APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Operator Licensing Examination Report: 50-313/OL 90-03

Operating License: DPR-51

Docket: 50-313

Licensee: Entergy Operations, Inc.
 P.O. Box 551
 Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One, Unit 1 (ANO1)

Examination At: Arkansas Nuclear One, Unit 1

Chief Examiner: _J. L. Pellet, Chief, Operator Licensing Section_ 8/16/90
 Division of Reactor Safety

Approved: _J. L. Pellet, Chief, Operator Licensing Section_ 8/16/90
 Division of Reactor Safety

Summary

NRC Administered An Examination Conducted During the Week of August 6, 1990 (NRC Report 50-313/OL 90-03)

NRC administered an examination to a senior reactor operator (SRO) applicant. The applicant passed all portions of the examination and has been issued the appropriate license.

DETAILS

1. PERSON EXAMINED

		RO	SRO	TOTAL
License Examination:	Pass -	0	1	1

2. EXAMINER

J. L. Pellet, Chief Examiner

3. EXAMINATION REPORT

Performance results for individual candidates are not included in this report because examination reports are placed in the NRC Public Document Room as a matter of course. Individual performance 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. The facility licensee post-examination comments, less the supporting documentation, are included in the report immediately following the master examination key.

3.2 Examination Summary

Because only one applicant was administered an examination, no generic weaknesses or general findings were developed.

3.3 Master Examination and Answer Key

A master copy of the ANO1 license examination and answer key is attached. The facility licensee comments which have been accepted are incorporated into the answer key.

3.4 Simulation Facility Fidelity Report

A Simulation Facility Fidelity Report, in accordance with ES-501, Attachment 1 is attached.

ATTACHMENT 1

SIMULATION FACILITY REPORT

Facility: Arkansas Nuclear One, Unit 1

Facility Docket No.: 50-313

Operating Test Administered on: August 7, 1990

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

During the conduct of the simulator portion of the operating test, no items were observed.

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

FACILITY: Arkansas Nuclear One-1

REACTOR TYPE: PWR-B&W177

DATE ADMINISTERED: 90/08/0%

CANDIDATE:

INSTRUCTIONS TO CANDIDATE:

Points for each question are indicated in parentheses after the question. To pass this examination, you must achieve an overall grade of at least 80%. Examination papers will be picked up four and one half (4 1/2) hours after the examination starts.

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
~~96~~ 93	~~100~~.00 97		

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 (1) of the following conditions will prevent placing the
Diamond Control Rod Station in automatic?

   a.   T-ave is being controlled by the Feedwater Demand Subsection

   b.   Reactor Demand Hand/Auto Station is in HAND

   c.   Neutron error is 1.5%

   d.   T-ave is greater than setpoint

ANSWER: 001   (1.00)

   c.   [+1.0]

REFERENCE:

   ANO1 STM-1-64 rev 2, p.22
   001000K105 (4.5/4.4)

      001000K105   ..(KA's)

QUESTION: 002   (1.00)

WHICH ONE (1) of the following is supplied electrical power
from the rod control system DC Hold Power Supplies
during normal operation?

   a.   TWO (2) phases of all of the rods in EACH of the safety
        groups

   b.   ONE (1) phase of all of the rods in EACH of the safety
        groups

   c.   TWO (2) phases of all of the rods in EACH of the regulating
        groups

   d.   ONE (1) phase of all of the rods in EACH of the regulating
        groups

ANSWER: 002 (1.00)

a. [+1.0]

REFERENCE:

ANO1 STM-1-02 p.12
001000G007 (3.2/3.3)

001000G007 ..(KA's)

QUESTION: 003 (1.00)

WHICH ONE (1) of the following describes the required actions during
a reactor startup if, on the FIRST attempt, the reactor does NOT achieve
criticality within plus or minus 0.5% delta k/k?

a. No action is required until plus or minus 1.0% delta k/k
   is reached

b. Fully insert all regulating rods only

c. Fully insert all regulating rods and insert all safety
   rods in Group 1 to 50% withdrawn

d. Fully insert all regulating and safety rods

ANSWER: 003 (1.00)

b. [+1.0]

REFERENCE:

ANO1 1102.08 p.7
001010A207 (3.6/4.2)

001010A207 ..(KA's)

QUESTION. C04   (1.00)

WHICH ONE (1) of the following is the purpose of the RC pump
anti-reverse rotation device?

   a. To minimize reactor coolant pump starting voltage

   b. To minimize reactor coolant pump mechanical damage

   c. To minimize the flow through an idle RC pump

   d. To minimize re-start time of the RC pump at low power

ANSWER: 004 (1.00)

  c.   [+1.0]

REFERENCE:

ANO1 AA-51002-001 p.12
003000G007 (3.2/3.3)

    003000G007   ..(KA's)

QUESTION: 005 (1.00)

WHICH ONE (1) of the following failures would be indicated by a
DECREASE in RC pump seal return (bleed off) flow?

   a. The lower (#1) seal

   b. The middle (#2) seal AND loss of seal injection

   c. The upper (#3) seal

   d. The lower (#1) seal AND loss of seal injection

ANSWER: 005 (1.00)

  c.   [+1.0]

REFERENCE:

ANO1 STM-01-03 p.11, figure 3.17
003000A201 (3.5/3.9)

    003000A201   ..(KA's)

QUESTION: 006 (1.00)

WHICH ONE (1) of the following is the reason for the Total Seal
Injection Flow Control Valve (CV-1206) closing on a loss of the
operating makeup pump?

    a.   Prevents water hammer when the standby makeup pump starts

    b.   Ensures the standby HPI pump will have adequate NPSH

    c.   Avoids thermal shock to RC pump seal package when the
         standby makeup pump starts

    d.   Allows time for the PZR level control valve to respond

ANSWER: 006 (1.00)

 a. [+1.0]

REFERENCE:

ANO1 STM-10-04 p.15; 1101.01, p. 25
003000G010 (3.3/3.6)

    003000G010   ..(KA's)

QUESTION: 007   (1.00)

WHICH ONE (1) of the following describes the valve interlocks
associated with the Reactor Makeup Tank (MUT)?

    a.   At a MUT level of 54 inches, three way valve CV-1248
        repositions to the MUT AND MUT vent valve CV-1257 OPENS

    b.   At a MUT level of 54 inches, BWST supply valves CV-1407/1408
        OPEN

    c.   At a MUT level of 17 inches, three way valve CV-1248 repositions
        to the MUT AND MUT vent valve CV-1257 OPENS

    d.   At a MUT level of 17 inches, BWST supply valves CV-1407/1408
        OPEN

ANSWER: 007   (1.00)

  c.   [+1.0]

REFERENCE:

  ANO1   STM-1-04 rev 2, p.10
  004010A305 (3.3/3.2)

    004010A305   ..(KA's)

QUESTION: 008   (1.00)

WHICH ONE (1) of the following valves will be in the OPEN position
after an ESAS Channel 1 and 2 actuation? All valves were in normal
at power lineups prior to the ESAS actuation.

    a.   CV-1213, Letdown inlet to E29B (letdown cooler)

    b.   CV-1216, Letdown outlet from E29B

    c.   CV-1301, Makeup pump recirculation

    d.   CV-1274, RC pump bleed off isolation

ANSWER: 008   (1.00)

 a.   [+1.0]

REFERENCE:

 ANO1   STM-1-04 table 4.13 and figure 4.4
 000011A107 (4.4/4.4)

    000011A107   ..(KA's)

QUESTION: 009   (1.00)

 WHICH ONE (1) of the following sets of components receives control
 signals from the pressurizer level control and indicating system?

        a.   Primary makeup pumps AND the pressurizer heaters

        b.   Letdown isolation valve CV-1221 AND pressurizer spray valve

        c.   Pressurizer heaters AND makeup valve CV-1235

        d.   Pressurizer spray valve AND makeup valve CV-1235

ANSWER: 009   (1.00)

 c.   [+1.0]

REFERENCE:

 ANO1   STM-1-69 rev 0, p.10
 004000K101   (3.6/4.0)

    004000K101   ..(KA's)

QUESTION: 010   (1.00)

WHICH ONE (1) of the following combinations of plant parameters
a... inputs for the Engineered Safeguards Actuation System?

    a.   Reactor Building Pressure
         RC Temperature

    b.   RC Pressure
         Pressurizer Level

    c.   Pressurizer Level
         RC Temperature

    d.   RC Pressure
         Reactor Building Pressure

R

ANSWER: 010   (1.00)

 d.   [÷1.0]

REFERENCE:

ANO1   STM-1-65 rev 0, p.1
013000K101 (4.2/4.4)

    013000K101   ..(KA's)

QUESTION: 011   (1.00)

Given the following conditions:

