U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/OL-94-01

Docket No. 50-346 Operating License No. NPF-3

Licensee: Toledo Edison Company
Edison Plaza, 300 Madison Avenue
Toledo, OH 43652

Facility Name: Davis-Besse Nuclear Power Station

Examination Administered At: Davis-Besse Nuclear Power Station

Examination Conducted: Week of May 16, 1994

Chief Examiner: C. Osterholtz 6/10/94
C. Osterholtz Date

Approved By: T. Burdick 6/10/94
T. Burdick, Chief Date
Operator Licensing Section 2

Examination Summary

Examination administered during the week of May 16, 1994
(Report No. 50-346/OL-94-01[DRS])
Written examinations and operating tests were given to three (3) senior reactor operator (SRO) instant applicants, and three reactor operator (RO) applicants. An exit meeting was conducted on May 20, 1994, with plant management.

Results: All applicants passed the examinations.

The following is a summary of licensee strengths and weaknesses noted during performance of this examination:

Strengths

- Use of facility procedures (Section 3).
- Integrated Control System operations (Section 3).
- Informing personnel outside the control room of plant status (Section 3).
- Facility support of examination preparation and administration (Section 4).

Weaknesses

- Diagnoses based on control room indications (Section 3).
- Crew communications (Section 3).

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REPORT DETAILS

1. Examiners

C. Osterholtz, Chief Examiner, NRC RIII
R. Cain, Contract Examiner, INEL, Inc.
C. Tyner, Contract Examiner, INEL, Inc.

2. Persons Contacted

Licensee Representatives

+J. Wood, Plant Manager
+T. Bergner, Manager, Nuclear Training
+S. Byrne, Manager, Plant Operations
* M. Chambers, Qualifications Instructor
+D. Eshelman, Operations Superintendent
+S. Laeng, Simulator Instructor
* S. Lindsay, Simulator Instructor
*+T. Simonetti, Initial Licensing Lead Instructor
*+R. Simpkins, Supervisor, Operations Training
+P. Smith, Compliance Supervisor
* K. Stigen, Simulator Operations

Nuclear Regulatory Commission

S. Stasek, Senior Resident Inspector
*+T. Burdick, Chief, Operator Licensing Section 2

*Denotes those present at the training exit meeting on May 19, 1994.
+Denotes those present at the management exit meeting on May 20, 1994.

3. Initial License Training Program Observations

This information is being provided as input to the licensee's system approach to training (SAT) process. No response is required.

a. Written Examination

The post-examination review of the written examination by the NRC identified the following weaknesses in the candidates' knowledge as evidenced by the majority of the candidates failing to provide the correct response for each particular knowledge area examined. The facility submitted no post-examination comments for review.

- Administrative controls associated with I&C calibration checks. (RO and SRO question No. 5)

- Diesel generator response if manually stopped when the governor selector switch is in the "hydraulic" position. (RO and SRO question No. 38)

- Actions to be taken to start the diesel fire pump from the control room if its overcrank light is illuminated. (RO and SRO question No. 39)

- Reason for opening the reactor coolant system and pressurizer high point vents when experiencing inadequate core cooling. (RO and SRO question No. 64)

- Conditions which permit jumpering the reactor coolant pump interlocks. (RO and SRO question No. 65)

- Applicability of rod control interlocks. (RO and SRO question No. 68)

- Effects on an emergency diesel generator if 125 volt DC power is lost. (RO question No. 90)

- Verifying position of a throttled valve. (SRO question 76)

- Minimum concurrence required to downgrade an emergency classification. (SRO question 79)

- Conditions that allow a shift supervisor to authorize immediate actions maintenance. (SRO question 83)

- Electric fire pump power supplies. (SRO question 89)

- Plant response on a load rejection. (SRO question 95)

b. Job Performance Measures (JPMs)

During the administration of the walkthrough portion of the operating examinations, the examiners observed both strengths and weaknesses on the part of the senior reactor operator (SRO) and reactor operator (RO) candidates.

The following strength was observed:

- The ability to comply with procedure guidance to accomplish assigned tasks.

During the administration of prescripted JPM questions, knowledge weaknesses were noted concerning:

- The Component cooling water pump automatic trip associated with low flow.

- Rod control system response if both "RUN" and "JOG" signals occur simultaneously.

c. Dynamic Simulator Scenarios

During the administration of the operating portion of the operating examinations, the examiners observed both strengths and weaknesses on the part of the senior reactor operator (SRO) and reactor operator (RO) candidates.

The following strengths were observed:

- The ability to utilize the facility procedures and technical specifications.

- The ability to keep personnel outside the control room informed of plant status.

- The ability to manipulate and control the plant's integrated control system.

The following weaknesses were observed:

- The ability of RO candidates to diagnose a vapor space leak in the pressurizer.

- The ability of SRO candidates to diagnose a steam generator tube rupture in both steam generators.

- The ability of crew members to effectively communicate with each other. For example:

  - Several instances occurred when the SRO had to repeat orders to board operators before they were acknowledged and carried out.

  - Several instances occurred when the SRO was not informed of control panel manipulations.

  - One instance occurred when a board operator observed indications of a station blackout but did not report this condition until the SRO inquired about electric plant status.

4. Training

The licensee training staff provided the NRC excellent support during validation of simulator scenarios and job performance measures. In

addition, the facility's pre-review of the written examination was thorough and considered valuable in the development of a plant specific valid examination.

5. Procedures

During the course of the examination process the following weaknesses in facility procedures were identified by the NRC:

- DB-OP-06511, "CONTROL ROOM HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM PROCEDURE", step 3.1.7.a, incorrectly directs the operator to transition to another part of the procedure that is not applicable.

- DB-OP-06006, "MAKEUP AND PURIFICATION SYSTEM", step 3.12.4, directs the operator to throttle a valve that has been isolated due to excessive leakage.

6. Simulator Observations

Simulator discrepancies identified. These discrepancies are noted in Enclosure 3.

7. Exit Meeting

A training exit meeting was held on May 19, 1994 and a management exit meeting was held on May 20, 1994. Those attending the meetings are listed in section 2 of this report. The following items were discussed during the exit meetings:

- Strengths and weaknesses observed.

- Simulator items as noted in Enclosure 3, "Simulation Facility Report."

- General observations relating to plant operations.

ENCLOSURE 2

SIMULATION FACILITY REPORT

Facility Licensee: Davis Besse Nuclear Power Plant

Facility Licensee Docket No.: 50-346

Operating Tests Administered: Week of May 16, 1994

The following observations were made by the NRC examination team during the simulator portion of the February 1994 initial examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance 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 future evaluations. No licensee action is required in response to these observations.

ITEM	DESCRIPTION
MSIVs	Incorrect audio response received when valves shut
Travelling Screen Delta P	Delta P does not change across the screens as they are increasingly blocked
Mechanical Hogger	Hogger does not auto start prior to receiving Condenser High Press alarm
CCW pump	Pump breaker red light de-energizes when the breaker is failed shut
High Press Injection	Leakage around HPI valves occurred without being inserted into the simulator program
Radiation Monitoring	Simulator radiation monitors not modeled with those in plant

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
REACTOR OPERATOR LICENSE
REGION 3

CANDIDATE'S NAME: MASTER EXAMINATION COPY

FACILITY: Davis-Besse 1

REACTOR TYPE: PWR-B&W17

DATE ADMINISTERED: 94/05/16

INSTRUCTIONS TO CANDIDATE:

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

TEST VALUE	CANDIDATE'S SCORE	%
100.00		___ % TOTALS

FINAL GRADE

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

Candidate's Signature

MASTER COPY

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

091 a b c d ___

MULTIPLE CHOICE

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination, the following rules apply:

1. Cheating on the examination will result in a denial of your application and could result in more severe penalties.

2. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.

3. To pass the examination, you must achieve a grade of 80 percent or greater.

4. The point value for each question is indicated in parentheses after the question number.

5. There is a time limit of 4 hours for completing the examination.

6. Use only black ink or dark pencil to ensure legible copies.

7. Print your name in the blank provided on the examination cover sheet and the answer sheet.

8. Mark your answers on the answer sheet provided and do not leave any question blank.

9. If the intent of a question is unclear, ask questions of the examiner only.

10. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.

11. When you complete the examination, assemble a package including the examination questions, examination aids, and answer sheets and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet.

12. After you have turned in your examination, leave the examination area as defined by the examiner.

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QUESTION: 001 (1.00)

A plant start-up is in progress and Station Document Control has issued working copies of the start-up procedures for the control room binders.

Who is REQUIRED to ensure the procedure revisions in the working copies are current and used ONLY during the plant start-up?

a. The Control Room SRO.

b. A non-licensed STA.

c. The Station Document Control assistant.

d. The operator using the working copy.

QUESTION: 002 (1.00)

The Control Room SRO is giving directions for a complex valve line-up to a Non-Licensed Operator over the Gai-Tronics phone system.

What should the Non-Licensed Operator do upon receipt of the SRO's message?

The Non-Licensed Operator:

a. acknowledges that the message has been received and will be performed.

b. paraphrases the message to the Independent Verifier.

c. performs the valve line-up and reports to the Control Room.

d. writes the instructions down and reads them back to the Control Room SRO.

QUESTION: 003 (1.00)

Which of the following is the PREFERRED action to take when responding to 3% hydrogen concentration in containment following a large break LOCA?

a. Operate the Hydrogen Dilution Blowers.

b. Install and operate a Hydrogen Igniter.

c. Operate the Hydrogen Purge System.

d. Install and operate a Hydrogen Recombiner.

QUESTION: 004 (1.00)

When are maintenance personnel REQUIRED to be in constant communication with operations personnel?

Constant communications with operations personnel is REQUIRED:

a. when any condition exists that could delay an outage.

b. during evolutions which have the potential to adversely effect station operation.

c. when performing maintenance on radioactive systems.

d. during maintenance on high voltage systems (greater than 4160 volts).

QUESTION: 005 (1.00)

Plant instrumentation and control (I&C) personnel have informed the Shift Supervisor (SS) that they need to isolate and remove a pressure gauge on the Moisture Separator Reheater (MSR) to check its calibration.

What is the MINIMUM administrative control required for this work?

a. A personal Red Tag Clearance.

b. None, as long as the I&C personnel remain in the area.

c. An Operational Information Tag.

d. A System Dispatcher's Clearance.

QUESTION: 006 (1.00)

Which of the following is the method for "independent" verification of a red tag?

Once the initial operator has hung the tags:

a. a second operator will check the tags and component positions at a later time.

b. a second operator will follow immediately behind the first operator and check the tags and component positions as they are tagged.

c. a second operator will verify the tags are hanging at a later time.

d. he/she must wait a minimum of 30 minutes prior to reverifying the tagout.

QUESTION: 007 (1.00)

The plant is in Mode 6, condenser vacuum has been "broken" and the condenser is opened to atmosphere for maintenance. You have been assigned as the "Attendant" for the condenser hotwell.

Under what condition(s) can you leave the condenser hotwell area during entry of personnel?

You may leave:

a. during specified Union break periods.

b. to assist personnel preparing to enter the hotwell.

c. when relieved by a fire watch, but for 5 minutes only.

d. to summon rescue services when needed.

QUESTION: 008 (1.00)

Which of the following identify the MINIMUM manning requirements for the Fire Brigade?

a. 6 operators
2 of which are needed for safe shutdown

b. A fire captain
4 operators, none of which are needed for safe shutdown

c. A fire captain
4 operators, all of which are needed for safe shutdown

d. A fire captain
6 operators, 4 of which are needed for safe shutdown

QUESTION: 009 (1.00)

When using a lifted lead to serve as a clearance boundary for a 4160 V breaker, who MUST accompany the operator hanging the clearance?

a. A second qualified operator

b. A licensed reactor operator

c. A control room SRO

d. A qualified electrician

QUESTION: 010 (1.00)

Given the following conditions:

-- Reactor power is 95%.
-- Group 7 control rods are at 95%.
-- Xenon is INCREASING to reach equilibrium.
-- The Diamond Rod Control Station "Out Command" light is illuminated.

Select the cause for these conditions.

a. The Group 7 control rods are at their "out limit."

b. Xenon has reached equilibrium.

c. Neutron error is less than (more negative) -1.0%.

d. Neutron error is greater than (more positive) 1.0%.

QUESTION: 011 (1.00)

What is the power supply to the CRD Trip Breaker under voltage coils?

a. The Reactor Protection System (RPS).

b. The Integrated Control System (ICS).

c. The Motor Generator.

d. The Inductrol Voltage Regulator.

QUESTION: 012 (1.00)

Given the following conditions:

-- Reactor power is 99%.
-- Control Rod Exercising test, DB-SC-03272, has just been performed.
-- Groups 1 through 6 rods have 100% lamps illuminated.
-- Group 7 rods are at 95%.
-- The Diamond Control Station will not go back in "Auto".

Which of the following would cause the Diamond Control Station to fail to return to "Auto"?

a. Neutron error greater than 0.5% in either direction.

b. Group 3 rods are NOT at the "Out Limit".

c. Group 6 rods are NOT at the "Out Limit".

d. The Sequence Inhibit lamp is illuminated.

QUESTION: 013 (1.00)

Given the following conditions:

-- A plant runback is in progress from 100% power.
-- Main feedwater to the OTSGs has re-ratioed.
-- RCS flow on Non-Nuclear Instrumentation (NNIs) indicates 80 mmph in Loop "A" and 38 mmph in Loop "B."

Select the cause for the above conditions.

a. A Main Feedwater Pump has tripped.

b. RCS flow indication from NNI loop "B" has failed low.

c. One Reactor Coolant Pump in loop "B" has tripped.

d. RCS flow indication from NNI loop "A" has failed high.

QUESTION: 014 (1.00)

Given the following conditions:

-- 2 Reactor Coolant Pumps (RCPs) are running in Loop "A".
-- 1 RCP is running in Loop "B".
-- Reactor power is 50% by nuclear instrumentation indication.

One of the running RCPs develops high vibration and must be secured immediately. When it is secured, the plant trips.

Which reactor coolant pump was secured and why did the plant trip?

a. The RCP running in Loop "B".
The plant trip was due to the Power/pump monitors in the RPS.

b. The RCP running in Loop "B".
The plant trip was due to flux/delta flux/flow in the RPS.

c. An RCP running in Loop "A".
The plant trip was due to the Power/pump monitors in the RPS.

d. An RCP running in Loop "A".
The plant trip was due to flux/delta flux/flow in the RPS.

QUESTION: 015 (1.00)

Given the following conditions:

-- A plant start-up is in progress.
-- The Reactor Operator attempted to start 1-1 RCP.
-- 1-1 RCP would not start.

Which of the following situations will prevent the RCP from starting?

a. Insufficient net positive suction head (NPSH).

b. Component Cooling Water (CCW) flow to 1-1 seal cooler of 26 gpm.

c. Seal injection flow to 1-1 RCP of 2.6 gpm.

d. RCS cold leg temperature of 490 degrees F.

QUESTION: 016 (1.00)

Given the following conditions:

-- PZR level is constant.
-- Make-up Tank level is decreasing.
-- The Equipment Operator reports increased seal leakage on the Low Pressure Injection pumps. (LPI/DH)
-- The "Drinking Bird" for RCP 2-1 has increased.

Select the cause for the above indications.

a. RCS leakage in the pressurizer water space.

b. RCS leakage in the letdown system.

c. Seal injection filter leakage.

d. RCP seal leakage increase for RCP 2-1.

QUESTION: 017 (1.00)

Given the following conditions:

-- A reactor trip has occurred from 100% power.
-- Main feedwater was slow in response and caused a small overcooling transient.
-- The reactor operator transferred MU pump suctions MU 3971 AND MU 6405 to the BWST position.
-- The overcooling transient has stopped.

Select the response of the Make-Up Tank level due to the above transient.

Make-Up Tank level will:

a. decrease initially; then increase.

b. decrease initially; then remain the same.

c. increase initially; then decrease.

d. increase initially; then remain the same.

QUESTION: 018 (1.00)

Given the following conditions:

-- An RCS cooldown is in progress.
-- At 1800 psig the operator bypasses the SFAS RCS low pressure bistable for all 4 channels.
-- The "1650# TRIP BLKD" lights have illuminated.
-- An RCP seal leak has developed causing the operator to trip the affected RCP and increase the plant cooldown rate.
-- RCS pressure reaches 1650 psig.

Select the appropriate SFAS condition.

a. HPI initiates on low RCS pressure due to the RCS leak.

b. The "Blue Safety System Bypass Lights" for HPI illuminate.

c. LPI initiates on low RCS pressure due to the RCS leak.

d. SFAS 1650# block cannot be reset until RCS pressure increases above the block setpoint.

QUESTION: 019 (1.00)

Given the following conditions:

-- The Emergency Diesel Generator (EDG) is running for the monthly surveillance.
-- The EDG is paralleled with the grid and at full load.
-- A Channel 1 and 2 SFAS signal has occurred due to RCS low pressure.

Select the condition of the EDG and the SFAS load sequencer AFTER receipt of the SFAS signal.

a. The EDG engine remains running and the load sequencer is not started.

b. The EDG engine remains running and the load sequencer is started.

c. The EDG engine trips and the load sequencer is not started.

d. The EDG engine trips and the load sequencer is started.

QUESTION: 020 (1.00)

Given the following conditions:

-- A loss of coolant accident has occurred.
-- SFAS has initiated on low RCS pressure.
-- RCS TSAT meters indicate 5 degrees F.

What is the REQUIRED mode of operation for HPI.

a. HPI should be throttled to prevent exceeding the maximum P/T for cooldown limit line on Figure 1.

b. Full HPI should be initiated with both pumps.

c. HPI should be throttled to less than 35 gpm per pump.

d. Full HPI should be initiated with one pump.

QUESTION: 021 (1.00)

Given the following conditions:

-- A reactor start-up is in progress.
-- Group 4 rods are being withdrawn.
-- Indication for Rod 4-1 is erratic.
-- An "asymmetry fault" alarm is illuminated on the rod control panel.

Choose the reason and cause for the rod alarm.

There is erratic indication from group 4, rod 1...

a. relative position indication (RPI) causing a loss of "all safety rods out" indication.

b. absolute position indication (API) causing a 6.5% (9 inch) asymmetric rod fault.

c. relative position indication (RPI) causing a 6.5% (9 inch) asymmetric rod fault.

d. absolute position indication (API) causing a loss of "all safety rods out" indication.

QUESTION: 022 (1.00)

Given the following conditions:

-- Safety rod Groups 1-4 are at their out limit.
-- The Reactor Operator (RO) commenced withdrawing Group 5 rods and has stopped.

What will be the indication that sub-critical multiplication is occurring.

a. A constant, positive start-up rate with increasing source range counts.

b. A constant, negative start-up rate with source range counts decreasing to a previous level.

c. Start-up rate leveling off at zero DPM with source range counts increasing and leveling off at a higher value than previously observed.

d. Start-up rate leveling off at zero DPM with intermediate range power level increasing and leveling off at 1.0 E-8 amps.

QUESTION: 023 (1.00)

While withdrawing regulating control rods for criticality, all outward rod motion stopped.

Choose the cause for the loss of control rod motion.

a. A positive 1.5 DPM start-up rate in the Source Range.

b. A positive 3 DPM start-up rate in the Intermediate Range.

c. A 7 inch asymmetric rod.

d. Programmer lamp fault "A".

