

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Operator Licensing Examination Report No. 50-368/OL 92-02

Operating License No. NPF-6

Licensee: Entergy Operations Inc.
Route 3, Box 137G
Russellville, Arkansas 72801

Examinations at: Arkansas Nuclear One, Unit 2

Examinations Conducted: August 3-7, 1992

Chief Examiner: S. L. McCrory

Approved by: *J. L. Pellet* 8-14-92
for J. L. Pellet, Chief Date
Operator Licensing Section
Division of Reactor Safety

Summary

NRC Administered Examinations Conducted During the Week of August 3, 1992
(Examination Report 50-368/OL 92-02)

NRC administered examinations to six reactor operator (RO) applicants and six senior reactor operator (SRO) applicants. All applicants passed all portions of the examination and have been issued the appropriate license.

Applicant performance in the examinations was very good. The average score on the written examination was 91 percent overall, 89.9 percent for ROs, and 92.2 percent for SROs. SROs provided very good oversight of panel manipulations and system operation in the dynamic simulator portion of the operating examination. Additionally, applicants exhibited good communication discipline in that they were diligent to ensure that all communications were acknowledged by the intended recipient.

During the conduct of the in-plant walkthrough portion of the operating examination an examiner observed instances where on-shift crews had failed to annotate plant drawings in the control room to reflect outstanding temporary modifications. The condition did not constitute an immediate safety concern and was turned over to the senior resident inspector for further investigation.

During discussions with SRO applicants regarding emergency plan implementation, it was noted that there is no procedural guidance to address notifications and external communications when the designated communicator is

not available. The facility licensee staff reported that a similar weakness had been identified in a recent emergency preparedness exercise and that a resolution had not yet been reached.

DETAILS

1. PERSONS EXAMINED

		<u>SRO</u>	<u>RO</u>	<u>Total</u>
Licensee Examinations:	Pass -	6	6	12
	Fail -	0	0	0

2. EXAMINERS

S. L. McCrory, Chief Examiner
J. L. Pellet
R. E. Lantz

3. EXAMINATION REPORT

Performance results for individual examinees are not included in this report as it will be placed in the NRC Public Document Room and these results are not subject to public disclosure.

3.1 Examination Review Comment/Resolution

In general, editorial comments or changes made as a result of facility reviews prior to the examination, during the examination, or subsequent grading reviews are not addressed by this resolution section. This section reflects resolution of substantive comments submitted to the NRC by the facility licensee after the examination. The facility licensee post-examination comments, less the supporting documentation, are included in the report immediately following the master examination key. Unless otherwise indicated in this section, the facility licensee comments were incorporated into the master examination key. Facility licensee comments, which were not accepted, are described below along with NRC response.

All facility licensee comments were incorporated into the examination. Additionally, following a review of individual question performance subsequent to grading of written examinations, it was determined that RO examination question number 057 (SRO examination question number 060) did not discriminate adequately. The question was deleted from the examination and grades were adjusted to reflect the resultant total examination points.

3.2 Site Visit Summary

The facility licensee was provided a copy of the examination and answer key for the purpose of commenting on the examination content validity. The facility licensee was informed that examination results could be expected within 30 days of the completion of the examination.

The NRC met with members of the licensee's training staff and summarized the results of the examinations as presented in this report. The following personnel were present:

NRC

J. Pellet
S. McCrory
R. Lantz
L. Smith

FACILITY

R. Eddington
J. Waid
R. Henry
R. Espolt
G. King
D. Robison
T. Loyd

3.3 General Comments

3.3.1 Written Examination

Performance on the written examination was very good. The average score on the written examination was 91 percent overall, 89.9 percent for ROs, and 92.2 percent for SROs. The following question numbers represent those on which 50 percent or more of the applicants scored less than 70 percent of the question value and are provided to assist facility evaluation of training weaknesses.

Common weaknesses (RO#/SRO#): 23/26 24/27

RO weaknesses: 08 17 33 42 51 70

SRO weaknesses: 47 61 75 80 87

3.3.2 Operating Examination

The applicants' performance on the operating test was generally good. SRO applicants provided very good oversight of panel manipulations and system operation in the dynamic simulator portion of the operating examination. There were instances where this level of oversight helped avoid improper system operation and redirected operator response. Additionally, applicants exhibited good communication discipline in that they were diligent to ensure that all communications were acknowledged by the intended recipient.

During the walkthrough and discussion portions of the operating examination two concerns were identified. While discussing emergency plan implementation with SRO applicants, it was discovered that there was no procedural guidance to identify a backup to the primary off-site communicator. Emergency Plan Implementing Procedure 1903.064, "Emergency Response Facility - Control Room," specifies that the shift engineer (SE) from the unaffected unit will perform the duties of the communicator for the affected unit. However, when posed with a situation wherein the SE from the other unit was not available, SRO applicants responded inconsistently regarding how to address the situation.

Most indicated that they would attempt to handle communications themselves. A similar weakness was identified in a recent facility emergency exercise. Facility licensee staff members indicated that corrective action was still in progress.

The second concern arose when an examiner was evaluating an applicant's knowledge of the procedures and controls for temporary modifications. The examiner observed multiple instances wherein the plant drawings in the control room were not annotated to reflect outstanding temporary modifications as required by procedure 1000.028, "Temporary Modification Control" Revision 16, PC-1, step 6.9.1. The examiner brought this to the attention of the shift operation supervisor, who took immediate corrective action. The facility licensee staff provided a condition report on the matter at the exit meeting. There was no immediate safety significance to the event and the details were provided to the senior resident inspector for further investigation and evaluation.

3.3.3 Conclusion

Applicant performance in all portions of the examination was good to very good. No generic weaknesses were exhibited during the course of the examinations. The following findings and observations are summarized and provided for facility licensee consideration as appropriate:

- There appears to be no procedural guidance for a backup communicator for emergency plan implementation if the unaffected unit SE is not available.
- Control room drawings were not annotated, in multiple instances, to reflect outstanding temporary modifications.

3.4 Master Examination and Answer Key

A master copy of the written examination and answer key is attached. The facility licensee post-examination comments, which have been accepted, are incorporated into the answer key.

3.5 Facility Post-Examination Review Comments

The facility post-examination review comment regarding the written examination are attached following the master examination key. Those comments not accepted were addressed in the resolution section of this report.

3.6 Simulation Facility Report

All items on the attached Simulation Facility Report have been discussed with the facility personnel.

SIMULATION FACILITY REPORT

Licensee: Entergy Operations Inc.

Docket No: 50-368

Operating Tests Administered at: Arkansas Nuclear One, Unit 2

Operating Tests Administered: Week of August 3, 1992

This report does not constitute an audit or inspection and is not, without further verification and review, indicative of non-compliance with 10 CFR Part 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the operating examinations identified above, no simulator fidelity problems were observed. The simulator computer experienced a "lock-up" for about 20 minutes during the examinations. However, that did not significantly impact the conduct of the examinations.

Due to the limited number of scenarios run, this report should not be construed as an extensive assessment of simulator fidelity.

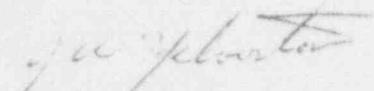


John Pellet, Chief
Operator Licensing Section
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Comments on Unit 2 RO/SRO Examinations

Attached are comments on the Unit 2 RO/SRO examination administered the week of August 3, 1992. Section 1 contains two questions which were keyed incorrectly. Section 2 contains questions that are either no longer relevant or may have multiple answers. If you have any questions concerning these comments, please contact Joe Waid at 501-964-6328.

Sincerely,


Jerry W. Yelverton
Vice President, Operations

JWY:llf

SECTION 1

The following question, SRO exam question #3, should be keyed as "C" per OP1903.010, Attachment 3, Section 2.1 (NUE), RCS leakage > T.S. limits requiring a Plant S/D or C/D.

*EXLEVEL 3

*KA 194001A116

*QUESTION 3:

The plant is operating at 100% power. At 1945 an RCS leak of 0.8 gpm is detected. An emergency power entry is authorized at 2145 to locate the source of the leakage. At 2300 a through wall pinhole leak is located on the casing of RCP 2P32B.

Which one of the following actions is required?

- a. No action is required unless leakage increases to 1.0 gpm.
- b. Immediately trip the reactor.
- c. Declare a NUE per OP1903.010.
- d. Declare an ALERT per OP1903.010.

*ANSWER:

D

*REFERENCE

ANO2 OP 1903.010, 2203.016

KA 194001A116

Section 2 (Continued)

The correct answer is 10 R/hr which relates to answer "B" as being the correct answer instead of answer "C".

*EXLEVEL S

*KA 072000G008 072000A101

*QUESTION 104:

Which one of the following indicates the radiation level at which the High Range containment radiation monitors require action to be taken in EOPs?

- a. 10 E-1 R/hr
- b. 10 E+0 R/hr
- c. 10 E+1 R/hr
- d. 10 E+2 R/hr

*ANSWER

C.

*REFERENCE

ANO2 STM-2-62, TABLE 62.2

KA 072000G008

KA 072000A101

SECTION 2

This question is not relevant because ANO no longer uses weekly limits.

*EXLEVEL R

*KA 194001K104

*QUESTION 15:

An operator with complete exposure records has a whole body radiation exposure of 90 mrem for the current week.

Which one of the following is the MAXIMUM time period the operator can stay in a 25 mr/hr radiation area without exceeding the initial administrative exposure limit for weekly whole body exposure?

- a. 4 hours
- b. 6 hours
- c. 8 hours
- d. 10 hours

*ANSWER

C.

*REFERENCE

ANO2 LP AA 62002-005 PG 9

KA 194001K104 (3.3/3.5)

Section 2 (Continued)

This question can be read in three different ways and depending upon how it is read can yield two different answers. If the question is read as just the issuance of the hold card, or the approval for a surveillance oil sample, then the correct response is answer "A" as keyed. However, if the question is read that the oil sample is not a surveillance, and is requesting approval for oil sample, this is entering an LCO for other than surveillance and requires approval of the Unit 2 Operations Manager. Reference Conduct of Operations, 1015.001. Therefore, either answer "A" or "C" should be accepted as the correct answer.

*EXLEVEL S

*KA 194001K102

*QUESTION 25:

While the unit is at 100% power, mechanical maintenance has requested that LPSI pump 2P60A be hold carded to allow for oil sampling. What is the MINIMUM level of authority that may issue the hold card?

- a. Control Room Supervisor
- b. Shift Supervisor
- c. Unit 2 Manager, Operations
- d. Unit 2 Plant Manager

*ANSWER

A.

*REFERENCE

ANO OP 1000.27 PG 9

KA 194001K102 3.7

Section 2 (Continued)

The keyed response is the most correct answer for this question, however, the limit exceeded should be 80 degrees per hour instead of 100 degrees per hour. Reference OP2102.002 Section 5.0, Limits and Precautions, 5.2.

*EXLEVEL B

*KA 002000G005

*QUESTION 49:

The following data was recorded during RCS heatup.

TIME	RCS deg. F	PZR psia
0900	200	298
0915	224	298
0930	249	330
0945	273	400
1000	298	460
1015	327	500
1030	348	540
1045	371	580

Which one of the following is the reason that the heatup was improperly performed?

- a. RCS heatup rate exceeded 100 deg. F in one hour.
- b. PZR heatup rate exceeded 200 deg. F in one hour.
- c. Margin to saturation exceeded 200 deg. F.
- d. Margin to saturation decreased below 30 deg. F.

*ANSWER

A.

*REFERENCE

ANO2 OP 2102.002 TS 3.4.9

KA 002000G005 3.6/4.1

NRC Operator Licensing Examination Report 50-368/OL 92-02

bcc w/enclosure (except Master Examination and Answer Key):

bcc distrib. by RIV:

J. L. Milhoan, RA	Section Chief (DRP/A)
RIV File	Resident Inspector
L. Miller, TTC	J. Keeton
DRS (J. L. Pellet)	L. Hurley
T. Alexion, NRR Project Manager (MS: 13-E-21)	
S. Peterson, NRR Project Manager (MS: 11-D-23)	
Licensee & Debt Collection Branch, ATTN: Leah Tremper (MNBB 4503)	

bcc w/complete enclosure:

bcc to DMB (IE42)
 Chief Examiner
 Chief Examiner Reading File

RIV:OLS:RE	C.OLS	D:DRS	D/DRP	
SMcCrory/1b	JLPellet	SJCollins	ABSeach	
8/14/92	8/14/92	8/14/92	8/16/92	

U. S. NUCLEAR REGULATORY COMMISSION
 SITE SPECIFIC EXAMINATION
 SENIOR OPERATOR LICENSE
 REGION 4

CANDIDATE'S NAME: _____

FACILITY: Arkansas Nuclear One-2

REACTOR TYPE: PWR-CE

DATE ADMINISTERED: 92/08/03

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	%
TOTALS	<u>99.00</u>	_____	_____
			FINAL GRADE

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

Candidate's Signature

QUESTION: 001 (1.00)

The exposure limit for a declared fertile female is 400 mrem per:

- a. quarter.
- b. rolling quarter.
- c. trimester.
- d. gestation period.

QUESTION: 002 (1.00)

Which one of the following is the required combination of persons to approve an Emergency Containment Building entry for a cavity inspection at full power?

- a. Shift Superintendent, Unit 2 and Plant Manager, Central
- b. Plant Manager, Unit 2 and Operations Manager, Unit 2
- c. Operations Manager, Unit 2 and Superintendent, HP Operations
- d. Superintendent, HP Operations and Plant Manager, Unit 2

QUESTION: 003 (1.00)

The plant is operating at 100% power. At 1945 an RCS leak of 0.8 gpm is detected. An emergency power entry is authorized at 2145 to locate the source of the leakage. At 2300 a through wall pinhole leak is located on the casing of RCP 2P32B.

Which one of the following actions is required?

- a. No action is required unless leakage increases to 1.0 gpm.
- b. Immediately trip the reactor.
- c. Declare a NUC per OP1903.010.
- d. Declare an ALERT per OP1903.010.

QUESTION: 004 (1.00)

RCS degasification is in progress prior to cooldown. Which one of the following conditions MUST be maintained through the grab sampling process that replaces the H₂/O₂ continuous sampler?

- a. O₂ less than 4%.
- b. H₂ less than 4%.
- c. O₂ AND H₂ less than 4%.
- d. O₂ OR H₂ less than 4%.

QUESTION: 005 (1.00)

Select the shift standing periodicity required of a licensed operator to maintain his/her license in an "active" status per the regulations of 10 CFR 55 "Operators' Licenses."

- a. Seven 8 hour shifts or five 12 hour shifts per calendar month.
- b. Seven 8 hour shifts or five 12 hour shifts per calendar quarter.
- c. Five 8 hour shifts or four 12 hour shifts per calendar month.
- d. Five 8 hour shifts or four 12 hour shifts per calendar quarter.

QUESTION: 006 (1.00)

Which one of the individuals below is NOT permitted to operate reactor controls under the instruction or supervision of a licensed operator?

- a. Waste Control operator enrolled in a current license training course to obtain an operator license.
- b. Individual enrolled in a current license training course to obtain an instructor certification.
- c. A licensed reactor operator whose license has become inactive per the requirements of 10CFR55.
- d. A licensed reactor operator who recently failed an NRC administered Senior Reactor Operator upgrade examination.

QUESTION: 007 (1.00)

In accordance with 1015.01, "Conduct of Operation," for scheduled overtime, an individual should not be permitted to work more than 16 hours straight, excluding shift turnover time. Also, an individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than ____ (1) ____ hours in any 48 hour period, nor more than ____ (2) ____ hours in any seven day period, excluding shift turnover time. Which one of the following options correctly completes the sentences?

- a. (1) 24, (2) 66.
- b. (1) 24, (2) 72.
- c. (1) 32, (2) 66.
- d. (1) 32, (2) 72.

QUESTION: 008 (1.00)

Which one of the following correctly explains the process of checking a locked valve in the CLOSED position?

- a. Attempt to move the operator in the closed direction
- b. Attempt to move the operator in the closed direction, if no motion, attempt to crack it open
- c. Attempt to move the operator in the open direction and if some motion, close until tight
- d. Remove the locking device and then attempt to move the operator in the open direction until motion occurs, then close it

QUESTION: 009 (1.00)

Which one of the following TEMPORARY conditions requires administrative controls in accordance with 1000.028, "Temporary Modification Control"?

