U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-373/OL-95-01

Docket Nos. 50-373; 50-374 Licenses No. NPF-11; NPF-18

Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

Facility Name: LaSalle County Nuclear Station

Examination Administered At: LaSalle County Nuclear Station
Marseilles, Illinois

Production Training Center
Braceville, Illinois

Examination Conducted: During the week of October 9, 1995

Examiners: D. McNeil, D. Roth; RIII NRC

Chief Examiner: Michael E. Bielby Sr. 11/2/95
M. E. Bielby, Sr. Date

Approved By: Eldon a Fletcher for 11/2/95
T. M. Burdick, Chief Date
Operator Licensing Branch

Examination Summary

Examination administered during the week of October 9, 1995 (Report No. 50-373/OL-95-01)
Initial license operating examinations were administered to seven (7) previously non-licensed individuals applying for Senior Reactor Operator (SRO) licenses.
Results: One candidate failed the administrative portion of the operating examination. All other individuals taking the examination successfully passed all sections of their respective examinations and will be issued SRO licenses.

The following is a summary of strengths and items for improvement noted during performance of this examination:

Strengths:

- Lack of facility post written examination comments (Section 3.a).

- Facility preparation of administrative portion of the operating examination (Section 3.b).

- Crew briefings during scenarios (Section 4.c).

- Simulator performance (Section 6.0).

Items for Improvement:

- Facility preparation of written examination (Section 3.a).

- Facility preparation of Job Performance Measures (JPMs) portion of operating examination (Section 3.c).

- Facility preparation of scenarios portion of operating examination (Section 3.d).

REPORT DETAILS

1. Examiners

*M. Bielby, Chief Examiner, RIII NRC
*D. McNeil, RIII NRC
*D. Roth, RIII NRC

2. Persons Contacted

Facility

*D. Ray, Station Manager
*S. Harmon, Staff Assistant to Station Manager
*T. Johnson, Operations Training Group Leader
*K. Rach, BWR Operations Training Supervisor
B. Wallace, Training Manager

U. S. Nuclear Regulatory Commission (NRC)

P. Brochman, Senior Resident Inspector, LaSalle
*H. Simons, Resident Inspector, LaSalle
T. Burdick, Chief Operator Licensing Branch

*Denotes those present at the exit meeting on October 13, 1995.

3. Licensee Examination Preparation

The licensee volunteered to participate in a pilot program in which the NRC initial operator license examination was prepared by the licensee, and reviewed and approved by the NRC. The written portion of the examination was administered by the licensee, and the operating portion by the NRC.

Examination preparation and administration was prescribed by NUREG 1021, "Operator Licensing Examiner Standards," Revision 7, and superseded in part by Interim Pilot Examination Guidance approved by Nuclear Reactor Regulation/Headquarters Operator Licensing Branch (NRR/HOLB). Although technically meeting NUREG 1021 and interim guidelines, NRC examiners requested additional changes to bring the examination into conformance with recent NRC developed examinations given at other facilities.

The following information is provided for evaluation by the licensee via their SAT based training program. No response is required.

a. Written Examination

The written examination was a 100 point multiple choice format prepared by the licensee, reviewed and approved by RIII NRC, and administered by the licensee. As originally submitted, the written examination contained a large number of memory-level knowledge questions.

The Examiner Standards direct preparation of written examination questions in accordance with NUREG/BR-0122, "Examiner's Handbook for Developing Operator Licensing Written Examinations," Revision 5. Although the Examiner Standards do not specify a maximum number of memory-level knowledge questions, Section 4.3, item (3) of the Examiner's Handbook directs that questions be written at the highest level of knowledge reflected in the testing objective. During two days of review and incorporation of comments with the licensee, NRC examiners demonstrated how many of the licensee prepared memory-level questions could be converted into higher knowledge level questions.

Strengths:

- Preparation of the written examination by the licensee decreased technical inaccuracies and resulted in no post examination comments.

Items for Improvement:

- Licensee's original submitted written examination contained a large number of memory-level knowledge questions.

b. Administrative

As originally submitted, a large percentage of the administrative portion of the examination consisted of a Job Performance Measures (JPMs) format which permitted a more performance based review of candidates' knowledge and abilities to operate the plant. However, a majority of the JPMs were open ended and did not sufficiently define failure criteria. The remaining portion of the administrative section consisted of good, open reference, prescripted questions. After discussions with NRC examiners, the licensee proposed a final set of administrative JPMs which resulted in a challenging, open reference, administrative examination with good evaluation criteria.

Strengths:

- Good JPM format.
- Good open reference, prescripted questions.
- Changes made by licensee resulted in good evaluation criteria.

Items for Improvement:

- Original JPMs had no objective criteria for failure.

c. Job Performance Measures (JPMs)

The original submittal of JPMs and questions were designed to be open reference as required by the Examiner Standards. Although safety significant, a large percentage of the JPMs were short and

straight forward. Examples included manual initiation (arm and depress) of automatic depressurization system (ADS), manual injection (arm and depress) of high pressure core spray (HPCS), and bypass a failed local power range monitor (LPRM). Although safety significant, the JPMs were not an adequate evaluation tool. To compensate for the non-challenging performance aspect of those JPMs, the licensee incorporated NRC suggestions of either an alternate path JPM format, or more probing and in depth JPM questions.

A majority of the original JPM questions were not open reference format. They required simple memory-level knowledge, and allowed candidates to reference a single procedure for the answer. As a result, those questions were considered a direct look-up format which are not allowed on NRC open reference examinations. The licensee incorporated NRC suggestions for removal of references, or replacement questions with an open reference format.

Strengths:

No significant strengths were noted in this area.

Items for Improvement:

- Although safety significant, large percentage of JPMs were short and straight forward (ADS, HPCS, LPRM).

- Large number of original JPM questions were direct look-up format.

d. Dynamic Simulator Scenarios

As submitted, many of the original component, instrument and major transient failures did not meet definitions contained in Section ES-301, Sections D.4.c and .d of NUREG 1021. Additionally, each scenario set did not ensure that every candidate would have the opportunity to perform or respond to the required numbers and types of evolutions and events, or ensure that each competency and rating factor was adequately covered. After the licensee incorporated comments for changing or replacing events, NRC examiners verified each candidate would receive the required number of events, and be evaluated against all required competencies, by using forms ES-301-5 and -6.

After final review and incorporation of NRC comments, the scenarios allowed examiners to adequately evaluate candidates' minimum competencies. However, the lack of complexity and challenge, particularly after entering the licensee's emergency operating procedures (LGAs), did not allow examiners to further evaluate candidates' strengths and weaknesses. As a result, the examiners could not provide a good evaluation of the licensee's training program status. NUREG 1021, Section D.4.d, and the Interim Examination Outline Guidance Quality Assurance Checklist, Item 3.c, direct the scenario preparers to use qualitative scenario attributes identified in Attachment 3 of ES-604. These

attributes include clear descriptions and examples of overall expected scenario quality and complexity, as well as expected malfunctions after entering the emergency operating procedures.

Strengths:

No significant strengths were noted in this area.

Items for Improvement:

- Many of the originally submitted scenario component, instrument and major transient events did not meet definitions contained in Section ES-301, Sections D.4.c and .d of NUREG 1021.

- Lack of complexity and challenges after entering LGAs.

4. Initial License Training Program Observations

Candidates were well prepared and appeared familiar with all aspects of the examination process. Although the pass rate decreased slightly from the previous two initial operator license examinations in 1992 and 1993, the overall satisfactory operator performance was comparable. Additionally, weaknesses identified during the previous two examinations were not repeated.

Training department personnel were responsive to needs of the candidates and in assisting the NRC in developing and validating the examination. Instructors were knowledgeable and maintained a professional attitude throughout the examination week.

The following information is provided for evaluation by the licensee via their SAT based training program. No response is required.

a. Written Examination

Candidate performance on the written examination was strong based on the overall pass rate and grade average, and was comparable to the previous two written examinations (1992 and 1993).

Strengths:

No significant strengths were noted in this area.

Weaknesses:

- Results of grading revealed generic weaknesses in the following systems, and emergency and plant wide generic sections of the examination as evidenced by failure of at least half of the candidates:

  Systems, Question # 43:

  Residual Heat Removal/Low Pressure Coolant Injection (RHR/LPCI): Containment Spray System Mode: The question

asked for a description of the response of drywell (DW) and suppression chamber (SC) spray valves following a large reactor coolant leak after both sprays had been appropriately initiated and either SC or DW pressure decreased below 1.69 psig. Six candidates answered incorrectly. Five candidates selected distractor d., as DW pressure drops below 1.69 psig, the DW spray valves will close, but the SC spray valve will remain open. The correct answer was b., as DW pressure drops below 1.69 psig, the SC spray valve will close, but the DW spray valves will remain open. Reference: LaSalle Licensed Operator System Description Manual, Chapter 39, RHR System, pages 19 and 20, Section II, D.11 and 12; KA 226001A215 3.6/3.8)

Emergency Procedures, Question # 54:

High DW pressure: The question asked the purpose of securing DW sprays before pressure drops to a specified value in LGA-03. Five candidates answered incorrectly. Four candidates selected distractor d., to minimize excessive cycling of the vacuum breakers. The correct answer was b., to minimize oxygen accumulation in the primary containment. Reference: LaSalle procedure lesson plan, LGA-03, Primary Containment Control, page 22; KA 295024G007 (3.6/3.9)

Plant Wide Generics, Question # 78:

High DW pressure: The question asked for the maximum time allowed to complete the department head review approval of a temporary procedure change. Four candidates answered incorrectly. Three candidates selected distractor c., three days. The correct answer was b., 14 days. Reference: LaSalle administrative procedure, LAP-820-4, page 3; KA 294001A101 (2.9/3.4)

b. Job Performance Measures (JPMs)

JPM performance was satisfactory as evidenced by all seven candidates' successful completion of the JPMs and answering associated questions. Minor individual weaknesses were documented, however, there were no generic issues identified.

Strengths

- Candidates demonstrated familiarity with plant procedures, and were able to promptly retrieve and execute the correct procedure(s) when performing JPMs.

Weaknesses

No significant weaknesses were noted in this area.

c. Dynamic Simulator Scenarios

All individuals were graded as satisfactory in the dynamic simulator scenarios. Five scenarios were used during two days of dynamic scenario examinations. A licensed operator was used as a surrogate to complete the three member crew in four scenarios. All crews included a senior technical advisor (STA) who was allowed to provide data and communications only when requested by one of the crew members being examined.

Periodic crew briefs were held by the shift supervisor when appropriate. They provided a concise synopsis of problems, resolutions and current plant status. When completed, crew members acknowledged their understanding of the briefing.

Strengths

- Crew briefs had closure and acknowledgement from crew members.

Weaknesses

No significant weaknesses were noted in this area.

5. Operations, Security, Radiation Protection, Other

Strengths

- Training, operations, security and radiation protection personnel were cooperative and professional when dealing with NRC examiners. Plant and control room entrance and exits were made in a timely manner with a minimum of delays.

Weaknesses

No significant weaknesses were noted in this area.

6. Simulator Observations

The simulator performed well throughout the examination. Throughout the diverse conditions of dynamic scenarios and simulator JPMs, it did not halt, or appear to give erroneous indications.

7. Exit Meeting

An exit meeting was held with LaSalle County Nuclear Station management on October 13, 1995. Those attending the management meeting are listed in Section 2 of this report. The following items were discussed during the exit meeting:

- Strengths, weaknesses and items for improvement noted in this report.

- The general observations relating to the plant noted in Section 5.

The facility licensee did not identify as proprietary any of the materials provided to or reviewed by the examiners during the inspection.

Enclosure 2

SIMULATION FACILITY REPORT

Facility Licensee: Commonwealth Edison Company
(LaSalle County Nuclear Station)

Facility Licensee Docket Nos: 50-373; 50-374

Operating Tests Administered: October 9 - 11, 1995

The following documents observations made by the NRC examination team during the October 1995, initial license 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.

During the conduct of the simulator portion of the operating tests, the following item was observed:

ITEM	DESCRIPTION

No items were identified.

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

MASTER

CANDIDATE'S NAME : **Sample Test**

FACILITY: **Lasalle 1 and 2**

REACTOR TYPE: **BWR-GE5/6**

DATE ADMINISTERED: **95/10/06**

INSTRUCTIONS TO CANDIDATE:

Use the answer sheet (s) provided to document your answers. Staple this cover sheet to the top of the answer sheets. The examination contains 100 questions worth 1-point each. 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 exam is my own. I have neither given nor received aid.

_____
Candidate's Signature

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.

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

TEST BOOKLET

DO NOT OPEN THIS BOOKLET UNTIL
TOLD TO DO SO.

Name: _____

1. Which ONE of the following applies to independent verifications?

   A. It must be performed by a Shift Supervisor when a significant radiation or safety hazard exists.

   B. It shall be conducted on all safety related systems.

   C. It requires physical separation between the positioner and verifier at all times.

   D. It must be performed on all breakers, valves, and components within the protected area.

2. Which one of the following would qualify as a "Temporary Alteration" as defined in LAP 240-6, "Temporary Alterations?"

   A. A hose is connected to a service air stop for grinding in the turbine building.

   B. An electrical lead is lifted in accordance with a surveillance procedure which is to be completed by the end of this shift.

   C. A hose is installed to drain a heat exchanger under an OOS.

   D. A circuit card is pulled to disable an annunciator.

3. You are in the RCIC room in protective clothing. The assembly alarm SOUNDS and a plant announcement directs all personnel to proceed to their assembly area.

   What action, if any, should be taken prior to proceeding to the assembly area?

   A. Remove your outer gloves and rubber shoes.

   B. Remove all protective clothing in the RCIC room.

   C. Exit the RCIC room as you are.

   D. Call Radiation Protection to obtain guidance.

4. You were called this morning and requested to assist with a unit startup this evening.

   To enter the plant at 11 PM that evening, what is the **LATEST** time that you could consume any alcohol?

   A. 2 PM

   B. 4 PM

   C. 6 PM

   D. 8 PM

5. Select the expected condition beyond a door with a sign posted that reads "DANGER-CONFINED SPACE".

   A. A rotating equipment hazard for personnel.

   B. A depleted oxygen atmosphere may or does exist.

   C. A limited number of people may occupy the space at one time.

   D. High equipment noise levels.

6. Given the following conditions:
   - You are responding to an electrical fire as a member of the plant's fire brigade team.
   - You have brought a Class B/C fire extinguisher to the scene.
   - Other members have rigged a fire hose with a solid-stream nozzle.

   Which one of the following actions should be taken?

   A. Do not use the Class B/C fire extinguisher. Put the fire out with the fire hose.

   B. Wait for the fire brigade member assigned to bring a Class D fire extinguisher, then use the Class D fire extinguisher.