QUESTION: 024 (1.00)

Given the following conditions:

-- A reactor trip has occurred from 100% power.
-- Sub-cooling margin is 0 degrees F.
-- Reactor Coolant pumps have been tripped.
-- Natural circulation has NOT been verified.

Select the instrumentation used to verify Subcooling Margin (SCM).

a. T-hot and pressurizer pressure.

b. T-cold and RCS loop pressure.

c. T-sat meter with normal inputs.

d. Incore thermocouples and loop pressure.

QUESTION: 025 (1.00)

Given the following conditions:

-- A station blackout has occurred.
-- High Pressure Injection and Auxiliary Feedwater have failed to operate.
-- The reactor core has become partially uncovered.

Select the best indication that indicates core damage may be unavoidable.

a. T-sat monitors indicate 0 degrees F.

b. There is no indication of natural circulation.

c. The self power neutron detectors (SPNDs) indicate 100% reactor power 3 minutes after the above transient.

d. RCS pressure/temperature is in Region 4 of Figure 2 for Inadequate Core Cooling.

QUESTION: 026 (1.00)

Given the following conditions:

-- Reactor power was steady state at 75%.
-- Both main feedwater pumps tripped.

Select the Auxiliary Feedwater response and OTSG level response.

a. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 49 inches.

b. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 124 inches.

c. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 55 inches.

d. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 130 inches.

QUESTION: 027 (1.00)

Given the following conditions:

-- The reactor has tripped.
-- SG 2 has isolated by the SFRCS low pressure trip and indicates "0" psig.
-- A main steam safety valve on SG 1 is leaking.
-- RCS cooldown rate due to the leakage is 45 degrees F per hour.

Which of the following is the correct operator response?

a. Initiate Makeup/HPI cooling.

b. Continue Cooldown with AFW feeding SG 1.

c. Continue Cooldown with AFW feeding BOTH SG's.

d. Isolate AFW to BOTH SG's.

QUESTION: 028 (1.00)

Given the following conditions:

--	T hot	- 591 degrees F
--	T cold	- 567 degrees F
--	T ave	- 579 degrees F
--	Pressurizer pressure	- 2155 psig
--	Steam pressure	- 910 psig

Which of the following is the APPROXIMATE Subcooling Margin for the above plant conditions? (Steam tables are supplied.)

a. 43 degrees

b. 56 degrees

c. 68 degrees

d. 80 degrees

QUESTION: 029 (1.00)

The controls for the Core Flood Tank (CFT) Discharge Isolation Valves (CF1A and CF1B) are located on the ESF Panel. The "Blue" lights next to the valve open/close pushbuttons are "illuminated".

What is the STATUS of the CFT valves?

a. The valves are closed.

b. The valves are open.

c. The valves are deenergized.

d. The valves are energized.

QUESTION: 030 (1.00)

The Davis-Besse Technical Specifications for Emergency Core Cooling Systems (ECCS) with T-ave greater than 280 degrees F identifies a SUBSYSTEM of ECCS as:

-- One OPERABLE High Pressure Injection (HPI) pump AND
-- One OPERABLE Low Pressure Injection (LPI) pump

AND which of the following?

a. The Borated Water Storage Tank.

b. One OPERABLE Core Flood Tank.

c. One OPERABLE Containment Spray Pump.

d. One OPERABLE Decay Heat Cooler.

QUESTION: 031 (1.00)

Given the following conditions:

-- The plant is operating at 95% power
-- All plant systems are operating as designed
-- Due to problems with cooling, containment temperatures are increasing

Which of the following is the expected affect of these conditions?

a. Indicated Makeup Tank level will decrease

b. Actual Makeup Tank level will increase.

c. Indicated Pressurizer level will decrease.

d. Actual Pressurizer level will increase.

QUESTION: 032 (1.00)

IDENTIFY the components/systems that receive an input signal from the pressurizer level indication system.

a. Three-Way Letdown Valve (MU-11) and pressurizer spray valve.

b. Makeup Flow Controller (MU-32) and pressurizer heaters.

c. Reactor Protection System and pressurizer power operated relief valve.

d. Safety Features Actuation System and pressurizer auxiliary spray valve.

QUESTION: 033 (1.00)

The pressurizer Pilot Operated Relief Valve (PORV) "Red" indicating light on the control switch is ILLUMINATED.

Which of the following describes the status of the PORV?

The red light "Illuminated" indicates the PORV:

a. control solenoid is energized.

b. is in the "locked open" position.

c. pilot valve is repositioned to close the PORV.

d. is in the "Open" position.

QUESTION: 034 (1.00)

Given the following conditions:

-- The plant is shutdown with cooldown in progress
-- The Reactor Protection System (RPS) has just been placed in "Shutdown Bypass"

Which of the following RPS trips IS available for protection?

a. High RCS temperature

b. Low RCS Pressure

c. Power to Pump

d. Flux/Delta Flux/Flow

QUESTION: 035 (1.00)

Given the following conditions:

-- The plant is operating at 80% power
-- All plant systems are operating as designed
-- A loss of power to 120 VAC Essential Power Panel Y2 has just occurred

What is the expected effect on the RPS system?

a. RPS Channel 1 will trip and CRD Breaker "B" will open.

b. RPS Channel 1 will trip and all CRD Breakers will open.

c. RPS Channel 2 will trip and CRD Breaker "A" will open.

d. RPS Channel 2 will trip and all CRD Breakers will open.

QUESTION: 036 (1.00)

Given the following conditions:

-- The plant is at 75% power
-- All ICS stations are in "automatic"

SELECT the parameter that will INCREASE BTU limits (i.e. increase the amount of superheat) if the parameter's instrument fails "Downscale".

a. Reactor coolant system hot leg temperature

b. Reactor coolant system loop flow

c. Feedwater temperature

d. Steam generator pressure

QUESTION: 037 (1.00)

Which of the following "feed" pumps will remove the GREATEST amount of heat from the reactor coolant system? (Assume all pumps are feeding at the same flowrate.)

a. Startup Feed Pump

b. Main Feed Pump

c. Motor Driven Feed Pump (MFW mode)

d. Auxiliary Feed Pump

QUESTION: 038 (1.00)

Given the following conditions:

-- Emergency Diesel Generator #2 had been running in parallel with its associated 4160 VAC Essential Bus for testing and has been unloaded due to electric governor instability
-- The Governor Selector Switch has been placed in the "Hydraulic" position
-- The operator has just depressed the "Stop" pushbutton

What will be the expected response of the Emergency Diesel Generator?

The engine will:

a. immediately stop.

b. slow to 450 rpm and immediately stop.

c. run at 450 rpm for 10 minutes and then stop.

d. run at 900 rpm for 10 minutes and then stop.

QUESTION: 039 (1.00)

Given the following conditions:

-- The Reactor Operator is attempting to start the Diesel Fire Pump from the Control Room.
-- After 2 minutes the local operator reports the engine cranked several times but did not start and that the "Overcrank" light is "Illuminated".

What is required before the Reactor Operator can attempt another start sequence?

a. The Reactor Operator must wait 2 minutes for the start sequence timer to reset.

b. The local operator must place the Diesel Fire Pump controller to "Off" and back to "Auto."

c. The Reactor Operator must reset the start sequence timer on the back of panel 912-1.

d. The local operator must place the Diesel Fire Pump controller to "Manual 1" or "Manual 2" and back to "Auto."

QUESTION: 040 (1.00)

Given the following conditions:

-- The plant is operating at power
-- All systems are operable and in automatic
-- A transient causes reactor coolant system pressure to decrease to 1450 psig

Which of the following describes the affect of this transient on the plant air systems?

a. Station Air to the Turbine Building essential header is isolated.

b. Instrument Air to the Auxiliary Building non-essential header is isolated.

c. The Instrument Air and Station Air header cross-tie valve (SA 6445) closes.

d. The Station Air supply to the Containment Air header is isolated.

QUESTION: 041 (1.00)

Which of the following is the operator's responsibility regarding operation of the Quench Tank?

The operator must:

a. verify the Recirc Pump starts at 200 degrees F and automatically stops at 150 degrees F.

b. verify the Recirc Pump starts at 150 degrees F and is manually stopped at 125 degrees F.

c. start the Recirc Pump at 200 degrees F and verify it automatically stops at 150 degrees F.

d. start the Recirc Pump at 150 degrees F and manually stop it at 125 degrees F.

QUESTION: 042 (1.00)

Given the following conditions:

-- The plant is at 100% power
-- All systems are operating as designed
-- A Component Cooling Water (CCW) Surge Tank High level alarm has just been received.
-- The Reactor Operator reports CCW return radiation level is trending upward as well as surge tank level

IDENTIFY tne CCW load that is the source of the leakage into the system.

a. Decay Heat Coolers

b. Pressurizer Quench Tank Cooler

c. Letdown Coolers

d. Spent Fuel Pool Cooling Heat Exchangers

QUESTION: 043 (1.00)

Given the following conditions:

-- The plant is shutdown with Decay Heat Removal Loop 1 in service.
-- Due to a transient, reactor coolant system pressure is increasing and reaches 325 psig.

How is the Decay Heat Removal system protected from overpressure for these conditions?

a. The RCS to DHR Isolation Valves (DH 11 and DH 12) close.

b. The installed Emergency Sump Line/Pump Suction relief valves (PSV 1508 and PSV 1509) will lift.

c. The DHR Pump Suctior Valves (DH 1517 and DH 1518) close.

d. The installed DH 11/12 Dropline/Pump Suction relief valve (PSV 4849) will lift.

QUESTION: 044 (1.00)

IDENTIFY the symptom (alarm) for misaligned control rods that will NOT be received if ANY ENTIRE group is misaligned.

a. Control Rod Drive Sequence Fault alarm

b. Control Rod Drive Asymmetric Rod alarm

c. Control Rod Drive Limiting Condition for Operation alarm

d. Control Rod Drive Withdraw Inhibit alarm

QUESTION: 045 (1.00)

Given the following conditions:

-- The plant is operating at power
-- It has been determined that shutdown margin is less than 1% delta k/k
-- The Reactor Operator had been directed to initiate boration until the adequate shutdown margin is attained

Which of the following is the MINIMUM GPM flow rate that meets the requirements for boration for these conditions?

Total makeup flow from the:

a. Makeup Tank is 130 gpm.

b. Makeup Tank is 100 gpm

c. Borated Water Storage Tank is 95 gpm.

d. Borated Water Storage Tank is 65 gpm.

QUESTION: 046 (1.00)

Following a reactor trip, 6 control rods are stuck out. The Reactor Operator has started Boration as directed by DB-OP-02000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture".

Select the condition that will allow termination of boration?

a. Shutdown margin has been calculated to be 1.15%.

b. Source range counts on all channels are less than 100 cps.

c. Reactor coolant system boron concentration is 1550 ppm.

d. 3 of the 6 stuck control rods have been fully inserted.

QUESTION: 047 (1.00)

Given the following conditions:

-- The reactor automatically tripped from 95% power
-- All expected automatic and operator actions have occurred
-- The Shift Supervisor is directing trip recovery actions in accordance with DP-OP-06910, "Trip Recovery"

SELECT the reason why the Turbine Bypass Valves shall be placed in "Hand" prior to resetting the control rod drive breakers.

Placing the Turbine Bypass Valves in "Hand" will:

a. maintain the required Shutdown Margin above the Technical Specification minimum.

b. prevent pressurizer level from decreasing offscale low during the startup.

c. prevent an unnecessary and uncontrolled reactor coolant system cooldown.

d. ensure steam generator pressure remains below the Main Steam Safety Valve setpoints.

QUESTION: 048 (1.00)

As directed by DP-OP-020000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", what is the CRITERIA used to initiate ATWS mitigation actions following a reactor trip?

a. The number of control rods fully inserted on the reactor trip.

b. Reactor power level and trend following the reactor trip.

c. The status of the control rod drive reactor trip breakers.

d. The status of the primary to secondary heat transfer.

QUESTION: 049 (1.00)

Given the following conditions:

-- Quench Tank pressure is 25 psig
-- Quench Tank temperature is 85 degrees F
-- The Power Operated Relief Valve (PORV) has been determined to be stuck open
-- The Quench Tank Cooler is not available

What will be the final PORV downstream temperature for the above conditions?

a. 233 degrees F

b. 267 degrees F

c. 352 degrees F

d. 649 degrees F

QUESTION: 050 (1.00)

Which of the following provides the most CREDIBLE indication that the Power Operated Relief Valve (PORV) is stuck open?

a. Pressurizer level is slowly decreasing with stable T-ave and reactor coolant system pressure.

b. The "red" indicating light on the PORV switch (HISRC2-6) is "illuminated."

c. The "blue" PORV indicating light on Panel C5705 is "illuminated."

d. Reactor coolant system pressure is decreasing with stable T-ave and pressurizer level.

QUESTION: 051 (1.00)

IDENTIFY tne Turbine Plant Cooling Water (TPCW) system condition that REQUIRES the Reactor Operator to trip the reactor.

a. High Level Cooling Water Tank level cannot be maintained above five (5) feet.

b. The running TPCW Pump discharge pressure cannot be throttled to maintain greater than 50 psig.

c. The running TPCW Pump has been operating at "runout" conditions for four (4) minutes.

d. Low Level Cooling Water Tank level cannot be maintained above five (5) feet.

QUESTION: 052 (1.00)

Given the following conditions exist:

-- The plant is operating at 95% power
-- Seal injection water flow to RCP 2-2 has just been lost

How long is the reactor coolant pump allowed to operate for the above conditions?

RCP 2-2 may operate:

a. until reactor power has been reduced to or below the three pump limit (72%).

b. for a maximum of thirty (30) minutes if normal component cooling water flow is maintained.

c. indefinitely, provided normal component cooling water flow is maintained.

d. until ANY reactor coolant pump component high temperature alarm is received.

QUESTION: 053 (1.00)

WHICH of the following symptoms would be an indication of an increasing condenser pressure (i.e., loss of condenser vacuum)?

a. Condenser circulating water inlet temperature is decreasing.

b. Condenser hotwell water level is decreasing.

c. Generator megawatts are decreasing with constant steam flow.

d. Turbine Sealing Steam header pressure is increasing.

QUESTION: 054 (1.00)

Given the following conditions:

-- The plant is operating at 65% power
-- All systems are operating as designed
-- A "lockout" condition has occurred on Essential 4160V Bus D1
-- All plant systems have responded as designed
-- No operator actions have been taken

IDENTIFY the EXPECTED indications for this failure?

Annunciator alarm (1-3-H) "Bus D1 Lockout" is in, bus voltage will be

a. 4160 volts and Emergency Diesel Generator 2 will be running with the output breaker closed.

b. 4160 volts and Emergency Diesel Generator 2 will have started and tripped.

c. 0 volts and Emergency Diesel Generator 2 will have started and tripped.

d. 0 volts and Emergency Diesel Generator 2 will be running with the output breaker open.

QUESTION: 055 (1.00)

Given the following conditions:

-- The plant is operating at 55% power
-- Due to a slowly decreasing pressurizer level, Letdown has been isolated

Which of the following parameters indicate that the leak was isolated with letdown?

a. Makeup Tank level is steady
Pressurizer level is decreasing

b. Makeup Tank level is steady
Pressurizer level is increasing

c. Makeup Tank level is decreasing
Pressurizer level is steady

d. Makeup Tank level is decreasing
Pressurizer level is increasing

QUESTION: 056 (1.00)

Given the following conditions:

-- The plant has just experienced a complete loss of Decay Heat Removal while in Cold Shutdown
-- Temperature readings indicate a 1.5 degree F INCREASE in Reactor Coolant System temperature every 10 minutes
-- The reactor vessel head is installed
-- No other means of core cooling is immediately available
-- Current temperature is 158 degrees F

Based on the above information, which of the following is the MAXIMUM amount of time that may elapse before the primary containment integrity Tech Spec LCO must be entered? (Choices are rounded to the nearest minute.)

a. 240 minutes

b. 280 minutes

c. 420 minutes

d. 810 minutes

QUESTION: 057 (1.00)

The plant has experienced a loss of instrument air during power operation.

Prior to restoration of air and when possible, what should be done with any failed pneumatic controllers?

a. The controller should be placed in "Manual" and the demand signal should be matched with actual position.

b. The air supply to the controller should be isolated and the controlier vented.

c. The controller should be placed in "Manual" and the demand signal should be run down to the "0" position.

d. The air supply to the controller should be isolated and the controller deenergized.

QUESTION: 058 (1.00)

Due to a serious fire in the Control Room, the Shift Supervisor has directed a Control Room evacuation.

Which of the following actions should be taken by the Reactor Operators prior to evacuating the Control Room?

a. Trip Reactor Coolant Pumps 1-2 and 2-1.

b. Initiate AFW flow and isolation of both SG's.

c. Trip Makeup Pump #2 if it was running prior to the fire.

d. Verify Makeup Pump #1 suction is aligned to the Makeup Tank.

QUESTION: 059 (1.00)

Given the following conditions:

-- The plant has experienced a steam generator tube leak of greater than 50 gpm
-- No reactor coolant pumps are available
-- A natural circulation cooldown is in progress

Why is the operator directed to reduce RCS pressure to maintain a minimum subcooling margin during the cooldown?

A minimum subcooling margin:

a. ensures normal makeup will be capable of maintaining pressurizer level greater than 100 inches.

b. will reduce the differential pressure between the RCS and the leaking steam generator.

c. allows a greater cooldown rate by reducing the steam generator tube-to-shell thermal stresses.

d. prevents a pressurized thermal shock condition when HPI is required for RCS makeup.

QUESTION: 060 (1.00)

Given the following conditions:

-- The plant has just completed a reactor shutdown to Mode 3
-- Reactor coolant system temperatures are stable
-- A SG tube leak is confirmed on SG 1-1

Which of the following would be the LEAST dependable indication of a steam generator tube leak on SG 1-2 for these conditions?

a. Rad Con main steam line radiation surveys.

b. Steam generator water sampling and analysis.

c. Steam generator level and feedwater flow changes.

d. Reactor coolant system leak rate changes.

QUESTION: 061 (1.00)

Given the following conditions:

-- The plant is operating at 100% power
-- All plant systems are operating as designed
-- All plant electrical systems are in their "preferred" switch lineup

Which of the following power losses can occur WITHOUT the plant experiencing a major transient?

A power loss has occurred on:

a. ICS DC.

b. ICS AC.

c. NNI-X DC.

d. NNI-Y AC.

QUESTION: 062 (1.00)

Which of the following annunciators, if alarming, is a symptom of high activity in the reactor coolant system and REQUIRES entry into DB-OP-02535, "High Activity In The Reactor Coolant System"?

a. Containment Radiation High (4-1-A)

b. Vacuum System Discharge Radiation High (9-4-A)

c. Main Steam Line 1 Radiation High (12-1-A)

d. Letdown Radiation High (2-1-A)

QUESTION: 063 (1.00)

With the plant operating at 100% power, a loss of D1P and DAP has occurred.

SELECT the reason why the operator is directed to "commence a rapid power reduction" for these conditions.

a. The loss of power prevents the Integrated Control System from automatically performing the plant runback.

b. The loss of power has disabled the Main Turbine automatic and control room demanded trips.

c. The resultant condensate/feed system flowrate cannot support the current power level.

d. Seal return flow from the reactor coolant pumps has been isolated concurrent with a loss of component cooling water.