- a. Removal for repair of a failed circuit card from a Seismic Class I cabinet
- b. Changing the setpoint of the MAIN FW PUMP TURB THRUST BRG WEAR HI annunciator
- c. Installation of electrical jumpers to an approved Maintenance Procedure
- d. Hoses or tubing attached to system drains to facilitate draining

QUESTION: 010 (1.00)

Which one of the following is the approved breathing apparatus for use in areas suspected to be oxygen deficient?

- a. Self contained breathing apparatus
- b. Air-line respirator with full face piece
- c. Air-line respirator hood
- d. Air purifying respirator with full face piece

QUESTION: 011 (1.00)

Which one of the following events requires notification to the NRC within ONE hour of the declaration of the Emergency Classification?

- a. Exposure of 150 REM to the hands and forearms of a Radiation Technician while handling Special Nuclear Material
- b. The reactor failed to trip when TWO RC pressure instruments exceeded their reactor trip setpoint
- c. An unplanned reactor trip occurs from 100% power, due to failure of a Main Feed pump
- d. It was determined that BOTH trains of HPSI had been inoperable for two hours due to a Waste Control Operator inadvertently isolating BOTH trains while hanging HOLD cards

QUESTION: 012 (1.00)

In which one of the following auxiliary system tanks would nitrogen NOT be used to lower a HIGH hydrogen concentration?

- a. Waste Gas Surge Tank (2T-17).
- b. Spent Resin Tank (2T-13).
- c. Quench Tank (2T-42).
- d. Waste Gas Decay Tanks (2T-18A, B, C).

QUESTION: 013 (1.00)

An unrestricted entry is permitted into which one of the confined space atmospheres indicated below?

	O2 CONCENTRATION	COMBUSTIBLE GAS CONC.
a.	20%	25% LEL
b.	19%	3% LEL
c.	22%	3% LEL
d.	25%	30% LEL

QUESTION: 014 (1.00)

While the unit is at 100% power, mechanical maintenance has requested that LPSI pump 2P60A be hold carded to allow for oil sampling. What is the MINIMUM level of authority that may issue the hold card?

- a. Control room supervisor
- b. Shift supervisor
- c. Unit 2 manager, operations
- d. Unit 2 plant manager

QUESTION: 015 (1.00)

Which one of the following Technical Specification terms describes the process of making a qualitative assessment of an instrument channel's behavior during operation by visually comparing the indications to independent instrument channels measuring the same parameter?

- a. Channel verification
- b. Channel functional test
- c. Channel check
- d. Channel calibration

QUESTION: 016 (1.00)

Which one of the following ESFAS parameters CANNOT be bypassed to permit plant shutdown and cooldown?

- a. Steam Generator Low Pressure
- b. Pressurizer Low Pressure
- c. RWT Low Level
- d. Steam Generator High/Low Level

QUESTION: 017 (1.00)

With both feedwater pumps and three condenser pumps in operation, which one of the following conditions will automatically start the fourth condensate pump.

- a. Main feed pump suction pressure low
- b. Condenser hotwell level high
- c. Steam generator level low
- d. Condensate pump differential pressure high

QUESTION: 018 (1.00)

During a station blackout, re-energizing which one of the following electrical buses would most readily permit restoring power to the motor driven EFW pump?

- a. 2A1
- b. 2A2
- c. 2H1
- d. 2H2

QUESTION: 019 (1.00)

Which one of the following is the typical indication of loss of DC control power to a remotely operated valve or breaker?

- a. Position indicating lights go out.
- b. Position indicating lights go dim.
- c. An amber fault light comes on.
- d. A red DC LED goes out.

QUESTION: 020 (1.00)

The RCS "B" hot leg safety channel RTD (2TE-4710-4) provides a signal to which one of the following?

- a. CAPS computer
- b. LTOP annunciator
- c. Reactor Regulating system
- d. Trend recorder 2C-14

QUESTION: 021 (1.00)

Which one of the following is the principal benefit from operating with a reduced T-hot on unit 2? (The subject of tests conducted within the past month - 7/92.)

- a. Decrease chloride stress corrosion in the SG tubes.
- b. Decrease fuel pellet swell and pin cracking.
- c. Decrease thermal stress on SG hot leg inlet nozzle.
- d. Decrease peak containment pressure following a LOCA.

QUESTION: 022 (1.00)

Which one of the following mediums is used to control the closing speed of the MSIVs?

- a. hydraulic
- b. pneumatic
- c. mechanical friction
- d. spring force

QUESTION: 023 (1.00)

Which one of the following protective/safe-guard features was recently (6/92) determined to have been installed such that it would not actuate if protection setpoints were exceeded in an ATWS condition?

- a. DSS
- b. DEFAS
- c. MSIS
- d. SIAS

QUESTION: 024 (1.00)

To prevent degradation of insulation on ESFAS equipment, limits are placed on bus:

- a. voltage.
- b. current.
- c. frequency.
- d. inductive load.

QUESTION: 025 (1.00)

Which one of the following is the basis for the EDG load limits?

- a. Piston pin bushing elongation
- b. Generator winding insulation embrittlement
- c. Fuel oil pump capacity
- d. Output breaker current rating

QUESTION: 026 (1.00)

Which one of the following is the power supply for the EDG voltage control motor operated potentiometer?

- a. 125 V station DC
- b. 125 V rectified DC from EDG output
- c. 120 V vital instrument AC
- d. 120 V step-down AC from EDG output

QUESTION: 027 (1.00)

The N-16 decay tank is designed to prevent:

- a. erroneous RCS coolant activity indications.
- b. erroneous S/G blowdown radiation indications.
- c. unnecessary personnel exposure at the RCS sample station.
- d. unnecessary personnel exposure at the S/G sample station.

QUESTION: 028 (1.00)

Which one of the following SW/A.W valves automatically OPENS on SIAS?

- a. ACW supply
- b. CCW supply
- c. ACW return
- d. ECP return

QUESTION: 029 (1.00)

While placing the second main feedwater pump in service during a power increase from 50% to 100%, annunciator 2K11-D6, INSTRUMENT AIR HEADER PRESSURE HIGH LOW, actuates. Air header pressure is 80 psig and decreasing slowly. Investigation discloses that one compressor is running unloaded, the other is in AUTO but not running, and receiver pressure is 98 psig. As header pressure continues to slowly decrease through 75 psig, which one of the following is the correct response?

- a. Stop the power increase and trip the second main feedwater pump.
- b. Open the air dryer bypass and place the standby instrument air filter in service.
- c. Trip the reactor and perform standard post trip actions.
- d. Align breathing air system to the instrument air crossconnect and ensure one compressor is operating.

QUESTION: 030 (1.00)

The plant is in mode 5 preparing to replace a RCP seal with the following conditions:

LPSI pump 2P60A	Running on SDC
LPSI pump 2P60B	Tagged for motor repair
CS pump 2P35B	Aligned for standby SDC
RCS pressure	90 psia
SDC suction temp	180 deg.F
DZR level	24% (decreasing slowly)

LPSI pump 2P60A trips and cannot be restarted. Which one of the following actions is most appropriate for the control room operators to take?

- Allow the plant to heat up and use the S/Gs and EFW system for decay heat removal.
- If temperature reaches 200 deg.F, place CS pump 2P35A in service as the SDC backup.
- Depressurize to less than 75 psia and place CS pump 2P35A in service as the SDC backup.
- Use EFW pump 2P7B to feed S/Gs and S/G blowdown system to flume for heat removal.

QUESTION: 031 (1.00)

Fifteen minutes after a complete loss of feedwater event the following conditions exist:

RCS press	2265 psia (increasing)
RCS T-hot	548 deg.F (increasing)
RCS T-cold	546 deg.F (increasing)
PZR level	50% (increasing)
S/G "A" press	1030 psia (increasing)
S/G "B" press	1025 psia (increasing)
S/G "A" level	35%
S/G "B" level	38%

EFW pump 2P7B is then placed in service.

Which one of the following is the reason that the feed rate must be limited to not more than 150 gpm initially?

- To limit the possibility of feed ring damage when S/G level is below the feed ring.
- To limit the RCS cooldown resulting from restoration of feedwater from the CST.
- To minimize the thermal shock to the S/G tubes when feedwater is restored.
- To minimize the temperature differential across the tube bundle wrapper sheet.

QUESTION: 032 (1.00)

While performing the actions of the Reactor Trip Recovery Procedure, RCS T-ave is observed to be 538 deg.F and slowly decreasing. Which one of the following is the likely cause of the cooldown?

- Excessive RCS makeup due to three charging pumps running with PZR level at setpoint.
- Excessive S/G feed due to FWCS operating in RTO and EFW auto actuated.
- Excessive PZR spray flow due to spray valve partially stuck open.
- Excessive RCS letdown due to PZR level being too high.

QUESTION: 033 (1.00)

The following conditions exist after a reactor trip:

RCS press	-----	1825 psia (decreasing)
RCS T-hot	-----	504 deg.F (decreasing)
RCS T-cold	-----	496 deg.F (decreasing)
PZR level	-----	20% (decreasing)
S/G "A" press	-----	740 psia (decreasing slowly)
S/G "B" press	-----	400 psia (decreasing rapidly)
S/G "A" level	-----	21% (increasing slowly)
S/G "B" level	-----	11% (decreasing rapidly)

Which one of the following is the correct diagnosis of the event?

- a. Loss of Coolant Accident
- b. Loss of Feedwater
- c. Steam Generator Tube Rupture
- d. Excess Steam Demand

QUESTION: 034 (1.00)

The plant was shutdown 144 hours ago and is in mode 5 when a loss of shutdown cooling requires the initiation of HPSI feed and bleed. Which of the following is the minimum HPSI flow rate required to ensure adequate decay heat removal?

- a. 175 gpm
- b. 100 gpm
- c. 75 gpm
- d. 50 gpm

QUESTION: 035 (1.00)

The plant is operating at 100% power with a containment building depressurization in progress. If containment atmosphere monitor (2RE-8231-1) indicates a high radiation alarm, how will the release to the atmosphere be stopped?

- a. The containment purge supply and exhaust fans will stop, terminating the release.
- b. The containment purge isolation valves will automatically close on a signal from 2RE-8231-1.
- c. The release is terminated by automatic closing of the H2 purge valves.
- d. The release is terminated by manually closing the purge isolation valves.

QUESTION: 036 (1.00)

The following data was recorded during RCS heatup.

TIME	RCS deg.F	PZR psia
0900	200	298
0915	224	298
0930	249	330
0945	273	400
1000	298	460
1015	327	500
1030	348	540
1045	371	580
1100	392	600

Which one of the following is the reason that the heatup was improperly performed?

- a. RCS heatup rate exceeded 100 deg.F in one hour.
- b. PZR heatup rate exceeded 200 deg.F in one hour.
- c. Margin to saturation exceeded 200 deg.F.
- d. Margin to saturation decreased below 30 deg.F.

QUESTION: 037 (1.00)

A loss of offsite power occurs after a 300 day run at full power resulting in the following post-trip conditions:

RCS press	1750 psia
RCS T-hot	567 deg.F
RCS T-cold	540 deg.F
CET temp	569 deg.F
Upper head temp	609 deg.F
PZR level	45% (steady)
S/G "A" press	965 psia
S/G "B" press	965 psia
S/G "A" level	29% (steady)
S/G "B" level	20% (decreasing slowly)

Which one of the following is correct regarding core cooling and vessel voiding respectively?

- a. adequate, exists
- b. inadequate, exists
- c. adequate, does not exist
- d. inadequate, does not exist

QUESTION: 038 (1.00)

Pressure control channel 2PIC-4626A fails low while the plant is at 75% power with pressure channel 2PIC-4626B controlling in auto. Which one of the following is necessary to minimize the consequences of the instrument failure?

- a. Place all PZR heater handswitches to OFF.
- b. Reset the SDBCS by pressing the Emergency Off/Condenser interlock reset pushbutton.
- c. Place the SDBCS master controller in AUTO LOCAL and adjust the setpoint.
- d. Reset PZR heaters by taking the handswitches to OFF and back to AUTO.

QUESTION: 039 (1.00)

The following conditions exist during plant cooldown:

RCS T-cold	-----	350 deg.F
RCS press	-----	400 psia
PZR level	-----	50%
RCPs running	-----	2P32A & 2P32C

What equipment and method is currently being used for overpressure protection?

- PZR safety valves, to relieve 110% of full load heat production.
- PZR safety valves, to relieve full flow from one SI pump.
- LTOP relief valves, to relieve 110% of full load heat production.
- LTOP relief valves, to relieve full flow from one SI pump.

QUESTION: 040 (1.00)

A reactor coolant pump was started twice from ambient temperature to vent the RCS. It ran for a total of 40 minutes and has subsequently been at rest for 2 hours. At the earliest, the pump may be started after another:

- 20 minutes.
- 40 minutes.
- 60 minutes.
- 80 minutes.

QUESTION: 041 (1.00)

The following annunciator alarms occur while the plant is operating at 100% power:

GEN H2 AND STATOR CLG TROUBLE (2K02-A4)
INLET FLOW LOW (2KC-140-3)
INLET PRESSURE LOW (2KC-140-4)

What action is required?

- a. Manually reduce turbine load to <27%.
- b. Manually reduce turbine load to <80%.
- c. If inlet flow or pressure continue to decrease, verify an automatic turbine trip initiates.
- d. If inlet flow or pressure continue to decrease, verify an automatic turbine runback initiates.

QUESTION: 042 (1.00)

Which one of the following parameters, if recorded LOWER than actual, would cause indicated power to read higher than actual if the NIs are being calibrated using a secondary calorimetric with COLSS out of service?

- a. Feedwater flow delta P
- b. Steam pressure
- c. Feedwater temperature
- d. RCS T-hot

QUESTION: 043 (1.00)

The following conditions exist 5 minutes after a reactor trip:

RCS pressure	2060 psia (increasing slowly)
RCS T-hot	541 deg.F
RCS T-cold	540 deg.F
PZR level	18% (increasing slowly)
S/G "A" press	963 psia (decreasing slowly)
S/G "B" press	965 psia (decreasing slowly)
S/G "A" level	15% (increasing slowly)
S/G "B" level	18% (increasing slowly)
EFW pumps running	2P7A & B
RTO	Active

If the above trends continue, which one of the following actions should be taken?

- Increase EFW flow to both S/Gs.
- Close MSIVs and S/G blowdown isolation valves.
- Stop one RCP in each RCS loop.
- Stop two charging pumps.

QUESTION: 044 (1.00)

With EFW pump 2P7A and AFW pump 2P75 both inoperable and the plant at full power, both MFW pumps trip and annunciator alarm 2A3 LO RELAY TRIP actuates. With S/G levels continuing to decrease, which one of the following actions should be taken FIRST?

- Reduce S/G pressure to less than condensate pump discharge pressure.
- Initiate HPSI system feed and bleed cooling.
- Secure all RCPs.
- Crossconnect buses 2A3 and 2A4.

QUESTION: 045 (1.00)

The plant tripped from 100% power due to a S/G tube rupture. The following plant conditions exist:

RCS T-hot ----- 490 deg.F
RCS press ----- 1380 psia (stable)
RCPS ----- 2P32A & C running
Ruptured S/G ----- isolated
Ruptured S/G press --- 700 psia (stable)
Ruptured S/G level --- 80% (increasing slowly)

RCS pressure should be reduced to:

- a. 700 psia
- b. 800 psia
- c. 900 psia
- d. 1000 psia

QUESTION: 046 (1.00)

When used in the EOPs, floating steps should be monitored continuously and only performed:

- a. at the discretion of the CRS.
- b. when the instruction step cannot be completed.
- c. after having been presented in the EOP.
- d. when their specific conditions arise.

QUESTION: 047 (1.00)

While operating at 100% the following conditions/indications occur:

REGEN HEAT EXCHANGER TO LETDOWN HEAT EXCHANGER DISCH TEMP HIGH alarms
CHARGING FLOW LOW alarm

PZR level ----- trending down for last 30 min
VCT level ----- trending down for last 30 min
Letdown flow ----- minimum
Regen HX dischg temp ----- 465 deg.F
Charging pumps ----- all available running

Which one of the following actions are required to be taken?