- 75% power
- Channel NI-5 is the highest reading Power Range Channel
- Diamond Rod Control Station is in AUTOMATIC
- Channel NI-6 instantaneously fails LOW
- No operator action is taken

WHICH ONE (1) of the following correctly describes the resultant control rod system response?

   a.   Control rods will continuously drive IN at maximum rate

   b.   Control rods will continuously drive IN at minimum rate

   c.   Control rods will continuously drive OUT

   d.   Control rods will NOT move

ANSWER: 011   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1 STM-01-64 rev 2, p.15
 015000K103 (3.1/3.1)

     015000K103   ..(KA's)

QUESTION: 012   (1.00)

WHICH ONE (1) of the followj j is the detection instrument used by the Gamma Metrics Source Range Nuclear Instruments?

   a.   Compensated ion detector

   b.   BF3 proportional detector

   c.   Fission chamber

   d.   Uncompensated ion detector

ANSWER: 0'.2   (1.00)

 c. [+1.(]

REFERENCE:

 ANO1 STM-10-67 rev 1, p.[
 015000K601 (2.9/3.2)

    015000K601   ..(KA's)

QUESTION: 013   (1.00)

 WHICH ONE (1) of the following conditions will generate a REACT PROT
 SYSTEM TROUBLE alarm without generating an RPS channel trip?

        a.   Any intermediate range detector auxiliary power supply
             failure

        b.   Any channel of RPS in channel bypass

        c.   Any power range NI channel in test or calibrate

        d.   Any module of an RPS channel in test position

ANSWER: 013   (1

 a. [+1.0]

REFERENCE:

 ANO1 AOP 1203.12I p.33
 015000A301 (3.8/3.8)

    015000A301   ..(KA's)

QUESTION: 014   (1.00)

WHICH ONE (1) of the following actions occur following receipt of
ESAS channel 7 through 10 signals?

    a.   Reactor Building sump valves (CV-1405 and CV-1406) OPEN

    b.   Reactor Building spray pumps START

    c.   Reactor Building spray discharge valves (CV-2400 and
       CV-2401) THROTTLE to 60% OPEN

    d.   Reactor Building cooling fans START

ANSWER: 014   (1.00)

  b.   [*1.0]

REFERENCE:

ANO1   STM-1-65 Table 65.7
022000A301 (4.1/4.3)

   022000A301   ..(KA's)

QUESTION: 015   (1.00)

WHICH ONE (1) of the following specifies the impact on the Reactor
Building Ventilation system fan and cooling units if there is a
rupture in the common discharge header from the main chilled water
pumps (VP1A & B)?

    a.   They are not affected by the loss of main chilled water

    b.   They will be inoperable in the ESAS mode but available for
       normal cooling

    c.   They will be inoperable in the normal mode but available for
       ESAS cooling

    d.   They will be inoperable in the normal AND ESAS mode

ANSWER: 015   (1.00)

c.   [+1.0]

REFERENCE:

ANO1   STM-1-09 pgs.1-4
ANO1   STM-1-45 pgs.4-6
022000K101 (3.5/3.7)

    022000K101   ..(KA's)

QUESTION: 016   (1.00)

WHICH ONE (1) of the following is the reason for adding sodium
hydroxide (NaOH) to the Reactor Building Spray System?

    a.   It facilitates the converting of soluble iodine into in-
         soluble iodine

    b.   It controls sump pH to limit corrosion inside the
         Reactor Building

    c.   It minimizes the amount of hydrogen generated in the core during a
         LOCA

    d.   It reacts to produce a chemical solution that provides
         cleansing action inside the Reactor Building

ANSWER: 016   (1.00)

 b.   [+1.0]

REFERENCE:

ANO1   STM-1-08 rev 1, p.2
ANO1   1104.05 rev 27, p.1
026000K402 (3.1/3.6)

    026000K402   ..(KA's)

QUESTION: 017 (1.00)

WHICH ONE (1) of the following is an automatic trip of a Main Feedwater
(MFW) pump ONLY during pump startup?

    a. Operating condensate pumps trip

    b. Rotor vibration

    c. Pump suction pressure low

    d. Low exhaust vacuum

ANSWER: 017 (1.00)

 b. [+1.0]

REFERENCE:

 ANO1 1106.16
 059000K416 (3.1/3.2)

    059000K416   ..(KA's)

QUESTION: 018 (1.00)

In WHICH ONE (1) of the following will EFIC actuate and control OTSG
levels at 312 inches? Assume RC pumps are running unless specified
otherwise.

    a. BOTH OTSGs pressures are less than 750 psig, and NO RC pumps
        are operating in either loop

    b. "A" OTSG pressure is less than 600 psig, and BOTH RC pumps
        in "B" loop are NOT operating

    c. "A" OTSG pressure is less than 750 psig, and BOTH RC pumps
        in the "A" loop are NOT operating

    d. BOTH OTSGs pressures are less than 600 psig, with ONE (1)
        RC pump operating in EACH loop

ANSWER: 018   (1.00)

a.   [+1.0]

REFERENCE:

ANO1 STM-01-66 p.2
061000K402   (4.5/4.6)

   061000K402   ..(KA's)

QUESTION: 019   (1.00)

WHICH ONE (1) of the following is an automatic action that occurs
when the Control Room Area Radiation Monitor (RE-8001) is in HIGH alarm?

   a.   Smoke Exhaust fan (VEF-43) STARTS

   b.   Control Room Supply & Return valves (CV-7905 AND CV-7907) OPEN

   c.   Control Room Emergency Unit Cooler (VUC-9) STARTS

   d.   Fans VSF-8A/B STOP

ANSWER: 019   (1.00)

d.   [+1.0]

REFERENCE:

ANO1 STM-1-47 p.17; 1104.34, p. 10
072000K104 (3.3/3.5)

   072000K104   ..(KA's)

QUESTION: 020   (1.00)

WHICH ONE (1) of the following would require a RC cooldown in accordance with the Pressurized Thermal Shock (PTS) limits? A tube rupture is not in progress.

    a.   RC temperature is 520 degrees F and the cooldown rate is 90 degrees F/hour

    b.   RC temperature is 480 degrees F and the cooldown rate is 110 degrees F/hour

    c.   RC temperature is 520 degrees F, HPI is ON and ALL RC pumps are OFF

    d.   RC temperature is 480 degrees F, HPI is ON and TWO (2) RC pumps are OFF

ANSWER: 020   (1.00)

b.   [+1.0]

REFERENCE:

ANO1   1202.01 p.29 Caution
ANO1   AA-21003-005 p.6
002000G010 (3.4/3.9)

    002000G010   ..(KA's)

QUESTION: 021 (1.00)

WHICH ONE (1) of the following statements describes the PRIMARY
function of the Pressurizer Level Control System?

The Pressurizer Level Control System maintains pressurizer
level during reactor operation to ...

        a.   Protect the pressurizer relief valves

        b.   Provide a surge chamber to accommodate RC volume changes

        c.   Prevent damage to the pressurizer heaters by operating them
             uncovered

        d.   Prevent an excessive pressure decrease on a large insurge of
             water

ANSWER: 021 (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1 STM-01-03 p.6
 002020K403 (3.1/3.4)

    002020K403   ..(KA's)

QUESTION: 022 (1.00)

WHICH ONE (1) of the following is the response of the ICS input signal when less than 95% full flow is SIMULTANEOUSLY sensed in BOTH loops? The ICS Auto/Manual T-ave Transfer Switch is initially in the "Unit T-ave" position and all systems are in automatic.

a. Allow the operator to select either Loop-A, Loop-B, or UNIT T-ave

b. Restrict operator position selection to only UNIT T-ave

c. Automatically select the loop with the LOWEST flow

d. Automatically select the loop with the HIGHEST flow

ANSWER: 022 (1.00)

a. [+1.0]

REFERENCE:

ANO1 STM-01-69 p.5
002000A109 (3.7/3.8)

002000A109 ..(KA's)

QUESTION: 023 (1.00)

WHICH ONE (1) of the following is the proper valve status for the Decay Heat Removal System (DH) in the Emergency Safeguards Actuation (Emergency Standby) lineup?

a. Decay Heat Cooler Inlet valve (DH-3A/B) CLOSED

b. Makeup pump suction supply valves (DH-7A/B) OPEN

c. Low pressure injection valves (CV-1401/1400) OPEN

d. Decay Heat suction valves (CV-1050/1410) CLOSED

ANSWER: 023 (1.00)

d.   [+1.0]

REFERENCE:

ANO1 AA-51002-020 p.11
ANO1 1104.04 Attachment A
006020A302 (3.9/4.2)

006020A302   .. KA's)

QUESTION: 024   (1.00)

WHICH ONE (1) of the following ccmponents is actuated by Engineered
Safeguards Actuation System Channel 2?

