer of the SED's duties from the SSS to the Emergency Support Facilities?

a. Authorizing emergency workers to exceed normal radiation exposure limits is transferred to the Radiological Assessment Manager (RAM).

b. Determining the necessity for implementing a site evacuation is transferred to the Site Security Supervisor.

c. Decisions to notify offsite agencies of followup offsite radiological conditions is transferred to the Offsite Dose Assessment Manager (ODAM) in the EOF.

d. Making Protective Action Recommendations to emergency offsite agencies is transferred to the Site Emergency Director (SED) in the TSC.

ANSWER: 076 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-350-1-01 EO: 7.1
SEP, pg 5-6

294001A116 [2.9/4.7]

294001A116 ..(KA's)

QUESTION: 077 (1.00)

To properly perform a shift turnover, the Equipment Checklist will be completed by the offgoing CSO and will be reviewed by _____.

a. the oncoming CSO and an oncoming SRO.

b. the oncoming CSO and the oncoming STA.

c. an offgoing SRO, the oncoming CSO, and an oncoming SRO.

d. an offgoing SRO, the oncoming CSO, and the oncoming STA.

ANSWER: 077 (1.00)

a.

REFERENCE:

N1-ODP-OPS-0101, Rev 7, pg 2

294001A109 [3.3/4.3]

294001A109 ..(KA's)

QUESTION: 078 (1.00)

Which one of the following is responsible for reviewing the CSO log to ensure uniformity between the CSO and SSS log and to ensure compliance with GAP-OPS-01, Administration of Operations, and N1-ODP-OPS-0102, Log Maintenance?

a. CSO

b. ASSS

c. SSS

d. STA

ANSWER: 078 (1.00)

b.

REFERENCE:

Lesson Plan: None located.
N1-ODP-OPS-0102, Rev 0, Step 3.9.2, pg 7

294001A106 [3.4/3.6]

294001A106 ..(KA's)

QUESTION: 079 (1.00)

The SSS has just received a Deviation/Event Report (DER) concerning ECCS systems. The SSS must determine the system's operability.

Which one of the following is a condition that must be met for the SSS to declare ECCS operable?

a. Obtain the approval of the General Supervisor Operations or the Manager Operations.

b. Determine that the condition is not bounded by an existing accident or transient analysis in the FSAR.

c. Establish with reasonable assurance that the system is capable of performing its design function.

d. Forward the concern to Plant Engineering for resolution prior to the expiration of the associated LCO time limit.

ANSWER: 079 (1.00)

c.

REFERENCE:

Lesson Plan: None located.
N1-OCP-OPS-0103, Rev 0, pg 2

294001A113 [4.5/4.3]

294001A113 ..(KA's)

QUESTION: 080 (1.00)

The reactor is at 100% power and Liquid Poison Train #11 has just been declared inoperable. Technical Specification 4.1.2.c states that the "redundant component shall be verified to be operable immediately and daily thereafter."

Which one of the following describes the required operability surveillance for Liquid Poison Train #12?

a. Immediately review plant records to determine that the train is not inoperable and repeat this record review once per day thereafter.

b. Immediately review plant records to determine that the train is not inoperable and perform the train surveillance test once per day thereafter.

c. Immediately perform the train surveillance test to determine that the train is operable and review the plant records once per day thereafter.

d. Immediately perform the train surveillance test to determine that the train is operable and perform the train surveillance test once per day thereafter.

ANSWER: 080 (1.00)

a.

REFERENCE:

Lesson Plan: None located.
T.S. 4.1.2.c and N1-ODP-OPS-0103, Rev 0, Step 3.4.1.b, pg 5

294001A102 [4.2/4.2]

294001A102 ..(KA's)

QUESTION: 081 (1.00)

SELECT the choice below that completes the following statement.

During the application of a markup, if components are located in a high radiation area the independent verification for the position of these components may be waived by the _____.

a. CSO provided the waiver is logged in the Control Room Log

b. CSO provided a licensed operator applies the tag

c. SSS provided the waiver is logged in the SSS Log

d. SSS provided a licensed operator applies the tag

ANSWER: 081 (1.00)

d.