QUESTION: 064 (1.00)

Section 9, "Inadequate Core Cooling", of DB-OP-02000 directs the operator to "open the RCS and PZR high point vents" when incore temperatures have reached Region 3.

SELECT the affect on the plant by performing this step.

Opening the RCS and PZR high point vents:

a. provides a vent path for any non-condensible gases that may be restricting RCS - steam generator heat transfer.

b. allows better control of reactor coolant pressure while maintaining it 40 to 60 psig above steam generator pressure.

c. provides an additional flow path to assist MU/HPI cooling in controlling/reducing core temperatures.

d. reduces reactor coolant system pressure allowing increased flowrates from all running injection systems.

QUESTION: 065 (1.00)

SELECT the MINIMUM conditions that PERMIT jumpering the reactor coolant pump starting interlocks, as necessary, during an inadequate core cooling event?

Incore thermocouple temperatures:

a. show entry into Region 2 of Figure 2 of DB-OP-02000.

b. show entry into Region 3 of Figure 2 of DB-OP-02000.

c. indicate an average clad temperature of 1640 degrees F.

d. indicate an average clad temperature of 1950 degrees F.

QUESTION: 066 (1.00)

Given the following conditions:

-- A loss of feedwater has occurred
-- Power has been lost to 4160V Bus D2
-- Steam generator pressures are both at 850 psig

Which of the following may be used to feed the steam generators?

a. Startup Feed Pump

b. Main Feed Pump

c. Auxiliary Feed Pump

d. Motor Driven Feed Pump - AFW Mode

QUESTION: 067 (1.00)

Given the following conditions:

-- The plant has been operating at 55% power with three (3) reactor coolant pumps running for 10 hours
-- All systems are operating normally with ICS in full "Auto"
-- The auctioneered nuclear instrumentation INPUT to ICS has just failed "Low"
-- No operator actions are taken

What would be the expected reactor power response for these conditions?

Reactor power would:

a. increase to the high flux trip setpoint.

b. increase until limited to 103% power.

c. decrease until limited to 23.5% power.

d. decrease to hot standby.

QUESTION: 068 (1.00)

Given the following conditions:

-- The Rod Stop button is being depressed
-- CRD Group 7 "OUT" command is locked in
-- Reactor power is 85%

Select the correct response if RCP 1-1 trips.

a. The Group 7 rods will remain at the present location.

b. The Group 7 rods will withdraw until the reactor trips.

c. The Group 7 rods will insert until the runback is complete.

d. The reactor will trip immediately.

QUESTION: 069 (1.00)

Which of the following is considered an "overcooling" condition?

a. The plant is in Mode 4 with steam generator pressures of 300 psig and 350 psig.

b. HPI Cooling is in cperation with steam generator pressures of 850 psig and 875 psig.

c. Following a trip, SG #1 pressure is 1000 psig and SG #2 pressure is 890 psig with one of its Main Steam Safety Valves stuck open.

d. Following a trip, plant parameters are outside of, but are trending towards, the post trip target box with steam generator pressures of 1000 psig and 1010 psig.

QUESTION: 070 (1.00)

Given the following conditions:

-- The plant is returning to power following a refueling outage
-- Power is 15% and power ascension is in progress
-- NI-3 has just failed "downscale"

Which of the following is the expected indication for this failure?

a. A "Startup Rod Withdraw Inhibit" annunciator (5-5-E) will be received.

b. Intermediate Range Startup Rate will indicate "0" DPM.

c. RPS Channels 1 and 3 will trip.

d. NI-1 and NI-2 will energize.

QUESTION: 071 (1.00)

Given the following conditions:

-- A reactor and plant startup is in progress
-- Both Source Range Nuclear channels have just failed

SELECT the FIRST point at which the Source Range failure will NOT affect the startup either procedurally or automatically.

a. Both Intermediate Range channels are on-scale.

b. All Power Range channels are on-scale with proper Intermediate Range overlaps verified.

c. The reactor is in Mode 2 with the CRD Breakers closed.

d. Reactor power is 7% with plant heatup in progress.

QUESTION: 072 (1.00)

Given the following conditions:

-- A steam generator tube rupture has occurred on SG #2
-- A plant cooldown is in progress using turbine bypass valves.

Shutdown Margin is:

a. increasing due to the plant cooldown.

b. increasing due to makeup system operation.

c. decreasing due to power defect.

d. decreasing due to the Xenon transient.

QUESTION: 073 (1.00)

Given the following conditions:

-- The plant had been operating at 75% power
-- All four Reactor Coolant Pumps have been lost
-- Natural circulation flow has NOT been established

Which of the following actions will INCREASE the heat transfer from the reactor coolant system to the steam generators

a. Lowering steam generator water levels.

b. Reducing the steam generator steaming rates.

c. Increasing steam generator pressures.

d. Increasing steam generator auxiliary feed rate.

QUESTION: 074 (1.00)

Given the following conditions:

-- A loss of coolant accident is in progress
-- The Safety Features Actuation System (SFAS) has not actuated as designed
-- The Shift Supervisor has directed all SFAS Level 1, 2 and 3 components be actuated

Which of the following will actuate ONLY the SFAS Level 1, 2 and 3 components?

a. Depress the "TRIP" pushbutton on the BWST Level Low Bistable in any two SFAS Channels.

b. Depress the "Trip" pushbutton on the CTMT Radiation High Trip Bistable in any two SFAS Channels.

c. Depress the "TRIP" pushbutton on the CTMT Pressure High Trip Bistable in any two SFAS Channels.

d. Depress the "Trip" pushbutton on the RCS Pressure Low Trip Bistable in any two SFAS Channels.

QUESTION: 075 (1.00)

Given the following conditions:

-- The plant had been operating at 80% power
-- A loss of off-site power occurred and neither Emergency Diesel Generator started
-- The Shift Supervisor has determined that power will not be restored for one (1) hour and has ordered Attachment 5 of DB-OP-02521, "Selective Battery Load Shedding" to be performed

The MAXIMUM amount of time that can elapse before attachment 5 MUST be completed after the power loss is:

a. 10 minutes

b. 20 minutes

c. 30 minutes

d. 60 minutes

QUESTION: 076 (1.00)

It is time for shift turnover and you have entered the plant to assume the duties of a Licensed RO in the Control Room. While on the way to the Control Room the announcement, "Attention all personnel; attention all personnel: an Alert has been declared. All members of the onsite emergency organization report to your designated emergency assembly area and stand by", is made over the plant paging system. Where do you report for duty?

a. The Control Room

b. The Operations Support Center (OSC)

c. The Technical Support Center (TSC)

d. The Emergency Control Center (ECC)

QUESTION: 077 (1.00)

You are performing the quarterly surveillance on the Low Pressure Injection (LPI) pump. The surveillance requires you to reposition a "locked valve" per the procedure, "Operation and Control of Locked Valves."

Whose permission is REQUIRED to unlock and reposition the "locked valve?"

a. The procedure authorizes valve repositioning without permission.

b. The Control Room RO.

c. The Shift Supervisor.

d. The Shift Manager.

QUESTION: 078 (1.00)

Given the following conditions:

-- An Equipment Operator has reported to the Control Room that two instruments monitoring the same parameter are reading 150 psig apart

Who has the RESPONSIBILITY to determine which instrument to use for control of the plant?

a. The Control Room Reactor Operator receiving the report from the Equipment Operator.

b. The Equipment Operator responsible for operation of the equipment being monitored.

c. The Control Room Senior Reactor Operator will determine which instrument to use.

d. The Shift Technical Advisor will evaluate and determine which instrument to use.

QUESTION: 079 (1.00)

During the performance of a valve lineup, a normally open motor operated valve (MOV) in the Decay Heat Removal system has been manually seated "Closed" in accordance with DB-OP-00000, "Conduct of Operations".

SELECT the statement describing the requirements for this valve following the manual operation.

The MOV will be:

a. manually cycled twice and an evaluation will be performed to verify operability.

b. immediately cycled twice with power to restore it to operable condition.

c. declared inoperable and Operational Information Tags will be issued.

d. declared inoperable and a Danger Tag (red tag) clearance will be issued.

QUESTION: 080 (1.00)

Given the following conditions:

-- Reactor power is 100%.
-- NI-5 fails and reads 0% power.

Select the ICS response and reason for the response to the above failure.

a. ICS remains stable; NI power is high auctioneered.

b. ICS runback occurs; neutron error greater than 1%.

c. ICS runback occurs; ICS crosslimit is in effect.

d. ICS reverts to "manual"; loss of neutron signal input.

QUESTION: 081 (1.00)

Given the following conditions:

-- A loss of off-site power has occurred.
-- Steam generator pressures are both 900 psig.
-- An SFAS Level 2 actuation has occurred.

Select the auxiliary feedwater response and OSTG level response.

a. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 49 inches.

b. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 124 inches.

c. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 55 inches.

d. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 130 inches.

QUESTION: 082 (1.00)

With Containment Air Coolers (CAC) running in "FAST" speed, the Emergency Control Transfer Switches are placed in "Local".

IDENTIFY the expected CAC system response.

The CAC fans will:

a. both trip.

b. downshift to "SLOW" speed. Fan 1-3 will have to be manually started in "SLOW" speed.

c. continue to run in "FAST" speed upon receipt of a SFAS Level 2 signal.

d. downshift to "SLOW" speed and Fan 1-3 will automatically start in "SLOW" speed.

QUESTION: 083 (1.00)

Following a reactor trip, steam generator levels will be lowered to, and maintained at, the low level limits. The Rapid Feedwater Reduction (RFR) circuit is one means by which the feedwater demand signal is reduced.

Which of the following will MOST SIGNIFICANTLY REDUCE the feedwater demand should the RFR circuit fail?

a. Feedwater temperature demand correction circuit.

b. Reactor to Feedwater cross limits.

c. Feedwater to Reactor cross limits.

d. Steam Generator level control circuit.

QUESTION: 084 (1.00)

How will a loss of ALL power to the Integrated Control System affect the Main Feed Pumps? (Assume all systems are operating in automatic prior to the power loss.)

The Main Feed Pumps will:

a. trip and coast to a stop.

b. decelerate and continue to run at the low speed stop (3900 rpm).

c. run at 4400 rpm.

d. accelerate and continue to run at the high speed stop (5300 rpm).

QUESTION: 085 (1.00)

SELECT the system that will initiate an AUTOMATIC start of the Emergency Ventilation System when a HIGH radiation level is detected in that system?

a. Radwaste Ventilation System

b. Containment Purge System

c. Auxiliary Building Radioactive Ventilation System

d. Fuel Handling Area Ventilation System

QUESTION: 086 (1.00)

Given the following conditions:

-- The plant is operating at 65% power
-- The Delta T-cold and T-avg indications both suddenly increase to HIGHER values

Which of the following is the cause for these increases? (Assume the SASS system is not available.)

a. T-cold failed HIGH

b. T-cold failed LOW

c. T-hot failed HIGH

d. T-hot failed LOW

QUESTION: 087 (1.00)

What is the MINIMUM water level above the top of seated spent fuel assemblies that is PHYSICALLY possible in the spent fuel pool following an external pipe rupture?

a. 6 feet

b. 9 feet

c. 15 feet

d. 23 feet

QUESTION: 088 (1.00)

Which of the following heat transfer regions provides the GREATEST primary to secondary heat transfer in the steam generators during normal power operation?

a. Subcooled Region

b. Nucleate Boiling Region

c. Film Boiling Region

d. Superheat Region

QUESTION: 089 (1.00)

Emergency Diesel Generator #1 is running, supplying it's associated 4160 VAC Essential Bus in parallel with the grid for surveillance testing.

The local operator takes the "DG 1 Volt Regulator" switch to the "Lower" position.

IDENTIFY the expected response of the diesel generator indications?

Emergency Diesel Generator #1:

a. output KVARs decrease.

b. output voltage decreases.

c. output frequency decreases.

d. output KWs decrease.

QUESTION: 090 (1.00)

What will be the expected effect on Emergency Diesel Generator (EDG) #2 following a loss of 125 VDC power?

The EDG:

a. is unable to be started either automatically or manually.

b. will start and run at idle speed (450 rpm) but will not accelerate to 900 rpm.

c. will not start automatically but may be started manually.

d. will start and run at 900 rpm but cannot be placed on its associated 4160 VAC Essential Bus.

QUESTION: 091 (1.00)

Given the following conditions:

-- The plant is operating at 55% power
-- All systems are operating as designed

Which rod position indicating (PI) system is selected on the Control Room Rod Position Indication Panel for normal monitoring and why is this one selected?

a. ABSOLUTE -- allows immediate verification that all control rods are fully inserted on a reactor trip.

b. RELATIVE -- allows continuous monitoring of sequence fault conditions during control rod motion.

c. ABSOLUTE -- allows continuous monitoring of sequence fault conditions during control rod motion.

d. RELATIVE -- allows immediate verification that all control rods are fully inserted on a reactor trip.

QUESTION: 092 (1.00)

IDENTIFY the conditions under which the Containment Spray Pumps will auto start.

The pumps will auto start:

a. as soon as the Containment Spray Discharge Valves have stroked to the full open position.

b. after the Containment Spray Discharge Valves are open and reactor coolant system pressure is 1450 psig.

c. if reactor coolant system pressure is 1500 psig and a SFAS Level 4 signal is received.

d. as soon as reactor coolant system pressure decreases to less than 450 psig.

QUESTION: 093 (1.00)

The plant has experienced a loss of instrument air to the Turbine Building essential air header ONLY.

Which of the following is an indication of this loss of air?

a. Both Heater Drain Pumps have tripped on Heater Drain Tank low level.

b. Both Auxiliary Feedwater Pumps will start.

c. Main condenser hotwell level is slowly decreasing.

d. Pressurizer level is slowly decreasing.

QUESTION: 094 (1.00)

SELECT the Safety Features Actuation System (SFAS) "Level" actuation that will result in the closure of ALL Component Cooling Water (CCW) system containment isolation valves.

a. Level 2

b. Level 3

c. Level 4

d. Level 5

QUESTION: 095 (1.00)

The plant has experienced a Loss of Coolant Accident (LOCA). All systems are functioning as designed.

Which of the following is the APPROXIMATE Reactor Coolant System (RCS) pressure at which the Low Pressure Injection (LPI) system will begin injecting water into the reactor vessel?

a. 100 psig

b. 200 psig

c. 325 psig

d. 450 psig

QUESTION: 096 (1.00)

Given the following conditions:

-- The plant is operating at 75% power
-- All plant systems are operating as designed

What will be the expected result if the "Close Valves" pushbutton on the Main Turbine EHC Control Panel 1 is depressed?

a. The Turbine Control Valves and Main Stop Valves will remain at their current position.

b. The Turbine Control Valves will slowly close and turbine load will decrease.

c. The Main Stop Valves will close and the turbine will trip on reverse power.

d. The generator output breakers will open and turbine speed will decrease to the currently selected speed.

QUESTION: 097 (1.00)

Which of the following conditions REQUIRE the Reactor Operator to trip the reactor following a Main Turbine trip?

a. One Turbine Stop Valve (MSV) and one Turbine Control Valve (TCV) are open.

b. All four Combined Intermediate Valves (CIV) have failed to close.

c. Reactor power is in excess of Atmospheric Vent Valve (AVV) capacity.

d. Reactor power was 32% prior to the Main Turbine trip.

QUESTION: 098 (1.00)

Following an evacuation of the Control Room, local shutdown control has been established at the Auxiliary Shutdown Panel.

SELECT the plant evolution that can be performed from this panel.

a. Reduce steam generator pressure with atmospheric vent valves.

b. Trip either reactor coolant pump in Loop 2.

c. Start the #1 Makeup Pump and raise pressurizer level.

d. Raise reactor coolant system pressure with pressurizer heaters.

QUESTION: 099 (1.00)

Given the following conditions:

-- The plant was initially operating at 75% power
-- A complete load rejection has just occurred
-- All plant systems have responded as designed
-- No operator actions have been taken
-- The reactor and turbine did not exceed any trip setpoints

What will be the approximate load remaining on the turbine once the plant has stabilized?

a. 25 MWe

b. 48 MWe

c. 75 MWe

d. 110 MWe

QUESTION: 100 (1.00)

During a steam generator tube rupture the operator is directed to determine which SG has the rupture by comparing readings on the main steam line radiation monitors (RE 609 and RE 6000).

Which of the following isotopes provides the indication of the tube rupture?

a. Nitrogen-16

b. Xenon-133

c. Iodine-133

d. Cesium-137

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

PROCTOR COPY

ANSWER: 001 (1.00)

a.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 41.

L.O. OLC-GOP-501-10K

[3.3/3.4]

194001A101 ..(KA's)

ANSWER: 002 (1.00)

d.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 30.

L.O. OLC-GOP-501-09K

[3.0/3.2]

194001A104 ..(KA's)

ANSWER: 003 (1.00)

d.

PROCTOR COPY

REFERENCE:

DB-OP-02000, Table 3.

[3.4/3.8]

194001K115 ..(KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 31

L.O. OLC-GOP-501-09K

[3.6/3.8]

194001A105 ..(KA's)

ANSWER: 005 (1.00)

b.

REFERENCE:

Safety Tagging, DB-OP-00015, page 7

L.O. OLC-GOP-503-01K

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 006 (1.00)

a.

REFERENCE:

Safety Tagging, DB-OP-00015, page 37
L.O. OLC-GOP-503-03K
[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

Confined Space Entry Program, NG-HS-00507, page 9
L.O. Check with facility
[3.3/3.6]

194001K113 ..(KA's)

ANSWER: 008 (1.00)

b.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 26
L.O. OLC-GOP-501-11K
[3.5/4.2]

194001K116 ..(KA's)

ANSWER: 009 (1.00)

d.

REFERENCE:

Safety Tagging, DB-OP-00015, page 24
L.O. OLC-GOP-503-05K
[3.6/3.7]

194001K107 ..(KA's)

ANSWER: 010 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 3, ICS, page 43
L.O. OLC-PWR-070-09K
[3.4/3.6]

001000K103 ..(KA's)

ANSWER: 011 (1.00)

a.

REFERENCE:

Training Information Manual, Volume 3, CRDS, page 47
L.O. ONL-INC-002-02K
[3.6/3.7]

001000K202 ..(KA's)

ANSWER: 012 (1.00)

b.

REFERENCE:

Training Information manual, Volume 3, CRDS, page 37 & 38
L.O. OLC-PWR-036-04K
[3.5/3.8]

001000K403 ..(KA's)

ANSWER: 013 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 3, ICS, page 35.
L.O. OLC-PWR-073-01K
[3.6/3.6]

003000A304 ..(KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 4, RPS, page 24.
L.O. OLC-PWR-039-03K
[3.9/4.2]

003000K304 ..(KA's)

ANSWER: 015 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 1, RCP and Motor, pages 27 & 28.

L.O. OLC-GOP-203-03K

[3.3/3.2]

003000A401 ..(KA's)

ANSWER: 016 (1.00)

d.

REFERENCE:

Training Information Manual, Vol. 1, RCP and Motor, pages 9, 10, 11, & 12

L.O. OLC-GOP-121-01K

[3.4/3.8]

004000K104 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

TIM, Vol. 7, Make-up and Purification, page 7
L.O. check with facility.
[3.4/3.7]

004000K122 ..(KA's)

ANSWER: 018 (1.00)

d.