       a.   "A" High Pressure Injection pump (P36-A)

       b.   "B" Low Pressure injection pump (P34-B)

       c.   EFIC train "B"

       d.   CV-1274 (RC pumps seal return valve)

ANSWER: 024 (1.00)

d.   [+1.0]

REFERENCE:

ANO1 STM-01-65 table 65.2
006000K405   (4.3/4.4)

006000K405   ..(KA's)

QUESTION: 025 (1.00)

WHICH ONE (1) of the following statements describes the plant response to a pressurizer level channel (controlling channel) failing LOW? (ASSUME no operator action taken and reactor at 100% power).

a. The pressurizer control valve OPENS, actual pressurizer level and RC pressure INCREASES

b. The pressurizer control valve position REMAINS THE SAME, actual pressurizer level and RC pressure DECREASES

c. The pressurizer control valve CLOSES, actual level DECREASES and pressurizer heaters turn OFF

d. The pressurizer control valve position REMAINS THE SAME, actual pressurizer level and RC pressure INCREASES

ANSWER: 025 (1.00)

a. [+1.0]

REFERENCE:

ANO1 AA-51002-034 p.9
011000K301 (3.2/3.4)

011000K301   ..(KA's)

QUESTION: 026 (1.00)

WHICH ONE (1) of the following Pressurizer water levels is the setpoint at which all heaters are interlocked OFF?

a. 200 inches

b. 100 inches

c. 55 inches

d. 40 inches

QUESTION: 025 (1.00)

WHICH ONE (1) of the following statements describes the plant response to a pressurizer level channel (controlling channel) failing LOW? (ASSUME no operator action taken and reactor at 100% power).

    a. The pressurizer control valve OPENS, actual pressurizer
        level and RC pressure INCREASES

    b. The pressurizer control valve position REMAINS THE SAME,
        actual pressurizer level and RC pressure DECREASES

    c. The pressurizer control valve CLOSES, actual level DECREASES
        and pressurizer heaters turn OFF

    d. The pressurizer control valve position REMAINS THE SAME
        actual pressurizer level and RC pressure INCREASES

ANSWER: 025   (1.00)

  a.   [+1.0]

REFERENCE:

 ANO1   AA-51002-034 p.9
 011000K301 (3.2/3.4)

    011000K301   ..(KA's)

QUESTION: 026 (1.00)

WHICH ONE (1) of the following Pressurizer water levels is the
setpoint at which all heaters are interlocked OFF?

    a. 200 inches

    b. 100 inches

    c. 55 inches

    d. 40 inches

ANSWER: 026   (1.00)

c.   [+1.0]

REFERENCE:

ANO1   1103.05 rev 20, p.3
011000K401 (3.3/3.7)

011000K401   ..(KA's)

QUESTION: 027   (1.00)

WHICH ONE (1) of the following prevents placing TWO (2) channels of
the Reactor Protective System in "Manual Bypass" while the reactor is
at 80% power?

   a.   Actuation of a reactor trip signal (two out of four) when
        the second channel is placed in "Manual Bypass"

   b.   Actuation of an RPS channel trip when the second channel in
        placed in "Manual bypass"

   c.   An RPS interlock which prevents the second channel from
        being placed in "Manual bypass"

   d.   An RPS interlock which returns the FIRST channel to "Normal"
        (non-bypass), whenever an attempt is made to place a SECOND
        channel in "Manual Bypass"

ANSWER: 027   (1.00)

c.   [+1.0]

REFERENCE:

ANO1   1105.01 p.4
ANO1   AA 51002-006 p.30
ANO1   STP-01-63 p.17
012000K604 (3.3/3.6)

012000K604   ..(KA's)

QUESTION: 028   (1.00)

WHICH ONE (1) of the following spent fuel system conditions will
cause an annunciator to alarm in the control room?

    a.   Spent fuel pool return flow LOW

    b.   ICW flow through the spent fuel coolers LOW

    c.   Spent fuel pool temperature HIGH

    d.   Spent fuel pool level HIGH

ANSWER: 028   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1   STM-1-07 rev 1, p.3
 ANO1   OP 1101.02 rev 5, p.16
 033000K401 (2.9/3.2)

    033000K401   ..(KA's)
    033000A203   (3.1/3.5)

QUESTION: 029   (1.00)

WHICH ONE (1) of the following describes how the three heat transfer
region surfaces (lengths) in the OTSG change as power INCREASES?

	NUCLEATE BOILING	FILM BOILING	SUPERHEAT
a.	remains constant	increases	decreases
b.	increases	decreases	remains constant
c.	decreases	relatively constant	increases
d.	increases	relatively constant	decreases

ANSWER: 029 (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1 AA-51002-001 p.22
 ANO1 STM-01-15 p.5, 15
 035010A101 (3.6/3.8)

     035010A101   ..(KA's)

QUESTION: 030 (1.00)

WHICH ONE (1) of the following describes the reason that Emergency
Feedwater (EFW) will cause a quicker DECREASE in OTSG pressure than
the same MFW flow rate?

     a. EFW is injected into the steam space

     b. Main Feedwater is NOT counterflow to the OTSG tubes

     c. OTSG pressure is HIGHER during EFW flow conditions

     d. EFW is injected into the outer wrapper area of the OTSG

ANSWER: 030 (1.00)

 a. [+1.0]

REFERENCE:

 ANO1 B&W ATOGs, Appendix B, p.B-10
 035010K101 (4.2/..5)

   035010K101   ..(KA's)

QUESTION: 031 (1.00)

WHICH ONE (1) of the following instruments feeding ICS, upon failure
as indicated, would cause an INCREASE in reactor power?

    a.   OTSG Startup Range Level fails LOW

    b.   T-hot fails HIGH

    c.   T-cold fails HIGH

    d.   Turbine header pressure fails LOW

ANSWER: 031 (1.00)

  a. [+1.0]

REFERENCE:

  ANO1 AA-51002-034 p.11
  039000K305 (3.6/3.7)

    039000K305 ..(KA's)

QUESTION: 032 (1.00)

WHICH ONE (1) of the following loads would be sequenced ON by
the ESAS system following an ESAS actuation with degraded power?

    a.   Instrument air compressors

    b.   Control room chillers

    c.   RB spray pumps

    d.   Intermediate cooling water pumps

ANSWER: 032 (1.00)

  c. [+1.0]

REFERENCE:

ANO1   1202.01 p.204
ANO1   AA-51002-016 p.23
ANO1   1107.02 p.3
064000A307 (3.6/3.7)

    064000A307   ..(KA's)

QUESTION: 033   (1.00)

WHICH ONE (1) of the following process radiation monitors has
automatic actions associated with a HIGH alarm?

    a.   RE-2236/2237, Intermediate Cooling Water

    b.   RE-3814/3815, Liquid Service Water

    c.   RE-4642, Liquid Radwaste

    d.   RE-3809/3810, Decay Heat Water

ANSWER: 033   (1.00)

  c.   [+1.0]

REFERENCE:

ANO1 1203.07
073000K101 (3.6/3.9)

    073000K101   ..(KA's)

QUESTION: 034   (1.00)

WHICH ONE (1) of the following completes Technical Specification
3.17.1, Fire Suppression Water System?

    a.   Two high press. fire pumps each with a capacity of 2500 gpm

    b.   Two high press. fire pumps with a combined capacity of 2500 gpm

    c.   Three high press. fire pumps with a combined capacity of 2500 gpm

    d.   Three high press. fire pumps each with a capacity of 2500 gpm

ANSWER: 034   (1.00)

 a.   [+1.0]

REFERENCE:

 ANO1   Tech Spec 3.17.1, p.66m
 086000G011 (2.7/3.5)

    086000G011   ..(KA's)

QUESTION: 035   (1.00)

 WHICH ONE (1) of the following would cause damage to an operating DH
 pump?

        a.   Flow per pump of 3800 gpm during normal operations

        b.   Flow per pump exceeding 3500 gpm when taking suction from
             the building sump during ESAS operations

        c.   Operation in the recirculation mode without cooling for three
             (3) minutes

        d.   Pump discharge pressure at 420 psig and RC temperature at 250
             degrees F.