REFERENCE:

GAP-OPS-02, Rev 1, Sec 3.1.5.g, pg 5

294001K103 [3.3/3.8]

294001K103 ..(KA's)

QUESTION: 082 (1.00)

The reactor is at 100% power. The quarterly core spray system operability test for core spray pump 111 and core spray topping pump 111 is in progress per procedure N1-ST-Q1A. The following valves have been repositioned per procedure:

- 40-06, Full Flow Test Valve, is fully open.
- 40-12, Outside Discharge Isolation Valve, is closed.
- 40-11 and 40-10, Inside Discharge Isolation Valves, are closed.

A loss of coolant accident occurs, resulting in the following plant conditions:

- RPV level is 10 inches, slowly decreasing.
- RPV pressure is 450 psig, slowly decreasing.
- Drywell pressure is 3.8 psig, slowly increasing.

Which one of the following describes the response of Core Spray loop 11 to these conditions?

a. Both Inside Discharge Isolation Valves open.
40-12, Outside Isolation Valve, opens.
40-06, Full Flow Test Valve, closes.

b. Both Inside Discharge Isolation Valves open.
40-12, Outside Isolation Valve, remains closed.
40-06, Full Flow Test Valve, remains open.

c. Both Inside Discharge Isolation Valves remain closed.
40-12, Outside Isolation Valve, opens.
40-06, Full Flow Test Valve, remains open.

d. Both Inside Discharge Isolation Valves remain closed.
40-12, Outside Isolation Valve, remains closed.
40-06, Full Flow Test Valve, closes.

ANSWER: 082 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-209-1 LO-11.0
Operations Technology Chapter 17, pg 2, 5, and 6
N1-ST-Q1A

KA 209001A304 3.7/3.6

209001A304 ..(KA's)

QUESTION: 083 (1.00)

Which one of the following describes the MINIMUM Containment Spray System components, when operating at full capacity, that are required to remove 100% of the post-accident core energy released following a design basis LOCA?

a. One containment spray system with one pump running and the associated raw water pump running.

b. One containment spray system with two pumps running and the two associated raw water pumps running.

c. Two containment spray systems with one pump running in each system and the two associated raw water pumps running.

d. Two containment spray systems with two pumps running in each system and the associated raw water pumps running.

ANSWER: 083 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-226-01 EO-1 and 4
Ops Tech Chapter 18, pg 2 and 4
Tech Spec Bases 3.3.7, pg 162

226001G006 [2.8/3.8]

226001G006 ..(KA's)

QUESTION: 084 (1.00)

Reactor is at 100% power when the Liquid Poison TANK LEVEL/TEMPERATURE HI/LO PUMPS LOW TEMP alarm is received. The Liquid Poison System conditions are as follows:

- Squib valve #12 continuity monitor light is OUT.
- Squib valve #11 continuity monitor light is ON.
- Tank level is 1200 gallons.
- Tank temperature is 65 deg. F.
- Pump suction temperature is 71 deg. F.
- Boron-10 enrichment is 65%.
- Weight percent Sodium Pentaborate solution = 11%.

Which one of the following is the action that must be taken by the SSS?

a. Place the reactor in Hot Shutdown within 1 hour.

b. Place the reactor in Cold Shutdown within 24 hours.

c. Commence a normal orderly shutdown within 1 hour.

d. Enter a seven day Limiting Condition for Operation.

ANSWER: 084 (1.00)

d. d

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01 EO-1.14
Tech Spec 3.1.2, pg 44 and Fig 3.1.2b

211000G005 [3.6/4.4]

211000G005 ..(KA's)

QUESTION: 085 (1.00)

Which one of the following is the basis for the IRM High Flux Scram?

a. To prevent exceeding the safety limit MCPR due to high local power levels if the design basis rod withdrawal error occurs.

b. To prevent exceeding the safety limit MCPR when reactor pressure is less than 850 psig if an uncontrolled continuous positive reactivity addition occurs.

c. To prevent exceeding the LHGR limit due to high local power levels if the design basis rod withdrawal error occurs.

d. To prevent exceeding the LHGR limit when reactor pressure is less than 850 psig if an uncontrolled continuous positive reactivity addition occurs.

ANSWER: 085 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-215-1-06 EO-6.4 and 6.5 (related)
Tech. Spec. Bases 2.1.2, pg 18

215003G006 [2.8/3.8]

215003G006 ..(KA's)

QUESTION: 086 (1.00)

The plant is operating at 100% power. Due to static Battery Charger #161A failure, the computer supply MG #167 has been aligned to charge the 125 VDC Battery #11.