   C. Use the fire hose first. If it does not put out the fire, use the Class B/C fire extinguisher.

   D. Do not use the fire hose. Put the fire out with the Class B/C fire extinguisher.

7. In accordance with LAP-820-4, a temporary procedure change...

   A. requires ALL pages be marked with a red "TPC" stamp.

   B. is authorized for use by the Shift Engineer.

   C. may change the intent of the procedure.

   D. can be renewed after its termination date.

8. Which of the following tasks would require the procedure to be referenced prior to its performance?

   A. Manually starting the standby stator water cooling pump if the running pump trips.

   B. Placing the HPCS pump in PTL following an inadvertent initiation at power.

   C. Shutting down the Standby Gas Treatment trains following a spurious initiation.

   D. Starting both loops of RHR in Suppression Pool Cooling with a stuck open relief valve.

9. You have been on normal shift crew rotation as a Unit/Field Supervisor through September 20 of this year. So far, you have maintained an active SRO license.

   Since September 20, you have been temporarily assigned to assist Dresden station. However, you did return to complete the following 8-hour shifts as unit supervisor:

   - September 29 and 30
   - October 1, 2, and 3
   - November 4 and 5

   What is the **MINIMUM** number of 8-hour shifts (if any) you will need to maintain your SRO license active into next year?

   A. none

   B. one

   C. two

   D. five

10. Which one of the following is **NOT** required to be logged in the Nuclear Station Operator (NSO) Unit 2 Log?

A. Starting the 2A heater drain pump.

B. Replacing the paper for an APRM chart recorder.

C. A surveillance that is unsatisfactory.

D. A reactor power level change from 70% to 95%.

11. NOTE: Use electrical drawings provided to answer this question.

During a refueling outage on unit-1, the operators perform the 18-month surveillance of the "A" standby liquid control system (SBLC). This surveillance verifies the actual capability of SBLC to inject into the RPV with the exception of using demineralized water instead of boron.

Upon placing the keylock switch to SYS "A", the operator notices that the reactor water cleanup outboard isolation valve, 1G33-F004, **DID NOT** receive an isolation signal.

Which of the following relays, if its contacts failed, could be the cause?

A. K2A

B. K3A

C. KX3A

D. K6A

12. During WHICH ONE of the following events would the presence of a QNE be required for Control Rod Manipulations?

A. Control rod exercising for control rods at position 48.

B. Raising power from 35% to 40% during a start-up.

C. Inserting cram arrays for an RR pump downshift.

D. Inserting flow control line rods.

13. Which of the following conditions would result in a red "SRV" box indicating "CLSD" on the Safety Parameter Display System (SPDS)?

A. An SRV is open with reactor pressure at 850 psig.

B. All SRVs are closed with reactor pressure at 1090 psig.

C. SRV "B" is still closed after initiating ADS.

D. An SRV indicates closed with its tailpipe temp. above 250F.

14. During normal operation of the control rod drive (CRD) hydraulics system, the in-service flow control valve fails open.

Which of the following statements describes the response of the CRD system?

	Charging Water Pressure	**Drive Water Pressure**
A.	decreases	increases
B.	increases	increases
C.	increases	decreases
D.	decreases	decreases

15. While operating near full power, a hydraulic control unit (HCU) for a fully withdrawn control rod experiences a loss of nitrogen pressure for the accumulator.

Identify the resulting plant conditions.

A. The control rod will drift into the core.

B. The control rod will not automatically scram.

C. The scram time for the control rod will be longer.

D. The control rod will only insert with control rod drive pressure.

16. Unit-2 is operating at 82% power on the 101% flow control line. A trip of TDRFP 2A results in a flow control valve runback. Upon checking core flow, you find it to be 42M#/hour.

Based on this information, what is your next action?

A. Stabilize the plant, and contact the QNE.

B. Scram the reactor, and perform LGP 3-2.

C. Insert cram arrays to the 70% flow control line.

D. Reset the runback, and raise core flow to 45M#/hour.

17. Following a LOCA with a concurrent loss of off-site power, which two ECCS low pressure pumps start after a 5 second time delay when the diesels re-energize the 4 KV buses?

A. LPCI B and LPCI C

B. LPCI A and LPCI B

C. LPCS and LPCI A

D. LPCS and LPCI C

18. A small LOCA occurs in the drywell that initiates all ECCS systems. Injection from HPCS causes reactor water level to increase to the HPCS injection valve high level closure setpoint. Later, the break becomes larger, and level begins to drop rapidly.

As level continues to drop, the HPCS injection valve will..

A. open when level reaches the HPCS low level initiation setpoint.

B. remain closed until the low RPV level signal is cleared.

C. open as soon as level drops below the high level injection valve closure setpoint.

D. remain closed until the high drywell pressure initiation signal clears.

19. The unit is operating near full power. The quarterly operability surveillance of the Low Pressure Core Spray (LPCS) system is in progress. The LPCS pump is operating at the required pressure and flows for the surveillance. The LPCS full flow test valve is throttled open.

Upon receipt of a LOCA signal, the LPCS full flow test valve will...

A. remain open, and the LPCS injection valve will open immediately.

B. remain open until the LPCS injection valve opens at 500 psig; then, the full flow test valve will close.

C. close, and the LPCS injection valve will open when reactor pressure drops to 500 psig.

D. close; then, the LPCS injection valve will open when the full flow test valve is full closed.

20. Which of the following statements describes the operation of the LPCS minimum flow valve?

Assume the LPCS is in its NORMAL lineup.

Prior to pump start, the LPCS minimum flow valve is...

A. open and will close when LPCS flow is high.

B. open and closes when the LPCS injection valve begins to open.

C. closed and opens when the LPCS injection valve begins to close.

D. closed and opens when LPCS discharge pressure is high.

21. With a boron concentration of 13.0%, what is the MINIMUM VOLUME required to maintain the SBLC system operable?

A. 4600 gallons

B. 4750 gallons

C. 4900 gallons

D. 5050 gallons

22. Which of the following conditions would result in a full reactor scram with the SRM shorting links **removed** and all IRMs on range 1?

A. SRM D reaches 5 x 10E5 cps.

B. SRM C is fully withdrawn from the core.

C. Both SRMs A and C reach 1 x 10E5 cps.

D. SRM B drops below 100 cps.

23. The unit is operating at about 75% power. APRM A is currently operating with 14 operable LPRMs.

Which of the following events will cause an APRM HI-HI/INOP alarm at control room panel 1H13-P603?

A. Flow comparator "A" is placed in BYPASS.

B. Another LPRM feeding APRM A is taken to bypass.

C. The meter function switch for APRM A is placed to COUNT.

D. One of the operable LPRMs feeding APRM A fails down scale.

24. The output of all 172 local power range monitors is sent to the...

A. process computer and the APRMs.

B. process computer and the RBMs.

C. SPDS and APRMs.

D. RBMs and SPDS.

25. Following a loss of all AC power, what is the **MINIMUM** reactor water level that can be monitored from the control room?

PLANT CONDITIONS:
Drywell temperature: 120F
Reactor Building temperature: 94F
Reactor pressure: 880 psig

A. +25 inches

B. 0 inches

C. -150 inches

D. -311 inches

26. Continued operation of RCIC turbine below 2100 RPM could potentially result in the adverse conditions listed below **EXCEPT** ..

A. excessive wear to the governor valve.

B. insufficient turbine bearing lubrication.

C. cavitation of the RCIC pump.

D. water hammer in the exhaust line.

27. While operating near full power, a loss of all condensate and feed water occurs. No high pressure injection is available, and LPCS is the only low pressure ECCS pump running.

Under which set of plant conditions would you expect an automatic initiation of ADS?

	Time Elapsed	Reactor Water Level	Drywell Pressure	LPCS Discharge Pressure
A.	2 minutes	-130 inches	+2.0 psig	180 psig
B.	12 minutes	-140 inches	+1.5 psig	130 psig
C.	2 minutes	-150 inches	+1.5 psig	130 psig
D.	12 minutes	-120 inches	+2.0 psig	180 psig

28. Which of the following could be detected by an increase in drywell floor drain fill up rate?

A. RBCCW piping leak in the drywell

B. Gland seal leakage

C. Leakage past the reactor head vent valves

D. Reactor vessel head flange leakage

29. While operating near full power, the NSO reports to you that drywell oxygen concentration is currently reading 4.5%. What actions would you direct to be taken with this condition?

A. Commence a reactor shutdown as soon as possible.

B. Purge the primary containment as soon as possible.

C. Wait unit 6% is reached, then purge the primary containment.

D. Wait until 6% is reached, then commence a reactor shutdown.

30. While operating at power, a small LOCA has occurred. The reactor was manually scrammed; all control rods fully inserted.

- Suppression pool temperature is 100 degrees F
- Reactor pressure is 850 psig.
- Drywell pressure is 6 psig
- Suppression chamber pressure is 1 psig

Which of the following conditions would result in a loss of primary containment pressure suppression capability if it were to occur?

A. The drywell cooling system cannot be restarted.

B. Suppression pool level drops to -10 feet.

C. A suppression chamber/drywell vacuum breaker sticks open.

D. One of the drywell vent/purge dampers fails to open.

31. Which of the following events would you expect to occur from a loss of RPS Bus A?

A. A trip of the RCIC turbine if it were running.

B. A loss of cooling to the reactor recirculation pumps.

C. A lockup of the reactor recirculation flow control valves.

D. An automatic start of the Division II Post-LOCA monitor.

32. The unit is operating at 100% power with reactor recirculation control in loop manual mode. A short in the Maximum Combined Flow Limit potentiometer causes the limit to drop to 80%.

What is the INITIAL response of the EHC system to this failure?

A. The turbine control valves will close until 80% steam flow is being passed; the turbine bypass valves will open to pass about 20% steam flow.

B. The turbine will trip from a power/load imbalance.

C. The turbine control valves will close until 80% steam flow is being passed; the bypass valves remain closed.

D. The reactor recirculation flow control valves will runback power to 80%.

33. The unit is operating at 90% power. Your NSO has just received a reactor water level high alarm.

You observe the following reactor and feedwater parameters:

- Reactor water level 44 inches and rising

- Total reactor steam flow is 13.5 million pounds/hour
- Total reactor feedwater flow is 14.8 million pounds/hour

- TDRFP "A" Flow: .5 million pounds/hour and going down rapidly
- TDRFP "B" FLow: 5.3 million pounds/hour and going down slowly

- TDRFP "A" M/A station output 95% and going up rapidly
- TDRFP "B" M/A station output 65% and going down slowly

- TDRFP "A" speed is 5230 rpm and going up rapidly
- TDRFP "B" speed is 4530 rpm and going down slowly

Given the information above, determine the failure.

A. The flow transmitter for TDRFP "A" is failing low.

B. The M/A station (function generator) output for TDRFP "B" is failing low.

C. The flow transmitter for TDRFP "B" is failing high.

D. The M/A station (function generator) output for TDRFP "A" is failing high.

34. The unit is operating near full power. The following conditions exist on the reactor water level control system:

-TDRFP "A" is in 3-element automatic
-TDRFP "B" is in manual
-MDRFP is in standby with its M/A station output set at 15%.
-The actuator selector switch is selected to "Turbine B"

Both TDRFPs trip on low condenser vacuum. A reactor scram occurs on low reactor water level. Following the transient, the MDRFP will...

A. start and control reactor water level at 18".

B. start with its own M/A station at 15%.

C. start and control reactor water level at 36".

D. remain in standby with its own M/A station at 15%.

35. What three conditions will cause a trip of an RPS electrical power monitoring assembly (EPMA)?

A. Undervoltage, underfrequency, and overcurrent.

B. Overvoltage, overfrequency, and underfrequency.

C. Undervoltage, overfrequency, and underfrequency.

D. Overvoltage, undervoltage, and underfrequency.

36.

The potential consequence(s) of extended diesel generator operation below 2200 KW is...

A. speed hunting of the governor.

B. overheating of the journal bearing.

C. excessive wear to the piston rings and cylinder walls.

D. damage to the turbocharger bearings.

37. When using the Off-Gas mechanical vacuum pump to initially draw a vacuum in the condenser, what is the MINIMUM backpressure would you expect to see reached?

A. 2"HgA

B. 7"HgA

C. 15"HgA

D. 23"HgA

38. A normal unit startup is in progress. Control rod 30-43 is notched to position 10 instead of stopping at the banked position 08.

As a result, the rod worth minimizer (RWM) will...

A. allow the control rod to be inserted to position 08.

B. allow entering a substitute position of 08 for rod 30-43.

C. not allow any further rod movement without bypassing the rod.

D. allow the entire group to be latched and withdrawn to position 10.

39. The reactor is operating at about 74% power and 70% core flow. You are withdrawing control rods to reach the 100% flow control line. As you withdraw the control rods, you notice that reactor core flow is dropping slightly.

What is the cause of this drop in core flow?

A. Reduced RR pump efficiency due to higher reactor pressure.

B. Reduced core inlet subcooling by feedwater heating.

C. Flow compensation by the reactor recirculation system.

D. Additional flow restriction from increased two-phase flow.

40. Unit-1 is in cold-shutdown. You are walking down the control room panels for shift turnover. You notice that shutdown cooling flow is about 6200 gpm.

Under which of the following conditions should you direct the NSO to reduce shutdown cooling flow?

A. reactor water level is below 40 inches.

B. the reactor recirculation pumps are operating.

C. RHR service water temperature is above 75 degrees F.

D. only one RHR service water pump is running.

41. While withdrawing control rods during a normal reactor startup, you receive the following alarm at control panel 1H13-P603:

A402 "CONT ROD POS INFO SYSTEM INOPERATIVE"

Which method(s) of rod movement is(are) available to you during this condition?

A. Notch insert and continuous insert

B. Continuous insert only

C. Notch insert only

D. Notch insert and withdrawal

42. With the unit operating at about 85% power, APRM channel C fails down scale. As a result, RBM channel A will...

A. shift to APRM channel E and continue to operate.

B. operate with reduced trip setpoints.

C. initiate an INOP rod block.

D. be automatically bypassed.

43. A Large reactor coolant leak has occurred. The SRO has entered LGA-03 for primary containment control. Suppression chamber sprays and drywell sprays have been started in accordance with LGA-03. Drywell pressure is 10 psig and dropping; suppression chamber pressure is 5 psig and dropping.

Based on the current trends, which of the following statements describe the responses of the drywell and suppression chamber spray systems? **Assume no operator actions.**

A. As suppression chamber pressure drops below 1.69 psig, the drywell spray valves will close, but the suppression chamber spray valve will remain open.

B. As drywell pressure drops below 1.69 psig, the suppression chamber spray valve will close, but the drywell spray valves will remain open.