REFERENCE:

Training Information Manual, Vol. 5, SFAS, page 63.
L.O. OLC-PWR-051-03K
[4.2/4.4]

013000K106 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 5, SFAS, page 65.
L.O. OLC-PWR-051-06K
[4.1/4.4]

013000K112 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

Emergency Procedure, DB-OP-02000, Specific Rule 2

L.O. OLC-GOP-301-03K

[4.0/4.2]

013000A101 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

Training Information Manual, Vol. 3, CRDS, page 8 & 21.
DB-OP-06402, Pg. 70

L.O. OLC-PWR-036-04K

[3.2/3.6]

014000K101 ..(KA's)

ANSWER: 022 (1.00)

c.

REFERENCE:

"Approach to Criticality", DB-OP-06912, page 5

L.O. OLC-GOP-204-03K

[3.4/3.7]

015000K506 ..(KA's)

ANSWER: 023 (1.00)

b.

REFERENCE:

Training Information Manual, Vol. 3, CRDS, page 21 & 22

L.O. OLC-PWR-037-06K

[3.5/3.5]

015000G008 ..(KA's)

ANSWER: 024 (1.00)

d.

REFERENCE:

Emergency procedure, DB-OP-02000, Section 5, page 72

L.O. OLC-GOP-304-01K

[3.4/3.7]

017020K401 ..(KA's)

ANSWER: 025 (1.00)

d.

REFERENCE:

B&W Technical Document, Vol. 2, page III.F-12

L.O. OLC-GOP-308-02K

[3.6/4.1]

017020A202 ..(KA's)

ANSWER: 026 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 2, Auxiliary Feedwater System, page 19

L.O. OLC-PWR-030-06K

[3.6/3.7]

059000K302 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

DB-OP-02000, Pg. 125

[3.5/3.9]

061000K103 ..(KA's)

ANSWER: 028 (1.00)

b.

REFERENCE:

OPS-SYS-I103, "Reactor Coolant System", Rev. 00, Pages 13 & 14, E.O. - 03K

[3.7/4.2]

002000K509 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

TIM, "Core Flood System", Rev. 0

OLC-PWR-I041, "Core Flood System", Rev. 03, Page 4, E.O. - 03K & 06K

[3.6/3.7]

006000K410 ..(KA's)

ANSWER: 030 (1.00)

d.

REFERENCE:

Davis-Besse Tech Spec 3.5.2, Page 3/4 5-3

OLC-PWR-I043, "Decay Heat Removal/Low Pressure Injection", Rev. 04, E.O. - 03K

[3.6/4.2]

006000G011 ..(KA's)

ANSWER: 031 (1.00)

b.

REFERENCE:

DB-OP-06003, "Pressurizer Operating Procedures", Rev. 02, Page 7

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, E.O. - 02K, 02K F & 05K D

[3.1/3.1]

011000K604 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

TIM, "Pressurizer System", Rev. 1, Pages 11 & 14

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, E.O. - 05K

[3.7/4.0]

011000K103 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, Pages 15 & 16, E.O. - 05K, 06K & 07K

[4.0/3.8]

010000A403 ..(KA's)

ANSWER: 034 (1.00)

a.

REFERENCE:

TIM, "Reactor Protection System", Rev. 1, Pages 34 & 45

OPS-SYS-I504, "Reactor Protection System", Rev. 0, E.O. - 10K, 04K & 03K

[3.2/3.5]

012000K406 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

TIM, "Reactor Protection System", Rev. 1, Pages 7, 8, 33 and Figure 1

OPS-SYS-I504, "Reactor Protection System", E.O. - 05K & 02K

[3.3/3.7]

012000K201 ..(KA's)

ANSWER: 036 (1.00)

d.

REFERENCE:

TIM, "Integrated Control System", Rev. 2, Page 36 & Figure 18

OLC-PWR-I069, "Feedwater Subsystem", Rev. 02, Pages 4 & 5, E.O. - 06K & 09K

[3.0/3.1]

016000A201 ..(KA's)

ANSWER: 037 (1.00)

d.

REFERENCE:

B&W Emergency Operating Procedures Technical Bases Document, Volume 3, Page II.C-9

OLC-PWR-I026, "Once-Through Steam Generator", Rev. 4, E.O. - 04K

[4.2/4.5]

035010K101 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

OPS-SYS-I406, "Emergency Diesel Generators", Rev. 0, Page 20, E.O. - 03K & 04K

[3.3/3.4]

064000A306 ..(KA's)

ANSWER: 039 (1.00)

b.

REFERENCE:

ONL-FBT-I013, "Fire Protection System", Rev. 7, Pages 8 & 9, E.O. - 04K & 09K

[3.3/3.3]

086000A401 ..(KA's)

ANSWER: 040 (1.00)

d.

REFERENCE:

TIM, "Plant Air System", Rev. 1, Page 9

OPS-SYS-I602, "Plant Air", Rev. 00, Page 23, E.O. - 08K

[3.3/3.4]

078000K103 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

DB-OP-06004, "Quench Tank", Rev. 02, Page 10

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, Page 28, E.O. - 05K & 06K

[2.6/2.7]

007000A103 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

DB-OP-02523, "Component Cooling Water System Malfunctions", Rev. 00, Pages 24 & 32

OLC-PWR-I020, "Component Cooling Water", Rev. 04, E.O. - 01K & 09K

[3.2/3.5]

008000A202 ..(KA's)

ANSWER: 043 (1.00)

d.

REFERENCE:

TIM, "Decay Heat Removal/Low Pressure Injection", Rev. 2, Page 7

OLC-PWR-I043, "Decay Heat Removal/Low Pressure Injection", Rev. 04, E.O. - 09K

[3.0/3.2]

005000K401 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, Page 2, E.O. - 01K

[3.6/3.4]

000005A101 ..(KA's)

ANSWER: 045 (1.00)

c.

REFERENCE:

DB-OP-02510, "Loss of Reactor Coolant System Boron", Rev. 00, Page 7

OLC-GOP-I116, "Loss of RCS Boron", Rev. 5, E.O. - 03K

[3.3/3.9]

000024A205 ..(KA's)

ANSWER: 046 (1.00)

a.

REFERENCE:

DB-OP-02000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", Rev. 03, Pages 19 & 20

OLC-GOP-I303, "Supplementary Actions", Rev. 10. E.O. - 05K

[4.1/4.4]

000024K301 ..(KA's)

ANSWER: 047 (1.00)

c.

REFERENCE:

DP-OP-06910, "Trip Recovery", Rev. 16 C-4, Page 17

OLC-GOP-I207, "Trip Recovery", Rev. 4, E.O. - 02K

[4.0/4.6]

000007K301 ..(KA's)

ANSWER: 048 (1.00)

b.

REFERENCE:

DP-OP-020000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", Rev. 03, Page 15

OLC-GOP-I302, "Symptoms, Auto. Actions, Immed. Actions", Rev. 9, E.O. - 04K

[4.4/4.7]

000029A201 ..(KA's)

ANSWER: 049 (1.00)

b.

REFERENCE:

Steam Tables

OLC-GOP-I119, "PZR System Abnormal Operation", Rev. 2, Page 5, E.O. - 01K & 05K

[3.6/4.1]

000008K302 ..(KA's)

ANSWER: 050 (1.00)

d.

REFERENCE:

DB-OP-02513, "Pressurizer System Abnormal Operation", Rev. 02 C-1, Page 5

OLC-GOP-I119, "PZR System Abnormal Operation", Rev. 2, Pages 2-4, E.O. - 01K & 04K

[3.9/4.2]

000008A201 ..(KA's)

ANSWER: 051 (1.00)

a.

REFERENCE:

DB-OP-02514, "Loss Of Turbine Plant Cooling Water Pump(s)", Rev. 01, Page 8

OLC-GOP-I120, "Loss of TPCW Pump(s)", Rev. 3, E.O. - 03K

[3.6/3.5]

000026G010 ..(KA's)

ANSWER: 052 (1.00)

c.

REFERENCE:

DB-OP-02515, "Reactor Coolant Pump And Motor Abnormal Operation", Rev. 01, Pages 13 & 21

OLC-GOP-I121, "RCP And Motor Abnormal Operation", Rev. 4, Page 9, E.O. - 02K & 06K

[3.7/3.7]

000015A210 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

OLC-GOP-I125, "High Condenser Pressure", Rev. 5, E.O. - 01K & 04K

[2.7/2.9]

000051G011 ..(KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

DB-OP-02521, "Loss Of AC Bus Power Sources", Rev. 01, Pages 6 & 7

OLC-GOP-I128, "Loss Of AC Bus Power Sources", Rev. 6, E.O. - 01K & 05K

[4.4/4.6]

000056A214 ..(KA's)

ANSWER: 055 (1.00)

d.

REFERENCE:

DB-OP-02522, "Small RCS Leaks", Rev. 01 C-2, Pages 7 & 8

OLC-GOP-I129, "Small RCS Leaks", Rev. 4, E.O. - 01K & 03K

[3.5/3.8]

000009A202 ..(KA's)

ANSWER: 056 (1.00)

b.

REFERENCE:

DB Tech Spec 3.6.1.1, Page 3/4 6-1 and Table 1.1, Page 1-7

OLC-GOP-I135, "Loss Of Decay Heat Removal", Rev. 6, E.O. - 02K & 05K

[3.9/4.3]

000025K101 ..(KA's)

ANSWER: 057 (1.00)

a.

REFERENCE:

DB-OP-02528, "Loss Of Instrument Air", Rev. 02, Page 16

OLC-GOP-I1.6, "Loss Of Instrument Air", Rev. 6, E.O. - 05K & 06K

[3.1/3.3]

000065G006 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

DB-OP-02519, "Serious Control Room Fire", Rev. 01 C-1, Page 7

OLC-GOP-I126, "Serious Control Room Fire", Rev. 6, E.O. - 03K & 06K

[3.3/4.1]

000067K304 ..(KA's)

ANSWER: 059 (1.00)

b.

REFERENCE:

DB-OP-02531, "Steam Generator Tube Leak", Rev. 01 C-1, Page 21

OLC-GOP-I140, "Steam Generator Tube Leak", Rev. 7, E.O. - 03K & 06K

[4.2/4.4]

000037K307 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

DB-OP-02531, "Steam Generator Tube Leak", Rev. 01 C-1, Page 7

OLC-GOP-I140, "Steam Generator Tube Leak", Rev. 7, E.O. - 01K & 05K

[3.4/3.9]

000037A203 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

DB-OP-02532, "Loss Of NNI/ICS Power", Rev. 02 C-1, Pages 7 & 12

OLC-GOP-I141, "Loss Of NNI/ICS Power", Rev. 3, Page 11, E.O. - 01K & 05K

[4.0/4.3]

000057A219 ..(KA's)

ANSWER: 062 (1.00)

d.

REFERENCE:

DB-OP-02535, "High Activity In The Reactor Coolant System", Rev. 03, Page 4

OLC-GOP-I130, "High Activity In The Reactor Coolant System", Rev. 4, E.O. - 01K

[2.6/3.0]

000076K201 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

DB-OP-02537, "Loss of D1P and DAP", Rev. 00, Page 6

OLC-GOP-I143, "Loss Of DC Procedures", Rev. 0, E.O. - 02K & 05K

[3.5/3.9]

000058A203 ..(KA's)

ANSWER: 064 (1.00)

a.

REFERENCE:

DB-OP-02000 Section 9, "Inadequate Core Cooling", Rev. 03, Pages 181 & 182

OLC-GOP-I308, "Inadequate Core Cooling", Rev. 7, E.O. - 04K

[4.0/4.4]

000074K311 ..(KA's)

ANSWER: 065 (1.00)

d.

REFERENCE:

DB-OP-02000 Section 9, "Inadequate Core Cooling", Rev. 03, Pages 183 & 184

OLC-GOP-I308, "Inadequate Core Cooling", Rev. 7, E.O. - 03K

[4.3/4.6]

000074A113 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

DB-OP-02000 Section 4, "Supplementary Actions", Rev. 03, Page 51

OLC-GOP-I303, "Supplementary Actions", Rev. 10, E.O. - 05K

[4.1/4.2]

000054A203 ..(KA's)

ANSWER: 067 (1.00)

a.

REFERENCE:

TIM, "Integrated Control System", Rev. 2, Page 45

TIM, "Reactor Protection System", Rev. 1, Page 34

OLC-PWR-I074, "ICS Failure Modes", Rev. 01, E.O. - 01K

[4.2/4.3]

000001A204 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

DB-OP-02516, "CRD Malfunctions", Rev. 02

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, E.O. - 02K, 04K & 05K

[3.9/4.0]

000001G010 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

DB-OP-02000 Section 4, "Supplementary Actions", Rev. 03, Page 58

OLC-GOP-I306, "Overcooling", Rev. 8, Page 1, E.O. - 01K & 04K

[4.0/4.1]

000040A106 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

DB-OP-02505, "Nuclear Instrumentation Failures", Rev. 00 C-1, Page 5

OLC-GOP-I108, "Nuclear Instrumentation Failures", Rev. 3, Page 3, E.O. - 01K & 05K

[3.3/3.6]

000033A202 ..(KA's)

ANSWER: 071 (1.00)

d.

REFERENCE:

DB-OP-02505, "Nuclear Instrumentation Failures", Rev. 00 C-1, Page 17

OLC-GOP-I108, "Nuclear Instrumentation Failures", Rev. 3, E.O. - 05K

[3.1/33]

000032G011 ..(KA's)

ANSWER: 072 (1.00)

b.

REFERENCE:

B&W Owners Group EOP Technical Bases Document, Vol 2

No Specific Facility Reference and Learning Objective identified

[3.8/4.4]

000038A206 ..(KA's)

ANSWER: 073 (1.00)

d.

REFERENCE:

DB-OP-02000 Section 6, "Lack of Heat Transfer", Rev. 03, Pages 88 & 89

OLC-GOP-I305, "Lack Of Heat Transfer", Rev. 7, Pages 1 & 2, E.O. - 03K & 04K

[4.4/4.6]

000015K101 ..(KA's)

ANSWER: 074 (1.00)

c.

REFERENCE:

DB-OP-06405, "Safety Features Actuation System Procedure", Rev. 02, Pages 68 & 69

OLC-PWR-051, "Safety Features Actuation System", Rev. 02, E.O. - 02K & 03K

[3.5/3.7]

000069A101 ..(KA's)

ANSWER: 075 (1.00)

c.

REFERENCE:

DB-OP-02521, "Loss Of AC Bus Power Sources", Rev. 01, Pages 10 & 23
OLC-GOP-I128, "Loss Of AC Bus Power Sources", Rev. 6, E.O. - 03K & 04K
[3.5/3.9]

000055A104 ..(KA's)

ANSWER: 076 (1.00)

b.

REFERENCE:

Emergency Plan, page 5-13
L.O. OLC-GOP-601-08K
[3.1/4.4]
194001A116 ..(KA's)

ANSWER: 077 (1.00)

c.

REFERENCE:

Operation and Control of Locked Valves, DB-OP-00008, page 7 & 8
L.O. OLC-GOP-505-03K
[3.6/3.7]
194001K101 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

DB-OP-00000, "Conduct Of Operations", Rev. 02, Page 20

OLC-GOP-I501, "Conduction Of Operations", Rev. 4, E.O. - 03K

[4.3/4.1]

194001A113 ..(KA's)

ANSWER: 079 (1.00)

c.

REFERENCE:

DB-OP-00000, "Conduct Of Operations", Rev. 02, Pages 38 & 38a

OLC-GOP-I501, "Conduction Of Operations", Rev. 4, E.O. - None identified

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 080 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 5, Nuclear Instrumentation, page 25

L.O. OLC-PWR-070-03K

[3.4/4.0]

015000K304 ..(KA's)

ANSWER: 081 (1.00)

b.

REFERENCE:

Training Information Manual, Vol. 2, Auxiliary Feedwater System, page 19

L.O. OLC-PWR-029-06K

[3.9/4.2]

061000A101 ..(KA's)

ANSWER: 082 (1.00)

a.

REFERENCE:

DB-OP-06016, "Containment Air Cooling System Procedure", Rev. 02 C-1, Page 4

OPS-SYS-I306, "Containment Heat Removal", Rev. 0, Page 5, E.O. - 06K

[3.6/3.6]

022000A401 ..(KA's)

ANSWER: 083 (1.00)

b.

REFERENCE:

TIM, "Integrated Control System", Rev. 2, Pages 45 & 46

OLC-PWR-I070, "Reactor Control Subsystem", Rev. 02, E.O. - 03K & 09K

[3.3/3.5]

059000K402 ..(KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

OLC-PWR-I024, "MFPT/Pump Control", Rev. 5, Page 39, E.O. - 04K

[2.5/2.6]

059000A107 ..(KA's)

ANSWER: 085 (1.00)

d.

REFERENCE:

TIM, "Emergency Ventilation System", Rev. 0, Page 8

OLC-PWR-I048, "Containment Ventilation", Rev. 03, E.O. - 04K

[3.5/3.9]

072000K102 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

TIM, "Non-Nuclear Instrumentation", Rev. 2, Page 15 and Figure 18

OLC-PWR-I035, "Non-Nuclear Instrumentation", Rev. 2, E.O. - 02K

[3.4/3.4]

016000K101 ..(KA's)

ANSWER: 087 (1.00)

b.

REFERENCE:

TIM, "Spent Fuel Pool", Rev. 1, Page 3

OPS-SYS-I113, "Spent Fuel Pool Cooling", Rev. 00, E.O. - 07K

[2.9/3.2]

033000K401 ..(KA's)

ANSWER: 088 (1.00)

b.

REFERENCE:

TIM, "Once-Through Steam Generator", Rev. 2, Pages 17 & 19

OLC-PWR-I026, "Once-Through Steam Generator", Rev. 4, E.O. - 05K

[3.8/4.0]

035010K109 ..(KA's)

ANSWER: 089 (1.00)

a.

REFERENCE:

DB-OP-06316, "Diesel Generator Operating Procedure", Rev. 01, Page 40

OPS-SYS-I406, "Emergency Diesel Generators", Rev. 0, E.O. - 03K & 04K

[3.3/3.4]

064000A402 ..(KA's)

ANSWER: 090 (1.00)

a.

REFERENCE:

DB-OP-02538, "Loss Of D2P And DAP", Rev. 00, Page 8, 32

OLC-GOP-I143, "Loss Of DC Busses", Rev. 0, E.O. - 03K

[3.7/4.1]

063000K301 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

OPS-SYS-I501, "Control Rod Drive - Electrical", Rev. 00, Page 37, E.O. - 09K

[3.2/3.6]

014000A102 ..(KA's)

ANSWER: 092 (1.00)

c.

REFERENCE:

TIM, "Containment Heat Removal System", Rev. 1, Page 7

OPS-SYS-I306, "Containment Heat Removal", Rev. 0, E.O. - 06K

[3.5/3.7]

026000G007 ..(KA's)

ANSWER: 093 (1.00)

b.

REFERENCE:

TIM, "Main Steam System", Rev. 2, Pages 4 & 13

OPS-SYS-I602, "Plant Air", Rev. 00, Page 30, E.O. - 06K

[3.4/3.6]

078000K302 ..(KA's)

ANSWER: 094 (1.00)

c.

REFERENCE:

TIM, "Component Cooling Water", Rev. 2, Page 17

OLC-PWR-I020, "Component Cooling Water", Rev. 04, Page 32, E.O. - 05K & 09K

[3.6/3.7]

008030A304 ..(KA's)

ANSWER: 095 (1.00)

b.