Which one of the following describes the impact of this alignment on plant operations?

a. Operation may continue provided the normal battery charger is returned to operation within 7 days.

b. Operation may continue provided the normal battery charger is returned to operation within 24 hours.

c. The plant must be placed in HOT SHUTDOWN with reactor coolant pressure reduced to 110 psig or less within 10 hours.

d. The plant may continue to operate indefinitely.

ANSWER: 086 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-001-263-1-01 EO-1.8
N1-OP-47A, Rev 14, pg 3
NMP1 Question Bank

263000G005 [3.1/3.8]

263000G005 ..(KA's)

QUESTION: 087 (1.00)

During the performance of N1-ST-C2, Manual Opening of the Solenoid-Actuated Relief Valves and Flow Verification, the last ERV to be tested, ERV #123, stuck open. ERV #123 had to be closed by pulling its fuses. Plant conditions are as follows:

- Reactor power is 30%.
- Suppression chamber pressure is 1.3 psig.
- Suppression pool temperature is 111 deg. F.
- All other ERVs passed N1-ST-C2 satisfactorily.

Which one of the following is the action(s) that must be directed by the SSS?

a. Reduce bulk pool temperature to less than 95 deg. F within 24 hours.

b. Commence a normal shutdown to reduce reactor pressure to 110 psig or less and to saturation temperature or less within 10 hours.

c. Commence a normal shutdown to cold shutdown and reduce bulk pool temperature to less than 95 deg. F within 24 hours.

d. Scram the reactor and reduce reactor pressure to 110 psig or less and to saturation temperature or less within 10 hours.

ANSWER: 087 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-1-001-239-01 EO-8
Lesson Plan 01-LOT-1-001-223-01 EO-8
Tech Spec 3.3.2, pg 127 and 128
Tech Spec 3.1.5, pg 60 and 61

295013G003 [3.3/4.2]

295013G003 ..(KA's)

QUESTION: 088 (1.00)

Which one of the following is the basis for the Technical Specification 3.1.6 requirement to reduce reactor coolant temperature to 212 deg. F or less within 10 hours for a loss of BOTH CRD pumps?

a. loss of cooling water to the rod drive mechanism seals

b. loss of charging water to the HCU accumulators

c. loss of high pressure coolant injection capability

d. loss of drive flow for manual rod insertion

ANSWER: 088 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-1-001-201-02 EO-16 (related but not specific)
Tech Spec Bases 3.1.6, pg 64

295022G004 [2.7/3.6]

295022G004 ..(KA's)

QUESTION: 089 (1.00)

Which one of the following is the reason for reducing the APLHGR core thermal limit when operating with an isolated reactor recirculation loop?

a. The reduced core flow coastdown time during a LOCA results in an earlier boiling transition time and higher clad temperatures.

b. The reduced core flow coastdown time during a LOCA results in a slower core uncovery time and a higher sustained power level at the hot node.

c. The core uncovers faster during a LOCA due to the reduced primary coolant volume resulting in increased cladding strain.

d. The core uncovers faster during a LOCA causing reduced nucleate boiling and increased pellet-clad-interaction.

ANSWER: 089 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-202-01 EO-1.8 (related but not specific)
Tech Spec Bases 3.1.7, pg 73

295001K103 [3.6/4.1]

295001K103 ..(KA's)

QUESTION: 090 (1.00)

An ATWS is in progress and Liquid Poison has been initiated per EOP 3.0, Step RQ-9. During injection of liquid poison, a loss of power renders the Liquid Poison pumps inoperable. Plant conditions are as follows:

- Initial Liquid Poison Tank level was 1550 gallons.
- Final Liquid Poison Tank level is 1250 gallons.
- Reactor pressure is being controlled at 920 psig.

Which one of the following describes the effect of the Liquid Poison injection on the reactor core?

a. The reactor will remain shutdown with all rods withdrawn if reactor pressure remains at or above 920 psig.

b. The reactor will remain shutdown with all rods withdrawn if reactor moderator temperature remains above 212 deg. F.

c. The moderator temperature coefficient may have become positive and could result in a power excursion if moderator temperature increases.

d. The void coefficient may have become positive and could result in a power excursion if the reactor vessel is rapidly depressurized.

