

NOV 7 1990

U.S. NUCLEAR REGULATORY COMMISSION REGION I  
OPERATOR LICENSING EXAMINATION REPORT

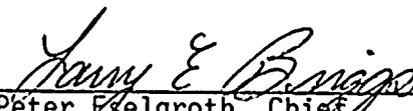
EXAMINATION REPORT NO. 90-23 (OL)  
FACILITY DOCKET NO. 50-244  
FACILITY LICENSE NO. DPR-18  
LICENSEE: Rochester Gas and Electric Company  
49 East Avenue  
Rochester, New York 14649  
FACILITY: R. E. Ginna Nuclear Power Plant  
EXAMINATION DATES: September 10 - September 14, 1990  
EXAMINERS: P. Bonnett, Operations Engineer  
M. Lintz, Examiner, PNL  
A. Lopez, Examiner, PNL  
W. Maier, Operations Engineer  
L. Sherfey, Examiner, PNL

CHIEF EXAMINER:

  
F. Paul Bonnett, Operations Engineer

11-7-90  
Date

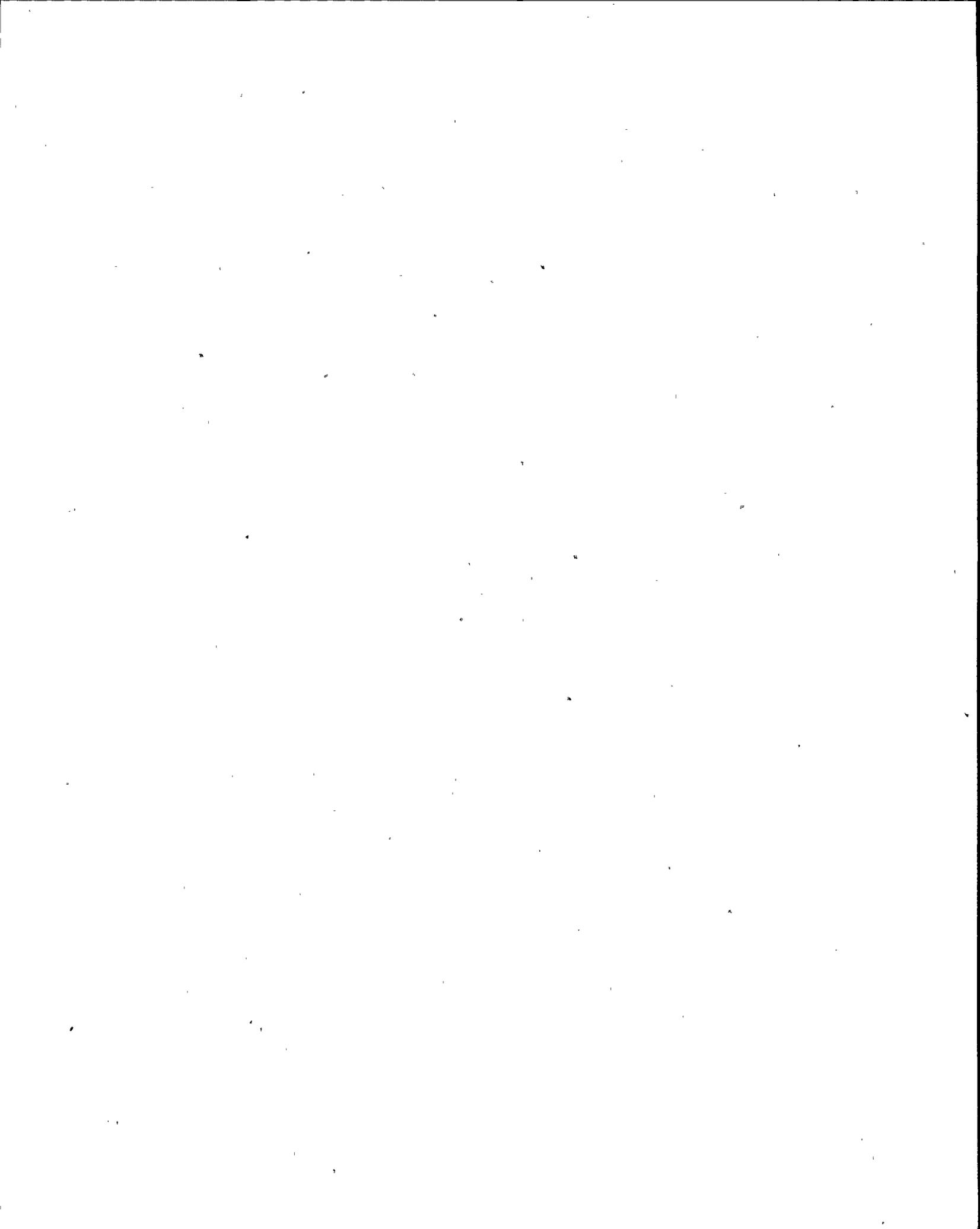
APPROVED BY:

  
Peter Eselgroth, Chief  
PWR Section, Operations Branch  
Division of Reactor Safety

11/7/90  
Date

Examination Summary: Written examinations and operating tests were administered to six (6) senior reactor operator (SRO) candidates and seven (7) reactor operator (RO) candidates. All thirteen (13) candidates passed the examinations.

During the preparation of the initial examination, some discrepancies with the training system descriptions were noted. These errors necessitated a facility comment to correct the written examination answer key. Further, the lesson objectives for procedural lesson plans were broad and not facility specific. This hindered the examination author from creating questions that addressed facility specific learning objectives.

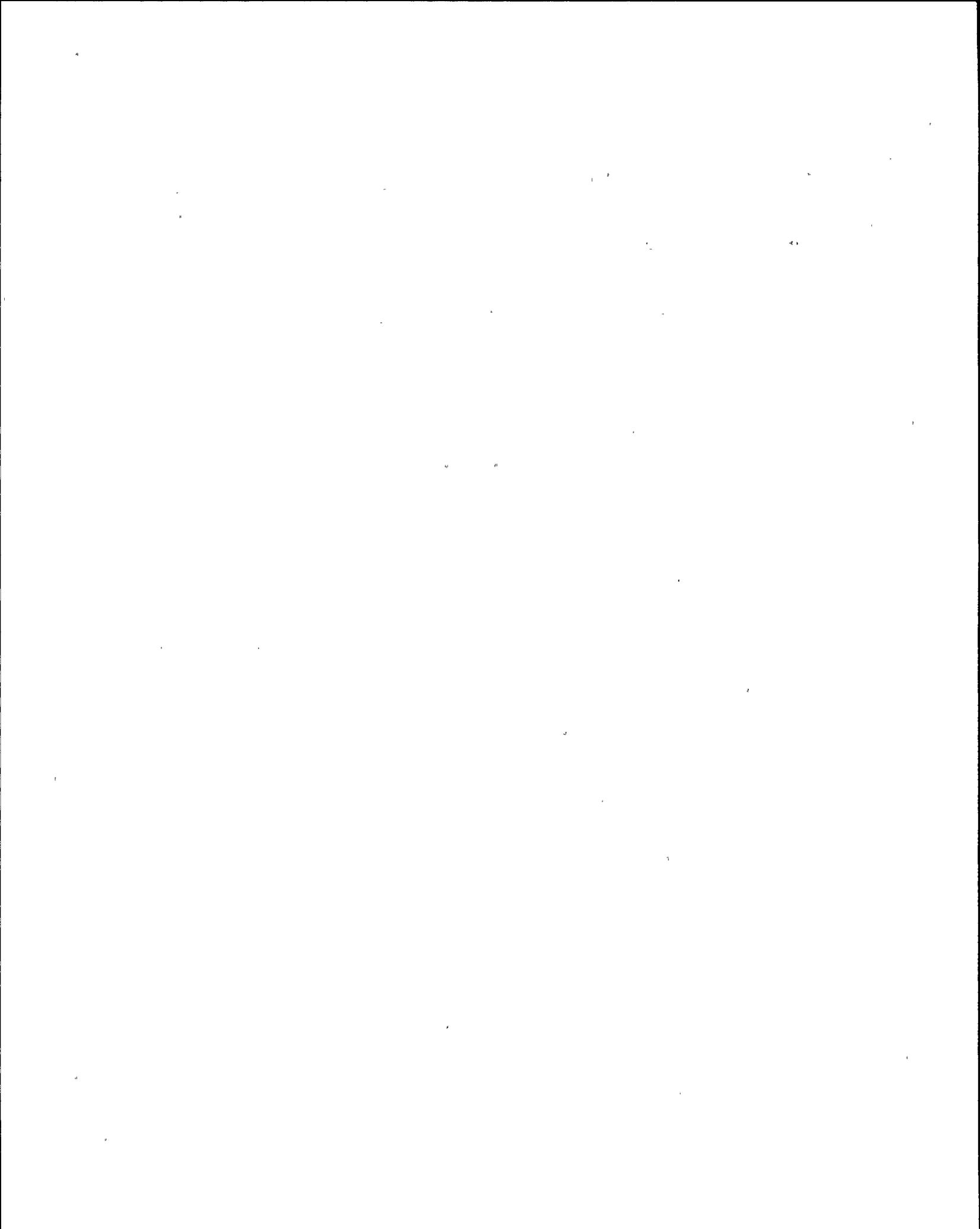


The candidates demonstrated a weakness in their knowledge of the integrated plant control functions. Of two crews tested, neither crew was able to correctly diagnose the failure of the Pressurizer Master Level Controller and the Programmed T-Reference input to the Rod Control System.

Several candidates used uncontrolled material rather than controlled documents during the operating test walk-through. The Training System Descriptions books that were in the control room and stamped in red ink "For Training Use Only" on the title page, were consulted by most of the candidates throughout the walk-through. This large dependence upon these uncontrolled references indicates a weakness in the ability to obtain and interpret controlled reference materials and drawings.

A procedural inconsistency was noted between the instrument defeat procedures for a power range nuclear instrument and a loop T-ave instrument. Both procedures addressed tripping the TRIP bistables for the Overpower and Overtemperature delta-T circuit. However, only one procedure addressed tripping the bistables for the rod stops circuit associated with this. Both procedures were adequate; however, the procedure that tripped the rod stop bistables was more conservative. The inconsistency was due to the procedures being written by two different authors. This lack of procedural consistency in defeating these protective relays caused confusion for the candidates.

There was inadequate procedural guidance for entry into AP-RCC.2 "RCC/RPI Malfunction" when a stuck control rod condition existed. During a stuck rod simulator scenario the stuck rod never became sufficiently misaligned from its bank to cause an alarm condition. The unit was being shutdown to comply with facility technical specifications; however, the guidance provided by AP-RCC.2 was not utilized to respond to the event. The operators did not enter this procedure which provides the proper guidance to address a stuck control rod because the proper procedure entry conditions had not been established to bring it to the operators attention (see Paragraph 5.0 of this report).



## DETAILS

### 1.0 INTRODUCTION AND OVERVIEW

The NRC examiners administered initial examinations to six (6) Senior Reactor Operator (SRO) candidates and seven (7) Reactor Operator candidates. The examinations were administered in accordance with NUREG 1021, Examiner Standards, Rev. 5, dated January 1, 1989. The results of the examination are summarized below.

	RO Pass/Fail	SRO Pass/Fail
Written	7 / 0	6 / 0
Operating	7 / 0	6 / 0
Overall	7 / 0	6 / 0

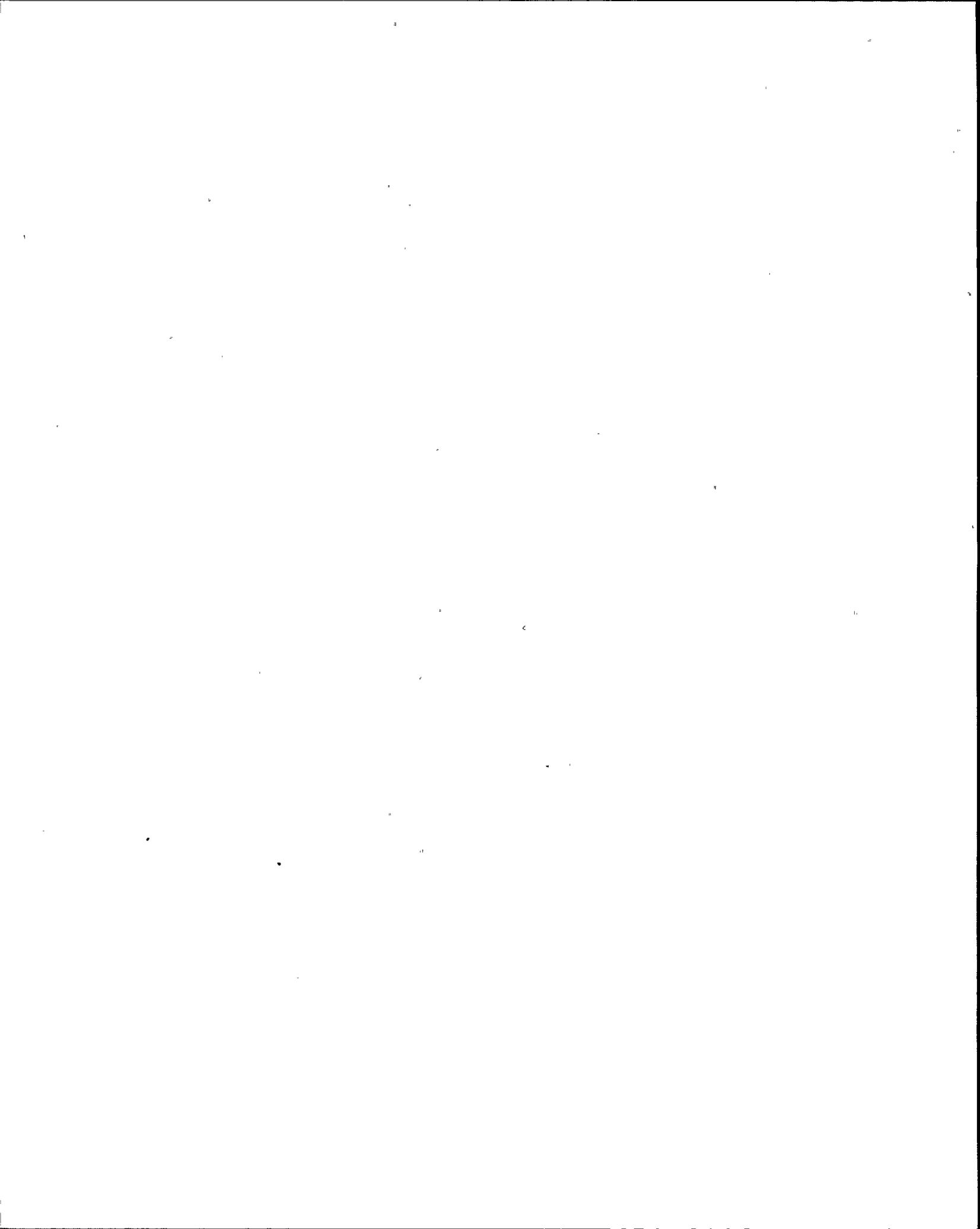
### 2.0 PERSONS CONTACTED

#### 2.1 U.S. Nuclear Regulatory Commission

- \* P. Bonnett, Operations Engineer
- M. Lintz, Examiner, PNL
- \* A. Lopez, Examiner, PNL
- \* W. Maier, Operations Engineer
- \* T. Moslak, Sr. Resident Inspector
- \* N. Perry, Resident Inspector
- L. Sherfey, Examiner, PNL

#### 2.2 R. E. Ginna

- N. Brehse, Training Instructor
- \* R. Carroll, Ginna Training Manager
- S. Dixon, Simulator Instructor
- \* D. Hudnut, Supervisor Simulator Training
- \* F. Maciuska, Supervisor License Training
- K. Masker, Shift Technical Advisor
- \* R. Mecredy, V.P. Ginna Nuclear Production
- \* G. Meier, Dept. Manager - Production Division Training
- \* T. Schuler, Operations Manager



- \* R. Smith, Senior Vice President
- \* T. White, Emergency Procedure Coordinator
- \* J. Widay, Superintendent Ginna Production

\* Denotes those present at the exit interview on September 14, 1990.

### 3.0 PRE-EXAMINATION ACTIVITIES

- 3.1 A pre-examination trip was made to R.E. Ginna Nuclear Power Plant the week of August 27, 1990. The purposes of the trip were to become more familiar with the plant prior to the operating test, to review the written examination with the facility, and to "dry-run" the scenarios on the simulator.

During the orientation trip, the facility reviewed the written examination. All facility comments were discussed and validated during the review session. The examination was revised to incorporate those changes. All facility individuals involved with the review of the examination materials signed security agreements to ensure that there was no compromise of the examination.

### 4.0 EXAMINATION-RELATED FINDINGS AND CONCLUSIONS

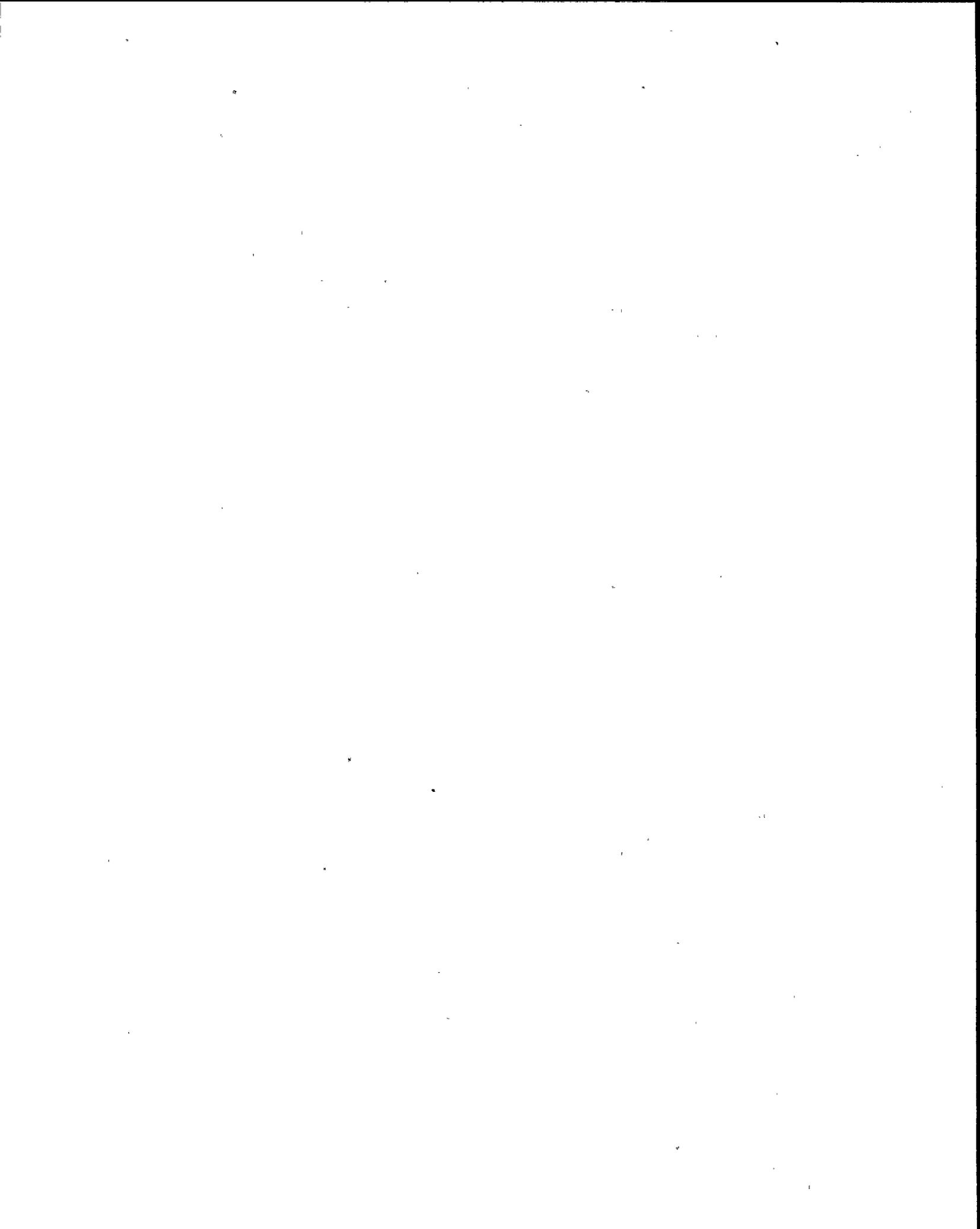
- 4.1 The following is a summary of the strengths and deficiencies noted during the administration of the written examination and operating tests. This information is being provided to aid the licensee in upgrading license and requalification training programs. No licensee response is required.

#### Strengths

- a. Knowledge of remote shutdown procedures/responsibilities in the event of a control room evacuation
- b. Ability to follow the guidelines prescribed by the Emergency Operating Procedures

#### Deficiencies

- a. Operators' usage of Alarm Response Procedures
- b. Reactor Operators' acknowledgment of alarm horn without first looking to see what alarm had come in.
- c. Operators' knowledge of interrelation between the Pressurizer Master Level Controller and Charging Pump speed.
- d. Operators' knowledge of how T-Reference interacts with the Rod Control System.