C. As suppression chamber pressure drops below 1.69 psig, the suppression chamber spray valve will close, but the drywell spray valves will remain open.

D. As drywell pressure drops below 1.69 psig, the drywell spray valves will close, but the suppression chamber spray valve will remain open.

44. During power operations, the unit experiences a loss of auxiliary power (i.e., the UAT and SAT are lost). The common diesel generator fails to start and re-energize its 4KV bus.

In addition to HPCS, what other ECCS pumps are currently available for injection if needed?

A. LPCI A and LPCS

B. LPCI B and LPCI C

C. LPCS and LPCI B

D. LPCI A and LPCI B

45. At 2 AM, the fire brigade is dispatched to respond to a fire in the plant. Upon arriving at the scene, the fire brigade members shall follow the direction of the ...

A. Fire Chief.

B. Fire Officer #1.

C. Fire Marshall.

D. Shift Engineer.

46. Under which of the following conditions would you expect the control room ventilation emergency makeup train to automatically start?

A. Smoke in the auxiliary equipment room

B. High radiation in the outside air

C. Smoke in the control room

D. Ammonia in the outside air

47. While operating at power, a loss of all feedwater occurs. Level drops to -35 inches; then, the operator recovers level with RCIC.

Which of the following containment isolations should you verify has occurred?

A. The isolation valves for the 24-point and 3-point CAMs have all closed.

B. The reactor water sample valves have all closed.

C. The instrument nitrogen isolation valves have all closed.

D. The TIP probe has withdrawn if a TIP run was in progress.

48. RMCS will generate a rod selection block when the reactor mode switch is in....

A. STARTUP, and the refueling platform is moved over the core.

B. STARTUP, and the operator withdraws one control rod from the full in position.

C. REFUEL, and the refueling platform is moved over the core.

D. REFUEL, and the operator withdraws one control rod from the full in position .

49.

An isolation of Unit-1 reactor building ventilation occurs; however, no other automatic actions occur.

The cause of the isolation is...

A. High refuel floor ventilation radiation.

B. Low reactor water level.

C. High MSL tunnel pressure.

D. High reactor building ventilation radiation.

50. With the unit operating near full power, which of the following conditions requires the operator to **immediately** trip the main turbine?

A. An increase of 5 degrees F to the turbine journal bearing.

B. A bypass valve opens during a loss of stator cooling run back.

C. RCIC inadvertently initiates and runs for one minute.

D. The low pressure turbine bearing vibration exceeds 8 mils.

51. The emergency procedures have been entered due to a high reactor pressure condition. The condenser is not available for pressure control.

Which of the following alternate pressure control methods will **MINIMIZE** the loss of reactor vessel inventory?

A. SRVs in low-low set mode

B. RWCU in blowdown mode to radwaste

C. RWCU in recirculation mode

D. RCIC in pressure control mode

52. A major coolant break has occurred in the drywell. Although suppression chamber and drywell sprays have been started, drywell pressure is 40 psig; suppression chamber pressure is 42 psig. Both are still increasing.

With the conditions listed above, why is venting the suppression chamber preferred over venting the drywell?

A. This will reduce the levels of radioactivity by the scrubbing action of the suppression pool water.

B. This will minimize the loss of nitrogen, because the suppression chamber has a smaller volume than the drywell.

C. This allows a faster pressure reduction, because the suppression chamber has larger vent lines.

D. The rate of depressurization can be throttled with the 2" suppression chamber bypass vent valve.

53. Which of the following actions required by LGA-03 prevents "chugging" at the downcomer vents from occurring during a LOCA?

A. Emergency depressurizing prior to exceeding the pressure suppression pressure limit.

B. Initiating suppression pool cooling prior to reaching 120 degrees F in the pool.

C. Initiating suppression chamber sprays at 1.69 psig in the suppression chamber.

D. Initiating drywell sprays when pressure exceeds 8 psig in the suppression chamber.

54. LGA-03 directs the operator to secure drywell sprays before pressure drops to a specified value.

This will minimize...

A. nitrogen loss from the primary containment.

B. oxygen accumulation in the primary containment.

C. excessive loading of the suppression pool.

D. excessive cycling of the vacuum breakers.

55. Which of the following conditions would require entry into LGA-01 and LGA-03?

A. Drywell pressure at 3.0 psig.

B. Suppression pool temperature at 115 degrees F.

C. RPV pressure at 1060 psig.

D. RPV level at -100 inches.

56. While operating at about 90% power, a voltage transient in the EHC electrical system causes reactor pressure to rise to 1050 psig.

Which statement describes the response of the plant to this event?

A. A high pressure alarm will be received, but the turbine bypass valves will return reactor pressure to normal.

B. The reactor will scram, and the reactor recirculation pumps will trip to zero speed.

C. A high pressure alarm will be received, but the control valves will return reactor pressure to normal.

D. The reactor will scram, and the reactor recirculation pumps will downshift to slow speed.

57. An MSIV closure has occurred due to low RPV level. Level has been subsequently restored. Reactor power is 18%, and suppression pool temperature is 106 degrees and RISING.

Assuming that the Main Condenser is available, what condition(s) must be verified prior to re-opening the MSIVs ?

A. Drywell pressure is less than 1.69 psig.

B. Cold shutdown boron has been injected.

C. No indications of a MSL break or fuel failure.

D. The recirc pumps are tripped, and boron has not been injected.

58. Which of the following conditions would be indicative of a failed reactor recirculation jet pump?

	Core Plate DP	**Affected RR Loop's Flow**
A.	Decrease	Increase
B.	Increase	Increase
C.	Increase	Decrease
D.	Decrease	Decrease

59. Given: Core thermal power is 64%
Total core flow is 50 million pounds/hour

Which of the following actions would drive the plant closer to the instability region?

A. Removing FW heaters from service.

B. Inserting the cram arrays.

C. Raising reactor water level.

D. Increasing reactor recirculation flow.

60. With a loss of 125 VDC 111Y, which of the following systems still can be manually initiated from the control room?

A. Alternate Rod Insertion - Division I

B. Low Pressure Core Spray (LPCS)

C. Automatic Depressurization System (ADS)

D. Low Pressure Core Injection (LPCI) "A"

61. Which of the following conditions would require entry into the Emergency Operating Procedures?

A. RB North HCU area at 160 degrees.

B. Drywell Temperature at 142 degrees.

C. Reactor Pressure at 1030 psig

D. Drywell pressure at 1.35 psig

62. In response to a stuck open SRV, which of the following conditions would require scramming the reactor?

A. SRV tailpipe temperature reaches 350 degrees F.

B. Two cyclings of the SRV's handswitch were unsuccessful.

C. One minute has elapsed since the SRV first opened.

D. Suppression pool temperature is 112 degrees F.

63. A severe fire with thick smoke forced an immediate evacuation of the control room. The reactor was not scrammed prior to exiting.

Which of the following is the **preferred** method of scramming the reactor outside of the control room?

A. Open the RPS feeder breakers at the RPS distribution panels.

B. Open the ARI system feeder breakers at 111Y and 112Y.

C. Trip both RPS motor-generator sets locally.

D. Vent the scram air header in accordance with LGA-NB-01.

64. The Control Room has been evacuated in accordance with LOA-RX-01. All immediate operator actions have been completed.

Which of the following actions can be performed from the Remote Shutdown Panel?

A. Starting the MSIV Leakage Control System.

B. Injecting with Standby Liquid Control.

C. Controlling RPV pressure with SRVs S, U, and R.

D. Controlling RPV level with RCIC.

65. With a loss of RBCCW flow to the reactor recirculation pumps, which of the following additional conditions would require the RR pumps to be tripped within one minute?

A. RWCU bottom head drain flow is lost.

B. Both control rod drive pumps are lost.

C. The seal staging flow orifice becomes plugged.

D. A failure of #1 RR pump seal occurs.

66. In response to a major leak in the Instrument Air system, the operators have scrammed the reactor with the reactor mode switch taken to SHUTDOWN.

As the Instrument Air system pressure continues to decrease, what will be the effect on the MSIVs?

	Inboard MSIVs	**Outboard MSIVs**
A.	Remain open	Will close
B.	Will close	Remain open
C.	Will close	Will close
D.	Remain open	Remain open

67. Upon a loss of Instrument/Service Air, which of the following components could continue to operate on its own instrument air supply?

A. Reactor Building Ventilation Isolation Dampers

B. Primary Containment Chiller "C"

C. Feedwater Regulating Valve

D. Fuel Pool Demineralizer Flow Control Valves

68. If an RPS bus is lost, what two (2) group isolations could result in a loss of the main condenser due to MSIV closure if quick corrective actions are not taken?

A. 4 and 5

B. 3 and 10

C. 4 and 10

D. 3 and 4

69. While operating at 80% power, the CRD Pump 1A trips. The operator attempts to start CRD Pump 1B; however,it also trips. Two accumulator trouble alarms come in.

What should the NSO do next?

A. Monitor for rod drifts.

B. Dispatch an operator to the CRD Pump room.

C. Trip both RR Pumps to off.

D. Place the mode switch in shutdown.

70. During a transient in which RHR is needed for water level control, the LGAs state to only use RHR if Suppression Pool level is above -18 feet, because....

A. there is not enough water in the suppression pool to restore level from -161 inches to +36 inches. Therefore, other water sources should be used.

B. the RHR pumps may not have adequate net positive suction head to prevent cavitation and damage to the pumps.

C. HPCS or LPCS would be a better system to use to ensure that suppression pool level stays above the PSP curve.

D. unstable steam condensation could occur during a depressurization; therefore, other sources are used to prevent pressurizing the suppression chamber.

71. LGA-02, Secondary Containment Control, requires certain actions to be taken if a primary system is discharging outside secondary containment.

"Primary systems" are any plant systems...

A. that are safety-related and is required to be operable in all modes except cold shutdown.

B. required to shutdown the reactor or provide long-term core cooling.

C. whose pressure will change with drywell and/or suppression pool pressure.

D. whose leak rate will decrease as the reactor continues to depressurize.

72. Which of the following conditions requires entry into LGA-09, "Radioactive Release Control?"

A. A gaseous release of radioactivity requiring a GSEP classification at the ALERT level.

B. The uncorrected primary containment gross gamma radiation level exceeds 2000R/hr.

C. A fuel element failure that results in main steam line radiation exceeding 3 times their normal values.

D. An unisolable main steam line break that results in any secondary containment area exceeding their max safe values.

73. Which of the following conditions will cause the 1A Diesel Generator to start?

A. Reactor water level at -100 inches.

B. Degraded bus voltage for 5 minutes on bus 142Y with no initiation signal present.

C. Loss of voltage on bus 143 with no ECCS initiation signal present.

D. Local start switch in start with transfer switch in AUTO.

74. Due to a leak in the RWCU heat exchanger room, the reactor building vent radiation levels increase to 13 mr/hr. What is the expected plant response to this condition? (Assume the operator has isolated the RWCU system)

A. The reactor building ventilation should isolate, and SBGT should auto-start.

B. The reactor building radiation alarm is the only expected plant response.

C. The SBGT should auto-start and cause reactor building ventilation to isolate.

D. The SBGT should auto-start to assist the reactor building ventilation in reducing radiation levels.

75. Following a loss of shutdown cooling with no other means of forced circulation available, the operator is directed to raise and maintain reactor water level high.

Why is reactor water level maintained at a high level?

A. provides a large volume of relatively cool water to control the reactor temperature increase.

B. establishes a path of coolant circulation which will prevent inadvertent reactor repressurization.

C. maintains the required net positive suction head for restarting the RHR Pump.

D. will provide an adequate margin to the low water level shutdown cooling isolation setpoint.

76. Which of the following situations **WOULD NOT** be an appropriate use of a caution card?

A. Informing personnel a RWCU pump feed breaker shall remain OPEN, while maintenance is being performed on the pump.

B. Directing the operator to notify the chemistry department prior to starting an RHR service water loop.

C. Informing the operator that the common RBCCW heat exchanger is lined up to unit-1.

D. Identifying a deviation exists between a local and remote voltage meter for the 1B diesel generator.

77. While performing a tour of the plant, you notice the following rad worker activities. Which of these activities **WOULD NOT** be considered a violation of radiation protection standards? You notice a rad worker...

A. adjusting his contact lens in a contaminated area.

B. chewing gum in the RCIC corner room.

C. in a contaminated area wearing eye glasses.

D. leaning over a rad rope to retrieve a wrench.

78. Which one of the following is the MAXIMUM time allowed to complete the Department Head Review approval of a Temporary Procedure Change?

A. 7 days.

B. 14 days.

C. 3 days.

D. 21 days.

79. A LIMITING SAFETY SYSTEM SETTING has been exceeded for Unit 2 and an automatic scram DOES NOT occur. A manual scram is then inserted. All rods have inserted to the Full-in position with the exception of 3 central control rods which are at position 24. Subsequent attempts to insert these rods to the Full-in position ARE NOT successful.

What GSEP classification is required, if any?

A. Alert.

B. Site Emergency.

C. None required.

D. Unusual Event.

80. Which ONE of the following conditions would result in violation of a SAFETY LIMIT?

A. Reactor Mode Switch in Startup; Core Flow = 30% of rated; Reactor Pressure = 750 psig; APRMs indicate 28% power.

B. Process computer is OOS. At +12.5 inches water level an ATWS occurs, however at -50 inches ARI inserts the control rods.

C. Reactor is shutdown; all fuel has been off-loaded; and a vessel draining event occurs resulting in a vessel level of -138 inches.

D. Reactor is at full power with core flow at 102% of rated; an APRM HI-HI Scram occurs at 115% reactor power.

81. A reactor scram has occurred due to a low RPV level condition. Setpoint setdown is still active with RPV level at about 18 inches. The MDRFP is running and controlling level with FRV in single element auto control. The startup controller setpoint is at 36 inches.

What will be the effect on the feedwater system if the operator were to depress the setpoint-setdown pushbutton with the conditions described above?

A. The setpoint setdown will not reset until RPV level is ± 2 inches of the setpoint setdown setpoint of + 18 inches.

B. The feedwater regulating valve will fully open and the MDRFP will trip on high RPV level.

C. the feedwater regulating valve will immediately lockout at it's current position.

D. RPV level will slowly increase to 36 inches over the next few minutes.

82. Complete the following statement in regards to the operation of an uninterruptable power supply (UPS).

If the normal _____ UPS power supply voltage drops, the UPS will be supplied by the _____ power supply through a blocking diode. If both of these supplies fail, a static transfer switch will swap to a(n) _____ supply.