ANSWER: 035   (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   1104.04 p. 6
 005000K407 (3.2/3.5)

    005000K407   ..(KA's)

QUESTION: 036   (1.00)

WHICH ONE (1) of the following discharge to the Reactor Coolant
Quench Tank?

    a.   Core flood tank relief valves

    b.   DH suction relief valves

    c.   Reactor vessel high point vents.

    d.   RC pump seal leakage

ANSWER: 036   (1.00)

  d.   [+1.0]

REFERENCE:

ANO1   STM-1-03 p. 13
ANO1   AA-51002-001 p. 14
007000K103 (3.0/3.2)

    007000K103   ..(KA's)

QUESTION: 037   (1.00)

WHICH ONE (1) of the following will NOT cause an automatic
trip of the main turbine?

    a.   HIGH rotor vibration

    b.   Loss of DC power to the Turbine Lockout Relay

    c.   HIGH exhaust hood temperature

    d.   Loss of EHC control system power

ANSWER: 037   (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   1203.12D p.7 & 52
 045050K101 (3.4/3.6)

     045050K101   ..(KA's)

QUESTION: 038   (1.00)

 Service Water system valves CV-3821 and CV-3822 (SW inlet to
 DH coolers) are interlocked to automatically do WHICH ONE (1) of the
 following?

        a.   OPEN when the associated DH pump starts

        b.   OPEN upon ESAS Channel 3 and 4 actuation

        c.   THROTTLE SW inlet flow to control the RC cooldown rate

        d.   THROTTLE to control SW flow through the DH coolers to 3000
             GPM or less

ANSWER: 038   (1.00)

 a.   [+1.0]

REFERENCE:

 ANO1 STM-1-42 p.13
 076000K108   (3.5/3.5)

     076000K108   ..(KA's)

QUESTION: 039 (1.00)

WHICH ONE (1) of the following conditions would NOT result in a DIRECT automatic trip of the Instrument Air compressor?

   a. Low ICW flow

   b. High temperature from after cooler

   c. Electrical fault

   d. Low oil pressure

ANSWER: 039 (1.00)

 a.   [+1.0]

REFERENCE:

 ANO1   1104.24 p.2
 078000K104 (2.6/2.9)

     078000K104   ..(KA's)

QUESTION: 040 (1.00)

WHICH ONE (1) of the following conditions would require a manual reactor trip?

   a. Loss of TWO (2) power range NI channels

   b. TWO (2) dropped rods at 1% reactor power

   c. ONE (1) dropped rod at 80% reactor power

   d. A startup rate of 1.5 DPM

ANSWER: 040 (1.00)

 b. [+1.0]

REFERENCE:

ANO1   1203.21 rev 3, p.1
ANO1   1203.03 rev 12, p.2
ANO1   1102.08 rev 12, p.2
000003K304 (3.8/4.1)

   000003K304   ..(KA'ε)

QUESTION: 041   (1.00)

WHICH ONE (1) of the following conditions requires tripping the
the affected RC pump in accordance with 1203.31, "Reactor Coolant
Pump and Motor Emergencies"?

   a.   Controlled bleed-off temperature greater than 165 degrees F

   b.   ONE (1) stage of a seal package has failed

   c.   Motor winding temperature greater than 250 degrees F

   d.   Motor bearing temperature greater than 200 degrees F

ANSWER: 041   (1.00)

 d.   [+1.0]

REFERENCE:

ANO1   1203.31 p.15
C00015A208   (3.4/3.5)

   000015A208   ..(KA's)

QUESTION: 042 (1.00)

WHICH ONE (1) of the following events would require immediate
boration in accordance with 1202.01 Section 15.0, "Actions to
Accomplish Emergency Boration"?

   a. An uncontrolled reactivity increase

   b. Failure of TWO (2) control rods to fully insert following a
       reactor trip

   c. Anytime a continuous rod withdrawal event occurs

   d. Anytime minimum shutdown margin is in question

ANSWER: 042 (1.00)

  b. [+1.0]

REFERENCE:

  ANO1 1202.01 p.315
  000024G010   (4.0/4.0)

      000024G010   ..(KA's)

QUESTION: 043 (1.00)

WHICH ONE (1) of the following describes the response of the
operating Service Water pump "A" to a loss of offsite power in
conjunction with an ESAS actuation?

   a. Pump continues operation without interruption

   b. Pump continues operation until standby pump is started by
       load sequencing

   c. Pump stops and is restarted by load sequencing

   d. Pump stops and will not restart until offsite power is
       restored

ANSWER: 043   (1.00)

  c.   [+1.0]

REFERENCE:

  ANO1   STM-1-32 rev 1, p.65
  ANO1   STM-1-42 rev 1, p.10
  000026A202 (2.9/3.6)

      000026A202   ..(KA's)

QUESTION: 044   (1.00)

  WHICH ONE (1) of the following ICW pump MAXIMUM discharge
  pressures and MINIMUM time frames will automatically start
  the Standby ICW pump in accordance with 1104.28, "ICW System
  Operating Procedure"?

      a.   34 psig for 10 seconds

      b.   49 psig for 5 seconds

      c.   49 psig for 10 seconds

      d.   34 psig for 5 seconds

ANSWER: 044   (1.00)

  a.   [+1.0]

REFERENCE:

  ANO1   1104.28 p.5
  000026G010 (3.6/3.5)

      000026G010   ..(KA's)

QUESTION: 045 (1.00)

Given the following conditions:

T+0   Reactor trip from 100% power due to low RC pressure
             All control rods fully insert
             No secondary activity alarms

T+30sec   Immediate actions of Reactor Trip tab were completed
             successfully
             Follow-up actions of Reactor Trip tab were completed until
             transfer criteria were met

T+1min   RC T-cold is 535 degrees and decreasing
             RC subcooling is 40 degrees F and decreasing
             Pressurizer level is 40 inches and decreasing
             RC pressure is 1650 psig and decreasing
             Main steam line pressures are 800 psig and decreasing

WHICH ONE (1) of the following is the correct Section of EOP 1202.01,
to be in for the above conditions?

    a. 4.0 "Actions To Correct Overcooling"

    b. 5.0 "Actions to Correct Loss of Subcooling Margin"

    c. 12.0 "Actions for Main Steam Line Isolation"

    d. 13.0 "Actions for ESAS Actuation"

ANSWER: 045 (1.00)

 a. [+1.0]

REFERENCE:

 ANO1 1202.01, rev 19, p.20, 28
 000040K304 (4.5/4.7)

    000040K304   ..(KA's)

QUESTION: 046 (1.00)

WHICH ONE (1) of the following is a reason for isolation of a OTSG
with a steam leak upstream of the MSIV?

    a. To reduce the probability of occurrence of a OTSG tube
       rupture in the faulted OTSG

    b. To maximize the cooldown capability of the non-faulted loop
       following a steam line break

    c. To allow the faulted OTSG to boil dry to prevent overcooling
       the RC

    d. To ensure the release to the environment remains below the
       10CFR100 limits on a design basis event

ANSWER: 046 (1.00)

 c. [+1.0]

REFERENCE:

ANO1 1202.01 p.270
000040K301 (4.2/4.5)

   000040K301 ..(KA's)

QUESTION: 047 (1.00)

WHICH ONE (1) of the following correctly discriminates between a
steam line rupture inside containment and a small break LOCA?

    a. RC temperature

    b. RC pressure

    c. Containment temperature

    d. Containment pressure

ANSWER: 047 (1.00)

a. [+1.0]

REFERENCE:

ANO1 1202.01, p. 28, 272
000040A203 (4.6/4.7)

000040A203 ..(KA's)

QUESTION: 048 (1.00)

WHICH ONE (1) of the following is the first condenser vacuum reading which,
on decreasing vacuum, would require a manual turbine trip, per AOP 1203.16,
"Loss of Condenser Vacuum?" Initially, the main turbine is operating at
50% power with normal condenser vacuum.

    a. 28" Hg.

    b. 26" Hg.

    c. 24" Hg.

    d. 22" Hg.

ANSWER: 048 (1.00)

c. [+1.0]

REFERENCE:

ANO1 1203.16 rev 4, p.2
000051A202 (3.9/4.1)

000051A202 ..(KA's)

QUESTION: 049 (1.00)

WHICH ONE (1) of the following symptoms would be an indication of a loss of condenser vacuum?

    a. Increasing gland seal steam header pressure

    b. Decreasing electrical load with constant steam flow

    c. Decreasing circulating water inlet temperature

    d. Decreasing condenser hotwell level

ANSWER: 049 (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   1203.16 rev 4, p.1
 000051A201 (2.4/2.7)

    000051A201   ..(KA's)

QUESTION: 050 (1.00)

WHICH ONE (1) of the following components/systems would NOT be available during a loss of offsite and onsite power (Station Blackout)?

    a. P-7A speed control

    b. Main Feedwater emergency lube oil pumps

    c. RC pump emergency lube oil pumps

    d. RC pumps seal cooling pump

ANSWER: 050   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1   1202.01 p.209,215,216
 000055A204 (3.7/4.1)

    000055A204   ..(KA's)

QUESTION: 051   (1.00)

 WHICH ONE (1) of the following is an operator action per 1202.01
 Section 10.0, "Actions to Correct Blackout?"