- a. Stop charging pumps and close letdown isolation and VCT outlet valves.
- b. Close letdown isolation valve and makeup to the VCT.
- c. Close the charging header isolation valve and maintain minimum letdown flow.
- d. Stop charging pumps and close charging header isolation and VCT outlet valves.

QUESTION: 048 (1.00)

While at 100% power, the following conditions are observed for a RCP:

Controlled bleedoff ----- < 0.5 gpm
Controlled bleedoff temp ----- 150 deg.F
Vapor seal press ----- 1600 psia
One seal stage has 0 dP.

Which one of the following actions should be taken?

- a. Start a controlled plant shutdown.
- b. Manually initiate safety injection.
- c. Trip the reactor, then trip the RCP.
- d. Trip the RCP, then trip the reactor.

QUESTION: 049 (1.00)

While operating at power, significant current oscillations (100 amps) are observed on 480V ESF bus 2B5. Annunciator CHARGING PUMP HEADER FLOW LOW actuates and shortly thereafter, charging pump 2P36A trips on overcurrent. Which one of the following actions should be taken?

- a. Restart charging pump 2P36A after resetting the overcurrent trip.
- b. Start an alternate charging pump after verifying its suction and discharge paths.
- c. Secure letdown and initiate an investigation for the loss of charging pump 2P36A.
- d. Secure letdown, start an alternate charging pump, then restore letdown.

QUESTION: 050 (1.00)

While operating at 80% power with Reactor Regulating System loop selector switch in BOTH, the RCS loop 1 T-hot indicator (2TI-4614) drifts to 625 deg.F over a 2 minute period. What action is required?

- a. Place selector switch to opposite RRS.
- b. Place charging pump controls to automatic.
- c. Place pressurizer level controller to manual.
- d. Place letdown flow controller to manual.

QUESTION: 051 (1.00)

A control room evacuation has been ordered as a result of a fire in the control room printer room. In addition to ensuring that the reactor and turbine are tripped, which one of the following conditions should also be established prior to leaving the control room?

- a. RCPs running and EFW in service
- b. RCPs secured and EFW in service
- c. RCPs running and MFW in service
- d. RCPs secured and MFW in service

QUESTION: 052 (1.00)

Following a loss of offsite power, the ESF buses are being powered by the DGs, instrument air pressure is 18 psig and decreasing, and RCS CETs indicate 550 deg.F and slowly increasing. Which one of the following methods should be used to restore and control CET temperatures to the normal Hot Standby band?

- a. Modulate open "A" and "B" S/G upstream AD valves.
- b. Modulate closed "A" and "B" S/G upstream AD valves.
- c. Modulate open "A" and "B" S/G upstream AD isolation valves.
- d. Modulate closed "A" and "B" S/G upstream AD isolation valves.

QUESTION: 053 (1.00)

While operating at 100% power, ALL pressurizer level indication is lost and cannot be restored. Which one of the following actions should be taken to minimize the consequences of this event?

- a. Reduce turbine load slowly and match letdown flow with charging and controlled bleedoff flows.
- b. Reduce turbine load slowly and add 3000 gallons of makeup to the RCS to maintain pressurizer level.
- c. Trip the reactor and add 3000 gallons of makeup to the RCS to maintain pressurizer level.
- d. Trip the reactor and match letdown flow with charging and controlled bleedoff flows.

QUESTION: 054 (1.00)

The following conditions exist after a reactor trip:

RCS press	-----	1650 psia (decreasing slowly)
RCS T-hot	-----	559 deg.F (decreasing slowly)
RCS T-cold	-----	558 deg.F (decreasing slowly)
PZR level	-----	10% (decreasing slowly)
Containment press	-----	20.3 psia (increasing slowly)
Containment Rad Mon	-----	Trending up
SIAS, CCAS, CIAS	-----	Actuated
RCP status	-----	Two running

Which one of the following actions should be taken regarding the RCPs?

- a. Stop all RCPs due to LOCA condition.
- b. Stop all RCPs due to containment spray actuation.
- c. Leave the RCPs running and restore CCW flow.
- d. Leave the RCPs running and restore controlled bleedoff.

QUESTION: 055 (1.00)

The following conditions exist after a reactor trip from 100% power:

RCS press	-----	1800 psia (decreasing)
RCS T-cold	-----	425 deg.F (decreasing)
PZR level	-----	20% (decreasing)
CEAs	-----	All fully inserted
Containment press	-----	15 psia (steady)
Containment temp	-----	115 deg.F
Containment Rad Mon	-----	No alarms
S/G press's	-----	725 psia (decreasing)
MS Rad Mon	-----	No alarms

Which one of the following procedures should be implemented for the above conditions?

- a. Reactor Trip Recovery (OP2202.002)
- b. Excess Steam Demand (OP2202.005)
- c. Loss of Coolant Accident (OP2202.003)
- d. RCS Overcooling (OP2202.013)

QUESTION: 056 (1.00)

Which one of the following indications is required to be used with RCS pressure to ensure operation within P-T curve limits following an uncomplicated trip?

- a. RCS T-cold
- b. RCS T-hot
- c. RCS T-ave
- d. CET T-ave

QUESTION: 057 (1.00)

Which one of the following is an ECCS subsystem that is required to be operable in modes 1, 2, and 3?

- a. One CCP
- b. One Spray pump
- c. One NaOH pump
- d. One suction path from containment sump

QUESTION: 058 (1.00)

Which one of the following is the basis for the Technical Specification limits on the combination of containment internal pressure, average air temperature and relative humidity?

- a. Will not exceed 5 psig vacuum
- b. Will not exceed 54 psia on a LOCA
- c. To allow personnel access at power
- d. To minimize RCP motor overheating

QUESTION: 059 (1.00)

Which one of the following is the basis for two independent containment recirculation fans operable in modes 1 and 2?

- a. Keep the dome cooled
- b. Keep the reactor cavity cooled
- c. Keep H₂ concentration below flammable limits
- d. Keep adequate mixing to allow for personnel entries

QUESTION: 060 (1.00)

A boric acid solution has been injected into the VCT. Approximately how long is required before the concentration in the VCT is the same as the concentration in the RCS?

- a. 20 minutes
- b. 40 minutes
- c. 60 minutes
- d. 80 minutes

QUESTION: 061 (1.00)

What is the primary design purpose of the containment spray NaOH subsystem following a LOCA?

- a. Remove Iodine from the atmosphere
- b. Inhibit Hydrogen flammability
- c. Neutralize Boric acid in reactor coolant
- d. Increase heat capacity of spray water

QUESTION: 062 (2.00)

Match the items in column A with the appropriate input signals in column B. Items in column B may be used more than once or not at all.

- | Column A | Column B |
|-------------------------------|--------------------------|
| a. Low press trip (1766 psia) | 1. Narrow range press |
| b. Open SIT outlet valves | 2. Control channel press |
| c. Isolate shutdown cooling | 3. Wide range press |
| d. DNBR calculator | 4. Low range press |

QUESTION: 063 (1.00)

The basis for the turbine overspeed protection is to minimize the possibility of:

- a. overcooling the RCS.
- b. an overpower event.
- c. damage to safety related equipment.
- d. personnel injury.

QUESTION: 064 (1.00)

For which one of the following will a reactor trip occur?

- a. Loss of power to 2RS-1 panel
- b. Hi linear power trip on channel A and low DNBR trip on channel D
- c. MG set B in service and MG set A trips with sync breaker open
- d. Hi LPD trip on channel B and CPC channel C fails.

QUESTION: 065 (1.00)

Which one of the following is the input signals to the SDBCS quick open logic?

- a. Main steam flow and main steam press
- b. Master controller status and pressurizer press
- c. Master controller status and main steam press
- d. Main steam flow and pressurizer press

QUESTION: 066 (1.00)

Which one of the following is the reason for the requirement to open the ACTM breaker within 30 seconds of manual transfer to the UG after a CEDMCS timer failure?

- a. High voltage may burn up the upper gripper.
- b. Low voltage to the upper gripper will not hold the CEA.
- c. High voltage may burn up the lower gripper.
- d. The CEA may transfer back to the lower gripper.

QUESTION: 067 (1.00)

Which one of the following is correct concerning the 1 E-4 bistable?

- a. Light indication only
- b. Automatically bypasses high log power trip
- c. Automatically enables high log power trip
- d. Swaps start-up channel detector power

QUESTION: 068 (1.00)

Which one of the following is NOT the result of a FWCS RTO signal?

- a. The selected MFP is tripped.
- b. The FW reg valve receives a close signal.
- c. The FW reg bypass valve receives a 5% flow demand signal.
- d. FW pump speed is reduced to the auto low speed stop.

QUESTION: 069 (1.00)

An "Intact Steam Generator" in the EOP context is the one that has:

- a. indicated level between 10 and 90%.
- b. the smaller SG tube leak.
- c. a SG tube leak below Tech Spec limits.
- d. no unisolable leaks other than main steam.

QUESTION: 070 (1.00)

Plant conditions following a reactor trip due to a loss of offsite power are:

1. PZR level - 18% and stable
2. PZR press - 2000 psia and stable
3. Average CET temp - 620 deg.F and stable
4. RVLMS sensor 2 (LVL 01) indicates wet

RCS inventory is:

- a. being maintained because RVLMS indicates the reactor vessel is full.
- b. being maintained because PZR press is stable.
- c. NOT being maintained because RCS MTS is less than 30 deg.F.
- d. NOT being maintained because PZR level is too low.

QUESTION: 071 (1.00)

Which one of the following criteria is required to be met to permit terminating/throttling HPSI flow?

- a. Loop ΔT less than 50 deg.F and at least one SG available for RCS heat removal.
- b. RVLMS sensor 2 (LVL 01) indicates wet and T-hot and T-cold constant or decreasing.
- c. Each HPSI pump flow greater than 50 gpm and electrical power to at least one 6900v bus.
- d. RVLMS sensor four (LVL 03) or higher indicates wet and at least one SG available for heat removal.

QUESTION: 072 (1.00)

Which one of the following must be verified if single-phase natural circulation ca. \dot{m} be maintained after a LOCA?

- a. RCS press within P-T Limits of Attachment 1 and PZR level 29-70%
- b. T-hot and T-cold constant or decreasing and ΔT (T-hot - avg CET) less than 10 deg.F
- c. Avg CETs below superheat and cooldown with SDECS
- d. HPSI flow >240 gpm per header and T-cold being controlled

QUESTION: 073 (1.00)

Which one of the following parameters is used in the maximum LPD calculation?

- a. Highest of neutron flux or thermal power
- b. RCP speed and number of RCPs running
- c. Maximum T-hot including uncertainty
- d. Static intermediate variables for LPD update

QUESTION: 074 (2.00)

Match the component in column A with its cooling system in column B. Items in column B may be used more than once or not at all.

Column A	Column B
a. Containment emergency cooling	1. CCW
b. Instrument air compressors	2. ACW
c. Turbine gland steam condenser	3. Circ Water
d. PZR water space sample cooler	4. Service Water

QUESTION: 075 (1.00)

Smoke in the unit 2 control room exhaust will:

- start 2VSF9.
- isolate the control rooms.
- stop 2VSF8A/B.
- shift to the "Exhaust" mode.

QUESTION: 076 (1.00)

Which one of the following output signals is generated by the Reactor Regulating System (RRS)?

- Continuous withdrawal prohibit
- Quick open block signal
- PZR water level setpoint signal
- Low Tave-Tref signal to SDBCS

QUESTION: 077 (1.00)

With an EFAS present, which one of the following signals will cause the EFW pump suction to shift to service water?

- a. EFW pump suction pressure low
- b. Condensate storage tank level low
- c. EFW pump flow low
- d. Loss of offsite power

QUESTION: 078 (1.00)

Secondary Plant oxygen is controlled by adding which one of the following?

- a. NH_4OH (ammonia)
- b. NaOH (sodium hydroxide)
- c. HNO_2 (nitrous acid)
- d. N_2H_4 (hydrazine)

QUESTION: 079 (1.00)

Following the determination that a CEA in shutdown bank "A" is misaligned by 4" and mechanically bound, shutdown margin is calculated to be 5.1%. Which one of the following actions should be taken?

- a. Continue plant operation without restriction.
- b. Reduce power to less than or equal to 81%.
- c. Start a plant shutdown and be in Mode 3 within 6 hours.
- d. Trip the reactor and initiate emergency boration.

QUESTION: 080 (1.00)

The limitations on secondary system specific activity ensure that the resultant off-site dose will be acceptable. This dose projection includes a ___ gpm primary to secondary leak on the affected S/G with a concurrent ___.

- a. 0.5, 1 microcurie primary activity
- b. 1.0, loss of offsite power
- c. 0.5, loss of offsite power
- d. 1.0, 1 microcurie primary activity

QUESTION: 081 (1.00)

Which one of the following choices best completes the statement concerning the bases for Technical Specification requirements for liquid waste.

The radioactive material content of an unprotected outside temporary radioactive liquid storage tank is limited to ___ curie(s). This ensures that an uncontrolled release would result in concentrations less than the limits of ___ in the nearest surface water supply in a(n) ___ area.

- a. 10, Technical Specification 11.1.4, monitored
- b. 1, 10 CFR 20, controlled
- c. 10, 10 CFR 20, unrestricted
- d. 1, Technical Specification 11.1.4, free release

QUESTION: 082 (1.00)

If a REMOTE shutdown must be performed on Unit 2, which one of the following actions will NOT be performed prior to evacuating the control room?

- a. Establish Emergency Boration
- b. Verify EFAS actuation
- c. Energize 4160 V Vital Buses from EDGs
- d. Verify MFW pumps tripped

QUESTION: 083 (1.00)

While at 100% power, "Plant Process Gas Radiation High/Low" (2K11-C10) alarms and Control Room Vent Monitor (2RE-8750-1) is in high alarm. Which one of the following actions is required to ensure adequate control room environment while the rad monitor is in alarm? (Assume all systems operate automatically.)

- a. Start a control room emergency fan/filter unit.
- b. Start control room emergency fan 2VSF-9.
- c. Restart normal control room fans and reopen dampers.
- d. Align control room exhaust/recirc fans to exhaust.

QUESTION: 084 (1.00)

Which one of the following concerning the CEDMCS is correct?

- a. A single control rod may be placed on the cabinet hold bus.
- b. A "Maintenance Error" alarm is caused by improper voltage on the hold bus.
- c. The hold bus places holding voltage on the upper gripper of the affected CEA's.
- d. The CEDMCS Power Cabinet auxiliary undervoltage relays output to the Rod Motion Inhibit circuitry.

QUESTION: 085 (1.00)

Which one of the following CVCS conditions/malfunctions will have the largest absolute impact on Shutdown Margin if each persists for the same length of time? Assume the plant is at full power EOL conditions and all system parameters are at their normal values.

- a. 2CV-4823-2 (RHX outlet) shuts
- b. SIAS
- c. VCT level <5%
- d. 2CV-4926 (BAM flow control) fails shut during blended makeup to VCT

QUESTION: 086 (1.00)

Select the choice which clearly permits continued full power operation to continue for at least 24 hours without further operator action to comply with Technical Specifications. Assume that unstated parameters are at satisfactory levels.

- a. While being powered from bus 2B64, battery charger 2D34 is connected to bus 2D01 after battery charger 2D31 is declared inoperable.
- b. Battery charger 2D32 is inoperable and all cell voltages on battery 2D12 are 2.14 VDC except for one pilot cell which is 2.11 VDC.
- c. During weekly surveillance, total bank voltage for battery 2D11 is 123.5 VDC.
- d. Bus 2D02 voltage is 130 VDC with one cell of battery 2D12 jumpered out and the lowest cell voltage on the remaining cells is 2.10 VDC.

QUESTION: 087 (1.00)

Which one of the following indicates the radiation level at which the High Range containment radiation monitors require action to be taken in EOPs?

- a. 10 E-1 R/hr
- b. 10 E+0 R/hr
- c. 10 E+1 R/hr
- d. 10 E+2 R/hr

QUESTION: 088 (1.00)

Which one of the choices below best completes the following statement?