A. D.C. / regulated A.C. / unregulated A.C.

B. regulated A.C. / D.C. / unregulated A.C.

C. regulated A.C. / unregulated A.C. / D.C.

D. primary D.C. / unregulated A.C. / backup D.C.

83. With an initial RPV pressure of 835 psig, which one of the following is the MINIMUM pressure in psig that the reactor may be reduced to after one hour of cooldown?

Note: Use Tech. Spec. limits for cooldown.

A. 290

B. 315

C. 350

D. 270

84. Following a major transient, the following conditions exist:

-Suppression Chamber Pressure	10 psig.
-Suppression Pool Level	0 feet
-Suppression Pool Temperature	165 degrees
-Drywell Pressure	14 psig
-Drywell Temperature	275 degrees and INCREASING
-Reactor Pressure	480 psig and DECREASING
-RPV Water Level	+9 inches and INCREASING

What actions should be taken to REDUCE Containment pressure? (Assume no containment samples are available.)

A. Stop Suppression Chamber Sprays.

B. Initiate RPV flooding.

C. Start Drywell Sprays.

D. Vent the Drywell using SBGT.

85.

Why is -12 feet in the suppression pool of concern to the operator?

A. Vortexes at the suction of the ECCS pumps can begin at this level and can result in air binding of the pumps.

B. Adequate steam condensation through the downcomer vents during a LOCA cannot be assured below this level.

C. All suppression pool temperature indication becomes invalid at this level.

D. The increased air volume in the primary containment could cause an implosion of the drywell.

86. Given the following plant conditions:

-Reactor pressure is 900 psig
-Suppression Pool level is -6 feet and DECREASING
-Suppression Pool temperature is 170 degrees F.

Determine the Suppression Pool level at which the Heat Capacity Temperature Limit will be exceeded.

A. -12 feet.

B. -11 feet.

C. -10 feet.

D. -8 feet.

87. When performing an Emergency Depressurization, ADS should be initiated by using the pushbuttons. What is the reason for this?

A. Using the control switch utilizes 110 psig drywell pneumatic supply to open the valves, which may not be sufficient if drywell pressure is high.

B. Using the ADS pushbutton opens 5 SRVs at once, ensuring that at least 5 valves are open.

C. The ADS pushbutton opens all the SRVs at once, whereas using the control switches would be a slower process.

D. Using the ADS pushbutton ensures the SRVs stay open, whereas the control switches could be returned to AUTO and allow the valves to close.

88. Which of the following describes the bases for the Suppression Pool low level limit in Tech Specs?

The low level limit is based on ensuring...

A. an adequate supply of water is available to the emergency core cooling systems pumps to ensure adequate core cooling during a LOCA.

B. adequate suppression pool capacity to condense the steam during a reactor LOCA to prevent exceeding 45 psig in the Drywell/Suppression Chamber.

C. any steam/non-condensibles that get blown down into the Suppression Chamber during a LOCA go through water to lower radiation levels.

D. adequate room for the non-condensibles in the drywell to be collected in the Suppression chamber during a LOCA to prevent exceeding 54psig in the Drywell/Suppression Chamber.

89. Given:

-Rx scram and all control rods in to 00
-MSIVs are closed due to low level
-RPV level is -161 and lowering
-No high pressure injection systems are available

The Shift Engineer directs an Emergency Depressurization per LGA-04. The operator reports that only four ADS valves opened. Which of the following actions is required?

A. Enter LGA-05 to flood the RPV since the condenser is unavailable.

B. Reset the initiation and reclose the ADS valves until RPV level drops to -211.

C. Enter LGA-07 to steam cool the core since four ADS valves will not depressurize the RPV.

D. Re-open the MSIVs to establish the condenser as a heat sink and open the turbine bypass valves.

90. While operating near full power, the unit experienced a major reactor coolant leak in the primary containment. All safety systems operated properly, and the appropriate LGAs were entered.

The following sequence of events occurred:

TIME	EVENTS
0830	Reactor scram and all rods inserted to 00.
1110	Saturation conditions reached in the drywell.
1200	All ADS valves are open with RPV pressure maintained about 60 psi above suppression chamber pressure.
1315	Drywell sprays have reduced drywell temperature to 195F.
1345	The IMs have backfilled the reference legs for the water level indicators.

The current time is 1400.

What is the MAXIMUM time that injection can be stopped and water level lowered to observe water level indicator response?

A. 4 minutes

B. 5 minutes

C. 9 minutes

D. 10 minutes

91. While operating at power, a large coolant leak in the primary containment occurred. Following the scram, 20 control rods failed to fully insert at positions greater than 02. All applicable LGAs have been entered.

The following conditions currently exist:

- The RPV Saturation Limit (RSL) was exceeded.
- Five ADS valves are open.
- Feedwater is being used for RPV injection.
- APRMs indicate about 3% and slowly decreasing.
- Reactor pressure is 150 psig and decreasing.

Describe the plant status indicated by the decreasing reactor pressure.

A. The vessel has been flooded to the main steam lines; this ensures adequate core cooling.

B. The steaming rate is less than the feedwater injection rate; this indicates the reactor is shutdown.

C. The reactor decay heat is insufficient to vaporize the injecting feedwater; this indicates adequate core submergence.

D. The feed injection rate cannot maintain adequate pressure; this indicates that core cooling is inadequate.

92. When classifying a GSEP condition, three fission product barriers would be considered lost if:

A. A large LOCA results in DW pressure peaking at 12.5 psig and vessel level is -180 inches. All isolations and auto starts occur as designed. Vessel level remains at -180 inches for several minutes and is subsequently restored.

B. Containment radiation levels are 120 R/hr and rising. The MSIVs close on HI-HI MSL radiation, and both MSIVs in MSL "B" fail to fully close.

C. A casualty occurs which leads to a TAF emergency depressurization. RPV Flooding is subsequently entered and level is restored on the narrow range instruments.

D. A steam leak occurs in the MSIV tunnel resulting in tunnel temperatures of 320 degrees. The Group 1 isolation fails; however, ECCS Systems operate correctly and restore vessel level prior to reaching TAF.

93. LGA-09 directs the operator to restart turbine building ventilation if needed. This will...

A. provide a backup to secondary containment if reactor building ventilation fails to isolate.

B. prevent a possible unmonitored ground level release from the turbine building.

C. provide a source of dilution flow for the SBGT system if running.

D. allow continued operation of turbine building equipment without exceeding max safe conditions.

94. LGA-03, Primary Containment Control, directs the operator to maintain suppression pool temperature below the HCTL and if you cannot, then reduce reactor pressure to stay inside the HCTL.

The basis for reducing reactor pressure to stay inside the HCTL is to ...

A. allow the operator to depressurize the reactor to a point where RHR and LPCS can inject prior to the suppression pool temperature exceeding the RHR NPSH limit.

B. ensure the suppression pool has enough capacity to accept a full reactor depressurization without exceeding the design temperature of the suppression pool.

C. ensure there is adequate margin to the ECCS suction piping design temperature in the event of a full reactor depressurization.

D. prevent inadequate steam condensation in the event of a full reactor depressurization, resulting in the suppression pool to drywell vacuum breakers opening.

95. During an ATWS, why is the operator directed NOT to cool down until the reactor is shutdown without boron injection or the cold shutdown weight of boron has been injected?

A. Lowering reactor pressure would cause the water in the reactor to "swell", thus lowering the boiling boundary and increase the chance to damage fuel.

B. Cooling down the reactor with an ATWS in progress will add positive reactivity due to the water in the reactor being cooler and more dense.

C. Core flow may become restricted due to the cooler water causing the boron to come out of solution and depositing on core surfaces.

D. Higher reactor pressure helps mixing of the boron due to the higher steaming rates and minimizes the time to complete the shutdown.

96. No high pressure systems are available. RPV level is at -100" and slowly dropping with several rods not fully inserted into the core.

Why is RHR injection through the SDC return valves an acceptable level control method, but injection through the LPCI injection valves is not acceptable?

The SDC return valves...

A. inject outside the shroud.

B. require less time to inject.

C. can be throttled.

D. create less flow restriction.

97. If no 250VDC battery charger is available to the 250VDC loads, why are some loads manually shed?

A. To prevent those loads from inadvertently tripping.

B. To provide D.C. power to the computer U.P.S.

C. To prevent overcurrent trips on safety related equipment.

D. To maintain RCIC availability for as long as possible.

98. While performing LOS-DC-W1 on the Unit-1, Division-2 125 VDC battery, you obtain the following data:

- ICV: 2.14
- Temperature: 86 degrees F
- Level: -1 (as recorded)
- Specific Gravity (uncorrected): 1.201
- Battery Charger Current: 5 amps on float

S.G.(corrected) =

$$\text{S.G.(uncorrected)} + \frac{(\text{T-77 degrees F})(.001)}{3} + (\text{Level Mark})(.003)$$

Based on the above information, the Specific Gravity is ___?___, which ___?___ meet the Technical Specification Category A limit.

A. 1.198, does NOT

B. 1.195, does NOT

C. 1.207, does

D. 1.201, does

99. In LGA-03, Primary Containment Control, the operator is directed to initiate drywell sprays prior to reaching 340 degrees in the drywell.

Why was 340 degrees chosen as the action point?

A. This is the maximum temperature at which the inboard MSIVs are operable for group isolations.

B. All level instruments are unreliable at drywell temperatures above 340 degrees.

C. This is the maximum temperature at which the ADS valves are qualified.

D. This is the design temperature of the drywell and actions should be taken to prevent this temperature.

100. At what MINIMUM suppression pool level would you expect the suppression pool-to-drywell vacuum breakers be covered?

A. 745 feet elevation

B. 667 feet elevation

C. 807 feet elevation

D. 700 feet elevation

Thursday, October 19, 1995 @ 06:50 AM

Answer Key

Test Name: 9501SO.TST
Test Date: Wednesday, October 04, 1995

		Question ID		Type	Pts	Answer(s) 0	1	2	3	4	5	6	7	8	9
1:	1	294001K1.01	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	2	294001K1.02	001	MC-SR	1	A	D	A	C	A	D	B	C	B	B
1:	3	294001K1.03	001	MC-SR	1	A	C	D	A	B	A	C	D	B	B
1:	4	294001K1.05	001	MC-SR	1	C	C	C	C	C	C	C	C	C	C
1:	5	294001K1.14	001	MC-SR	1	A	B	B	A	D	B	C	C	D	A
1:	6	294001K1.16	001	MC-SR	1	A	A	C	D	B	D	B	B	A	C
1:	7	294001A1.01	001	MC-SR	1	A	D	A	C	B	B	C	A	D	B
1:	8	294001A1.02	001	MC-SR	1	A	C	B	D	B	C	A	D	B	A
1:	9	294001A1.03	002	MC-SR	1	C	C	C	C	C	C	C	C	C	C
1:	10	294001A1.06	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	11	294001A1.07	001	MC-SR	1	D	D	D	D	D	D	D	D	D	D
1:	12	294001A1.09	001	MC-SR	1	A	C	B	D	D	B	A	B	C	A
1:	13	294001A1.15	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	14	201001A2.07	001	MC-SR	1	A	C	A	D	B	A	B	D	C	B
1:	15	201003K4.04	001	MC-SR	1	A	D	C	B	B	C	D	A	A	B
1:	16	202002G014	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	17	203000K4.07	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	18	209002K4.01	001	MC-SR	1	A	B	C	D	A	A	D	C	B	B
1:	19	209001A1.01	001	MC-SR	1	A	B	A	A	C	C	B	B	D	D
1:	20	209001K4.05	001	MC-SR	1	A	B	D	C	A	A	D	C	B	B
1:	21	211000G005	001	MC-SR	1	B	B	B	B	B	B	B	B	B	B
1:	22	215004K4.02	001	MC-SR	1	A	C	C	B	D	A	B	B	A	D
1:	23	215005K1.01	001	MC-SR	1	A	A	B	D	B	B	C	C	D	A
1:	24	215005K1.04	002	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	25	216000K5.01	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	26	217000G010	001	MC-SR	1	A	D	A	B	D	C	B	A	C	B
1:	27	218000K5.01	001	MC-SR	1	A	D	B	B	B	A	C	D	A	C
1:	28	223001K1.04	001	MC-SR	1	A	B	D	C	B	A	A	B	D	C
1:	29	223001G005	001	MC-SR	1	A	D	B	A	B	B	A	C	D	C
1:	30	223001K6.09	001	MC-SR	1	A	D	C	B	A	C	B	A	B	D
1:	31	223002K6.08	001	MC-SR	1	A	B	B	A	D	C	D	B	C	A
1:	32	241000K3.07	001	MC-SR	1	A	A	B	C	A	C	B	D	D	B
1:	33	259001A2.07	001	MC-SR	1	A	B	D	A	C	A	B	D	B	C
1:	34	259002K4.12	001	MC-SR	1	A	C	D	B	A	B	B	D	C	A
1:	35	212000K1.04	001	MC-SR	1	A	A	A	B	D	D	B	C	C	B
1:	36	264000G010	001	MC-SR	1	A	A	D	B	B	D	B	A	C	C
1:	37	256000A4.13	001	MC-SR	1	B	B	B	B	B	B	B	B	B	B
1:	38	201006A3.04	001	MC-SR	1	A	D	A	C	B	A	B	C	D	B
1:	39	202001A1.03	001	MC-SR	1	A	A	B	B	B	D	A	D	C	C
1:	40	205000G010	001	MC-SR	1	A	B	B	A	D	B	C	C	A	D
1:	41	214000K3.03	001	MC-SR	1	A	D	B	C	B	B	D	C	A	A
1:	42	215002K6.04	001	MC-SR	1	A	D	C	B	C	D	B	A	B	A
1:	43	226001A2.15	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1:	44	219000K2.02	001	MC-SR	1	A	C	B	C	A	B	D	D	B	A
1:	45	286000G001	001	MC-SR	1	A	D	B	D	C	A	B	A	C	B