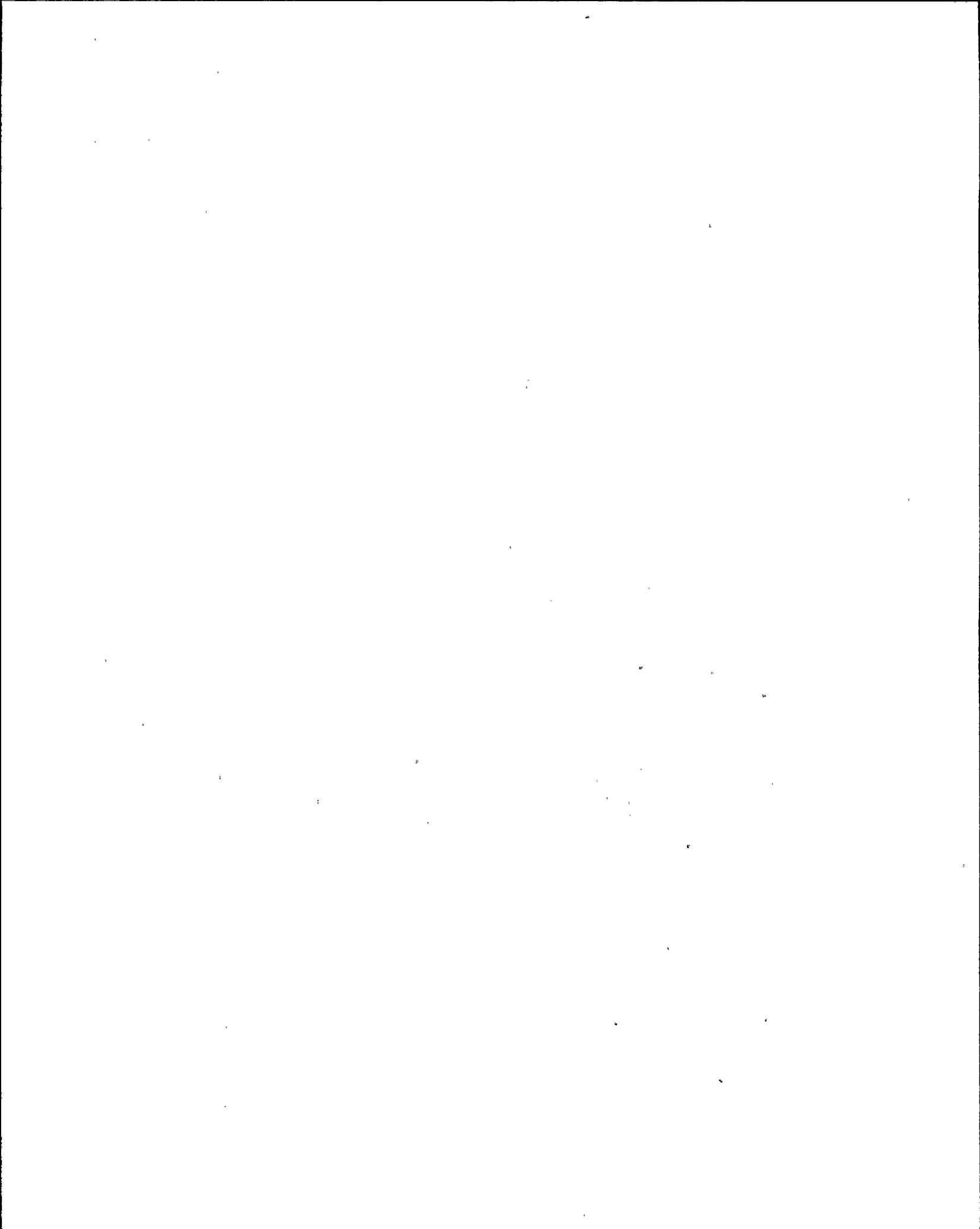
#### 4.2 Training Program Comments

During the preparation of the initial examination, some discrepancies with the training system descriptions were noted by the examination team. System description SYS54 improperly stated that the Intermediate Building Emergency Local Indicating Panel (IBELIP) gave indication of RCS pressure when the actual parameter was RCS temperature. This error necessitated a facility comment to correct the written examination answer key.

Further, the lesson objectives for procedural lesson plans were broad and not facility specific. All objectives were worded the same in that they required knowledge of the procedure's purpose, reasons for cautions and notes, and the ability to use the procedure in-hand. They did not address specific knowledge and performance standards relating to the procedure. The examiner identified only one instance in which a procedure lesson plan had a specific objective unique to that procedure. This hindered the examination author from creating questions that addressed facility specific learning objectives.

The candidates demonstrated a weakness in their knowledge of the Pressurizer Master Level Controller and its integrated plant control of the Charging Pumps. An operator weakness in the knowledge of integrated plant controls between Programmed T-Reference from turbine impulse pressure, and the Rod Control System was also noted. Two crews were given scenarios during which either the pressurizer master level controller or programmed T-reference were failed. Neither crew was able to correctly diagnose the failures of these instruments as the causes of the systems' malfunctions.

Several candidates used uncontrolled material rather than controlled documents during the operating test walk-through. The Training System Descriptions books which were in the control room and stamped in red ink "For Training Use Only" on the title page, were consulted by most of the candidates throughout the walk-through. Specifically, one candidate was attempting to explain the operation of the Steam Generator Blowdown System using the P&IDs. He experienced difficulty in reading the drawing and then resorted to using a simplified drawing from the Training System Descriptions books. The inspector inquired as to the accuracy of these documents relative to the present plant conditions. The inspector was informed by the facility that these books and the Emergency Response Guidelines (ERG) are "training controlled" documents and are available in the control room to the operators as "reference-only" documents to back up procedure usage or operational assessments. In accordance with the Ginna Station Quality Assurance Manual, Section 6, paragraph 3.2.2, these documents are Training Department documents and not plant controlled. Candidates are licensed to operate by controlled procedures and drawings, and they are required to display an ability to use these



documents during the examination process. This large dependence upon these uncontrolled references indicates a weakness in the operators' ability to obtain and interpret controlled reference materials and drawings.

The examiner at no time other than during the examination, observed the use of these documents by licensed operators. The examiner discussed, in detail, the above concern with the facility. The facility stated that they were currently evaluating the procedure concerning the control of these documents.

Simulator Fidelity problems are noted in Attachment 4 and were discussed with licensee representatives.

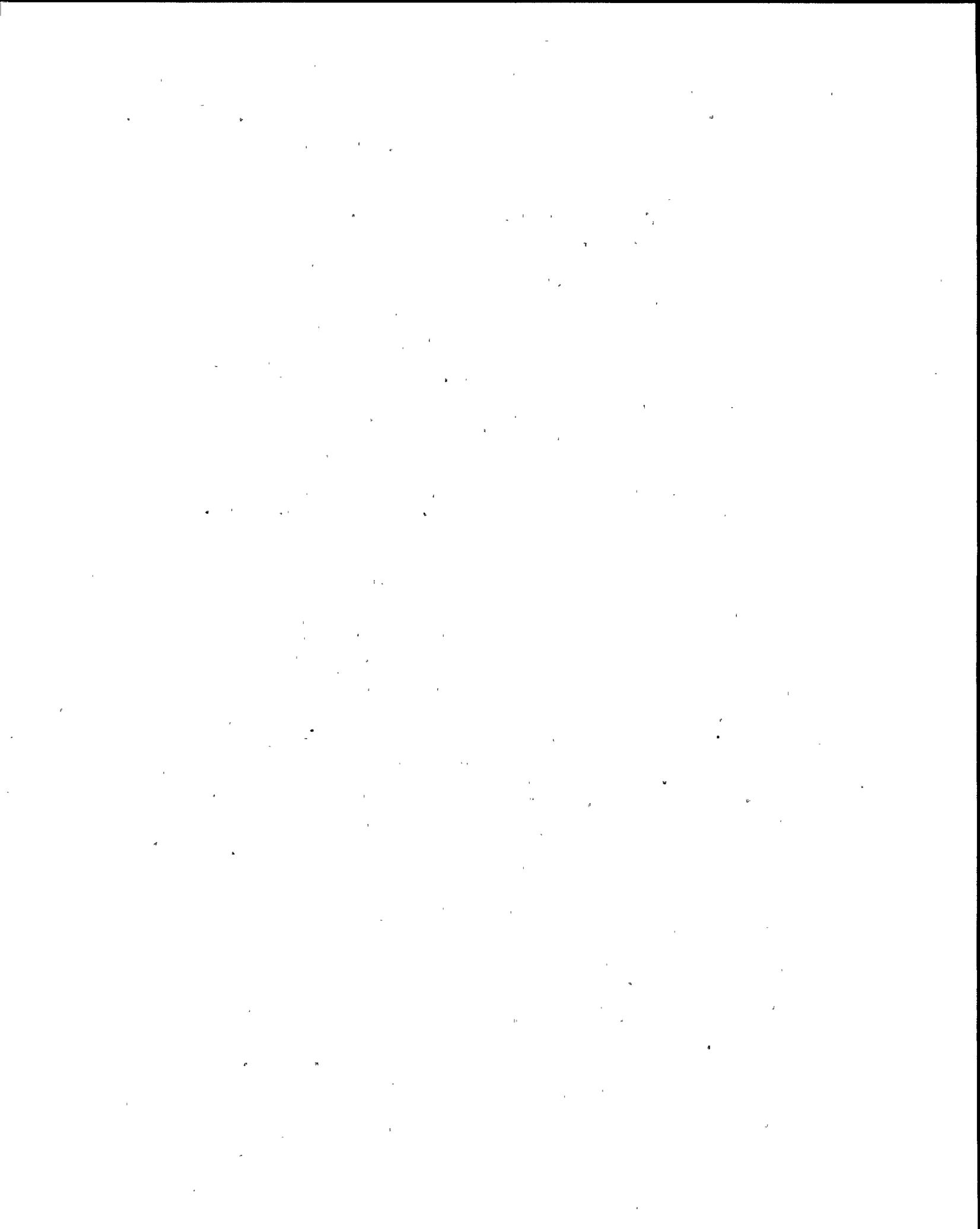
Overall, the applicants were prepared for the licensing examinations. Licensing provided reference materials were adequate and generally in accordance with the NRC's "90-day letter". Certain information had to be further requested after receipt of the reference material.

## 5.0 Additional Findings

During the examination, two procedural problems were identified.

An inconsistency was noted between the instrument defeat procedures for a power range nuclear instrument and a loop T-ave instrument. Both instruments are inputs to the Overpower and Overtemperature Delta-T circuitries. Procedure ER-INST.1 "Reactor Protection Bistable Defeat After Instrumentation Loop Failure" directs the operator to trip the bistables and bypass the rod stops for Overpower and Overtemperature delta-T circuits. Procedure ER-NIS.3 "PR Malfunction" only trips the bistables for the Overpower delta-T and Overtemperature delta-T trips. Tripping these two bistables defeats the Trip bistables and also defeats the Rod Stop circuitry. Both procedures were adequate; however, the procedure that tripped the rod stop bistables was more conservative. The examiner questioned a candidate about this difference. The candidate was unable to explain the difference between the two procedures. The training facility researched the problem and informed the examiner that the inconsistency was due to the procedures being written by two different authors. This lack of procedural consistency in defeating these protective relays caused confusion for the candidates. The facility also informed the examiner that they will perform a review of these procedures and correct the inconsistency.

There was inadequate procedural guidance for entry into AP-RCC.2 "RCC/RPI Malfunction" when a stuck control rod condition existed. Procedure AP-RCC.2 provides the steps necessary to continue plant operation while investigating an RCC/RPI malfunction. The entry conditions for this procedure are a dropped control rod requiring implementation of AP-TURB.2, "Automatic Turbine Runback", or the alarm response procedures for either of two annunciator windows. However, the rod never became sufficiently misaligned from its bank to cause an alarm condition. The crew diagnosed



the stuck rod and began a plant shutdown in accordance with facility technical specifications. The guidance provided by AP-RCC.2 which would have allowed continued plant operations to investigate the malfunction was not utilized in response to this event.

#### 6.0 Exit Interview

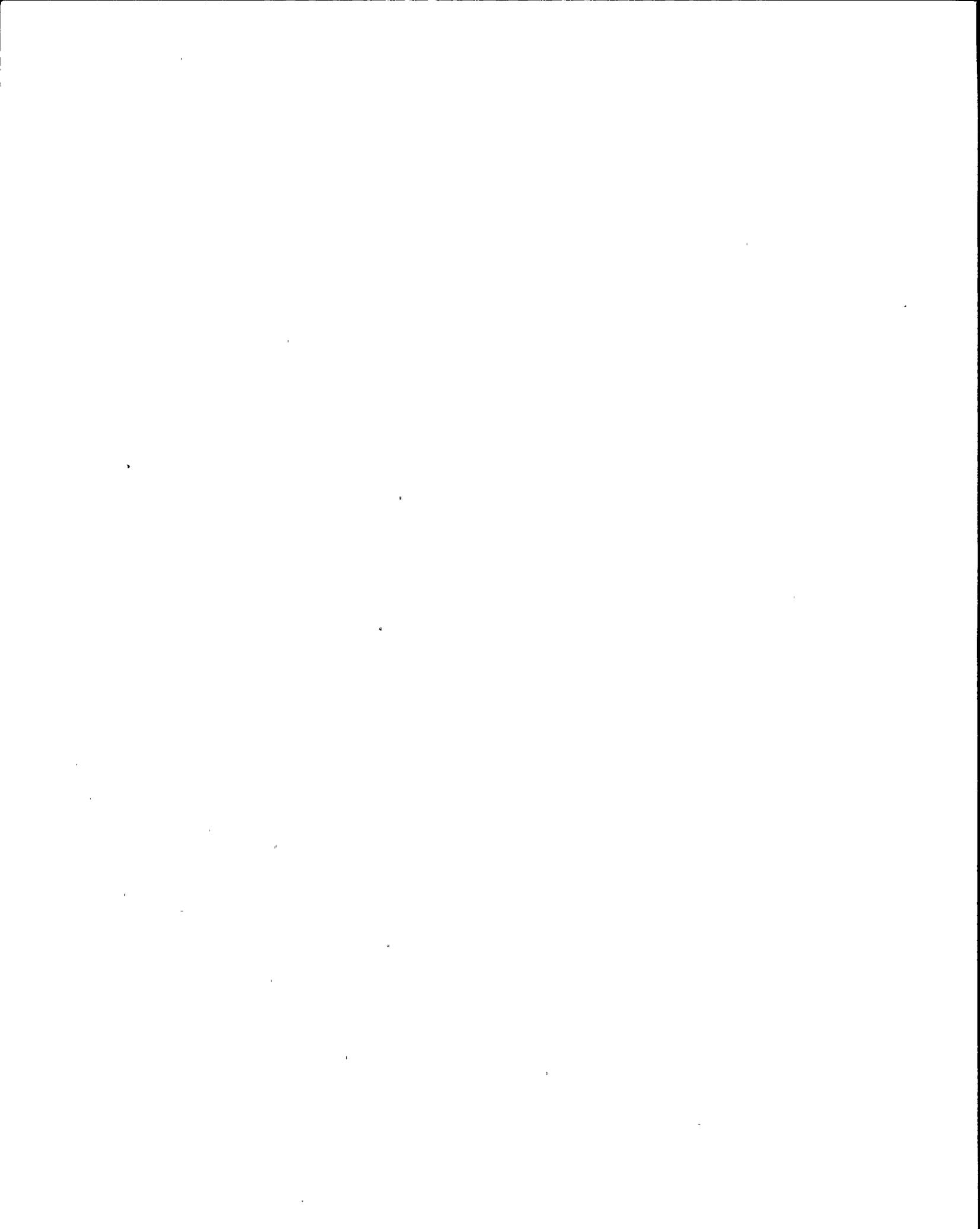
An exit meeting was conducted on September 14, 1990. The licensee representatives who attended the meeting are listed in section 2.2 of this report.

There were no problems with access to the plant, and Operations personnel were cooperative. Generic strengths and weaknesses from the examination, simulator fidelity problems, and other findings discussed in this report were presented.

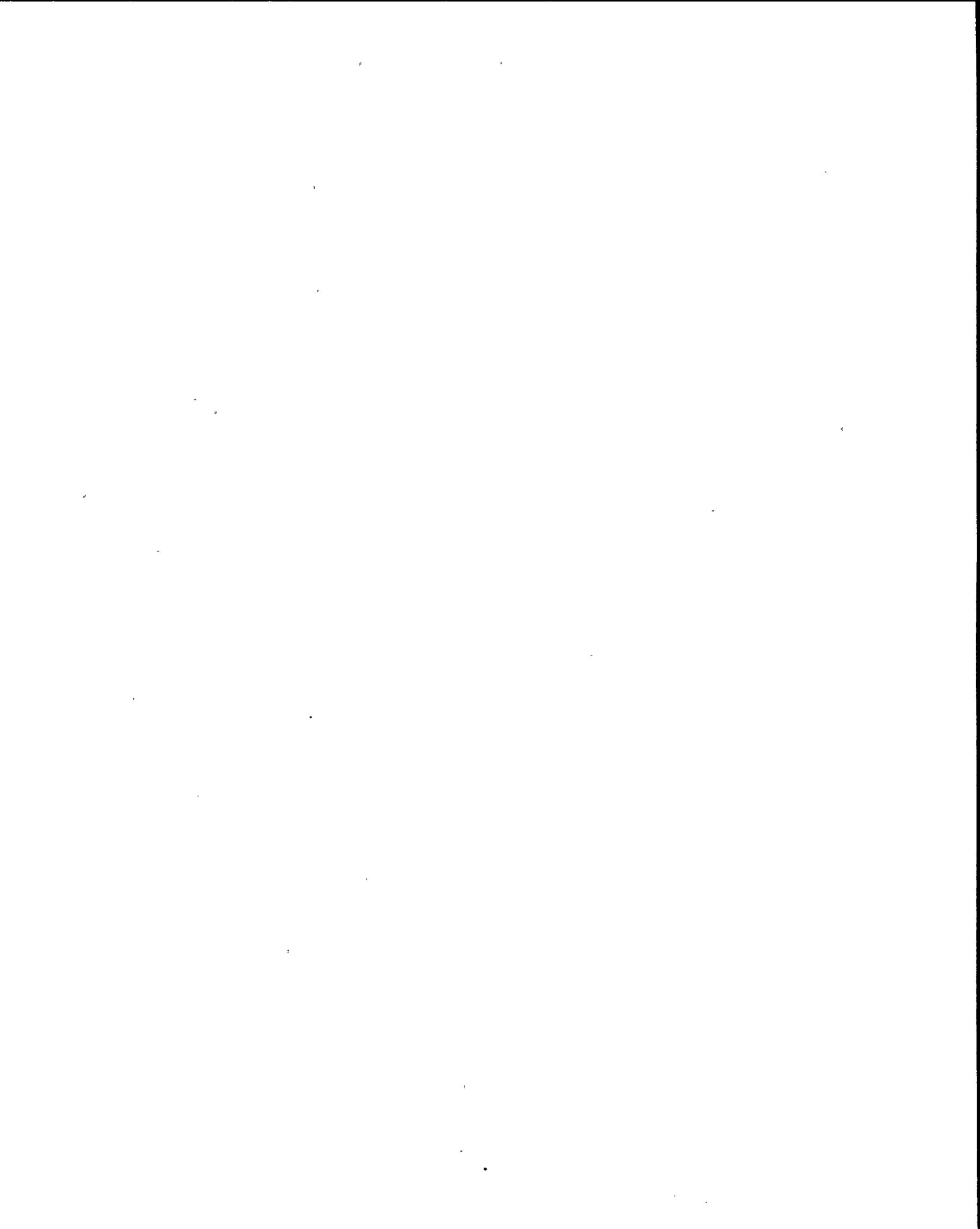
It was explained by the examiners that the results of the examinations would not be presented at the exit meeting but would be contained in the Examination Report. Every effort would be made to send the applicant's results in approximately 30 working days.

#### Attachments:

1. Master Reactor Operator Examination with Answer Key
2. Master Senior Reactor Operator Examination with Answer Key
3. Facility Comments on Initial Written Examination and NRC Response to Facility Comments
4. Simulator Fidelity Report



Attachment 1  
Master Reactor Operator Examination  
with Answer Key



U. S. NUCLEAR REGULATORY COMMISSION  
REACTOR OPERATOR LICENSE EXAMINATION  
REGION 1

FACILITY: Ginna  
REACTOR TYPE: PWR-WEC2  
DATE ADMINISTERED: 90/09/10  
CANDIDATE:

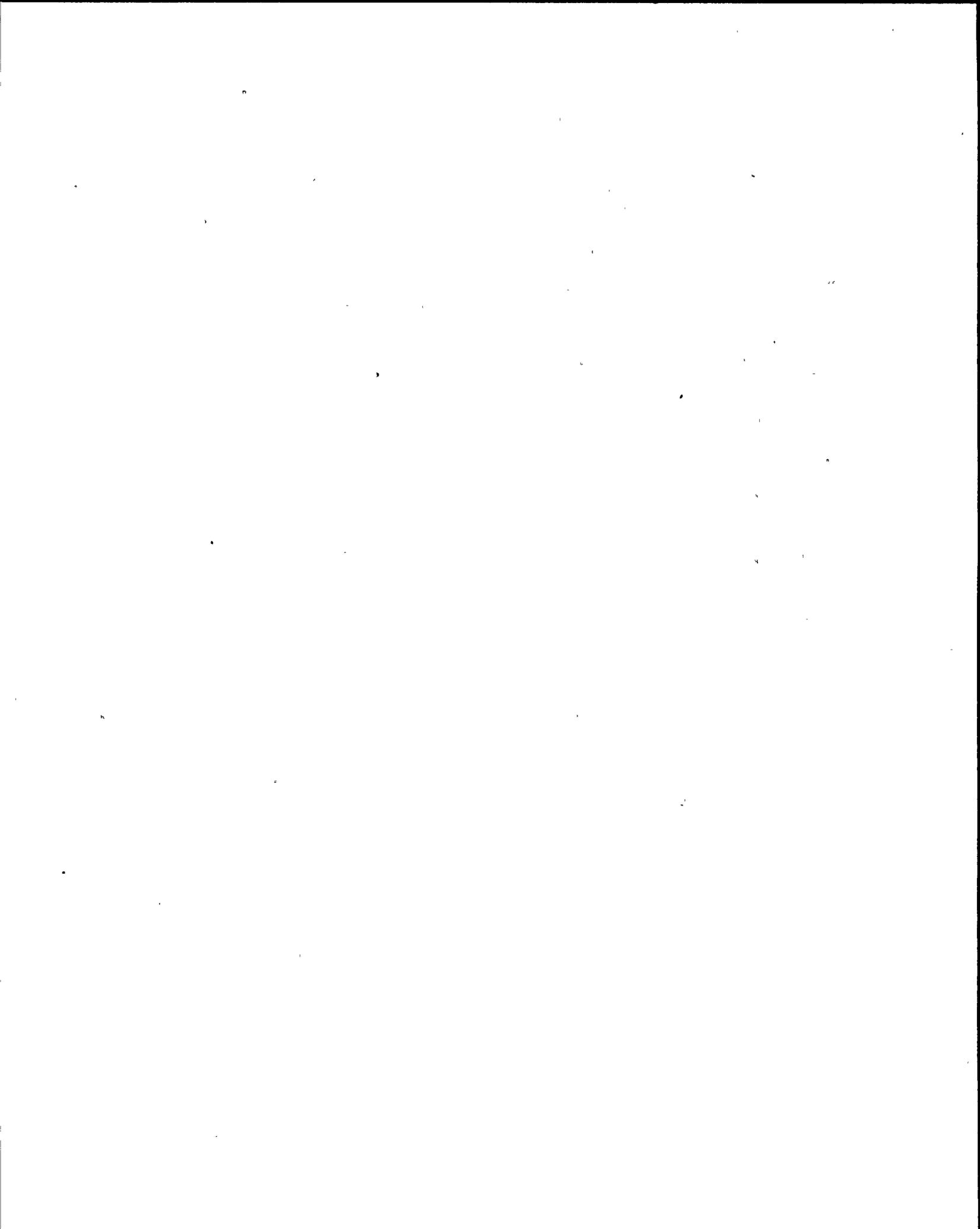
INSTRUCTIONS TO CANDIDATE:

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

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
95	100.00		

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

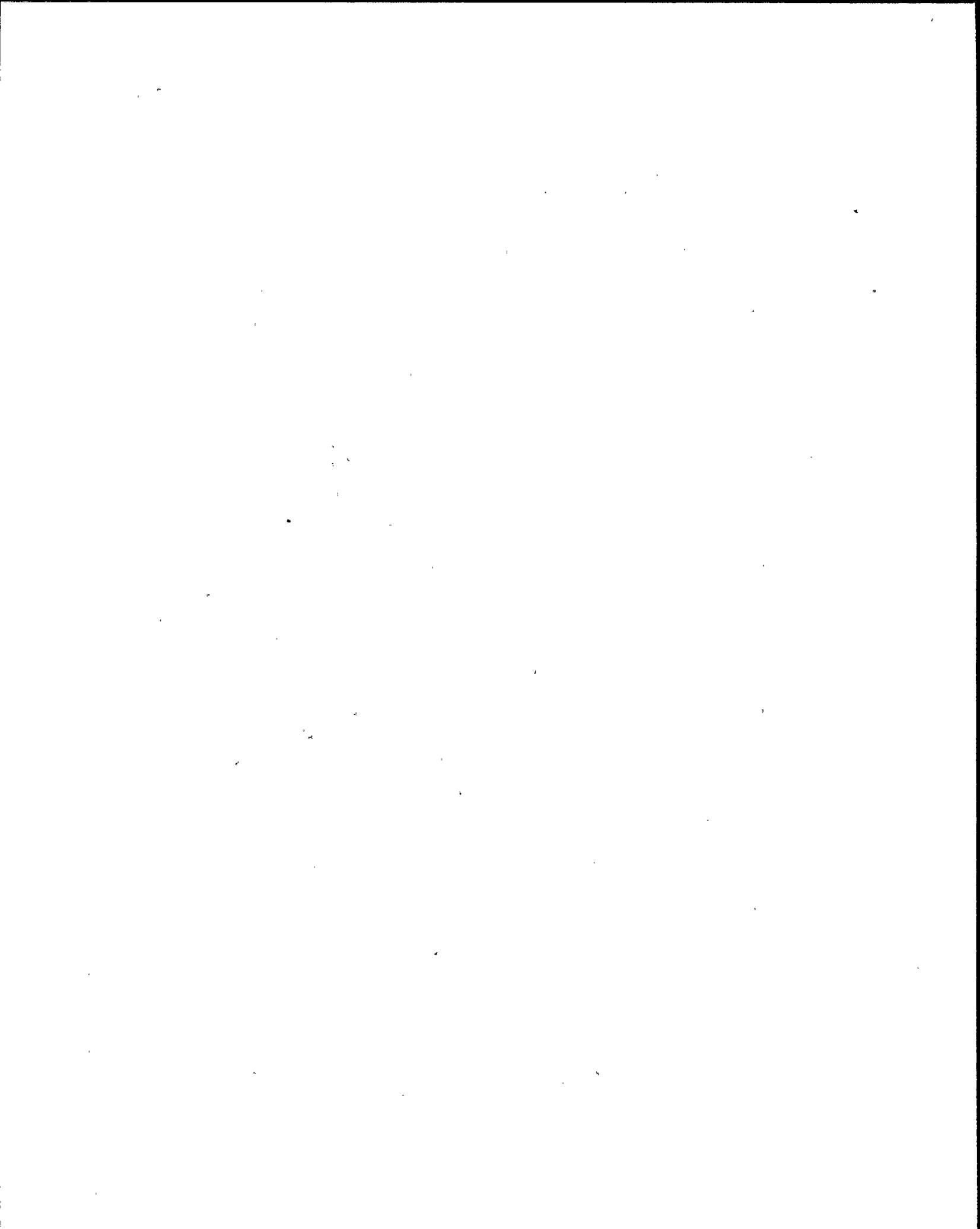
\_\_\_\_\_  
Candidate's Signature



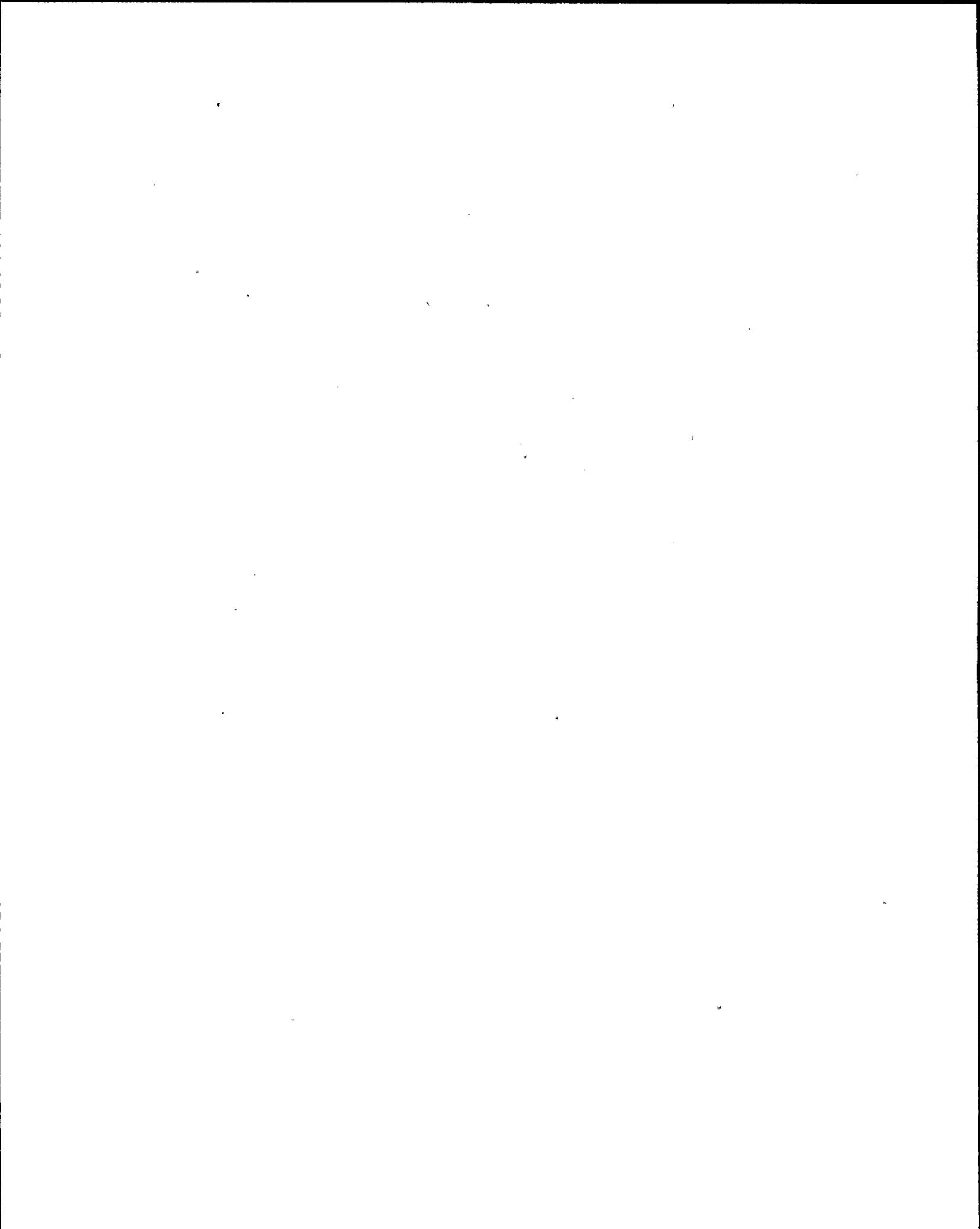
## NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must 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. This must be done after you complete the examination.
3. Restroom trips are to be limited and only one candidate at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
4. Use black ink or dark pencil only to facilitate legible reproductions.
5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet.
6. Fill in the date on the cover sheet of the examination (if necessary).
7. You may write your answers on the examination question page or on a separate sheet of paper. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.
8. If you write your answers on the examination question page and you need more space to answer a specific question, use a separate sheet of the paper provided and insert it directly after the specific question. DO NOT WRITE ON THE BACK SIDE OF THE EXAMINATION QUESTION PAGE.
9. Print your name in the upper right-hand corner of the first page of answer sheets whether you use the examination question pages or separate sheets of paper. Initial each of the following answer pages.
10. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.
11. If you are using separate sheets, number each answer and skip at least 3 lines between answers to allow space for grading.
12. Write "Last Page" on the last answer sheet.
13. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.



14. The point value for each question is indicated in parentheses after the question. The amount of blank space on an examination question page is NOT an indication of the depth of answer required.
15. Show all calculations, methods, or assumptions used to obtain an answer.
16. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK. NOTE: partial credit will NOT be given on multiple choice questions.
17. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.
18. If the intent of a question is unclear, ask questions of the examiner only.
19. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
20. To pass the examination, you must achieve an overall grade of 80% or greater.
21. There is a time limit of (4 1/2) hours for completion of the examination. (or some other time if less than the full examination is taken.)
22. When you are done and have turned in your examination, leave the examination area as defined by the examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.



QUESTION: 001 (1.00)

WHICH of the following statements describes the preferred method of verifying a valve locked closed in accordance with Admin. Procedure A-52.2 (Control of Locked Valve and Breaker Operation)?

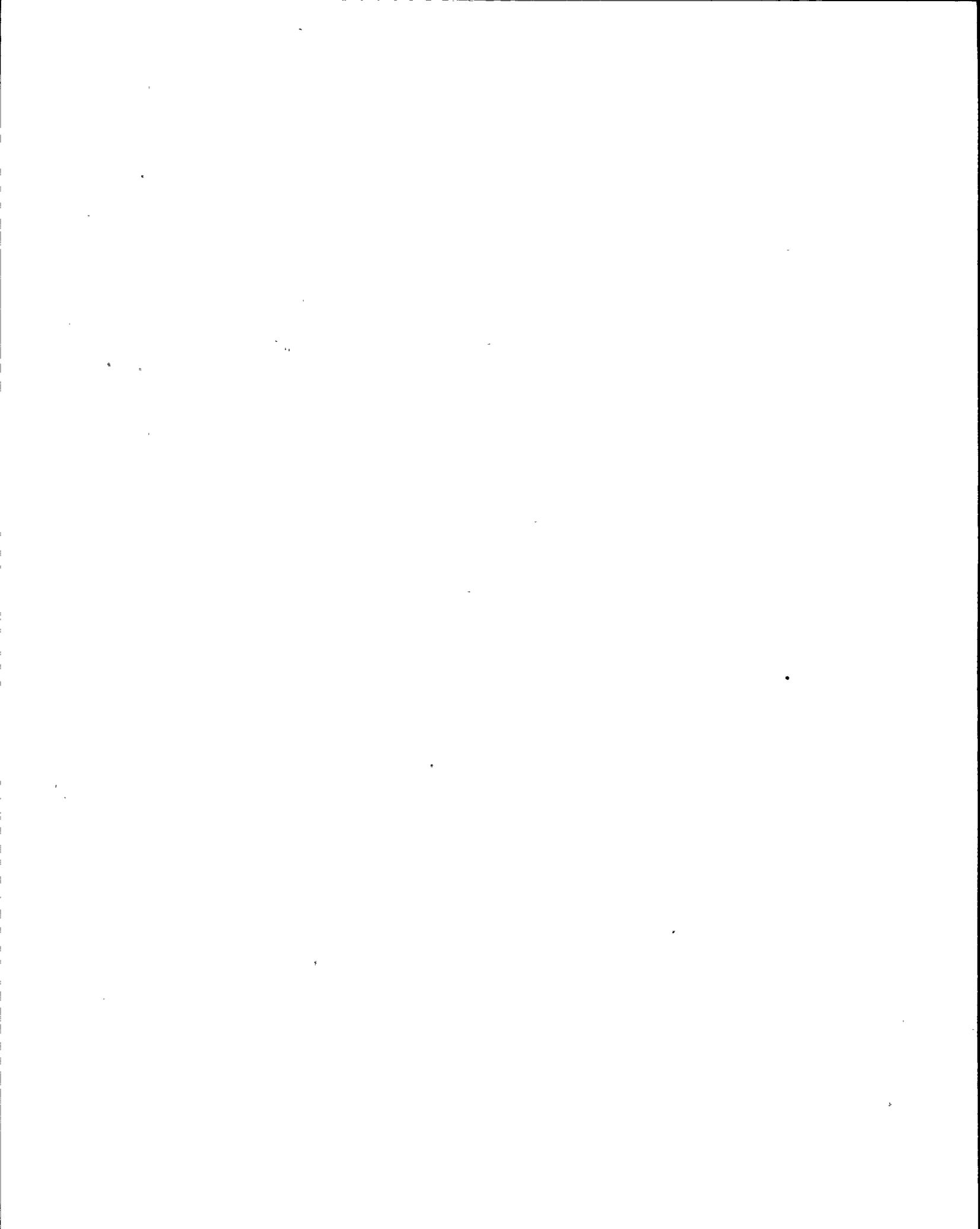
- a. Ensure that the locking device is intact and properly installed.
- b. Unlock the locking device, crack the valve off its seat and immediately reseal it, reinstall the locking device.
- c. Without removing the locking device, attempt to close the valve.
- d. Without removing the locking device, crack the valve off its seat and immediately reseal it.



QUESTION: 002 (1.00)

Concerning Hold Verifications, in WHICH of the following cases MUST an operator perform the required hold verification? (CHOOSE ONE)

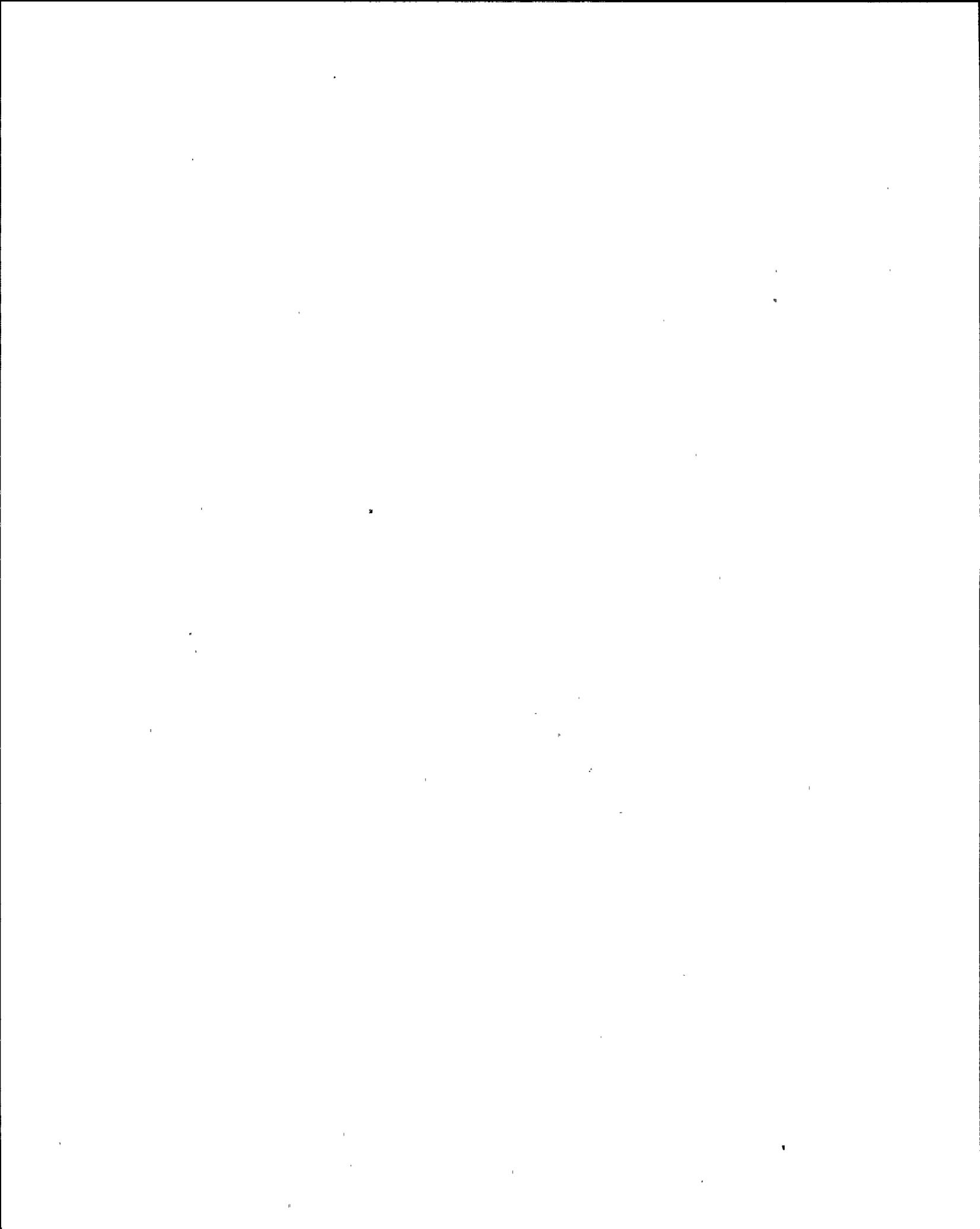
- a. Hold verification of an isolated work area which falls within the boundaries of a previously verified hold.
- b. Hold verification in the containment vessel, where estimated doses to personnel performing the verification are 35 mrem.
- c. Electrical holds, where verification was already performed by a station electrician.
- d. Manual valve holds, where verification was already performed by a pipefitter.



QUESTION: 003 (1.00)

WHICH of the following statements describe measures that demonstrate the practice of keeping radiation exposures at Ginna "as low as is reasonably achievable (ALARA)"?

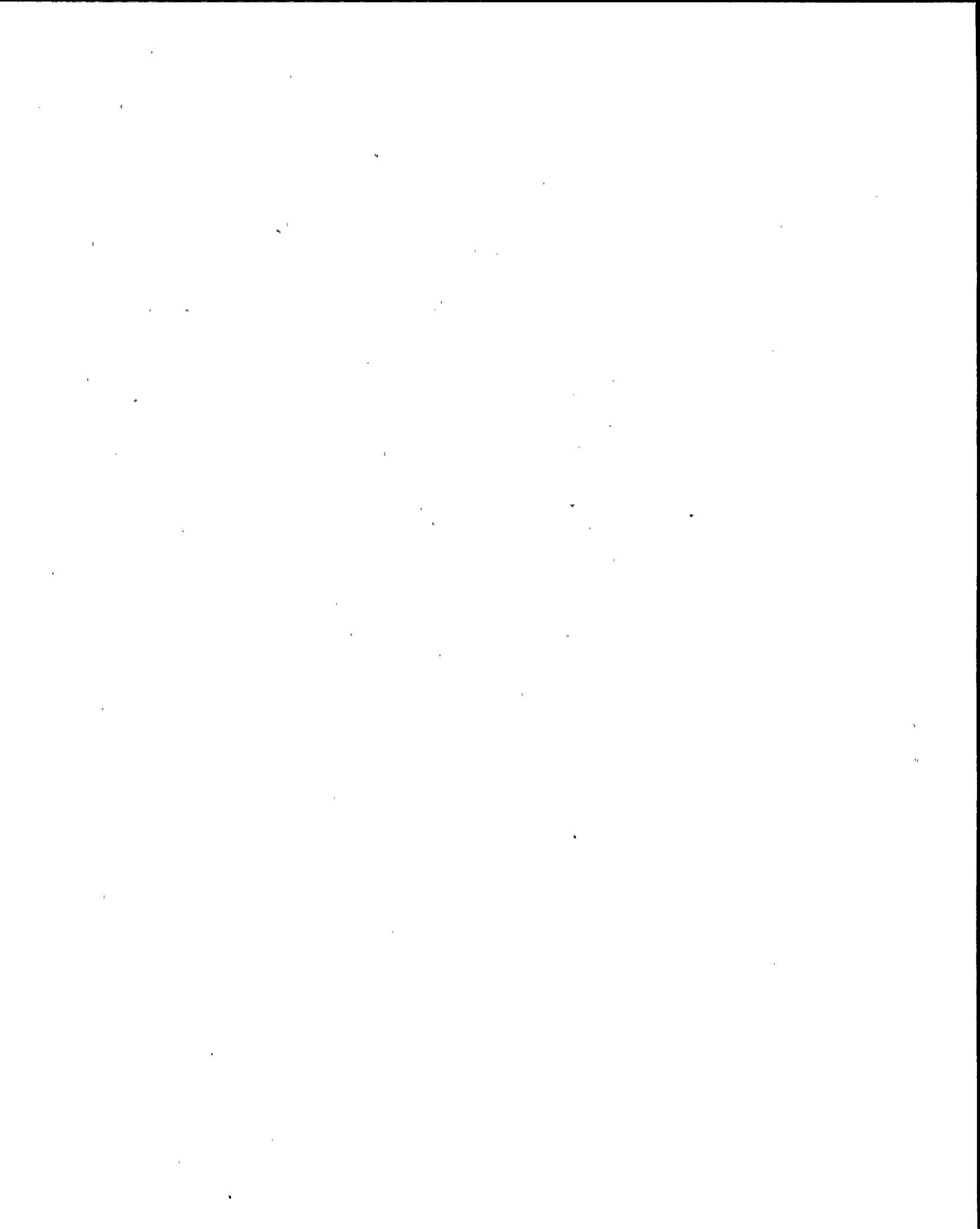
- a. Maintaining quarterly whole body exposures less than 2.0 Rem for personnel older than 19 years of age.
- b. Maintaining quarterly whole body exposures less than 1.25 Rem for personnel older than 18 years of age without a NRC Form-4 on file.
- c. Maintaining quarterly exposures to the skin of the whole body less than 7.5 Rem for personnel older than 18 years of age.
- d. Maintaining cumulative occupational exposure for personnel with a NRC Form-4 on file less than  $5(N-18)$ , where N is the individual's age in years.



QUESTION: 004 (1.00)

An electrician desires to check the routing of a cable in the Main Control Board (MCB). WHICH of the following statements describes the proper conduct within the MCB area?

