



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

ENCLOSURE 1

EXAMINATION REPORT - 50-259/92-301

Facility Licensee: Tennessee Valley Authority

Facility Name: Browns Ferry Nuclear Plant

Facility Docket Nos.: 50-259, 50-260 and 50-296

Facility License Nos.: DPR-33, DPR-52 and DPR-68

Examinations were administered at the Browns Ferry Nuclear Plant near Athens, Alabama.

Chief Examiner: Michael E. Ernst
for D. Charles Payne

12/29/92
Date Signed

Examiners: J. Bartley, Region II
M. Daniels, Sonalyst, Inc.

Approved By:

Michael E. Ernst
Michael E. Ernst, Chief
Operator Licensing Section 2
Division of Reactor Safety

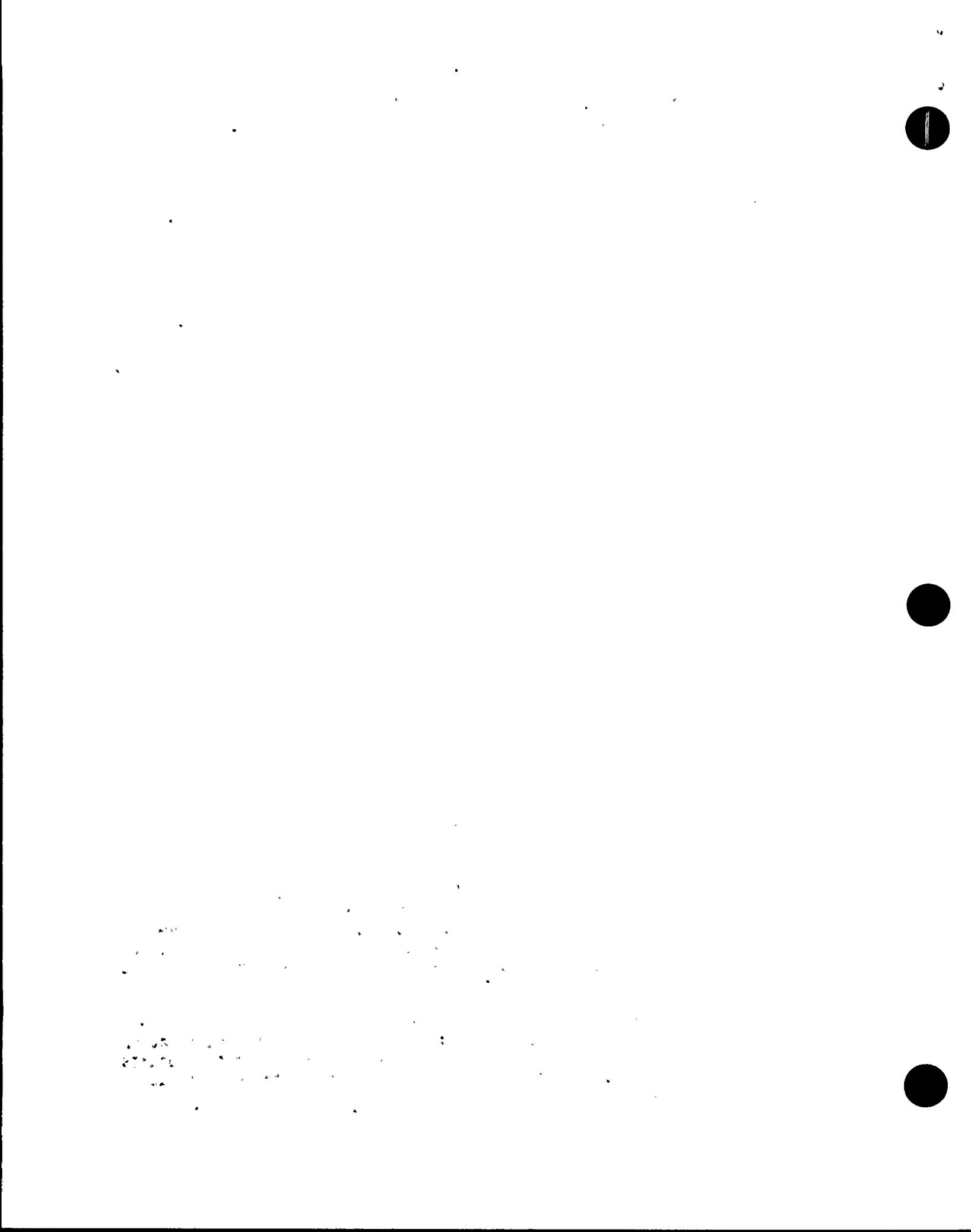
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SUMMARY

Scope: Regular, announced requalification examinations were conducted during the weeks of November 30 and December 7, 1992. The examinations were administered in accordance with the Examiner Standards (ES), NUREG-1021, Revision 7 (draft). Written and operating examinations were administered to 8 Senior Reactor Operators (SROs) and 12 Reactor Operators (ROs). An initial retake examination was administered to one SRO who had failed the simulator portion of the examination given in September 1992.

Results: All 20 operators passed the requalification examination. Four of four crews evaluated passed the simulator portion of the examination. One SRO passed the initial retake examination. Based on the results of the examinations, the Browns Ferry Requalification Program has been determined to be satisfactory.

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In the Operations functional area, a strength was identified in the performance of crews during the simulator portion of the operating examination (paragraph 2.e).

In the Engineering and Technical Support functional area, a strength was identified regarding the performance of the simulator facility (paragraph 2.f).

While some individual operator weaknesses were noted, no generic operator weaknesses were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*T. Albright, Simulator Services Manager
*D. Ashley, Operations Training Manager, TVA Corporate
R. Champion, Shift Operations Supervisor Instructor, Training
*T. Chinn, Shift Operations Supervisor Instructor, Training
*M. DeRoche, Operations Training Manager, BFN
*T. Dexter, Training Manager
*J. Duke, Shift Operations Supervisor, Operations
*M. Herrell, Plant Operations Manager
D. Hill, Contract Instructor, FRG, Inc.
*R. Moll, Operations Superintendent
J. Parshall, Shift Operations Supervisor Instructor, Training
*G. Pierce, Site Licensing Manager
*J. Scalice, Plant Manager
*O. Zeringue, Vice President, Browns Ferry

NRC Employees

*J. Bartley, Region II
M. Daniels, Sonalysts
R. Musser, Resident Inspector
*C. Patterson, Senior Resident Inspector
*C. Payne, Chief Examiner, Region II
*P. Rush, Intern, Nuclear Reactor Regulation

*Attended exit meeting

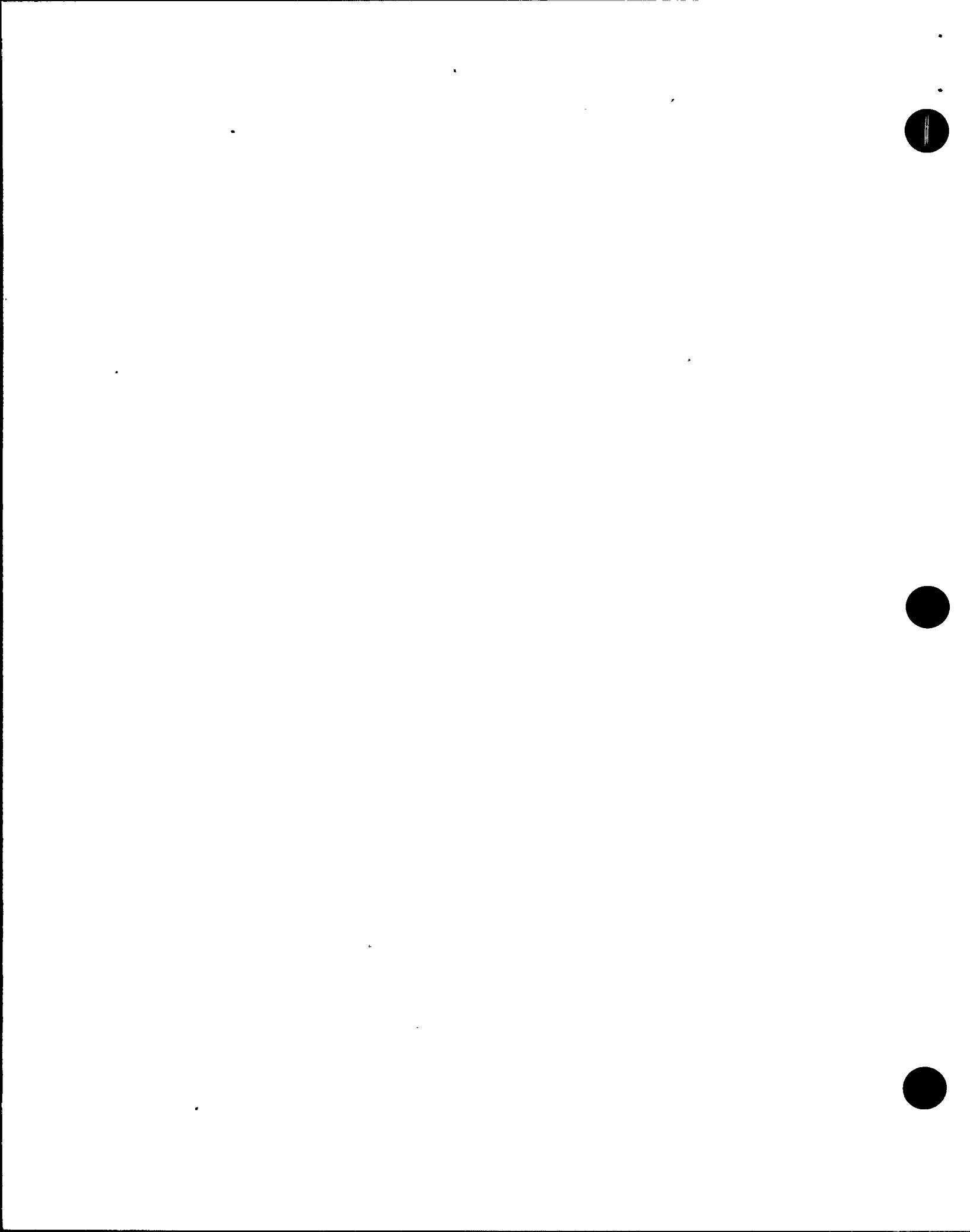
Other licensee employees contacted included instructors, operators, engineers and office personnel.

2. Discussion

a. Results and Program Evaluation

This was the third requalification examination conducted at the facility. The examination was administered under the guidelines of NUREG-1021, Revision 7 (draft). Eight SROs and twelve ROs passed the examination. Four of four crews evaluated passed the simulator portion of the examination. One SRO passed an initial retake examination.

Based on the examination results, the Browns Ferry Requalification Program meets the criteria established in NUREG-1021, ES-601.D.2, Revision 7 (draft), and has been determined to be satisfactory.



b. Reference Material

The licensee supplied reference material to support examination preparation. Procedures and lesson plans provided were adequate. The facility banks of examination materials were good in both scope and quality. The quantity of scenarios, written examination questions, and Job Performance Measures (JPMs) met NRC guidelines. The quality of the banks appeared good, and a dynamic revision and updating process appeared to be ongoing.

The licensee supplied a sampling plan describing the requalification cycle. The process used for selecting topics to be included in the examination was explained at a meeting held between licensee examination personnel and NRC examiners. The selection process met the guidelines for NRC administered examinations and supported testing both knowledge gained during the requalification program and other general areas. Some facility confusion existed as to the use of the NRC "skyscraper" model (for initial examinations) in the requalification sample plan but was clarified during the meeting.

c. Examination Development

The licensee supplied the NRC with proposed examinations. The examinations were good in content and structure. The NRC reviewed the examinations and proposed several minor improvements, which, after review, were accepted by the licensee.

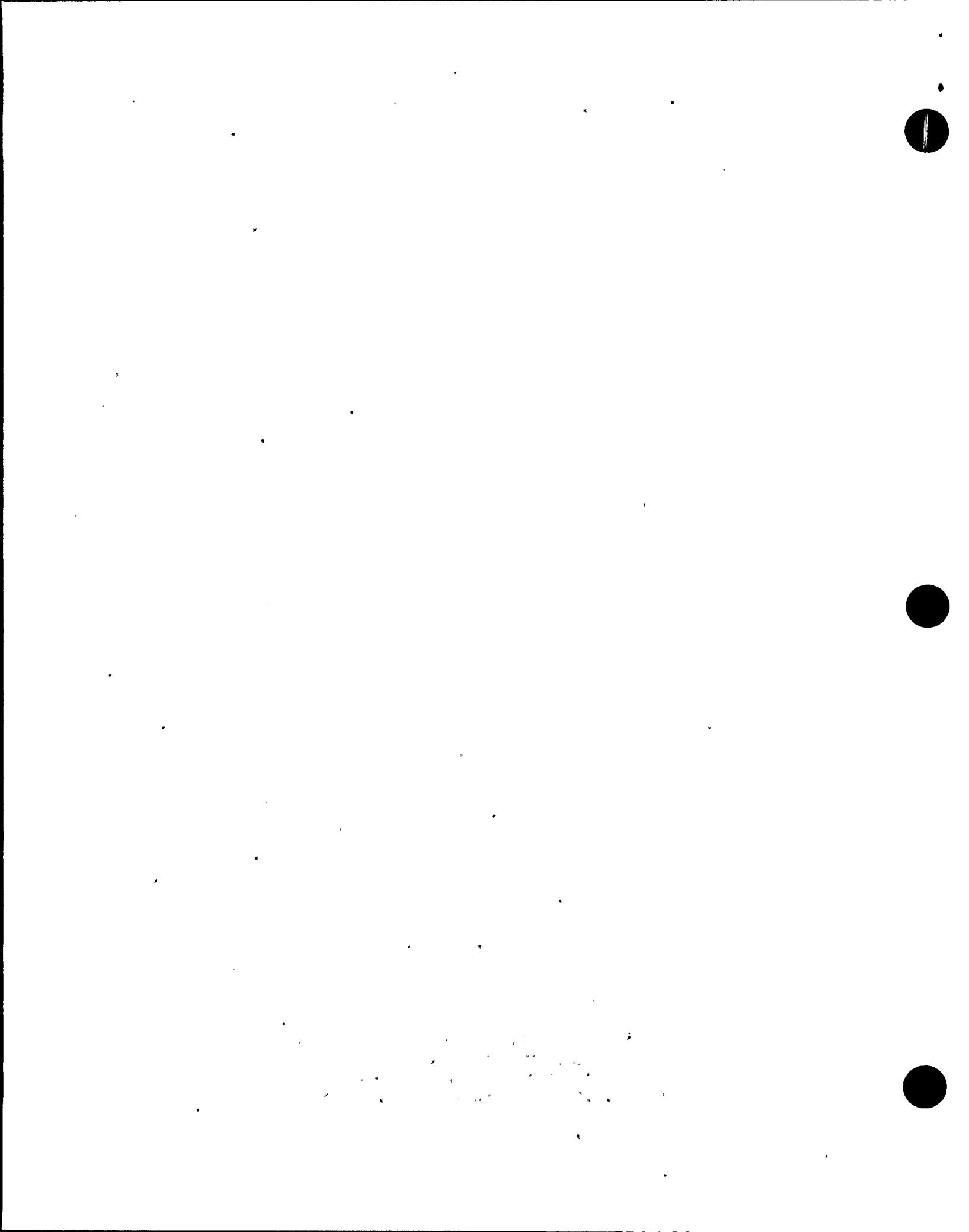
(1) Written Examination

The Part A (static simulator) examination submitted by the facility was reviewed by the NRC, and it was noted that some questions tested low levels of knowledge. Additionally, some questions, intended to be specific to the static scenario, were actually generic in nature. These questions were corrected by removing initial conditions from the operators turnover sheet. Changes were also made by the facility to about 25% of the proposed questions to improve the stems and/or distractors. No changes were made to the static simulator setup.

The Part B examination submitted by the facility was reviewed by the NRC and evaluated as good in question scope and depth. Again, changes were made by the facility to about 25% of the proposed questions to improve the stems and/or distractors.

(2) Simulator Scenarios

The scenarios submitted by the facility reflected a strong commitment by management to be operationally oriented and challenging simulator examinations. Each scenario tested the Emergency Operating Instructions to significant depth and



complexity. The NRC examiners made only minor modifications to scenario initial conditions in order to provide continuity between scenarios. The scenarios submitted met the guidelines of NUREG-1021, Revision 7 (draft), for scenario attributes. The simulator exercise guides were very thorough, providing simulator setup information, outside operator role play cues, expected operator actions and a list of critical tasks expected to be performed. All scenarios were validated before use. Also, as permitted by the Examiner Standards, the NRC examiners elected to use the substitute scenario that was developed by the facility for the examination in lieu of another.