Thursday, October 19, 1995 @ 06:50 AM

Answer Key

Test Name: 9501SO.TST
Test Date: Wednesday, October 04, 1995

	Question ID		Type	Pts	Answer(s) 0	1	2	3	4	5	6	7	8	9
1: 46	290003K5.01	001	MC-SR	1	A	D	C	A	A	B	D	B	B	C
1: 47	215001K1.05	001	MC-SR	1	A	C	A	D	C	D	B	B	A	B
1: 48	234000K1.04	001	MC-SR	1	A	D	B	C	A	D	B	B	A	C
1: 49	288000K4.01	001	MC-SR	1	A	A	B	B	C	C	B	D	A	D
1: 50	295005AA1.04	001	MC-SR	1	A	D	A	D	C	B	B	A	B	C
1: 51	295007AA2.03	001	MC-SR	1	A	D	A	A	B	C	C	B	D	B
1: 52	295010AK3.01	001	MC-SR	1	A	A	B	C	D	A	B	B	D	C
1: 53	295024EK3.01	001	MC-SR	1	A	A	D	B	A	D	B	C	B	C
1: 54	295024G007	001	MC-SR	1	A	C	A	D	D	B	C	B	A	B
1: 55	295024G011	001	MC-SR	1	A	B	D	B	C	A	A	B	C	D
1: 56	295025EK2.01	001	MC-SR	1	A	C	C	A	B	D	B	D	B	A
1: 57	295031EK2.12	001	MC-SR	1	A	B	C	D	B	C	B	A	D	A
1: 58	295001AA2.05	001	MC-SR	1	A	B	B	D	A	A	D	B	C	C
1: 59	295001AK1.04	001	MC-SR	1	A	C	B	B	D	A	C	A	D	B
1: 60	295004AK2.03	001	MC-SR	1	A	D	A	D	C	C	B	B	B	A
1: 61	295012G011	001	MC-SR	1	A	C	D	B	D	B	B	A	A	C
1: 62	295013AA2.01	001	MC-SR	1	A	C	A	A	C	D	B	B	D	B
1: 63	295016AA1.01	001	MC-SR	1	A	B	D	B	C	A	C	A	B	D
1: 64	295016AA1.08	001	MC-SR	1	A	A	C	C	B	D	A	B	B	D
1: 65	295018G010	001	MC-SR	1	A	B	B	D	A	B	A	C	D	C
1: 66	295019AK2.05	001	MC-SR	1	A	C	D	D	B	A	B	C	B	A
1: 67	295019AK2.14	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1: 68	295020AK1.01	001	MC-SR	1	A	A	B	C	D	C	D	B	B	A
1: 69	295022G010	001	MC-SR	1	A	C	A	C	B	D	A	B	B	D
1: 70	295030EK2.04	001	MC-SR	1	A	A	C	D	D	B	A	C	B	B
1: 71	295033EK3.03	001	MC-SR	1	A	B	C	D	B	D	A	B	A	C
1: 72	295038G011	001	MC-SR	1	A	A	C	B	D	A	B	D	B	C
1: 73	295003AK2.02	001	MC-SR	1	A	C	D	D	B	B	A	C	A	B
1: 74	295033EK2.04	001	MC-SR	1	A	B	B	D	C	A	D	A	C	B
1: 75	295021AK3.01	001	MC-SR	1	A	B	D	C	C	B	A	D	B	A
1: 76	294001K1.02	002	MC-SR	1	A	B	C	B	D	A	A	C	B	D
1: 77	294001K1.03	002	MC-SR	1	C	C	C	C	C	C	C	C	C	C
1: 78	294001A1.01	002	MC-SR	1	A	D	B	C	C	B	A	A	B	D
1: 79	294001A1.16	001	MC-SR	1	A	B	D	A	B	B	A	D	C	C
1: 80	212000G005	001	MC-SR	1	A	B	C	D	B	A	B	D	C	A
1: 81	259002A3.02	001	MC-SR	1	A	B	C	A	D	D	A	B	B	C
1: 82	262002K4.01	001	MC-SR	1	A	B	D	A	C	B	B	A	D	C
1: 83	290002G005	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1: 84	295024G012	001	MC-SR	1	A	B	B	D	C	C	A	B	A	D
1: 85	295030EK1.01	001	MC-SR	1	A	B	C	D	A	B	C	D	A	B
1: 86	295030EK1.03	001	MC-SR	1	A	A	A	A	A	A	A	A	A	A
1: 87	295030G004	001	MC-SR	1	A	C	A	B	D	A	D	B	B	C
1: 88	295030G004	002	MC-SR	1	A	A	A	C	D	B	B	C	D	B
1: 89	295031G012	001	MC-SR	1	A	C	B	D	B	D	A	C	A	B
1: 90	295031G012	002	MC-SR	1	B	B	B	B	B	B	B	B	B	B

Thursday, October 19, 1995 @ 06:51 AM

Answer Key

Test Name: 9501SO.TST
Test Date: Wednesday, October 04, 1995

	Question ID		Type	Pts	Answer(s) 0	1	2	3	4	5	6	7	8	9
1: 91	295031G004	001	MC-SR	1	A	B	C	A	D	D	A	B	C	B
1: 92	295038EK1.02	001	MC-SR	1	A	A	B	C	C	B	D	A	B	D
1: 93	295038EK2.03	001	MC-SR	1	A	D	C	C	A	B	B	D	B	A
1: 94	295026EK3.01	001	MC-SR	1	A	D	B	A	B	B	C	C	A	D
1: 95	295015AK1.02	001	MC-SR	1	A	D	A	B	A	B	D	C	B	C
1: 96	295037EK2.09	001	MC-SR	1	A	D	B	B	A	A	B	D	C	C
1: 97	295004AK3.01	001	MC-SR	1	A	B	C	A	C	D	B	D	B	A
1: 98	295004G008	002	MC-SR	1	A	B	C	D	A	D	C	D	A	B
1: 99	295012G007	001	MC-SR	1	A	B	D	B	B	C	A	A	C	D
1: 100	295029EK2.05	001	MC-SR	1	A	D	C	D	A	A	B	C	B	B

1. 294001K1.01 001
Which ONE of the following applies to independent verifications?

A. It shall be conducted on all safety related systems.

B. It requires physical separation between the positioner and verifier at all times.

C. It must be performed on all breakers, valves, and components within the protected area.

D. It must be performed by a Shift Supervisor when a significant radiation or safety hazard exists.

REF: LaSalle administrative procedure, LAP 100-30.

2. 294001K1.02 001
Which one of the following would qualify as a "Temporary Alteration" as defined in LAP 240-6, "Temporary Alterations?"

A. A circuit card is pulled to disable an annunciator.

B. A hose is installed to drain a heat exchanger under an OOS.

C. An electrical lead is lifted in accordance with a surveillance procedure which is to be completed by the end of this shift.

D. A hose is connected to a service air stop for grinding in the turbine building.

REF: LaSalle administrative procedure, LAP 240-6, page 2.

3. 294001K1.03 001
You are in the RCIC room in protective clothing. The assembly alarm SOUNDS and a plant announcement directs all personnel to proceed to their assembly area.

What action, if any, should be taken prior to proceeding to the assembly area?

A. Remove your outer gloves and rubber shoes.

B. Exit the RCIC room as you are.

C. Call Radiation Protection to obtain guidance.

D. Remove all protective clothing in the RCIC room.

REF: LaSalle administrative procedure, LAP 1170-2, page 2

4. 294001K1.05 001
You were called this morning and requested to assist with a unit startup this evening.

To enter the plant at 11 PM that evening, what is the LATEST time that you could consume any alcohol?

A. 2 PM

B. 4 PM

C. 6 PM

D. 8 PM

REF: LaSalle administrative procedure, LAP 1100-18.

5. 294001K1.14 001
Select the expected condition beyond a door with a sign posted that reads "DANGER-CONFINED SPACE".

A. A depleted oxygen atmosphere may or does exist.

B. A limited number of people may occupy the space at one time.

C. High equipment noise levels.

D. A rotating equipment hazard for personnel.

REF: LaSalle administrative procedure, LAP 900-20.

6. 294001K1.16 001
Given the following conditions:

- You are responding to an electrical fire as a member of the plant's fire brigade team.
- You have brought a Class B/C fire extinguisher to the scene.
- Other members have rigged a fire hose with a solid-stream nozzle.

Which one of the following actions should be taken?

A. Do not use the fire hose. Put the fire out with the Class B/C fire extinguisher.

B. Use the fire hose first. If it does not put out the fire, use the Class B/C fire extinguisher.

C. Wait for the fire brigade member assigned to bring a Class D fire extinguisher, then use the Class D fire extinguisher.

D. Do not use the Class B/C fire extinguisher. Put the fire out with the fire hose.

REF: Commonwealth Edison Safety Handbook.

7. 294001A1.01 001
In accordance with LAP-820-4, a temporary procedure change...

A. is authorized for use by the Shift Engineer.

B. may change the intent of the procedure.

C. can be renewed after its termination date.

D. requires ALL pages be marked with a red "TPC" stamp.

REF: LaSalle administrative procedure, LAP 820-4, page 3

8. 294001A1.02 001
Which of the following tasks would require the procedure to be referenced prior to its performance?

A. Shutting down the Standby Gas Treatment trains following a spurious initiation.

B. Placing the HPCS pump in PTL following an inadvertent initiation at power.

C. Starting both loops of RHR in Suppression Pool Cooling with a stuck open relief valve.

D. Manually starting the standby stator water cooling pump if the running pump trips.

REF: LaSalle administrative procedure, LAP-100-40.

9. 294001A1.03 002

You have been on normal shift crew rotation as a Unit/Field Supervisor through September 20 of this year. So far, you have maintained an active SRO license.

Since September 20, you have been temporarily assigned to assist Dresden station. However, you did return to complete the following 8-hour shifts as unit supervisor:

- September 29 and 30
- October 1, 2, and 3
- November 4 and 5

What is the MINIMUM number of 8-hour shifts (if any) you will need to maintain your SRO license active into next year?

A. none

B. one

C. two

D. five

REF: LaSalle administrative procedure 200-10, Page 1.

10. 294001A1.06 001

Which one of the following is NOT required to be logged in the Nuclear Station Operator (NSO) Unit 2 Log?

A. Replacing the paper for an APRM chart recorder.

B. A surveillance that is unsatisfactory.

C. A reactor power level change from 70% to 95%.

D. Starting the 2A heater drain pump.

REF: LaSalle administrative procedure, LAP 220-2, page 3.

11. 294001A1.07 001
NOTE: Use electrical drawings provided to answer this question.

During a refueling outage on unit-1, the operators perform the 18-month surveillance of the "A" standby liquid control system (SBLC). This surveillance verifies the actual capability of SBLC to inject into the RPV with the exception of using demineralized water instead of boron.

Upon placing the keylock switch to SYS "A", the operator notices that the reactor water cleanup outboard isolation valve, 1G33-F004, DID NOT receive an isolation signal.

Which of the following relays, if its contacts failed, could be the cause?

A. K2A

B. K3A

C. KX3A

D. K6A

REF: Electrical drawings 1E-1-4209AB, 4228AK, and 4232AH.

12. 294001A1.09 001
During WHICH ONE of the following events would the presence of a QNE be required for Control Rod Manipulations?

A. Raising power from 35% to 40% during a start-up.

B. Inserting cram arrays for an RR pump downshift.

C. Inserting flow control line rods.

D. Control rod exercising for control rods at position 48.

REF: LaSalle administrative procedure, LAP 100-35, page 10.

13. 294001A1.15 001
Which of the following conditions would result in a red "SRV" box indicating "CLSD" on the Safety Parameter Display System (SPDS)?

A. All SRVs are closed with reactor pressure at 1090 psig.

B. SRV "B" is still closed after initiating ADS.

C. An SRV indicates closed with its tailpipe temp. above 250F.

D. An SRV is open with reactor pressure at 850 psig.

REF: LaSalle System Description, Chapter 69, Computer , page 36.

14. 201001A2.07 001
During normal operation of the control rod drive (CRD) hydraulics system, the in-service flow control valve fails open.

Which of the following statements describes the response of the CRD system?

	Charging Water Pressure	Drive Water Pressure
A.	decreases	increases
B.	increases	decreases
C.	decreases	decreases
D.	increases	increases

REF: LaSalle System Description, Chapter 8, Page 8.; LOA-RD-04,

15. 201003K4.04 001
While operating near full power, a hydraulic control unit (HCU) for a fully withdrawn control rod experiences a loss of nitrogen pressure for the accumulator.

Identify the resulting plant conditions.

A. The scram time for the control rod will be longer.

B. The control rod will not automatically scram.

C. The control rod will only insert with control rod drive pressure.

D. The control rod will drift into the core.

REF: LaSalle System Description, Chapter 7, Pages 36 & 37, Figure 7-7.

16. 202002G014 001

Unit-2 is operating at 82% power on the 101% flow control line. A trip of TDRFP 2A results in a flow control valve runback. Upon checking core flow, you find it to be 42M#/hour.

Based on this information, what is your next action?

A. Scram the reactor, and perform LGP 3-2.

B. Insert cram arrays to the 70% flow control line.

C. Reset the runback, and raise core flow to 45M#/hour.

D. Stabilize the plant, and contact the QNE.

REF: LaSalle Operating Abnormal procedure LOA-RR-09, Instability Protection, Immediate Operator Actions.

17. 203000K4.07 001

Following a LOCA with a concurrent loss of off-site power, which two ECCS low pressure pumps start after a 5 second time delay when the diesels re-energize the 4 KV buses?

A. LPCI A and LPCI B

B. LPCS and LPCI A

C. LPCS and LPCI C

D. LPCI B and LPCI C

REF: LaSalle Licensed Operator system Description Manual, Chapter 28, Page 46, Section V.

18. 209002K4.01 001

A small LOCA occurs in the drywell that initiates all ECCS systems. Injection from HPCS causes reactor water level to increase to the HPCS injection valve high level closure setpoint. Later, the break becomes larger, and level begins to drop rapidly.

As level continues to drop, the HPCS injection valve will..

A. open when level reaches the HPCS low level initiation setpoint.

B. open as soon as level drops below the high level injection valve closure setpoint.

C. remain closed until the high drywell pressure initiation signal clears.

D. remain closed until the low RPV level signal is cleared.

REF: LaSalle Systems Description , Chapter 36, High Pressure Core Spray System, Page 10.

19. 209001A1.01 001

The unit is operating near full power. The quarterly operability surveillance of the Low Pressure Core Spray (LPCS) system is in progress. The LPCS pump is operating at the required pressure and flows for the surveillance. The LPCS full flow test valve is throttled open.

Upon receipt of a LOCA signal, the LPCS full flow test valve will...

A. close, and the LPCS injection valve will open when reactor pressure drops to 500 psig.

B. remain open until the LPCS injection valve opens at 500 psig; then, the full flow test valve will close.

C. close; then, the LPCS injection valve will open when the full flow test valve is full closed.

D. remain open, and the LPCS injection valve will open immediately.

REF: LaSalle System Description , Chapter 38, Low Pressure Core Spray, page 28, Section V.

20. 209001K4.05 001

Which of the following statements describes the operation of the LPCS minimum flow valve?

Assume the LPCS is in its NORMAL lineup.

Prior to pump start, the LPCS minimum flow valve is...

A. open and will close when LPCS flow is high.

B. closed and opens when the LPCS injection valve begins to close.

C. closed and opens when LPCS discharge pressure is high.

D. open and closes when the LPCS injection valve begins to open.

REF: LaSalle System Description, Chapter 38, Low Pressure Core Spray System, Page 8.