    a.   Place ICW pump switches in pull-to-lock or OFF position

    b.   Manually close RC pump seal return valves are CLOSED

    c.   Verify EFW P7B maintaining proper OTSG level

    d.   Verify main steam line isolation valves are CLOSED

ANSWER: 051   (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   1202.01 rev 19, p.206
 000055K302   (4.3/4.6)

    000055K302   ..(KA's)

QUESTION: 052 (1.00)

WHICH ONE (1) of the following times is the designed battery reserve capacity for ensuring adequate power supply to the emergency 125VDC loads?

a. TWO (2) hours

b. FOUR (4) hours

c. SIX (6) hours

d. EIGHT (8) hours

ANSWER: 052 (1.00)

a. [+1.0]

REFERENCE:

ANO1 AA-51002-007 p.42
000055K301 (2.7/3.4)

000055K301 ..(KA's)

QUESTION: 053 (1.00)

WHICH ONE (1) of the following is the first corrective action for a Station Blackout condition per 1202.01, Section 10, "Actions to Correct Blackout"?

a. Establish natural circulation flow and decay heat removal

b. Attempt to make an EDG available

c. Manually isolate letdown and RC pump seal return

d. Select REFLUX BOILING setpoint for EFW

ANSWER: 053   (1.00)

 a. [+1.0]

REFERENCE:

ANO1 1202.01, rev 19, p.205
000055K302 (4.3/4.6)

     000055K302   ..(KA's)

QUESTION: 054 (1.00)

WHICH ONE (1) of the following transients occurs on a loss of
NNI-X AC power?

     a.   Continuous rod INSERTION occurs due to failed T-ave signal

     b.   Letdown ISOLATES due to closure of Letdown Cooler outlet
          valve CV-1221

     c.   Pressurizer level INCREASES due to control valve CV-1235
          failing open

     d.   OTSG levels INCREASE due to failed feedwater pressure signal

ANSWER: 054   (1.00)

 b.   [+1.0] QUESTION DELETED PER FACILITY COMMENT

REFERENCE:

ANO1   1202.01 rev 19, p.238
C00057A218 (3.1/3.1)

     000057A218   ..(KA's)

QUESTION: 055 (1.00)

WHICH ONE (1) of the following component responses to a loss of total ICS power is correct?

a. Feedwater crossover valve stays as it was

b. Feedwater low load block valves stay as they were

c. The turbine rejects to OPERATOR MANUAL

d. The main feedwater block valves stay as they were

ANSWER: 055 (1.00)

a. [+1.0]

REFERENCE:

ANO1 AA-51002-015 p.47
000057A219 (4.0/4.3)

000057A219 ..(KA's)

QUESTION: 056 (1.00)

WHICH ONE (1) of the following is a direct condition which would require all but one (1) Reactor Coolant Pump to be stopped per EOP 1202.01, Section 13.0, "Actions for ESAS Actuation"?

a. LOCA

b. Severe overcooling event

c. Steam line break inside containment

d. Containment isolation

ANSWER: 056 (1.00)

d. [+1.0]

REFERENCE:

ANO1 1202.01 p.272
000068G010 (4.0/4.2)

   000068G010   ..(KA's)

QUESTION: 057   (1.00)

WHICH ONE (1) of the following is a required operator action follow-
ing a large break LOCA?

   a.   Place hydrogen recombiners in operation prior to hydrogen
        concentration reaching 3.5%

   b.   Start ONE (1) hydrogen sampler within thirty minutes after
        a LOCA

   c.   Start BOTH hydrogen samplers within fifteen minutes after
        a LOCA

   d.   Place BOTH hydrogen recombiners in operation within fifteen
        minutes after a LOCA or prior to reaching 2.5% hydrogen
        concentration

ANSWER: 057   (1.00)

a.   [+1.0]

REFERENCE:

ANO1   1202.01 rev 19, p.281
ANO1   1104.31 rev 4, p.5 & 8
000069G010 (3.9/3.9)

   000069G010   ..(KA's)

QUESTION: 058   (1.00)

WHICH ONE (1) of the following would constitute a LOSS of Reactor
Building (RB) Integrity during operation at power?

   a.   Any automatic RB isolation valve which is INOPERABLE is
        de-energized and CLOSED and the corresponding in-line valve
        is OPEN

   b.   Only ONE (1) door of the personnel lock is CLOSED and
        sealed (repairs are in progress)

   c.   All non-automatic RB isolation valves are CLOSED

   d.   All automatic RB isolation valves are OPERABLE and OPEN

ANSWER: 058   (1.00)

 d.   [+1.0]

REFERENCE:

ANO1   1203.05 p.1
ANO1   Tech Spec 3.2.3 & 3.6.1
000069A201 (3.7/4.3)

     000069A201   ..(KA's)

QUESTION: 059   (1.00)

WHICH ONE (1) of the following correctly describes why OTSGs are
depressurized during execution of 1202.01 Section 7.0, "Actions to
Correct Inadequate Core Cooling"?

   a.   To maintain OTSG tube-to-shell delta T within limits

   b.   To reduce h   ressure to allow the Core Flood Tanks and low
        pressure inj< tion (LPI) pumps to inject

   c.   To reduce RC temperature to increase thermal driving head
        for natural circulation

   d.   To allow ONE (1) RC pump per loop to be started to make use
        of any coolant in the system that has condensed and settled
        out in low points

ANSWER: 059   (1.00)

 b. [+1.0]

REFERENCE:

 ANO1   1202.01 p.108
 000074K311   (4.0/4.4)

    000074K311   ..(KA's)

QUESTION: 060   (1.00)

WHICH ONE (1) of the following methods contained within EOP 1202.01,
Section 5.0, "Actions to Correct Loss of Subcooling Margin," is used
for removal of RC voids that are due to the presence of
non-condensable gases if RC pumps are not available?

     a.   Pressurize the RC to reduce void size

     b.   Maximize natural circulation cooling to collapse the void

     c.   Maximize HPI flow for hot leg refill

     d.   Open high point vents for hot leg venting

ANSWER: 060   (1.00)

 d. [+1.0]

REFERENCE:

 ANO1   1202.01 p.68
 000074K311   (4.0/4.4)

    000074K311   ..(KA's)

QUESTION: 061   (1.00)

WHICH ONE (1) of the following is the major concern when T-clad
reaches 1800 degrees F during an Inadequate Core Cooling transient?

     a.   Melting of the cladding

     b.   Significant hydrogen gas generation

     c.   Melting of the fuel

     d.   Structural failure of core supports

ANSWER: 061   (1.00)

  b.   [+1.0]

REFERENCE:

 ANO1   1202.01 p.115
 ANO1   AA-51003-001 p.14
 000074K102   (4.6/4.8)

    000074K102   ..(KA's)

QUESTION: 062   (1.00)

WHICH ONE (1) of the following is the action taken to recover from
high RC gross gamma activity according to 1203.19, "High Activity in
Reactor Coolant"? The high reactivity is not due to failed fuel.

     a.   INCREASE MUT hydrogen concentration

     b.   PURGE the MUT to remove non-condensable gases

     c.   Place BOTH purification demineralizers in service

     d.   INCREASE letdown flow to MAXIMUM

ANSWER: 062   (1.00)

d.   [+1.0]

REFERENCE:

ANO1   1203.19 p.2
000076K306 (3.2/3.8)

000076K306   ..(KA's)

QUESTION: 063   (1.00)

WHICH ONE (1) of the following is the reason for verifying a turbine trip has occurred in Step 2.2 of EOP 1202.01, "Reactor Trip"?

    a.   Turbine trip signal is required to transfer AC bus power supplies

    b.   Reduces feedwater flow requirements

    c.   Minimizes steam generator tube-to-shell delta-T

    d.   Prevents an uncontrolled RC cooldown

ANSWER: 063   (1.00)

d.   [+1.0]

REFERENCE:

ANO1 ATOG Part II - Volume 1, p. 19, 20
000007K301 (4.0/4.6)

000007K301   ..(KA's)

QUESTION: 064   (1.00)

WHICH ONE (1) of the following represents the order of priority
for the listed Emergency Procedure Tabs when performing Emergency
Operating Procedure 1202.01 Section 1.0, "Reactor Trip"?
Assume a Steam Generator Tube Rupture was NOT the initial entry
condition.