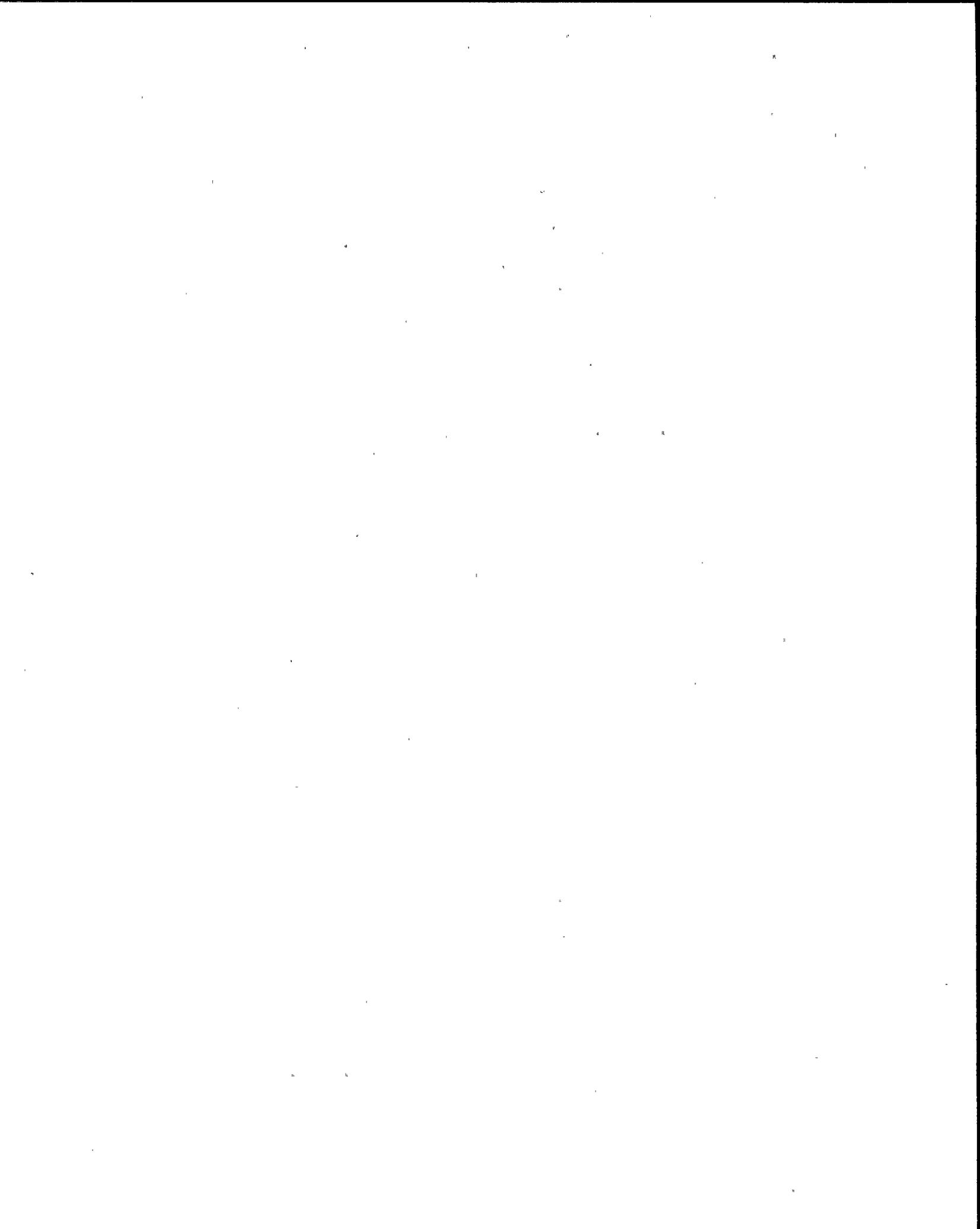
- a. The electrician's job must be authorized by a work request and by use of the Access Authorization Log maintained by the Shift Supervisor.
- b. Entry into the MCB area must be approved by an on-shift licensed operator.
- c. If the electrician's work is distracting to the operators, approval to request the electrician to leave must come from the Shift Supervisor.
- d. If working with another electrician, the HCO must authorize the discussion of non-job related subjects between the electricians.



QUESTION: 005 (1.00)

WHICH of the following statements describes the practice recommended for removal of fuses under an electrical hold?

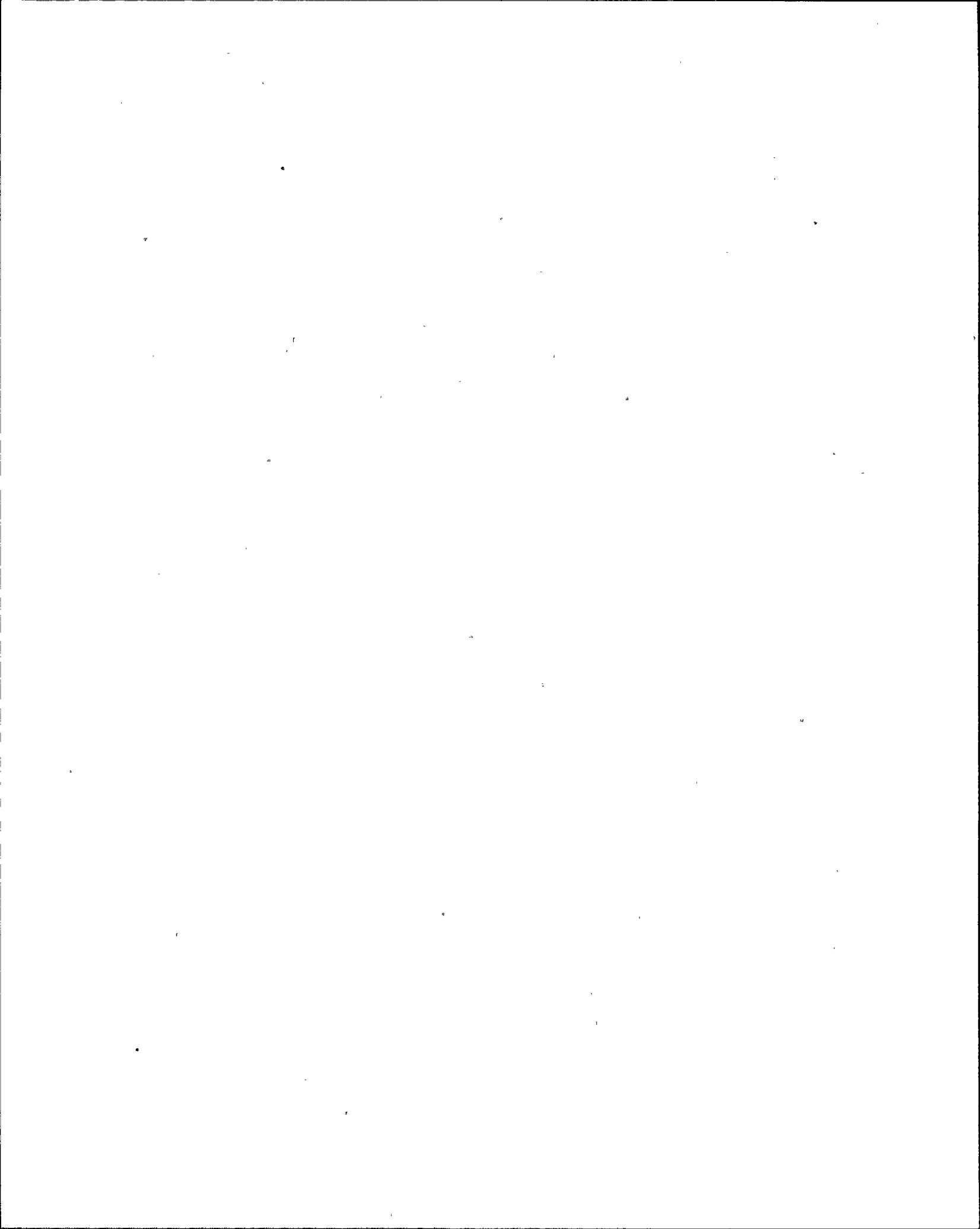
- a. Fuse ferrules should be taped, and the fuse inserted into one clip only of the fuse holder to ensure the proper fuse is installed when the hold is released.
- b. Fuses should be physically removed from the breaker, cubicle, or cabinet in which they were previously installed and taken to the Control Room for the duration of the hold.
- c. Fuses should be kept in an envelope and attached to either the hold card or the fuse clip from which they were removed to ensure they are not lost or mixed with fuses of different ratings.
- d. Fuses shall be kept in the possession of the person removing them until release of the hold.



QUESTION: 006 (1.00)

WHICH of the following samples is NOT required in all cases prior to entry into a confined space?

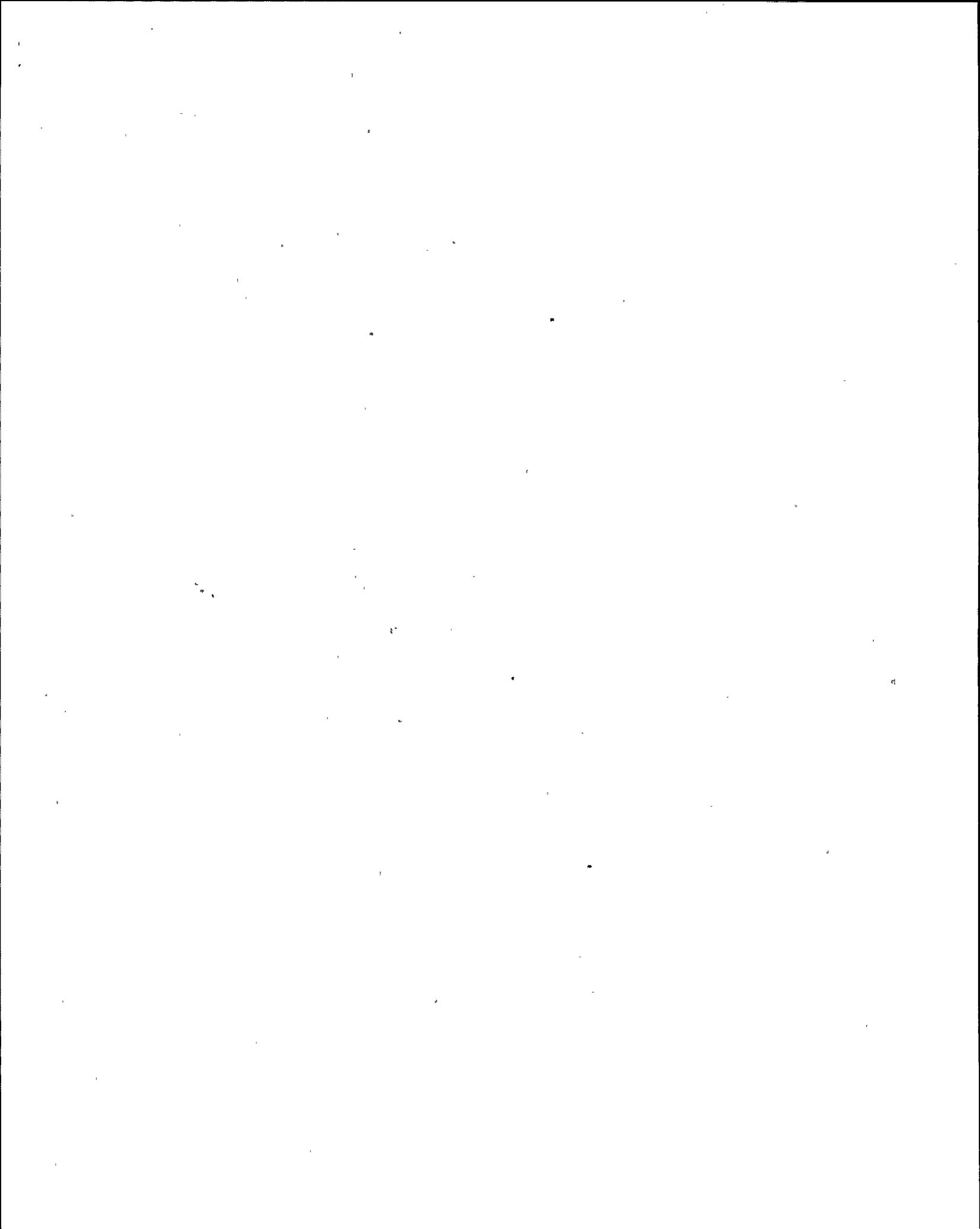
- a. Oxygen concentration
- b. Carbon monoxide concentration
- c. Lower flammability limit
- d. Nitrogen concentration



QUESTION: 007 (1.00)

Ansul Foam Unit portable extinguishers are best used for:

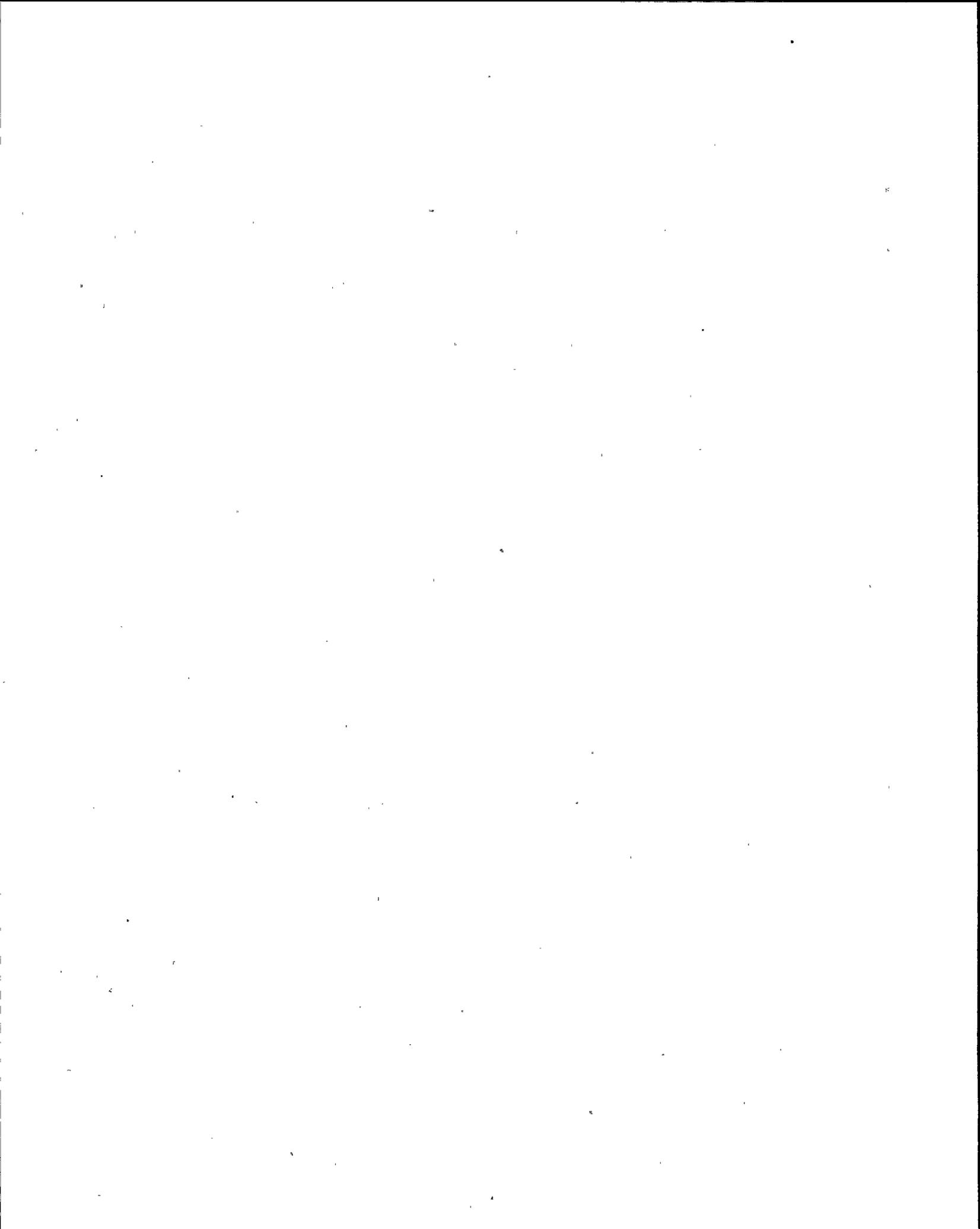
- a. Electrical fires
- b. Charcoal filter fires
- c. Paper fires
- d. Oil fires



QUESTION: 008 (1.00)

How are communications established between the remote shutdown crew in the event of a fire in the Control Room?

- a. By using the station page circuit and headphones located in the Appendix R locker outside the Control Room.
- b. By using channel two of the normal two-way radio circuit.
- c. By using a sound-powered phone circuit established between the various control stations.
- d. By activation of a dedicated circuit off the Appendix R repeater, using two-way radios.

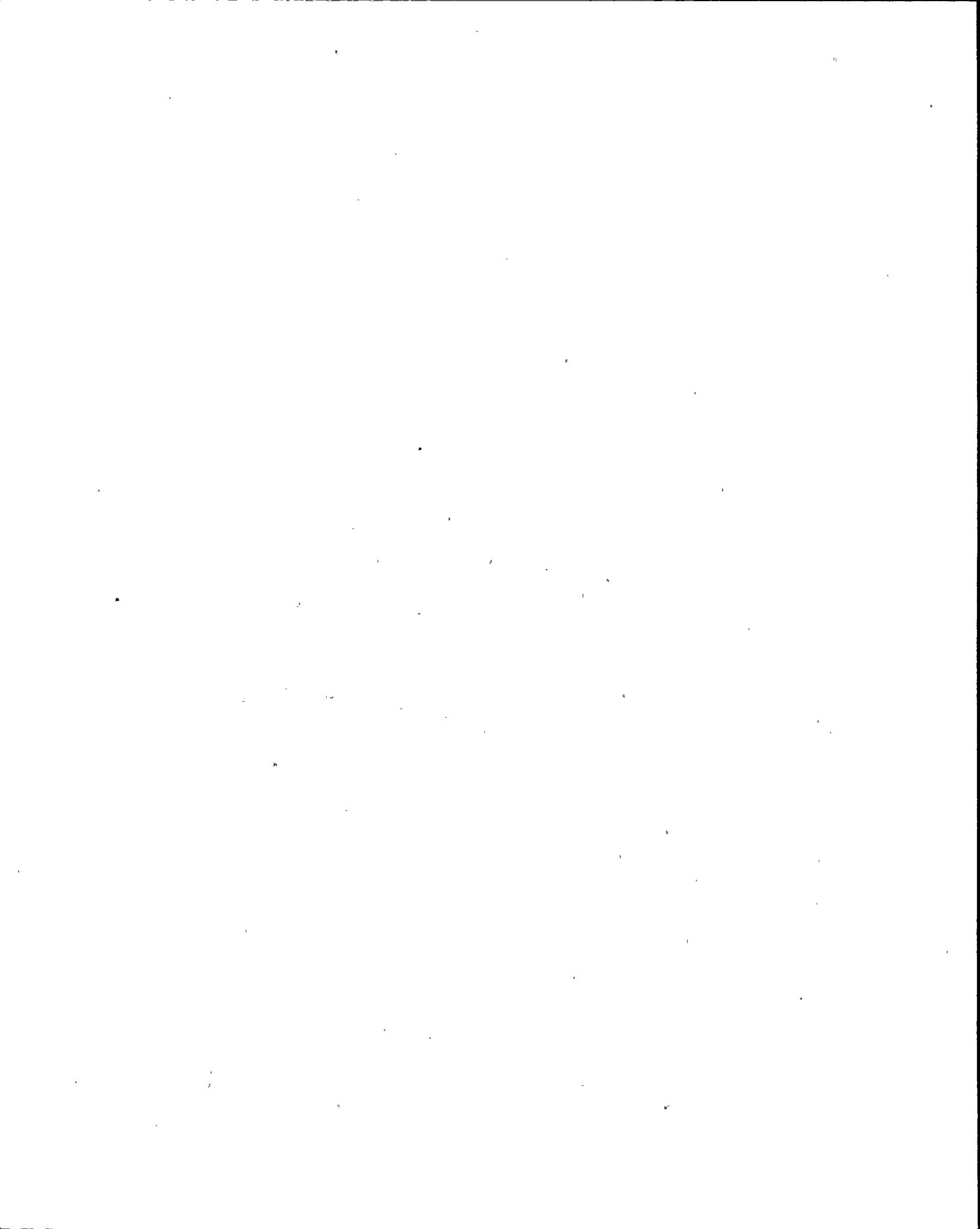


QUESTION: 009 (1.00)

The plant has just tripped from 100% power.

WHICH of the following statements describes the information that should be included in the Ginna Station Event Report (A-25.1)?

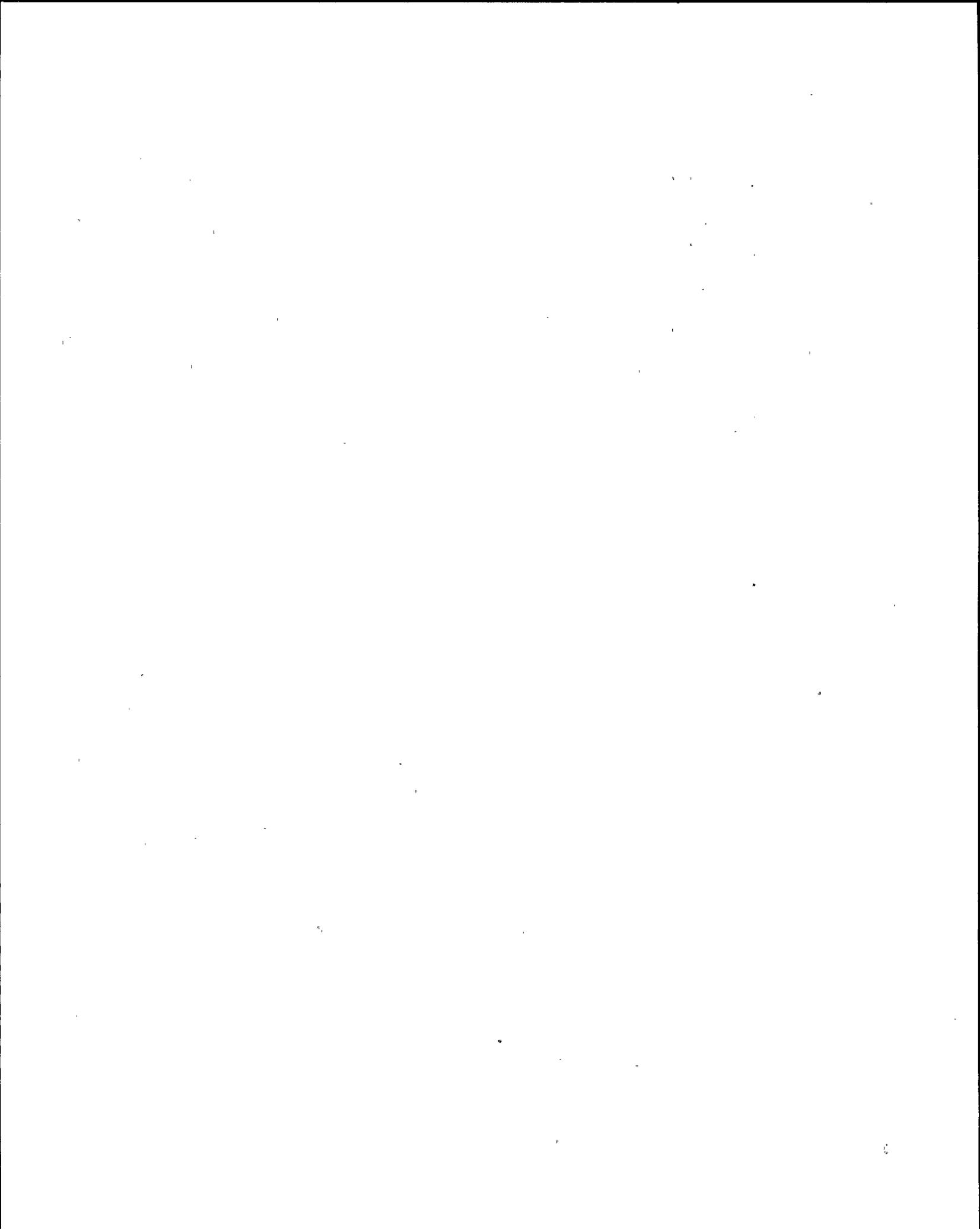
- a. Time of the trip  
Names of Control Room (CR) personnel present  
First-out alarm received  
Unusual alarms received after the trip
- b. Activities in progress at the time of the trip  
Abnormal trends in plant parameters before the trip  
First-out alarm received  
Immediate corrective actions taken by CR personnel  
Unusual alarms received before and after the trip
- c. Activities in progress at the time of the trip  
Time of the trip  
Names of CR personnel present  
Event classification of the trip  
Tech spec action statements in effect before and after the trip  
Power level at time of the trip  
Boron concentration before and after the trip
- d. First-out alarm received  
Immediate corrective actions taken by CR personnel  
List of all procedures entered after the trip  
Log of all borations made after the trip



QUESTION: 010 (1.00)

WHICH of the following AO activities requires direct supervision by an active licensed individual?