(3) Job Performance Measures

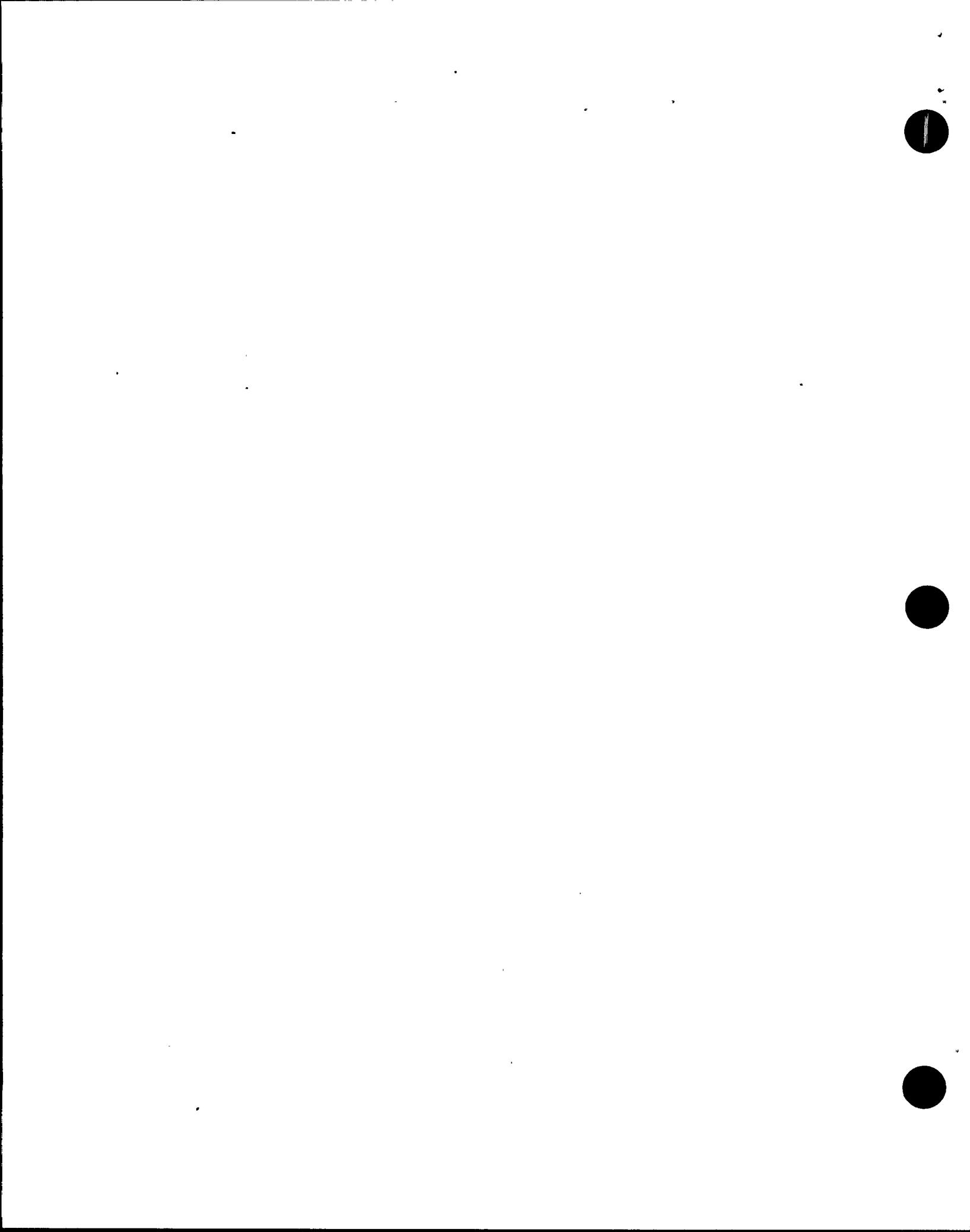
JPMs submitted for the examination were good in scope and content. JPMs were validated before use either by actual performance in the simulator, walkdown in the plant, or by a detailed review with the associated procedure. One JPM (RPS Manual Scram SI) was replaced to allow a more safety-significant JPM be tested. Several JPMs required some modifications which included: 1) some JPM steps incorrectly identified as critical, 2) some JPM cues for the operator that were inappropriate or incorrect, and 3) some response feedback that was not consistent with how it would be received in the plant. Detailed discussions were held with the requalification training staff on particular JPM deficiencies found during the examination.

Abnormal Operating Instruction (AOI) related JPMs were minimally represented in the JPM examination bank. There were 10 JPMs in the bank covering four AOIs (out of 41 total AOIs). Approximately seven other AOIs appear to be appropriate for the examination bank. Also, with the impending startup of Unit 3, JPMs specific to that unit's tasks should be developed. The Training Department is aware of these needs and has a program to develop AOI and Unit 3 JPMs as procedures are identified and written. The facility is encouraged to continue expanding their JPM bank as additional operator tasks are identified.

d. Examination Administration

(1) Scheduling and Conduct of Examinations

The administration of examinations was conducted without major problems. Scheduling of the written examination was exceptional in that the operators from both weeks of the examination were scheduled to conduct that portion of the examination on the same day. This greatly reduced the burdens of written examination preparation and administration. Additionally, the scheduling of



the other examination parts was well planned and executed, resulting in minimal stress to the operators taking the exam and reduced fatigue of the examiners conducting the exam.

(2) Facility Evaluators

Facility evaluators in the operating portions of the examination were able to administer the examinations competently and provide accurate, unbiased evaluations of operator performance. Some inappropriate cueing occurred and also some cues or plant response feedback were missed when they would have been appropriate. One evaluator incorrectly graded a step or two on several JPMs but this had no effect on exam outcome because the steps were non-critical.

e. Operator Performance

As evidenced by the high percentage of operators and crews passing the examination (paragraph 2.a), operator performance was excellent. Operator knowledge of the plant and its systems was good. During simulator examinations, crews in the simulator demonstrated an excellent ability to use emergency procedures successfully to mitigate the effects of simulated complex accident situations. This performance of crews during the simulator portion of the operating examination is identified as a facility strength.

The examiners also observed that interaction between the operations and training organizations continued to be strong and ongoing. The examiners considered that the strong relationship between these two organizations contributed to the good performance of the operators.

One staff crew demonstrated problems in two areas during the dynamic simulator examination. One area involved the Unit Operator's ability to line up of the Residual Heat Removal System for drywell sprays and suppression pool cooling. While defective drywell spray override switches (found later by simulator technicians) may have contributed to the difficulty, operator performance was considered to be acceptable but weak. The other area of weakness concerned communications. This crew's communication skills were not up to the same level of performance as the other three crews tested. Many information exchanges were informal and utilized slang terminology. However, no operator errors occurred during the two simulator scenarios run on this crew as a result of this observation.

f. Simulator Fidelity

During the examination, the simulator performed well. The capabilities of the simulator allowed for all desired events to be accurately simulated, and the overall status of the simulator was

good. The variety of malfunctions was large, permitting great flexibility in scenario direction and related training. The capabilities and performance of the Browns Ferry simulator is also identified as a facility strength.

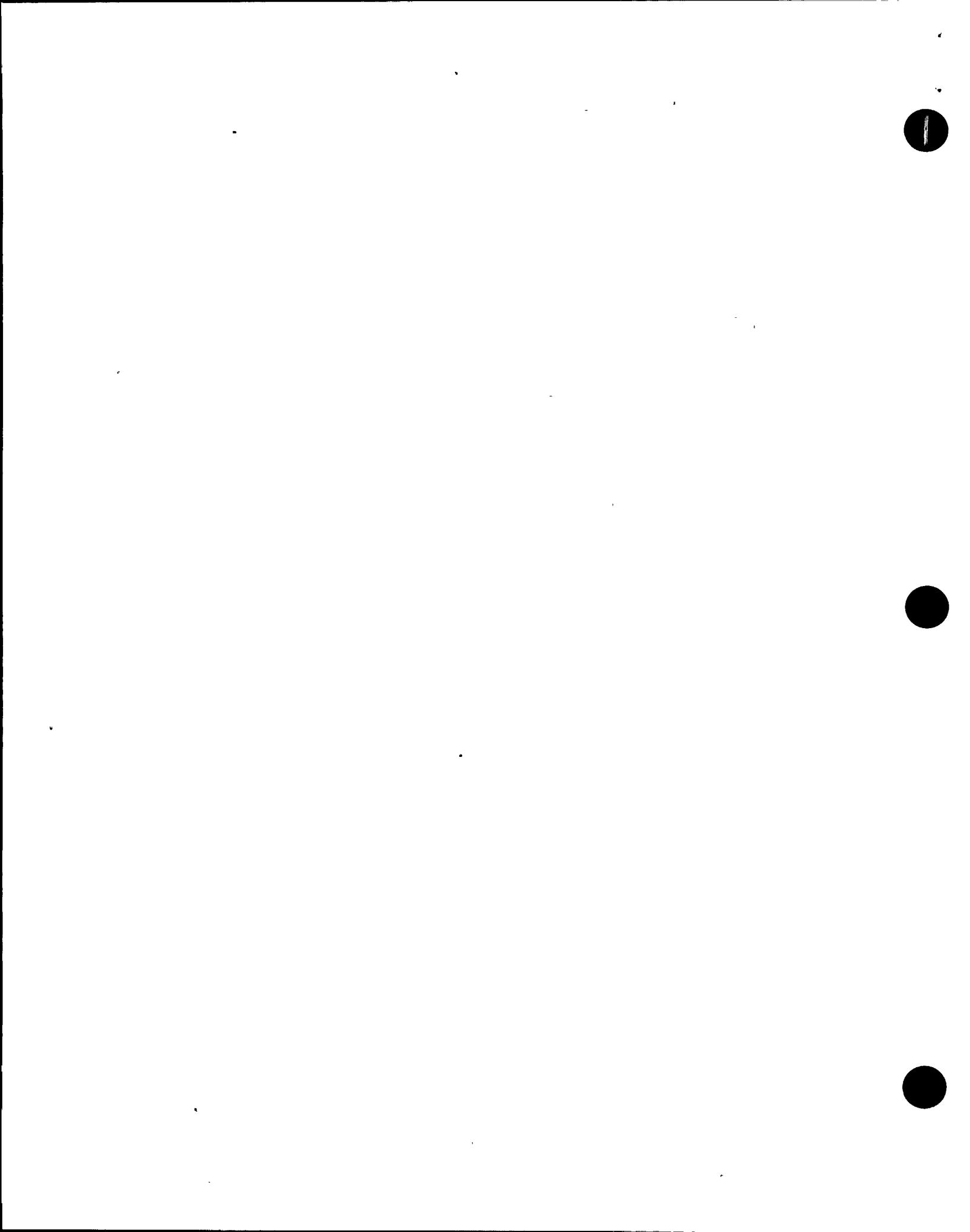
g. Procedures

- (1) 2-EOI Appendix 18, Suppression Pool Water Inventory Removal and Makeup. Step 3.a.2) directs the opening of 2-74-529A(B), RHR DR PUMP A(B) ISOL. The valve in the plant is actually labeled "2-74-529A(B), RHR DRAIN PUMP A(B) SHUTOFF VLV".
- (2) 2-EOI Appendix 12A, Containment Venting. Step 4.b.8) has the operator verify 2-FIC-84-20, CAD TRAIN A VENT TO SGT indicates approximately 100 scfm. During every performance of this appendix, this indication is widely fluctuating and causing a high pressure alarm on 2-PA-84-21, SGT SYSTEM DUCT HIGH PRESSURE. If the above response is typical of the system during startup, then the procedure steps are in incorrect order for efficient performance of the task.
- (3) 2-EOI Appendix 12A, Containment Venting. Step 4.b has the operator line up 2-FCV-84-20, CAD TRAIN A VENT TO SGT to vent the containment to the Standby Gas Treatment System by setting flow to approximately 100 scfm. Procedural guidance is provided for the operator if the Standby Gas Treatment duct high pressure alarm is received; however, no procedural transition exists to direct the operator to step 4.c (to line up 2-FCV-84-19, CAD TRAIN B VENT TO SGT) if the operator can not achieve 100 scfm flow.

Within the areas inspected, no violations were identified.

3. Exit Interview

The examination scope and findings were summarized with those persons indicated in paragraph 1 on December 10, 1992. The examiners described the areas examined and discussed in detail the results listed above. Dissenting comments were not received from the licensee. Proprietary information is not contained in this report.



ENCLOSURE 2

SIMULATOR FIDELITY REPORT

Facility Licensee: Tennessee Valley Authority

Facility Docket Nos.: 50-259, 50-260 and 50-296

Operating Tests Administered On: December 2 - 9, 1992

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

During the conduct of the simulator portion of the operating tests, the following items were observed:

<u>ITEM</u>	<u>DESCRIPTION</u>
None	

Browns Ferry
Regual Exam

SECTION 1
Exam #1

ANSWER KEY
E: 1

EXAM: 176021C12W4A

1) PV:1.0 Q#:5251 RT:2.0 DF:0 LP:OPL176.021, OPL71.013/9 CT:SYS, 021

Which of the following caused the RWCU isolation:

- a. SLC initiation
- b. High area temperature
- c. High floor drain temperature
- d. High drywell pressure

CORRECT RESPONSE :A

REFERENCE:

NONE

2) PV:1.0 Q#:5374 RT:3.0 DF:0 LP:OPL176.021, OPL171.022/6 CT:SYS, 021

Given current plant conditions, why are the APRM high/high and APRM high indicating lights illuminated on panel 9-14?

- a. APRM high/high due to exceeding .58W + 62, and APRM high due to exceeding .58W +50.
- b. APRM high/high due to exceeding .66W + 54, and APRM high due to exceeding 12%.
- c. APRM high/high due to exceeding 120%, and APRM high due to exceeding 12%.
- d. APRM high/high due to exceeding 15%, and APRM high due to exceeding 12%.

CORRECT RESPONSE :D

REFERENCE:

NONE

3) PV:1.0 Q#:5373 RT:3.0 DF:0 LP:OPL176.021, OPL171.024/4, OPL171.035/9 CT

Given current plant conditions, why are both the RBM and RWM NOT enforcing?

- a. RWM is not enforcing because steam flow is >30%; RBM is not enforcing because no rod is selected.
- b. RWM is not enforcing because turbine first stage pressure is >30%; RBM is not enforcing because both steam flow and feedwater flow are >30%.
- c. RWM is not enforcing because both steam flow and feedwater flow are >30%; RBM is not enforcing because no rod is selected.
- d. RWM is not enforcing because no rod is selected; RBM is not enforcing because turbine first stage pressure is >30%.

CORRECT RESPONSE :C

REFERENCE:

NONE

4) PV:1.0 Q#:5254 RT:3.0 DF:0 LP:OPL176.021, OPL171.038/5B CT:SYS, 021

Given current plant conditions, which of the following describes the response if reactor pressure decreases below 450 psig?

- a. Shutdown bus and board 43 switches trip to manual.
- b. 480 volt load shed logic initiates.
- c. Shutdown bus and board transfer to alternate feeder.
- d. No change to current electrical and switch alignment.

CORRECT RESPONSE :A

REFERENCE:

NONE

5) PV:1.0 Q#:5380 RT:3.0 DF:0 LP:OPL176.021, OPL171.009/2 CT:SYS, 021

Given current plant conditions, if the turbine tripped, how many SRV's will have to be opened to maintain Reactor pressure within the capacity of the BYPASS valves?

- a. 2-3
- b. 4-5
- c. 6-7
- d. 8-9

CORRECT RESPONSE :B

REFERENCE:

NONE

6) PV:1.0 Q#:5378 RT:3.0 DF:0 LP:OPL176.021, OPL171.007/2 CT:SYS, 021

Given current plant conditions, if reactor water level was intentionally lowered, how would the panel 9-4 jet pump flow indication respond?

- a. Indicated jet pump and core flow remain constant.
- b. Indicated jet pump flow decreases and indicated core flow decreases
- c. Indicated jet pump flow increases and indicated core flow increases
- d. Indicated jet pump flow increases and indicated core flow decreases

CORRECT RESPONSE :B

REFERENCE:

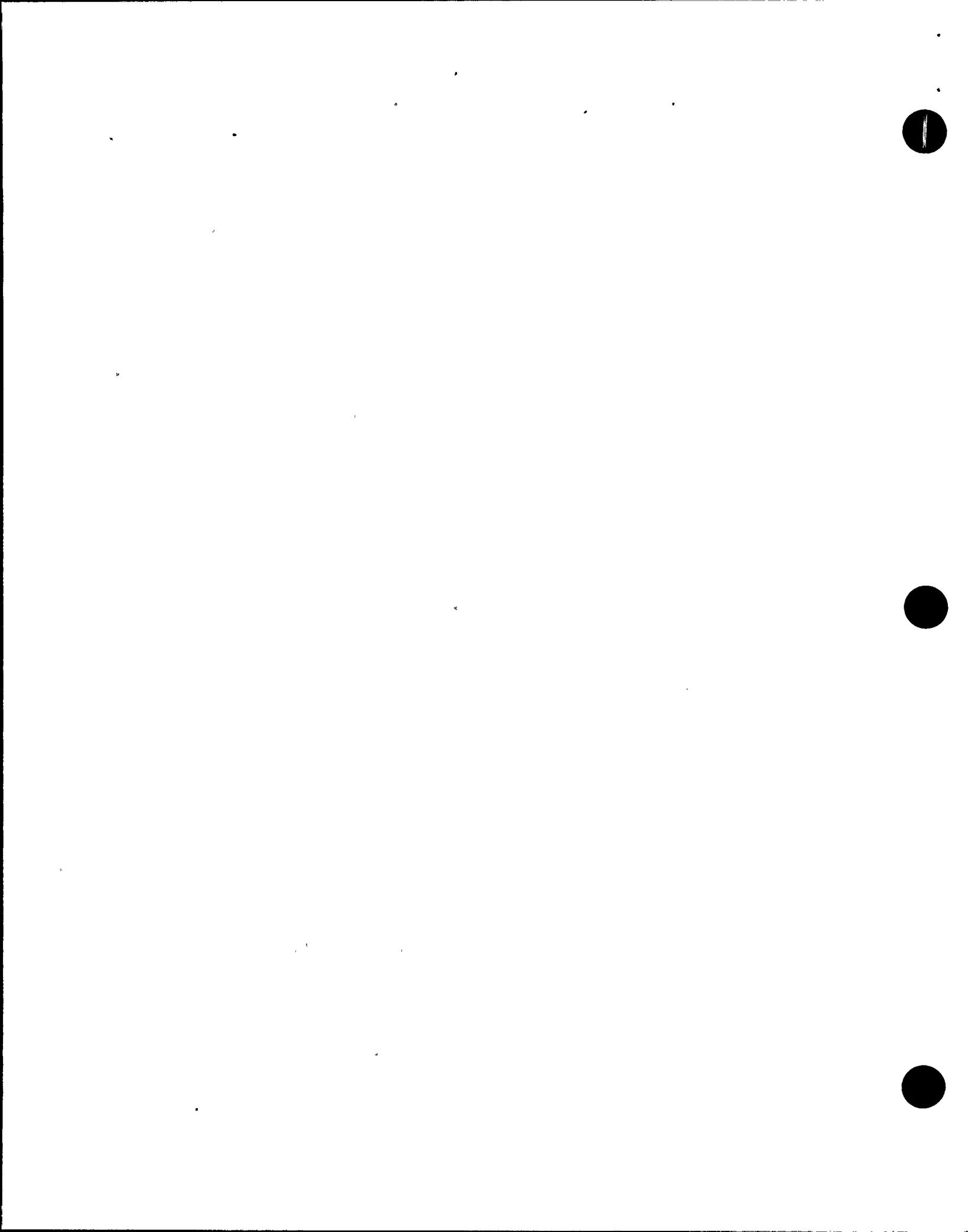
NONE

7) PV:1.0 Q#:9382 RT:3.0 DF:0 LP:OPL176.021, OPL171.017/6 CT:SYS, 021

Given the current plant conditions, what would happen if keylock switch 2-HS-84-36, "DW/Suppr Chbr Train B Vent", was taken to the DRYWELL Position?