21. 211000G005 001
With a boron concentration of 13.0%, what is the MINIMUM VOLUME required to maintain the SBLC system operable?

A. 4600 gallons

B. 4750 gallons

C. 4900 gallons

D. 5050 gallons

REF: Tech. Spec. 3.1.5, Figures 3.1.5-1 and 3.1.5-2.

22. 215004K4.02 001
Which of the following conditions would result in a full reactor scram with the SRM shorting links removed and all IRMs on range 1?

A. SRM D reaches 5 x 10E5 cps.

B. Both SRMs A and C reach 1 x 10E5 cps.

C. SRM B drops below 100 cps.

D. SRM C is fully withdrawn from the core.

REF: LaSalle System Description, Chapter 11, Page 24.

23. 215005K1.01 001
The unit is operating at about 75% power. APRM A is currently operating with 14 operable LPRMs.

Which of the following events will cause an APRM HI-HI/INOP alarm at control room panel 1H13-P603?

A. Another LPRM feeding APRM A is taken to bypass.

B. The meter function switch for APRM A is placed to COUNT.

C. One of the operable LPRMs feeding APRM A fails down scale.

D. Flow comparator "A" is placed in BYPASS.

REF: LaSalle Licensed Operator System Descriptions Manual, Chapter 14, Average Power Range Monitoring System, Page 26, Section III.B.

24. 215005K1.04 002
The output of all 172 local power range monitors is sent to the...

A. process computer and the RBMs.

B. process computer and the APRMs.

C. RBMs and SPDS.

D. SPDS and APRMs.

REF: LaSalle Systems Description, Chapter 13.

25. 216000K5.01 001
Following a loss of all AC power, what is the MINIMUM reactor water level that can be monitored from the control room?

PLANT CONDITIONS:

Drywell temperature: 120F
Reactor Building temperature: 94F
Reactor pressure: 880 psig

A. 0 inches

B. -150 inches

C. -311 inches

D. +25 inches

REF: LaSalle abnormal procedure LOA-AP-08 and LGA-01. Requires use of LGA Detail LGA-D1

26. 217000G010 001
Continued operation of RCIC turbine below 2100 RPM could potentially result in the adverse conditions listed below EXCEPT ..

A. cavitation of the RCIC pump.

B. insufficient turbine bearing lubrication.

C. water hammer in the exhaust line.

D. excessive wear to the governor valve.

REF: LaSalle Licensed Operator System Desription Manual, Chapter 41, Reactor Core Isolation Cooling, page 40, Section V.B. insufficient turbine bearing lubrication.

27. 218000K5.01 001

While operating near full power, a loss of all condensate and feed water occurs. No high pressure injection is available, and LPCS is the only low pressure ECCS pump running.

Under which set of plant conditions would you expect an automatic initiation of ADS?

	Time Elapsed	Reactor Water Level	Drywell Pressure	LPCS Discharge Pressure
A.	2 minutes	-130 inches	+2.0 psig	180 psig
B.	2 minutes	-150 inches	+1.5 psig	130 psig
C.	12 minutes	-120 inches	+2.0 psig	180 psig
D.	12 minutes	-140 inches	+1.5 psig	130 psig

REF: LaSalle Licensed Operator System Description Manual, Chapter 37, Automatic Depressurization System, Page 22, Section III.

28. 223001K1.04 001

Which of the following could be detected by an increase in drywell floor drain fill up rate?

A. RBCCW piping leak in the drywell

B. Leakage past the reactor head vent valves

C. Reactor vessel head flange leakage

D. Gland seal leakage

REF: LaSalle Licensed Operator System Description Manual, Chapter 73, Leakage Detection System, Page 18, Section II.D.

29. 223001G005 001

While operating near full power, the NSO reports to you that drywell oxygen concentration is currently reading 4.5%. What actions would you direct to be taken with this condition?

A. Purge the primary containment as soon as possible.

B. Wait unit 6% is reached, then purge the primary containment.

C. Wait until 6% is reached, then commence a reactor shutdown.

D. Commence a reactor shutdown as soon as possible.

REF: Tech Specs 3.6.6.2

NOTE: Requires use of Tech. Specs.

30. 223001K6.09 001
While operating at power, a small LOCA has occurred. The reactor was manually scrammed; all control rods fully inserted.

- Suppression pool temperature is 100 degrees F
- Reactor pressure is 850 psig.
- Drywell pressure is 6 psig
- Suppression chamber pressure is 1 psig

Which of the following conditions would result in a loss of primary containment pressure suppression capability if it were to occur?

A. A suppression chamber/drywell vacuum breaker sticks open.

B. Suppression pool level drops to -10 feet.

C. One of the drywell vent/purge dampers fails to open.

D. The drywell cooling system cannot be restarted.

REF: LaSalle Licensed Operator System Description Manual, Chapter 48, Primary and Secondary Containment, page 24; LGA-03.

31. 223002K6.08 001
Which of the following events would you expect to occur from a loss of RPS Bus A?

A. A lockup of the reactor recirculation flow control valves.

B. A loss of cooling to the reactor recirculation pumps.

C. An automatic start of the Division II Post-LOCA monitor.

D. A trip of the RCIC turbine if it were running.

REF: LaSalle Licensed Operator Systems Description Manual, Chapter 49, Primary Containment Isloation System, page 38, Section V.A.

32. 241000K3.07 001

The unit is operating at 100% power with reactor recirculation control in loop manual mode. A short in the Maximum Combined Flow Limit potentiometer causes the limit to drop to 80%.

What is the INITIAL response of the EHC system to this failure?

A. The turbine control valves will close until 80% steam flow is being passed; the bypass valves remain closed.

B. The turbine will trip from a power/load imbalance.

C. The reactor recirculation flow control valves will runback power to 80%.

D. The turbine control valves will close until 80% steam flow is being passed; the turbine bypass valves will open to pass about 20% steam flow.

REF: LaSalle Licensed Operator System Description Manual, Chapter 26, Turbine EHC - Electrical System, page 46, section V.F.

33. 259001A2.07 001

The unit is operating at 90% power. Your NSO has just received a reactor water level high alarm.

You observe the following reactor and feedwater parameters:

- Reactor water level 44 inches and rising
- Total reactor steam flow is 13.5 million pounds/hour
- Total reactor feedwater flow is 14.8 million pounds/hour
- TDRFP "A" Flow: .5 million pounds/hour and going down rapidly
- TDRFP "B" FLow: 5.3 million pounds/hour and going down slowly
- TDRFP "A" M/A station output 95% and going up rapidly
- TDRFP "B" M/A station output 65% and going down slowly
- TDRFP "A" speed is 5230 rpm and going up rapidly
- TDRFP "B" speed is 4530 rpm and going down slowly

Given the information above, determine the failure.

A. The flow transmitter for TDRFP "A" is failing low.

B. The flow transmitter for TDRFP "B" is failing high.

C. The M/A station (function generator) output for TDRFP "A" is failing high.

D. The M/A station (function generator) output for TDRFP "B" is failing low.

REF: LaSalle Licensed Operator System Description Manual, Chapter 31, Reactor Water Level Control System, Page 32, Section V.4.

34. 259002K4.12 001
The unit is operating near full power. The following conditions exist on the reactor water level control system:

-TDRFP "A" is in 3-element automatic
-TDRFP "B" is in manual
-MDRFP is in standby with its M/A station output set at 15%.
-The actuator selector switch is selected to "Turbine B"

Both TDRFPs trip on low condenser vacuum. A reactor scram occurs on low reactor water level. Following the transient, the MDRFP will...

A. start with its own M/A station at 15%.

B. start and control reactor water level at 36".

C. remain in standby with its own M/A station at 15%.

D. start and control reactor water level at 18".

REF: LaSalle Licensed Operator System Description Manual, Chapter 31, Reactor Water Level Control System, Page 18.

35. 212000K1.04 001
What three conditions will cause a trip of an RPS electrical power monitoring assembly (EPMA)?

A. Overvoltage, undervoltage, and underfrequency.

B. Undervoltage, overfrequency, and underfrequency.

C. Overvoltage, overfrequency, and underfrequency.

D. Undervoltage, underfrequency, and overcurrent.

REF: LaSalle System Description Manual, Chapter 20B, Reactor Protection System, Page 7.

36. 264000G010 001
The potential consequence(s) of extended diesel generator operation below 2200 KW is...

A. damage to the turbocharger bearings.

B. excessive wear to the piston rings and cylinder walls.

C. overheating of the journal bearing.

D. speed hunting of the governor.

REF: Station surveillance procedure LOS-DG-M1, Diesel Generator "0" Monthly Operability Surveillance, Limitations and Precautions Section.

37. 256000A4.13 001
When using the Off-Gas mechanical vacuum pump to initially draw a vacuum in the condenser, what is the MINIMUM backpressure would you expect to see reached?

A. 2"HgA

B. 7"HgA

C. 15"HgA

D. 23"HgA

REF: LaSalle system operating procedure, LOP-OG-02, Off-Gas Mechanical Vacuum Pump Shutdown, Limitations and Actions.

38. 201006A3.04 001
A normal unit startup is in progress. Control rod 30-43 is notched to position 10 instead of stopping at the banked position 08.

As a result, the rod worth minimizer (RWM) will...

A. allow the control rod to be inserted to position 08.

B. not allow any further rod movement without bypassing the rod.

C. allow the entire group to be latched and withdrawn to position 10.

D. allow entering a substitute position of 08 for rod 30-43.

REF: LaSalle System Description, Chapter 18, Page 72.

39. 202001A1.03 001
The reactor is operating at about 74% power and 70% core flow. You are withdrawing control rods to reach the 100% flow control line. As you withdraw the control rods, you notice that reactor core flow is dropping slightly.

What is the cause of this drop in core flow?

A. Additional flow restriction from increased two-phase flow.

B. Flow compensation by the reactor recirculation system.

C. Reduced core inlet subcooling by feedwater heating.

D. Reduced RR pump efficiency due to higher reactor pressure.

REF: Core Operations Lesson Plan, Chapter 1, Power Changes.

40. 205000G010 001
Unit-1 is in cold-shutdown. You are walking down the control room panels for shift turnover. You notice that shutdown cooling flow is about 6200 gpm.

Under which of the following conditions should you direct the NSO to reduce shutdown cooling flow?

A. the reactor recirculation pumps are operating.

B. RHR service water temperature is above 75 degrees F.

C. only one RHR service water pump is running.

D. reactor water level is below 40 inches.

REF: LaSalle Systems Description , Chapter 39, Residual Heat Removal System, page 77, Appendix A; LOP-RH-07.

41. 214000K3.03 001
While withdrawing control rods during a normal reactor startup, you receive the following alarm at control panel 1H13-P603:

A402 "CONT ROD POS INFO SYSTEM INOPERATIVE"

Which method(s) of rod movement is(are) available to you during this condition?

A. Continuous insert only

B. Notch insert only

C. Notch insert and withdrawal

D. Notch insert and continuous insert

REF: LaSalle Licensed Operator Systems Description Manual, Chapter 17, Reactor Manual Control System, page 86, Section V.F.

42. 215002K6.04 001
With the unit operating at about 85% power, APRM channel C fails down scale. As a result, RBM channel A will...

A. be automatically bypassed.

B. initiate an INOP rod block.

C. operate with reduced trip setpoints.

D. shift to APRM channel E and continue to operate.

REF: LaSalle Systems Description , Chapter 15, Rod Block Monitoring System, page 22.

43. 226001A2.15 001

A Large reactor coolant leak has occurred. The SRO has entered LGA-03 for primary containment control. Suppression chamber sprays and drywell sprays have been started in accordance with LGA-03. Drywell pressure is 10 psig and dropping; suppression chamber pressure is 5 psig and dropping.

Based on the current trends, which of the following statements describe the responses of the drywell and suppression chamber spray systems? Assume no operator actions.

A. As drywell pressure drops below 1.69 psig, the suppression chamber spray valve will close, but the drywell spray valves will remain open.

B. As suppression chamber pressure drops below 1.69 psig, the suppression chamber spray valve will close, but the drywell spray valves will remain open.

C. As drywell pressure drops below 1.69 psig, the drywell spray valves will close, but the suppression chamber spray valve will remain open.

D. As suppression chamber pressure drops below 1.69 psig, the drywell spray valves will close, but the suppression chamber spray valve will remain open.

REF: LaSalle Licensed Operator System Description Manual, Chapter 39 Residual Heat Removal System, pages 19 and 20,Section II, D. 11. & 12.

44. 219000K2.02 001

During power operations, the unit experiences a loss of auxiliary power (i.e., the UAT and SAT are lost). The common diesel generator fails to start and re-energize its 4KV bus.

In addition to HPCS, what other ECCS pumps are currently available for injection if needed?

A. LPCI B and LPCI C

B. LPCS and LPCI B

C. LPCI A and LPCI B

D. LPCI A and LPCS

REF: LaSalle Licensed Operator System Descriptions Manual, Chapter 38, Low Pressure Core Spray System, Page 24, Section III. D. and Chapter 39, Residual Heat Removal System, Page 34, Section III. D.

45. 286000G001 001
At 2 AM, the fire brigade is dispatched to respond to a fire in the plant. Upon arriving at the scene, the fire brigade members shall follow the direction of the ...

A. Fire Chief.

B. Fire Marshall.

C. Shift Engineer.

D. Fire Officer #1.

REF: LAP 900-14 page 7

46. 290003K5.01 001
Under which of the following conditions would you expect the control room ventilation emergency makeup train to automatically start?

A. High radiation in the outside air

B. Smoke in the control room

C. Ammonia in the outside air

D. Smoke in the auxiliary equipment room

REF: LaSalle Licensed Operator System Description Manual, Chapter 59, Control Room Ventilation, page 38, Section V.

47. 215001K1.05 001
While operating at power, a loss of all feedwater occurs. Level drops to -35 inches; then, the operator recovers level with RCIC.

Which of the following containment isolations should you verify has occurred?

A. The TIP probe has withdrawn if a TIP run was in progress.

B. The instrument nitrogen isolation valves have all closed.

C. The reactor water sample valves have all closed.

D. The isolation valves for the 24-point and 3-point CAMs have all closed.

REF: LaSalle Licensed Operator System Description Manual, Chapter 49, Appendix B.

48. 234000K1.04 001
RMCS will generate a rod selection block when the reactor mode switch is in....

A. REFUEL, and the operator withdraws one control rod from the full in position .

B. REFUEL, and the refueling platform is moved over the core.

C. STARTUP, and the operator withdraws one control rod from the full in position.

D. STARTUP, and the refueling platform is moved over the core.

REF: LaSalle Licensed Operator System Description Manual, Chapter 17, Reactor Manual Control, Rev. 4, Page 54

49. 288000K4.01 001
An isolation of Unit-1 reactor building ventilation occurs; however, no other automatic actions occur.