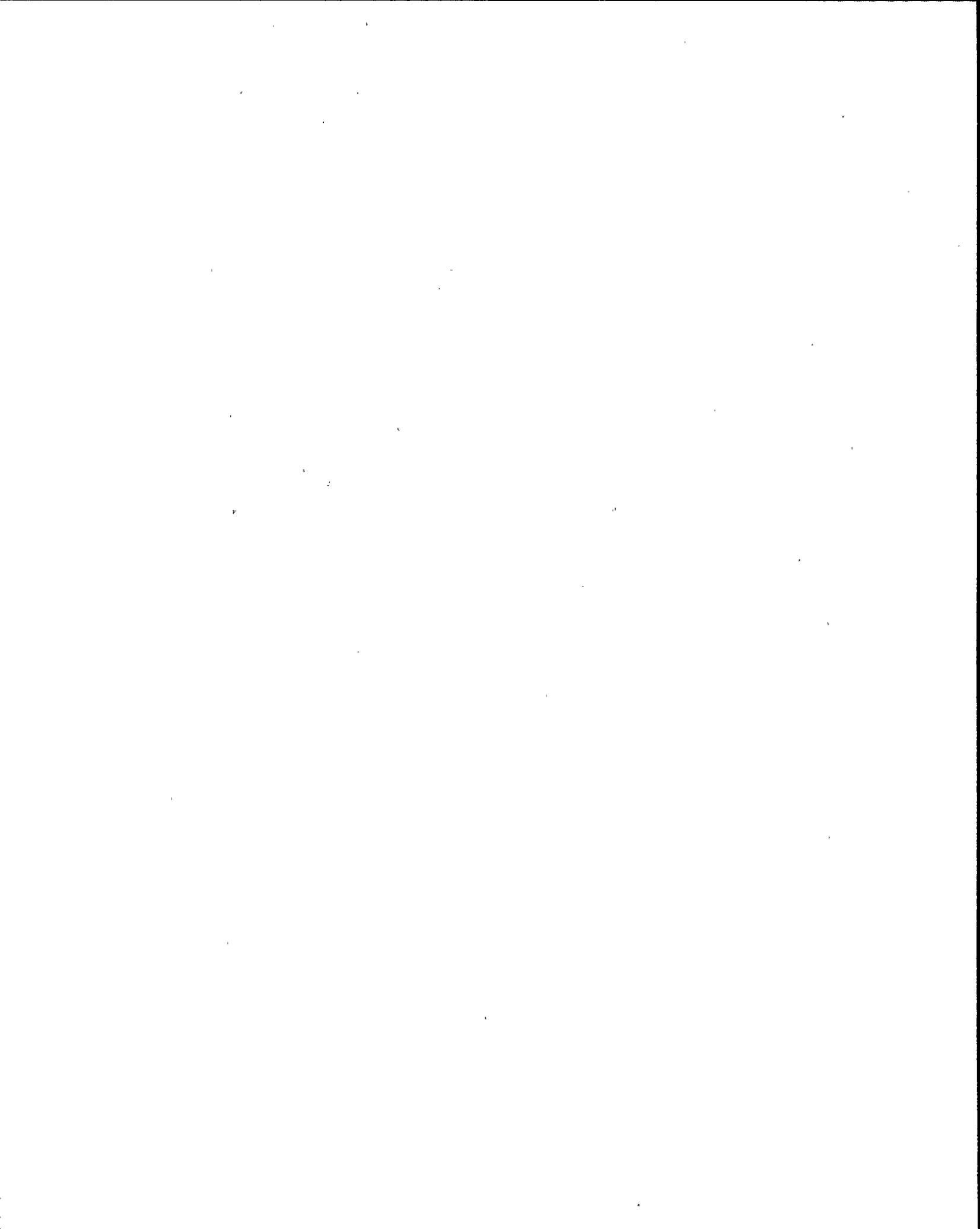
- a. Performance of an alarm check at 1A D/G Alarm panel.
- b. On a startup, adjusting gland seal condenser vacuum.
- c. Adding oil to the TDAFWP oil reservoir.
- d. During a shutdown, opening V-356 (BAST to charging pumps).



QUESTION: 011 (1.00)

WHICH of the following statements describes the proper procedure for isolating in the CLOSED position for HOLD purposes, a pneumatically operated valve that FAILS OPEN?

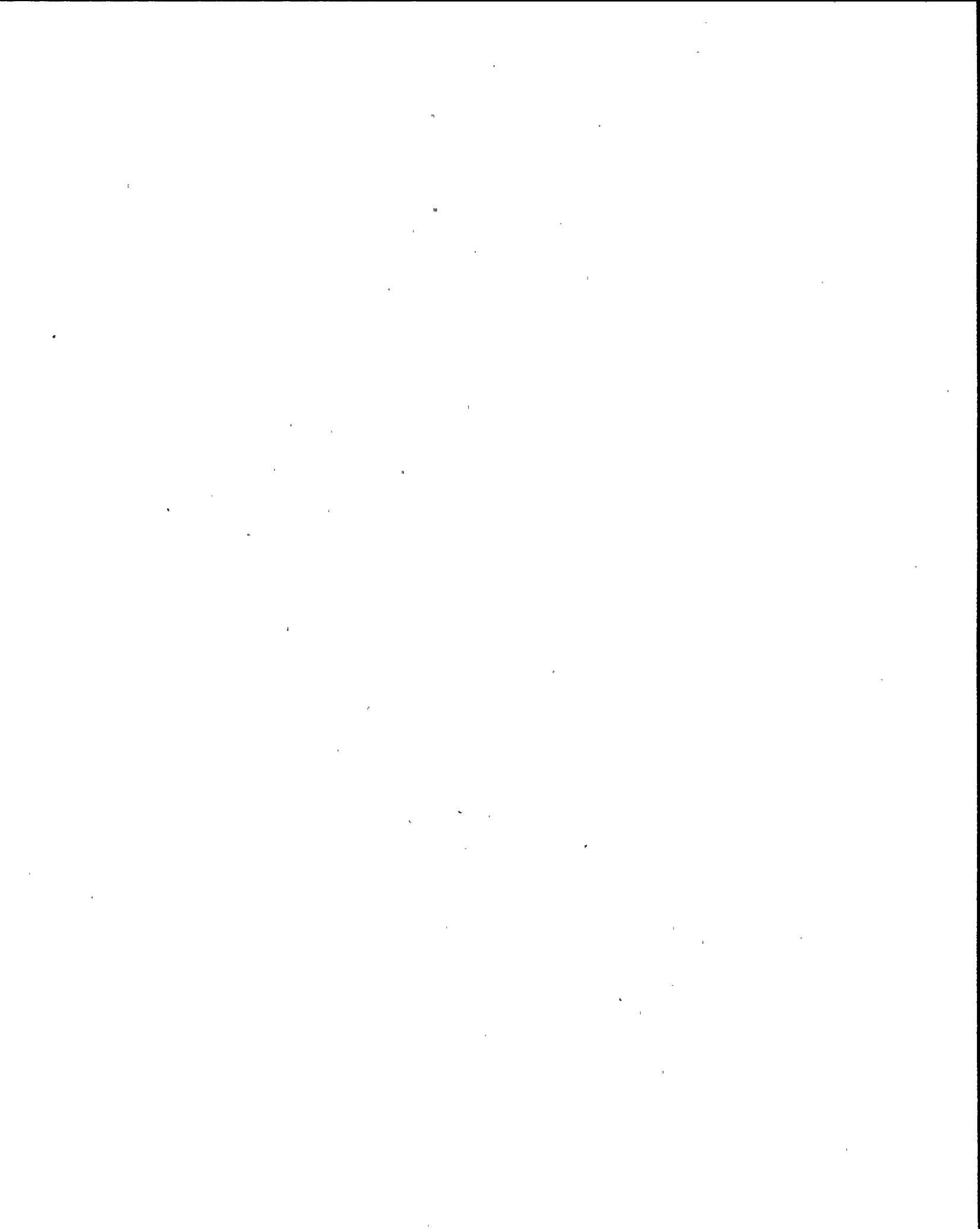
- a. Close the valve  
Install a HOLD tag on the remote operating switch  
Isolate the air supply to the valve  
Install a HOLD tag on the CLOSED air supply valve
- b. Close the valve  
Install a HOLD tag on the remote operating switch and on the air line where it enters the valve actuator.
- c. Close the valve  
Install a blocking device or gag  
Install a HOLD tag on the valve
- d. Close the valve  
Install a blocking device or gag  
Isolate the air supply  
Install HOLD tags on the valve and the air supply isolation valve.



## QUESTION: 012 (1.00)

When using a manual trip pushbutton to trip the reactor in the event of an ATWS, how are the trip coils affected? (CHOOSE ONE):

- a. UV coils and shunt coils are all de-energized.
- b. UV coils only are de-energized, the shunt coils are unaffected.
- c. Shunt coils only are energized, the UV coils are unaffected.
- d. UV coils are de-energized, the shunt coils are energized.



QUESTION: 013 (1.00)

To perform an alternate dilution, WHICH of the following sequences properly explains the steps necessary with the Reactor Makeup Control starting in AUTO?

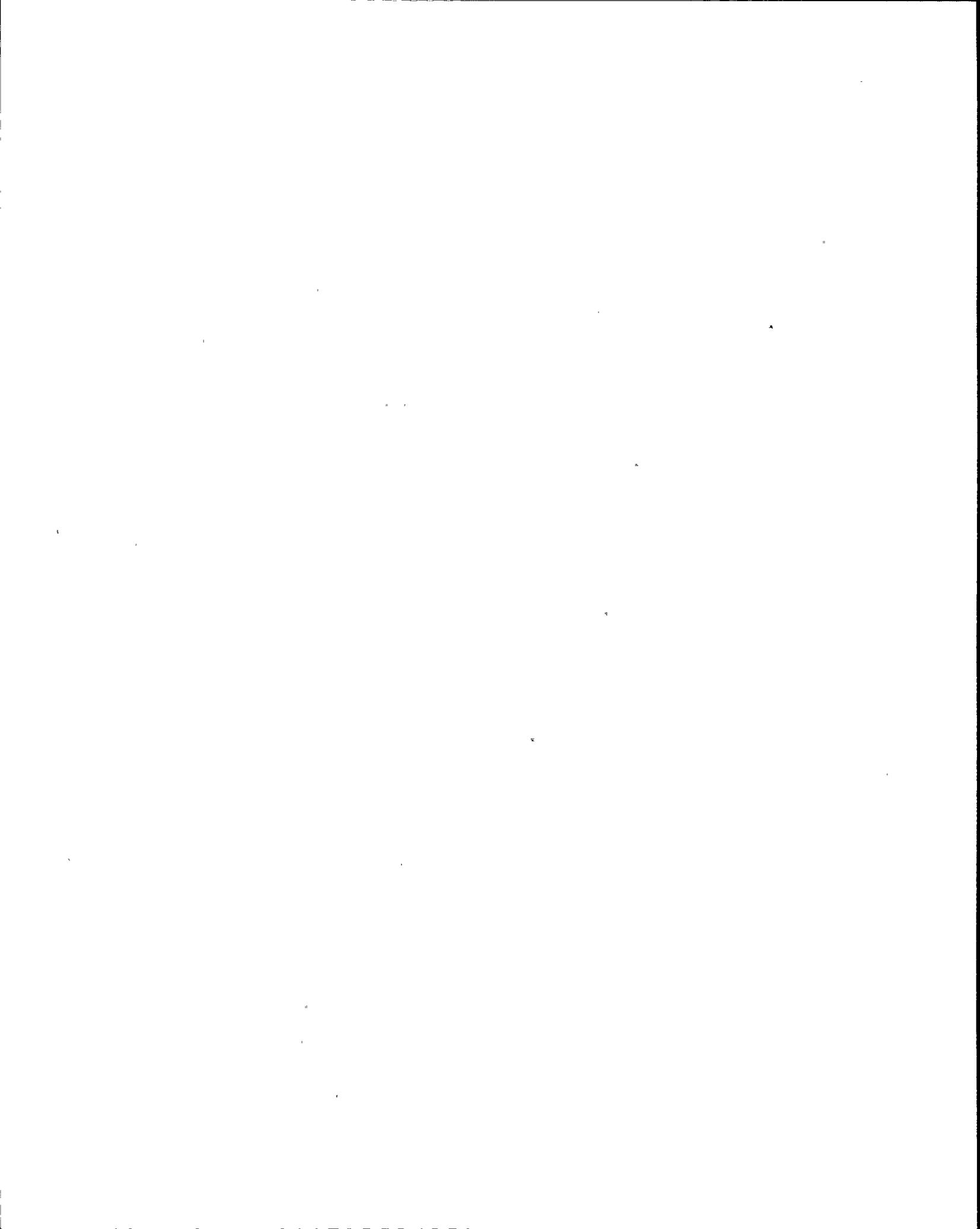
- a.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Set makeup water batch integrator to desired gallons
  - 3) Set desired flow rate for FCV-111
  - 4) Take control switch to start
  
- b.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Take controller for valve FCV-110C to manual and close FCV-110C
  - 3) Set desired flow rate for FCV-111
  - 4) Take control switch to start
  
- c.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Take controller for valve FCV-110B to manual and close FCV-110B
  - 3) Set makeup water batch integrator to desired gallons
  - 4) Set desired flow rate for FCV-111
  - 5) Take control switch to start
  
- d.
  - 1) Start a RMW pump
  - 2) Take controller for FCV-111 to manual and open FCV-111
  - 3) Set makeup water batch integrator to desired gallons
  - 4) Take control switch to start



QUESTION: 014 (1.00)

WHICH of the following describes the purpose of the "Top Level Release" Key for the PRIMARY CRT of the Safety Assessment System (SAS)?

- a. To change modes between the various top level displays regardless of which top level display is selected on the secondary CRT.
- b. To view the various secondary displays when the secondary CRT is already selected to a secondary display.
- c. To view the various Critical Safety Function (CSF) Displays when the secondary CRT is already selected to a top level display.
- d. To view the Safety System Readiness Monitor (SSRM) displays when the secondary CRT is already selected to a CSF display.



QUESTION: 015 (1.00)

The plant is in a General Emergency

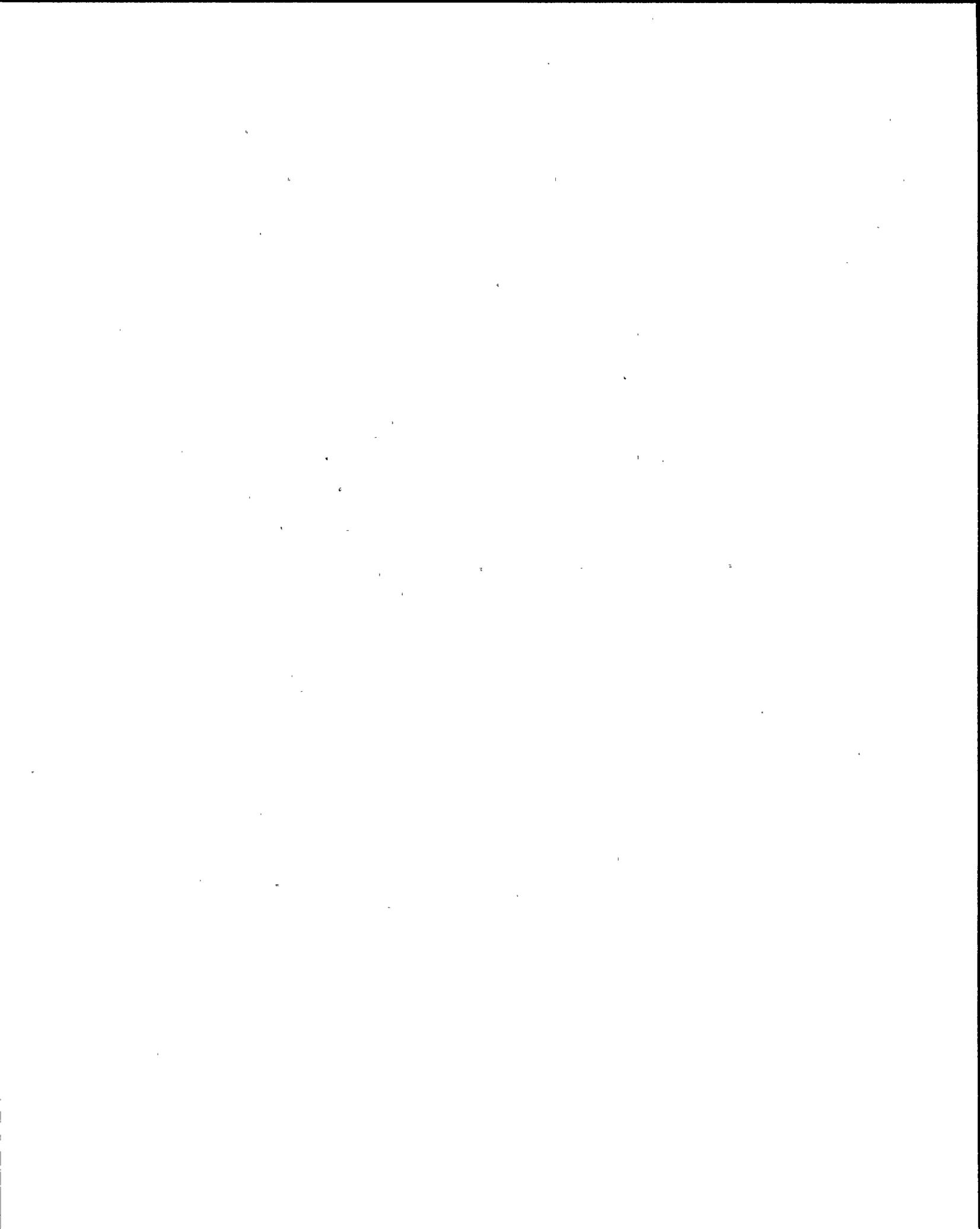
Your crew is transiting from the Emergency Survey Center (ESC) to the CR to relieve the shift.

You are the team leader and are carrying a high range dose rate meter.

As you exit the stairwell in the turbine building on your way to the CR, the dose rate meter is reading 4 R/hr and increasing.

WHICH of the following describes the proper response to this situation?

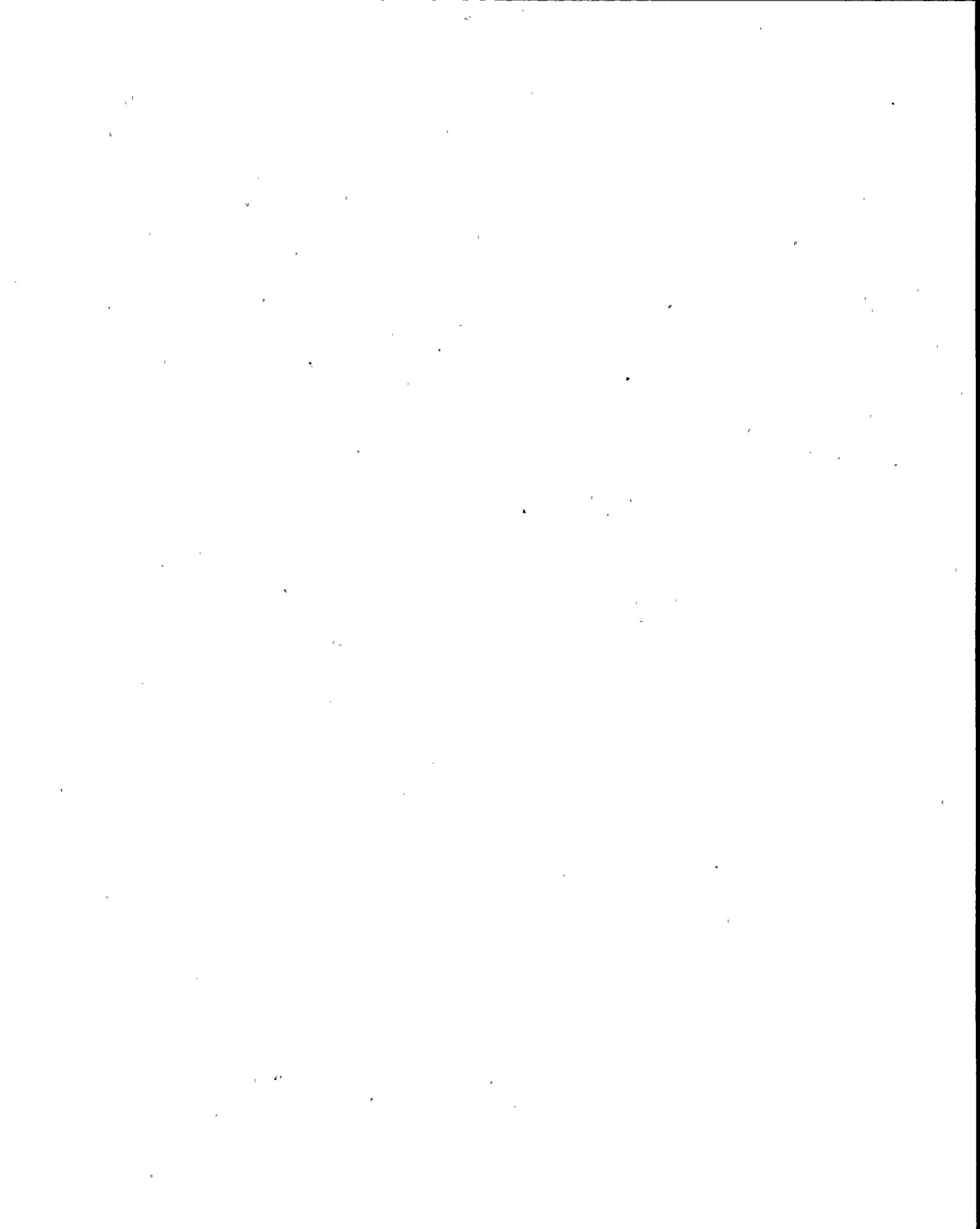
- a. Leave the immediate area and contact the Emergency Coordinator.
- b. Continue to the Control Room and notify Health Physics.
- c. Get an additional instrument to verify the reading.
- d. Leave the area and return to the ESC.



QUESTION: 016 (1.00)

For a trip of "A" Reactor Coolant Pump below P-8, WHICH of the following correctly describes the effect on the "A" S/G level immediately after the trip?

- a. "A" S/G level decreases to follow the new programmed level for the lower value of turbine impulse chamber pressure.
- b. "A" S/G level increases in response to a higher steam flow as sensed from a lower steam pressure.
- c. "A" S/G level decreases due to the density increase of the water in the downcomer being cooled by colder RCS water.
- d. "A" S/G level increases due to an increased steam flow to compensate for a lower enthalpy rise across the U-tubes.