- a. The vent path from the PSC will not be affected.
- b. The vent path will re-align to the drywell.
- c. The vent path will be from the PSC and the drywell.
- d. All vent paths will be isolated.

CORRECT RESPONSE :D



REFERENCE:
NONE

8) PV:1.0 Q#:9381 RT:3.0 DF:0 LP:OPL176.021, OPL171.017/6 CT:SYS, 021

Given current plant conditions, to monitor primary containment hydrogen and oxygen per EOI-2.

- a. Reset PCIS, depress 2-HS-76-91 and 92, and restart sample pumps.
- b. Take HS 43-39 and 41, PASS PCIS Logic Bypass, to Bypass and restart sample pumps.
- c. Take 2-HS-76-49 and 59 to NORMAL, return to initial position, and restart sample pumps.
- d. Take HS-76-69 and 79, Sample Isolation Bypass, to Bypass and restart sample pumps.

CORRECT RESPONSE :D

REFERENCE:
NONE

PV:1.0 Q#:6762 RT:3.0 DF:0 LP:OPL176.021, OPL171.007/26 CT:SYS, 021

Given current plant conditions, why are the recirculation pumps not running?

- a. A & B Recirc pumps were tripped manually.
- b. RPT systems A and B tripped the Recirc pumps.
- c. The pumps tripped on low reactor water level.
- d. The ATWS/ARI logic tripped the recirc pumps.

CORRECT RESPONSE :A

REFERENCE:
NONE

10) PV:1.0 Q#:9546 RT:3.0 DF:0 LP:OPL176.999, OPL171.205/2 CT:EOI, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Analyze each of the following and Determine the one that identifies a condition where actual water level is above TAF. (RHR & Recir Pump shutdown)

- a. RPV Pressure = 800 psig; with -225" indicated on LI 3-52 and 62A.
- b. RPV Pressure = 500 psig; with -240" indicated on LI 3-52 and 62A.
- c. RPV Pressure = 200 psig; with -200" indicated on LI-3-52 and 62A.
- d. RPV Pressure = 100 psig; with -230" indicated on LI-3-52 and 62A.

CORRECT RESPONSE :C

REFERENCE:

NONE

11) PV:1.0 Q#:8927 RT:2.0 DF:0 LP:OPL176.999, OPL171.076/1 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

While using the SPDS terminal the unit operator notes a parameter value display change from GREEN to YELLOW. Which of the following describes the significance of the change in color?

- a. The computer is no longer receiving an input signal for that parameter.
- b. The computer has substituted a value for that parameter.
- c. The parameter's normal operating range has been exceeded.
- d. The parameter has exceeded an EOI entry condition.

CORRECT RESPONSE :C

REFERENCE:

NONE

12) PV:1.0 Q#:4199 RT:2.0 DF:0 LP:OPL176.999, OPL171.029/3B CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Which of the following statements correctly describes the functioning of the Reactor Manual Control System (RMCS) auxiliary timer?

- a. The auxiliary timer monitors the rod insert and withdraw cycles to prevent a faulty Multiflex Timer from causing uncontrolled rod movement.
- b. The auxiliary timer deselects the selected rod at the end of the Multiflex Timer sequence for that movement cycle.
- c. If the auxiliary timer times out, the auxiliary timer generates a select rod block.
- d. If the auxiliary timer times out, the auxiliary timer generates both a rod withdrawal and a rod insert block. Multiflex Timer sequence for that movement cycle.

CORRECT RESPONSE :C

REFERENCE:

NONE

PV:1.0 Q#:5789 RT:3.0 DF:0 LP:OPL176.999, OPL171.044/11 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

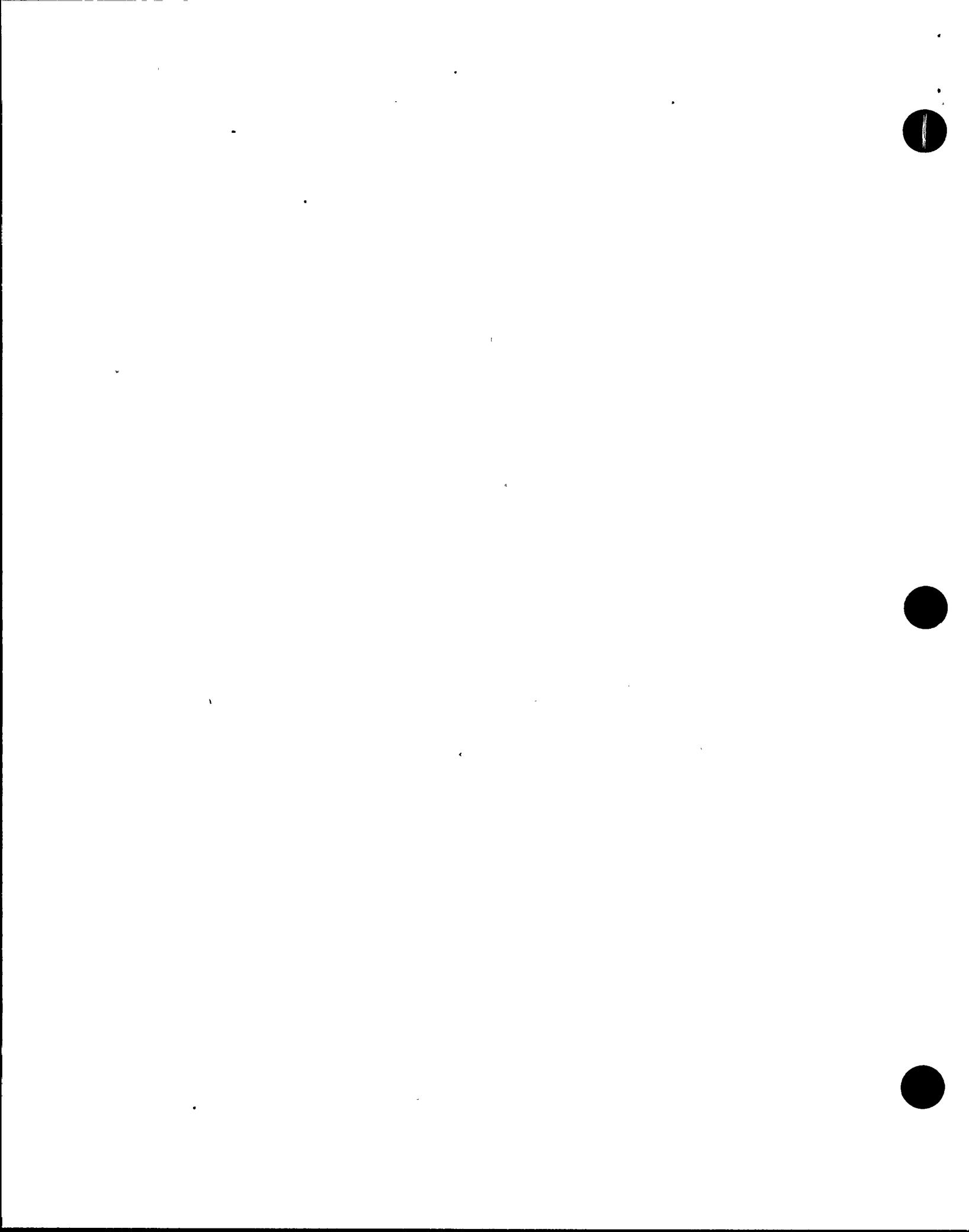
Following a loss of coolant accident in which level decreased to -150", what signals must be present and/or actions performed to allow opening both containment spray valves (FCV-74-60 and 61)?

- a. Switches 2-XS-74-121 and 129 to SELECT and switches 2-XS-74-122 and 130 to MAN OVERRIDE.
- b. Select switch 2-XS-74-121 to SELECT; Drywell Pressure \geq 1.96 psig.
- c. Drywell pressure \geq 1.96 psig.
- d. Switches 2-XS-74-122 and 130 to MAN OVERRIDE.

CORRECT RESPONSE :B

REFERENCE:

NONE



14) PV:1.0 Q#:8936 RT:3.0 DF:0 LP:OPL176.999, OPL171.007/25 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Which of the following describes a condition in which the READY TO RESET lights for Alternate Rod Insertion (ARI) will be illuminated and ARI can be reset following a failure to scram?

- a. Rx pressure 1150 psig
Rx level -60 inches
Elapsed time since initiation 35 seconds
- b. Rx pressure 1050 psig
Rx level -30 inches
Elapsed time since initiation 5 minutes
- c. Rx pressure 1100 psig
Rx level -10 inches
Elapsed time since initiation 25 seconds
- d. Rx pressure 850 psig
Rx level -100 inches
Elapsed time since initiation 10 minutes

CORRECT RESPONSE :B

REFERENCE:

NONE

15) PV:1.0 Q#:7645 RT:3.0 DF:0 LP:OPL176.999, OPL171.014/3, OPL171.010/4 CT

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

The Unit 2 Turbo-Generator is being rolled to rated speed, when a problem develops with the Load Set (failed to 100% load set signal). The turbine speed continues to accelerate beyond 1800 rpm. Which of the following statements is correct?

- a. The # 1, 3, and 5 CIV Control Valves start throttling closed at the point when the Main Control Valves have reached full closed.
- b. The CIV Control Valves (1 thru 6) will start closing simultaneously with the Main Control Valves.
- c. The # 2, 4, and 6 CIV Control Valves will start closing when the # 1, 3, and 5 CIV Control Valves have reached full closed.
- d. The # 1, 3, and 5 CIV Control Valves will start closing when the # 2, 4, and 6 CIV Control Valves have reached 50% closed.

CORRECT RESPONSE :A

REFERENCE:

NONE

16) PV:1.0 Q#:7948 RT:3.0 DF:0 LP:OPL176.999, OPL171.039/5 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Given the following plant condition:

SLC LOSS OF SQUIB VALVE CONTINUITY annunciator: Alarming
Squib valve "A" firing circuit is open (0 ma current flow)

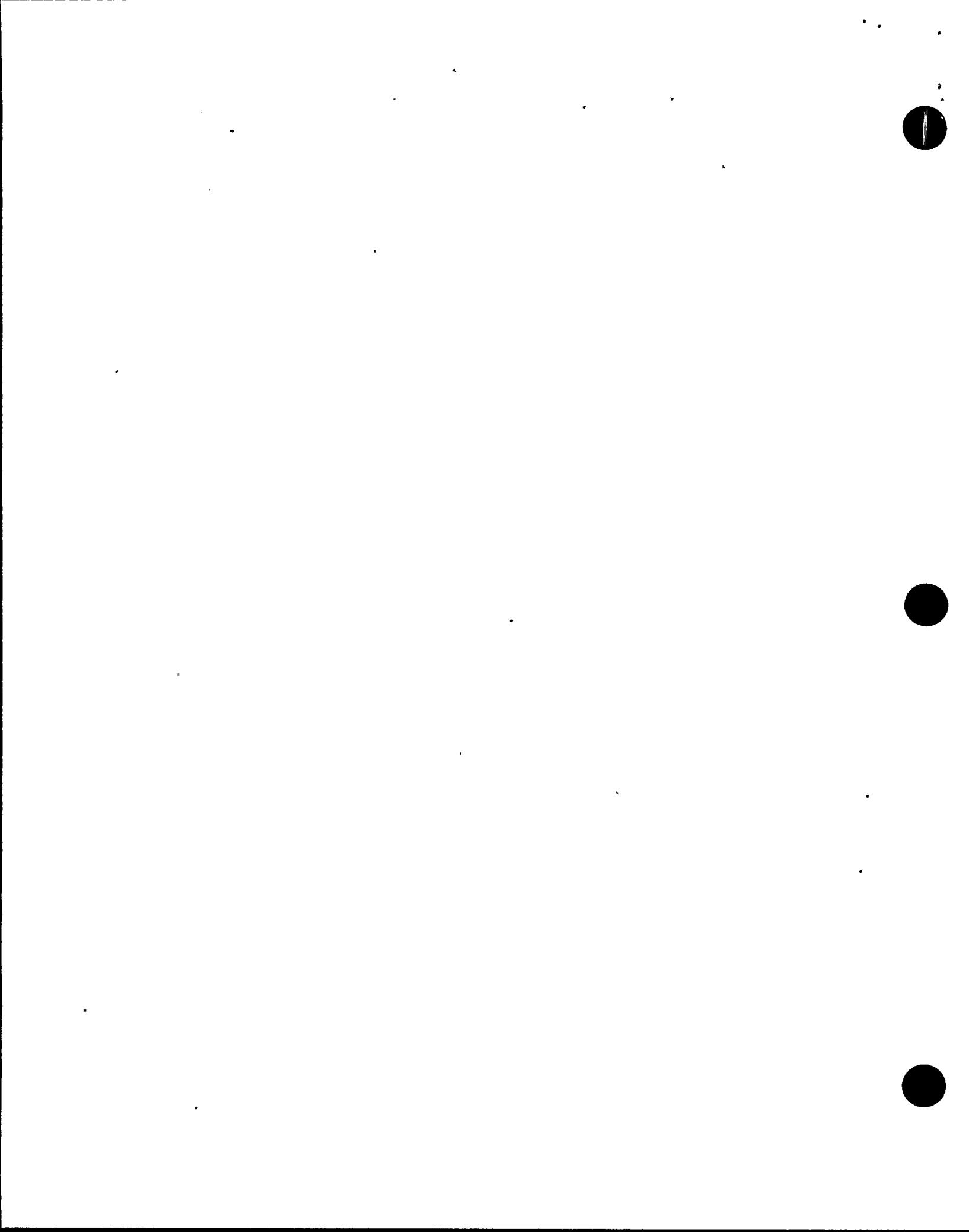
SELECT the ONE statement that describes the effect of taking the SLC pump control switch to the START "A" position. The 'A' pump starts and

- a. recirculates the solution through the relief valve and the RWCU system isolates.
- b. recirculates the solution through the relief valve and the RWCU system does not isolate.
- c. the "B" squib valve fires; and the RWCU does not isolate.
- d. the "B" squib valve fires; and the RWCU system isolates.

CORRECT RESPONSE :D

REFERENCE:

NONE



ANSWER KEY
E: 1

EXAM: 176013C12W4A

1) PV:1.0 Q#:5177 RT:3.0 DF:0 LP:OPL176.013, OPL171.030/9 CT:OI, 013

Given current plant conditions, the off gas recombiner is operating:
(Assume that the reactor is operating at 2570 mwt.)

- a. 69-72°F above the minimum allowable delta T.
- b. 79-82°F above the minimum allowable delta T.
- c. 69-72°F below the minimum allowable delta T.
- d. 79-82°F below the minimum allowable delta T.

CORRECT RESPONSE :A

REFERENCE:

NONE

2) PV:1.0 Q#:8134 RT:3.0 DF:0 LP:OPL176.013, OPL171.007/15, OPL171.007/16

Under present plant conditions, were the source of the scoop tube lock to be found and corrected, what would be the effect of depressing the Scoop Tube "A" RESET pushbutton (2-HS-96-15)?

- a. Recirculation Pump "A" speed would lower to 45%.
- b. Recirculation Pump "A" speed would lower to 28%.
- c. Recirculation Pump "A" speed would lower to 20%.
- d. Recirculation Pump "A" speed would remain the same.

CORRECT RESPONSE :A

REFERENCE:

NONE

3) PV:1.0 Q#:5188 RT:3.0 DF:0 LP:OPL176.013, OPL171.028/2 CT:SYS, 013

Given current plant conditions, what would deenergize both RPS busses?

- a. Loss of 480V Sd Bd 2A.
- b. Loss of 4KV Sd Bd "C".
- c. Loss of 480V RMOV Bd 2A.
- d. Loss of 4KV Sd Bd "D".

CORRECT RESPONSE :D

REFERENCE:

NONE

4) PV:1.0 Q#:8133 RT:3.0 DF:0 LP:OPL176.013, OPL171.009/1 CT:SYS, 013

Under present plant conditions, what would the FINAL effect (steady state to steady state) on the plant be if MSIV 1-15 failed closed?

- a. Reactor level would decrease; total steam flow would remain the same; generator output remains the same.
- b. A Group 1 isolation would occur on high steam flow.
- c. Reactor level would remain the same; turbine steam flow would decrease; generator output would decrease.
- d. Reactor level, total steam flow, and generator output would remain the same.