ANSWER: 090 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-05 EO-3.0
EOP BASES NMP1 EOP 3.0, Section E, pg 98

295037K103 [4.2/4.4]

295037K103 ..(KA's)

QUESTION: 091 (1.00)

SELECT the choice below that completes the following statement.

The MINIMUM Sodium Pentaborate Solution stored in the Liquid Poison Tank includes an additional 25% margin beyond that which is required to shutdown the reactor to _____.

a. allow for any non-uniform mixing of the solution in the reactor core

b. allow for the 197 gallons contained in the tank below the pump suction line

c. ensure a 10 degree F variance in tank solution temperature does not result in system inoperability

d. ensure that chugging does not occur

ANSWER: 091 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-1-001-211-01 EO-1.14
Tech Spec Bases 3.1.2, pg 48

295037G004 [3.1/4.2]

295037G004 (KA's)

QUESTION: 092 (1.00)

N1-ST-C2, Manual Opening of Solenoid Actuated Pressure Relief Valves and Flow Verification, is in progress. Torus level is being lowered due to an above normal level condition. The last relief valve, ERV 123, has been opened for testing and the operator observes the following plant conditions.

- ERV 123 cannot be closed with the control switch.
- Torus pressure is 4.5 psig increasing rapidly.
- Drywell pressure is 2.5 psig increasing.
- Torus level is 9.0 ft.
- Torus temperature is 110 deg. F. increasing.

Which one of the following is the correct operator action to minimize the impact on containment? (Assume the operator takes action to stop lowering Torus level and RPS responds properly.)

a. Emergency Depressurize the RPV because the Heat Capacity Temperature Limit has been exceeded.

b. Emergency Depressurize the RPV to minimize containment pressure increases because a RPV safety valve has lifted.

c. Pull the fuses to close ERV 123 because the ERV tailpipe has ruptured.

d. Pull the fuses to close ERV 123 because the ERV tailpipe is uncovered.

ANSWER: 092 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-06 EO-2.0
EOP-4, EOP-8
N1-OP-1, Rev 39, Section H.7, pg 29

295024A108 [3.9/3.9]

295024A108 ..(KA's)

QUESTION: 093 (1.00)

An ATWS is in progress and EOP-3 is being executed. Plant conditions are as follows:

- Liquid Poison system has failed.
- MSIVs have closed.
- 2 ERVs are stuck open and reactor pressure is 600 psig.
- Torus pressure is 5 psig increasing.
- Torus level is 9 feet.
- Torus temperature is 132 deg. F.

Which one of the following actions must be directed by the SSS?

a. Remain in EOP-3 and open an additional ERV to reduce reactor pressure and limit cooldown to 100 deg. F/hr.

b. Remain in EOP-3 and control ECs to minimize reactor vessel cooldown rate.

c. Remain in EOP-3 and use ECs and ERVs to maximize RPV depressurization and cooldown without exceeding a cooldown rate of 100 deg. F/hr.

d. Exit RP section of EOP-3, enter EOP-8, and open 3 additional ERVs to reduce reactor pressure regardless of the cooldown rate.

ANSWER: 093 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-05 EO-2.0
EOP-3, Step RP-1

295013G012 [3.6/4.2]

295013G012 ..(KA's)

QUESTION: 094 (1.00)

Battery Bus #11 is de-energized and the Emergency Diesel Generators (DG) have received an automatic initiation signal.

Which one of the following describes the method by which DG #102 is started?

a. Control power automatically transfers, DG #102 automatically starts, and the DG output breaker automatically closes.

b. Control power automatically transfers, DG #102 is started from the Control Room, and the DG output breaker is manually closed locally.

c. Control power is manually transferred locally. From the Control Room DG #102 is remote-manually started, and the DG output breaker is remote-manually closed.

d. Control power is manually transferred locally. From local controls, DG #102 is manually started, and the DG output breaker is manually closed locally.