The cause of the isolation is...

A. High MSL tunnel pressure.

B. Low reactor water level.

C. High reactor building ventilation radiation.

D. High refuel floor ventilation radiation.

REF: LaSalle Licensed Operator System Descriptions Manual, Chapter 60, page 22, Section V.

50. 295005AA1.04 001
With the unit operating near full power, which of the following conditions requires the operator to immediately trip the main turbine?

A. A bypass valve opens during a loss of stator cooling run back.

B. RCIC inadvertently initiates and runs for one minute.

C. The low pressure turbine bearing vibration exceeds 8 mils.

D. An increase of 5 degrees F to the turbine journal bearing.

REF: LaSalle Station abnormal operating procedure LOA-GC-01.

51. 295007AA2.03 001

The emergency procedures have been entered due to a high reactor pressure condition. The condenser is not available for pressure control.

Which of the following alternate pressure control methods will MINIMIZE the loss of reactor vessel inventory?

A. RWCU in recirculation mode

B. RWCU in blowdown mode to radwaste

C. RCIC in pressure control mode

D. SRVs in low-low set mode

REF: L.P. LGA-01, Pages 12 and 13.

52. 295010AK3.01 001

A major coolant break has occurred in the drywell. Although suppression chamber and drywell sprays have been started, drywell pressure is 40 psig; suppression chamber pressure is 42 psig. Both are still increasing.

With the conditions listed above, why is venting the suppression chamber preferred over venting the drywell?

A. This will reduce the levels of radioactivity by the scrubbing action of the suppression pool water.

B. This allows a faster pressure reduction, because the suppression chamber has larger vent lines.

C. The rate of depressurization can be throttled with the 2" suppression chamber bypass vent valve.

D. This will minimize the loss of nitrogen, because the suppression chamber has a smaller volume than the drywell.

REF: L.P., LGA-03, Primary Containment Control, Page 32.

53. 295024EK3.01 001
Which of the following actions required by LGA-03 prevents "chugging" at the downcomer vents from occurring during a LOCA?

A. Initiating drywell sprays when pressure exceeds 8 psig in the suppression chamber.

B. Initiating suppression chamber sprays at 1.69 psig in the suppression chamber.

C. Initiating suppression pool cooling prior to reaching 120 degrees F in the pool.

D. Emergency depressurizing prior to exceeding the pressure suppression pressure limit.

REF: LaSalle procedure lesson plan, LGA-03, Primary Containment Control, Page 20.

54. 295024G007 001
LGA-03 directs the operator to secure drywell sprays before pressure drops to a specified value.

This will minimize...

A. oxygen accumulation in the primary containment.

B. excessive loading of the suppression pool.

C. excessive cycling of the vacuum breakers.

D. nitrogen loss from the primary containment.

REF: LaSalle procedure lesson plan, LGA-03, Primary Containment Control, page 22.

55. 295024G011 001
Which of the following conditions would require entry into LGA-01 and LGA-03?

A. Drywell pressure at 3.0 psig.

B. RPV pressure at 1060 psig.

C. RPV level at -100 inches.

D. Suppression pool temperature at 115 degrees F.

REF: LaSalle emergency procedures, LGA-01 and LGA-03.

56. 295025EK2.01 001
While operating at about 90% power, a voltage transient in the EHC electrical system causes reactor pressure to rise to 1050 psig.

Which statement describes the response of the plant to this event?

A. The reactor will scram, and the reactor recirculation pumps will downshift to slow speed.

B. A high pressure alarm will be received, but the control valves will return reactor pressure to normal.

C. The reactor will scram, and the reactor recirculation pumps will trip to zero speed.

D. A high pressure alarm will be received, but the turbine bypass valves will return reactor pressure to normal.

REF: Lasalle abnormal operating procedure, LOA-NB-06, Reactor High Pressure, page 1.

57. 295031EK2.12 001
An MSIV closure has occurred due to low RPV level. Level has been subsequently restored. Reactor power is 18%, and suppression pool temperature is 106 degrees and RISING.

Assuming that the Main Condenser is available, what condition(s) must be verified prior to re-opening the MSIVs ?

A. No indications of a MSL break or fuel failure.

B. Cold shutdown boron has been injected.

C. The recirc pumps are tripped, and boron has not been injected.

D. Drywell pressure is less than 1.69 psig.

REF: L.P. LGA-10, Page 20.

58. 295001AA2.05 001
Which of the following conditions would be indicative of a failed reactor recirculation jet pump?

	Core Plate DP	Affected RR Loop's Flow
A.	Decrease	Increase
B.	Increase	Decrease
C.	Decrease	Decrease
D.	Increase	Increase

REF: LaSalle Systems Description Manual, Chapter 2, Reactor Vessel Internals, Page 32, Section V.

59. 295001AK1.04 001
Given: Core thermal power is 64
Total core flow is 50 million pounds/hour

Which of the following actions would drive the plant closer to the instability region?

A. Removing FW heaters from service.

B. Raising reactor water level.

C. Increasing reactor recirculation flow.

D. Inserting the cram arrays.

REF: LaSalle abnormal operating procedure, LOA-RR-09, Core Instability Protection, Page 3, Section E, Discussion.

60. 295004AK2.03 001
With a loss of 125 VDC 111Y, which of the following systems still can be manually initiated from the control room?

A. Automatic Depressurization System (ADS)

B. Low Pressure Core Spray (LPCS)

C. Low Pressure Core Injection (LPCI) "A"

D. Alternate Rod Insertion - Division I

REF: LaSalle abnormal operating procedure LOA-DC-02, 125 VDC System Failure, Page 8, Table 2.

61. 295012G011 001
Which of the following conditions would require entry into the Emergency Operating Procedures?

A. Drywell Temperature at 142 degrees.

B. Reactor Pressure at 1030 psig

C. Drywell pressure at 1.35 psig

D. RB North HCU area at 160 degrees.

REF: LGA-03 Entry Conditions

62. 295013AA2.01 001
In response to a stuck open SRV, which of the following conditions would require scramming the reactor?

A. Suppression pool temperature is 112 degrees F.

B. One minute has elapsed since the SRV first opened.

C. Two cyclings of the SRV's handswitch were unsuccessful.

D. SRV tailpipe temperature reaches 350 degrees F.

REF: LaSalle abnormal operating procedure, LOA-NB-02, Stuck Open Safety Relief Valve, page 3, Immediate Operator Actions.

63. 295016AA1.01 001
A severe fire with thick smoke forced an immediate evacuation of the control room. The reactor was not scrammed prior to exiting.

Which of the following is the preferred method of scramming the reactor outside of the control room?

A. Open the RPS feeder breakers at the RPS distribution panels.

B. Trip both RPS motor-generator sets locally.

C. Vent the scram air header in accordance with LGA-NB-01.

D. Open the ARI system feeder breakers at 111Y and 112Y.

REF: LaSalle abnormal operating procedure, LOA-RX-01, page 2, Subsequent Operator Actions.

64. 295016AA1.08 001
The Control Room has been evacuated in accordance with LOA-RX-01. All immediate operator actions have been completed.

Which of the following actions can be performed from the Remote Shutdown Panel?

A. Controlling RPV level with RCIC.

B. Controlling RPV pressure with SRVs S, U, and R.

C. Injecting with Standby Liquid Control.

D. Starting the MSIV Leakage Control System.

REF: LaSalle abnormal operating procedure LOA-RX-01.
LaSalle System Description, Chapter 74.

65. 295018G010 001
With a loss of RBCCW flow to the reactor recirculation pumps, which of the following additional conditions would require the RR pumps to be tripped within one minute?

A. Both control rod drive pumps are lost.

B. The seal staging flow orifice becomes plugged.

C. A failure of #1 RR pump seal occurs.

D. RWCU bottom head drain flow is lost.

REF: LaSalle abnormal operating procedures LOA-WR-01, Loss of RBCCW, and LOA-RR-02, Reactor Recirc Pump Trouble, Operator Immediate Actions.

66. 295019AK2.05 001
In response to a major leak in the Instrument Air system, the operators have scrammed the reactor with the reactor mode switch taken to SHUTDOWN.

As the Instrument Air system pressure continues to decrease, what will be the effect on the MSIVs?

	Inboard MSIVs	Outboard MSIVs
A.	Remain open	Will close
B.	Will close	Will close
C.	Remain open	Remain open
D.	Will close	Remain open

REF: LaSalle abnormal operating procedure LOA-IA-01, Loss of Instrument Air and/or Service Air, Page 3, Section E, Discussion.

67. 295019AK2.14 001
Upon a loss of Instrument/Service Air, which of the following components could continue to operate on its own instrument air supply?

A. Primary Containment Chiller "C"

B. Feedwater Regulating Valve

C. Fuel Pool Demineralizer Flow Control Valves

D. Reactor Building Ventilation Isolation Dampers

REF: LaSalle Licensed Operator System Descriptions Manual, Chapter 52, Primary Containment Chillwater System, Page 28, Section IV. Interconnections with other Systems.

68. 295020AK1.01 001
If an RPS bus is lost, what two (2) group isolations could result in a loss of the main condenser due to MSIV closure if quick corrective actions are not taken?

A. 4 and 10

B. 3 and 10

C. 3 and 4

D. 4 and 5

REF: LaSalle abnormal operating procedure LOA-RP-01, Loss of RPS.
LaSalle System Description, Chapter 49, PCIS, Page 38.

69. 295022G010 001

While operating at 80% power, the CRD Pump 1A trips. The operator attempts to start CRD Pump 1B; however,it also trips. Two accumulator trouble alarms come in.

What should the NSO do next?

A. Place the mode switch in shutdown.

B. Trip both RR Pumps to off.

C. Dispatch an operator to the CRD Pump room.

D. Monitor for rod drifts.

REF: Tech. Specs. 3.1.3.5

70. 295030EK2.04 001

During a transient in which RHR is needed for water level control, the LGAs state to only use RHR if Suppression Pool level is above -18 feet, because....

A. the RHR pumps may not have adequate net positive suction head to prevent cavitation and damage to the pumps.

B. HPCS or LPCS would be a better system to use to ensure that suppression pool level stays above the PSP curve.

C. unstable steam condensation could occur during a depressurization; therefore, other sources are used to prevent pressurizing the suppression chamber.

D. there is not enough water in the suppression pool to restore level from -161 inches to +36 inches. Therefore, other water sources should be used.

REF: L.P. LGA-01 page 22

71. 295033EK3.03 001

LGA-02, Secondary Containment Control, requires certain actions to be taken if a primary system is discharging outside secondary containment.

"Primary systems" are any plant systems...

A. whose leak rate will decrease as the reactor continues to depressurize.

B. whose pressure will change with drywell and/or suppression pool pressure.

C. required to shutdown the reactor or provide long-term core cooling.

D. that are safety-related and is required to be operable in all modes except cold shutdown.

REF: LaSalle lesson plan, LGA-02, Secondary Containment Control, Page 14.

72. 295038G011 001

Which of the following conditions requires entry into LGA-09, "Radioactive Release Control?"

A. A gaseous release of radioactivity requiring a GSEP classification at the ALERT level.

B. A fuel element failure that results in main steam line radiation exceeding 3 times their normal values.

C. An unisolable main steam line break that results in any secondary containment area exceeding their max safe values.

D. The uncorrected primary containment gross gamma radiation level exceeds 2000R/hr.

REF: LaSalle Emergency Operating Procedure, LGA-09, Radiation Release Control.

NOTE: Requires the use of LZP-1200-1 to evaluate the loss of containment barriers.

73. 295003AK2.02 001
Which of the following conditions will cause the 1A Diesel Generator to start?

A. Degraded bus voltage for 5 minutes on bus 142Y with no initiation signal present.

B. Loss of voltage on bus 143 with no ECCS initiation signal present.

C. Local start switch in start with transfer switch in AUTO.

D. Reactor water level at -100 inches.

REF: L.P. Diesel Generators and Auxiliaries Rev. 6 page 42

74. 295033EK2.04 001
Due to a leak in the RWCU heat exchanger room, the reactor building vent radiation levels increase to 13 mr/hr. What is the expected plant response to this condition? (Assume the operator has isolated the RWCU system)

A. The reactor building ventilation should isolate, and SBGT should auto-start.

B. The SBGT should auto-start and cause reactor building ventilation to isolate.

C. The SBGT should auto-start to assist the reactor building ventilation in reducing radiation levels.

D. The reactor building radiation alarm is the only expected plant response.

REF: L.P. LGA-02, Page 8.

75. 295021AK3.01 001
Following a loss of shutdown cooling with no other means of forced circulation available, the operator is directed to raise and maintain reactor water level high.

Why is reactor water level maintained at a high level?

A. establishes a path of coolant circulation which will prevent inadvertent reactor repressurization.

B. maintains the required net positive suction head for restarting the RHR Pump.

C. will provide an adequate margin to the low water level shutdown cooling isolation setpoint.

D. provides a large volume of relatively cool water to control the reactor temperature increase.

REF: LOP RH-07

76. 294001K1.02 002
Which of the following situations WOULD NOT be an appropriate use of a caution card?

A. Informing personnel a RWCU pump feed breaker shall remain OPEN, while maintenance is being performed on the pump.

B. Identifying a deviation exists between a local and remote voltage meter for the 1B diesel generator.

C. Directing the operator to notify the chemistry department prior to starting an RHR service water loop.

D. Informing the operator that the common RBCCW heat exchanger is lined up to unit-1.

REF: LaSalle administrative procedure, LAP 900-11, Caution Card Procedure, Page 1.

77. 294001K1.03 002
While performing a tour of the plant, you notice the following rad worker activities. Which of these activities WOULD NOT be considered a violation of radiation protection standards? You notice a rad worker...

A. adjusting his contact lens in a contaminated area.

B. chewing gum in the RCIC corner room.

C. in a contaminated area wearing eye glasses.

D. leaning over a rad rope to retrieve a wrench.

REF: LaSalle administrative procedure, LAP 1100-14, page 1.

78. 294001A1.01 002
Which one of the following is the MAXIMUM time allowed to complete the Department Head Review approval of a Temporary Procedure Change?

A. 14 days.

B. 7 days.

C. 21 days.

D. 3 days.

REF: LaSalle administrative procedure,LAP 820-4 page 3

79. 294001A1.16 001
A LIMITING SAFETY SYSTEM SETTING has been exceeded for Unit 2 and an automatic scram DOES NOT occur. A manual scram is then inserted. All rods have inserted to the Full-in position with the exception of 3 central control rods which are at position 24. Subsequent attempts to insert these rods to the Full-in position ARE NOT successful.

What GSEP classification is required, if any?