CORRECT RESPONSE :D

REFERENCE:

NONE

5) PV:1.0 Q#:4752 RT:3.0 DF:0 LP:OPL176.013, OPL171.043/3&4 CT:SYS, 013

Given current plant conditions, how will SRV-1-34 operate?

- a. If HS-1-34A was placed in "Open", the valve will open.
- b. If ADS actuated the valve will open.
- c. If reactor pressure increased to 1105 psig, the valve should open.
- d. Will operate in all modes, because valve control is transferred to Panel 25-32.

CORRECT RESPONSE :C

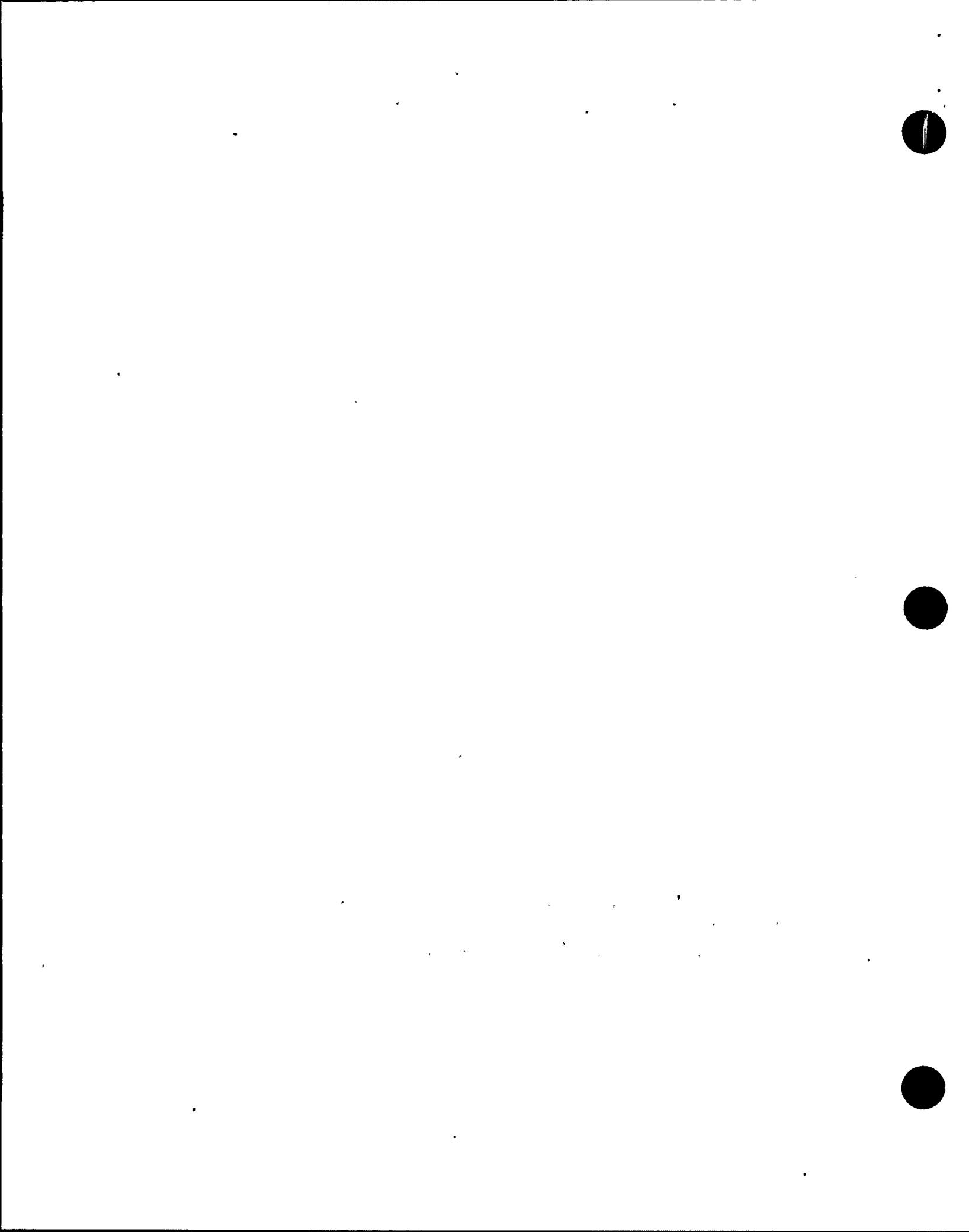
REFERENCE:

NONE

6) PV:1.0 Q#:5185 RT:2.0 DF:0 LP:OPL176.013, OPL171.025/4 CT:SYS, 013

Given current plant conditions, why could any control rod be selected at this time?

- a. All 4 select relays are energized with turbine first stage pressure above 154 psig.
- b. All 4 select relays are energized with the mode switch in run.
- c. The RWM auto light is on.
- d. RBM and RSCS are both bypassed.



CORRECT RESPONSE :A

REFERENCE:

NONE

7) PV:1.0 Q#:4753 RT:3.0 DF:0 LP:OPL176.013, OPL171.014/5 CT:SYS, 013

Given current plant conditions, which of the following best describes the effects of slowly reducing the Max Combined Flow Limiter setting?

- a. Control valves remain the same; bypass valves open; generator load decreases; reactor pressure decreases.
- b. Control valve open; bypass valves remain the same; generator load increases; reactor pressure decreases.
- c. Control valves close; bypass valves open; generator load decreases; reactor pressure remains the same.
- d. Control valves close; bypass valve positions remain the same; generator output decreases; reactor pressure increases.

CORRECT RESPONSE :D

REFERENCE:

NONE

8) PV:1.0 Q#:7045 RT:3.0 DF:0 LP:OPL176.013, OPL171.017/5 CT:SYS, 013

Given current plant conditions, what would be the impact of a spurious and extended Group 6 PCIS isolation on continued plant operation?

- a. Drywell pressure increases, leading to a scram at 2.45 psig.
- b. Inboard and outboard MSIV close due to loss of control air pressure.
- c. PSC keep fill is lost, requiring condensate transfer be lined up.
- d. Eventually the MSIV's automatically close due to a Gp. 1 isolation signal.

CORRECT RESPONSE :D

REFERENCE:

NONE

9) PV:1.0 Q#:5180 RT:3.0 DF:0 LP:OPL176.013, OPL171.044/11 CT:SYS, 013

Given current plant conditions, what combination of valves can be opened?

- a. 74-60, 74-57, and 23-34.
- b. 74-60, 74-58, and 74-59.
- c. 74-60, 74-61, and 74-53.
- d. 74-57, 74-58, and 74-59.

CORRECT RESPONSE :B

REFERENCE:

NONE

10) PV:1.0 Q#:5179 RT:2.0 DF:0 LP:OPL176.013, OPL171.038/7&8 CT:SYS, 013

Given current plant conditions, what will the response of "C" DG be if an accident signal were received?

- a. The DG will shift to single unit mode and continue to supply "C" 4KV S/D bd.
- b. The DG will not be affected; it will continue to run as it is now running.
- c. The output breaker will trip, and the DG will continue to run at 900 rpm.
- d. The output breaker will trip and the DG will go to idle speed (450 rpm) and await an undervoltage condition.

CORRECT RESPONSE :C

REFERENCE:

NONE

11) PV:1.0 Q#:5178 RT:4.0 DF:0 LP:OPL176.013, OPL171.026/8 CT:SYS, 013

Given current conditions, What will happen to "A" RFP SPEED if 2-HS-3-104, RFPT "A" Hyd. Jack Control, is placed in the ON position?

- a. It will remain the same because the motor speed changer (MSC) is controlling the RFPT.
- b. It will remain the same because the motor gear unit (MGU) is at its high speed stop.
- c. It will decrease to the setting of the motor speed changer (MSC).
- d. It will increase to the setting of the motor gear unit (MGU).

CORRECT RESPONSE :A

REFERENCE:

NONE

12) PV:1.0 Q#:8936 RT:3.0 DF:0 LP:OPL176.999, OPL171.007/25 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Which of the following describes a condition in which the READY TO RESET lights for Alternate Rod Insertion (ARI) will be illuminated and ARI can be reset following a failure to scram?

- a. Rx pressure 1150 psig
Rx level -60 inches
Elapsed time since initiation 35 seconds
- b. Rx pressure 1050 psig
Rx level -30 inches
Elapsed time since initiation 5 minutes
- c. Rx pressure 1100 psig
Rx level -10 inches
Elapsed time since initiation 25 seconds
- d. Rx pressure 850 psig
Rx level -100 inches
Elapsed time since initiation 10 minutes

CORRECT RESPONSE :B

REFERENCE:

NONE

13) PV:1.0 Q#:4197 RT:3.0 DF:0 LP:OPL176.999, OPL171.029/5 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

From the list given below select the one that will cause the Refuel Mode One Rod Permissive light to illuminate.

- a. Refuel mode; all rods fully inserted; select power switch in on; one rod selected.
- b. Refuel mode; all rods full-in over travel; select power switch in on; all rods de-selected.
- c. Refuel mode; all rods full-in over travel; select power switch in on; only one rod not fully inserted.
- d. Refuel or shutdown mode; all rods full-in over travel; select power switch in on; all rods de-selected.

CORRECT RESPONSE :B

REFERENCE:

NONE

PV:1.0 Q#:9323 RT:3.0 DF:0 LP:OPL176.999, OPL171.052/10 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT UPON CURRENT PLANT CONDITIONS

The following information has been given to the Unit Operator in regards to the fuel pool cooling system:

- Effluent Conductivity 1.3 micromhos/cm
- Flow 400 gpm
- Filter-demineralizer DP 14.5 DP
- Resin Trap DP 8.5 psid

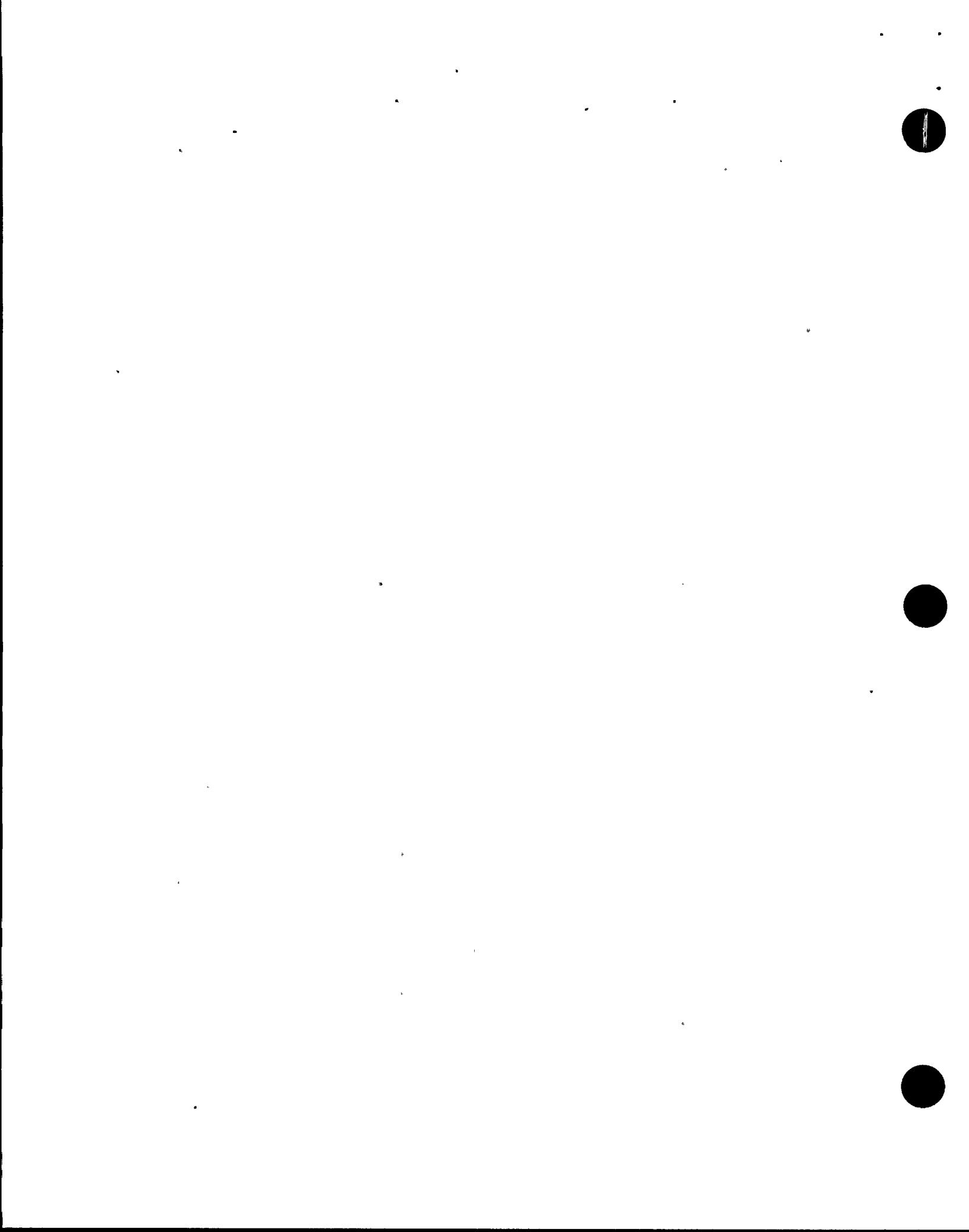
What action should be taken, if any, concerning the filter-demineralizer.

- a. No action required.
- b. Remove filter-demineralizer from service, backwash and precoat.
- c. Open demin bypass valve to lower demin delta P.
- d. Place spare filter-demineralizer inservice to improve conductivity.

CORRECT RESPONSE :B

REFERENCE:

NONE



15) PV:1.0 Q#:7258 RT:3.0 DF:0 LP:OPL176.999, OPL171.020/6 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

Which of the following best describes the effect of depressing the "B" IRM's "INOP INHIBIT" pushbutton?

- a. An INOP rod block and half-scram will occur.
- b. An IRM INOP alarm will occur; but no protective trips take place.
- c. The mode switch out of operate, inop trip is bypassed.
- d. The low detector voltage inop trip is bypassed.

CORRECT RESPONSE :C

REFERENCE:

NONE

16) PV:1.0 Q#:5568 RT:3.0 DF:0 LP:OPL176.999, OPL171.042/4 CT:SYS, 999

THE FOLLOWING QUESTION IS NOT DEPENDENT ON PRESENT PLANT CONDITIONS.

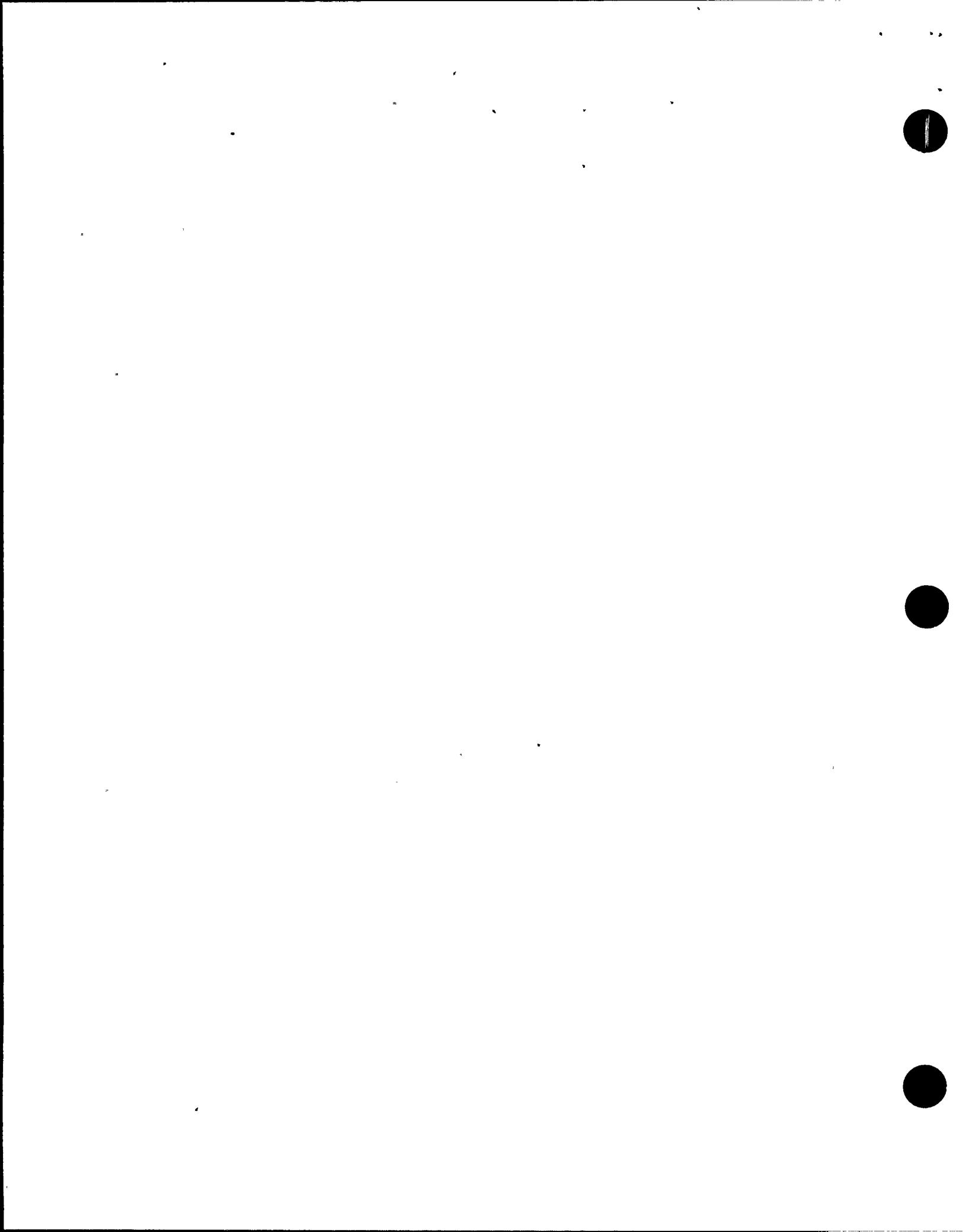
HPCI initiated at -45" and level is returned to normal (+30) using available systems. HPCI is then placed in pressure control with the 2-FCV-73-44 (HPCI Inbd injection valve) closed. Suppression pool level increases to +7 inches. Which of the following statements MOST ACCURATELY describes the status of the HPCI system. (ASSUME NO OPERATOR ACTION HAS YET BEEN TAKEN.)