REFERENCE:

DB-OP-02000 Section 10, "Large LOCA", Rev. 03, Page 189

OLC-PWR-I043, "Decay Heat Removal/Low Pressure Injection", Rev. 04, E.O. - 04K & 05K

[3.3/3.4]

005000A102 ..(KA's)

ANSWER: 096 (1.00)

a.

REFERENCE:

TIM, "Electro-Hydraulic Control System", Rev. 2, Pages 32 & 33

OPS-SYS-I522, "EHC Electrical", Rev. 00, E.O. - 04K

[3.1/2.9]

045000A401 ..(KA's)

ANSWER: 097 (1.00)

a.

REFERENCE:

DB-OP-02500, "Turbine Trip", Rev. 01, Page 6

OLC-GOP-I101, "Turbine Trip, DB-OP-02500", Rev. 5, E.O. - 02K & 03K

[4.3/4.3]

000007A107 ..(KA's)

ANSWER: 098 (1.00)

d.

REFERENCE:

DB-OP-02508, "Control Room Evacuation", Rev. 00 C-1, Page 10

OLC-GOP-I112, "Control Room Evacuation", Rev. 5, E.O. - 04K & 05K

[3.8/4.0]

000068A128 ..(KA's)

ANSWER: 099 (1.00)

b.

REFERENCE:

DP-OP-02520, "Load Rejection", Rev. 00, Page 4

OLC-GOP-I127, "Load Rejection", Rev. 5, Page 2, E.O. - 04K & 05K

[4.3/4.5]

000056A244 ..(KA's)

ANSWER: 100 (1.00)

a.

REFERENCE:

OLC-GOP-I027, "Main Steam", Rev. 05, Page 21

OLC-GOP-I307, "Steam Generator Tube Rupture", Rev. 7, E.O. - 03K

[4.4/4.6]

000038A203 ..(KA's)

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

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
SENIOR OPERATOR LICENSE
REGION 3

CANDIDATE'S NAME: MASTER EXAMINATION COPY

FACILITY: Davis-Besse 1

REACTOR TYPE: PWR-B&W177

DATE ADMINISTERED: 94/05/16

INSTRUCTIONS TO CANDIDATE:

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

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

FINAL GRADE

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

_____
Candidate's Signature

MASTER COPY

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

001	a	b	c	d	___	023	a	b	c	d	___
002	a	b	c	d	___	024	a	b	c	d	___
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004	a	b	c	d	___	026	a	b	c	d	___
005	a	b	c	d	___	027	a	b	c	d	___
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008	a	b	c	d	___	030	a	b	c	d	___
009	a	b	c	d	___	031	a	b	c	d	___
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013	a	b	c	d	___	035	a	b	c	d	___
014	a	b	c	d	___	036	a	b	c	d	___
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020	a	b	c	d	___	042	a	b	c	d	___
021	a	b	c	d	___	043	a	b	c	d	___
022	a	b	c	d	___	044	a	b	c	d	___
						045	a	b	c	d	___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

046 a b c d ___

MULTIPLE CHOICE

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A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

091 a b c d ___

MULTIPLE CHOICE

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination, the following rules apply:

1. Cheating on the examination will result in a denial of your application and could result in more severe penalties.

2. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.

3. To pass the examination, you must achieve a grade of 80 percent or greater.

4. The point value for each question is indicated in parentheses after the question number.

5. There is a time limit of 4 hours for completing the examination.

6. Use only black ink or dark pencil to ensure legible copies.

7. Print your name in the blank provided on the examination cover sheet and the answer sheet.

8. Mark your answers on the answer sheet provided and do not leave any question blank.

9. If the intent of a question is unclear, ask questions of the examiner only.

10. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.

11. When you complete the examination, assemble a package including the examination questions, examination aids, and answer sheets and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet.

12. After you have turned in your examination, leave the examination area as defined by the examiner.

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QUESTION: 001 (1.00)

A plant start-up is in progress and Station Document Control has issued working copies of the start-up procedures for the control room binders.

Who is REQUIRED to ensure the procedure revisions in the working copies are current and used ONLY during the plant start-up?

a. The Control Room SRO.

b. A non-licensed STA.

c. The Station Document Control assistant.

d. The operator using the working copy.

QUESTION: 002 (1.00)

The Control Room SRO is giving directions for a complex valve line-up to a Non-Licensed Operator over the Gai-Tronics phone system.

What should the Non-Licensed Operator do upon receipt of the SRO's message?

The Non-Licensed Operator:

a. acknowledges that the message has been received and will be performed.

b. paraphrases the message to the Independent Verifier.

c. performs the valve line-up and reports to the Control Room.

d. writes the instructions down and reads them back to the Control Room SRO.

QUESTION: 003 (1.00)

Which of the following is the PREFERRED action to take when responding to 3% hydrogen concentration in containment following a large break LOCA?

a. Operate the Hydrogen Dilution Blowers.

b. Install and operate a Hydrogen Igniter.

c. Operate the Hydrogen Purge System.

d. Install and operate a Hydrogen Recombiner.

QUESTION: 004 (1.00)

When are maintenance personnel REQUIRED to be in constant communication with operations personnel?

Constant communications with operations personnel is REQUIRED:

a. when any condition exists that could delay an outage.

b. during evolutions which have the potential to adversely effect station operation.

c. when performing maintenance on radioactive systems.

d. during maintenance on high voltage systems (greater than 4160 volts).

QUESTION: 005 (1.00)

Plant instrumentation and control (I&C) personnel have informed the Shift Supervisor (SS) that they need to isolate and remove a pressure gauge on the Moisture Separator Reheater (MSR) to check its calibration.

What is the MINIMUM administrative control required for this work?

a. A personal Red Tag Clearance.

b. None, as long as the I&C personnel remain in the area.

c. An Operational Information Tag.

d. A System Dispatcher's Clearance.

QUESTION: 006 (1.00)

Which of the following is the method for "independent" verification of a red tag?

Once the initial operator has hung the tags:

a. a second operator will check the tags and component positions at a later time.

b. a second operator will follow immediately behind the first operator and check the tags and component positions as they are tagged.

c. a second operator will verify the tags are hanging at a later time.

d. he/she must wait a minimum of 30 minutes prior to reverifying the tagout.

QUESTION: 007 (1.00)

The plant is in Mode 6, condenser vacuum has been "broken" and the condenser is opened to atmosphere for maintenance. You have been assigned as the "Attendant" for the condenser hotwell.

Under what condition(s) can you leave the condenser hotwell area during entry of personnel?

You may leave:

a. during specified Union break periods.

b. to assist personnel preparing to enter the hotwell.

c. when relieved by a fire watch, but for 5 minutes only.

d. to summon rescue services when needed.

QUESTION: 008 (1.00)

Which of the following identify the MINIMUM manning requirements for the Fire Brigade?

a. 6 operators
2 of which are needed for safe shutdown

b. A fire captain
4 operators, none of which are needed for safe shutdown

c. A fire captain
4 operators, all of which are needed for safe shutdown

d. A fire captain
6 operators, 4 of which are needed for safe shutdown

QUESTION: 009 (1.00)

When using a lifted lead to serve as a clearance boundary for a 4160 V breaker, who MUST accompany the operator hanging the clearance?

a. A second qualified operator

b. A licensed reactor operator

c. A control room SRO

d. A qualified electrician

QUESTION: 010 (1.00)

Given the following conditions:

-- Reactor power is 95%.
-- Group 7 control rods are at 95%.
-- Xenon is INCREASING to reach equilibrium.
-- The Diamond Rod Control Station "Out Command" light is illuminated.

Select the cause for these conditions.

a. The Group 7 control rods are at their "out limit."

b. Xenon has reached equilibrium.

c. Neutron error is less than (more negative) -1.0%.

d. Neutron error is greater than (more positive) 1.0%.

QUESTION: 011 (1.00)

What is the power supply to the CRD Trip Breaker under voltage coils?

a. The Reactor Protection System (RPS).

b. The Integrated Control System (ICS).

c. The Motor Generator.

d. The Inductrol Voltage Regulator.

QUESTION: 012 (1.00)

Given the following conditions:

-- Reactor power is 99%.
-- Control Rod Exercising test, DB-SC-03272, has just been performed.
-- Groups 1 through 6 rods have 100% lamps illuminated.
-- Group 7 rods are at 95%.
-- The Diamond Control Station will not go back in "Auto".

Which of the following would cause the Diamond Control Station to fail to return to "Auto"?

a. Neutron error greater than 0.5% in either direction.

b. Group 3 rods are NOT at the "Out Limit".

c. Group 6 rods are NOT at the "Out Limit".

d. The Sequence Inhibit lamp is illuminated.

QUESTION: 013 (1.00)

Given the following conditions:

-- A plant runback is in progress from 100% power.
-- Main feedwater to the OTSGs has re-ratioed.
-- RCS flow on Non-Nuclear Instrumentation (NNIs) indicates 80 mmph in Loop "A" and 38 mmph in Loop "B."

Select the cause for the above conditions.

a. A Main Feedwater Pump has tripped.

b. RCS flow indication from NNI loop "B" has failed low.

c. One Reactor Coolant Pump in loop "B" has tripped.

d. RCS flow indication from NNI loop "A" has failed high.

QUESTION: 014 (1.00)

Given the following conditions:

-- 2 Reactor Coolant Pumps (RCPs) are running in Loop "A".
-- 1 RCP is running in Loop "B".
-- Reactor power is 50% by nuclear instrumentation indication.

One of the running RCPs develops high vibration and must be secured immediately. When it is secured, the plant trips.

Which reactor coolant pump was secured and why did the plant trip?

a. The RCP running in Loop "B".
The plant trip was due to the Power/pump monitors in the RPS.

b. The RCP running in Loop "B".
The plant trip was due to flux/delta flux/flow in the RPS.

c. An RCP running in Loop "A".
The plant trip was due to the Power/pump monitors in the RPS.

d. An RCP running in Loop "A".
The plant trip was due to flux/delta flux/flow in the RPS.

QUESTION: 015 (1.00)

Given the following conditions:

-- A plant start-up is in progress.
-- The Reactor Operator attempted to start 1-1 RCP.
-- 1-1 RCP would not start.

Which of the following situations will prevent the RCP from starting?

a. Insufficient net positive suction head (NPSH).

b. Component Cooling Water (CCW) flow to 1-1 seal cooler of 26 gpm.

c. Seal injection flow to 1-1 RCP of 2.6 gpm.

d. RCS cold leg temperature of 490 degrees F.

QUESTION: 016 (1.00)

Given the following conditions:

-- PZR level is constant.
-- Make-up Tank level is decreasing.
-- The Equipment Operator reports increased seal leakage on the Low Pressure Injection pumps.
-- The "Drinking Bird" for RCP 2-1 has increased.

Select the cause for the above indications.

a. RCS leakage in the pressurizer water space.

b. RCS leakage in the letdown system.

c. Seal injection filter leakage.

d. RCP seal leakage increase for RCP 2-1.

QUESTION: 017 (1.00)

Given the following conditions:

-- A reactor trip has occurred from 100% power.
-- Main feedwater was slow in response and caused a small overcooling transient.
-- The reactor operator transferred MU pump suctions MU 3971 AND MU 6405 to the BWST position.
-- The overcooling transient has stopped.

Select the response of the Make-Up Tank level due to the above transient.

Make-Up Tank level will:

a. decrease initially; then increase.

b. decrease initially; then remain the same.

c. increase initially; then decrease.

d. increase initially; then remain the same.

QUESTION: 018 (1.00)

Given the following conditions:

-- An RCS cooldown is in progress.
-- At 1800 psig the operator bypasses the SFAS RCS low pressure bistable for all 4 channels.
-- The "1650# TRIP BLKD" lights have illuminated.
-- An RCP seal leak has developed causing the operator to trip the affected RCP and increase the plant cooldown rate.
-- RCS pressure reaches 1650 psig.

Select the appropriate SFAS condition.

a. HPI initiates on low RCS pressure due to the RCS leak.

b. The "Blue Safety System Bypass Lights" for HPI illuminate.

c. LPI initiates on low RCS pressure due to the RCS leak.

d. SFAS 1650# block cannot be reset until RCS pressure increases above the block setpoint.

QUESTION: 019 (1.00)

Given the following conditions:

-- The Emergency Diesel Generator (EDG) is running for the monthly surveillance.
-- The EDG is paralleled with the grid and at full load.
-- A Channel 1 and 2 SFAS signal has occurred due to RCS low pressure.

Select the condition of the EDG and the SFAS load sequencer AFTER receipt of the SFAS signal.

a. The EDG engine remains running and the load sequencer is not started.

b. The EDG engine remains running and the load sequencer is started.

c. The EDG engine trips and the load sequencer is not started.

d. The EDG engine trips and the load sequencer is started.

QUESTION: 020 (1.00)

Given the following conditions:

-- A loss of coolant accident has occurred.
-- SFAS has initiated on low RCS pressure.
-- RCS TSAT meters indicate 5 degrees F.

What is the REQUIRED mode of operation for HPI.

a. HPI should be throttled to prevent exceeding the maximum P/T for cooldown limit line on Figure 1.

b. Full HPI should be initiated with both pumps.

c. HPI should be throttled to less than 35 gpm per pump.

d. Full HPI should be initiated with one pump.

QUESTION: 021 (1.00)

Given the following conditions:

-- A reactor start-up is in progress.
-- Group 4 rods are being withdrawn.
-- Indication for Rod 4-1 is erratic.
-- An "asymmetry fault" alarm is illuminated on the rod control panel.

Choose the reason and cause for the rod alarm.

There is erratic indication from group 4, rod 1...

a. relative position indication (RPI) causing a loss of "all safety rods out" indication.

b. absolute position indication (API) causing a 6.5% (9 inch) asymmetric rod fault.

c. relative position indication (RPI) causing a 6.5% (9 inch) asymmetric rod fault.

d. absolute position indication (API) causing a loss of "all safety rods out" indication.

QUESTION: 022 (1.00)

Given the following conditions:

-- Safety rod Groups 1-4 are at their out limit.
-- The Reactor Operator (RO) commenced withdrawing Group 5 rods and has stopped.

What will be the indication that sub-critical multiplication is occurring.

a. A constant, positive start-up rate with increasing source range counts.

b. A constant, negative start-up rate with source range counts decreasing to a previous level.

c. Start-up rate leveling off at zero DPM with source range counts increasing and leveling off at a higher value than previously observed.

d. Start-up rate leveling off at zero DPM with intermediate range power level increasing and leveling off at 1.0 E-8 amps.

QUESTION: 023 (1.00)

While withdrawing regulating control rods for criticality, all outward rod motion stopped.

Choose the cause for the loss of control rod motion.

a. A positive 1.5 DPM start-up rate in the Source Range.

b. A positive 3 DPM start-up rate in the Intermediate Range.

c. A 7 inch asymmetric rod.

d. Programmer lamp fault "A".

QUESTION: 024 (1.00)

Given the following conditions:

-- A reactor trip has occurred from 100% power.
-- Sub-cooling margin is 0 degrees F.
-- Reactor Coolant pumps have been tripped.
-- Natural circulation has NOT been verified.

Select the instrumentation used to verify Subcooling Margin (SCM).

a. T-hot and pressurizer pressure.

b. T-cold and RCS loop pressure.

c. T-sat meter with normal inputs.

d. Incore thermocouples and loop pressure.

QUESTION: 025 (1.00)

Given the following conditions:

-- A station blackout has occurred.
-- High Pressure Injection and Auxiliary Feedwater have failed to operate.
-- The reactor core has become partially uncovered.

Select the best indication that indicates core damage may be unavoidable.

a. T-sat monitors indicate 0 degrees F.

b. There is no indication of natural circulation.

c. The self power neutron detectors (SPNDs) indicate 100% reactor power 3 minutes after the above transient.

d. RCS pressure/temperature is in Region 4 of Figure 2 for Inadequate Core Cooling.

QUESTION: 026 (1.00)

Given the following conditions:

-- Reactor power was steady state at 75%.
-- Both main feedwater pumps tripped.

Select the Auxiliary Feedwater response and OTSG level response.

a. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 49 inches.

b. Both Auxiliary Feedwater Pumps start and maintain OTSG levels at 124 inches.

c. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 55 inches.

d. One Auxiliary Feedwater Pump starts and maintains OTSG levels at 130 inches.

QUESTION: 027 (1.00)

Given the following conditions:

-- The reactor has tripped.
-- SG 2 has isolated by the SFRCS low pressure trip and indicates "0" psig.
-- A main steam safety valve on SG 1 is leaking.
-- RCS cooldown rate due to the leakage is 45 degrees F per hour.

Which of the following is the correct operator response?

a. Initiate Makeup/HPI cooling.

b. Continue Cooldown with AFW feeding SG 1.

c. Continue Cooldown with AFW feeding BOTH SG's.

d. Isolate AFW to BOTH SG's.

QUESTION: 028 (1.00)

Given the following conditions:

--	T hot	- 591 degrees F
--	T cold	- 567 degrees F
--	T ave	- 579 degrees F
--	Pressurizer pressure	- 2155 psig
--	Steam pressure	- 910 psig

Which of the following is the APPROXIMATE Subcooling Margin for the above plant conditions? (Steam tables are supplied.)

a. 43 degrees

b. 56 degrees

c. 68 degrees

d. 80 degrees

QUESTION: 029 (1.00)

The controls for the Core Flood Tank (CFT) Discharge Isolation Valves (CF1A and CF1B) are located on the ESF Panel. The "Blue" lights next to the valve open/close pushbuttons are "illuminated".

What is the STATUS of the CFT valves?

a. The valves are closed.

b. The valves are open.

c. The valves are deenergized.

d. The valves are energized.

QUESTION: 030 (1.00)

The Davis-Besse Technical Specifications for Emergency Core Cooling Systems (ECCS) with T-ave greater than 280 degrees F identifies a SUBSYSTEM of ECCS as:

-- One OPERABLE High Pressure Injection (HPI) pump AND
-- One OPERABLE Low Pressure Injection (LPI) pump

AND which of the following?

a. The Borated Water Storage Tank.

b. One OPERABLE Core Flood Tank.

c. One OPERABLE Containment Spray Pump.

d. One OPERABLE Decay Heat Cooler.

QUESTION: 031 (1.00)

Given the following conditions:

-- The plant is operating at 95% power
-- All plant systems are operating as designed
-- Due to problems with cooling, containment temperatures are increasing

Which of the following is the expected affect of these conditions?

a. Indicated Makeup Tank level will decrease

b. Actual Makeup Tank level will increase.

c. Indicated Pressurizer level will decrease.

d. Actual Pressurizer level will increase.

QUESTION: 032 (1.00)

IDENTIFY the components/systems that receive an input signal from the pressurizer level indication system.

a. Three-Way Letdown Valve (MU-11) and pressurizer spray valve.

b. Makeup Flow Controller (MU-32) and pressurizer heaters.

c. Reactor Protection System and pressurizer power operated relief valve.

d. Safety Features Actuation System and pressurizer auxiliary spray valve.

QUESTION: 033 (1.00)

The pressurizer Pilot Operated Relief Valve (PORV) "Red" indicating light on the control switch is ILLUMINATED.

Which of the following describes the status of the PORV?

The red light "Illuminated" indicates the PORV:

a. control solenoid is energized.

b. is in the "locked open" position.

c. pilot valve is repositioned to close the PORV.

d. is in the "Open" position.