If all fuel oil storage facilities on site are filled to capacity, there is enough fuel oil capacity to allow a single EDG to run fully loaded for ___ days without bringing additional fuel oil on site. Assume that fuel oil facilities designated for Unit 1 are not available but Unit 2 system realignments may be performed as necessary.

- a. less than 3
- b. 3-5
- c. 6-8
- d. more than 9

QUESTION: 089 (1.00)

Following a large break LOCA, the following conditions exist:

RWT	-----	5.4% (decreasing)
All ESF pumps	-----	running
RCS press	-----	350 psia
RCS T-hot	-----	395 deg.F
PZR level	-----	off-scale low
HPSI flow	-----	throttled
RWT outlet vlvs	-----	open
ESF mini-recirc isol vlv	-----	open
All ESF pump recirc vlvs	-----	open
Containment press	-----	14.9 psia

Which one of the following actions is required?

- a. Manually override and secure LPSI pumps to ensure pumps are not operated with inadequate NPSH.
- b. Monitor Containment Building parameters and secure CS pumps when criteria are met.
- c. Restore full HPSI flow due to margin to saturation decreasing to less than 30 deg.F.
- d. Manually initiate RAS and verify component actuation per OP 2202.010 Standard Attachment 16.

QUESTION: 090 (1.00)

The RCS pressure control system (2PIC-4626A/4626B) provides signals for which one of the following groups of controls?

- a. back-up heaters and proportional heaters
- b. back-up heaters and SDC interlocks
- c. proportional heaters and low pressurizer pressure block interlock
- d. SDC interlocks and low pressurizer pressure block interlock.

QUESTION: 091 (1.00)

During plant heat-up, the plant startup procedure 2102.002 directs the operator to open the SIT outlet MOVs and install hold cards on the SIT outlet MOV breakers in the open position. This is done because SIT outlet:

- a. MOV motors are not environmentally qualified for a LOCA environment.
- b. MOV motor current would overload the diesel generator during a SIAS.
- c. MOVs do not meet single failure criteria for a passive system.
- d. MOVs are not powered from a 1E power supply.

QUESTION: 092 (1.00)

The reactor has tripped due to an inadvertent MSIV closure. Which CPC generated reactor protection trip was actuated to protect the reactor core?

- a. DNBR
- b. LPD
- c. ASGT
- d. less than 4 RCPs running

QUESTION: 093 (1.00)

To conduct a liquid radioactive waste release, the flow rate is set as determined by radiochemistry on the dump permit. This flow rate is based on:

- a. unit 2 circ water flow.
- b. gallons of liquid in tank to be released.
- c. unit 1 circ water flow.
- d. length of time tank was in short path recirc.

QUESTION: 094 (1.00)

When the "Alternate Source to Load" light is lit on inverter cabinet 2Y13, which one of the following should be declared inoperable?

- a. 2 ESFAS channel 2
- b. Vital AC bus 2RS3
- c. RPS channel A
- d. Diesel generator 2K4B

QUESTION: 095 (1.00)

When implementing Alternate Shutdown, instrumentation should be verified (where possible) against which one of the following prior to use?

- a. 8600 computer
- b. SPDS computer
- c. CAPS computer
- d. Remote shutdown panel

QUESTION: 096 (1.00)

Which one of the following containment spray system indications or parameters can be monitored on control room instrumentation? DO NOT consider annunciators/alarms.

- a. CS pump running current
- b. NaOH pump discharge pressure
- c. NaOH tank temperature
- d. SW D/P across a CS pump cooler

QUESTION: 097 (1.00)

Which one of the following systems DOES NOT require some amount of realignment when starting an EDG manually following a loss of 125 VDC power?

- a. 125 VDC control power
- b. EDG starting air
- c. Service water system
- d. EDG fuel oil system

QUESTION: 098 (1.00)

Prior to initiating withdrawal of fuel assemblies from the reactor vessel, at least _____ channel(s) of audible source range indication and _____ channel(s) of visual source range indication must be operable in the control room.

- a. 1, 1
- b. 1, 2
- c. 2, 1
- d. 2, 2

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

ANSWER: 001 (1.00)

B

REFERENCE:

ANO2 OP 1642.006
KA 194001K104 3.3/3.5

194001K104 ..(KA's)

ANSWER: 002 (1.00)

D

REFERENCE:

ANO2 OP 1622.007 ATT 3
KA 194001K105 3.1/3.4

194001K105 ..(KA's)

ANSWER: 003 (1.00)

C

REFERENCE:

ANO2 OP 1903.010, 2203.016
KA 194001A116

194001A116 ..(KA's)

ANSWER: 004 (1.00)

D

REFERENCE:

ANO? OP 2102.012, 2104.010 ATT B
KA 194001K101 3.4/3.8

194001K101 ..(KA's)

ANSWER: 005 (1.00)

b

REFERENCE:

10 CFR 55.53(e)

194001A103 ..(KA's)

ANSWER: 006 (1.00)

b

REFERENCE:

10CFR55.13[a][2]

194001A109 194001A103 ..(KA's)

ANSWER: 007 (1.00)

b.

REFERENCE:

ANO OP 1015.01
194001A103 (2.5/3.4)

194001A103 ..(KA's)

ANSWER: 008 (1.00)

a.

REFERENCE:

ANO 1015.01 p 54
194001K102 (3.7/4.1) 194001K101 (3.6/3.7)

194001K102 194001K101 ..(KA's)

ANSWER: 009 (1.00)

b.

REFERENCE:

ANO 1000.028 p.5
194001K102 (3.7/4.1)

194001K102 ..(KA's)

ANSWER: 010 (1.00)

a.

REFERENCE:

ANO 1000.32 p5
194001K113 (3.3/3.6)

194001K113 ..(KA's)

ANSWER: 011 (1.00)

b.

REFERENCE:

ANO 1903.10, p 45
ANO 1903.011 rev 3, p.18
194001A116 (3.1/4.4)

194001A116 .. (KA's)

ANSWER: 012 (1.00)

b.

REFERENCE:

ANO 2203.10, p.8
194001K115 (3.4/3.8)

194001K115 194001K116 .. (KA's)

ANSWER: 013 (1.00)

C

REFERENCE:

ANO OP 1053.005
KA 194001K114 3.3

194001K114 .. (KA's)

ANSWER: 014 (1.00)

A or C

REFERENCE:

ANO OP 1000.27 pg 9
KA 194001K102 3.7

194001K102 .. (KA's)

ANSWER: 015 (1.00)

C

REFERENCE:

ANO2 TS 1.1
KA 194001A113 4.3

194001A113 .. (KA's)

ANSWER: 016 (1.00)

A

REFERENCE:

ANO2 LP AA-52002-013 pg 6
KA 013000K412 3.7/3.9

013000K412 .. (KA's)

ANSWER: 017 (1.00)

A

REFERENCE:

ANO2 STM 2-19, LP 32002-021
KA 059000A303 2.5/2.6

059000A303 .. (KA's)

ANSWER: 018 (1.00)

A

REFERENCE:

ANO2 STM 2-32 FIG 32.10
KA 061000K202 3.7/3.7

061000K202 .. (KA's)

ANSWER: 019 (1.00)

A

REFERENCE:

ANO2 STM 2-32
KA 063000K302 3.5/3.7

063000K302 .. (KA's)

ANSWER: 020 (1.00)

A

REFERENCE:

ANO2 STM 2-03, LP AA-52002-001
KA 002020A301 4.4/4.6

002020A301 .. (KA's)

ANSWER: 021 (1.00)

A

REFERENCE:

ANO2 REDUCED T-HOT TEST PACKAGE BACKGROUND INFORMATION
KA 002000K520 2.3/2.7

002000K520 .. (KA's)

ANSWER: 022 (1.00)

A

REFERENCE.

ANO2 STM 2-15
KA 035010K601 3.2/3.6

035010K601 .. (KA's)

ANSWER: 023 (1.00)

B

REFERENCE:

ANO2 CONDITION REPORT CR-2-92-0140
KA 000029K206 2.9/3.1

000029K206 .. (KA's)

ANSWER: 024 (1.00)

A

REFERENCE:

ANO2 SOP 2107.001 pg 5
KA 062000A208 2.7/3.0

062000A208 .. (KA's)

ANSWER: 025 (1.00)

A

REFERENCE:

ANO2 STM 2-31, LP AA-52002-016
KA 064050A301 2.8/2.8
KA 064000G005 3.4/3.9

064000G005 064050A301 .. (KA's)

ANSWER: 026 (1.00)

A

REFERENCE:

ANO2 STM 2-31, LP AA-52002-016
KA 064000K203 3.2/3.6

064000K203 .. (KA's)

ANSWER: 027 (1.00)

A

REFERENCE:

ANO2 STM 2-62, LP AA-52002-018
KA 073000A101 3.2/3.5

073000A101 .. (KA's)

ANSWER: 028 (1.00)

D. ECP return - open

REFERENCE:

ANO 2 STM-2-42, LP AA-52002-027-4A
KA 076000K116 3.6/3.8
KA 076000K403 2.9/3.4
KA 076000A302 3.7/3.7

076000A302 076000K403 076000K116 .. (KA's)

ANSWER: 029 (1.00)

B

REFERENCE:

ANO2 OP 2203.021, 2104.024, 2203.012K
KA 078000A301 3.1/3.2
KA 000065G012 3.1/3.3

000065G012 078000A301 .. (KA's)

ANSWER: 030 (1.00)

C

REFERENCE:

ANO2 OP 2203.029, 2104.004, 1015.008
KA 005000K306 3.1/3.2
KA 005000A203 2.9/3.1
KA 000025G012 3.3/3.5

005000K306 000025G012 005000A203 .. (KA's)

ANSWER: 031 (1.00)

A

REFERENCE:

ANO2 OP 2202.006, CEN-152
KA 000054K304 4.4/4.6
KA 061000K302 4.2/4.4

061000K302 000054K304 .. (KA's)

ANSWER: 032 (1.00)

B

REFERENCE:

ANO2 OP 2202.002		
KA	059000G007	3.1/3.2
KA	059000K417	2.5/2.8
KA	059000A201	3.4/3.6

059000A201 059000K417 059000G007 .. (KA's)

ANSWER: 033 (1.00)

D

REFERENCE:

ANO2 OP 2202.001		
KA	000040A201	4.2/4.7

000040A201 .. (KA's)

ANSWER: 034 (1.00)

C

REFERENCE:

ANO2 OP 2203.029 ATTACH E GRAPH 2		
KA	005000G013	3.3/3.4
KA	005000K106	3.5/3.6

005000G013 005000K106 .. (KA's)

ANSWER: 035 (1.00)

D

REFERENCE:

ANO2 OP 2104.033
KA 029000K403 3.2/3.5

029000K403 .. (KA's)

ANSWER: 036 (1.00)

A

REFERENCE:

ANO2 OP 2102.002, TS 3.4.9
KA 002000G005 3.6/4.1

002000G005 .. (KA's)

ANSWER: 037 (1.00)

C

REFERENCE:

ANO2 OP 2202.007, 2202.010 ATT 1
KA 000074G012 4.3/4.4
KA 002000K514 3.7/4.2
KA 002000K512 3.7/3.9

002000K512 002000K514 000074G012 .. (KA's)

ANSWER: 038 (1.00)

C

REFERENCE:

ANO2	2203.028, 2203.012J	2K10-5	
KA	041000G015		3.2/3.3
KA	016000K103		3.2/3.2
KA	016000K303		3.0/3.1

016000K303 016000K103 041000G015 .. (KA's)

ANSWER: 039 (1.00)

A

REFERENCE:

ANO2	2102.010		
KA	002000G010		3.4/3.9
KA	002000K410		4.2/4.4

002000K410 002000G010 .. (KA's)

ANSWER: 040 (1.00)

D

REFERENCE:

ANO2	2103.006		
KA	003000G010		3.3/3.6
KA	003000K614		2.6/2.9

003000K614 003000G010 .. (KA's)

ANSWER: 041 (1.00)

D

REFERENCE:

ANO2 OP 2203.012B 2K02-B4, 2203.012Y 2K24-3 & 2K24-4
KA 045050K101 3.4/3.6
KA 045000K412 3.3/3.6

045000K412 045050K101 ..(KA's)

ANSWER: 042 (1.00)

C

REFERENCE:

ANO2 2105.013, 2103.016
KA 015000A101 3.5/3.8

015000A101 ..(KA's)

ANSWER: 043 (1.00)

B

REFERENCE:

ANO2 2202.001
KA 000040G012 3.8/4.1
KA 000040A201 4.2/4.7

000040G012 000040A201 ..(KA's)

ANSWER: 044 (1.00)

C

REFERENCE:

ANO2 OP 2202.006
KA 000054K304 4.4/4.6

000054K304 .. (KA's)

ANSWER: 045 (1.00)

C

REFERENCE:

ANO2 2202.004, 2202.010 ATT 1
KA 000038A215 4.2/4.0

000038A215 .. (KA's)

ANSWER: 046 (1.00)

D

REFERENCE:

ANO2 OP 2202.002, 1015.021
KA 000007G012 3.8/3.9

000007G012 .. (KA's)

ANSWER: 047 (1.00)

D

REFERENCE:

ANO2 2203.036, 2203.012L
KA 000022A201 3.2/3.8

000022A201 .. (KA's)

ANSWER: 048 (1.00)

C

REFERENCE:

ANO2 2203.025
KA 000015K303 3.7/4.0

000015K303 .. (KA's)

ANSWER: 049 (1.00)

B

REFERENCE:

ANO2 OP 2203.036, 2203.012L
KA 000022K302 3.5/3.8

000022K302 .. (KA's)

ANSWER: 050 (1.00)

D

REFERENCE:

ANO2 OP 2203.001
KA 000028A210 3.3/3.4

000028A210 .. (KA's)

ANSWER: 051 (1.00)

B

REFERENCE:

ANO2 OP 2203.030
KA 000068G010 4.1/4.2

000068G010 .. (KA's)

ANSWER: 052 (1.00)

C

REFERENCE:

ANO2 CP 2202.007
KA 000065K308 3.7/3.9

000065K308 .. (KA's)

ANSWER: 053 (1.00)

C

REFERENCE:

ANO2 OP 2203.028
KA 000028G012 3.1/3.2

000028G012 .. (KA's)

ANSWER: 054 (1.00)

C

REFERENCE:

ANO2 OP 2202.003, 2202.001
K. 000026K303 4.0/4.2

000026K303 .. (KA's)

ANSWER: 055 (1.00)

B

REFERENCE:

ANO2 OP 2202.001
KA 000040A203 4.6/4.7

000040A203 .. (KA's)

ANSWER: 056 (1.00)

B

REFERENCE:

ANO2 OP 2202.002, 2202.010 ATT 1
KA 000007K301 4.0/4.6

000007K301 .. (KA's)

ANSWER: 057 (1.00)

D

REFERENCE:

ANO2 TS 3.5.2
KA 006000G005 3.5/4.2

006000G005 .. (KA's)

ANSWER: 058 (1.00)

A

REFERENCE:

ANO2 TS 3.6.1.4
KA 022000G005 3.0/3.7

022000G005 .. (KA's)

ANSWER: 059 (1.00)

C

REFERENCE:

ANO2 TS 3.6.4.3
KA 022000G007 3.3/3.5

022000G007 .. (KA's)

ANSWER: 060 (1.00)

[DELETED]

REFERENCE:

ANO2 LP AA-42002-003
KA 004000A401 3.8/3.9

004000A401 .. (KA's)

ANSWER: 061 (1.00)

A

REFERENCE:

ANO2 SAR, EQB AA-42002-007-2A
KA 026000G007 3.5/3.7

026000G007 .. (KA's)

ANSWER: 062 (2.00)

- A. 3
- B. 4
- C. 4
- D. 1

REFERENCE:

ANO2 STM 2-03, LP AA-52002-001
KA 016000K107 3.7/3.7
KA 016000K403 2.8/2.9

016000403 016000K107 .. (KA's)

ANSWER: 063 (1.00)

C

REFERENCE:

ANO2 TS 3/4.3.4 BASES, LP AA-52002-001
KA 016000G006 2.5/3.4

016000G006 .. (KA's)

ANSWER: 064 (1.00)

D

REFERENCE:

ANO2 STM 2-63, LP AA-52002-006
KA 012000K101 3.4/3.7
KA 012000K401 3.7/4.0
KA 012000A305 3.6/3.7

012000A305 012000K401 012000K101 .. (KA's)

ANSWER: 065 (1.00)

D

REFERENCE:

ANO2 STM 2-23, LP AA-52002-011
KA 041020K603 2.7/2.9

041020K603 .. (KA's)

ANSWER: 066 (1.00)

D

REFERENCE:

ANO2 SOP 2105.09, LP AA-52002-012
KA 001000G008 3.6/3.6

001000G008 .. (KA's)

ANSWER: 067 (1.00)

C

REFERENCE:

ANO2 SOP 2105.015
KA 015000K604 3.1/3.2

015000K604 .. (KA's)

ANSWER: 068 (1.00)

A

REFERENCE:

ANO2 STM 2-69, LP AA-52002-015
KA 059000K402 3.3/3.5

059000K402 .. (KA's)

ANSWER: 069 (1.00)

B

REFERENCE:

ANO2 LP AA-52003-013, LO 3B, EOP USERS GUIDE 1015.021
KA 000038A201 4.1/4.7

000038A201 ..(KA's)

ANSWER: 070 (1.00)

C

REFERENCE:

ANO2 EOP 2202.007 pg 12 STEP 13, LO AA52003-011-004
KA 000056G012 3.4/3.6

000056G012 ..(KA's)

ANSWER: 071 (1.00)

D

REFERENCE:

ANO2 EOP 2202.003 STEP 24, LO AA52003-015-07
KA 000009A234 3.6/4.2

000009A234 ..(KA's)

ANSWER: 072 (1.00)

C

REFERENCE:

ANO2 EOP 2202.003 STEP 56, LO AA52003-015-014
KA 000011A201 4.2/4.7

000011A201 .. (KA's)

ANSWER: 073 (1.00)

A

REFERENCE:

ANO2 STM 2-65-1, LP AA-52002-024
KA 012000K502 3.1/3.2

012000K502 .. (KA's)

ANSWER: 074 (2.00)

A. 4
B. 1
C. 2
D. 1

REFERENCE:

ANO2 STM 2-40, 43, LP AA-52002-030
KA 008000K102 3.3/3.4
KA 076000K119 3.6/3.7

076000K119 008000K102 .. (KA's)

ANSWER: 075 (1.00)

D

REFERENCE:

ANO2 STM 2-47, LP AA-52002-032
KA 086000A303 2.9/3.3

086000A303 ..(KA's)

ANSWER: 076 (1.00)

C

REFERENCE:

ANO2 SOP 2105.004, LP AA-52002-034
KA 011000K105 3.4/3.5

011000K105 ..(KA's)

ANSWER: 077 (1.00)

A

REFERENCE:

ANO2 STM 2-19, LP AA-42002-021
KA 061000K401 3.9/4.2

061000K401 ..(KA's)

ANSWER: 078 (1.00)

D

REFERENCE:

ANO2 STM 2-20
KA 035010K502 2.9

035010K502 .. (KA's)

ANSWER: 079 (1.00)

D.

REFERENCE:

ANO2 OP 2203.003, 2202.001
KA 000005K301 4.0/4.3

000005K301 .. (KA's)

ANSWER: 080 (1.00)

B

REFERENCE:

ANO2 TS 3.7.1.4
KA 000037G004 2.5/3.9

000037G004 .. (KA's)

ANSWER: 081 (1.00)

C

REFERENCE:

ANO2 T.S. 11.1.4, BASES
KA 000059G004

000059G004 .. (KA's)

ANSWER: 082 (1.00)

C

REFERENC

ANO2 AOP 2203.030
KA 000068G010

000068G010 .. (KA's)

ANSWER: 083 (1.00)

A

REFERENCE:

ANO2 OP 2203.012K, 2104.007
KA 000061A101 3.6/3.6

000061A101 .. (KA's)

ANSWER: 084 (1.00)

C

REFERENCE:

ANO2 LP AA-52002-12
 KA 001000K105
 KA 001000A407
 KA 001000K401
 KA 001000K202
 KA 001000GC08

001000G008 001000K202 001000K401 001000A407 001000K105
 .. (KA's)

ANSWER: 085 (1.00)

B

REFERENCE:

ANO2 STM-2-4, SOP 2104.03
 KA 004000K519

004000K519 .. (KA's)

ANSWER: 086 (1.00)

D

REFERENCE:

ANO2 T.S. 3.8.2.1, 3.8.2.3, STM 2-32 pgs 37-40, 122, LP AA-520002-007,
 LO 7.5
 KA 063000G005

063000G005 .. (KA's)

ANSWER: 087 (1.00)

B

REFERENCE:

ANO2 STM 2-62, TABLE 62.2
KA 072000G008
KA 072000A101

072000A101 072000G008 .. (KA's)

ANSWER: 088 (1.00)

D

REFERENCE:

ANO2 STM 2-31 pgs 16, 17, 22, 42, LP AA-52002-016, LO 16.3C
KA 064000K103

064000K103 .. (KA's)

ANSWER: 089 (1.00)

D

REFERENCE:

ANO2 OP 2202.003
KA 000011A111 4.2/4.2

000011K314 .. (KA's)

ANSWER: 090 (1.00)

A

REFERENCE:

ANO2 STM 2-04
KA 010000K603 3.2

010000K603 .. (KA's)

ANSWER: 091 (1.00)

C

REFERENCE:

ANO2 LP AA-52002-004
KA 006000K410 3.6

006000K410 .. (KA's)

ANSWER: 092 (1.00)

C

REFERENCE:

ANO2 LP AA-52002-024, LO 24.2, I&C SYSTEM OP 2105.01
KA 012000A305 3.6

012000A305 .. (KA's)

ANSWER: 093 (1.00)

C

REFERENCE:

ANO2 STM 2-53
KA 000059A103 3.0

000059A103 .. (KA's)

ANSWER: 094 (1.00)

B

REFERENCE:

ANO2 SOP 2107.03 pg 24
KA 000057G008 3.2

000057G008 .. (KA's)

ANSWER: 095 (1.00)

B

REFERENCE:

ANO2 AOP 2203.14 pg 2
KA 000068A112 3.4

000068A112 .. (KA's)

ANSWER: 096 (1.00)

C

REFERENCE:

ANO2 STM 2-08, 2-42
KA 026000A401 4.5

026000A401 .. (KA's)

ANSWER: 097 (1.00)

D

REFERENCE:

ANO2 OP 2104.36
KA 000058A203 3.5

000058A203 .. (KA's)

ANSWER: 098 (1.00)

B

REFERENCE:

ANO LER 89-023
KA 015000G008 3.5/3.5

015000G008 .. (KA's)

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

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
REACTOR OPERATOR LICENSE
REGION 4

CANDIDATE'S NAME: _____

FACILITY: Arkansas Nuclear One-2

REACTOR TYPE: PWR-CE

DATE ADMINISTERED: 92/08/03

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	%
TOTALS	<u>98.00</u>	_____	<u> </u> FINAL GRADE

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

Candidate's Signature

QUESTION: 001 (1.00)

Which one of the individuals below is NOT permitted to operate reactor controls under the instruction or supervision of a licensed operator?

- a. Waste Control operator enrolled in a current license training course to obtain an operator license.
- b. Individual enrolled in a current license training course to obtain an instructor certification.
- c. A licensed reactor operator whose license has become inactive per the requirements of 10CFR55.
- d. A licensed reactor operator who recently failed an NRC administered Senior Reactor Operator upgrade examination.

QUESTION: 002 (1.00)

Which one of the following is the primary, backup and second backup means of communication for "Alternate Shutdown" (OP2203.014)?

- | | PRIMARY
----- | BACKUP
----- | SECOND BACKUP
----- |
|----|------------------|------------------|------------------------|
| a. | Gaitronics | Phone | Hand-held radios |
| b. | Phone | Gaitronics | Hand-held radios |
| c. | Phone | Hand-held radios | Gaitronics |
| d. | Hand-held radios | Phone | Gaitronics |

QUESTION: 003 (1.00)

Which one of the following is a valid method of performing a valve line-up and an independent verification?

- a. ONE individual checking that a valve is in the correct position, and then a second individual reviewing a report from the first individual that the position is correct
- b. ONE individual observing that a valve is in the correct position locally, and another individual independently using a remote position indicator to verify valve position
- c. TWO individuals verifying valve position from a remote position indicator
- d. TWO individuals placing a valve in its required position

QUESTION: 004 (1.00)

Which one of the following describes how an independent verification for a manually operated throttle valve is performed?

- a. Move the valve slightly in the closed direction and then return it to its original position
- b. Concurrently observe another operator initially positioning the valve
- c. Inspect the last valve lineup sheet for verification signature and compare recorded valve position with the required position
- d. Compare visual observation of stem or indicator position with the remote indication position

QUESTION: 005 (1.00)

Which one of the following individuals will provide the required position of components and the sequence of Hold Card removal information on the Hold Card Record Sheet for Hold Cards being permanently released in accordance with 1000.027, "Hold and Caution Control"?

- a. Shift Supervisor
- b. Lead Craftsman
- c. Maintenance Foreman
- d. Licensed Operator

QUESTION: 006 (1.00)

Which one of the following items is information listed on a HOLD TAG but NOT listed on a CAUTION TAG?

- a. Serial number
- b. Reason for tag
- c. Name of component
- d. Required position

QUESTION: 007 (1.00)

An operator with complete exposure records has a whole body radiation exposure of 90 mrem for the current week.

Which one of the following is the MAXIMUM time period the operator can stay in a 25 mr/hr radiation area without exceeding the initial administrative exposure limit for weekly whole body exposure?

- a. 4 hours
- b. 6 hours
- c. 8 hours
- d. 10 hours

QUESTION: 008 (1.00)

Which one of the following is a purpose for adding ammonia to the secondary chemistry?

- a. To minimize sludge buildup.
- b. To control oxygen.
- c. To minimize scale buildup.
- d. To control Ph.

QUESTION: 009 (1.00)

Which one of the following is the reason two-way radios should not be used in restricted areas?

- a. Radios may become contaminated due to possible airborne radiation.
- b. Radios are useless in these areas due to signal reception difficulties.
- c. Radio transmission interferes with security radios in the event of a security plan implementation.
- d. Radio transmission may inadvertently actuate sensitive equipment in these areas.

QUESTION: 010 (1.00)

Which one of the following Technical Specification terms describes the process of making a qualitative assessment of an instrument channel's behavior during operation by visually comparing the indications to independent instrument channels measuring the same parameter?

- a. Channel verification
- b. Channel functional test
- c. Channel check
- d. Channel calibration

QUESTION: 011 (1.00)

Which one of the following correctly represents requirements for access control per Station Administrative Procedure 1000.19, "Station Security Requirements?"

- a. Individuals responding to an emergency but not normally authorized access to a particular vital area may piggyback with an individual with proper access and then report to security after the emergency is controlled.
- b. When escorting a large group, only the escort needs to enter his/her PID and card to pass through doors as long as the group is not divided up among additional escorts.
- c. An individual checking out a key for a security door will specify the reason for entry and all personnel entering the space during key check out. Further reports to security are not necessary until the key is returned.
- d. An escorted visitor is permitted to enter a space alone as long as there is only one way in or out and the space is not a vital or sensitive area, such as a restroom or conference room, and the exit is monitored by the escort.

QUESTION: 012 (1.00)

Which one of the following describes a requirement for operations log entries?

- a. Corrected entries must be explained
- b. Out of specification readings must be recorded with red ink
- c. Missed entries must have explanations in the remarks section
- d. Entries must be made within one hour of the designated time

QUESTION: 013 (1.00)

Which one of the following ESFAS parameters CANNOT be bypassed to permit plant shutdown and cooldown?

- a. Steam Generator Low Pressure
- b. Pressurizer Low Pressure
- c. RWT Low Level
- d. Steam Generator High/Low Level

QUESTION: 014 (1.00)

With both feedwater pumps and three condensate pumps in operation, which one of the following conditions will automatically start the fourth condensate pump.

- a. Main feed pump suction pressure low
- b. Condenser hotwell level high
- c. Steam generator level low
- d. Condensate pump differential pressure high

QUESTION: 015 (1.00)

During a station blackout, re-energizing which one of the following electrical buses would most readily permit restoring power to the motor driven EFW pump?

- a. 2A1
- b. 2A2
- c. 2H1
- d. 2H2

QUESTION: 016 (1.00)

Which one of the following is the typical indication of loss of DC control power to a remotely operated valve or breaker?

- a. Position indicating lights go out.
- b. Position indicating lights go dim.
- c. An amber fault light comes on.
- d. A red DC LED goes out.

QUESTION: 017 (1.00)

The RCS "B" hot leg safety channel RTD (2TE-4710-4) provides a signal to which one of the following?

- a. CAPS computer
- b. LTOP annunciator
- c. Reactor Regulating system
- d. Trend recorder 2C-14

QUESTION: 018 (1.00)

Which one of the following is the principal benefit from operating with a reduced T-hot on unit 2? (The subject of tests conducted within the past month - 7/92.)

- a. Decrease chloride stress corrosion in the SG tubes.
- b. Decrease fuel pellet swell and pin cracking.
- c. Decrease thermal stress on SG hot leg inlet nozzle.
- d. Decrease peak containment pressure following a LOCA.

QUESTION: 019 (1.00)

Which one of the following mediums is used to control the closing speed of the MSIVs?

- a. hydraulic
- b. pneumatic
- c. mechanical friction
- d. spring force

QUESTION: 020 (1.00)

Which one of the following protective/safe-guard features was recently (6/92) determined to have been installed such that it would not actuate if protection setpoints were exceeded in an ATWS condition?

- a. DSS
- b. DEFAS
- c. MSIS
- d. SIAS

QUESTION: 021 (1.00)

To prevent degradation of insulation on ESFAS equipment, limits are placed on bus:

- a. voltage.
- b. current.
- c. frequency.
- d. inductive load.

QUESTION: 022 (1.00)

Which one of the following is the basis for the EDG load limits?

- a. Piston pin bushing elongation
- b. Generator winding insulation embrittlement
- c. Fuel oil pump capacity
- d. Output breaker current rating

QUESTION. 023 (1.00)

Which one of the following is the power supply for the EDG voltage control motor operated potentiometer?

- a. 125 V station DC
- b. 125 V rectified DC from EDG output
- c. 120 V vital instrument AC
- d. 120 V step-down AC from EDG output

QUESTION: 024 (1.00)

The N-16 decay tank is designed to prevent:

- a. erroneous RCS coolant activity indications.
- b. erroneous S/G blowdown radiation indications.
- c. unnecessary personnel exposure at the RCS sample station.
- d. unnecessary personnel exposure at the S/G sample station.

QUESTION: 025 (1.00)

Which one of the following SW/ACW valves automatically OPENS on SIAS?

- a. ACW supply
- b. CCW supply
- c. ACW return
- d. ECP return

QUESTION: 026 (1.00)

While placing the second main feedwater pump in service during a power increase from 50% to 100%, annunciator 2K11-D6, INSTRUMENT AIR HEADER PRESSURE HIGH LOW, actuates. Air header pressure is 80 psig and decreasing slowly. Investigation discloses that one compressor is running unloaded, the other is in AUTO but not running, and receiver pressure is 98 psig. As header pressure continues to slowly decrease through 75 psig, which one of the following is the correct response?

- a. Stop the power increase and trip the second main feedwater pump.
- b. Open the air dryer bypass and place the standby instrument air filter in service.
- c. Trip the reactor and perform standard post trip actions.
- d. Align breathing air system to the instrument air crossconnect and ensure one compressor is operating.

QUESTION: 027 (1.00)

The plant is in mode 5 preparing to replace a RCP seal with the following conditions:

LPSI pump 2P60A	-----	Running on SDC
LPSI pump 2P60B	-----	Tagged for motor repair
CS pump 2P35B	-----	Aligned for standby SDC
RCS pressure	-----	90 psia
SDC suction temp	-----	180 deg.F
PZR level	-----	24% (decreasing slowly)

LPSI pump 2P60A trips and cannot be restarted. Which one of the following actions is most appropriate for the control room operators to take?