- a. HPCI would be operating in pressure control with suction from the suppression pool.
- b. The HPCI turbine would be operating on minimum flow with suction from the CST.
- c. HPCI would be operating on minimum flow with suction from the suppression pool.
- d. HPCI would be operating in pressure control with suction from the CST.

CORRECT RESPONSE :C

REFERENCE:

NONE



ANSWER KEY
E: 1

EXAM: 1992C12W4R

1) PV:1.0 Q#:4034 RT:1.0 DF:0 LP:OPL171.005/24, OPL171.074/2 CT:AOI

A plant startup is in progress after a refueling outage, with reactor pressure at 500 psig. Reactor power is indicated on IRM Range 8. Annunciator 2-XA-55-5B-28, SCRAM PILOT AIR HEADER PRESS LOW, alarms. Before any corrective action can be taken, annunciator 2-XA-55-5A-28, CONTROL ROD DRIFT, alarms. The operator notices three (3) rod drift lights on the full core display illuminated. SELECT the action that is required.

- a. Insert a manual reactor scram.
- b. Trip the CRD pump.
- c. Inform the Reactor Engineer and check thermal limits.
- d. Insert the affected control rods to their designated position.

CORRECT RESPONSE :A

REFERENCE:

NONE

2) PV:1.0 Q#:6636 RT:2.0 DF:0 LP:OPL171.005/10, OPL171.074/2 CT:AOI

A reactor start-up and heat-up is in progress on Unit 2. Reactor pressure is 820 psig and the 1B CRD pump is out of service for bearing replacement. The following alarms/indications are received on Unit 2:

PA-85-1, CRD Pump 2A Suct Press Low
2A CRD pump breaker trips
CRD Drive water HDR diff press. is 175 psid
TA-85-7, Control Rod Drive Temp High

DETERMINE the action to be taken.

- a. Insert a manual scram.
- b. When the second accumulator light comes in due to pressure, manually scram.
- c. If charging water pressure is <1410 psig, manually scram.
- d. If CRD system not restored in 1 hour, manually scram.

CORRECT RESPONSE :B

REFERENCE:

NONE

3) PV:1.0 Q#:8935 RT:3.0 DF:0 LP:OPL171.007/20, OPL171.074/1 CT:AOI

While operating at 90% power the 2A Recirc Pump trips. The following conditions exist after the pump trip:

Reactor power (APRMs): Oscillations between 55% and 68%
Reactor power (LPRMs): 20% bandwidth of scale oscillations occurring
Core flow: 44%
LPRM UPSCALE annunciators have been received periodically

DETERMINE the one statement that describes the required action.

- a. Initiate a manual reactor scram.
- b. Verify recirc Pump 2B flow less than 46,600 gpm.
- c. Increase recirc speed to establish core flow at > 45% of rated within two hours.
- d. Reduce reactor power to less than than the 80% rod line within two hours by inserting control rods.

CORRECT RESPONSE :A

REFERENCE:

NONE

PV:1.0 Q#:7273 RT:4.0 DF:0 LP:OPL171.062/2, OPL171.074/1 CT:AOI

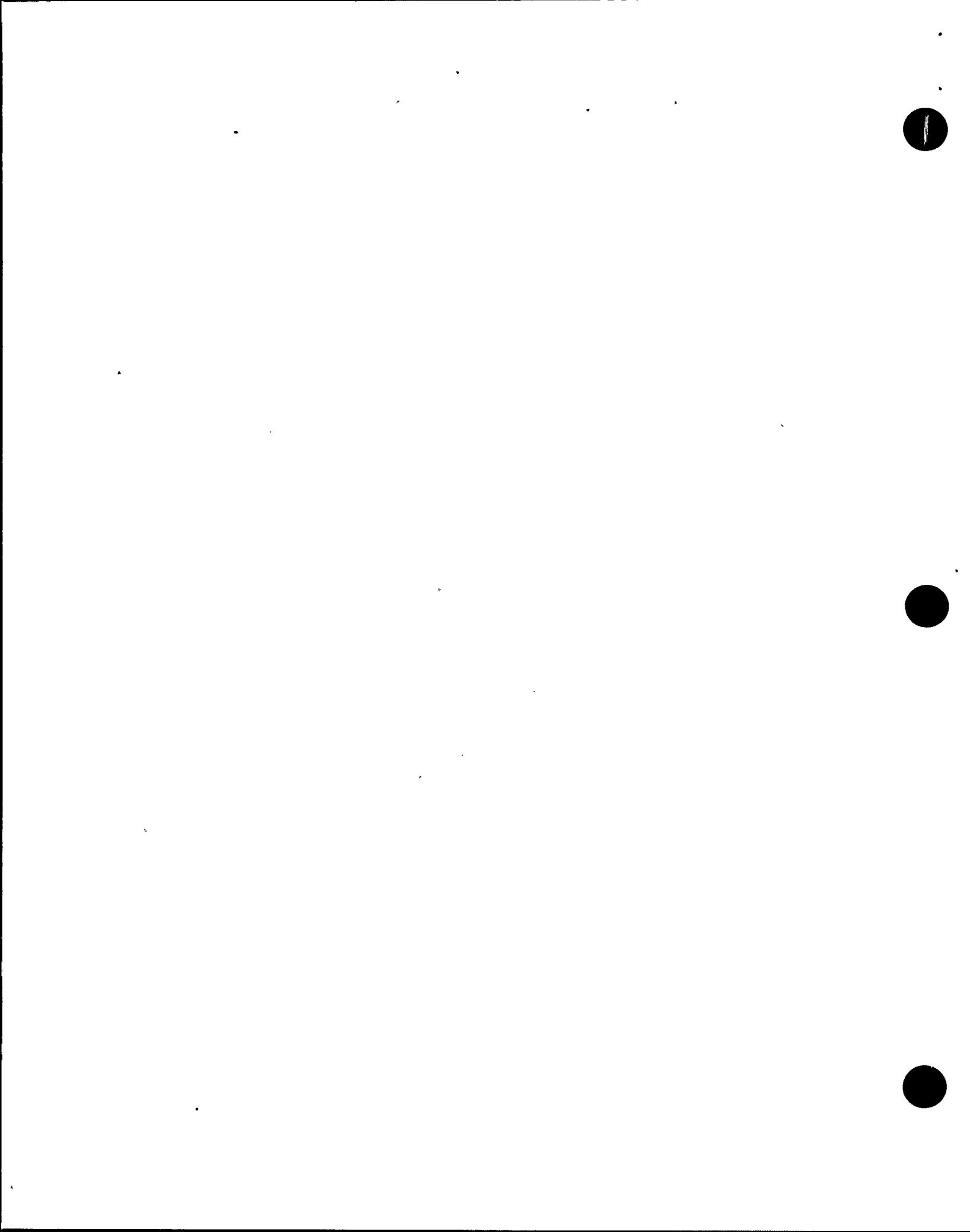
An operating transient has occurred such that core flow is 43.05×10^6 lbm/hr and Reactor power is 1647 MWT. DETERMINE which of the following best describes the actions required.

- a. Restart an idle recirculation pump to restore core flow to greater than 45% of rated.
- b. Initiate a manual scram.
- c. Insert control rods to reduce power to less than the 80% rod line.
- d. Reduce recirculation flow to minimum speed to reduce core flow to less than 40% of rated.

CORRECT RESPONSE :C

REFERENCE:

NONE



5) PV:1.0 Q#:7578 RT:3.0 DF:0 LP:OPL171.009/6, OPL171.074/1 CT:AOI

During operation at 85% power, the unit operator observes the following parameters:

- Reactor pressure increase
- Reactor power increase
- A, B, and C Main Steam line flow indicators at $\approx 3.35E06$ lbs/hr
- D Main Steam line flow indicator at $\approx 1.5E06$ lbs/hr

DETERMINE the appropriate operator action for this event.

- a. Manually scram the reactor.
- b. Immediately isolate the 'D' main steam line.
- c. Reduce power to < 70% and then isolate the 'D' main steam line.
- d. Leave 'as is' until an investigation into the cause has been completed.

CORRECT RESPONSE :C

REFERENCE:

NONE

PV:1.0 Q#:4902 RT:4.0 DF:0 LP:OPL171.074/1, OPL171.074/1 CT:AOI

Unit 2 is in cold shutdown with conditions as follows:

- Fuel movement in progress in the reactor vessel
- RHR pump 2C tagged
- 2A and 2B recirc pumps secured
- RHR pump 2A aligned in shutdown cooling
- RHR pumps 2B and 2D in standby readiness
- Reactor vessel temperature is 156 deg. F.

A malfunction causes the 2-FCV-74-2 (S/D Clg. Suction valve) to close. DETERMINE the required operator response.

- a. No action required currently. Repair 2-FCV-74-2 and return loop to service.
- b. Place the other RHR loop into shutdown cooling after flushing.
- c. Evacuate the Refuel floor and place additional Fuel Pool cooling pumps in service.
- d. Evacuate the Refuel Floor and place the other RHR loop into shutdown cooling without flushing.

CORRECT RESPONSE :D



REFERENCE:
NONE

7) PV:1.0 Q#:7817 RT:4.0 DF:0 LP:OPL171.067/17, OPL171.074/1 CT:AOI

Due to a radiation release in the plant, confirmed by RadCon, the following alarm is received in the unit 1 control room:

CONTROL ROOM HIGH RADIATION ISOLATION

No other alarms associated with control room radiation/ventilation are received. ASSESS the situation and DETERMINE which operator actions are most appropriate.

- a. Isolate all control bay ventilation systems.
- b. Check the control bay area CAMs to identify the source of radiation and isolate that area.
- c. Start the non-running CREVs fans and transfer Control Bay ventilation to fans with HEPA suction filters.
- d. Transfer Control Bay ventilation to fans with HEPA suction filters.

CORRECT RESPONSE :C

REFERENCE:
NONE

8) PV:1.0 Q#:9108 RT:5.0 DF:0 LP:OPL171.205/7B CT:EOI

A small leak with an ATWS is in progress. RPV water level is being lowered to control power. The following conditions exist:

RPV water level	-30 inches
Reactor power	12%
SRVs	2 open
Main Turbine	Tripped, bypass valves failed closed
Suppression pool temp.	115°F
Injection systems	Terminated except boron and CRD
Drywell pressure	3.0 psig

CONSIDER EACH OF THE FOLLOWING SITUATIONS SEPARATELY. Given the initial conditions above, DETERMINE which of the following cases RPV injection should be re-established.

- a. Drywell pressure at 2.4 psig.
- b. To maintain RPV level at > -122 until Appendix 8A is completed
- c. Reactor power at 4%
- d. All SRVs close.

CORRECT RESPONSE :C

REFERENCE:

NONE

9) PV:1.0 Q#:9078 RT:2.0 DF:0 LP:OPL171.202/16 CT:EOI

DETERMINE from the following conditions, when manual initiation of Alternate Rod Insertion is required.

- a. If the reactor is subcritical with some rods not fully inserted.
- b. If the reactor is critical with the Mode Switch in SHUTDOWN.
- c. Anytime a manual scram is initiated.
- d. If the reactor is sub-critical after the Mode Switch is in SHUTDOWN and the recirculation pumps are tripped.

CORRECT RESPONSE :B

REFERENCE:

NONE

10) PV:1.0 Q#:5285 RT:5.0 DF:0 LP:OPL171.203/7 CT:EOI

The following plant conditions exist:

Reactor Water Level = -20 inches
Reactor Pressure = 800 psig
Drywell Pressure = .75 psig
Suppression Chamber Pressure = .75 psig
Suppression Pool Temperature = 150°F
Suppression Pool Level = 12.5 feet

What should be done?

- a. Place HPCI in pressure control.
- b. Bypass HPCI Suction transfer interlocks.
- c. Shutdown HPCI.
- d. Conduct Emergency Depressurization.

CORRECT RESPONSE :C

REFERENCE:

NONE

PV:1.0 Q#:8188 RT:4.0 DF:0 LP:OPL171.205/03A, OPL171.201/08 CT:EOI

During execution of the EOIs, DETERMINE under which conditions the CRD system may be used for level control by injecting directly into the feedwater line via the 2-FCV-85-50 valve.

- a. Water level steadily decreasing towards top of active fuel and all rods full in.
- b. Water level steadily decreasing towards top of active fuel and Appendix 1D in progress.
- c. Water level steady at -120 inches and Appendix 1D in progress.
- d. Water level steady at -40 inches. All rods full in.

CORRECT RESPONSE :A

REFERENCE:

NONE

12) PV:1.0 Q#:9032 RT:4.0 DF:0 LP:OPL171.201/13, OPL171.202/16 CT:EOI

Suppression chamber pressure is 5 psig and suppression pool temperature is 210°F. RHR Pump A is being used to maintain RPV Water Level between +12" and +51". SELECT which of the following most accurately states the maximum allowable RHR pump flow for RHR pump 'A'.

- a. 1500 gpm
- b. 6000 gpm
- c. 11,500 gpm
- d. No flow restrictions

CORRECT RESPONSE :B

REFERENCE:

NONE

13) PV:1.0 Q#:9483 RT:2.0 DF:0 LP:OPL171.045/4 CT:SYS

During the time that Unit 2 is the only unit at BFNW which is fueled, DCN-H2735 was installed, this DCN has modified the CSS auto initiation logic. DETERMINE the effect of this modification on the Core Spray system.

- a. Unit 1 will no longer auto initiate; Units 2 and 3 will auto initiate.
- b. Only the preferred pumps on Unit 1 will auto initiate in the presence of accident signal on Unit 1 and 2 with a loss of offsite power.
- c. Only the preferred pumps on Unit 1 can be manually started (will not auto start) in the presence of a accident signal on Unit 1 and 2 with a loss of offsite power.
- d. Irrespective of conditions on Unit 1, all 4 CSS pumps on Unit 2 will auto start upon receipt of a Unit 2 Common Accident Signal (CAS).

CORRECT RESPONSE :D

REFERENCE:

NONE

14) PV:1.0 Q#:7827 RT:3.0 DF:0 LP:OPL171.028/15 CT:SYS

Power ascension is in progress on Unit 2 with the main turbine on line. Control rods are being withdrawn to increase power. As reactor power approaches 35%, the STA notes that 2 turbine bypass valves are open. Why is this of concern? (SELECT ONE)

- a. Removes RSCS from enforcing.
- b. Raises the actual power level at which the RPS reactor scram on turbine trip is enabled.
- c. Raises the actual power level for RBM to begin enforcing.
- d. Removes RWM from enforcing.

CORRECT RESPONSE :B

REFERENCE:

NONE

15) PV:1.0 Q#:7816 RT:3.0 DF:0 LP:OPL171.067/11 CT:SYS

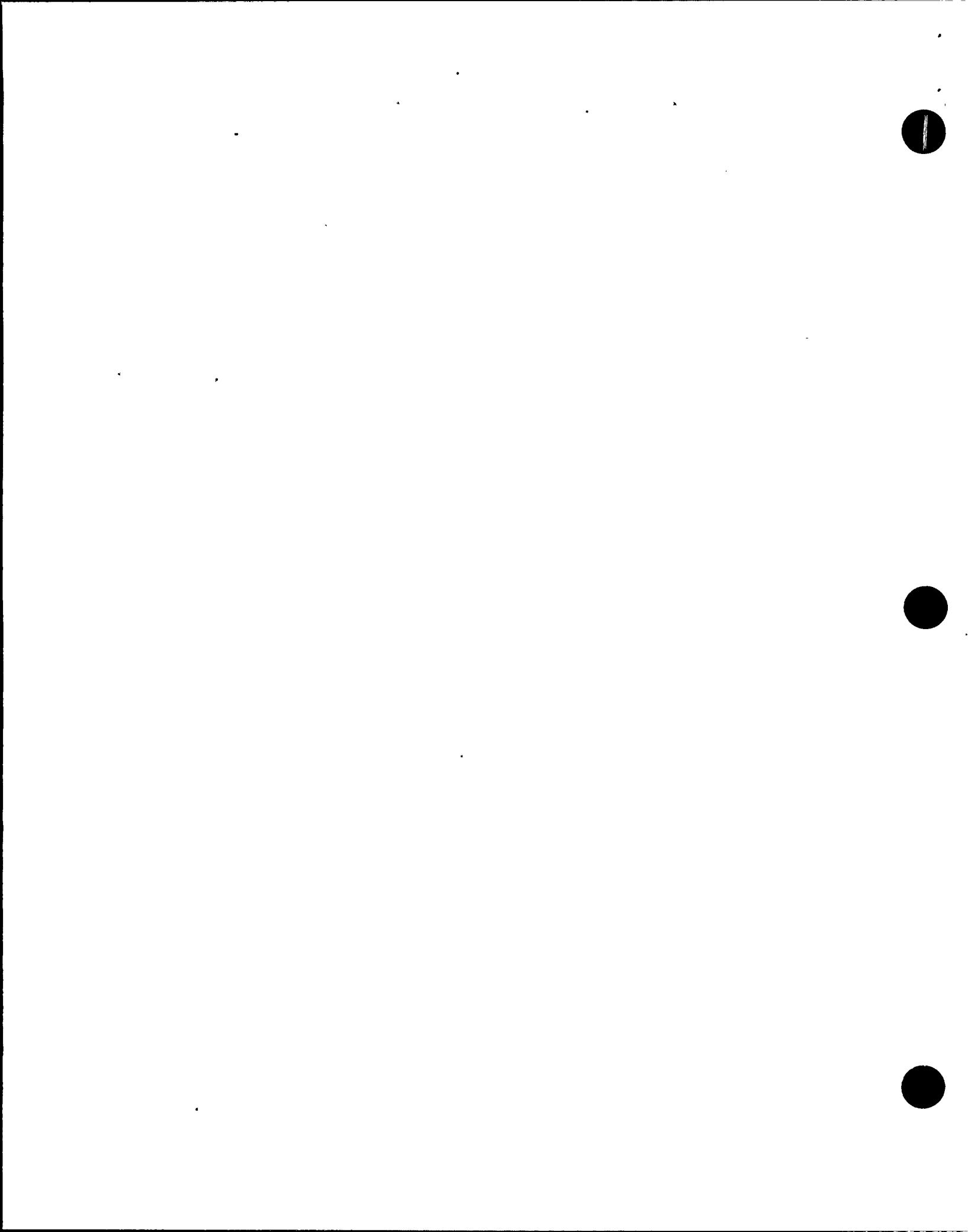
The U2 Turbine AUO reports that the belts are broken on the Mechanical Spaces exhaust fan. ASSESS the importance of this failure.