QUESTION: 034 (1.00)

Given the following conditions:

-- The plant is shutdown with cooldown in progress
-- The Reactor Protection System (RPS) has just been placed in "Shutdown Bypass"

Which of the following RPS trips IS available for protection?

a. High RCS temperature

b. Low RCS Pressure

c. Power to Pump

d. Flux/Delta Flux/Flow

QUESTION: 035 (1.00)

Given the following conditions:

-- The plant is operating at 80% power
-- All plant systems are operating as designed
-- A loss of power to 120 VAC Essential Power Panel Y2 has just occurred

What is the expected effect on the RPS system?

a. RPS Channel 1 will trip and CRD Breaker "B" will open.

b. RPS Channel 1 will trip and all CRD Breakers will open.

c. RPS Channel 2 will trip and CRD Breaker "A" will open.

d. RPS Channel 2 will trip and all CRD Breakers will open.

QUESTION: 036 (1.00)

Given the following conditions:

-- The plant is at 75% power
-- All ICS stations are in "automatic"

SELECT the parameter that will INCREASE BTU limits (i.e. increase the amount of superheat) if the parameter's instrument fails "Downscale".

a. Reactor coolant system hot leg temperature

b. Reactor coolant system loop flow

c. Feedwater temperature

d. Steam generator pressure

QUESTION: 037 (1.00)

Which of the following "feed" pumps will remove the GREATEST amount of heat from the reactor coolant system? (Assume all pumps are feeding at the same flowrate.)

a. Startup Feed Pump

b. Main Feed Pump

c. Motor Driven Feed Pump (MFW mode)

d. Auxiliary Feed Pump

QUESTION: 038 (1.00)

Given the following conditions:

-- Emergency Diesel Generator #2 had been running in parallel with its associated 4160 VAC Essential Bus for testing and has been unloaded due to electric governor instability
-- The Governor Selector Switch has been placed in the "Hydraulic" position
-- The operator has just depressed the "Stop" pushbutton

What will be the expected response of the Emergency Diesel Generator?

The engine will:

a. immediately stop.

b. slow to 450 rpm and immediately stop.

c. run at 450 rpm for 10 minutes and then stop.

d. run at 900 rpm for 10 minutes and then stop.

QUESTION: 039 (1.00)

Given the following conditions:

-- The Reactor Operator is attempting to start the Diesel Fire Pump from the Control Room.
-- After 2 minutes the local operator reports the engine cranked several times but did not start and that the "Overcrank" light is "Illuminated".

What is required before the Reactor Operator can attempt another start sequence?

a. The Reactor Operator must wait 2 minutes for the start sequence timer to reset.

b. The local operator must place the Diesel Fire Pump controller to "Off" and back to "Auto."

c. The Reactor Operator must reset the start sequence timer on the back of panel 912-1.

d. The local operator must place the Diesel Fire Pump controller to "Manual 1" or "Manual 2" and back to "Auto."

QUESTION: 040 (1.00)

Given the following conditions:

-- The plant is operating at power
-- All systems are operable and in automatic
-- A transient causes reactor coolant system pressure to decrease to 1450 psig

Which of the following describes the affect of this transient on the plant air systems?

a. Station Air to the Turbine Building essential header is isolated.

b. Instrument Air to the Auxiliary Building non-essential header is isolated.

c. The Instrument Air and Station Air header cross-tie valve (SA 6445) closes.

d. The Station Air supply to the Containment Air header is isolated.

QUESTION: 041 (1.00)

Which of the following is the operator's responsibility regarding operation of the Quench Tank?

The operator must:

a. verify the Recirc Pump starts at 200 degrees F and automatically stops at 150 degrees F.

b. verify the Recirc Pump starts at 150 degrees F and is manually stopped at 125 degrees F.

c. start the Recirc Pump at 200 degrees F and verify it automatically stops at 150 degrees F.

d. start the Recirc Pump at 150 degrees F and manually stop it at 125 degrees F.

QUESTION: 042 (1.00)

Given the following conditions:

-- The plant is at 100% power
-- All systems are operating as designed
-- A Component Cooling Water (CCW) Surge Tank High level alarm has just been received.
-- The Reactor Operator reports CCW return radiation level is trending upward as well as surge tank level

IDENTIFY the CCW load that is the source of the leakage into the system.

a. Decay Heat Coolers

b. Pressurizer Quench Tank Cooler

c. Letdown Coolers

d. Spent Fuel Pool Cooling Heat Exchangers

QUESTION: 043 (1.00)

Given the following conditions:

-- The plant is shutdown with Decay Heat Removal Loop 1 in service.
-- Due to a transient, reactor coolant system pressure is increasing and reaches 325 psig.

How is the Decay Heat Removal system protected from overpressure for these conditions?

a. The RCS to DHR Isolation Valves (DH 11 and DH 12) close.

b. The installed Emergency Sump Line/Pump Suction relief valves (PSV 1508 and PSV 1509) will lift.

c. The DHR Pump Suction Valves (DH 1517 and DH 1518) close.

d. The installed DH 11/12 Dropline/Pump Suction relief valve (PSV 4849) will lift.

QUESTION: 044 (1.00)

IDENTIFY the symptom (alarm) for misaligned control rods that will NOT be received if ANY ENTIRE group is misaligned.

a. Control Rod Drive Sequence Fault alarm

b. Control Rod Drive Asymmetric Rod alarm

c. Control Rod Drive Limiting Condition for Operation alarm

d. Control Rod Drive Withdraw Inhibit alarm

QUESTION: 045 (1.00)

Given the following conditions:

-- The plant is operating at power
-- It has been determined that shutdown margin is less than 1% delta k/k
-- The Reactor Operator had been directed to initiate boration until the adequate shutdown margin is attained

Which of the following is the MINIMUM GPM flow rate that meets the requirements for boration for these conditions?

Total makeup flow from the:

a. Makeup Tank is 130 gpm.

b. Makeup Tank is 100 gpm

c. Borated Water Storage Tank is 95 gpm.

d. Borated Water Storage Tank is 65 gpm.

QUESTION: 046 (1.00)

Following a reactor trip, 6 control rods are stuck out. The Reactor Operator has started Boration as directed by DB-OP-02000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture".

Select the condition that will allow termination of boration?

a. Shutdown margin has been calculated to be 1.15%.

b. Source range counts on all channels are less than 100 cps.

c. Reactor coolant system boron concentration is 1550 ppm.

d. 3 of the 6 stuck control rods have been fully inserted.

QUESTION: 047 (1.00)

Given the following conditions:

-- The reactor automatically tripped from 95% power
-- All expected automatic and operator actions have occurred
-- The Shift Supervisor is directing trip recovery actions in accordance with DP-OP-06910, "Trip Recovery"

SELECT the reason why the Turbine Bypass Valves shall be placed in "Hand" prior to resetting the control rod drive breakers.

Placing the Turbine Bypass Valves in "Hand" will:

a. maintain the required Shutdown Margin above the Technical Specification minimum.

b. prevent pressurizer level from decreasing offscale low during the startup.

c. prevent an unnecessary and uncontrolled reactor coolant system cooldown.

d. ensure steam generator pressure remains below the Main Steam Safety Valve setpoints.

QUESTION: 048 (1.00)

As directed by DP-OP-020000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", what is the CRITERIA used to initiate ATWS mitigation actions following a reactor trip?

a. The number of control rods fully inserted on the reactor trip.

b. Reactor power level and trend following the reactor trip.

c. The status of the control rod drive reactor trip breakers.

d. The status of the primary to secondary heat transfer.

QUESTION: 049 (1.00)

Given the following conditions:

-- Quench Tank pressure is 25 psig
-- Quench Tank temperature is 85 degrees F
-- The Power Operated Relief Valve (PORV) has been determined to be stuck open
-- The Quench Tank Cooler is not available

What will be the final PORV downstream temperature for the above conditions?

a. 233 degrees F

b. 267 degrees F

c. 352 degrees F

d. 649 degrees F

QUESTION: 050 (1.00)

Which of the following provides the most CREDIBLE indication that the Power Operated Relief Valve (PORV) is stuck open?

a. Pressurizer level is slowly decreasing with stable T-ave and reactor coolant system pressure.

b. The "red" indicating light on the PORV switch (HISRC2-6) is "illuminated."

c. The "blue" PORV indicating light on Panel C5705 is "illuminated."

d. Reactor coolant system pressure is decreasing with stable T-ave and pressurizer level.

QUESTION: 051 (1.00)

IDENTIFY the Turbine Plant Cooling Water (TPCW) system condition that REQUIRES the Reactor Operator to trip the reactor.

a. High Level Cooling Water Tank level cannot be maintained above five (5) feet.

b. The running TPCW Pump discharge pressure cannot be throttled to maintain greater than 50 psig.

c. The running TPCW Pump has been operating at "runout" conditions for four (4) minutes.

d. Low Level Cooling Water Tank level cannot be maintained above five (5) feet.

QUESTION: 052 (1.00)

Given the following conditions exist:

-- The plant is operating at 95% power
-- Seal injection water flow to RCP 2-2 has just been lost

How long is the reactor coolant pump allowed to operate for the above conditions?

RCP 2-2 may operate:

a. until reactor power has been reduced to or below the three pump limit (72%).

b. for a maximum of thirty (30) minutes if normal component cooling water flow is maintained.

c. indefinitely, provided normal component cooling water flow is maintained.

d. until ANY reactor coolant pump component high temperature alarm is received.

QUESTION: 053 (1.00)

WHICH of the following symptoms would be an indication of an increasing condenser pressure (i.e., loss of condenser vacuum)?

a. Condenser circulating water inlet temperature is decreasing.

b. Condenser hotwell water level is decreasing.

c. Generator megawatts are decreasing with constant steam flow.

d. Turbine Sealing Steam header pressure is increasing.

QUESTION: 054 (1.00)

Given the following conditions:

-- The plant is operating at 65% power
-- All systems are operating as designed
-- A "lockout" condition has occurred on Essential 4160V Bus D1
-- All plant systems have responded as designed
-- No operator actions have been taken

IDENTIFY the EXPECTED indications for this failure?

Annunciator alarm (1-3-H) "Bus D1 Lockout" is in, bus voltage will be

a. 4160 volts and Emergency Diesel Generator 2 will be running with the output breaker closed.

b. 4160 volts and Emergency Diesel Generator 2 will have started and tripped.

c. 0 volts and Emergency Diesel Generator 2 will have started and tripped.

d. 0 volts and Emergency Diesel Generator 2 will be running with the output breaker open.

QUESTION: 055 (1.00)

Given the following conditions:

-- The plant is operating at 55% power
-- Due to a slowly decreasing pressurizer level, Letdown has been isolated

Which of the following parameters indicate that the leak was isolated with letdown?

a. Makeup Tank level is steady
Pressurizer level is decreasing

b. Makeup Tank level is steady
Pressurizer level is increasing

c. Makeup Tank level is decreasing
Pressurizer level is steady

d. Makeup Tank level is decreasing
Pressurizer level is increasing

QUESTION: 056 (1.00)

Given the following conditions:

-- The plant has just experienced a complete loss of Decay Heat Removal while in Cold Shutdown
-- Temperature readings indicate a 1.5 degree F INCREASE in Reactor Coolant System temperature every 10 minutes
-- The reactor vessel head is installed
-- No other means of core cooling is immediately available
-- Current temperature is 158 degrees F

Based on the above information, which of the following is the MAXIMUM amount of time that may elapse before the primary containment integrity Tech Spec LCO must be entered? (Choices are rounded to the nearest minute.)

a. 240 minutes

b. 280 minutes

c. 420 minutes

d. 810 minutes

QUESTION: 057 (1.00)

The plant has experienced a loss of instrument air during power operation.

Prior to restoration of air and when possible, what should be done with any failed pneumatic controllers?

a. The controller should be placed in "Manual" and the demand signal should be matched with actual position.

b. The air supply to the controller should be isolated and the controller vented.

c. The controller should be placed in "Manual" and the demand signal should be run down to the "0" position.

d. The air supply to the controller should be isolated and the controller deenergized.

QUESTION: 058 (1.00)

Due to a serious fire in the Control Room, the Shift Supervisor has directed a Control Room evacuation.

Which of the following actions should be taken by the Reactor Operators prior to evacuating the Control Room?

a. Trip Reactor Coolant Pumps 1-2 and 2-1.

b. Initiate AFW flow and isolation of both SG's.

c. Trip Makeup Pump #2 if it was running prior to the fire.

d. Verify Makeup Pump #1 suction is aligned to the Makeup Tank.

QUESTION: 059 (1.00)

Given the following conditions:

-- The plant has experienced a steam generator tube leak of greater than 50 gpm
-- No reactor coolant pumps are available
-- A natural circulation cooldown is in progress

Why is the operator directed to reduce RCS pressure to maintain a minimum subcooling margin during the cooldown?

A minimum subcooling margin:

a. ensures normal makeup will be capable of maintaining pressurizer level greater than 100 inches.

b. will reduce the differential pressure between the RCS and the leaking steam generator.

c. allows a greater cooldown rate by reducing the steam generator tube-to-shell thermal stresses.

d. prevents a pressurized thermal shock condition when HPI is required for RCS makeup.

QUESTION: 060 (1.00)

Given the following conditions:

-- The plant has just completed a reactor shutdown to Mode 3
-- Reactor coolant system temperatures are stable
-- A SG tube leak is confirmed on SG 1-1

Which of the following would be the LEAST dependable indication of a steam generator tube leak on SG 1-2 for these conditions?

a. Rad Con main steam line radiation surveys.

b. Steam generator water sampling and analysis.

c. Steam generator level and feedwater flow changes.

d. Reactor coolant system leak rate changes.

QUESTION: 061 (1.00)

Given the following conditions:

-- The plant is operating at 100% power
-- All plant systems are operating as designed
-- All plant electrical systems are in their "preferred" switch lineup

Which of the following power losses can occur WITHOUT the plant experiencing a major transient?

A power loss has occurred on:

a. ICS DC.

b. ICS AC.

c. NNI-X DC.

d. NNI-Y AC.

QUESTION: 062 (1.00)

Which of the following annunciators, if alarming, is a symptom of high activity in the reactor coolant system and REQUIRES entry into DB-OP-02535, "High Activity In The Reactor Coolant System"?

a. Containment Radiation High (4-1-A)

b. Vacuum System Discharge Radiation High (9-4-A)

c. Main Steam Line 1 Radiation High (12-1-A)

d. Letdown Radiation High (2-1-A)

QUESTION: 063 (1.00)

With the plant operating at 100% power, a loss of D1P and DAP has occurred.

SELECT the reason why the operator is directed to "commence a rapid power reduction" for these conditions.

a. The loss of power prevents the Integrated Control System from automatically performing the plant runback.

b. The loss of power has disabled the Main Turbine automatic and control room demanded trips.

c. The resultant condensate/feed system flowrate cannot support the current power level.

d. Seal return flow from the reactor coolant pumps has been isolated concurrent with a loss of component cooling water.

QUESTION: 064 (1.00)

Section 9, "Inadequate Core Cooling", of DB-OP-02000 directs the operator to "open the RCS and PZR high point vents" when incore temperatures have reached Region 3.

SELECT the affect on the plant by performing this step.

Opening the RCS and PZR high point vents:

a. provides a vent path for any non-condensible gases that may be restricting RCS - steam generator heat transfer.

b. allows better control of reactor coolant pressure while maintaining it 40 to 60 psig above steam generator pressure.

c. provides an additional flow path to assist MU/HPI cooling in controlling/reducing core temperatures.

d. reduces reactor coolant system pressure allowing increased flowrates from all running injection systems.

QUESTION: 065 (1.00)

SELECT the MINIMUM conditions that PERMIT jumpering the reactor coolant pump starting interlocks, as necessary, during an inadequate core cooling event?

Incore thermocouple temperatures:

a. show entry into Region 2 of Figure 2 of DB-OP-02000.

b. show entry into Region 3 of Figure 2 of DB-OP-02000.

c. indicate an average clad temperature of 1640 degrees F.

d. indicate an average clad temperature of 1950 degrees F.

QUESTION: 066 (1.00)

Given the following conditions:

-- A loss of feedwater has occurred
-- Power has been lost to 4160V Bus D2
-- Steam generator pressures are both at 850 psig

Which of the following may be used to feed the steam generators?

a. Startup Feed Pump

b. Main Feed Pump

c. Auxiliary Feed Pump

d. Motor Driven Feed Pump - AFW Mode

QUESTION: 067 (1.00)

Given the following conditions:

-- The plant has been operating at 55% power with three (3) reactor coolant pumps running for 10 hours
-- All systems are operating normally with ICS in full "Auto"
-- The auctioneered nuclear instrumentation INPUT to ICS has just failed "Low"
-- No operator actions are taken

What would be the expected reactor power response for these conditions?

Reactor power would:

a. increase to the high flux trip setpoint.

b. increase until limited to 103% power.

c. decrease until limited to 23.5% power.

d. decrease to hot standby.

QUESTION: 068 (1.00)

Given the following conditions:

-- The Rod Stop button is being depressed
-- CRD Group 7 "OUT" command is locked in
-- Reactor power is 85%

Select the correct response if RCP 1-1 trips.

a. The Group 7 rods will remain at the present location.

b. The Group 7 rods will withdraw until the reactor trips.

c. The Group 7 rods will insert until the runback is complete.

d. The reactor will trip immediately.

QUESTION: 069 (1.00)

Which of the following is considered an "overcooling" condition?

a. The plant is in Mode 4 with steam generator pressures of 300 psig and 350 psig.

b. HPI Cooling is in operation with steam generator pressures of 850 psig and 875 psig.

c. Following a trip, SG #1 pressure is 1000 psig and SG #2 pressure is 890 psig with one of its Main Steam Safety Valves stuck open.

d. Following a trip, plant parameters are outside of, but are trending towards, the post trip target box with steam generator pressures of 1000 psig and 1010 psig.

QUESTION: 070 (1.00)

Given the following conditions:

-- The plant is returning to power following a refueling outage
-- Power is 15% and power ascension is in progress
-- NI-3 has just failed "downscale"

Which of the following is the expected indication for this failure?

a. A "Startup Rod Withdraw Inhibit" annunciator (5-5-E) will be received.

b. Intermediate Range Startup Rate will indicate "0" DPM.

c. RPS Channels 1 and 3 will trip.

d. NI-1 and NI-2 will energize.

QUESTION: 071 (1.00)

Given the following conditions:

-- A reactor and plant startup is in progress
-- Both Source Range Nuclear channels have just failed

SELECT the FIRST point at which the Source Range failure will NOT affect the startup either procedurally or automatically.

a. Both Intermediate Range channels are on-scale.

b. All Power Range channels are on-scale with proper Intermediate Range overlaps verified.

c. The reactor is in Mode 2 with the CRD Breakers closed.

d. Reactor power is 7% with plant heatup in progress.

QUESTION: 072 (1.00)

Given the following conditions:

-- A steam generator tube rupture has occurred on SG #2
-- A plant cooldown is in progress using turbine bypass valves.

Shutdown Margin is:

a. increasing due to the plant cooldown.

b. increasing due to makeup system operation.

c. decreasing due to power defect.

d. decreasing due to the Xenon transient.

QUESTION: 073 (1.00)

Given the following conditions:

-- The plant had been operating at 75% power
-- All four Reactor Coolant Pumps have been lost
-- Natural circulation flow has NOT been established

Which of the following actions will INCREASE the heat transfer from the reactor coolant system to the steam generators

a. Lowering steam generator water levels.

b. Reducing the steam generator steaming rates.

c. Increasing steam generator pressures.

d. Increasing steam generator auxiliary feed rate.