1. Overcooling Tab
2. Overheating Tab
3. Loss of Subcooling Margin Tab
4. Steam Generator Tube Leak Tab
5. Blackout or Degraded Power Tab
6. ESAS Tab
7. HPI Cooldown Tab

SELECTIONS:

a. 5, 2, 7, 6

b. 2, 6, 4, 3

c. 3, 1, 2, 7

d. 5, 6, 7, 1

ANSWER: 064   (1.00)

d. [+1.0]

REFERENCE:

ANO1   1202.01 p.1-22
000007G012   (3.8/3.9)

000007G012   ..(KA's)

QUESTION: 065   (1.00)

WHICH ONE (1) of the following is NOT an expected automatic action
as a result of a reactor trip from 100% power?

    a. A feedwater runback

    b. Letdown isolation valve CV-1221 CLOSES

    c. Turbine bypass valves OPEN

    d. Station auxiliaries bus transfers to Start Up transformer

ANSWER: 065   (1.00)

  b. [+1.0]

REFERENCE:

 ANO1   1202.01 p.1-10
 000007K301   (4.0/4.6)

    000007K301   ..(KA's)

QUESTION: 066   (1.00)

The initial symptoms of a pressurizer steam space leak are indicated
by pressurizer level ____(1)____ and pressurizer pressure ____(2)____.

    a. (1) decreasing, (2) decreasing

    b. (1) increasing, (2) decreasing

    c. (1) decreasing, (2) increasing

    d. (1) increasing, (2) increasing

ANSWER: 066   (1.00)

  b. [+1.0]

REFERENCE:

ANO1 ATOG Part II - Volume 2, p. F-25
000008A227 (2.9/3.2)

000008A227   ..(KA's)

QUESTION: 067 (1.00)

WHICH ONE (1) of the following is NOT an action taken by an operator
if a loss of RC Makeup pump occurs?

    a.   CLOSE letdown orifice block valve CV-1222

    b.   CLOSE RC pump total injection flow valve CV-1207

    c.   CLOSE makeup isolation valve CV-1234

    d.   CLOSE pressurizer level control valve CV-1235

ANSWER: 067 (1.00)

  c.   [+1.0]

REFERENCE:

ANO1 1203.26 rev 4, p.1
000022K302 (3.5/3.8)

000022K302   ..(KA's)

QUESTION: 068 (1.00)

WHICH ONE (1) of the following valve positions could result in a total loss of the Low Pressure Injection (LPI) System following an ESAS Channel 3 and 4 actuation? The LPI system is otherwise aligned for LPI. Assume no operator action.

   a. CV-1432, DH Cooler (E-35B) Bypass valve, OPEN

   b. CV-1414, Inside RB Sump Line A Outlet valve, CLOSED

   c. CV-1405, Outside RB Sump Line A Outlet valve, OPEN

   d. CV-1050, Decay Heat Suction valve, CLOSED

ANSWER: 068   (1.00)

   c.   [+1.0]   QUESTION DELETED PER FACILITY COMMENT

REFERENCE:

ANO1 STM-1-05 rev 0, p.4
000025A110   (3.1/2.9)

   000025A110   ..(KA's)

QUESTION: 069   (1.00)

WHICH ONE (1) of the following is the basis for requiring ONE (1) DH loop to be in operation during refueling operations?

   a. To maintain RC temperature less than 200 degrees F.

   b. To minimize the effect of a postulated boron dilution event

   c. To maintain ONE (1) LPI loop in the event emergency core cooling is required

   d. To prevent the partial uncovering of a fuel assembly during refueling

ANSWER: 069   (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   Tech Spec 3.8.2.1 Bases
 000025K101 (3.9/4.3)

    000025K101   ..(KA's)

QUESTION: 070   (1.00)

 Reactor power is at 86% when the controlling pressurizer pressure
 channel fails HIGH. With NO operator action, WHICH ONE (1) of the
 following describes one of the plant responses?

     a.   Actual RC pressure INCREASES

     b.   Pressurizer sprays go full SHUT

     c.   Heaters ENERGIZE

     d.   ESAS actuation

ANSWER: 070   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1   STM-10-034 p.5
 000027A211 (4.0/4.1)

    000027A211   ..(KA's)

QUESTION: 071 (1.00)

WHICH ONE (1) of the following recovery actions sections of EOP 1202.01 may be entered without a manual or automatic reactor trip?

    a. Degraded Power

    b. Loss of NNI power

    c. Steam Generator Tube Rupture

    d. Inadequate Core Cooling

ANSWER: 071 (1.00)

 c. [+1.0]

REFERENCE:

 ANO1 1202.01 rev 19, pgs.1-3
 000037G011   (3.9/4.1)

    000037G011   ..(KA's)

QUESTION: 072 (1.00)

WHICH ONE (1) of the following leakages will require initiation of a reactor shutdown per Technical Specifications?

    a. Unidentified RC leakage of 0.6 gallon/minute

    b. Identified RC leakage of 6.0 gallon/minute

    c. "A" OTSG tube leakage of 0.9 gallon/minute

    d. "A" AND "B" OTSG tube leakages of 0.6 gallon/minute EACH

ANSWER: 072 (1.00)

 d. [+1.0]

REFERENCE:

ANO1 TS 3.1.6
000037A210 (3.2/4.1)

000037A210 ..(KA's)

QUESTION: 073 (1.00)

WHICH ONE (1) of the following, in accordance with EOP 1202.01,
Section 8.0, "Actions for Tube Rupture", is the limiting
consideration during the initial controlled plant shutdown?

    a. Affected OTSG pressure remains below 1050 psig

    b. Affected OTSG level remains below 378 inches

    c. Pressurizer level remains greater than 100 inches

    d. Makeup Tank level is maintained

ANSWER: 073 (1.00)

 c. [+1.0]

REFERENCE:

ANO1 1202.01 p.116
000038K306 (4.2/4.5)

000038K306 ..(KA's)

QUESTION: 074   (1.00)

WHICH ONE (1) of the following is the reason all reactor coolant
pumps are tripped with dry OTSGs and no primary to secondary heat
transfer?

    a.   To get increased HPI flow by decreasing RC cold leg pressure

    b.   To stabilize OTSG temperatures and prevent buckling the
         tubes

    c.   To conserve steam generator secondary inventory by reducing
         heat input to the RC

    d.   To minimize the possibility of a tube rupture as EFW is
         restored to the OTSGs

ANSWER: 074   (1.00)

  b.   [+1.0]

REFERENCE:

  ANO1   1202.01 rev 19, p.99
  000054K304   (4.4/4.6)

    000054K304   ..(KA's)

QUESTION: 075   (1.00)

WHICH ONE (1) of the following will result from a loss of DC Panel
D11 OR Panel D21?

    a.   Loss of associated train diesel generator auto
         starting capability

    b.   Loss of power to EFW valves

    c.   Loss of power to DC inverters Y11 AND Y13

    d.   Loss of remote control capability for non vital 480V
         bus breakers

ANSWER: 075 (1.00)

a.   [+1.0]

REFERENCE:

ANO1 STM-1-32 figure 32.47
ANO1 AA-51002-007 p.44
ANO1 1107.04 p.4 and Exhibit A
000058A203 (3.5/3.9)

000058A203   ..(KA's)

QUESTION: 076 (1.00)

WHICH ONE (1) of the following valves fails AS IS on a loss of
Instrument Air?

a.   Letdown Orifice Block valve (CV-1222)

b.   Pressurizer Level Control (CV-1235)

c.   Startup valves (CV-2623/2673)

d.   Low Load valves (CV-2622/2672)

ANSWER: 076 (1.00)

a.   [+1.0]

REFERENCE:

ANO1 1203.24 p.13
000065A208 (2.9/3.3)

000065A208   ..(KA's)

QUESTION: 077 (1.00)

WHICH ONE (1) of the following is the MAXIMUM Instrument Air header pressure which would require tripping the reactor in accordance with 1203.24, "Loss of Instrument Air"?

a. 75 psig

b. 60 psig

c. 45 psig

d. 30 psig

ANSWER: 077 (1.00)

d. [+1.0]

REFERENCE:

ANO1 1203.24 p.7
000065A206 (3.6/4.2)

000065A206 ..(KA's)

QUESTION: 078 (1.00)

WHICH ONE (1) of the following parameters is used to help determine if the selected pressurizer level transmitter has failed or is indicating actual level?

a. Pressurizer spray valve position

b. RC pressure

c. Letdown flow

d. Pressurizer temperature

ANSWER: 078   (1.00)

  b.   [+1.0]

REFERENCE:

  ANO1 STM-01-034 p.9; 1203.15, p. 8
  000028A212 (3.1/3.5)

     000028A212   ..(KA's)

QUESTION: 079   (1.00)

  WHICH ONE (1) of the following, when operating during degraded power
  conditions AND with a OTSG Tube Rupture in progress, is the purpose
  for throttling HPI flow when the Pressurizer is full and subcooling
  is greater than 50 degrees F?

     a.   Minimize possible pressurized thermal shock of the reactor
          vessel

     b.   Minimize possible pressurized thermal shock of the OTSG
          tubes

     c.   Maintain ruptured OTSG tube-to-shell delta T limits

     d.   Minimize the potential for OTSG overfill

ANSWER: 079   (1.00)

  a.   [+1.0]