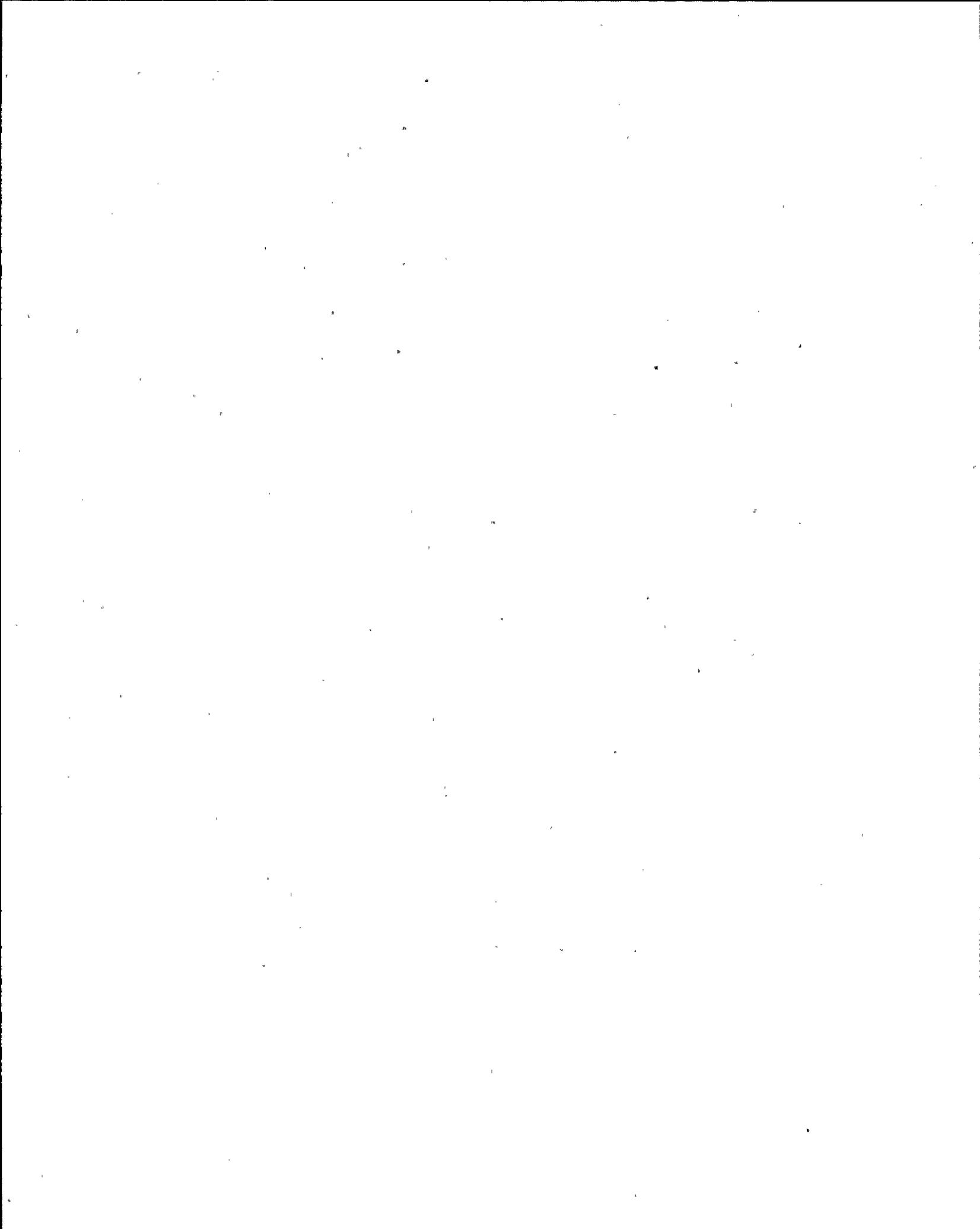


QUESTION: 017 (1.00)

A recent modification to the AMSAC circuitry moved the input point for the "armed" indication to the plant process computer system (PPCS) upstream of the manual block/arm switch.

The purpose of this modification was to (CHOOSE ONE):

- a. Provide electrical isolation between the PPCS and MCB alarm circuits and the Reactor Protection circuitry.
- b. Allow operators to block AMSAC from the MCB at any power level.
- c. Provide status of AMSAC to operators when it is blocked to prevent unblocking AMSAC with an actuation signal present.
- d. Provide <sup>an</sup> ~~an~~ alarm telling the operators to ensure AMSAC is manually unblocked prior to 50% power.



QUESTION: 018 (1.00)

The reactor is at 5% power.

A startup is in progress, but is being delayed due to Nuclear Instrumentation malfunctions.

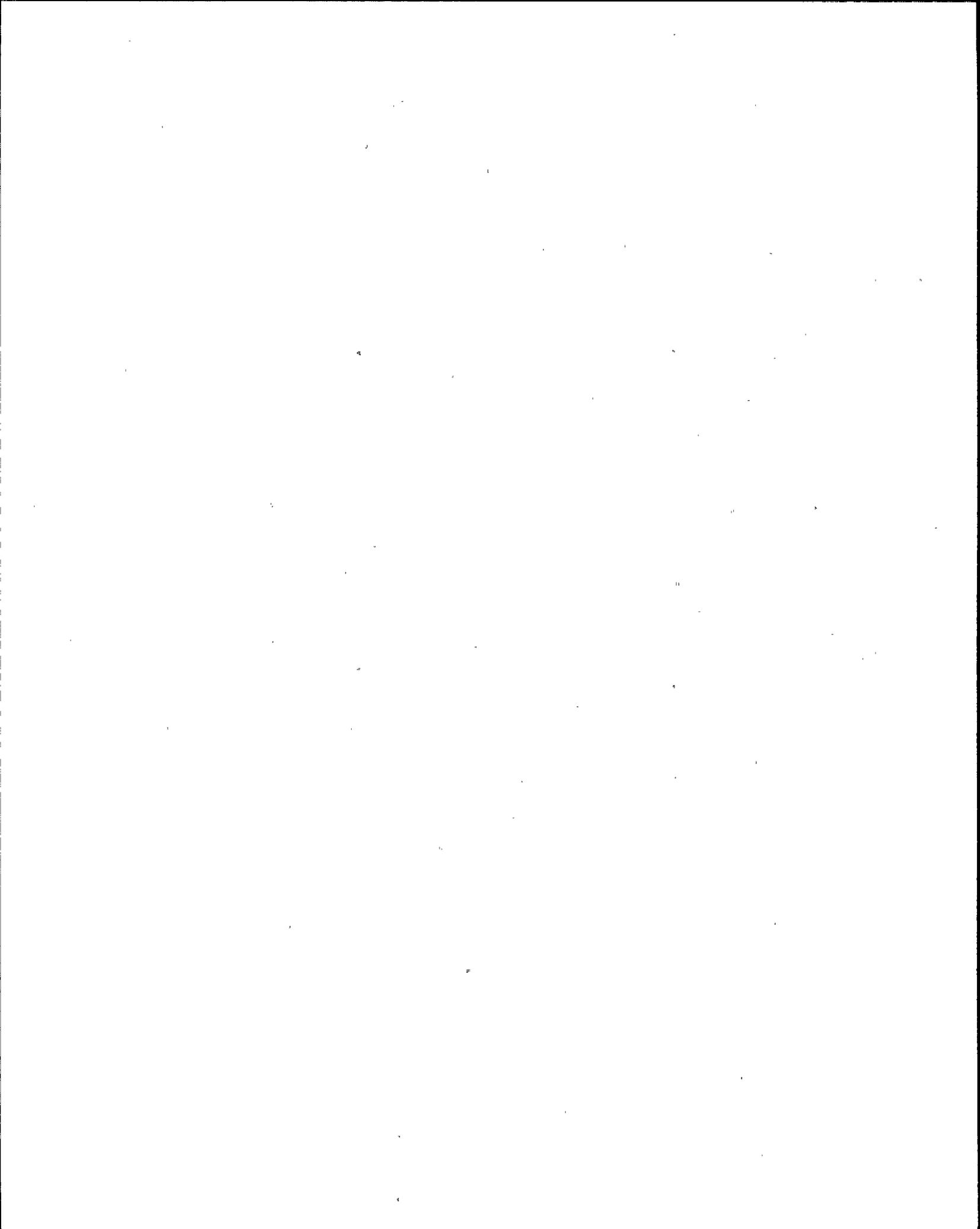
An I&C tech is troubleshooting both Source Range NI channels (N31 & N32) due to intermittent resetting of annunciator E-5 SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED.

The level trip switches for both channels are in BYPASS.

The HCO, seeing the bypass condition, inadvertently presses both P-6 Permissive Defeat Pushbuttons.

WHICH of the following adverse results will occur as a result of this action?

- a. The reactor will trip on SOURCE RANGE HI FLUX LEVEL REACTOR TRIP.
- b. SOURCE RANGE HI FLUX LEVEL REACTOR TRIP for both channels will be disabled, requiring entry into Tech Spec action statement 3.0.1.
- c. Both source range detectors will be damaged from high voltage being restored at an excessive power level.
- d. POWER RANGE LO RANGE REACTOR TRIP and INTERMEDIATE RANGE REACTOR TRIP will be disabled prior to the P-10 interlock setpoint, requiring entry into Tech Spec action statement 3.0.1.

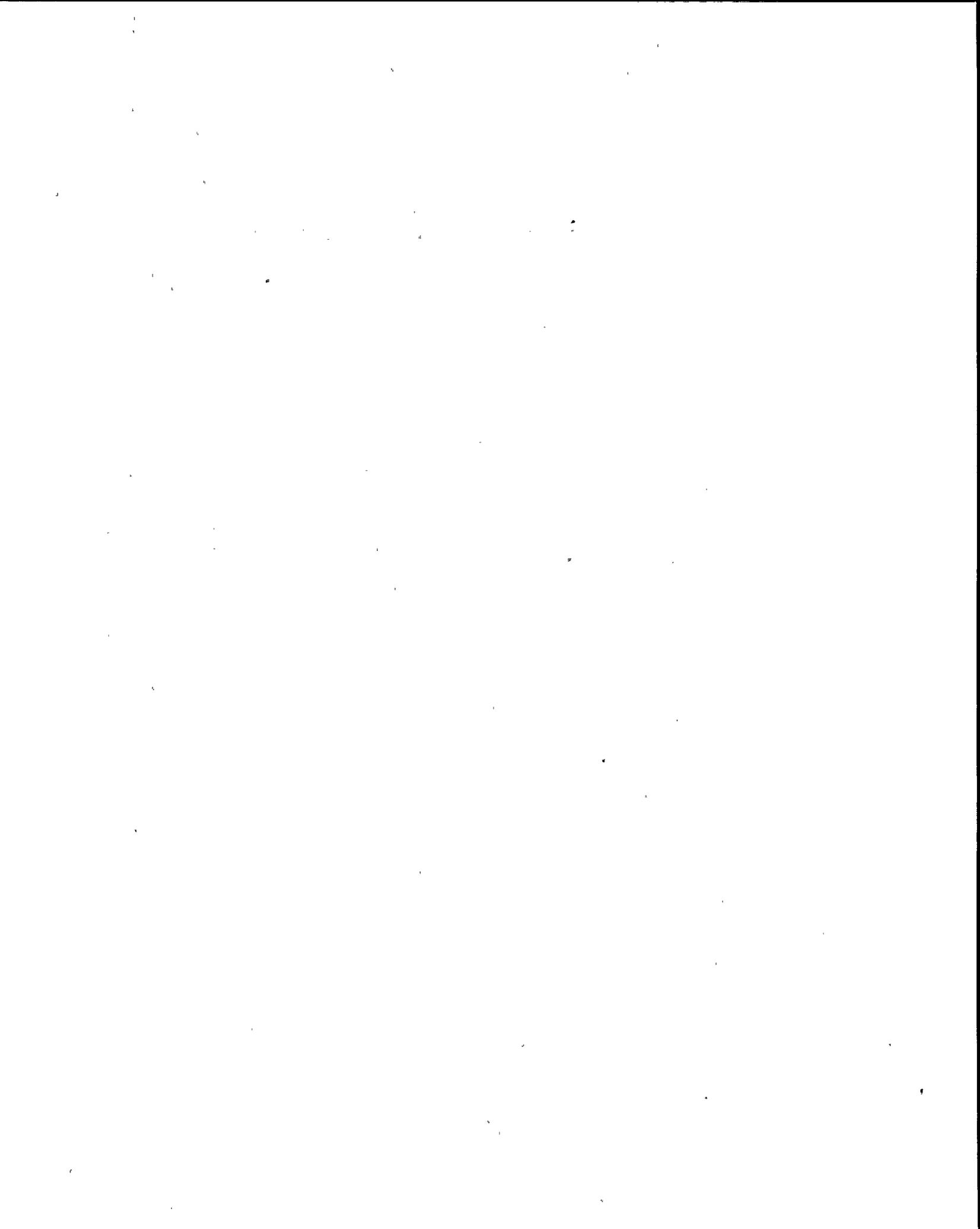


QUESTION: 019 (1.00)

The Incore Thermocouple System provides output to indication panels and to the PPCS.

WHICH of the following statements describes WHAT will happen if power is lost to one or both readouts?

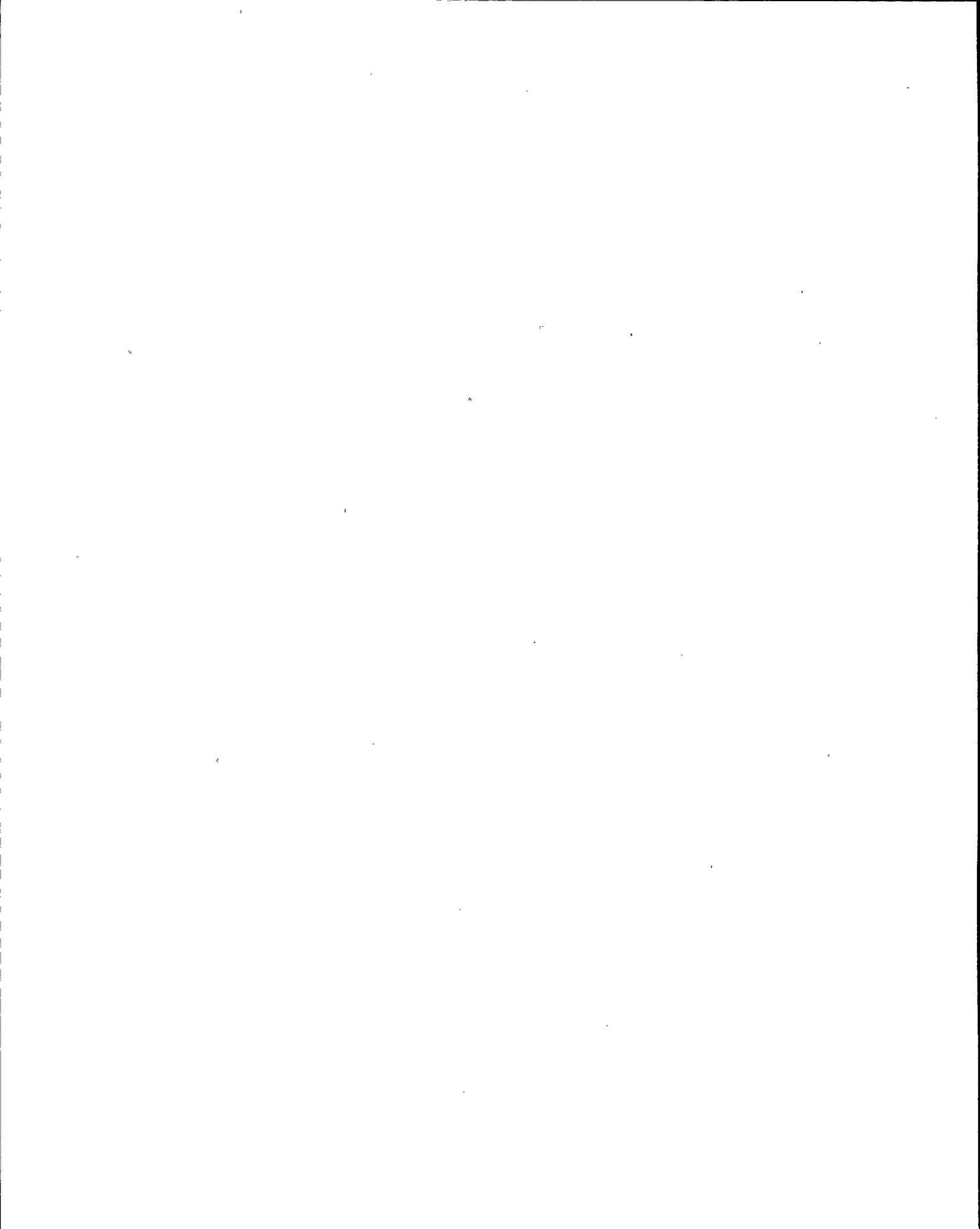
- a. If power is lost to either an indication panel or the PPCS, the other output will continue to provide indication for the affected thermocouples.
- b. If power is lost to the PPCS, the indication panel will continue to provide indication for the affected thermocouples.
- c. If power is lost to an indication panel, the PPCS will continue to provide indication for the affected thermocouples.
- d. If power is lost to either an indication panel or the PPCS, the other output will be disabled and the affected thermocouples cannot be monitored.



QUESTION: 020 (3.00)

MATCH the following VCT setpoints in COLUMN B to the automatic functions in COLUMN A. (Each setpoint will be used either once or not at all.)

<u>COLUMN A</u>	<u>COLUMN B</u>
a) High level divert solenoid deenergizes, allowing valve LCV-112A to direct flow back to the VCT. _____	1) 90% on LT-139
	2) 86% on LT-112
b) Auto makeup stops. _____	3) 83% on LT-139
	4) 75% on LT-112
c) Valve LCV-112B opens, then valve LCV-112C closes, shifting charging pump suction to the RWST. _____	5) 40% on LT-139
	6) 40% on LT-112
d) Low level alarm. _____	7) 30% on LT-139
e) Valve LCV-112A modulates to the closed position, directing full flow to the VCT. _____	8) 30% on LT-112
	9) 14% on LT-112
f) High level alarm. _____	10) 9% on LT-139
	11) 5% on LT-112
	12) 0% on LT-139



QUESTION: 021 (1.00)

While decreasing unit load from 100% to 92% at 3% per hour, the AFD decreases below the target band.

WHICH of the following actions is required by O-5.1 (Load Reductions)?  
(copy of procedure attached)

- a. Continue the load decrease, while monitoring rod position to ensure the Rod Insertion Limit is not exceeded.
- b. Stop the load decrease, borate rods out to restore AFD to the target band, then wait for equilibrium Xenon conditions to resume load decrease.
- c. Reduce power to less than 90%, borate to restore AFD to the target band, and log the duration that the band was exceeded.
- d. Stop the load decrease, wait for Xenon to build up in the lower core, then resume the load decrease when AFD restores itself to the target band.



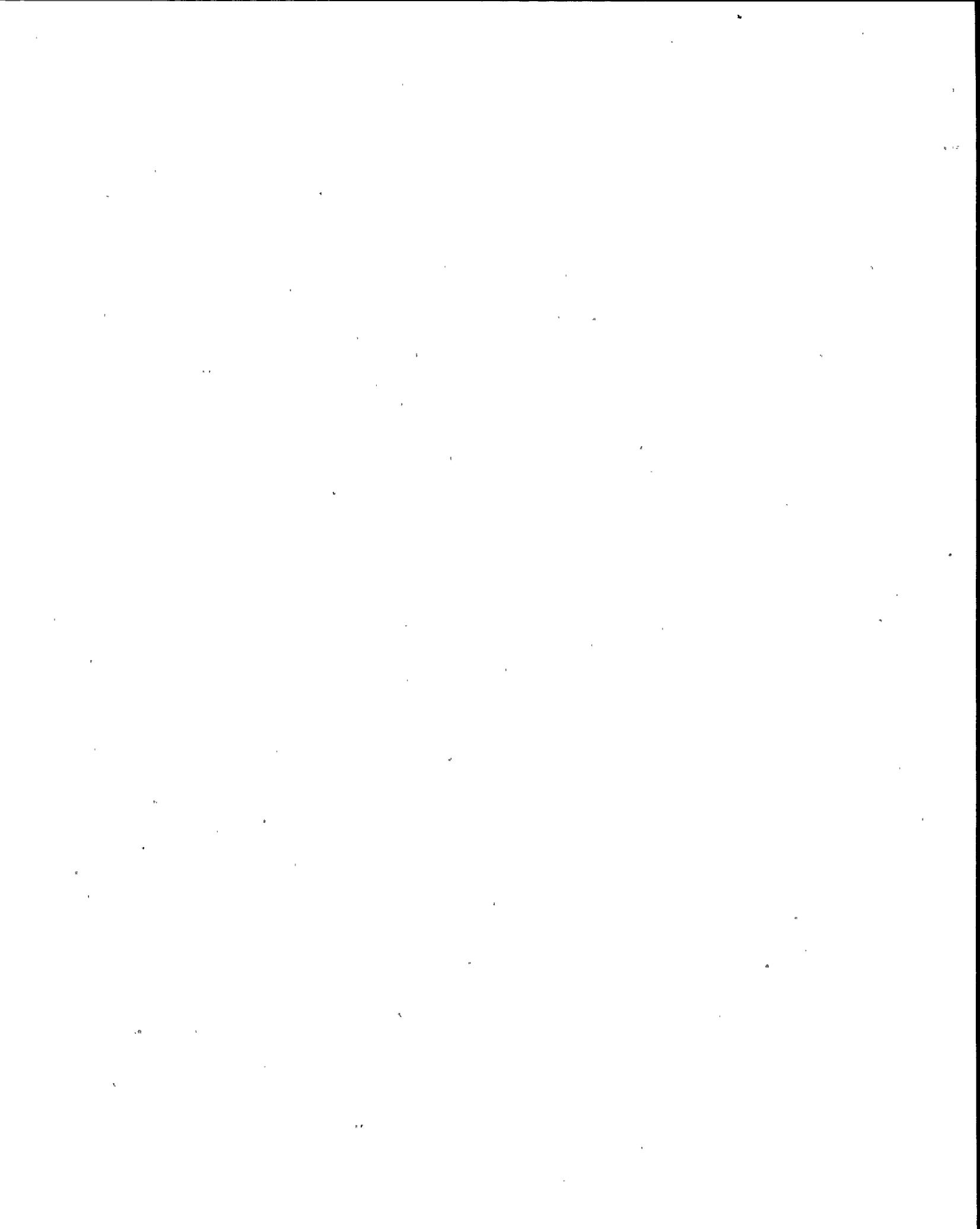
QUESTION: 022 (1.00)

GIVEN the following:

A reactor trip has occurred from a loss of both Main Feed Pumps. All AFW pumps and Standby AFW pumps are inoperable.

WHICH of the following conditions must be met to feed the S/G's with the condensate pumps?