ANSWER: 094 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-001-264-1-01 TO-4.0 EO-7.0
N1-OP-45, Rev 21, Section H.3 and H.4, pg 20 and 21

295004A102 [3.8/4.1]

295004A102 ..(KA's)

QUESTION: 095 (1.00)

Which one of the following describes a RPV condition for which the ADEQUATE CORE COOLING EOP criteria are met? (Assume reactor scram has fully inserted all control rods.)

a. EOP-9 is being executed. Reactor pressure is 600 psig, reactor level is -112 inches slowly decreasing, 1 Emergency Condenser is in service, and no injection to RPV.

b. EOP-2 is being executed. Reactor pressure is 150 psig, reactor level -90 inches decreasing, and both core spray subsystems injecting.

c. EOP-7 is being executed. Reactor pressure is 425 psig, reactor level is unknown, and 2 ERVs are open.

d. EOP-10 is being executed. Reactor is being vented, reactor level is -105 inches slowly increasing, and all available injection sources injecting.

ANSWER: 095 (1.00)

a.

REFERENCE:

Lesson Plan 01-LOT-6-344-1-11 EO-1.3
EOP Bases Section C, pg 2
EOP Bases Section K, pg 7 and 8, (Effective 8/9/93)
EOP-9, Step StC-5

295031K101 [4.6/4.7]

295031K101 ..(KA's)

QUESTION: 096 (1.00)

The reactor is operating at 100% power when an event on the Refuel Floor results in a continuing loss of level in the Spent Fuel Pool with the pool water spilling into the Reactor Building. Plant conditions are as follows:

- Area Radiation Monitor for the West End of Shield Wall, RB 340 indicates 3.2 R/hr.
- Area Radiation Monitor for Reactor Building East Wall, EL 340 indicates 3.0 R/hr.
- Area Radiation Monitor for Reactor Building Northwest, EL 318 indicates 2.6 R/hr.
- REACTOR BUILDING FLOOR DRAIN SUMP AREA WATER LEVEL HIGH alarm has been received for computer point B129.

Which one of the following is the action that must be directed by the SSS?

a. Scram the reactor and Emergency Depressurize the RPV.

b. Scram the reactor and execute EOP-2.

c. Shutdown the reactor per OP-43, Normal Operations Procedure and cooldown regardless of cooldown rate.

d. Shutdown the reactor per OP-43 and cooldown at less than 100 deg. F/hr.

ANSWER: 096 (1.00)

d.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-07 EO-1.2 and TO-1.0
EOP-5, Step SCR-9

295033G012 [3.8/4.4]

295033G012 ..(KA's)

QUESTION: 097 (1.00)

EOP-5, Secondary Containment Control, utilizes a Maximum Safe Operating Temperature of 135 deg. F to ensure personnel access for plant safe shutdown activities.

Which one of the following would be categorized as a safe shutdown activity?

a. Entry into an area to isolate or reduce primary system leakage.

b. Entry into the RWCU area for implementing alternate boron injection.

c. Local operations to support nitrogen purge of the drywell.

d. Local operations to support restoration of Reactor Building Ventilation.

ANSWER: 097 (1.00)

b.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-07 EO-1.3
EOP Bases for EOP-5, Section G, pg 19 and 31 (Effective 8/9/93)

295032K208 [3.8/3.9]

295032K208 ..(KA's)

QUESTION: 098 (1.00)

An ATWS has occurred.

- Reactor power is 8%.
- Containment Spray is running to reduce drywell pressure per EOP-4.
- HPCI is maintaining reactor level per EOP-3.
- There is a fire in the Reactor Building and the Fire Brigade has contained the fire and expects to extinguish it within 5 minutes.
- Several Reactor Building Floor Drain Sumps have exceeded their alarm setpoints.

Which one of the following systems would be isolated per EOP-5 if it were determined to be the source of the high Reactor Building sump levels?

a. Fire suppression sprinklers

b. Containment Spray

c. Core Spray

d. Control Rod Drive

ANSWER: 098 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-07 EO-1.2
EOP-5, Step SCL-3
EOP Bases for EOP-5, Section G, pg 41 (Effective 8/9/93)

295036A102 [3.5/3.6]

295036A102 ..(KA's)

QUESTION: 099 (1.00)

The reactor is operating at 100% power when the REACTOR BUILDING FLOOR DRAIN SUMPS 11-16 AREA WATER LEVEL HIGH alarm is received. The operator reports that computer points B126, B127, B128, B129, and F188 are in alarm. A nonlicensed operator reports that the Emergency Condenser Condensate Return Isolation Valve 39-05 has an unisolable leak. All floor drain sump pumps associated with the alarming sumps are running and the sump alarms cannot be cleared.