A. Site Emergency.

B. None required.

C. Unusual Event.

D. Alert.

REF: LaSalle emergency plan procedure, LZP 1200-1, Attachment A, page 4.

NOTE: Requires use of LZP-1200-1 for classifying GSEP event.

80. 212000G005 001
Which ONE of the following conditions would result in violation of a SAFETY LIMIT?

A. Reactor Mode Switch in Startup; Core Flow = 30% of rated; Reactor Pressure = 750 psig; APRMs indicate 28% power.

B. Reactor is shutdown; all fuel has been off-loaded; and a vessel draining event occurs resulting in a vessel level of -138 inches.

C. Reactor is at full power with core flow at 102% of rated; an APRM HI-HI Scram occurs at 115% reactor power.

D. Process computer is OOS. At +12.5 inches water level an ATWS occurs, however at -50 inches ARI inserts the control rods.

REF: Tech Specs 2.1.1

81. 259002A3.02 001
A reactor scram has occurred due to a low RPV level condition. Setpoint setdown is still active with RPV level at about 18 inches. The MDRFP is running and controlling level with FRV in single element autc control. The startup controller setpoint is at 36 inches.

What will be the effect on the feedwater system if the operator were to depress the setpoint-setdown pushbutton wiih the conditions described above?

A. RPV level will slowly increase to 36 inches over the next few minutes.

B. the feedwater regulating valve will immcdiately lockout at it's current position.

C. The feedwater regulating valve will fully open and the MDRFP will trip on high RPV level.

D. The setpoint setdown will not reset until RPV level is + 2 inches of the setpoint setdown setpoint of + 18 inches.

REF: LaSalle System Description, Chapter 31, Reactor Wter Level Control, Page 12.

82. 262002K4.01 001
Complete the following statement in regards to the operation of an uninterruptable power supply (UPS).

If the normal _____ UPS power supply voltage drops, the UPS will be supplied by the _____ power supply through a blocking diode. If both of these supplies fail, a static transfer switch will swap to a(n) _____ supply.

A. regulated A.C. / D.C. / unregulated A.C.

B. regulated A.C. / unregulated A.C. / D.C.

C. primary D.C. / unregulated A.C. / backup D.C.

D. D.C. / regulated A.C. / unregulated A.C.

REF: LaSalle Systems L.P., Chapter 43, A.C. Distributrion

83. 290002G005 001
With an initial RPV pressure of 835 psig, which one of the following is the MINIMUM pressure in psig that the reactor may be reduced to after one hour of cooldown?

Note: Use Tech. Spec. limits for cooldown.

A. 315

B. 350

C. 270

D. 290

REF: Tech. Spec. 3.4.6.1.

NOTE: This question requires the use of Steam Tables.

84. 295024G012 001
Following a major transient, the following conditions exist:

-Suppression Chamber Pressure	10 psig.
-Suppression Pool Level	0 feet
-Suppression Pool Temperature	165 degrees
-Drywell Pressure	14 psig
-Drywell Temperature	275 degrees and INCREASING
-Reactor Pressure	480 psig and DECREASING
-RPV Water Level	+9 inches and INCREASING

What actions should be taken to REDUCE Containment pressure?
(Assume no containment samples are available.)

A. Start Drywell Sprays.

B. Initiate RPV flooding.

C. Vent the Drywell using SBGT.

D. Stop Suppression Chamber Sprays.

REF: LGA-03, Primary Containment Pressure Control.

NOTE: Requires the use of the LGA flow charts.

85. 295030EK1.01 001
Why is -12 feet in the suppression pool of concern to the operator?

A. Adequate steam condensation through the downcomer vents during a LOCA cannot be assured below this level.

B. All suppression pool temperature indication becomes invalid at this level.

C. The increased air volume in the primary containment could cause an implosion of the drywell.

D. Vortexes at the suction of the ECCS pumps can begin at this level and can result in air binding of the pumps.

REF: LGA-03 L P., Objective T.1.a, Page 72.

86. 295030EK1.03 001
Given the following plant conditions:

-Reactor pressure is 900 psig
-Suppression Pool level is -6 feet and DECREASING
-Suppression Pool temperature is 170 degrees F.

Determine the Suppression Pool level at which the Heat Capacity Temperature Limit will be exceeded.

A. -12 feet.

B. -11 feet.

C. -10 feet.

D. -8 feet.

REF: LGA-03

NOTE: Requires the use of the LGA flow charts.

87. 295030G004 001
When performing an Emergency Depressurization, ADS should be initiated by using the pushbuttons. What is the reason for this?

A. Using the control switch utilizes 110 psig drywell pneumatic supply to open the valves, which may not be sufficient if drywell pressure is high.

B. The ADS pushbutton opens all the SRVs at once, whereas using the control switches would be a slower process.

C. Using the ADS pushbutton ensures the SRVs stay open, whereas the control switches could be returned to AUTO and allow the valves to close.

D. Using the ADS pushbutton opens 5 SRVs at once, ensuring that at least 5 valves are open.

REF: L.P. LGA-04, Page 14.

88. 295030G004 002
Which of the following describes the bases for the Suppression Pool low level limit in Tech Specs?

The low level limit is based on ensuring...

A. adequate suppression pool capacity to condense the steam during a reactor LOCA to prevent exceeding 45 psig in the Drywell/Suppression Chamber.

B. an adequate supply of water is available to the emergency core cooling systems pumps to ensure adequate core cooling during a LOCA.

C. adequate room for the non-condensibles in the drywell to be collected in the Suppression chamber during a LOCA to prevent exceeding 54psig in the Drywell/Suppression Chamber.

D. any steam/non-condensibles that get blown down into the Suppression Chamber during a LOCA go through water to lower radiation levels.

REF: Tech. Specs. bases 4.6.2

89. 295031G012 001

Given:

-Rx scram and all control rods in to 00
-MSIVs are closed due to low level
-RPV level is -161 and lowering
-No high pressure injection systems are available

The Shift Engineer directs an Emergency Depressurization per LGA-04. The operator reports that only four ADS valves opened. Which of the following actions is required?

A. Re-open the MSIVs to establish the condenser as a heat sink and open the turbine bypass valves.

B. Enter LGA-07 to steam cool the core since four ADS valves will not depressurize the RPV.

C. Reset the initiation and reclose the ADS valves until RPV level drops to -211.

D. Enter LGA-05 to flood the RPV since the condenser is unavailable.

REF: L.P., LGA-04, Page 18.

NOTE: Requires the use of the LGA flow charts.

90. 295031G012 002

While operating near full power, the unit experienced a major reactor coolant leak in the primary containment. All safety systems operated properly, and the appropriate LGAs were entered.

The following sequence of events occurred:

TIME	EVENTS
0830	Reactor scram and all rods inserted to 00.
1110	Saturation conditions reached in the drywell.
1200	All ADS valves are open with RPV pressure maintained about 60 psi above suppression chamber pressure.
1315	Drywell sprays have reduced drywell temperature to 195F.
1345	The IMs have backfilled the reference legs for the water level indicators.

The current time is 1400.

What is the MAXIMUM time that injection can be stopped and water level lowered to observe water level indicator response?

A. 4 minutes

B. 5 minutes

C. 9 minutes

D. 10 minutes

REF: LGA-05, RPV Flooding; LaSalle LGA Lesson Plan, LGA-05, RPV Flooding, Page 48.

NOTE: Requires the use of the LGA flow charts.

91. 295031G004 001
While operating at power, a large coolant leak in the primary containment occurred. Following the scram, 20 control rods failed to fully insert at positions greater than 02. All applicable LGAs have been entered.

The following conditions currently exist:

- The RPV Saturation Limit (RSL) was exceeded.
- Five ADS valves are open.
- Feedwater is being used for RPV injection.
- APRMs indicate about 3% and slowly decreasing.
- Reactor pressure is 150 psig and decreasing.

Describe the plant status indicated by the decreasing reactor pressure.

A. The feed injection rate cannot maintain adequate pressure; this indicates that core cooling is inadequate.

B. The reactor decay heat is insufficient to vaporize the injecting feedwater; this indicates adequate core submergence.

C. The steaming rate is less than the feedwater injection rate; this indicates the reactor is shutdown.

D. The vessel has been flooded to the main steam lines; this ensures adequate core cooling.

REF: LaSalle Lesson Plan, LGA-05, RPV Flooding, Page 26

92. 295038EK1.02 001
When classifying a GSEP condition, three fission product barriers would be considered lost if:

A. Containment radiation levels are 120 R/hr and rising. The MSIVs close on HI-HI MSL radiation, and both MSIVs in MSL "B" fail to fully close.

B. A casualty occurs which leads to a TAF emergency depressurization. RPV Flooding is subsequently entered and level is restored on the narrow range instruments.

C. A steam leak occurs in the MSIV tunnel resulting in tunnel temperatures of 320 degrees. The Group 1 isolation fails; however, ECCS Systems operate correctly and restore vessel level prior to reaching TAF.

D. A large LOCA results in DW pressure peaking at 12.5 psig and vessel level is -180 inches. All isolations and auto starts occur as designed. Vessel level remains at -180 inches for several minutes and is subsequently restored.

REF: LZP 1200-1, Attachment A
Note: This question requires the use of LZP-1200-1.

93. 295038EK2.03 001
LGA-09 directs the operator to restart turbine building ventilation if needed. This will...

A. prevent a possible unmonitored ground level release from the turbine building.

B. provide a source of dilution flow for the SBGT system if running.

C. allow continued operation of turbine building equipment without exceeding max safe conditions.

D. provide a backup to secondary containment if reactor building ventilation fails to isolate.

REF: Lasalle lesson plan LGA-09, Rad Release Control, Page 8.

94. 295026EK3.01 001
LGA-03, Primary Containment Control, directs the operator to maintain suppression pool temperature below the HCTL and if you cannot, then reduce reactor pressure to stay inside the HCTL.

The basis for reducing reactor pressure to stay inside the HCTL is to ...

A. ensure the suppression pool has enough capacity to accept a full reactor depressurization without exceeding the design temperature of the suppression pool.

B. ensure there is adequate margin to the ECCS suction piping design temperature in the event of a full reactor depressurization.

C. prevent inadequate steam condensation in the event of a full reactor depressurization, resulting in the suppression pool to drywell vacuum breakers opening.

D. allow the operator to depressurize the reactor to a point where RHR and LPCS can inject prior to the suppression pool temperature exceeding the RHR NPSH limit.

REF: L.P. LGA-03 Primary Containment Control rev. 11 page 52

95. 295015AK1.02 001

During an ATWS, why is the operator directed NOT to cool down until the reactor is shutdown without boron injection or the cold shutdown weight of boron has been injected?

a. Cooling down the reactor with an ATWS in progress will add positive reactivity due to the water in the reactor being cooler and more dense.

b. Core flow may become restricted due to the cooler water causing the boron to come out of solution and depositing on core surfaces.

c. Higher reactor pressure helps mixing of the boron due to the higher steaming rates and minimizes the time to complete the shutdown.

d. Lowering reactor pressure would cause the water in the reactor to "swell", thus lowering the boiling boundary and increase the chance to damage fuel

REF: L.P. LGA-10 Failure to Scram Rev. 3 page 26

96. 295037EK2.09 001

No high pressure systems are available. RPV level is at -100" and slowly dropping with several rods not fully inserted into the core.

Why is RHR injection through the SDC return valves an acceptable level control method, but injection through the LPCI injection valves is not acceptable?

The SDV return valves...

A. inject outside the shroud.

B. can be throttled.

C. create less flow restriction.

D. require less time to inject.

REF: L.P. LGA-10 Failure to Scram Rev. 3 page 30

97. 295004AK3.01 001
If no 250VDC battery charger is available to the 250VDC loads, why are some loads manually shed?

A. To maintain RCIC availability for as long as possible.

B. To prevent overcurrent trips on safety related equipment.

C. To provide D.C. power to the computer U.P.S.

D. To prevent those loads from inadvertently tripping.

REF: L.P. D.C. Distribution Rev. 4 page 30

98. 295004G008 002
While performing LOS-DC-W1 on the Unit-1, Division-2 125 VDC battery, you obtain the following data:

- ICV: 2.14
- Temperature: 86 degrees F
- Level: -1 (as recorded)
- Specific Gravity (uncorrected): 1.201
- Battery Charger Current: 5 amps on float

S.G.(corrected) =

$$\text{S.G.(uncorrected)} + \frac{(\text{T-77 degrees F})(.001)}{3} + (\text{Level Mark})(.003)$$

Based on the above information, the Specific Gravity is ___?___, which ___?___ meet the Technical Specification Category A limit.

A. 1.201, does

B. 1.198, does NOT

C. 1.195, does NOT

D. 1.207, does

REF: Technical Specification 3.8.2.3

NOTE: This question requires the use of Tech. Spec. 3.8.2.3.

99. 295012G007 001
In LGA-03, Primary Containment Control, the operator is directed to initiate drywell sprays prior to reaching 340 degrees in the drywell.

Why was 340 degrees chosen as the action point?

A. This is the maximum temperature at which the ADS valves are qualified.

B. All level instruments are unreliable at drywell temperatures above 340 degrees.

C. This is the design temperature of the drywell and actions should be taken to prevent this temperature.

D. This is the maximum temperature at which the inboard MSIVs are operable for group isolations.

REF: L.P. LGA-03 Primary Containment Control Rev. 11, page 42

100. 295029EK2.05 001
At what MINIMUM suppression pool level would you expect the suppression pool-to-drywell vacuum breakers be covered?

A. 745 feet elevation

B. 807 feet elevation

C. 700 feet elevation

D. 667 feet elevation

REF: L.P. Primary and Secondary Containment Rev. 5 page 6

ANSWER KEY

1. A
2. A
3. A
4. C
5. A

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6. A
7. A
8. A
9. C
10. A

11.D
12.A
13.A
14.A
15.A

16.A
17.A
18.A
19.A
20.A

21.B
22.A
23.A
24.A
25.A

26.A
27.A
28.A
29.A
30.A

31.A
32.A
33.A
34.A
35.A

36.A
37.B
38.A
39.A
40.A

ANSWER KEY (CONTINUED)

41.A
42.A
43.A
44.A
45.A

46.A
47.A
48.A
49.A
50.A

51.A
52.A
53.A
54.A
55.A

56.A
57.A
58.A
59.A
60.A

61.A
62.A
63.A
64.A
65.A

66.A
67.A
68.A
69.A
70.A

71.A
72.A
73.A
74.A
75.A

76.A
77.C
78.A
79.A
80.A

ANSWER KEY (CONTINUED)

81.A
82.A
83.A
84.A
85.A

86.A
87.A
88.A
89.A
90.B

91.A
92.A
93.A
94.A
95.A

96.A
97.A
98.A
99.A
100.A