REFERENCE:

  ANO1   1202.01 rev 20, p.132
  ANO1   1202.01 rev 19, p.182
  000056G003   (2.8/3.4)

     000056G003   ..(KA's)

QUESTION: 080   (1.00)

WHICH ONE (1) of the following represents the MINIMUM entry
conditions to go from the "Reactor Trip" tab of EOP 1202.01 to the
"Degraded Power" tab and NOT the "Blackout" tab?

    a.   Loss of normal control room lighting, both EDGs supplying
         their buses, and NO voltage is indicated on ONE (1) non-
         vital 4160 bus

    b.   Loss of normal control room lighting, either EDG is
         supplying its bus, and NO voltage is indicated on ALL
         non-vital 4160 buses

    c.   Control room lighting shifts to emergency DC, either EDG
         supplying its bus, and NO voltage is indicated on ONE (1)
         non-vital 4160 bus

    d.   Control room lighting shifts to emergency DC, NEITHER EDG is
         operable, and NO voltage is indicated on ALL non-vital 4160
         buses

ANSWER: 080   (1.00)

 b. [+1.0]

REFERENCE:

 ANO1 EOP 1202.01 rev 19, p.8
 000056A244   (4.3/4.5)

    000056A244   ..(KA's)

QUESTION: 081 (1.00)

WHICH ONE (1) of the following events requires notification
to the NRC within ONE (1) 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 (2) RC pressure
        instruments exceeded their reactor trip setpoint

    c.   An unplanned reactor trip occur_ from 100% power, due to
        failure of a Main Feed pump

    d.   It was determined that BOTH trains of HPI had been
        inoperable for two hours due to an Equipment Operator
        inadvertently isolating BOTH trains while hanging HOLD cards

ANSWER: 081 (1.00)

 b. [+1.0]

REFERENCE:

ANO1 1903.10 rev 23, p.44
ANO1 1903.011 rev 3, p.18
194001A116 (3.1/4.4)

   194001A116   ..(KA's)

QUESTION: 082   (1.00)

WHICH ONE (1) of the following states the reason hydrogen AND
oxygen concentrations are limited in the Primary Coolant Quench Tank?

   a. To reduce the potential for an explosive mixture of
       hydrogen and oxygen

   b. To reduce the amount of corrosion due to excessive oxygen
       concentrations

   c. To reduce the potential for over pressurizing the Quench
       Tank and deformation of the rupture disks

   d. To reduce the potential for gas binding the Quench Tank
       pumps when draining the tank

ANSWER: 082   (1.00)

 a.   [+1.0]

REFERENCE:

 ANO1   1203.10 p.1
 194001K115 (3.4/3.8)

    194001K115   ..(KA's)

QUESTION: 083   (1.00)

WHICH ONE (1) 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. INCREASING 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

ANSWER: 083   (1.00)

 b.   [+1.0]

REFERENCE:

 ANO1   1000.028 rev 13, p.4
 194001K102 (3.7/4.1)

    194001K102   ..(KA's)

QUESTION: 084   (1.00)

 WHICH ONE (1) of the following correctly describes the requirements
 of 1000.031, "Radiation Protection Manual"?

     a.   Personnel escorted by Health Physics do not require a RWP
          for entry into a RCA

     b.   When frisking with a RM-14, if the frisker reads greater
          than 50 counts per minute, you are to notify HP immediately

     c.   Entries to Locked High Radiation Areas must have continuous
          Health Physics coverage

     d.   Any individual entering a RCA is required to have as a
          minimum a TLD in their possession

ANSWER: 084   (1.00)

 c.   [+1.0]

REFERENCE:

 ANO1   1000.031 rev 10, p.24, 28, 39
 194001K105 (3.1/3.4)

    194001K105   ..(KA's)

QUESTION: 085 (1.00)

WHICH ONE (1) of the following SRD readings is the maximum that a 500 millirem (mRem) self-reading pocket dosimeter is to read before being replaced?

    a.   325 mRem

    b.   375 mRem

    c.   425 mRem

    d.   475 mRem

ANSWER: 085 (1.00)

  b. [+1.0]

REFERENCE:

ANO1 1000.031 rev 10, p.25
194001K103 (2.8/3.4)

   194001K103   ..(KA's)

QUESTION: 086 (1.00)

WHICH ONE (1) of the following describes a requirement for data sheet log entries?

    a. Corrected entries must be explained

    b. Use of whiteout (correction fluid) is not allowed

    c. Missed entries must have explanations in the remarks section

    d. Entries must be made within ONE (1) hour of the designated time

ANSWER: 086 (1.00)

  c. [+1.0]

REFERENCE:

ANO1 1015.03 rev 14, p.3
194001A106 (3.4/3.4)

   194001A106   ..('KA's)

QUESTION: 087   (1.00)

WHICH ONE (1) of the following is NOT required to be reviewed
by an oncoming control board operator during shift turnover?

        a.   Tag Out Log

        b.   Category "E" Log

        c.   New or revised special instructions

        d.   Surveillance Requirements

ANSWER: 087   (1.00)

   d.   [+1.0]

REFERENCE:

ANO1 1015.01 rev 37, p.28
ANO1 Forms 1015.15.15A and B were not provided
194001A106 (3.4/3.4)

   194001A106   ..(KA's)

QUESTION: 088 (1.00)

WHICH ONE (1) 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

ANSWER: 088 (1.00)

 b. [+1.0]

REFERENCE:

 ANO1 1015.01 rev 37, p.42
 194001K101 (3.6/3.7)

    194001K101   ..(KA's)

QUESTION: 089 (1.00)

WHICH ONE (1) 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

ANSWER: 089   (1.00)

d.   [+1.0]

REFERENCE:

ANO1   1000.027 rev 14, pgs.42-43 and 28
194001K102   (3.7/4.1)

194001K102   ..(KA's)

QUESTION: 090   (1.00)

WHICH ONE (1) of the following represents the minimum Technical
Specification shift crew staffing requirements for UNIT 1 during
Hot Standby?

a.   SRO-1 , RO-2, STA-0, Non-licensed operators-3

b.   SRO-2 , RO-1, STA-1, Non-licensed operators-2

c.   SRO-2 , RO-2, STA-1, Non-licensed operators-5

d.   SRO-1 , RO-2, STA-1, Non-licensed operators-2

ANSWER: 090   (1.00)

d.   [+1.0]

REFERENCE:

ANO1   TS 6.2-1
194001A103   (2.5/3.4)

194001A103   ..(KA's)

ANSWER: 089   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1   1000.027 rev 14, pgs.42-43 and 28
 194001K102   (3.7/4.1)

    194001K102   ..(KA's)

QUESTION: 090   (1.00)

 WHICH ONE (1) of the following represents the minimum Technical
 Specification shift crew staffing requirements for UNIT 1 during
 Hot Standby?

        a.   SRO-1 , RO-2, STA-0, Non-licensed operators-3

        b.   SRO-2 , RO-1, STA-1, Non-licensed operators-2

        c.   SRO-2 , RO-2, STA-1, Non-licensed operators-5

        d.   SRO-1 , RO-2, STA-1, Non-licensed operators-2

ANSWER: 090   (1.00)

 d.   [+1.0]

REFERENCE:

 ANO1   TS 6.2-1
 194001A103 (2.5/3.4)

    194001A103   ..(KA's)

QUESTION: 091 (1.00)

WHICH ONE (1) of the following will cause the GREATEST biological damage?

a. 0.1 Rad of fast neutron radiation

b. 9.0 Rem of gamma radiation

c. 10.0 Rem of beta radiation (internal)

d. 0.05 Rad of alpha radiation (internal)

ANSWER: 091 (1.00)

c. [+1.0]

REFERENCE:

10CFR20.5
194001K103 (2.8/3.4)

194001K103

..(KA's)

QUESTION: 092 (1.00)

WHICH ONE (1) of the following represents the procedural method for INITIAL alignment of valves/breakers per OP 1015.01, "Conduct of Operations"?

a. Normally open valves are fully back-seated then shut ONE (1) turn

b. Throttled valves are fully shut while counting turns then reopened to the number of turns specified on the valve alignment sheet

c. Locked open valves must be verified by available position indicators or system parameters if the locking device will not allow movement

d. Normally closed valves are verified by available position indicators or system parameters and they should not be operated in either direction

QUESTION: 091   (1.00)

WHICH ONE (1) of the following will cause the GREATEST biological damage?

    a.   0.1 Rad of fast neutron radiation

    b.   9.0 Rem of gamma radiation

    c.   10.0 Rem of beta radiation (internal)

    d.   0.05 Rad of alpha radiation (internal)

ANSWER: 091   (1.00)

 c.   [+1.0]

REFERENCE:

10CFR20.5
194001K103   (2.8/3.4)

   194001K103   ..(KA's)

QUESTION: 092   (1.00)

WHICH ONE (1) of the following represents the procedural method for INITIAL alignment of valves/breakers per OP 1015.01, "Conduct of Operations"?

    a.   Normally open valves are fully back-seated then shut ONE (1) turn

    b.   Throttled valves are fully shut while counting turns then reopened to the number of turns specified on the valve alignment sheet

    c.   Locked open valves must be verified by available position indicators or system parameters if the locking device will not allow movement

    d.   Normally closed valves are verified by available position indicators or system parameters and they should not be operated in either direction

ANSWER: 092 (1.00)

 b. [+1.0] QUESTION DELETED PER FACILITY COMMENT

REFERENCE:

 ANO1 1015.01, rev 37, pgs.39-40
 194001K101 (3.6/3.7)

     194001K101   ..(KA's)

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 used once,
more than once, or not at all, and only a single answer may occupy
one answer space.)