Which one of the following is the Emergency Classification that must be declared by the SSS?

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

ANSWER: 099 (1.00)

b. c.

REFERENCE:

Lesson Plan 01-LOT-006-350-1-01 TO: 9.0
EPIP-EPP-01, Rev 0, Fig. 1D, pg 14

295036G002 [2.7/4.1]

295036G002 ..(KA's)

QUESTION: 100 (1.00)

Which one of the following is the reason that EOP-4, Section DWT, directs an Emergency RPV Depressurization when the temperature of the drywell cannot be maintained below 300 deg. F?

a. Meeting containment spray initiation limitations cannot be assured.

b. Integrity of the primary containment cannot be assured.

c. Operation of the ADS valves cannot be assured.

d. Core Spray inboard injection valve operability cannot be assured.

ANSWER: 100 (1.00)

c.

REFERENCE:

Lesson Plan 01-LOT-006-344-1-06 EO-3.0
EOP Bases for EOP-4, Section F, pg 31, (Effective 8/9/93)

295012G007 [3.3/3.5]

295012G007 ..(KA's)

(********** END OF EXAMINATION **********)

A N S W E R K E Y

MULTIPLE CHOICE

001	d
002	b
003	d
004	c
005	b
006	b
007	b
008	c
009	d
010	b
011	c
012	b
013	c
014	a
015	a
016	b
017	b
018	d
019	d
020	b
021	a
022	b
023	a
024	a
025	d
026	c or d
027	b
028	c
029	d
030	b
031	c
032	d or c
033	b
034	c
035	d
036	d
037	c
038	c
039	c
040	c
041	d
042	c
043	a
044	a
045	d

A N S W E R K E Y

046 b

MULTIPLE CHOICE

047 d
048 b
049 c
050 d
051 d
052 a
053 d
054 c
055 c
056 c
057 a
058 d
059 b
060 c or a
061 d
062 c
063 c
064 d
065 c
066 b
067 a
068 c
069 c
070 b
071 b or a
072 c
073 c
074 d
075 a
076 d
077 a
078 b
079 c
080 a
081 d
082 d
083 a
084 ~~a~~ d
085 b
086 b
087 d
088 c
089 a
090 c

A N S W E R K E Y

091. a

MULTIPLE CHOICE

092 c

093 d

094 d

095 a

096 d

097 b

098 c

099 ~~b~~ C

100 c

(********** END OF EXAMINATION **********)

Attachment 3

NIAGARA MOHAWK

NMP-89224

NINE MILE POINT NUCLEAR STATION / P.O. BOX 32 LYCOMING, NEW YORK 13093 / TELEPHONE (315) 343-2110

November 22, 1993

Mr. Thomas T. Martin
Regional Administrator
U. S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Martin:

Niagara Mohawk Power Corporation (NMPC) has completed the facility review of the written initial licensing examinations that were administered by the United States Nuclear Regulatory Commission (USNRC) on November 16, 1993. Written examinations were given for two Reactor Operator (RO) candidates and four Senior Reactor Operator (SRO) candidates.

Comments and recommendations concerning several questions in each of the two examinations are submitted for your disposition in accordance with NUREG 1021, ES-402.

It is requested that the USNRC consider the enclosed comments and recommendations in the review and grading of the written examinations conducted on November 16, 1993.

Please direct any questions or concerns you may have to Mr. Robert Sanaker at (315) 349-2765.

Sincerely,

B. Ralph Sylvia
Executive Vice President - Nuclear

MAM/dew

Enclosures:
(1) Comments and recommendations for License examination

QUESTION:

RO Q#28/SRO Q#20

(See Attached)

COMMENT: Without instrument air the feedwater regulating valve is locked up.

Restoration of instrument air would restore full automatic operation of the HPCI System. This is choice "B".

Choice "C"; Pinning the feed reg. valve would allow the HPCI system to feed the reactor without automatic flow control. An operator would be directed to manually control level since this action would be required to control level prior to taking the time to restore power to air compressors.

RECOMMENDATION: Choice "C" should be accepted as an alternate correct choice.