QUESTION: 074 (1.00)

Given the following conditions:

-- A loss of coolant accident is in progress
-- The Safety Features Actuation System (SFAS) has not actuated as designed
-- The Shift Supervisor has directed all SFAS Level 1, 2 and 3 components be actuated

Which of the following will actuate ONLY the SFAS Level 1, 2 and 3 components?

a. Depress the "TRIP" pushbutton on the BWST Level Low Bistable in any two SFAS Channels.

b. Depress the "Trip" pushbutton on the CTMT Radiation High Trip Bistable in any two SFAS Channels.

c. Depress the "TRIP" pushbutton on the CTMT Pressure High Trip Bistable in any two SFAS Channels.

d. Depress the "Trip" pushbutton on the RCS Pressure Low Trip Bistable in any two SFAS Channels.

QUESTION: 075 (1.00)

Given the following conditions:

-- The plant had been operating at 80% power
-- A loss of off-site power occurred and neither Emergency Diesel Generator started
-- The Shift Supervisor has determined that power will not be restored for one (1) hour and has ordered Attachment 5 of DB-OP-02521, "Selective Battery Load Shedding" to be performed

The MAXIMUM amount of time that can elapse before attachment 5 MUST be completed after the power loss is:

a. 10 minutes

b. 20 minutes

c. 30 minutes

d. 60 minutes

QUESTION: 076 (1.00)

The plant is in Mode 6. A valve line-up is being performed on the Make-Up and Purification system. Reactor Coolant Pump seal injection valves are in a "throttled" position.

How are these valves verified as being in the "throttled" or correct position?

a. Verify the proper differential pressure across the valve(s).

b. Move the valve slightly in the "open" direction and then return it to the original position.

c. Move the valve slightly in the "closed" direction and then return it to the original position.

d. Look at the valve stem, it should not indicate fully open or fully closed.

QUESTION: 077 (1.00)

Under what condition may SFRCS be bypassed WITHOUT procedural guidance?

a. Specific permission for the bypass has been obtained from the Shift Manager.

b. The cause of the transient must be known and the plant must NOT be in mode 1.

c. An actuation of SFRCS will cause unnecessary Operator burden for the current plant conditions.

d. The Safety System IS required to perform its intended safety function.

QUESTION: 078 (1.00)

Given the following conditions:

-- A 21 year old radiation worker.
-- Current NRC Forms 4 and 5 are on file for the worker.
-- The worker has received 18.0 Rem Total Effective Dose Equivalent (TEDE) lifetime occupational dose.
-- The worker's current annual Total Effective Dose Equivalent (TEDE) dose is "zero" Rem.

In accordance with DB-HP-01201, "Administrative Dose Control Levels", what is the MAXIMUM amount of Total Effective Dose Equivalent (TEDE) that the worker can receive for the remainder of the year?

a. 2.5 Rem

b. 3.0 Rem

c. 5.0 Rem

d. 15.0 Rem

QUESTION: 079 (1.00)

An "ALERT" has been declared. The Shift Supervisor is the Emergency Director. The emergency condition has been resolved and the plant conditions restored to normal. All appropriate emergency response facilities have been activated.

Which of the following is the MINIMUM concurrence REQUIRED to "downgrade" the emergency classification?

a. The Shift Supervisor

b. The Control Room

c. The Control Room and the Technical Support Center (TSC)

d. The Control Room, TSC, and the Emergency Control Center (ECC)

QUESTION: 080 (1.00)

As the Shift Supervisor, you have reviewed the Surveillance Test Alert Report before assuming your duties on shift. A surveillance test on one of the station batteries will go beyond its Technical Specification Late Date on your shift.

What are you REQUIRED to do?

a. Notify the responsible shop and document in the Unit Log both the time and the person notified.

b. Perform the surveillance on your shift using operations personnel and notify the responsible shop when the surveillance is completed.

c. Declare the station battery "Inoperable", enter the Technical Specification time clock, and perform the surveillance as soon as possible.

d. Notify the Shift Manager and inform him or her that there is a 25% grace period on the Technical Specification Late Date.

QUESTION: 081 (1.00)

According to 10 CFR 20, what is the definition of Total Effective Dose Equivalent (TEDE)?

a. It is the sum of the Shallow Dose Equivalent, Whole Body (SDE, WB) and the Committed Effective Dose Equivalent (CEDE).

b. It is the sum of the Deep Dose Equivalent (DDE) and the Committed Dose Equivalent (CDE).

c. It is the sum of the Deep Dose Equivalent (DDE) and the Committed Effective Dose Equivalent (CEDE).

d. It is the sum of the Shallow Dose Equivalent, Max Extremity (SDE,ME) and the Deep Dose Equivalent (DDE).

QUESTION: 082 (1.00)

The I&C department must perform a routine calibration on one channel of the nuclear instrumentation. In order to perform this work according to the I&C procedure, a temporary voltmeter must be installed in the RPS cabinet, which is later removed according to procedure.

Whose permission is REQUIRED to perform this calibration and what documentation must accompany the approval?

a. The Control Room SRO and a Temporary Modification card.

b. The Shift Supervisor and a personal red tag.

c. The Shift Supervisor and the approved procedure.

d. The Shift Manager, Shift Supervisor, and a Temporary Modification card.

QUESTION: 083 (1.00)

When can the Shift Supervisor authorize Immediate Actions Maintenance (IAM)?

a. A Maintenance Work Order cannot be made available in time and a power reduction is in progress because of the malfunctioning component.

b. A Maintenance Work Order cannot be made available in time and the Shift Supervisor requires the work be completed prior to the end of shift.

c. The component requiring maintenance has failed on the midnight shift and a plant shutdown will be required by noon the following day.

d. Plant chemistry is going out of specification and no one from the plant call out list is available to help the Shift Chemist.

QUESTION: 084 (1.00)

Given the following conditions:

-- The plant is in Mode 3, T-ave is 300 degrees F.
-- Component Cooling Water (CCW) inlet valve to HPI pump 1-1 oil cooler is closed in order to repack the valve.
-- A Temporary Modification, exceeding seismic and ANSI ratings for the original piping, has been connected around the CCW inlet valve to supply the HPI pump oil cooler.
-- In order to connect the temporary piping, service water to one of the ECCS room coolers had to be isolated.
-- Service Water temperature is 81 degrees F.

Select the operational mode of HPI pump 1-1 and the reason for this mode.

HPI pump 1-1 is:

a. operable, because the temporary CCW line meets Technical Specification requirements.

b. operable, because CCW in not required for HPI pump 1-1 operability.

c. inoperable, because the CCW system to HPI pump 1-1 is inoperable.

d. inoperable, because the service water to the ECCS room cooler is inoperable.

QUESTION: 085 (1.00)

A valid high radiation level has just been detected in the Containment Purge System exhaust.

Which of the following actions must be accomplished by the operator? (Assume all automatic actions occur as designed.)

The operator must:

a. stop the CTMT Purge Exhaust and Supply Fans.

b. close the CTMT Purge Exhaust and Supply Fan suction and discharge dampers.

c. start one Emergency Ventilation System fan.

d. open the CTMT Purge system to Emergency Ventilation System damper (CV-5062).

QUESTION: 086 (1.00)

SELECT the means by which the Spent Fuel Pool maintains a K-eff of less than 0.95.

K-eff is maintained less than 0.95 by:

a. maintaining a minimum of 23 feet of water over the top of the irradiated fuel.

b. maintaining a maximum of 155 degrees F water temperature under abnormal heat load conditions.

c. maintaining a minimum center to center spacing of the spent fuel storage cells.

d. maintaining a minimum boron concentration of 1600 ppm in the spent fuel pool water.

QUESTION: 087 (1.00)

The Integrated Control System is designed to control the steam generator feed rate to insure a minimum of 35 degrees of superheat. 35 degrees was chosen to ensure that superheat does not decrease to 25 degrees during normal operation.

IDENTIFY the reason for maintaining a minimum of 25 degrees of superheat.

25 degrees of superheat ensures:

a. the main feedwater system feed nozzles do not flood out at maximum load.

b. HP turbine inlet quality is as close to 100% as possible.

c. the design feedwater preheating occurs in the Aspiration Region.

d. the lower tube sheet differential temperature limits are not exceeded.

QUESTION: 088 (1.00)

Why is the operator cautioned NOT to start and load an Emergency Diesel Generator if the Station Blackout Diesel Generator is also loaded?

a. A loss of offsite power with two of three emergency power sources running may cause a loss of both engines.

b. Running two diesels simultaneously in parallel with the grid will cause local grid frequency oscillations.

c. Two diesels running in the "droop" mode will cause large voltage fluctuations between the generators.

d. If the Emergency Diesel Generator trips it will immediately overload the Station Blackout Diesel Generator.

QUESTION: 089 (1.00)

Given the following conditions:

-- The normal power (BE-403) to the Electric Fire Pump has been lost
-- The transfer of the pump to the alternate power supply (BF-403) has occurred
-- Power has just been restored to BE-403

What is the expected system response to these conditions?

The Electric Fire Pump will:

a. transfer to BE-403 upon pump start.

b. transfer to BE-403 only on a loss of power to BF-403.

c. transfer to BE-403 after a time delay.

d. not automatically transfer to BE-403.

QUESTION: 090 (1.00)

Which of the following plant conditions require IMMEDIATE boration?

a. Three (3) safety rods are moving out with no command present and the "Rod Stop" button depressed.

b. Two (2) safety rods have been verified to be dropped with the reactor at power.

c. Two (2) regulating rods are moving slower than the remainder of the group during a power decrease and have been verified to be misaligned.

d. Three (3) regulating rods have not moved with the remainder of the group during a power increase and have been verified to be stuck.

QUESTION: 091 (1.00)

Given the following conditions:

-- The plant is at 22% power
-- The Main Turbine has received a valid trip signal
-- The Turbine Stop Valves and Turbine Control Valves have NOT closed
-- The Reactor Operator has tripped the reactor and has depressed "SFRCS Manual Actuation switches" (Start AFPT and Isolate SG pushbuttons)

Why is the operator directed to initiate SFRCS for these conditions?

SFRCS actuation will:

a. prevent a reactor coolant system overcooling transient.

b. prevent the Main Turbine from overspeeding.

c. provide Auxiliary Feedwater flow to maintain steam generator levels above 40 inches.

d. ensure total steam flow stays within the capacity of the Turbine Bypass Valve (TBV).

QUESTION: 092 (1.00)

Given the following conditions:

-- The Control Room has been evacuated due to a toxic gas problem
-- All immediate actions were completed prior to the evacuation
-- Supplementary actions are being directed in accordance with DB-OP-02508, "Control Room Evacuation"

IDENTIFY the individual tasked with the responsibility for COORDINATING the actions required to maintain the plant in hot standby per DB-OP-02508, "Control Room Evacuation".

a. Emergency Director

b. Shift Supervisor

c. Shift Manager

d. Assistant Shift Supervisor

QUESTION: 093 (1.00)

Given the following conditions:

-- The Control Room has been evacuated due to high radiation levels
-- Local shutdown control is established

Which of the following describes the condition the plant will be maneuvered to while the CTRM is evacuated?

a. Maintain Hot Standby until the CTRM is recovered.

b. Proceed to Hot Shutdown immediately.

c. Proceed to Cold Shutdown immediately.

d. Maintain Hot Standby for 1 hour, then proceed to Hot Shutdown.

QUESTION: 094 (1.00)

On an increasing condenser pressure, when does the Abnormal Procedure DIRECT the initiation of Auxiliary Feedwater flow to the steam generators?

AFW is initiated:

a. when condenser pressure reaches 5.0 inches HgA and load is less than 280 MWe.

b. if condenser pressure cannot be maintained less than 7.5 inches HgA by the Mechanical Hogger.

c. prior to condenser pressure reaching the Main Turbine automatic trip setpoint.

d. prior to the automatic high pressure trip of the Main Feed Pump Turbines.

QUESTION: 095 (1.00)

Given the following conditions:

-- The plant was initially operating at 75% power
-- A complete load rejection has just occurred
-- All plant systems have responded as designed
-- No operator actions have been taken
-- The reactor and turbine did not exceed any trip setpoints

Which of the following plant conditions would NOT be expected for the above plant indications.

a. T-avg is at 578 degrees F and is decreasing.

b. Steam Generator Startup Level is 45" and is decreasing.

c. Both Steam Generators are steady on low level limits.

d. Reactor power is 32% and is steady.

QUESTION: 096 (1.00)

During a small reactor coolant system leak, why does DB-OP-02522, "Small RCS Leaks", direct the operator to monitor the discharge pressure of the operating Makeup Pump(s)?

Makeup Pump discharge pressure:

a. can provide indication of the location of the leak.

b. fluctuations will provide early indication of pump "runout".

c. may provide indication that pump damage is the cause of the lowering pressurizer level.

d. and flow rate are used to determine whether or not the leak is within pump capacity.

QUESTION: 097 (1.00)

A fire is in progress at Davis-Besse.

IDENTIFY the CRITERIA for requesting off-site fire assistance as directed by DB-OP-02529, "Fire Procedure".

a. The fire is affecting more than one plant safety-related system.

b. The fire is located in a Radiological Restricted Area and is NOT out.

c. Fire suppression systems have been in operation for 15 minutes and the fire is NOT out.

d. The Fire Brigade has been unable to respond to the fire location within 5 minutes.

QUESTION: 098 (1.00)

Given the following conditions:

-- The plant is shutdown for a refueling outage

Which of the following requires entry into DB-OP-02530, "Fuel Handling Accident"?

a. An SFAS Level 1 actuation has occurred with fuel handling operations in progress.

b. Fuel handling personnel report dropping a new fuel assembly in the Fuel Handling Area.

c. Spent Fuel Pool water level is decreasing rapidly with increasing area radiation levels.

d. Fuel handling personnel report dropping an irradiated fuel assembly with no gas release noted.

QUESTION: 099 (1.00)

During a confirmed steam generator tube rupture condition, why is the operator directed to perform a manual reactor shutdown instead of tripping the reactor?

A manual reactor shutdown:

a. minimizes the potential for plant conditions resulting in uncontrolled releases to the environment.

b. maintains the minimum primary to secondary differential pressure to reduce the leak rate.

c. provides improved operator control of steam generator levels and pressures during control rod insertion.

d. allows improved automatic control of pressurizer level during control rod insertion.

QUESTION: 100 (1.00)

Given the following conditions:

-- The plant dropped a control rod while at low power
-- Reactor power stabilized at less than 5%

For these conditions, why does DB-OP-02516, "CRD Malfunctions", direct insertion of regulating rods to place the plant in Hot Standby INSTEAD of recovering the control rod?

a. Plant operation at low power with the generator loaded will make control rod recovery difficult.

b. Recovery of the control rod in these conditions would require a mode change.

c. The xenon transient from the power change will not allow the reactor to remain critical.

d. Insertion of the rod group for control rod recovery will take the reactor subcritical.

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

PROCTOR COPY

ANSWER: 001 (1.00)

a.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 41.

L.O. OLC-GOP-501-10K

[3.3/3.4]

194001A101 ..(KA's)

ANSWER: 002 (1.00)

d.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 30.

L.O. OLC-GOP-501-09K

[3.0/3.2]

194001A104 ..(KA's)

ANSWER: 003 (1.00)

d.

PROCTOR COPY

REFERENCE:

DB-OP-02000, Table 3.

[3.4/3.8]

194001K115 ..(KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 31

L.O. OLC-GOP-501-09K

[3.6/3.8]

194001A105 ..(KA's)

ANSWER: 005 (1.00)

b.

REFERENCE:

Safety Tagging, DB-OP-00015, page 7

L.O. OLC-GOP-503-01K

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 006 (1.00)

a.

REFERENCE:

Safety Tagging, DB-OP-00015, page 37
L.O. OLC-GOP-503-03K
[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

Confined Space Entry Program, NG-HS-00507, page 9
L.O. Check with facility
[3.3/3.6]

194001K113 ..(KA's)

ANSWER: 008 (1.00)

b.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 26
L.O. OLC-GOP-501-11K
[3.5/4.2]

194001K116 ..(KA's)

ANSWER: 009 (1.00)

d.

REFERENCE:

Safety Tagging, DB-OP-00015, page 24
L.O. OLC-GOP-503-05K
[3.6/3.7]

194001K107 ..(KA's)

ANSWER: 010 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 3, ICS, page 43
L.O. OLC-PWR-070-09K
[3.4/3.6]

001000K103 ..(KA's)

ANSWER: 011 (1.00)

a.

REFERENCE:

Training Information Manual, Volume 3, CRDS, page 47
L.O. ONL-INC-002-02K
[3.6/3.7]

001000K202 ..(KA's)

ANSWER: 012 (1.00)

b.

REFERENCE:

Training Information manual, Volume 3, CRDS, page 37 & 38
L.O. OLC-PWR-036-04K
[3.5/3.8]

001000K403 ..(KA's)

ANSWER: 013 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 3, ICS, page 35.

L.O. OLC-PWR-073-01K

[3.6/3.6]

003000A304 ..(KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 4, RPS, page 24.

L.O. OLC-PWR-039-03K

[3.9/4.2]

003000K304 ..(KA's)

ANSWER: 015 (1.00)

c.

REFERENCE:

Training Information Manual, Volume 1, RCP and Motor, pages 27 & 28.

L.O. OLC-GOP-203-03K

[3.3/3.2]

003000A401 ..(KA's)

ANSWER: 016 (1.00)

d.

REFERENCE:

Training Information Manual, Vol. 1, RCP and Motor, pages 9, 10, 11, & 12

L.O. OLC-GOP-121-01K

[3.4/3.8]

004000K104 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

TIM, Vol. 7, Make-up and Purification, page 7
L.O. check with facility.
[3.4/3.7]

004000K122 ..(KA's)

ANSWER: 018 (1.00)

d.

REFERENCE:

Training Information Manual, Vol. 5, SFAS, page 63.
L.O. OLC-PWR-051-03K
[4.2/4.4]

013000K106 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 5, SFAS, page 65.
L.O. OLC-PWR-051-06K
[4.1/4.4]

013000K112 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

Emergency Procedure, DB-OP-02000, Specific Rule 2

L.O. OLC-GOP-301-03K

[4.0/4.2]

013000A101 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

Training Information Manual, Vol. 3, CRDS, page 8 & 21.
DB-OP-06402, Pg. 70

L.O. OLC-PWR-036-04K

[3.2/3.6]

014000K101 ..(KA's)

ANSWER: 022 (1.00)

c.

REFERENCE:

"Approach to Criticality", DB-OP-06912, page 5
L.O. OLC-GOP-204-03K
[3.4/3.7]

015000K506 ..(KA's)

ANSWER: 023 (1.00)

b.

REFERENCE:

Training Information Manual, Vol. 3, CRDS, page 21 & 22
L.O. OLC-PWR-037-06K
[3.5/3.5]

015000G008 ..(KA's)

ANSWER: 024 (1.00)

d.

REFERENCE:

Emergency procedure, DB-OP-02000, Section 5, page 72
L.O. OLC-GOP-304-01K
[3.4/3.7]

017020K401 ..(KA's)

ANSWER: 025 (1.00)

d.