- a. Allow the plant to heat up and use the S/Gs and EFW system for decay heat removal.
- b. If temperature reaches 200 deg.F, place CS pump 2P35A in service as the SDC backup.
- c. Depressurize to less than 75 psia and place CS pump 2P35A in service as the SDC backup.
- d. Use EFW pump 2P7B to feed S/Gs and S/G blowdown system to flume for heat removal.

QUESTION: 028 (1.00)

Fifteen minutes after a complete loss of feedwater event the following conditions exist:

RCS press	-----	2265 psia (increasing)
RCS T-hot	-----	548 deg.F (increasing)
RCS T-cold	-----	546 deg.F (increasing)
PZR level	-----	50% (increasing)
S/G "A" press	-----	1030 psia (increasing)
S/G "B" press	-----	1025 psia (increasing)
S/G "A" level	-----	35%
S/G "B" level	-----	38%

EFW pump 2P7B is then placed in service.

Which one of the following is the reason that the feed rate must be limited to not more than 150 gpm initially?

- To limit the possibility of feed ring damage when S/G level is below the feed ring.
- To limit the RCS cooldown resulting from restoration of feedwater from the CST.
- To minimize the thermal shock to the S/G tubes when feedwater is restored.
- To minimize the temperature differential across the tube bundle wrapper sheet.

QUESTION: 029 (1.00)

While performing the actions of the Reactor Trip Recovery Procedure, RCS T-ave is observed to be 538 deg.F and slowly decreasing. Which one of the following is the likely cause of the cooldown?

- Excessive RCS makeup due to three charging pumps running with PZR level at setpoint.
- Excessive S/G feed due to FWCS operating in RTO and EFW auto actuated.
- Excessive PZR spray flow due to spray valve partially stuck open.
- Excessive RCS letdown due to PZR level being too high.

QUESTION: 030 (1.00)

The following conditions exist after a reactor trip:

RCS press	-----	1825 psia (decreasing)
RCS T-hot	-----	504 deg.F (decreasing)
RCS T-cold	-----	496 deg.F (decreasing)
PZR level	-----	20% (decreasing)
S/G "A" press	-----	740 psia (decreasing slowly)
S/G "B" press	-----	400 psia (decreasing rapidly)
S/G "A" level	-----	21% (increasing slowly)
S/G "B" level	-----	11% (decreasing rapidly)

Which one of the following is the correct diagnosis of the event?

- a. Loss of Coolant Accident
- b. Loss of Feedwater
- c. Steam Generator Tube Rupture
- d. Excess Steam Demand

QUESTION: 031 (1.00)

The plant was shutdown 144 hours ago and is in mode 5 when a loss of shutdown cooling requires the initiation of HPSI feed and bleed. Which of the following is the minimum HPSI flow rate required to ensure adequate decay heat removal?

- a. 175 gpm
- b. 100 gpm
- c. 75 gpm
- d. 50 gpm

QUESTION: 032 (1.00)

The plant is operating at 100% power with a containment building depressurization in progress. If containment atmosphere monitor (2RE-8231-1) indicates a high radiation alarm, how will the release to the atmosphere be stopped?

- a. The containment purge supply and exhaust fans will stop, terminating the release.
- b. The containment purge isolation valves will automatically close on a signal from 2RE-8231-1.
- c. The release is terminated by automatic closing of the H2 purge valves.
- d. The release is terminated by manually closing the purge isolation valves.

QUESTION: 033 (1.00)

The following data was recorded during RCS heatup.

TIME	RCS deg.F	PZR psia
0900	200	298
0915	224	298
0930	249	330
0945	273	400
1000	298	460
1015	327	500
1030	348	540
1045	371	580
1100	392	600

Which one of the following is the reason that the heatup was improperly performed?

- a. RCS heatup rate exceeded 100 deg.F in one hour.
- b. PZR heatup rate exceeded 200 deg.F in one hour.
- c. Margin to saturation exceeded 200 deg.F.
- d. Margin to saturation decreased below 30 deg.F.

QUESTION: 034 (1.00)

A loss of offsite power occurs after a 300 day run at full power resulting in the following post-trip conditions:

RCS press	-----	1750 psia
RCS T-hot	-----	567 deg.F
RCS T-cold	-----	540 deg.F
CET temp	-----	569 deg.F
Upper head temp	-----	609 deg.F
PZR level	-----	45% (steady)
S/G "A" press	-----	965 psia
S/G "B" press	-----	965 psia
S/G "A" level	-----	29% (steady)
S/G "B" level	-----	20% (decreasing slowly)

Which one of the following is correct regarding core cooling and vessel voiding respectively?

- adequate, exists
- inadequate, exists
- adequate, does not exist
- inadequate, does not exist

QUESTION: 035 (1.00)

Pressure control channel 2PIC-4626A fails low while the plant is at 75% power with pressure channel 2PIC-4626B controlling in auto. Which one of the following is necessary to minimize the consequences of the instrument failure?

- Place all PZR heater handswitches to OFF.
- Reset the SDBCS by pressing the Emergency Off/Condenser interlock handswitch.
- Take the SDBCS master controller in AUTO LOCAL and adjust the setpoint.
- Reset PZR heaters by taking the handswitches to OFF and back to AUTO.

QUESTION: 036 (1.00)

The following conditions exist during plant cooldown:

RCS T-cold ----- 350 deg.F
RCS press ----- 400 psia
PZR level ----- 50%
RCPS running ----- 2P32A & 2P32C

What equipment and method is currently being used for overpressure protection?

- a. PZR safety valves, to relieve 110% of full load heat production.
- b. PZR safety valves, to relieve full flow from one SI pump.
- c. LTOP relief valves, to relieve 110% of full load heat production.
- d. LTOP relief valves, to relieve full flow from one SI pump.

QUESTION: 037 (1.00)

A reactor coolant pump was started twice from ambient temperature to vent the RCS. It ran for a total of 40 minutes and has subsequently been at rest for 2 hours. At the earliest, the pump may be started after another:

- a. 20 minutes.
- b. 40 minutes.
- c. 60 minutes.
- d. 80 minutes.

QUESTION: 038 (1.00)

The following annunciator alarms occur while the plant is operating at 100% power:

GEN H2 AND STATOR CLG TROUBLE (2K02-A4)
INLET FLOW LOW (2KC-140-3)
INLET PRESSURE LOW (2KC-140-4)

What action is required?

- a. Manually reduce turbine load to <27%.
- b. Manually reduce turbine load to <80%.
- c. If inlet flow or pressure continue to decrease, verify an automatic turbine trip initiates.
- d. If inlet flow or pressure continue to decrease, verify an automatic turbine runback initiates.

QUESTION: 039 (1.00)

Which one of the following parameters, if recorded LOWER than actual, would cause indicated power to read higher than actual if the NIs are being calibrated using a secondary calorimetric with COLSS out of service?

- a. Feedwater flow delta P
- b. Steam pressure
- c. Feedwater temperature
- d. RCS T-hot

QUESTION: 040 (1.00)

The following conditions exist 5 minutes after a reactor trip:

RCS press	-----	2060 psia (increasing slowly)
RCS T-hot	-----	541 deg.F
RCS T-cold	-----	540 deg.F
PZR level	-----	18% (increasing slowly)
S/G "A" press	-----	963 psia (decreasing slowly)
S/G "B" press	-----	965 psia (decreasing slowly)
S/G "A" level	-----	15% (increasing slowly)
S/G "B" level	-----	18% (increasing slowly)
EFW pumps running	-----	2P7A & B
RTO	-----	Active

If the above trends continue, which one of the following actions should be taken?

- a. Increase EFW flow to both S/Gs.
- b. Close MSIVs and S/G blowdown isolation valves.
- c. Stop one RCP in each RCS loop.
- d. Stop two charging pumps.

QUESTION: 041 (1.00)

With EFW pump 2P7A and AFW pump 2P75 both inoperable and the plant at full power, both MFW pumps trip and annunciator alarm 2A3 LO RELAY TRIP actuates. With S/G levels continuing to decrease, which one of the following actions should be taken FIRST?

- a. Reduce S/G pressure to less than condensate pump discharge pressure.
- b. Initiate HPSI system feed and bleed cooling.
- c. Secure all RCPs.
- d. Crossconnect buses 2A3 and 2A4.

QUESTION: 042 (1.00)

The plant tripped from 100% power due to a S/G tube rupture. The following plant conditions exist:

RCS T-hot ----- 490 deg.F
RCS press ----- 1380 psia (stable)
RCPs ----- 2P32A & C running
Ruptured S/G ----- isolater
Ruptured S/G press --- 700 psia (stable)
Ruptured S/G level --- 80% (increasing slowly)

RCS pressure should be reduced to

- a. 700 psia
- b. 800 psia
- c. 900 psia
- d. 1000 psia

QUESTION: 043 (1.00)

When used in the EOPs, floating steps should be monitored continuously and only performed:

- a. at the discretion of the CRS.
- b. when the instruction step cannot be completed.
- c. after having been presented in the EOP.
- d. when their specific conditions arise.

QUESTION: 044 (1.00)

While operating at 100% the following conditions/indications occur:

REGEN HEAT EXCHANGER TO LETDOWN HEAT EXCHANGER DISCH TEMP HIGH alarms
CHARGING FLOW LOW alarms

PZR level ----- trending down for last 30 min
VCT level ----- trending down for last 30 min
Letdown flow ----- minimum
Regen HX dischg temp ----- 465 deg.F
Charging pumps ----- all available running

Which one of the following actions are required to be taken?

- Stop charging pumps and close letdown isolation and VCT outlet valves.
- Close letdown isolation valve and makeup to the VCT.
- Close the charging header isolation valve and maintain minimum letdown flow.
- Stop charging pumps and close charging header isolation and VCT outlet valves.

QUESTION: 045 (1.00)

While at 100% power, the following conditions are observed for a RCP:

Controlled bleedoff ----- < 0.5 gpm
Controlled bleedoff temp ----- 150 deg.F
Vapor seal press ----- 1600 psia
One seal stage has 0 dP.

Which one of the following actions should be taken?

- Start a controlled plant shutdown.
- Manually initiate safety injection.
- Trip the reactor, then trip the RCP.
- Trip the RCP, then trip the reactor.

QUESTION: 046 (1.00)

While operating at power, significant current oscillations (100 amps) are observed on 480V ESF bus 2B5. Annunciator CHARGING PUMP HEADER FLOW LOW actuates and shortly thereafter, charging pump 2P36A trips on overcurrent. Which one of the following actions should be taken?

- a. Restart charging pump 2P36A after resetting the overcurrent trip.
- b. Start an alternate charging pump after verifying its suction and discharge paths.
- c. Secure letdown and initiate an investigation for the loss of charging pump 2P36A.
- d. Secure letdown, start an alternate charging pump, then restore letdown.

QUESTION: 047 (1.00)

While operating at 80% power with Reactor Regulating System loop selector switch in BOTH, the RCS loop 1 T-hot indicator (2TI-4614) drifts to 625 deg.F over a 2 minute period. What action is required?

- a. Place selector switch to opposite RRS.
- b. Place charging pump controls to automatic.
- c. Place pressurizer level controller to manual.
- d. Place letdown flow controller to manual.

QUESTION: 048 (1.00)

A control room evacuation has been ordered as a result of a fire in the control room printer room. In addition to ensuring that the reactor and turbine are tripped, which one of the following conditions should also be established prior to leaving the control room?

- a. RCPs running and EFW in service
- b. RCPs secured and EFW in service
- c. RCPs running and MFW in service
- d. RCPs secured and MFW in service

QUESTION: 049 (1.00)

Following a loss of offsite power, the ESF buses are being powered by the DGs, instrument air pressure is 18 psig and decreasing, and RCS CETs indicate 550 deg.F and slowly increasing. Which one of the following methods should be used to restore and control CET temperatures to the normal Hot Standby band?

- a. Modulate open "A" and "B" S/G upstream AD valves.
- b. Modulate closed "A" and "B" S/G upstream AD valves.
- c. Modulate open "A" and "B" S/G upstream AD isolation valves.
- d. Modulate closed "A" and "B" S/G upstream AD isolation valves.

QUESTION: 050 (1.00)

While operating at 100% power, ALL pressurizer level indication is lost and cannot be restored. Which one of the following actions should be taken to minimize the consequences of this event?

- a. Reduce turbine load slowly and match letdown flow with charging and controlled bleedoff flows.
- b. Reduce turbine load slowly and add 3000 gallons of makeup to the RCS to maintain pressurizer level.
- c. Trip the reactor and add 3000 gallons of makeup to the RCS to maintain pressurizer level.
- d. Trip the reactor and match letdown flow with charging and controlled bleedoff flows.

QUESTION: 051 (1.00)

The following conditions exist after a reactor trip:

RCS pressure	-----	1650 psia (decreasing slowly)
RCS Temperature	-----	559 deg.F (decreasing slowly)
RCS Temperature	-----	558 deg.F (decreasing slowly)
PZR level	-----	10% (decreasing slowly)
Containment pressure	-----	20.3 psia (increasing slowly)
Containment Rad Mon	-----	Trending up
SIAS, CCAS, JIAS	-----	Actuated
RCP status	-----	Two running

Which one of the following actions should be taken regarding the RCPs?

- a. Stop all RCPs due to LOCA condition.
- b. Stop all RCPs due to containment spray actuation.
- c. Leave the RCPs running and restore CCW flow.
- d. Leave the RCPs running and restore controlled bleedoff.

QUESTION: 052 (1.00)

The following conditions exist after a reactor trip from 100% power:

RCS press -----	1800 psia (decreasing)
RCS T-cold -----	425 deg.F (decreasing)
PZR level -----	20% (decreasing)
CEAs -----	All fully inserted
Containment press -----	15 psia (steady)
Containment temp -----	115 deg.F
Containment Rad Mon -----	No alarms
S/G press's -----	725 psia (decreasing)
MS Rad Mon -----	No alarms

Which one of the following procedures should be implemented for the above conditions?

- a. Reactor Trip Recovery (OP2202.002)
- b. Excess Steam Demand (OP2202.005)
- c. Loss of Coolant Accident (OP2202.003)
- d. RCS Overcooling (OP2202.013)

QUESTION: 053 (1.00)

Which one of the following indications is required to be used with RCS pressure to ensure operation within P-T curve limits following an uncomplicated trip?

- a. RCS T-cold
- b. RCS T-hot
- c. RCS T-ave
- d. CET T-ave

QUESTION: 054 (1.00)

Which one of the following is an ECCS subsystem that is required to be operable in modes 1, 2, and 3?

- a. One CCP
- b. One Spray pump
- c. One NaOH pump
- d. One suction path from containment sump

QUESTION: 055 (1.00)

Which one of the following is the basis for the Technical Specification limits on the combination of containment internal pressure, average air temperature and relative humidity?

- a. Will not exceed 5 psig vacuum
- b. Will not exceed 54 psia on a LOCA
- c. To allow personnel access at power
- d. To minimize RCP motor overheating

QUESTION: 056 (1.00)

Which one of the following is the basis for two independent containment recirculation fans operable in modes 1 and 2?

- a. Keep the dome cooled
- b. Keep the reactor cavity cooled
- c. Keep H₂ concentration below flammable limits
- d. Keep adequate mixing to allow for personnel entries

QUESTION: 057 (1.00)

A boric acid solution has been injected into the VCT. Approximately how long is required before the concentration in the VCT is the same as the concentration in the RCS?

- a. 20 minutes
- b. 40 minutes
- c. 60 minutes
- d. 80 minutes

QUESTION: 058 (1.00)

What is the primary design purpose of the containment spray NaOH subsystem following a LOCA?

- a. Remove Iodine from the atmosphere
- b. Inhibit Hydrogen flammability
- c. Neutralize Boric acid in reactor coolant
- d. Increase heat capacity of spray water

QUESTION: 059 (1.00)

For which one of the following will a reactor trip occur?

- a. Loss of power to 2RS-1 panel
- b. Hi linear power trip on channel A and low DNBR trip on channel D
- c. MG set B in service and MG set A trips with sync breaker open
- d. Hi LPD trip on channel B and CPC channel C fails.

QUESTION: 060 (1.00)

Which one of the following is the input signals to the SDBCS quick open logic?