- a. The auxiliary instrument room will heat up and affect control circuits for the EHC system.
- b. The temperature on the reactor building side of the main steam tunnel will increase and cause isolation without an alarm.
- c. The computer room will heat up and result in loss of computer used for core and accident monitoring.
- d. The temperature on the turbine building side of the main steam tunnel will increase and cause an alarm and isolation.

CORRECT RESPONSE :D

REFERENCE:

NONE



16) PV:1.0 Q#:7623 RT:4.0 DF:0 LP:OPL171.044/4 CT:OI

While aligned in shutdown cooling using Loop I RHR, a leak occurs which results in the following conditions:

- RPV level at +5" and slowly decreasing
- DWP at 1.2 psig and steady
- RHR Loop 1 pumps tripped

SELECT the minimum operator actions required to align RHR Loop 2 for injection to the RPV.

- a. After FCV 74-47 or 74-48 is closed, reset PCIS, push the shutdown cooling isolation reset pushbuttons, start Loop II pumps and open both the inboard and outboard injection valves.
- b. After FCV 74-47 or 74-48 is closed, push the shutdown cooling isolation reset pushbuttons, start Loop II pumps and open the inboard injection valve.
- c. After FCV 74-47 and 74-48 are closed, start Loop II pumps and open the inboard injection valve.
- d. After FCV 74-47 and 74-48 are closed, start Loop II pumps and open the inboard and outboard injection valves.

CORRECT RESPONSE :B

REFERENCE:

NONE

17) PV:1.0 Q#:9410 RT:5.0 DF:0 LP:OPL173R000/1 CT:OI

Unit 2A 480 VAC RMOV Bd is transferred to its alternate feeder due to a failure of the normal feeder breaker.

- a. This alignment is allowed for a indefinite period provided the unit is placed in cold shutdown.
- b. With unit in operation, this alignment is allowed for a period not to exceed 7 days provided the remaining 480V RMOV Bds are operable.
- c. This alignment is allowed for an indefinite period provided the loading restrictions as detailed on the associated prints are observed.
- d. With unit in operation, this alignment is allowed for a period not to exceed 6 hours unless the unit is placed in cold shutdown within the following 30 hours.

CORRECT RESPONSE :A

REFERENCE:
NONE

18) PV:1.0 Q#:7674 RT:4.0 DF:0 LP:OPL1710035/12, OPL171.035 CT:TS, OI

The Reactor Engineer has requested that rods be withdrawn to adjust rod pattern. The following unit conditions exist:

- Reactor power @ 3291 mwt
- CMFCP = .887
- CMFLPD = .909
- MCPR = 1.432
- RBM 'A' is inoperable and bypassed
- RBM 'B' has just been declared inoperable

For this situation SELECT the correct requirement:

- a. Control rods may not be pulled until both RBM channels are operable.
- b. Control rods may not be pulled until one of the RBM channels is operable.
- c. RBM 'B' may be inhibited and rods pulled.
- d. One channel of RBM must be placed in the tripped condition within one hour.

CORRECT RESPONSE :C

REFERENCE:
NONE

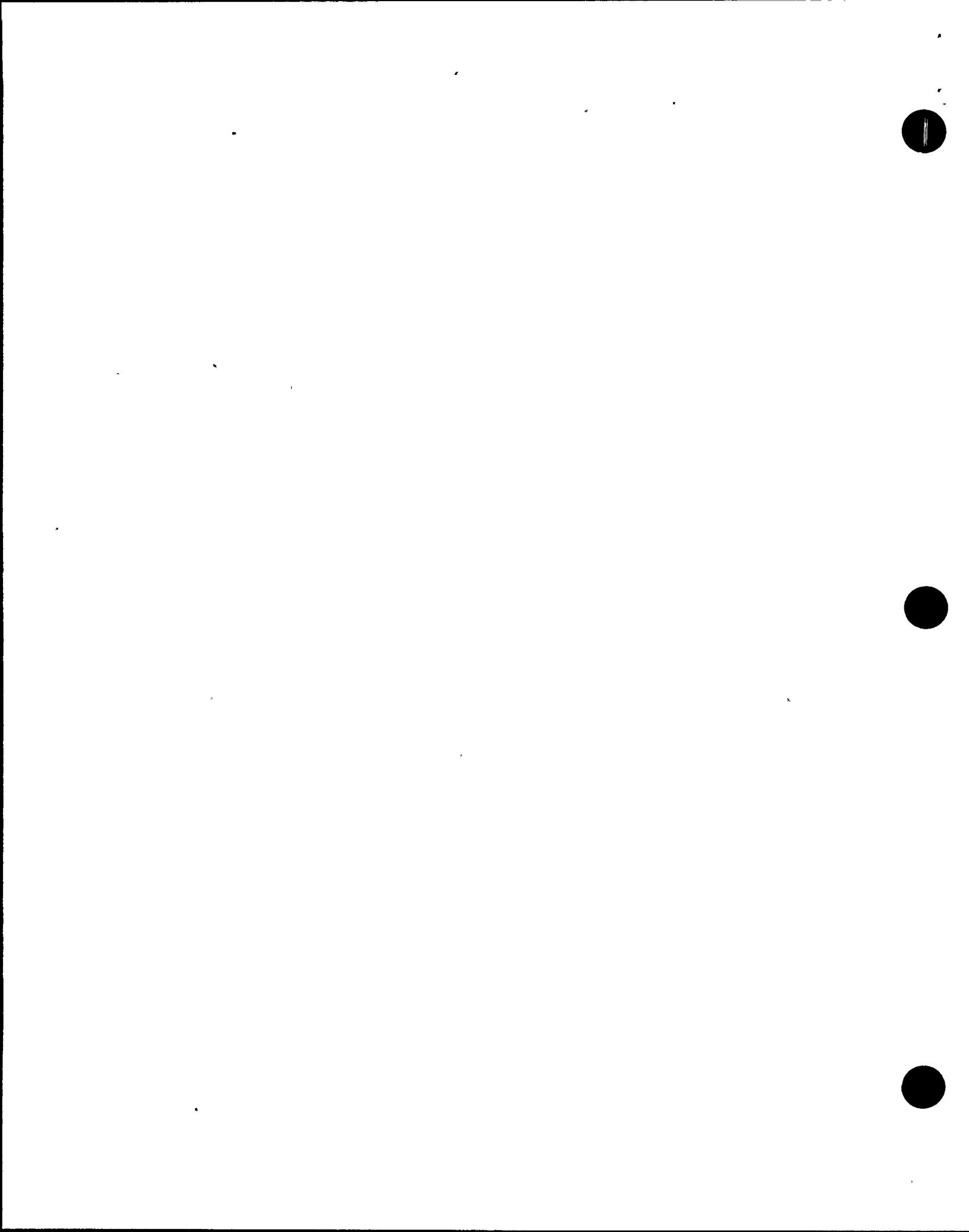
19) PV:1.0 Q#:6710 RT:5.0 DF:0 LP:OPL171.010/10 CT:OI

Prior to main turbine shell warming the first stage bowl temperature was 170°F. At 1600 hrs the first stage pressure reached 60 psig. When should shell warming be secured?

- a. When first stage bowl temperature reaches 350°F.
- b. At 1700 hrs if first stage bowl temperature has increased to 250°F.
- c. At 1800 hrs.
- d. At 1900 hrs.

CORRECT RESPONSE :D

REFERENCE:
NONE



20) PV:1.0 Q#:5232 RT:3.0 DF:0 LP:OPL171.038/1 CT:OI

Diesel Generator "A" is synchronized to 4KV S/D Bd "A". The instrumentation readings for the diesel generator are as follows:

voltage = 4160 VAC
frequency = 60 Hz
current = 340 amps
vars = 2000 Kvars
watts = 2200 Kw

What actions ARE NEEDED to bring the diesel generator operating parameters into conformance with procedural requirements for continuous operation with a power factor of 0.8 lagging.

- a. Take the VOLTAGE REGULATOR Control Switch to RAISE.
- b. Take the VOLTAGE REGULATOR Control Switch to LOWER.
- c. Take the GOVERNOR Control Switch to RAISE.
- d. Take the GOVERNOR Control Switch to LOWER.

CORRECT RESPONSE :B

REFERENCE:

NONE

21) PV:1.0 Q#:8136 RT:3.0 DF:0 LP:OPL171.024/8 CT:OI

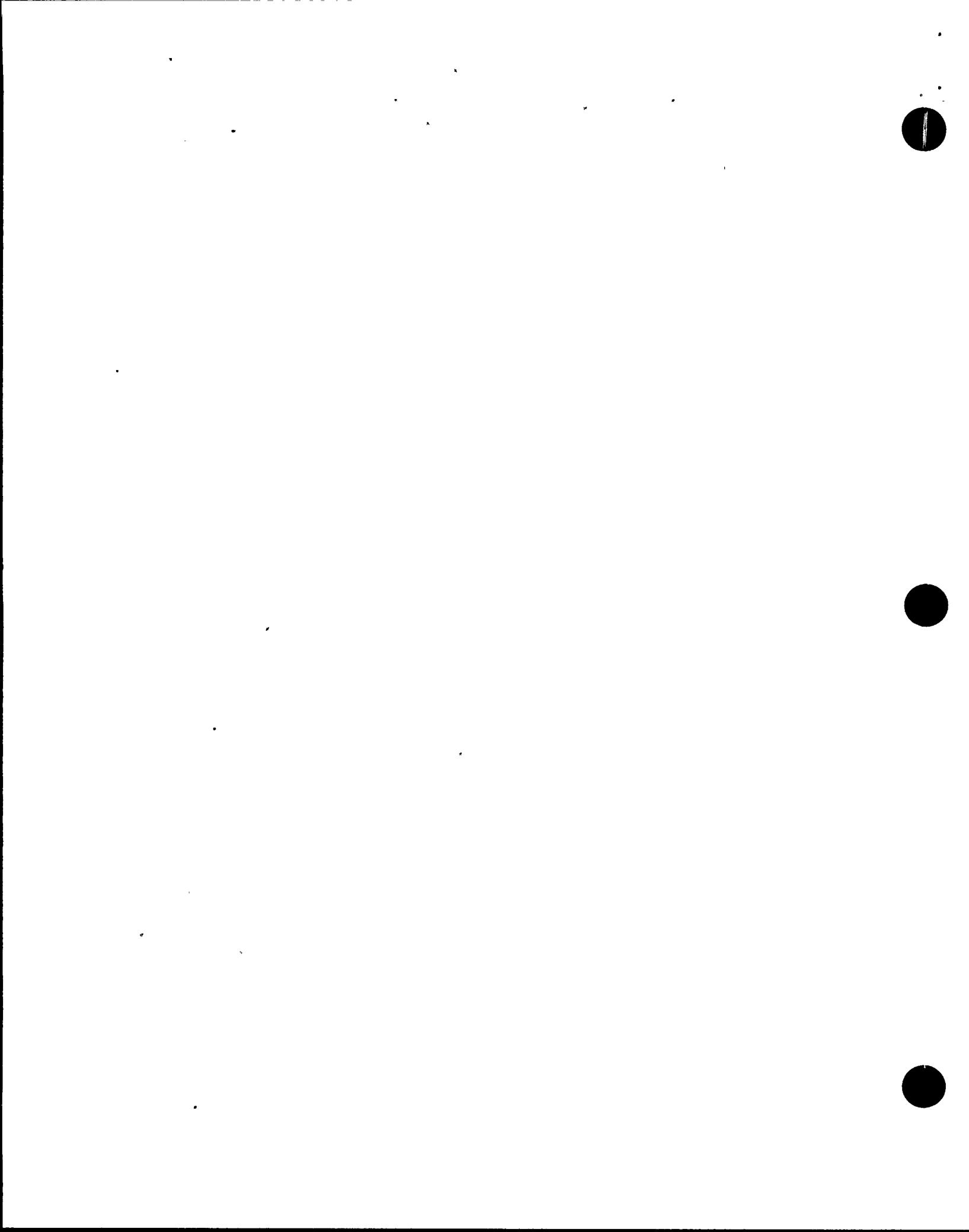
During a startup with power at 15% and RWM Group 30 latched (group limits 00-04), the first rod in group 30 double notches. A RWM notch error alarm and a RWM rod block alarm are received. the operator should...

- a. ... notch insert the rod back to '00' and then continue with rod withdrawal.
- b. ... use Emergency IN to insert rod one notch to 02 and then continue with startup.
- c. ... enter AOI for misposition rod and take actions as directed.
- d. ... bypass RWM, withdraw other rods in group to 04, and then return RWM to service.

CORRECT RESPONSE :B

REFERENCE:

NONE



22) PV:1.0 Q#:7568 RT:3.0 DF:0 LP:OPL171.047/6 CT:OI

During operation at 100% power, with all systems aligned normally, 480V Shutdown Board 2A normal feeder trips, and the operator transfers the board after 2 minutes to the alternate feeder. NO OTHER ACTIONS HAVE BEEN TAKEN. To return the RBCCW system to normal status, the operator must ...

- a. ...no action required once power restored.
- b. ...re-open FCV-70-48 after power restored.
- c. ...restart RBCCW pump 2A three (3) seconds after power is restored.
- d. ...restart RBCCW pump 2A forty (40) seconds after power is restored to board and open FCV 70-48.

CORRECT RESPONSE :B

REFERENCE:

NONE

23) PV:1.0 Q#:7213 RT:2.0 DF:0 LP:OPL171.059/2 CT:GOI

The following SRM counts are indicated prior to commencing a startup:

$$A = 250 \quad B = 300 \quad C = 200 \quad D = 400.$$

Later in the startup, the reactor is still subcritical and the following SRM counts exist:

$$A = 2800 \quad B = 4900 \quad C = 3000 \quad D = 6000.$$

SELECT which one of the following statements describes the required mode of rod withdrawal?

- a. Continuous withdrawal may continue because "D" SRM is reading 6000.
- b. Continuous withdrawal may continue because "C" SRM is reading 3000.
- c. Notch withdrawal must begin because "A" SRM is reading 2800.
- d. Notch withdrawal must begin because "B" SRM is reading 4900.

CORRECT RESPONSE :D

REFERENCE:

NONE

24) PV:1.0 Q#:9232 RT:3.0 DF:0 LP:OPL171.113/5 CT:SSP

During performance of 2-OI-74, Electrical Line-up Checklist for startup, the DAUO finds that the inboard injection valve on Loop II cannot be aligned due to a "HOLD" order. DETERMINE the proper action for the DAUO concerning the checklist.

- a. Cannot be DEVIATED.
- b. Can be DEVIATED. The DAUO shall place "DEVIATED" in the checklist signoff space with initials and date beside it.
- c. Can be DEVIATED and considered operable provided an safety assessment/evaluation is performed per SSP-12.13.
- d. Can be DEVIATED. The DAUO shall note the deviation in the REMARKS section of the checklist cover sheet.

CORRECT RESPONSE :A

REFERENCE:

NONE

25) PV:1.0 Q#:8930 RT:2.0 DF:0 LP:OPL171.071/26 CT:SSP

A CSSC motor operated valve has been closed with the manual handwheel. SELECT which of the following describes when the valve can be declared operable.

- a. After verification that the manual handwheel has been disengaged.
- b. After verification that the local and remote valve position indication agrees.
- c. As soon as the valve is re-opened using the motor operator.
- d. As soon as the valve has been cycled using the motor operator and stroke times meet acceptance criteria.

CORRECT RESPONSE :D

REFERENCE:

NONE

26) PV:1.0 Q#:7888 RT:3.0 DF:0 LP:OPL171.113/5 CT:SSP

During a periodic check of the CRD valve lineup checklist, a valve in the plant which is not on the locked valve checklist was found locked. IDENTIFY the appropriate action to be taken?