REFERENCE: Ops Tech. Ch. 16, Page 1, HPCI
Ops Tech Ch. 23, Page 7, Feedwater

QUESTION:

RO Q#79/SRO Q#26

(See Attached)

COMMENT: APRM #12 upscale and not bypassed would result in an auto scram signal on RPS Trip Bus 131. RPS Trip Bus 141 loses power when PB 141C trips. For Unit 1 terminology Trip Bus 141 is considered part of RPS System #12 and therefore part of RPS "System" #12 has lost power.

RECOMMENDATION: Accept either "C" or "D" as correct.

REFERENCE: Ops Tech. Chapter 9d
Ops Tech. Chapter 10

QUESTION:

RO Q#48/SRO Q#60

(See Attached)

COMMENT: Per N1-OP-10, Rev. 11, Step H.3.0 and Ops Tech Chapter 13c, pages 5 and 6 there are two (2) methods of providing cooling flow. These two (2) methods are described in choices "A" and "C".

RECOMMENDATION: Accept either "A" or "C" as correct.

REFERENCE: Ops Tech. Chapter 13c, Figure 13c-1 and pages 5 and 6
N1-OP-10, Rev. 11, Step H.3.0

QUESTION:

RO Q#6/SRO Q#71

(See Attached)

COMMENT: Thermal hydraulic instabilities have been proven to violate SLCPR and MFLCPR. 0.9 is the maximum MFLCPR allowed because of "power to flow instabilities." If instabilities occur or a MFLCPR of 1.0 is exceeded then OTB may occur. E.G. A MFLCPR of 1.1 is greater than 0.9 and with a MFLCPR of 1.1 OTB may occur in those bundles affected. The basis of the CPR Thermal Limit is to prevent OTB.

RECOMMENDATION: Accept either "A" or "B" as correct.

REFERENCE: NRC Bulletin 88-07, Supplement 1

QUESTION:

RO Q#83/SRO Q#32

(See Attached)

COMMENT: Per attached drawings the valves have both an orifice and an internal pilot. Orifice sizing and pilot work in conjunction, each with specific purposes, to allow pressure equalization across an MSIV.

RECOMMENDATION: Accept either "C" or "D" as correct.

REFERENCE: Ops Tech Chapter 21, Figures 21-1 & 21-2
Letter from Atwood and Morrill Co., Inc. dated November 23, 1993

QUESTION:

SRO Q#99

(See Attached)

COMMENT: This question gives all the indications of an unisolable primary system discharging outside containment. This meets the criteria for a Site Area Emergency.

RECOMMENDATION: Change Key to accept "C" instead of "B".

REFERENCE: EPIP-EPP-01, Rev. 0, Figure 10, page 12

ATTACHMENT 4

NRC RESOLUTION OF FACILITY COMMENTS

RO Question 28/SRO Question 20:

Comment not accepted. The question asks for the actions required to ensure "proper long term operation." Pinning the feed regulating valves would require manual control of reactor water level which is not "proper long term operation."

RO Question 79/SRO Question 26:

Comment accepted. Item 'd' was accepted as an additional correct answer.

RO Question 48/SRO Question 60:

Comment accepted. Item 'a' was accepted as an additional correct answer. The facility made a recommendation during the preexamination review to modify this question to ensure that there was only one correct answer. This recommendation failed to ensure that there was only one correct answer.

RO Question 6/SRO Question 71:

Comment accepted. Item 'a' was accepted as an additional correct response.

RO Question 83/SRO Question 32:

Comment accepted. Item 'c' was accepted as an additional correct answer.

SRO Question 99:

Comment accepted. The answer key was revised to recognize item 'c' as the correct answer.

ATTACHMENT 5

SIMULATION FACILITY REPORT

Facility License: DPR-63

Facility Docket No: 50-220

Operating Test Preparation and Administration: November 15-19, 1993

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of noncompliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information that may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
SDC Heat Exchanger Tube Leak	Malfunction SC02A caused a tube leak in SDC Loop 12 heat exchanger rather than SDC Loop 11 as expected. Malfunctions SC02B and SC02C had no effect on any of the SDC heat exchangers.
Level Instrumentation	A number of the level instrumentation malfunctions did not work as expected. Additionally, there were discrepancies between the actual plant, the simulator, and the malfunction documentation for the power supplies to the GEMAC level instruments.
Control Room Ventilation	There are no malfunctions or overrides that can be used to affect operation of the Control Room HVAC system.