- a. Main steam flow and main steam press
- b. Master controller status and pressurizer press
- c. Master controller status and main steam press
- d. Main steam flow and pressurizer press

QUESTION: 061 (1.00)

Which one of the following is the reason for the requirement to open the ACTM breaker within 30 seconds of manual transfer to the UG after a CEDMCS timer failure?

- a. High voltage may burn up the upper gripper.
- b. Low voltage to the upper gripper will not hold the CEA.
- c. High voltage may burn up the lower gripper.
- d. The CEA may transfer back to the lower gripper.

QUESTION: 062 (1.00)

Which one of the following is correct concerning the 1 E-4 bistable?

- a. Light indication only
- b. Automatically bypasses high log power trip
- c. Automatically enables high log power trip
- d. Swaps start-up channel detector power

QUESTION: 063 (1.00)

Which one of the following is NOT the result of a FWCS RTO signal?

- a. The selected MFP is tripped.
- b. The FW reg valve receives a close signal.
- c. The FW reg bypass valve receives a 5% flow demand signal.
- d. FW pump speed is reduced to the auto low speed stop.

QUESTION: 064 (1.00)

An "Intact Steam Generator" in the EOP context is the one that has:

- a. indicated level between 10 and 90%.
- b. the smaller SG tube leak.
- c. a SG tube leak below Tech Spec limits.
- d. no unisolable leaks other than main steam.

QUESTION: 065 (1.00)

Plant conditions following a reactor trip due to a loss of offsite power are:

1. PZR level - 18% and stable
2. PZR press - 2000 psia and stable
3. Average CET temp - 620 deg.F and stable
4. RVLMS sensor 2 (LVL 01) indicates wet

RCS inventory is:

- a. being maintained because RVLMS indicates the reactor vessel is full.
- b. being maintained because PZR press is stable.
- c. NOT being maintained because RCS MTS is less than 30 deg.F.
- d. NOT being maintained because PZR level is too low.

QUESTION: 066 (1.00)

Which one of the following criteria is required to be met to permit terminating/throttling HPSI flow?

- a. Loop dT less than 50 deg.F and at least one SG available for RCS heat removal.
- b. RVLMS sensor 2 (LVL 01) indicates wet and T-hot and T-cold constant or decreasing.
- c. Each HPSI pump flow greater than 50 gpm and electrical power to at least one 6900v bus.
- d. RVLMS sensor four (LVL 03) or higher indicates wet and at least one SG available for heat removal.

QUESTION: 067 (1.00)

Which one of the following must be verified if single-phase natural circulation cannot be maintained after a LOCA?

- a. RCS press within P-T Limits of Attachment 1 and PZR level 29-70%
- b. T-hot and T-cold constant or decreasing and dT (T-hot - avg CET) less than 10 deg.F
- c. Avg CETs below superheat and cooldown with SDBCS
- d. HPSI flow >240 gpm per header and T-cold being controlled

QUESTION: 068 (1.00)

Which one of the following parameters is used in the maximum LPD calculation?

- a. Highest of neutron flux or thermal power
- b. RCP speed and number of RCPs running
- c. Maximum T-hot including uncertainty
- d. Static intermediate variables for LPD update

QUESTION: 069 (1.00)

Which one of the following output signals is generated by the Reactor Regulating System (RRS)?

- a. Continuous withdrawal prohibit
- b. Quick open block signal
- c. PZR water level setpoint signal
- d. Low Tave-Tref signal to SDBCS

QUESTION: 070 (1.00)

Select the choice closest to the available shutdown margin for the plant conditions given below.

Reactor tipped, all rod inserted
RCS Tave = 450 deg. F
EFPD = 200
Current boron concentration = 1000 ppm

- a. -3.0% /\ K/K
- b. -4.0% /\ K/K
- c. -5.4% /\ K/K
- d. -8.4% /\ K/K

QUESTION: 071 (1.00)

Which one of the following RCP failures/malfunctions is LEAST likely to produce symptoms which would cause the operator to refer to ACP 2203.25, Reactor Coolant Pump Emergencies, for corrective action?

- a. Motor bearing seizure
- b. Pump/motor shaft shear
- c. Seal failure
- d. Oil reservoir leak

QUESTION: 072 (1.00)

Which one of the following should be the initial response to a loss of Instrument Air per AOP 2203.021?

- a. Cross connect Unit 1 & 2 instrument air headers.
- b. Open dryer bypass and place alternate filter in service.
- c. Initiate search for air line break.
- d. Cross connect breathing air compressors

QUESTION: 073 (1.00)

AOP 2203.28, "Pressurizer System Failure," provides specific guidance to the operator for all pressurizer system failures EXCEPT which one of the following?

- a. Level Channels
- b. Pressure Channels
- c. Heater Controls
- d. Spray Valves

QUESTION: 074 (1.00)

Select the answer below which best completes the following statement.

The alarm annunciator, "Nuclear Instrumentation Inoperative," will actuate if:

- a. a safety channel high voltage is low.
- b. a circuit card is removed from a control channel.
- c. a startup channel calibrate switch is in Test Low.
- d. any excor NI channel's trip test switch is NOT in off.

QUESTION: 075 (1.00)

A pressurizer code safety valve is leaking to atmosphere. The pressurizer is at 2250 psia.

Which one of the following statements best describes the condition of the exhaust steam from the leaking pressurizer safety valve?

- a. Temperature is approximately 655 degrees F.
- b. Moisture content is approximately 3%.
- c. Temperature is approximately 145 degrees F.
- d. Moisture content is approximately 36%.

QUESTION: 076 (1.00)

The pressurizer level transmitter selected for level control is inadvertently isolated at the transmitter and the variable leg of the transmitter is depressurized. Assume the plant is at 100% power and actual pressurizer level was at program level initially.

Which the one of the statements below BEST represents the response to the above condition?

- a. Pzr control channel level hi hi alarm, backup heaters energize spray valves full open.
- b. Pzr control channel level lo lo alarm, spray valves shut, a backup charging pump starts.
- c. Pzr control channel level hi alarm, letdown at maximum, proportional heaters go off.
- d. Pzr control channel level lo alarm, letdown to minimum, both backup charging pumps start.

QUESTION: 077 (1.00)

Using the figure provided, it can be determined that the detonation range of explosive gas mixtures is best defined as:

- a. 10-75% H₂, 30-90% air, and 5-70% steam
- b. 20-60% H₂, 40-80% air, and 0-30% steam
- c. 30-90% H₂, 30-90% air, and 10-70% steam
- d. 50-80% H₂, 40-80% air, and 20-50% steam

QUESTION: 078 (1.00)

The unit is in cold shutdown with RCS pressure at 50 psia and one train of shutdown cooling in service. Engineering is performing a hydrostatic test on new pressurizer pressure tubing and, due to a valve lineup error, causes 2PT-4623-1 (lo range pZR press) to peg high. Prompt operator action is required due to automatic:

- a. opening of all SIT outlet valves.
- b. stop of the running LPSI pump.
- c. initiation of a SIAS.
- d. closure of a shutdown cooling isolation valve.

QUESTION: 079 (1.00)

With the SPDS inoperable the RVLMS indication is available on which one of the following?

- a. CAPS (2C-69)
- b. 8600 Computer (2C-100)
- c. ICC cabinet (2C388-1,2)
- d. Unit 1 SPDS (C-69)

QUESTION: 080 (1.00)

What is signified by the amber light above the EDG 2DG1 start handswitch being lit?

- a. The 2DG1 DC control power is lost.
- b. The local-remote voltage hand-switch is in local.
- c. The starting air header pressure is low.
- d. The 4160V ESF bus 2A3 lockout must be reset.

QUESTION: 081 (1.00)

The reactor has tripped due to a loss of both main feedwater pumps. EFAS has actuated and emergenc. feedwater pump 2P7B is maintaining both steam generator levels at approximately 23%. 2K07-E9, "2P7B SUCT PRESS HI/LO" is received. What suction source to 2P7B will automatically be used to clear this alarm?

- a. startup and blowdown demineralizer effluent
- b. condensate storage tank 2T41
- c. Q condensate storage tank T41B
- d. service water loop 1

QUESTION: 082 (1.00)

The waste gas decay tank discharge line isolation valve, 2CV-2428, has shut, stopping the discharge flow. The reason is:

- a. the tank being discharged has reached 10 psig.
- b. radwaste exhaust fans 2VEF-8A, 8B tripped off.
- c. the setpoint for gaseous radioactive waste monitor 2RE-2429 is set too high.
- d. pressure from the decay tank is in excess of 10 psig as sensed at the pressure reducing valve outlet.

QUESTION: 083 (1.00)

With the feedwater control system master controller in manual, a reactor trip will cause:

- a. the S/Gs to overflow; operator action is required to prevent excessive cooldown.
- b. the system to respond as required and go to RX trip override; no operator action is required.
- c. the main feed pump speed to go to 2100 RPM, MFRVs to close and MFRV bypasses to be 5% open.
- d. the main feed pump speed to go to 3030 RPM and BOTH MFRV and bypasses to be 5% open.

QUESTION: 084 (1.00)

The manual bypass valve on each pressurizer spray valve is throttled to maintain a continuous spray flow. The reason for this is to:

- a. prevent boric acid crystals from clogging spray nozzle.
- b. prevent thermal cycling of backup pressurizer heaters.
- c. maintain auxiliary spray line temperature greater than 275 deg.F.
- d. maintain boron concentration equilibrium in the RCS.

QUESTION: 085 (1.00)

The 90% limit switch on the MSIVs (2CV-1010A AND 2CV-1060A) causes the:

- a. exercise valve (2HS-1011, 1061) green light to illuminate.
- b. exercise valve(s) to open to prevent inadvertent MSIV closure.
- c. intermediate position indication on the MSIV handswitches (2HS-1010-1, 1060-2).
- d. MSIV bypass valve to close when opening the MSIV.

QUESTION: 086 (1.00)

Which one of the following flow paths, when in service, is directed to the quench tank (2T-42)?

- a. reactor vessel head vents
- b. reactor vessel head inner gasket leakoff
- c. reactor coolant loop drains
- d. RCS valve packing leakoff

QUESTION: 087 (1.00)

Which one of the following sets of indications is consistent with abnormally high containment temperature and pressure conditions with a steam line rupture inside containment?

- a. Indicated S/G pressure is less than actual and indicated PZR pressure is greater than actual.
- b. Indicated S/G pressure is greater than actual and indicated S/G level is less than actual.
- c. Indicated PZR pressure is greater than actual and indicated PZR level is less than actual.
- d. Indicated PZR pressure is less than actual and indicated S/G level is greater than actual.

QUESTION: 088 (1.00)

Which one of the following is the correct expected response if an EDG is paralleled to the grid and the GOVERNOR and VOLTAGE control handswitches are both taken to RAISE/INCREASE?

- a. Kw increases and EDG speed increases.
- b. Reactive load increases and Kw increases.
- c. Output voltage increases and reactive load increases.
- d. EDG speed increases and output voltage increases.

QUESTION: 089 (1.00)

According to AOP 2203.028, "Pressurizer System Malfunctions," if the level control channel has failed low and the opposite channel has been selected, then to regain pressurizer heater control, place the pressurizer heater lo-level cutout switch to:

- a. OFF
- b. Unaffected channel
- c. AUTO
- d. ON

QUESTION: 090 (1.00)

While in mode 1 with SFP pump 2P40B in service, an operator isolates pump 2P40A and inadvertently opens the drain valve on pump 2P40B. What action is required to prevent total loss of inventory in the spent fuel pool?

- a. None, pump 2P40B will trip on low level cutout.
- b. Manually stop the in service SFP cooling pump.
- c. Initiate CVCS makeup to the SFP.
- d. None, a siphon breaker will stop the draining.

QUESTION: 091 (1.00)

The basis for the turbine overspeed protection is to minimize the possibility of:

- a. overcooling the RCS.
- b. an overpower event.
- c. damage to safety related equipment.
- d. personnel injury.

QUESTION: 092 (1.00)

Smoke in the unit 2 control room exhaust will:

- a. start 2VSF9.
- b. isolate the control rooms.
- c. stop 2VSF8A/B.
- d. shift to the "Exhaust" mode.

QUESTION: 093 (2.00)

Match each fire suppression system from Column B with the location it serves in Column A. (Note: The items in Column B may be used once, more than once, or not at all, and only a single answer may occupy one answer space.)

COLUMN A

- a. Upper South Elec. Penet. Room
- b. Lube Oil Storage Tank Room
- c. The Cable Spread Room
- d. Diesel Fuel Oil Vaults

COLUMN B

- 1. CO2
- 2. Halon
- 3. Deluge
- 4. Wet-Pipe
- 5. Pre-action
- 6. Dry-Pipe

QUESTION: 094 (2.00)

Match the items in column A with the appropriate input signals in column B. Items in column B may be used more than once or not at all.

Column A	Column B
a. Low press trip (1766 psia)	1. Narrow range press
b. Open SIT outlet valves	2. Control channel press
c. Isolate shutdown cooling	3. Wide range press
d. DNBR calculator	4. Low range press

QUESTION: 095 (2.00)

Match the component in column A with its cooling system in column B. Items in column B may be used more than once or not at all.

Column A	Column B
a. Containment emergency cooling	1. CCW
b. Instrument air compressors	2. ACW
c. Turbine gland steam condenser	3. Circ Water
d. PZR water space sample cooler	4. Service Water

QUESTION: 096 (2.00)

Pressurizer pressure is 2290 psia decreasing and pressurizer level is -4.0% from program level and decreasing. Assume that the reactor is at 100% power and charging pumps B and C are the standby and backup pumps respectively.

Match each of the components in column A with one of the choices in column B which BEST represents the condition of the component. (NOTE: Terms such as OFF and MINIMUM are NOT synonymous.) The conditions may be used more than once or not at all.

- | A. COMPONENT | B. CONDITION |
|-----------------------------|----------------|
| a. Spray valves | 1. ON |
| b. Backup heaters | 2. OFF |
| c. Letdown flow control vlv | 3. OPEN |
| d. CCP C | 4. SHUT |
| | 5. MAXIMUM |
| | 6. MINIMUM |
| | 7. 1/2 OPEN |
| | 8. 1/2 MAXIMUM |

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

ANSWER: 001 (1.00)

b

REFERENCE:

10CFR55.13 [a] [2]

194001A109 194001A103 .. (KA's)

ANSWER: 002 (1.00)

d.

REFERENCE:

ANO 2203.014
194001A104 (3.0/3.2)

194001A104 .. (KA's)

ANSWER: 003 (1.00)

b.

REFERENCE:

ANO 1015.01 p 41
194001K101 (3.6/3.7)

194001K101 .. (KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

ANO 1015.01 p 54
194001K101 (3.6/3.7)

194001K101 .. (KA's)

ANSWER: 005 (1.00)

d.

REFERENCE:

ANO 1000.027 p 26
194001K102 (3.7/4.1)

194001K102 .. (KA's)

ANSWER: 006 (1.00)

d.

REFERENCE:

ANO 1000.027
KA 194001K102 (3.7/4.1)

194001K102 .. (KA's)

ANSWER: 007 (1.00)

[DELETED]

REFERENCE:

ANO2 LP AA-62002-005 pg 9
194001K104 (3.3/3.5)

194001K104 .. (KA's)

ANSWER: 008 (1.00)

b.

REFERENCE:

ANO AA-52002-023
194001A114 (2.5/2.9)

194001A114 .. (KA's)

ANSWER: 009 (1.00)

D

REFERENCE:

ANO LER 89-042
KA 194001A104 3.0

194001A104 .. (KA's)

ANSWER: 010 (1.00)

C

REFERENCE:

ANO2 TS 1.1
KA 194001A113 4.3

194001A113 .. (KA's)

ANSWER: 011 (1.00)

D

REFERENCE:

ANO SAP 1000.19, pgs 5, 9, 10
KA 194001K105

194001K105 .. (KA's)

ANSWER: 012 (1.00)

C.