- a. It should be brought to the attention of the UO so it can be determined if it should be added to the list or have the lock removed.
- b. It should be immediately unlocked and the locking chain should be removed if permanently attached to the valve.
- c. It should be added to the checklist at the end of your group's section, it's position noted, initialed and dated.
- d. It should be left as found with no action required except noted in the system status folder that the valve is locked.

CORRECT RESPONSE :A

REFERENCE:

NONE

27) PV:1.0 Q#:4763 RT:4.0 DF:0 LP:OPL171.086/4 CT:SSP

Electrical maintenance needs to perform bridge, meggar, and high pot electrical tests on 2B RHR pump motor. DETERMINE which of the following would allow this testing to be performed.

- a. A clearance is established and filled out on a yellow clearance sheet. Only the SOS/SOS representative and the person doing the testing shall hold the clearance.
- b. A new separate clearance SHALL be established on a yellow clearance sheet. Any work in progress on a previous clearance shall be stopped until testing is completed.
- c. No special clearance requirements are necessary.
- d. An established clearance may be used provided it is filled out on a yellow clearance sheet and everyone holding the clearance authorized the testing.

CORRECT RESPONSE :A

REFERENCE:

NONE

28) PV:1.0 Q#:6740 RT:2.0 DF:0 LP:OPL171.110/2 CT:SSP

A valve checklist is being performed on the Control Air system in the Reactor Building. SELECT from the following the method used to CHECK a manual valve OPEN after it has been initially positioned OPEN.

- a. Independently verified open by turning the valve in the open direction and verifying no stem movement.
- b. Second party verified open by turning the valve in the open direction and verifying no stem movement.
- c. Independently verified open by turning the valve in the closed direction to verify movement and then re-opening.
- d. Second party verified open by turning the valve in the closed direction to verify movement and then re-opening.

CORRECT RESPONSE :C

REFERENCE:

NONE

29) PV:1.0 Q#:4339 RT:4.0 DF:0 LP:OPL171.058/2 CT:TS

The unit is operating at 85% power, when a scram is caused by an error while performing an instrumentation surveillance. Reactor water level decreases to approximately 0 inches, and is returned to normal by the feedwater system. Pressure is controlled on the turbine bypass valves. Control rod 26-19 is noted to be stuck at position 16. All other control rods are fully inserted. DETERMINE which, if any, safety limit has been exceeded.

- a. The Thermal Power Safety Limit.
- b. The Power Transient Safety Limit.
- c. The Reactor Vessel Water Level Safety Limit.
- d. No Safety Limit has been exceeded.

CORRECT RESPONSE :D

REFERENCE:

NONE

1) PV:1.0 Q#:8935 RT:3.0 DF:0 LP:OPL171.007/20, OPL171.074/1 CT:AOI

While operating at 90% power the 2A Recirc Pump trips. The following conditions exist after the pump trip:

Reactor power (APRMs): Oscillations between 55% and 68%
Reactor power (LPRMs): 20% bandwidth of scale oscillations occurring
Core flow: 44%
LPRM UPSCALE annunciators have been received periodically

DETERMINE the one statement that describes the required action.

- a. Initiate a manual reactor scram.
- b. Verify recirc Pump 2B flow less than 46,600 gpm.
- c. Increase recirc speed to establish core flow at > 45% of rated within two hours.
- d. Reduce reactor power to less than than the 80% rod line within two hours by inserting control rods.

CORRECT RESPONSE :A

REFERENCE:

NONE

PV:1.0 Q#:4034 RT:1.0 DF:0 LP:OPL171.005/24, OPL171.074/2 CT:AOI

A plant startup is in progress after a refueling outage, with reactor pressure at 500 psig. Reactor power is indicated on IRM Range 8. Announcer 2-XA-55-5B-28, SCRAM PILOT AIR HEADER PRESS LOW, alarms. Before any corrective action can be taken, annunciator 2-XA-55-5A-28, CONTROL ROD DRIFT, alarms. The operator notices three (3) rod drift lights on the full core display illuminated. SELECT the action that is required.

- a. Insert a manual reactor scram.
- b. Trip the CRD pump.
- c. Inform the Reactor Engineer and check thermal limits.
- d. Insert the affected control rods to their designated position.

CORRECT RESPONSE :A

REFERENCE:

NONE

3) PV:1.0 Q#:7578 RT:3.0 DF:0 LP:OPL171.009/6, OPL171.074/1 CT:AOI

During operation at 85% power, the unit operator observes the following parameters:

- Reactor pressure increase
- Reactor power increase
- A, B, and C Main Steam line flow indicators at $\approx 3.35E06$ lbs/hr
- D Main Steam line flow indicator at $\approx 1.5E06$ lbs/hr

DETERMINE the appropriate operator action for this event.

- a. Manually scram the reactor.
- b. Immediately isolate the 'D' main steam line..
- c. Reduce power to < 70% and then isolate the 'D' main steam line.
- d. Leave 'as is' until an investigation into the cause has been completed.

CORRECT RESPONSE :C

REFERENCE:

NONE

PV:1.0 Q#:6636 RT:2.0 DF:0 LP:OPL171.005/10, OPL171.074/2 CT:AOI

A reactor start-up and heat-up is in progress on Unit 2. Reactor pressure is 820 psig and the 1B CRD pump is out of service for bearing replacement. The following alarms/indications are received on Unit 2:

PA-85-1, CRD Pump 2A Suct Press Low
2A CRD pump breaker trips
CRD Drive water HDR diff press. is 175 psid
TA-85-7, Control Rod Drive Temp High

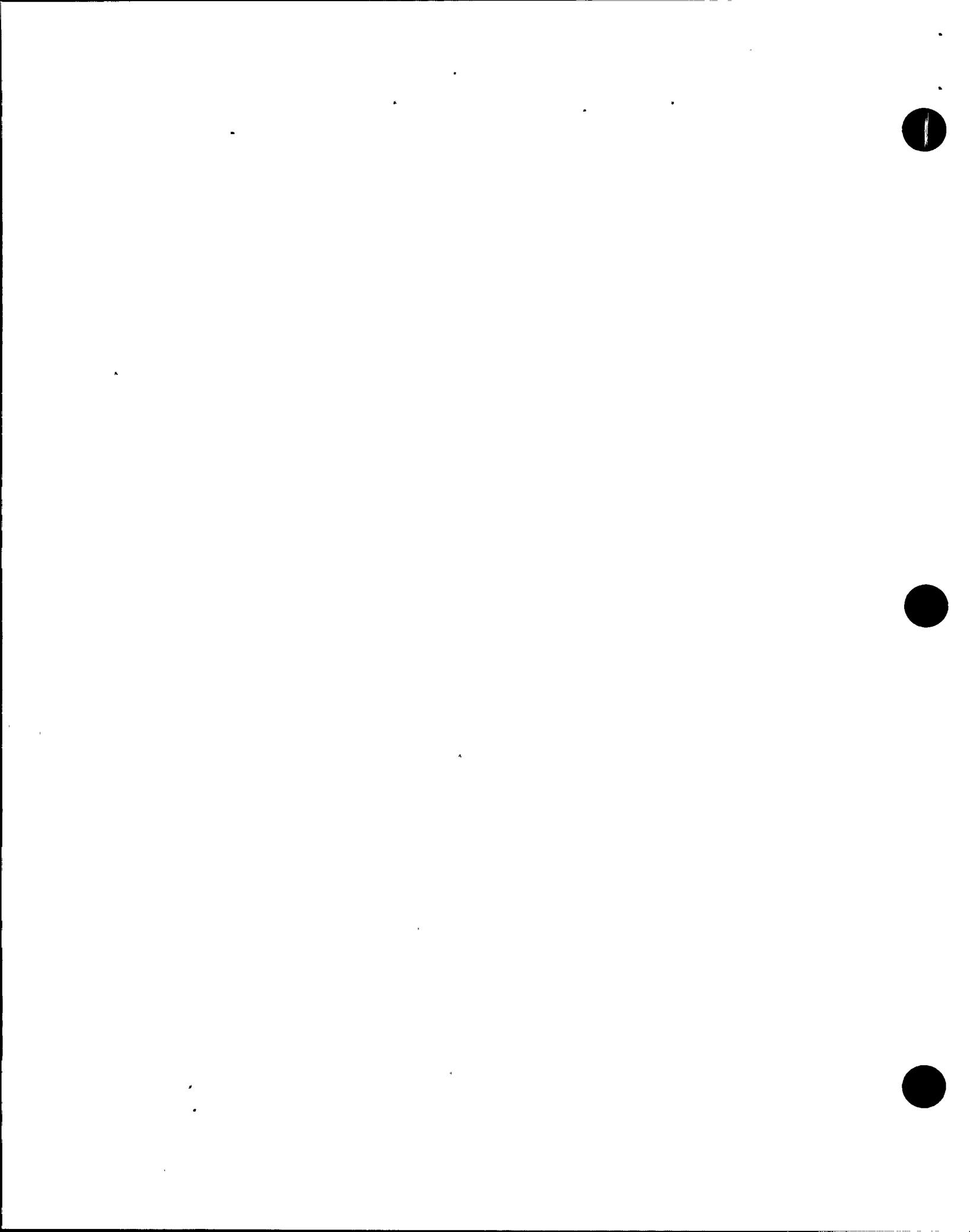
DETERMINE the action to be taken.

- a. Insert a manual scram.
- b. When the second accumulator light comes in due to pressure, manually scram.
- c. If charging water pressure is <1410 psig, manually scram.
- d. If CRD system not restored in 1 hour, manually scram.

CORRECT RESPONSE :B

REFERENCE:

NONE



5) PV:1.0 Q#:4902 RT:4.0 DF:0 LP:OPL171.074/1, OPL171.074/1 CT:AOI

Unit 2 is in cold shutdown with conditions as follows:

- Fuel movement in progress in the reactor vessel
- RHR pump 2C tagged
- 2A and 2B recirc pumps secured
- RHR pump 2A aligned in shutdown cooling
- RHR pumps 2B and 2D in standby readiness
- Reactor vessel temperature is 156 deg. F.

A malfunction causes the 2-FCV-74-2 (S/D Clg. Suction valve) to close. DETERMINE the required operator response.

- a. No action required currently. Repair 2-FCV-74-2 and return loop to service.
- b. Place the other RHR loop into shutdown cooling after flushing.
- c. Evacuate the Refuel floor and place additional Fuel Pool cooling pumps in service.
- d. Evacuate the Refuel Floor and place the other RHR loop into shutdown cooling without flushing.

CORRECT RESPONSE :D

REFERENCE:

NONE

6) PV:1.0 Q#:4763 RT:4.0 DF:0 LP:OPL171.086/4 CT:SSP

Electrical maintenance needs to perform bridge, meggar, and high pot electrical tests on 2B RHR pump motor. DETERMINE which of the following would allow this testing to be performed.

- a. A clearance is established and filled out on a yellow clearance sheet. Only the SOS/SOS representative and the person doing the testing shall hold the clearance.
- b. A new separate clearance SHALL be established on a yellow clearance sheet. Any work in progress on a previous clearance shall be stopped until testing is completed.
- c. No special clearance requirements are necessary.
- d. An established clearance may be used provided it is filled out on a yellow clearance sheet and everyone holding the clearance authorized the testing.

CORRECT RESPONSE :A

REFERENCE:

NONE

7) PV:1 Q#:5272 RT:3.0 DF:0 LP:OPL171.079/6 CT:SSP

While preparing a clearance for electrical maintenance, you notice an electrical print with a yellow circle around a set of contacts. Next to the circle is the following number: 2-92-016-74. SELECT which one of the following that describes these markings.

- a. The yellow circle means that this portion of the circuit has been deleted. (electrically removed or disconnected)
- b. The number adjacent to the circle is the Temporary Alteration Change Form (TACF) number.
- c. The yellow circle means that this portion of the circuit was added since the last revision of this drawing.
- d. The number adjacent to the circle is the Design Change Notice (DCN) number.

CORRECT RESPONSE :B

REFERENCE:

NONE

8) PV:1.0 Q#:6740 RT:2.0 DF:0 LP:OPL171.110/2 CT:SSP

A valve checklist is being performed on the Control Air system in the Reactor Building. SELECT from the following the method used to CHECK a manual valve OPEN after it has been initially positioned OPEN.

- a. Independently verified open by turning the valve in the open direction and verifying no stem movement.
- b. Second party verified open by turning the valve in the open direction and verifying no stem movement.
- c. Independently verified open by turning the valve in the closed direction to verify movement and then re-opening.
- d. Second party verified open by turning the valve in the closed direction to verify movement and then re-opening.

CORRECT RESPONSE :C

REFERENCE:

NONE

9) PV:1.0 Q#:9232 RT:3.0 DF:0 LP:OPL171.113/5 CT:SSP

During performance of 2-OI-74, Electrical Line-up Checklist for startup, the DAUO finds that the inboard injection valve on Loop II cannot be aligned due to a "HOLD" order. DETERMINE the proper action for the DAUO concerning the checklist.

- a. Cannot be DEVIATED.
- b. Can be DEVIATED. The DAUO shall place "DEVIATED" in the checklist signoff space with initials and date beside it.
- c. Can be DEVIATED and considered operable provided an safety assessment/evaluation is performed per SSP-12.13.
- d. Can be DEVIATED. The DAUO shall note the deviation in the REMARKS section of the checklist cover sheet.

CORRECT RESPONSE :A

REFERENCE:

NONE

10) PV:1.0 Q#:7928 RT:5.0 DF:0 LP:OPL171.092/2 CT:SSP, SRO

All three BFN units are in Cold S/D, with fuel in the vessel, and with the Unit 2 'B' and 'D' RHR heat exchangers isolated for tube replacement. Diesel generator B of Unit 1/2 has just been declared inoperable. SELECT which of the following correctly describes the event reportability.

- a. Is not reportable because the units are in cold shutdown.
- b. Is not reportable because only the components in a single RHR train are inoperable.
- c. Is reportable because RHR system II of Unit 2 will not initiate on a valid ECCS initiation signal.
- d. Is reportable because the limiting conditions for operation are not met for the operability of RHR systems I and II.

CORRECT RESPONSE :D

REFERENCE:

NONE

11) PV:1.0 Q#:7568 RT:3.0 DF:0 LP:OPL171.047/6 CT:OI

During operation at 100% power, with all systems aligned normally, 480V Shutdown Board 2A normal feeder trips, and the operator transfers the board after 2 minutes to the alternate feeder. NO OTHER ACTIONS HAVE BEEN TAKEN. To return the RBCCW system to normal status, the operator must ...

- a. ...no action required once power restored.
- b. ...re-open FCV-70-48 after power restored.
- c. ...restart RBCCW pump 2A three (3) seconds after power is restored.
- d. ...restart RBCCW pump 2A forty (40) seconds after power is restored to board and open FCV 70-48.

CORRECT RESPONSE :B

REFERENCE:

NONE

12) PV:1.0 Q#:9410 RT:5.0 DF:0 LP:OPL173R000/1 CT:OI

Unit 2A 480 VAC RMOV Bd is transferred to its alternate feeder due to a failure of the normal feeder breaker.

- a. This alignment is allowed for a indefinite period provided the unit is placed in cold shutdown.
- b. With unit in operation, this alignment is allowed for a period not to exceed 7 days provided the remaining 480V RMOV Bds are operable.
- c. This alignment is allowed for an indefinite period provided the loading restrictions as detailed on the associated prints are observed.
- d. With unit in operation, this alignment is allowed for a period not to exceed 6 hours unless the unit is placed in cold shutdown within the following 30 hours.

CORRECT RESPONSE :A

REFERENCE:

NONE

13) PV:1.0 Q#:7213 RT:2.0 DF:0 LP:OPL171.059/2 CT:GOI

The following SRM counts are indicated prior to commencing a startup:

$$A = 250 \quad B = 300 \quad C = 200 \quad D = 400.$$

Later in the startup, the reactor is still subcritical and the following SRM counts exist:

$$A = 2800 \quad B = 4900 \quad C = 3000 \quad D = 6000.$$

SELECT which one of the following statements describes the required mode of rod withdrawal?

- a. Continuous withdrawal may continue because "D" SRM is reading 6000.
- b. Continuous withdrawal may continue because "C" SRM is reading 3000.
- c. Notch withdrawal must begin because "A" SRM is reading 2800.
- d. Notch withdrawal must begin because "B" SRM is reading 4900.

CORRECT RESPONSE :D

REFERENCE:

NONE

14) PV:1.0 Q#:6536 RT:6.0 DF:0 LP:OPL171.058/3 CT:TS, SRO

Unit 2 is operating at 95% power, steady state, when it is discovered that the flow input to APRM channels A, C, and E has drifted high. SELECT which of the following describes the allowances and/or limitations imposed by Tech. Specs.

- a. Insert all operable control rods within four hours.
- b. Place APRM's A, C, and E in a tripped condition within 1 hour.
- c. Reduce power level to IRM range and place mode switch in STARTUP/HOT STBY within 8 hours.
- d. Restore APRM's A, C, and E to operable status within two hours.

CORRECT RESPONSE :B

REFERENCE:

NONE

15) PV:1.0 Q#:1766 RT:3.0 DF:0 LP:OPL171.058/3 CT:TS, SRO

U-2 is in a Refueling outage, loading fuel with the neutron monitoring system connected in the noncoincidence mode. The IM foreman notifies the SOS that IRM A in quadrant one & IRM E in quadrant three are inoperable due to an apprentice IM's error on performing surveillance on the instruments. All other IRM's are operable. DETERMINE the action(s) that should be performed with respect to the Rx protection system only?

- a. Suspend all operations involving core alterations and fully insert all operable control rods within one hour.
- b. Restore IRM A or E to operable status within 2 hours and continue fuel loading.
- c. Trip RPS A within one hour, continue fuel loading.
- d. No action required.