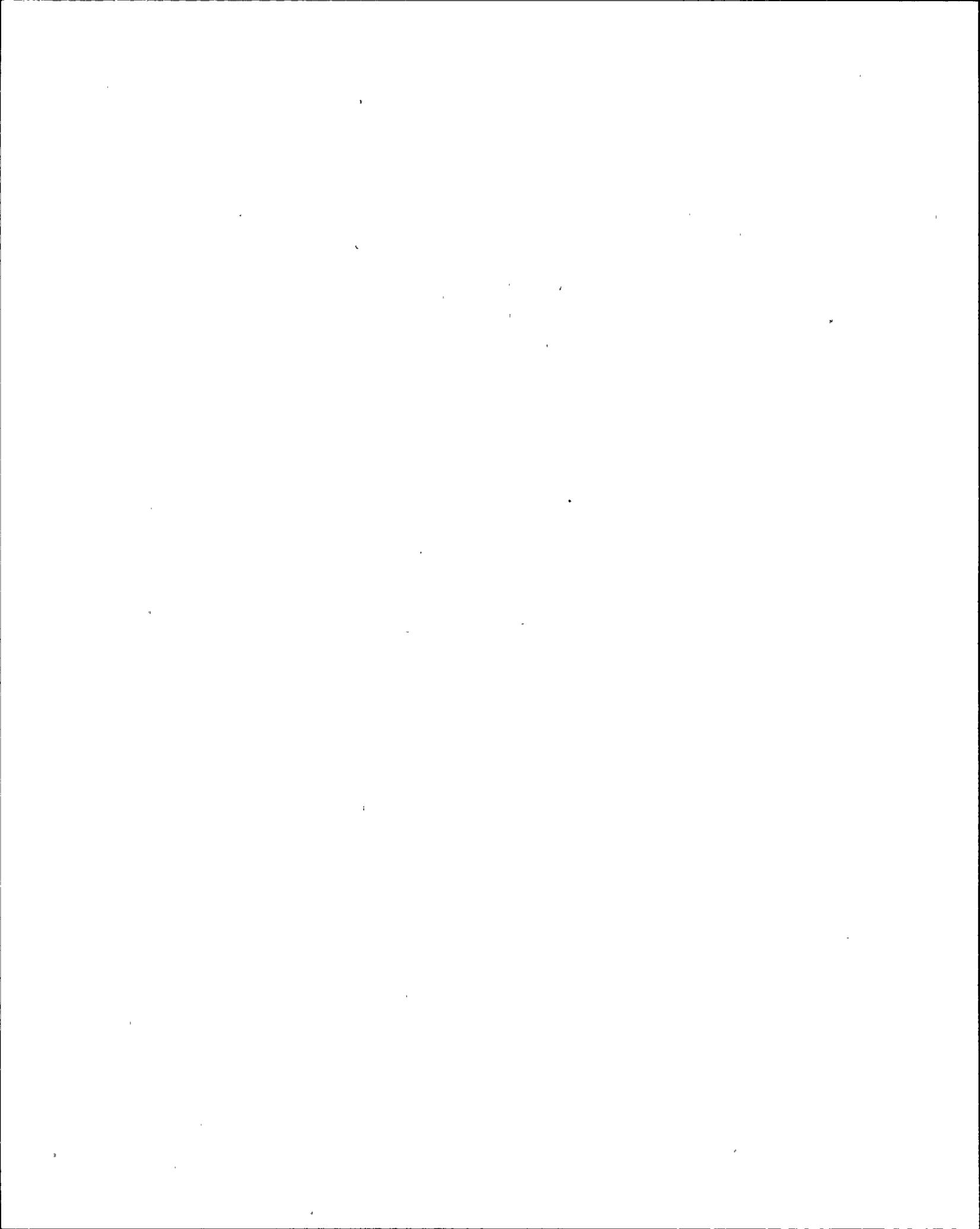
- a. Depressurize at least one S/G to less than 380 psig.
- b. Establish condenser vacuum for operation of steam dumps.
- c. Actuate SI and CI.
- d. Open at least one pressurizer PORV to establish an RCS bleed path.



QUESTION: 023 (1.00)

WHICH of the following sequences describes the air flow path through the Containment Recirc Fans during NORMAL operation?

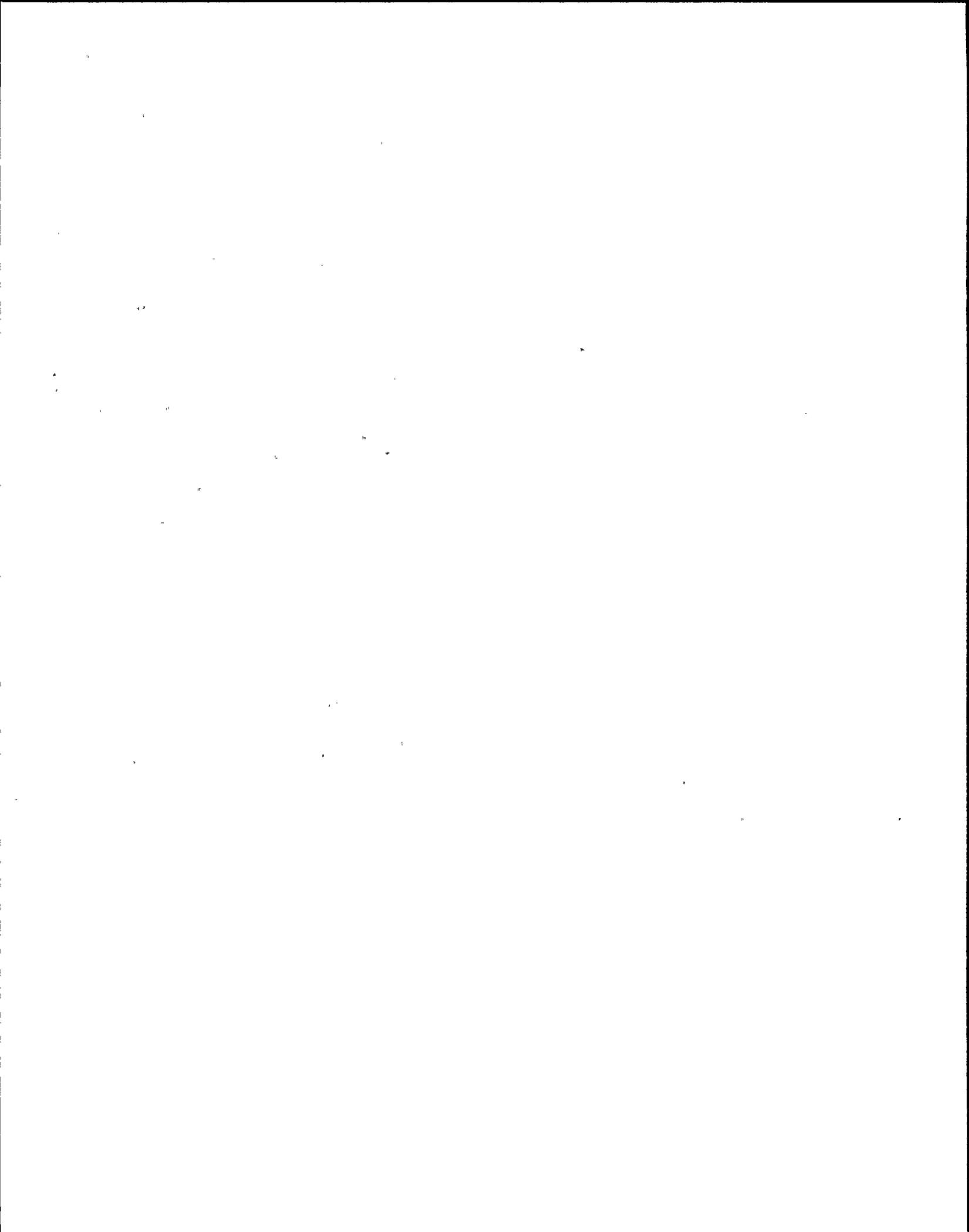
- a. Inlet louvers, cooling coils, HEPA filters, moisture separators, fan, distribution header.
- b. HEPA filters, inlet louvers, moisture separators, cooling coils, fan, distribution header.
- c. Cooling coils, inlet louvers, fan, HEPA filters, moisture separators, fan, distribution header.
- d. Inlet louvers, cooling coils, moisture separators, HEPA filters, fan, distribution header.



QUESTION: 024 (1.00)

WHICH of the following statements describes the operation of the Main Feedwater Regulating Valve Bypass valve's controller when operating in AUTO?

- a. A three-element controller compares impulse chamber pressure to the setpoint program, steam flow to feed flow, and actual S/G level to programmed level.
- b. A two-element controller compares impulse chamber pressure to the setpoint program, and actual S/G level to programmed level.
- c. A single-element controller compares actual S/G level to a programmed level manually entered by the operator.
- d. A single-element controller matches feed flows to steam flows.



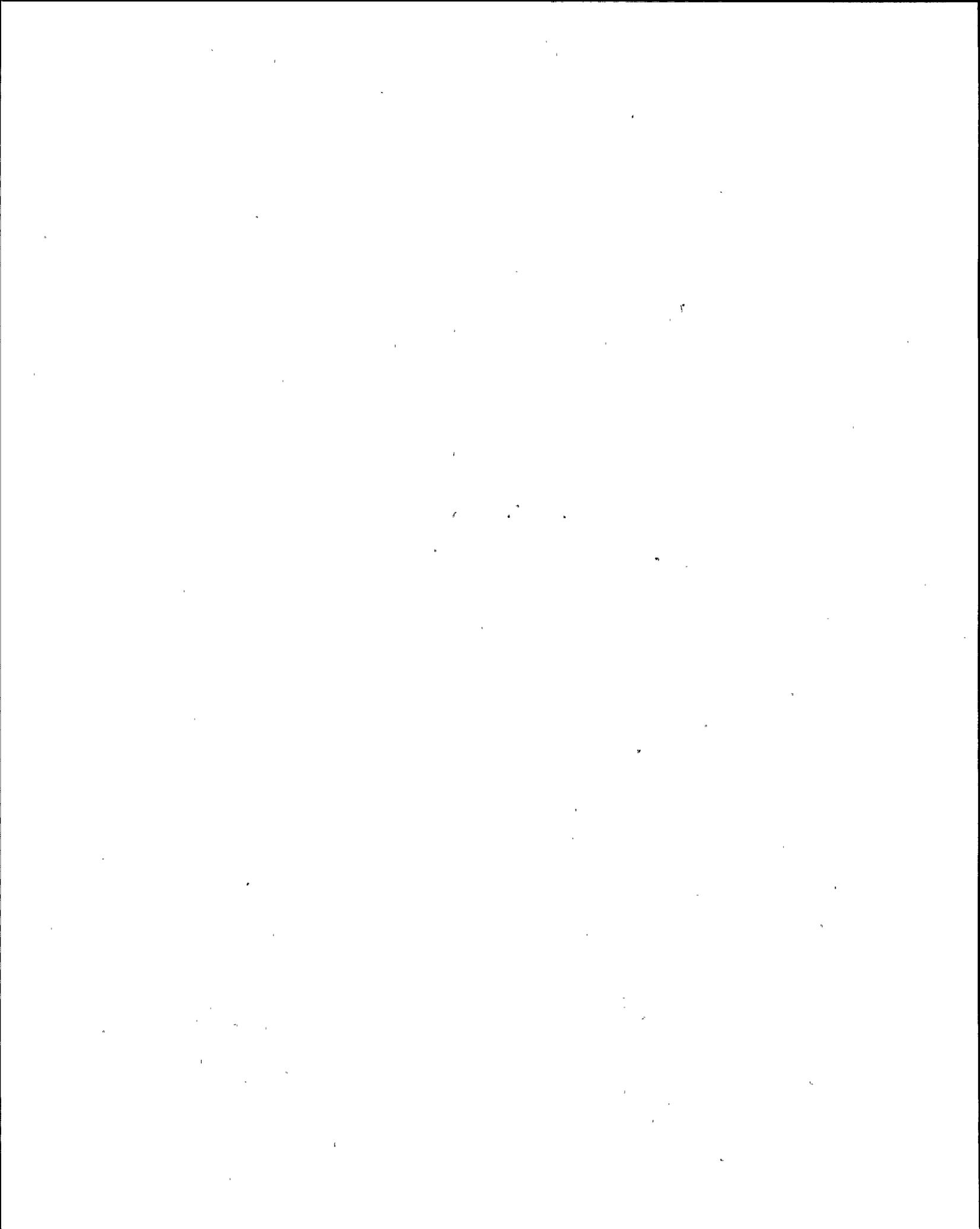
QUESTION: 025 (1.00)

GIVEN the following information:

The reactor is shutdown with a cooldown in progress.  
RCS Tavg = 530 degrees F  
1A Condensate Storage Tank (CST) is drained for maintenance.  
While taking logs you note that 1B CST level is 18.5 feet.

WHICH of the following statements describes the proper operator action to follow?

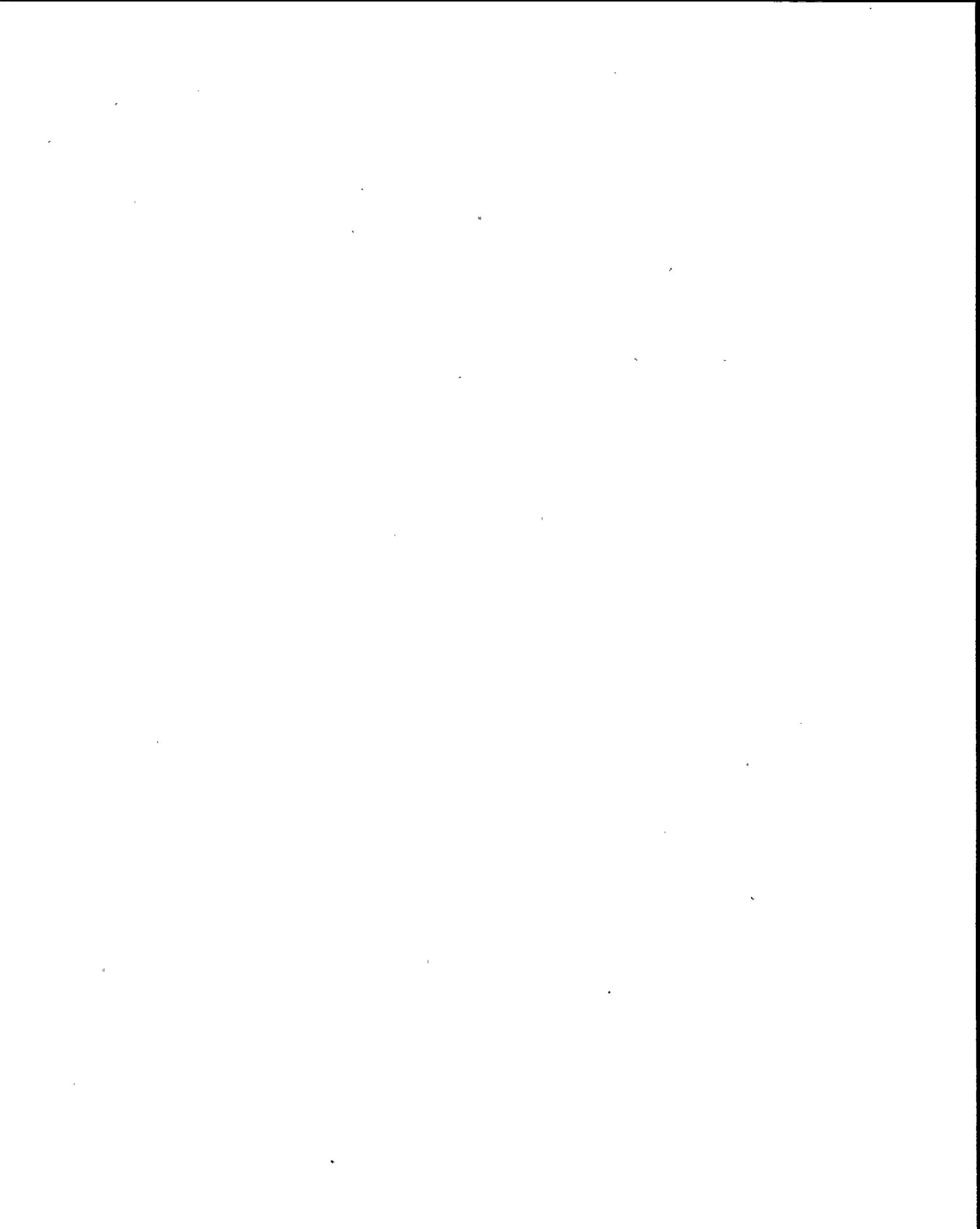
- a. Be less than 350 degrees F within the next 6 hours.
- b. Restore level in 1B CST to greater than 21.5 feet within 4 hours.
- c. Initiate action within 1 hour to place the unit in cold shutdown within the next 30 hours (Action Statement 3.0.1).
- d. Immediately secure all Auxiliary Feedwater flow to the S/G's.



QUESTION: 026 (1.00)

For a leaking Waste Gas Decay Tank relief valve, WHICH RMS monitor will show the first response?

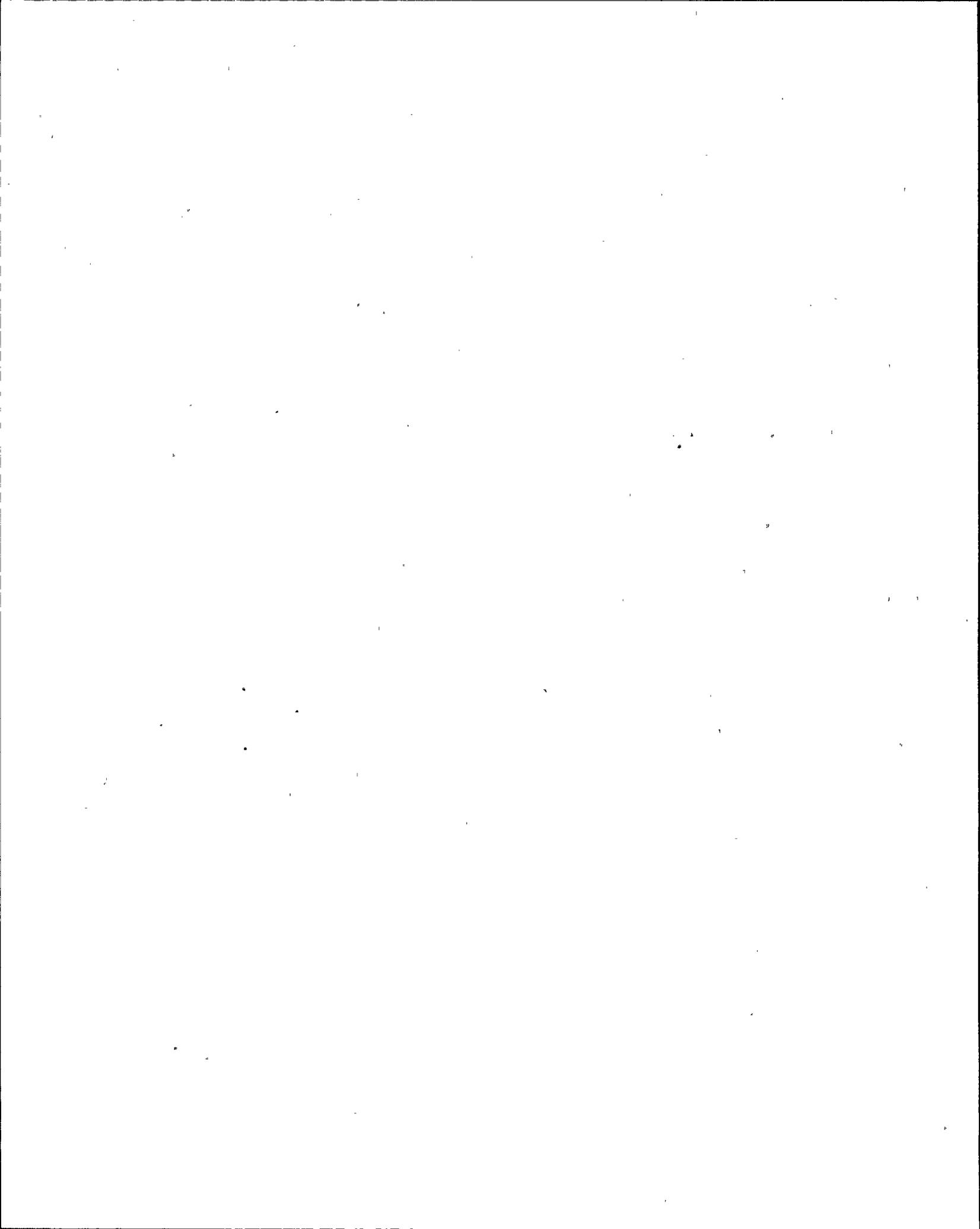
- a. R14A (Plant Vent High Range Effluent)
- b. R13 (Auxiliary Building Particulate)
- c. R35 (PASS Panel Wide Range Area Monitor)
- d. R14 (Auxiliary Building Noble Gas)



QUESTION: 027 (1.00)

If, while moving fuel in the Spent Fuel Pit, RMS channel R5 (Spent Fuel Pool Area Radiation Monitor) becomes inoperable, under WHICH of the following conditions may fuel movement continue?

- a. The fuel assemblies being handled must have decayed greater than or equal to 60 days since irradiation.
- b. A local radiation monitor on the spent fuel pit bridge must be verified operable.
- c. Aux building exhaust fan 1C must be running and the charcoal adsorber bank in service.
- d. The overload cutout for the auxiliary building crane shall be reduced to 1200 lbs to prevent heavy loads from being lifted over the spent fuel racks.