REFERENCE:

B&W Technical Document, Vol. 2, page III.F-12

L.O. OLC-GOP-308-02K

[3.6/4.1]

017020A202 ..(KA's)

ANSWER: 026 (1.00)

a.

REFERENCE:

Training Information Manual, Vol. 2, Auxiliary Feedwater System, page 19

L.O. OLC-PWR-030-06K

[3.6/3.7]

059000K302 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

DB-OP-02000, Pg. 125

[3.5/3.9]

061000K103 ..(KA's)

ANSWER: 028 (1.00)

b.

REFERENCE:

OPS-SYS-I103, "Reactor Coolant System", Rev. 00, Pages 13 & 14, E.O. - 03K

[3.7/4.2]

002000K509 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

TIM, "Core Flood System", Rev. 0

OLC-PWR-I041, "Core Flood System", Rev. 03, Page 4, E.O. - 03K & 06K

[3.6/3.7]

006000K410 ..(KA's)

ANSWER: 030 (1.00)

d.

REFERENCE:

Davis-Besse Tech Spec 3.5.2, Page 3/4 5-3

OLC-PWR-I043, "Decay Heat Removal/Low Pressure Injection", Rev. 04, E.O. - 03K

[3.6/4.2]

006000G011 ..(KA's)

ANSWER: 031 (1.00)

b.

REFERENCE:

DB-OP-06003, "Pressurizer Operating Procedures", Rev. 02, Page 7

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, E.O. - 02K, 02K F & 05K D

[3.1/3.1]

011000K604 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

TIM, "Pressurizer System", Rev. 1, Pages 11 & 14

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, E.O. - 05K

[3.7/4.0]

011000K103 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, Pages 15 & 16, E.O. - 05K, 06K & 07K

[4.0/3.8]

010000A403 ..(KA's)

ANSWER: 034 (1.00)

a.

REFERENCE:

TIM, "Reactor Protection System", Rev. 1, Pages 34 & 45

OPS-SYS-I504, "Reactor Protection System", Rev. 0, E.O. - 10K, 04K & 03K

[3.2/3.5]

012000K406 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

TIM, "Reactor Protection System", Rev. 1, Pages 7, 8, 33 and Figure 1

OPS-SYS-I504, "Reactor Protection System", E.O. - 05K & 02K

[3.3/3.7]

012000K201 ..(KA's)

ANSWER: 036 (1.00)

d.

REFERENCE:

TIM, "Integrated Control System", Rev. 2, Page 36 & Figure 18

OLC-PWR-I069, "Feedwater Subsystem", Rev. 02, Pages 4 & 5, E.O. - 06K & 09K

[3.0/3.1]

016000A201 ..(KA's)

ANSWER: 037 (1.00)

d.

REFERENCE:

B&W Emergency Operating Procedures Technical Bases Document, Volume 3, Page II.C-9

OLC-PWR-I026, "Once-Through Steam Generator", Rev. 4, E.O. - 04K

[4.2/4.5]

035010K101 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

OPS-SYS-I406, "Emergency Diesel Generators", Rev. 0, Page 20, E.O. - 03K & 04K

[3.3/3.4]

064000A306 ..(KA's)

ANSWER: 039 (1.00)

b.

REFERENCE:

ONL-FBT-I013, "Fire Protection System", Rev. 7, Pages 8 & 9, E.O. - 04K & 09K

[3.3/3.3]

086000A401 ..(KA's)

ANSWER: 040 (1.00)

d.

REFERENCE:

TIM, "Plant Air System", Rev. 1, Page 9

OPS-SYS-I602, "Plant Air", Rev. 00, Page 23, E.O. - 08K

[3.3/3.4]

078000K103 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

DB-OP-06004, "Quench Tank", Rev. 02, Page 10

OPS-SYS-I104, "Pressurizer/Quench Tank", Rev. 00, Page 28, E.O. - 05K & 06K

[2.6/2.7]

007000A103 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

DB-OP-02523, "Component Cooling Water System Malfunctions", Rev. 00, Pages 24 & 32

OLC-PWR-I020, "Component Cooling Water", Rev. 04, E.O. - 01K & 09K

[3.2/3.5]

008000A202 ..(KA's)

ANSWER: 043 (1.00)

d.

REFERENCE:

TIM, "Decay Heat Removal/Low Pressure Injection", Rev. 2, Page 7

OLC-PWR-I043, "Decay Heat Removal/Low Pressure Injection", Rev. 04, E.O. - 09K

[3.0/3.2]

005000K401 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, Page 2, E.O. - 01K

[3.6/3.4]

000005A101 ..(KA's)

ANSWER: 045 (1.00)

c.

REFERENCE:

DB-OP-02510, "Loss of Reactor Coolant System Boron", Rev. 00, Page 7

OLC-GOP-I116, "Loss of RCS Boron", Rev. 5, E.O. - 03K

[3.3/3.9]

000024A205 ..(KA's)

ANSWER: 046 (1.00)

a.

REFERENCE:

DB-OP-02000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", Rev. 03, Pages 19 & 20

OLC-GOP-I303, "Supplementary Actions", Rev. 10. E.O. - 05K

[4.1/4.4]

000024K301 ..(KA's)

ANSWER: 047 (1.00)

c.

REFERENCE:

DP-OP-06910, "Trip Recovery", Rev. 16 C-4, Page 17

OLC-GOP-I207, "Trip Recovery", Rev. 4, E.O. - 02K

[4.0/4.6]

000007K301 ..(KA's)

ANSWER: 048 (1.00)

b.

REFERENCE:

DP-OP-020000, "RPS, SFAS, SFRCS Trip or SG Tube Rupture", Rev. 03, Page 15

OLC-GOP-I302, "Symptoms, Auto. Actions, Immed. Actions", Rev. 9, E.O. - 04K

[4.4/4.7]

000029A201 ..(KA's)

ANSWER: 049 (1.00)

b.

REFERENCE:

Steam Tables

OLC-GOP-I119, "PZR System Abnormal Operation", Rev. 2, Page 5, E.O. - 01K & 05K

[3.6/4.1]

000008K302 ..(KA's)

ANSWER: 050 (1.00)

d.

REFERENCE:

DB-OP-02513, "Pressurizer System Abnormal Operation", Rev. 02 C-1, Page 5

OLC-GOP-I119, "PZR System Abnormal Operation", Rev. 2, Pages 2-4, E.O. - 01K & 04K

[3.9/4.2]

000008A201 ..(KA's)

ANSWER: 051 (1.00)

a.

REFERENCE:

DB-OP-02514, "Loss Of Turbine Plant Cooling Water Pump(s)", Rev. 01, Page 8

OLC-GOP-I120, "Loss of TPCW Pump(s)", Rev. 3, E.O. - 03K

[3.6/3.5]

000026G010 ..(KA's)

ANSWER: 052 (1.00)

c.

REFERENCE:

DB-OP-02515, "Reactor Coolant Pump And Motor Abnormal Operation", Rev. 01, Pages 13 & 21

OLC-GOP-I121, "RCP And Motor Abnormal Operation", Rev. 4, Page 9, E.O. - 02K & 06K

[3.7/3.7]

000015A210 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

OLC-GOP-I125, "High Condenser Pressure", Rev. 5, E.O. - 01K & 04K

[2.7/2.9]

000051G011 ..(KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

DB-OP-02521, "Loss Of AC Bus Power Sources", Rev. 01, Pages 6 & 7

OLC-GOP-I128, "Loss Of AC Bus Power Sources", Rev. 6, E.O. - 01K & 05K

[4.4/4.6]

000056A214 ..(KA's)

ANSWER: 055 (1.00)

d.

REFERENCE:

DB-OP-02522, "Small RCS Leaks", Rev. 01 C-2, Pages 7 & 8

OLC-GOP-I129, "Small RCS Leaks", Rev. 4, E.O. - 01K & 03K

[3.5/3.8]

000009A202 ..(KA's)

ANSWER: 056 (1.00)

b.

REFERENCE:

DB Tech Spec 3.6.1.1, Page 3/4 6-1 and Table 1.1, Page 1-7

OLC-GOP-I135, "Loss Of Decay Heat Removal", Rev. 6, E.O. - 02K & 05K

[3.9/4.3]

000025K101 ..(KA's)

ANSWER: 057 (1.00)

a.

REFERENCE:

DB-OP-02528, "Loss Of Instrument Air", Rev. 02, Page 16

OLC-GOP-I136, "Loss Of Instrument Air", Rev. 6, E.O. - 05K & 06K

[3.1/3.3]

000065G006 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

DB-OP-02519, "Serious Control Room Fire", Rev. 01 C-1, Page 7

OLC-GOP-I126, "Serious Control Room Fire", Rev. 6, E.O. - 03K & 06K

[3.3/4.1]

000067K304 ..(KA's)

ANSWER: 059 (1.00)

b.

REFERENCE:

DB-OP-02531, "Steam Generator Tube Leak", Rev. 01 C-1, Page 21

OLC-GOP-I140, "Steam Generator Tube Leak", Rev. 7, E.O. - 03K & 06K

[4.2/4.4]

000037K307 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

DB-OP-02531, "Steam Generator Tube Leak", Rev. 01 C-1, Page 7

OLC-GOP-I140, "Steam Generator Tube Leak", Rev. 7, E.O. - 01K & 05K

[3.4/3.9]

000037A203 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

DB-OP-02532, "Loss Of NNI/ICS Power", Rev. 02 C-1, Pages 7 & 12

OLC-GOP-I141, "Loss Of NNI/ICS Power", Rev. 3, Page 11, E.O. - 01K & 05K

[4.0/4.3]

000057A219 ..(KA's)

ANSWER: 062 (1.00)

d.

REFERENCE:

DB-OP-02535, "High Activity In The Reactor Coolant System", Rev. 03, Page 4

OLC-GOP-I130, "High Activity In The Reactor Coolant System", Rev. 4, E.O. - 01K

[2.6/3.0]

000076K201 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

DB-OP-02537, "Loss of D1P and DAP", Rev. 00, Page 6

OLC-GOP-I143, "Loss Of DC Procedures", Rev. 0, E.O. - 02K & 05K

[3.5/3.9]

000058A203 ..(KA's)

ANSWER: 064 (1.00)

a.

REFERENCE:

DB-OP-02000 Section 9, "Inadequate Core Cooling", Rev. 03, Pages 181 & 182

OLC-GOP-I308, "Inadequate Core Cooling", Rev. 7, E.O. - 04K

[4.0/4.4]

000074K311 ..(KA's)

ANSWER: 065 (1.00)

d.

REFERENCE:

DB-OP-02000 Section 9, "Inadequate Core Cooling", Rev. 03, Pages 183 & 184

OLC-GOP-I308, "Inadequate Core Cooling", Rev. 7, E.O. - 03K

[4.3/4.6]

000074A113 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

DB-OP-02000 Section 4, "Supplementary Actions", Rev. 03, Page 51

OLC-GOP-I303, "Supplementary Actions", Rev. 10, E.O. - 05K

[4.1/4.2]

000054A203 ..(KA's)

ANSWER: 067 (1.00)

a.

REFERENCE:

TIM, "Integrated Control System", Rev. 2, Page 45

TIM, "Reactor Protection System", Rev. 1, Page 34

OLC-PWR-I074, "ICS Failure Modes", Rev. 01, E.O. - 01K

[4.2/4.3]

000001A204 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

DB-OP-02516, "CRD Malfunctions", Rev. 02

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, E.O. - 02K, 04K & 05K

[3.9/4.0]

000001G010 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

DB-OP-02000 Section 4, "Supplementary Actions", Rev. 03, Page 58

OLC-GOP-I306, "Overcooling", Rev. 8, Page 1, E.O. - 01K & 04K

[4.0/4.1]

000040A106 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

DB-OP-02505, "Nuclear Instrumentation Failures", Rev. 00 C-1, Page 5

OLC-GOP-I108, "Nuclear Instrumentation Failures", Rev. 3, Page 3, E.O. - 01K & 05K

[3.3/3.6]

000033A202 ..(KA's)

ANSWER: 071 (1.00)

d.

REFERENCE:

DB-OP-02505, "Nuclear Instrumentation Failures", Rev. 00 C-1, Page 17

OLC-GOP-I108, "Nuclear Instrumentation Failures", Rev. 3, E.O. - 05K

[3.1/33]

000032G011 ..(KA's)

ANSWER: 072 (1.00)

b.

REFERENCE:

B&W Owners Group EOP Technical Bases Document, Vol 2

No Specific Facility Reference and Learning Objective identified

[3.8/4.4]

000038A206 ..(KA's)

ANSWER: 073 (1.00)

d.

REFERENCE:

DB-OP-02000 Section 6, "Lack of Heat Transfer", Rev. 03, Pages 88 & 89

OLC-GOP-I305, "Lack Of Heat Transfer", Rev. 7, Pages 1 & 2, E.O. - 03K & 04K

[4.4/4.6]

000015K101 ..(KA's)

ANSWER: 074 (1.00)

c.

REFERENCE:

DB-OP-06405, "Safety Features Actuation System Procedure", Rev. 02, Pages 68 & 69

OLC-PWR-051, "Safety Features Actuation System", Rev. 02, E.O. - 02K & 03K

[3.5/3.7]

000069A101 ..(KA's)

ANSWER: 075 (1.00)

c.

REFERENCE:

DB-OP-02521, "Loss Of AC Bus Power Sources", Rev. 01, Pages 10 & 23

OLC-GOP-I128, "Loss Of AC Bus Power Sources", Rev. 6, E.O. - 03K & 04K

[3.5/3.9]

000055A104 ..(KA's)

ANSWER: 076 (1.00)

c.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 37

L.O. OLC-GOP-501-10K

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 077 (1.00)

c.

REFERENCE:

Conduct of Operations, DB-OP-00000, page 68

L.O. OLC-GOP-501-26K

[4.3/4.1]

194001A113 ..(KA's)

ANSWER: 078 (1.00)

b.

REFERENCE:

DB-HP-01201
BAT Radiation Protection Course
[2.8/3.4]
194001K103 ..(KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

Emergency Plan, HS-EP-01700, page 8
L.O. OLC-GOP-603-01K
[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 080 (1.00)

a.

REFERENCE:

Shift Turnover, DB-OP-00100, page 7
L.O. OLC-GOP-502-02K
[2.9/3.9]

194001A110 ..(KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

10 CFR 20.1003, Definitions
L.O. BAT Radiation Protection Course
[2.8/3.4]

194001K103 ..(KA's)

ANSWER: 082 (1.00)

c.

REFERENCE:

Temporary Modifications, DB-OP-00020, page 4 & 5
L.O. OLC-GOP-504-02K
[2.7/3.9]

194001A109 ..(KA's)

ANSWER: 083 (1.00)

a.

REFERENCE:

Conduct of Operations, DB-OP-00000, Attachment 8

L.O. OLC-GOP-501-14K

[2.5/3.4]

194001A103 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

TIM, Vol. 6, HPI System, page 13, & Tech Specs.
L.O. OLC-PWR-042-14K

[3.8/3.8]

013000G007 ..(KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

TIM, "Containment Purge Ventilation System", Rev. 0, Pages 7 & 8

OLC-PWR-I048, "Containment Ventilation", Rev. 03, E.O. - 02K

[3.6/3.8]

029000K103 ..(KA's)

ANSWER: 086 (1.00)

c.

REFERENCE:

TIM, "Spent Fuel Pool", Rev. 1, Page 1

OPS-SYS-I113, "Spent Fuel Pool Cooling", Rev. 00, E.O. - 07K

[3.1/3.3]

033000K405 ..(KA's)

ANSWER: 087 (1.00)

b.

REFERENCE:

TIM, "Once-Through Steam Generator", Rev. 2, Page 13

OLC-PWR-I026, "Once-Through Steam Generator", Rev. 4, E.O. - 06K

[3.2/3.4]

035000G010 ..(KA's)

ANSWER: 088 (1.00)

a.

REFERENCE:

DB-OP-06316, "Diesel Generator Operating Procedure", Rev. 01, Page 9

OPS-SYS-I406, "Emergency Diesel Generators", Rev. 0, E.O. - 03K

[3.1/3.1]

064000A203 ..(KA's)

ANSWER: 089 (1.00)

c.

REFERENCE:

ONL-FBT-I013, "Fire Protection System", Rev. 7, Pages 5 & 6, E.O. - 04K

[3.0/3.4]

086000K402 ..(KA's)

ANSWER: 090 (1.00)

d.

REFERENCE:

DB-OP-02516, "CRD Malfunctions", Rev. 2, Page 24

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, E.O. - 03K

[3.5/4.4]

000005A203 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

DB-OP-02500, "Turbine Trip", Rev. 01, Page 6

OLC-GOP-I101, "Turbine Trip, DB-OP-02500", Rev. 5, Page 2, E.O. - 03K & 05K

[3.7/4.0]

000007K103 ..(KA's)

ANSWER: 092 (1.00)

d.

REFERENCE:

DB-OP-02508, "Control Room Evacuation", Rev. 00 C-1, Page 10

OLC-GOP-I112, "Control Room Evacuation", Rev. 5, E.O. - 03K & 06K

[3.8/4.0]

000068G012 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

DB-OP-02508, "Control Room Evacuation", Rev. 00 C-1, Page 12

OLC-GOP-I112, "Control Room Evacuation", Rev. 5, E.O. - 08K

[4.2/4.5]

000068K318 ..(KA's)

ANSWER: 094 (1.00)

d.

REFERENCE:

DB-OP-02158, "High Condenser Pressure", Rev. 00 C-1, Page 7

OLC-GOP-I125, "High Condenser Pressure", Rev. 5, E.O. - 02K & 04K

[2.6/2.9]

000051G010 ..(KA's)

ANSWER: 095 (1.00)

a.

REFERENCE:

DP-OP-02520, "Load Rejection", Rev. 00, Page 6

OLC-GOP-I127, "Load Rejection", Rev. 5, Pages 3 & 4, E.O. - 04K & 05K

[4.3/4.3]

000056A232 ..(KA's)

ANSWER: 096 (1.00)

a.

REFERENCE:

DB-OP-02522, "Small RCS Leaks", Rev. 01 C-2, Page 9

OLC-GOP-I129, "Small RCS Leaks", Rev. 4, E.O. - 03K & 05K

[4.2/4.5]

000009K321 ..(KA's)

ANSWER: 097 (1.00)

c.

REFERENCE:

DB-OP-02529, "Fire Procedure", Rev. 02, Page 13

OLC-GOP-I137, "Fire Procedure", Rev. 7, E.O. - 02K

[3.2/4.1]

000067G002 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

DB-OP-02530, "Fuel Handling Accident", Rev. 01, Page 4

OLC-GOP-I138, "Fuel Handling Accident", Rev. 6, E.O. - 01K

[3.4/4.1]

000036A202 . (KA's)

ANSWER: 099 (1.00)

a.

REFERENCE:

DB-OP-02000 Section 8, "Steam Generator Rupture", Rev. 03, Pages 136 & 137

OLC-GOP-I307, "Steam Generator Tube Rupture", Rev. 7, Page 13, E.O. - 02K

[4.4/4.5]

000038K302 ..(KA's)

ANSWER: 100 (1.00)

b.

REFERENCE:

DB-OP-02516, "CRD Malfunctions", Rev. 2, Page 15

OLC-GOP-I123, "CRD Malfunctions", Rev. 7, Page 5, E.O. - 03K & 05K

[3.8/4.1]

000003K304 ..(KA's)

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