CORRECT RESPONSE :D

REFERENCE:

NONE

PV:1.0 Q#:9488 RT:4.0 DF:0 LP:OPL171.045/12, OPL171.058/3 CT:TS, SRO

Upon reviewing 2-SI-4.5.A.1.d(I) "Core Spray Flow Rate Loop I", which was performed 3 shifts earlier, you notice that 2-SI-4.2.B has not been performed to return the area cooler fan thermostats to operable status. (Assume all other components are operable) What operator action is required per T.S.?

- a. Place the Unit in Hot Stby within 6 hrs and Cold Shutdown within the following 30 hrs.
- b. Place the Reactor in Cold Shutdown Condition within 24 hrs.
- c. The Reactor may remain in operation for an additional 6 days due to entry into a 7 day LCO.
- d. The Reactor may remain in operation without any LCO requirements.

CORRECT RESPONSE :C

REFERENCE:

NONE

17) PV:1.0 Q#:7776 RT:5.0 DF:0 LP:OPL171.075/2 CT:REP, SRO

An ATWS has resulted in fuel damage, indicated by radiation monitoring systems and sample results. An unisolable steam leak occurs in the drywell. The following conditions/parameters currently exist:

- Drywell radiation monitors indicate 200 R/hr
- Coolant sample indicates 185 μ Ci/gm Iodine
- Drywell pressure is 10 psig
- Drywell temperature peaked at 250°F
- Hydrogen and Oxygen concentration at 2%
- Appendix 12A being executed

A General Emergency has been declared. SELECT which recommendation is most appropriate.

- a. Recommendation 3
- b. Recommendation 4
- c. Recommendation 5
- d. Recommendation 6

CORRECT RESPONSE :D

REFERENCE:

NONE

18) PV:1.0 Q#:5229 RT:5.0 DF:0 LP:OPL171.075/2 CT:REP, SRO

Unit 2 was operating at 100% power when a scram was received due to Main Steam Line Hi Radiation. The MSIV's remained open, and attempts to close them failed. There is evidence that the primary containment has significant amounts of radiation present due to high radiation alarms for the drywell alarming. The main steam tunnel temperature is increasing. DETERMINE which event classification is most appropriate.

- a. Notification of Unusual Event
- b. Alert
- c. Site Area Emergency
- d. General Emergency

CORRECT RESPONSE :D

REFERENCE:

NONE

19) PV:1.0 Q#:5600 RT:5.0 DF:0 LP:OPL171.075/2 CT:REP, SRO

Storm damage to the switchyard results in a complete loss of offsite power. All Unit 1/2 diesel generators are lost due to a failure in the EECW System. Maintenance reports that the necessary repair parts must be shipped in by truck from Birmingham. Crosstie with Unit 3 diesel generators is not possible. SELECT which event classification is most appropriate.

- a. Notification of Unusual Event
- b. Alert
- c. Site Area Emergency
- d. General Emergency

CORRECT RESPONSE :C

REFERENCE:

NONE

20) PV:1.0 Q#:5245 RT:5.0 DF:0 LP:OPL171.041/8 CT:SSI

The SOS has initiated the Safe Shutdown Instruction for a Fire in 480 VAC RMOV BD 2C. DETERMINE which of the following sub-instructions is appropriate for a fire in this area?

- a. 2-SSI-001
- b. 2-SSI-1
- c. 2-SSI-2-1
- d. 2-SSI-2-2

CORRECT RESPONSE :D

REFERENCE:

NONE

21) PV:1.0 Q#:7886 RT:3.0 DF:0 LP:OPL171.081/2 CT:SSI

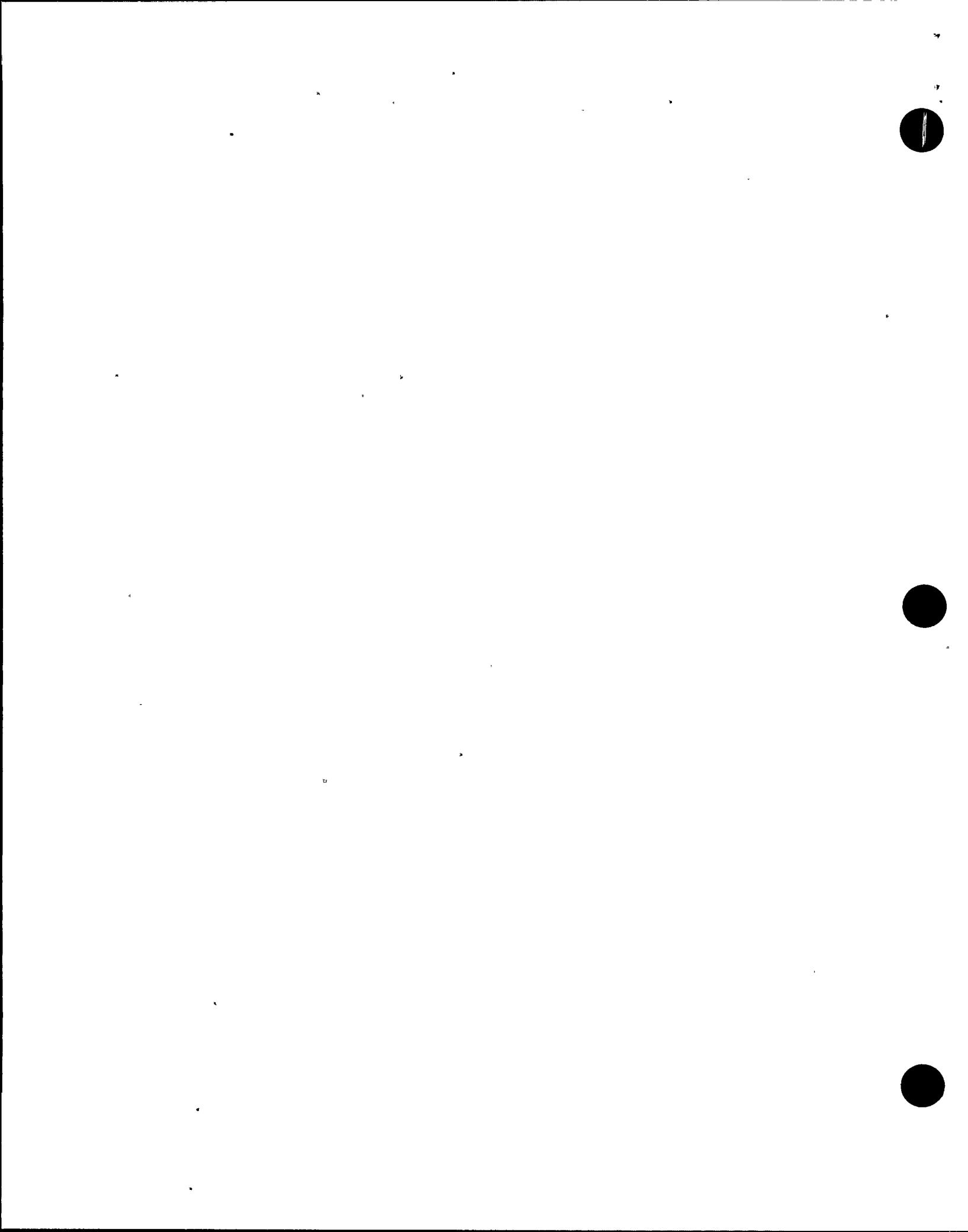
During operation at 100% power, MSRV 1-5 fails open. The operators perform the required actions and the MSRV goes closed when the fuses are pulled. DETERMINE which of the following measures should be taken?

- a. If the ability to operate from the backup control panel ONLY is restored (xfer switch still in emergency), then a continuous fire watch is required in area/zones 2-2 and 18 if THIS is the equivalent shutdown capability chosen.
- b. If the functions are not restored within 7 days, then fire watches may be established in all affected area/zones as an equivalent shutdown capability.
- c. If the ability to operate from the backup control panel is restored (xfer switch still in emergency), then no compensatory measures are required.
- d. If the backup control function of valves PCV 1-22, 30, and 34 is available, no compensatory measures are required.

CORRECT RESPONSE :B

REFERENCE:

NONE



22) PV:1.0 Q#:9080 RT:6.0 DF:0 LP:OPL171.203/14 CT:EOI

Due to an accident condition, the following plant parameters exist:

Drywell Hydrogen	5.4%
Drywell Oxygen	6.0%
Suppression Chamber Hydrogen	4.0%
Suppression Chamber Oxygen	5.5%
Suppression Pool Level	17 feet
Drywell temperature	250°F
Drywell Pressure	18 psig
RPV Level	+30 inches

DETERMINE which of the following actions is required.

- a. Spray the Suppression Chamber, Vent the Suppression Chamber, Initiate CAD to the Suppression Chamber.
- b. Spray the Suppression Chamber, Initiate CAD to the Suppression Chamber, Vent the Drywell.
- c. Spray the Suppression Chamber, Spray the Drywell, Vent the Suppression Chamber irrespective of off-site release rates, and Initiate CAD to the Drywell.
- d. Spray the Suppression Chamber, Spray the Drywell, Emergency Depressurize, Vent and Purge Irrespective of Off-Site release rates.

CORRECT RESPONSE :C

REFERENCE:

NONE

23) PV:1.0 Q#:9092 RT:5.0 DF:0 LP:OPL171.205/7A CT:EOI

An ATWS has occurred. The following conditions exist:

Reactor Power	3%
RPV Water Level	+33"
Main Turbine	Tripped
Bypass valves	Failed closed
SRVs	One open
Supp. Pool Temp.	115°F
SLC	Pump A injecting for 1 minute
Drywell Pressure	0.4 psig

SELECT which of the following describes the required actions.

- Terminate RPV injection except CRD and Boron. Lower level until level is 162" or the SRV closes.
- Terminate RPV injection except CRD and Boron. Lower level until level is -190 or the SRV closes.
- Continue injection with feedwater. Maintain RPV water level -162 to +51 inches.
- Continue injection with feedwater. Maintain RPV water level -190 to +51 inches.

CORRECT RESPONSE :C

REFERENCE:

NONE

24) PV:1.0 Q#:4353 RT:3.0 DF:0 LP:OPL171.203/11 CT:EOI

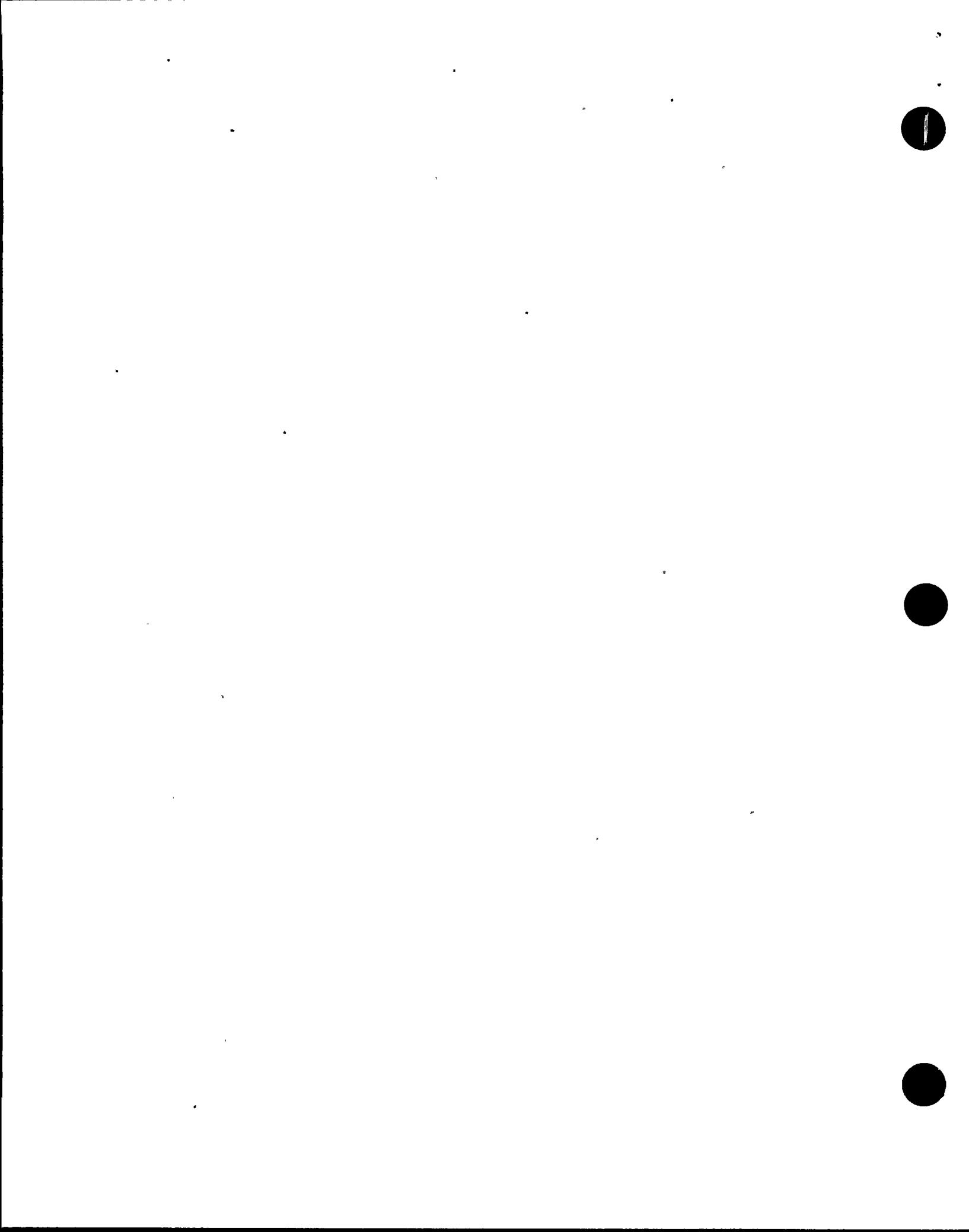
Reactor pressure is 900 psig, suppression pool temperature is 170°F and suppression pool level is 13.8 feet. Based on these conditions, DETERMINE which of the following is the minimum Suppression Pool level allowed prior to Emergency Depressurization being required.

- 11.50 feet
- 12.00 feet
- 12.75 feet
- 13.00 feet

CORRECT RESPONSE :B

REFERENCE:

NONE



25) PV:1.0 Q#:9032 RT:4.0 DF:0 LP:OPL171.201/13, OPL171.202/16 CT:EOI

Suppression chamber pressure is 5 psig and suppression pool temperature is 210°F. RHR Pump A is being used to maintain RPV Water Level between +12" and +51". SELECT which of the following most accurately states the maximum allowable RHR pump flow for RHR pump 'A'.

- a. 1500 gpm
- b. 6000 gpm
- c. 11,500 gpm
- d. No flow restrictions

CORRECT RESPONSE :B

REFERENCE:

NONE

26) PV:1.0 Q#:9108 RT:5.0 DF:0 LP:OPL171.205/7B CT:EOI

A small leak with an ATWS is in progress. RPV water level is being lowered to control power. The following conditions exist:

RPV water level	-30 inches
Reactor power	12%
SRVs	2 open
Main Turbine	Tripped, bypass valves failed closed
Suppression pool temp.	115°F
Injection systems	Terminated except boron and CRD
Drywell pressure	3.0 psig

CONSIDER EACH OF THE FOLLOWING SITUATIONS SEPARATELY. Given the initial conditions above, DETERMINE which of the following cases RPV injection should be re-established.

- a. Drywell pressure at 2.4 psig.
- b. To maintain RPV level at > -122 until Appendix 8A is completed
- c. Reactor power at 4%
- d. All SRVs close.

CORRECT RESPONSE :C

REFERENCE:

NONE

27) PV:1.0 Q#:5285 RT:5.0 DF:0 LP:OPL171.203/7 CT:EOI

The following plant conditions exist:

Reactor Water Level = -20 inches
Reactor Pressure = 800 psig
Drywell Pressure = .75 psig
Suppression Chamber Pressure = .75 psig
Suppression Pool Temperature = 150°F
Suppression Pool Level = 12.5 feet

What should be done?

- a. Place HPCI in pressure control.
- b. Bypass HPCI Suction transfer interlocks.
- c. Shutdown HPCI.
- d. Conduct Emergency Depressurization.

CORRECT RESPONSE :C

REFERENCE:

NONE

PV:1.0 Q#:8939 RT:3.0 DF:0 LP:OPL171.201/08, OPL171.202/16 CT:EOI

The plant has undergone an accident and the following conditions exist:

MSIVs are closed
SIC injection is required
The condenser is available
No indications of gross fuel failure or a main steam line break.
All MSRVs are operable

DETERMINE which of the following indicates TWO conditions which ARE allowed to be bypassed in order to re-open the MSIVs for these conditions.

- a. Reactor building ventilation low level isolation and MSIV low-low-low level isolation.
- b. MSIV low-low-low level isolation and main steam line high radiation isolation.
- c. Reactor building ventilation low level isolation and main steam line high flow isolation.
- d. Main steam line high flow isolation and main steam line high radiation isolation.

CORRECT RESPONSE :A

REFERENCE:

NONE

29) PV:1.0 Q#:5055 RT:3.0 DF:0 LP:OPL171.205/6 CT:EOI

The following conditions exist on Unit 2:

- All control rods inserted.
- Six ADS valves open.
- RPV water level unknown.
- Suppression chamber pressure: 15 psig
- D/W pressure: 15 psig

SELECT the following that will establish vessel flooding conditions.

- a. Increase injection until Reactor pressure is 105 psig and steady.
- b. Increase injection until Reactor pressure is 86 psig and steady.
- c. Close SRV's until Reactor pressure is 105 psig and steady.
- d. Close SRV's until Reactor pressure is 86 psig steady.

CORRECT RESPONSE :A

REFERENCE:

NONE