REFERENCE:

ANO 1015.03 p.3, 4
194001A106 (3.4/3.4)

194001A106 .. (KA's)

ANSWER: 013 (1.00)

A

REFERENCE:

ANO2 LP AA-52002-013 pg 6
KA 013000K412 3.7/3.9

013000K412 .. (KA's)

ANSWER: 014 (1.00)

A

REFERENCE:

ANO2 STM 2-19, LP 32002-021
KA 059000A303 2.5/2.6

059000A303 .. (KA's)

ANSWER: 015 (1.00)

A

REFERENCE:

ANO2 STM 2-32 FIG 32.10
KA 061000K202 3.7/3.7

061000K202 .. (KA's)

ANSWER: 016 (1.00)

A

REFERENCE:

ANO2 STM 2-32
KA 063000K302 3.5/3.7

063000K302 .. (KA's)

ANSWER: 017 (1.00)

A

REFERENCE:

ANO2 STM 2-03, LP AA-52002-001
KA 002020A301 4.4/4.6

002020A301 .. (KA's)

ANSWER: 018 (1.00)

A

REFERENCE:

ANO2 REDUCED T-HOT TEST PACKAGE BACKGROUND INFORMATION
KA 002000K520 2.3/2.7

002000K520 ..(KA's)

ANSWER: 019 (1.00)

A

REFERENCE:

ANO2 STM 2-15
KA 035010K601 3.2/3.6

035010K601 ..(KA's)

ANSWER: 020 (1.00)

B

REFERENCE:

ANO2 CONDITION REPORT CR-2-92-0140
KA 000029K206 2.9/3.1

000029K206 ..(KA's)

ANSWER: 021 (1.00)

A

REFERENCE:

ANO2 SOP 2107.001 pg 5
KA 062000A208 2.7/3.0

062000A208 ..(KA's)

ANSWER: 022 (1.00)

A

REFERENCE:

ANO2 STM 2-31, LP AA-52002-016
KA 064050A301 2.8/2.8
KA 064000G005 3.4/3.9

064000G005 064050A301 ..(KA's)

ANSWER: 023 (1.00)

A

REFERENCE:

ANO2 STM 2-31, LP AA-52002-016
KA 064000K203 3.2/3.6

064000K203 ..(KA's)

ANSWER: 024 (1.00)

A

REFERENCE:

ANO2 STM 2-62, LP AA-52002-018
KA 073000A101 3.2/3.5

073000A101 .. (KA's)

ANSWER: 025 (1.00)

D. ECP return - open

REFERENCE:

ANO 2 STM-2-42, LP AA-52002-027-4A
KA 076000K116 3.6/3.8
KA 076000K403 2.9/3.4
KA 076000A302 3.7/3.7

076000A302 076000K403 076000K116 .. (KA's)

ANSWER: 026 (1.00)

B

REFERENCE:

ANO2 OP 2203.021, 2104.024, 2203.012K
KA 078000A301 3.1/3.2
KA 000065G012 3.1/3.3

000065G012 078000A301 .. (KA's)

ANSWER: 027 (1.00)

C

REFERENCE:

ANO2 OP 2203.029, 2104.004, 1015.008
KA 005000K306 3.1/3.2
KA 005000A203 2.9/3.1
KA 000025G012 3.3/3.5

005000K306 000025G012 005000A203 .. (KA's)

ANSWER: 028 (1.00)

A

REFERENCE:

ANO2 OP 2202.006, CEN-152
KA 000054K304 4.4/4.6
KA 061000K302 4.2/4.4

061000K302 000054K304 .. (KA's)

ANSWER: 029 (1.00)

B

REFERENCE:

ANO2 OP 2202.002
KA 059000G007 3.1/3.2
KA 059000K417 2.5/2.8
KA 059000A201 3.4/3.6

059000A201 059000K417 059000G007 .. (KA's)

ANSWER: 030 (1.00)

D

REFERENCE:

ANO2 OP 2202.001
KA 000040A201 4.2/4.7

000040A201 .. (KA's)

ANSWER: 031 (1.00)

C

REFERENCE:

ANO2 OP 2203.029 ATTACH E GRAPH 2
KA 005000G013 3.3/3.4
KA 005000JK106 3.5/3.6

005000G013 005000JK106 .. (KA's)

ANSWER: 032 (1.00)

D

REFERENCE:

ANO2 OP 2104.033
KA 029000K403 3.2/3.5

029000K403 .. (KA's)

ANSWER: 033 (1.00)

A

REFERENCE:

ANO2 OP 2102.002, TS 3.4.9
KA 002000G005 3.6/4.1

002000G005 .. (KA's)

ANSWER: 034 (1.00)

C

REFERENCE:

ANO2 OP 2202.007, 2202.010 ATT 1
KA 000074G012 4.3/4.4
KA 002000K514 3.7/4.2
KA 002000K512 3.7/3.9

002000K512 002000K514 000074G012 .. (KA's)

ANSWER: 035 (1.00)

C

REFERENCE:

ANO2 2203.028, 2203.012J 2K10-5
KA 041000G015 3.2/3.3
KA 016000K103 3.2/3.2
KA 016000K303 3.0/3.1

016000K303 016000K103 041000G015 .. (KA's)

ANSWER: 036 (1.00)

A

REFERENCE:

ANO2 2102.010
KA 002000G010 3.4/3.9
KA 002000K410 4.2/4.4

002000K410 002000G010 ..(KA's)

ANSWER: 037 (1.00)

D

REFERENCE:

ANO2 2103.006
KA 003000G010 3.3/3.6
KA 003000K614 2.6/2.9

003000K614 003000G010 ..(KA's)

ANSWER: 038 (1.00)

D

REFERENCE:

ANO2 OP 2203.012B 2K02-E4, 2203.012Y 2K24-3 & 2K24-4
KA 045050K101 3.4/3.6
KA 045000K412 3.3/3.6

045000K412 045050K101 ..(KA's)

ANSWER: 039 (1.00)

C

REFERENCE:

ANO2 2105.013, 2103.016
KA 015000A101 3.5/3.8

015000A101 ..(KA's)

ANSWER: 040 (1.00)

B

REFERENCE:

ANO2 2202.001
KA 000040G012 3.8/4.1
KA 000040A201 4.2/4.7

000040G012 000040A201 ..(KA's)

ANSWER: 041 (1.00)

C

REFERENCE:

ANO2 OP 2202.006
KA 000054K304 4.4/4.6

000054K304 ..(KA's)

ANSWER: 042 (1.00)

C

REFERENCE:

ANO2 2202.004, 2202.010 ATT 1
KA 000038A215 4.2/4.0

000038A215 .. (KA's)

ANSWER: 043 (1.00)

D

REFERENCE:

ANO2 OP 2202.002, 1015.021
KA 000007G012 3.8/3.9

000007G012 .. (KA's)

ANSWER: 044 (1.00)

D

REFERENCE:

ANO2 2203.036, 2203.012L
KA 000022A201 3.2/3.8

000022A201 .. (KA's)

ANSWER: 045 (1.00)

C

REFERENCE:

ANO2 2203.025
KA 000015K303 3.7/4.0

000015K303 ..(KA's)

ANSWER: 046 (1.00)

B

REFERENCE:

ANO2 OP 2203.036, 2203.012L
KA 000022K302 3.5/3.8

000022K302 ..(KA's)

ANSWER: 047 (1.00)

D

REFERENCE:

ANO2 OP 2203.001
KA 000028A210 3.3/3.4

000028A210 ..(KA's)

ANSWER: 048 (1.00)

B

REFERENCE:

ANO2 OP 2203.030
KA 000068G010 4.1/4.2

000068G010 .. (KA's)

ANSWER: 049 (1.00)

C

REFERENCE:

ANO2 OP 2202.007
KA 000065K308 3.7/3.9

000065K308 .. (KA's)

ANSWER: 050 (1.00)

C

REFERENCE:

ANO2 OP 2203.028
KA 000028G012 3.1/3.2

000028G012 .. (KA's)

ANSWER: 051 (1.00)

C

REFERENCE:

ANO2 OP 2202.003, 2202.001
KA 000026K303 4.0/4.2

000026K303 .. (KA's)

ANSWER: 052 (1.00)

B

REFERENCE:

ANO2 OP 2202.001
KA 000040A203 4.6/4.7

000040A203 .. (KA's)

ANSWER: 053 (1.00)

B

REFERENCE:

ANO2 OP 2202.002, 2202.010 ATT 1
KA 000007K301 4.0/4.6

000007K301 .. (KA's)

ANSWER: 054 (1.00)

D

REFERENCE:

ANO2 TS 3.5.2
KA 006000G005 2.5/4.2

006000G005 ..(KA's)

ANSWER: 055 (1.00)

A

REFERENCE:

ANO2 TS 3.6.1.4
KA 022000G005 3.0/3.7

022000G005 ..(KA's)

ANSWER: 056 (1.00)

C

REFERENCE:

ANO2 TS 3.6.4.3
KA 022000G007 3.3/3.5

022000G007 ..(KA's)

ANSWER: 057 (1.00)

[DELETED]

REFERENCE:

ANO2 LP AA-42002-003
KA 004000A401 3.8/3.9

004000A401 .. (KA's)

ANSWER: 058 (1.00)

A

REFERENCE:

ANO2 SAR, EQB AA-42002-007-2A
KA 026000G007 3.5/3.7

026000G007 .. (KA's)

ANSWER: 059 (1.00)

D

REFERENCE:

ANO2 STM 2-63, LP AA-52002-006
KA 012000K101 3.4/3.7
KA 012000K401 3.7/4.0
KA 012000A305 3.6/3.7

012000A305 012000K401 012000K101 .. (KA's)

ANSWER: 060 (1.00)

D

REFERENCE:

ANO2 STM 2-23, LP AA-52002-011
KA 041020K603 2.7/2.9

041020K603 .. (KA's)

ANSWER: 061 (1.00)

D

REFERENCE:

ANO2 SOP 2105.09, LP AA-52002-012
KA 001000G008 3.6/3.6

001000G008 .. (KA's)

ANSWER: 062 (1.00)

C

REFERENCE:

ANO2 SOP 2105.015
KA 015000K604 3.1/3.2

015000K604 .. (KA's)

ANSWER: 063 (1.00)

A

REFERENCE:

ANO2 STM 2-69, LP AA-52002-015
KA 059000K402 3.3/3.5

059000K402 .. (KA's)

ANSWER: 064 (1.00)

B

REFERENCE:

ANO2 LP AA-52003-013, LO 3B, EOP USERS GUIDE 1015.021
KA 000038A201 4.1/4.7

000038A201 ..(KA's)

ANSWER: 065 (1.00)

C

REFERENCE:

ANO2 EOP 2202.007 pg 12 STEP 13, LO AA52003-011-004
KA 000056G012 3.4/3.6

000056G012 ..(KA's)

ANSWER: 066 (1.00)

D

REFERENCE:

ANO2 EOP 2202.003 STEP 24, LO AA52003-015-07
KA 000009A234 3.6/4.2

000009A234 ..(KA's)

ANSWER: 067 (1.00)

C

REFERENCE:

ANO2 EOP 2202.003 STEP 56, LO AA52003-015-014
KA 000011A201 4.2/4.7

000011A201 ..(KA's)

ANSWER: 068 (1.00)

A

REFERENCE:

ANO2 STM 2-65-1, LP AA-52002-024
KA 012000K502 3.1/3.2

012000K502 ..(KA's)

ANSWER: 069 (1.00)

C

REFERENCE:

ANO2 SOP 1105.004, LP AA-52002-034
KA 011000K105 3.4/3.5

011000K105 ..(KA's)

ANSWER: 070 (1.00)

C.

REFERENCE:

ANO2 OP 2103.15, EOP 2202.01
KA 000024A205

000024A205 .. (KA's)

ANSWER: 071 (1.00)

B

REFERENCE:

ANO2 AOP 2203.25
KA 000015G011

000015G011 .. (KA's)

ANSWER: 072 (1.00)

A

REFERENCE:

ANO2 AOP 2203.21 pg 2
KA 000065G010

000065G010 .. (KA's)

ANSWER: 073 (1.00)

C

REFERENCE:

ANO2 AOP 2203.28
KA 000027G010

000027G010 .. (KA's)

ANSWER: 074 (1.00)

A

REFERENCE:

ANO2 STM 2-67 pgs 6-8
KA 015000A202

015000A202 .. (KA's)

ANSWER: 075 (1.00)

B

REFERENCE:

ANO HTT&F pg 91, CE STEAM TABLES
KA 010000K501

010000K501 .. (KA's)

ANSWER: 076 (1.00)

D

REFERENCE:

ANO2 OP 2103.05, AOP 2203.12J, THERMAL SCIENCES FND-21, LESSON D-7
KA C11000A208
KA 011000A211

011000A211 011000A208 ..(KA's)

ANSWER: 077 (1.00)

B

REFERENCE:

ANO2 STM 2-06 pgs 1, 2, 10
KA 028000K501

028000K501 ..(KA's)

ANSWER: 078 (1.00)

D

REFERENCE:

ANO2 STM 2-03
KA 000025K302 3.3

000025K302 ..(KA's)

ANSWER: 079 (1.00)

C

REFERENCE:

ANO2 I&C SYS OP 2105.03, LP AA-52002-040
KA 017020A201 3.1

017020A201 .. (KA's)

ANSWER: 080 (1.00)

B

REFERENCE:

ANO2 LP AA-52002-016, LO 16.4
KA 064000A401 4.0

064000A401 .. (KA's)

ANSWER: 081 (1.00)

D

REFERENCE:

ANO2 ANNUNCIATOR RESPONSE 2203.12G
KA 061000K107 3.6

061000K107 .. (KA's)

ANSWER: 082 (1.00)

B

REFERENCE:

ANO2 STM 2-54
KA 071000A426 3.1

071000A426 .. (KA's)

ANSWER: 083 (1.00)

B

REFERENCE:

ANO2 STM 2-69
KA 059000K402 3.3

059000K402 .. (KA's)

ANSWER: 084 (1.00)

D

REFERENCE:

ANO2 RCS OP 2103.005
KA 004000K601 3.1

004000K601 .. (KA's)

ANSWER: 085 (1.00)

A

REFERENCE:

ANO2 OP 2106.16 pg 129
KA 039000A302 3.1

039000A302 .. (KA's)

ANSWER: 086 (1.00)

A

REFERENCE:

ANO2 STM 2-03
KA 007000K103 3.0

007000K103 .. (KA's)

ANSWER: 087 (1.00)

D

REFERENCE:

ANO2 HTT&F HANDBOOK pgs 96, 97
KA 000040K106 3.7

000040K106 .. (KA's)

ANSWER: 088 (1.00)

B

REFERENCE:

ANO2 OP 2104.36
KA 064000A402 3.3

064000A402 .. (KA's)

ANSWER: 089 (1.00)

B

REFERENCE:

ANO2 AOP 2203.28
KA 011000K604 3.1

011000K604 .. (KA's)

ANSWER: 090 (1.00)

D

REFERENCE:

ANO2 SOP 2104.06
KA 033000A203 3.1

033000A203 .. (KA's)

ANSWER: 091 (1.00)

C

REFERENCE:

ANO2 TS 3/4.3.4 BASES, LP AA-52002-001
KA 016000G006 2.5/3.4

016000G006 .. (KA's)

ANSWER: 092 (1.00)

D

REFERENCE:

ANO2 STM 2-47, LP AA-52002-032
KA 086000A303 2.9/3.3

086000A303 .. (KA's)

ANSWER: 093 (2.00)

- a. 5
- b. 4
- c. 3
- d. 3

REFERENCE:

ANO2 STM 2-60
194001K116 (3.5/4.2)

194001K116 .. (KA's)

ANSWER: 094 (2.00)

- A. 3
- B. 4
- C. 4
- D. 1

REFERENCE:

ANO2 STM 2-03, LP AA-52002-001
KA 016000K107 3.7/3.7
KA 016000K403 2.8/2.9

016000403 016000K107 .. (KA's)

ANSWER: 095 (2.00)

A. 4
B. 1
C. 2
D. 1

REFERENCE:

ANO2 STM 2-4U, 43, LP AA-52002-030
KA 008000K102 3.3/3.4
KA 076000K119 3.6/3.7

076000K119 008000K102 .. (KA's)

ANSWER: 096 (2.00)

A. 3. OPEN
B. 2. OFF
C. 6. MIN
D. 2. OFF

REFERENCE:

ANO2 STM 2-03 pg 11, FIG. 3.22
KA 010000K603
KA 011000A102
KA 011000K101

011000A102 010000K603 011000K101 .. (KA's)

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