              COLUMN A   COLUMN B

_____   a.   Upper South Elec. Penet. Room   1. CO2

_____   b.   The Control Room   2. Halon

_____   c.   The Cable Spread Room   3. Deluge (Water)
                                                  Sprinkler
_____   d.   Diesel Fuel Storage Vaults
                                              4. Open head sprinkler
                                                  system

                                              5. Pre-action, closed
                                                  head sprinkler system

ANSWER: 093 (2.00)

 a. 5 [+0.5]
 b. 2 [+0.5]
 c. 3 [+0.5]
 d. 3 [+0.5]

REFERENCE:

ANO1 Pre-Fire Plan tab 86-G, Diesel Fuel Fault, 97-R, 129-F
194001K116 (3.5/4.2)

      194001K116   ..(KA's)

QUESTION: 094 (2.00)

MATCH the appropriate description in Column B with the 1000.31,
"Radiation Protection Manual" allowable dose in Column A. (Note:
The items in Column B may used once, more than once, or not at all,
and only a single answer may occupy one answer space.)

COLUMN A	COLUMN B
_____ a. 100 mRem	1. Quarterly Federal limit for exposure to the extremities
_____ b. 300 mRem	2. Weekly ANO-1 limit for personnel with completed exposure records
_____ c. 1000 mRem	3. Quarterly Federal limit to whole body with complete exposure history
_____ d. 3000 mRem	4. Weekly ANO-1 administrative limit for personnel without exposure records
	5. Quarterly ANO-1 limit for person without previous exposure records
	6. Quarterly ANO-1 limit for exposure to the skin

ANSWER: 094 (2.00)

a. 4 [+0.5]
b. 2 [+0.5]
c. 5 [+0.5]
d. 3 [+0.5]

REFERENCE:

ANO1 1000.31 pp 4-6
194001K103 (2.8/3.4)

   194001K103   ..(KA's)

QUESTION: 095 (2.00)

MATCH the correct function or control from Column B with the correct
NNI input 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	COLUMN B
_____ a. RC flow	1. Interlocks Decay Heat Valves CV-1050 and CV-1410
_____ b. T-cold (wide)	
	2. PZR Spray Valve control
_____ c. RC pressure (wide)	
	3. RC pump interlock
_____ d. RC pressure (narrow)	4. Provides the ICS with the signal for reactor/feedwater crosslimits
	5. Used to adjust MFW pump speed to maintain constant D/P across the feedwater control valves
	6. ICS BTU limits

ANSWER: 095 (2.00)

a.   6   [+0.5]
b.   3   [+0.5]
c.   1   [+0.5]
d.   2   [+0.5]

REFERENCE:

ANO1   STM-1-03 p.16
ANO1   STM-1-69 pp.2-4
016000K101 (3.4/3.4)

    016000K101   ..(KA's)

QUESTION: 096 (2.00)

MATCH each RC penetration location from Column B with its appropriate
component listed in Column A. (Note: The items in Column B may used
once, more than once, or not at all, and only a single answer may
occupy one answer space.)

                  COLUMN A   COLUMN B

_____ a. PZR Spray   1. "A" RC pump Suction

_____ b. Normal MU Line   2. "B" RC pump Suction

_____ c. Letdown Line   3. "A" RC pump Discharge

_____ d. Decay Heat Removal Line   4. "B" RC pump Discharge

                                             5. "C" RC pump Discharge

                                             6. "D" RC pump Discharge

                                             7. "A" Hot Leg

                                             8. "B" Hot Leg

ANSWER: 096 (2.00)

a. 5 [+0.5]
b. 6 [+0.5]
c. 1 [+0.5]
d. 7 [+0.5]

REFERENCE:

ANO1   P&ID M-230
ANO1   STM-1-04   figure 4.4
002000K106 (3.7/4.0)   002000K108 (4.5/4.6)   002000K109 (4.1/4.1)

    002000K109   002000K108   002000K106   ..(KA's)

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

QUESTION	VALUE	REFERENCE
001	1.00	9000533
002	1.00	9000569
003	1.00	9000570
004	1.00	9000526
C05	1.00	9000571
006	1.00	9000572
007	1.00	9000520
008	1.00	9000534
009	1.00	9000573
010	1.00	9000523
011	1.00	9000524
012	1.00	9000525
013	1.00	9000574
014	1.00	9000540
015	1.00	9000575
016	1.00	9000522
017	1.00	9000543
018	1.00	9000550
019	1.00	9000530
020	1.00	9000544
021	1.00	9000548
022	1.00	9000551
023	1.00	9000521
024	1.00	9000552
025	1.00	9000549
026	1.00	9000580
027	1.00	9000553
028	1.00	9000576
029	1.00	9000541
030	1.00	9000579
031	1.00	9000555
032	1.00	9000527
033	1.00	9000518
034	1.00	9000539
035	1.00	9000556
036	1.00	9000528
037	1.00	9000545
038	1.00	9000557
039	1.00	9000529
040	1.00	9000546
041	1.00	9000538
042	1.00	8000076
043	1.00	8000082
044	1.00	9000558
045	1.00	8000074
046	1.00	8000095
047	1.00	9000531
048	1.00	8000079
049	1.00	8000083
050	1.00	8000075
051	1.00	8000084
052	1.00	9000519
053	1.00	9000578
054	1.00	8000073

QUESTION	VALUE	REFERENCE
001	1.00	9000533
002	1.00	9000569
003	1.00	9000570
004	1.00	9000526
005	1.00	9000571
006	1.00	9000572
007	1.00	9000520
008	1.00	9000534
009	1.00	9000573
010	1.00	9000523
011	1.00	9000524
012	1.00	9000525
013	1.00	9000574
014	1.00	9000540
015	1.00	9000575
016	1.00	9000522
017	1.00	9000543
018	1.00	9000550
019	1.00	9000530
020	1.00	9000544
021	1.00	9000548
022	1.00	9000551
023	1.00	9000521
024	1.00	9000552
025	1.00	9000549
026	1.00	9000580
027	1.00	9000553
028	1.00	9000576
029	1.00	9000541
030	1.00	9000579
031	1.00	9000555
032	1.00	9000527
033	1.00	9000518
034	1.00	9000539
035	1.00	9000556
036	1.00	9000528
037	1.00	9000545
038	1.00	9000557
039	1.00	9000529
040	1.00	9000546
041	1.00	9000538
042	1.00	8000076
043	1.00	8000082
044	1.00	9000558
045	1.00	8000074
046	1.00	8000095
047	1.00	9000531
048	1.00	8000079
049	1.00	8000083
050	1.00	8000075
051	1.00	8000084
052	1.00	9000519
053	1.00	9000578
054	1.00	8000073

QUESTION	VALUE	REFERENCE
055	1.00	8000096
056	1.00	9000581
057	1.00	9000547
058	1.00	9000559
059	1.00	8000078
060	1.00	8000094
061	1.00	9000560
062	1.00	9000532
063	1.00	9000514
064	1.00	9000535
065	1.00	9000561
066	1.00	8000092
067	1.00	8000072
068	1.00	8000077
069	1.00	8000089
070	1.00	9000537
071	1.00	8000091
072	1.00	9000563
073	1.00	9000562
074	1.00	8000085
075	1.00	9000517
076	1.00	9000516
077	1.00	9000564
078	1.00	9000536
079	1.00	8000081
080	1.00	8000093
081	1.00	8000001
082	1.00	8000046
083	1.00	8000069
084	1.00	8000070
085	1.00	8000071
086	1.00	8000086
087	1.00	8000087
088	1.00	8000088
089	1.00	8000090
090	1.00	9000566
091	1.00	9000567
092	1.00	9000577
093	2.00	8000080
094	2.00	9000515
095	2.00	9000554
096	2.00	9000568

	100.00	

	100.00	