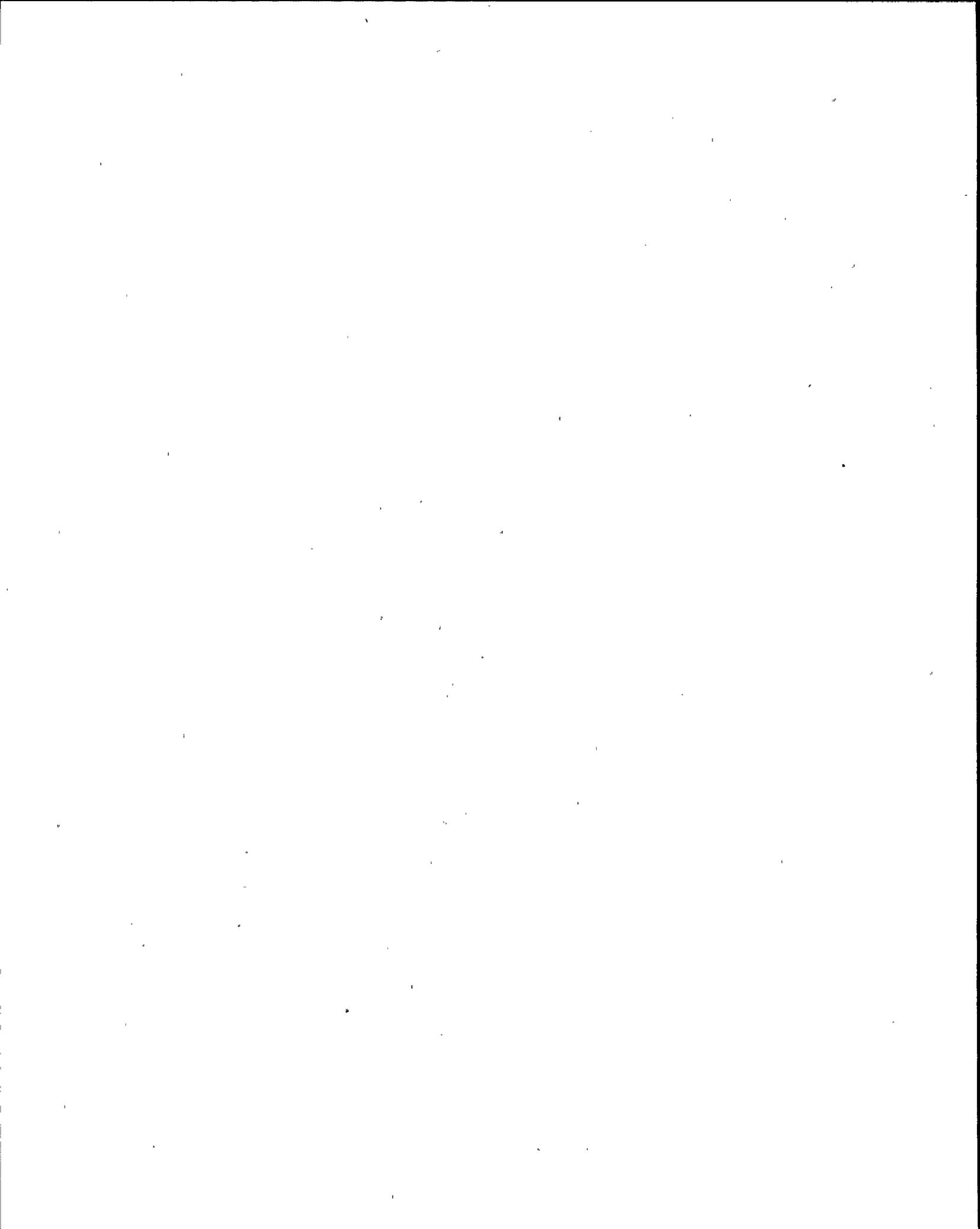
QUESTION: 028 (1.00)

GIVEN the following alarms:

- A-4 REGEN HX LETDOWN OUT HI TEMP 395F
- A-2 VCT LEVEL 14%
- B-9 RCP 1A LABYR SEAL LO DIFF PRESS 15" H2O
- B-10 RCP 1B LABYR SEAL LO DIFF PRESS 15" H2O
- F-4 PRESSURIZER LEVEL DEVIATION -5 NORMAL +5
- F-14 CHARGING PUMP SPEED
- L-9 AUX BLDG SUMP HI LEVEL
- L-10 AUX BUILDING SUMP PUMP AUTO START

WHICH of the following is the most likely cause?

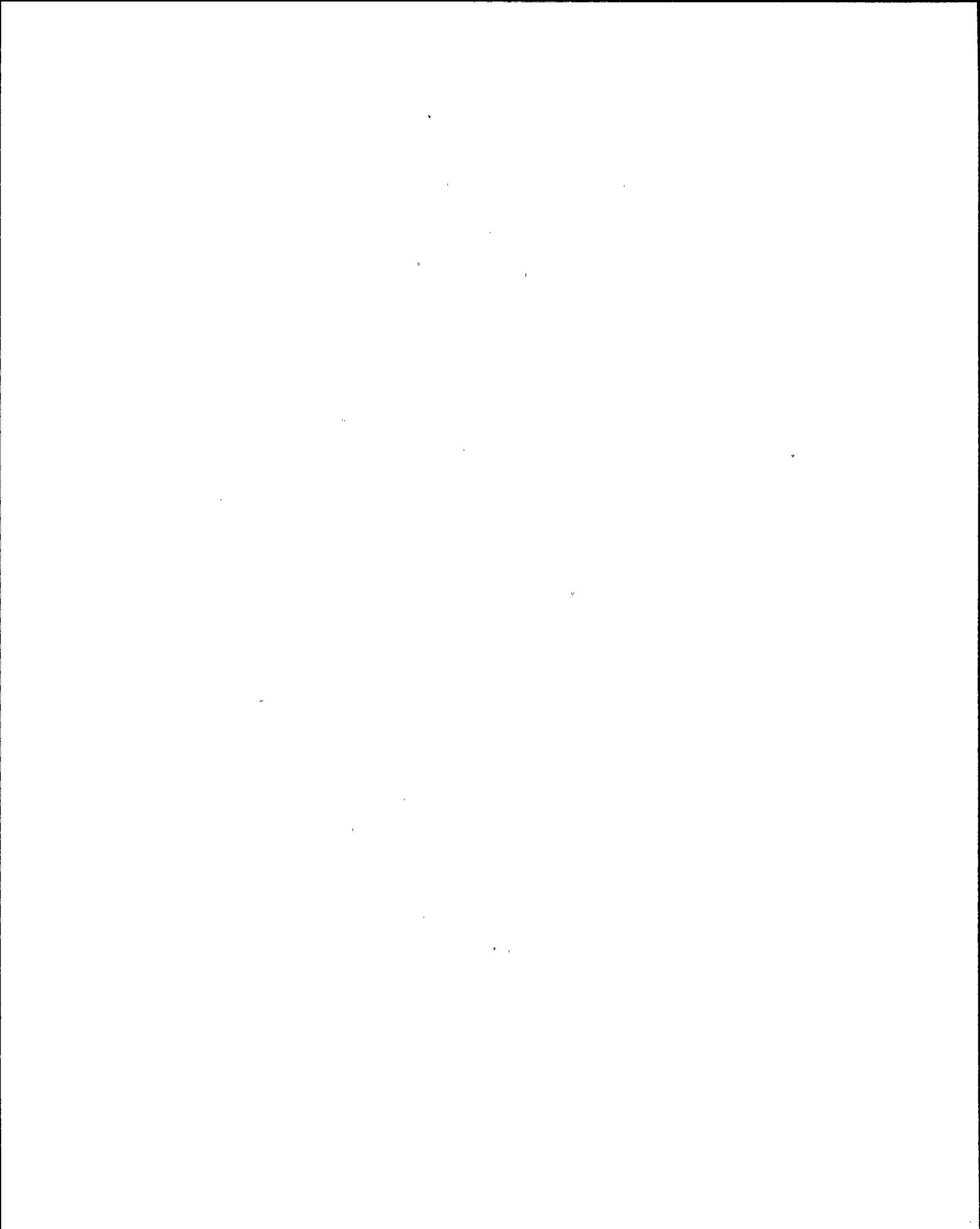
- a. Charging line leak outside containment
- b. Letdown line leak outside containment
- c. Charging line leak inside containment,
- d. RCP seal failure



QUESTION: 029 (1.00)

WHICH of the following statements describes what will occur when the Auxiliary Feedwater Bypass Switches are in DEFEAT?

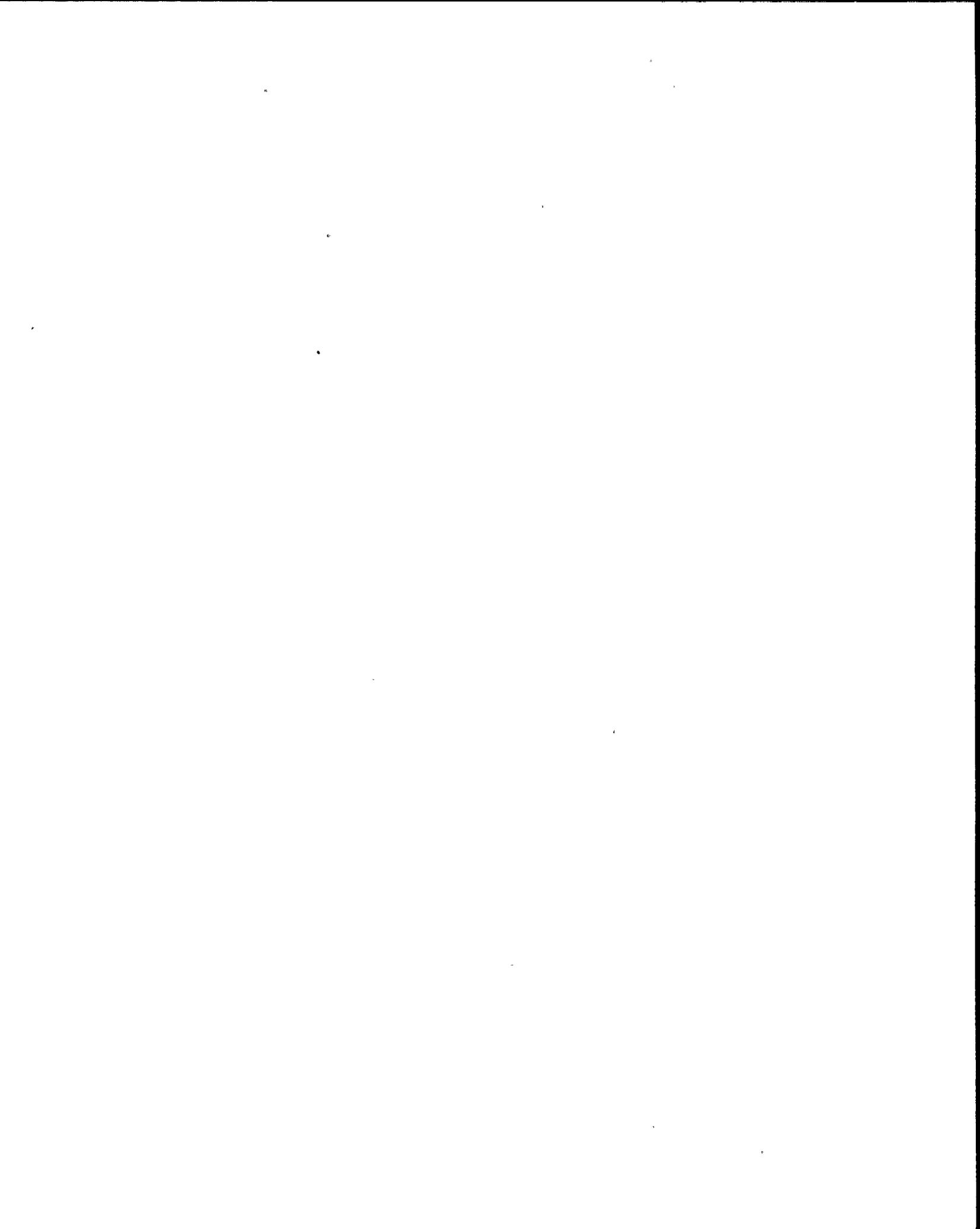
- a. If an SI occurs, the AOV bypass valves 4480 and 4481 will not close.
- b. If a Lo-Lo S/G level (2/3) occurs on either S/G, the AOV bypass valves 4480 and 4481 will not close.
- c. If the turbine is latched with both Main Feed Pumps tripped, the MDAFW pumps will auto start.
- d. If an AMSAC actuation occurs, the MDAFW pumps will not auto start.



QUESTION: 030 (1.00)

HOW MANY thermocouples must be operable in each quadrant to satisfy Tech Spec requirements?

- a. 4
- b. 5
- c. 6
- d. 7



QUESTION: 031 (1.00)

GIVEN the following information:

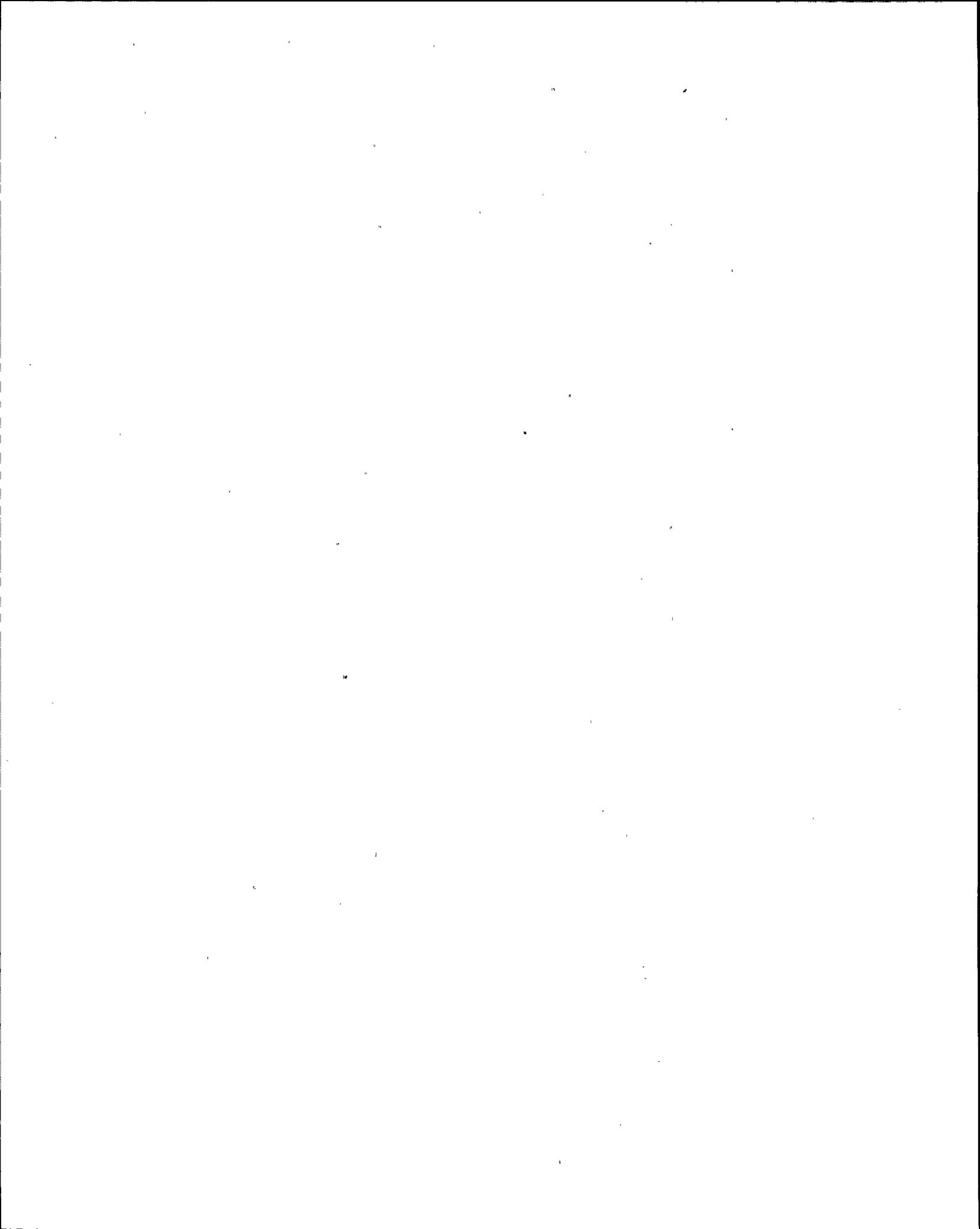
Plant startup is in progress

Reactor power is 25%

11B-12B Bus tie breaker trips open prior to swapping 11B to #11 Unit  
Aux Transformer, resulting in the deenergization of 11B Bus.

WHICH of the following actions is the most immediate priority?

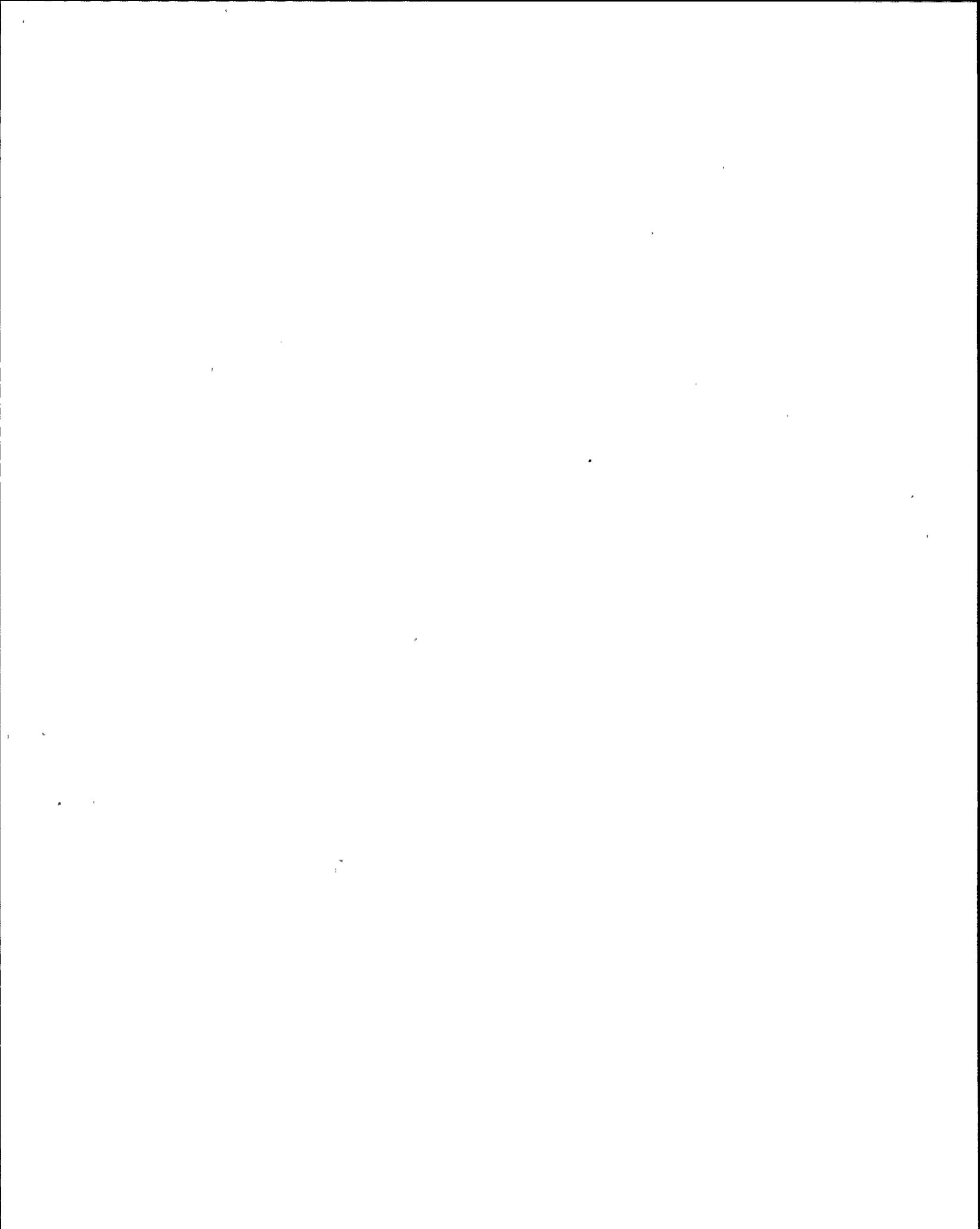
- a. Perform a Shutdown Margin calculation
- b. Reduce power to less than 8.5%
- c. Demonstrate the operability of both Emergency Diesel Generators
- d. Determine the cause of the breaker trip and reenergize 11B Bus from #11 Transformer



QUESTION: 032 (1.00)

WHICH of the following will cause the "A" S/G Feedwater bypass valve (FCV 480) to CLOSE when in MANUAL?

- a. High-high steam flow coincident with a low steamline pressure of 500 psig
- b. Turbine trip with  $T_{avg}$  less than 554 F
- c. Trip of both main feed pumps
- d. High level (67%) in "B" S/G



QUESTION: 033 (1.00)

GIVEN the following conditions:

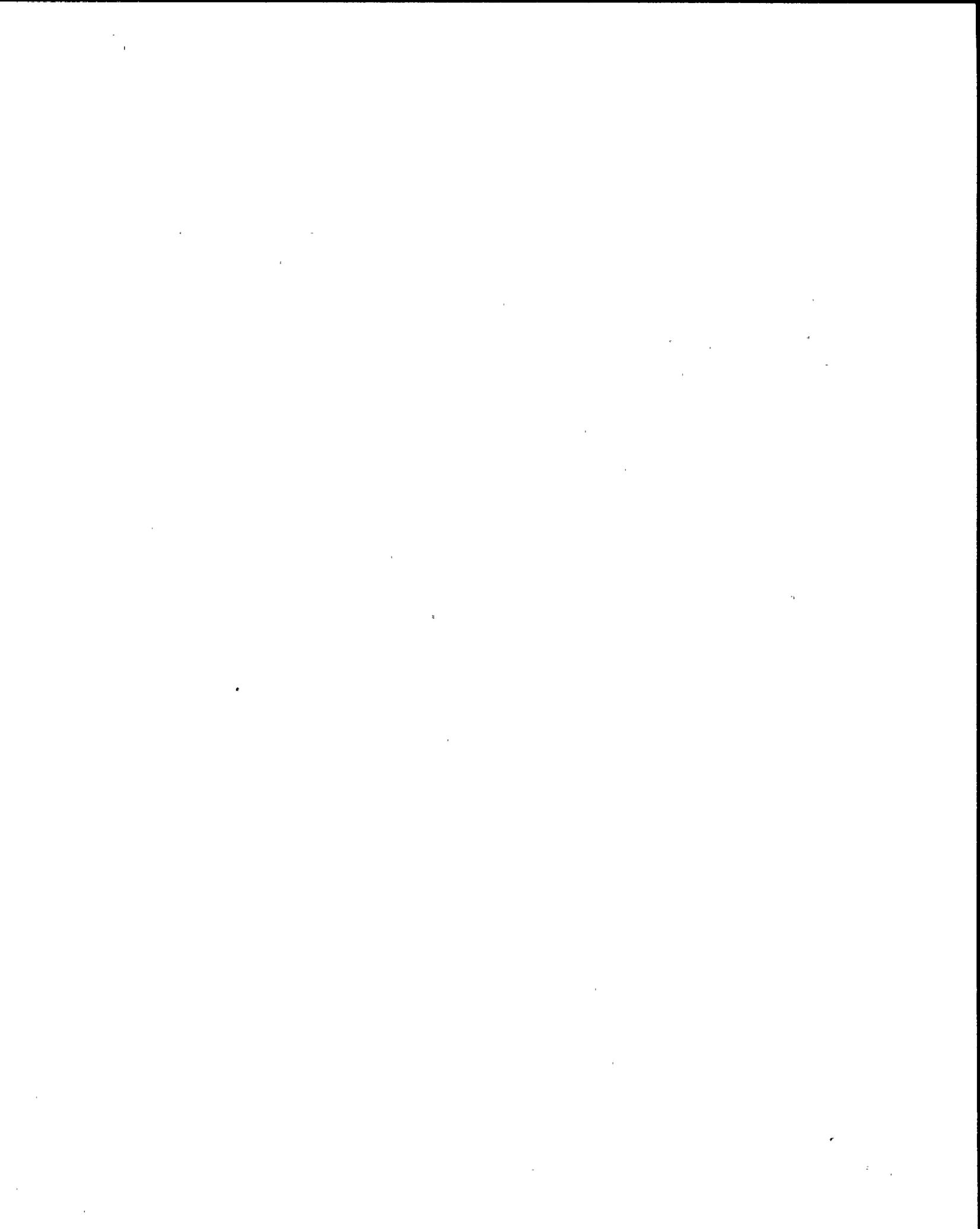
Reactor power =80%

The lower detector for N43 is open circuited (due to a broken cable)

Procedure O-6.4 requires the core quadrant power tilt to be calculated once a day with one excore nuclear channel out of service and power greater than 75%.

WHICH of the following is acceptable for determining core quadrant power tilt under the above conditions?

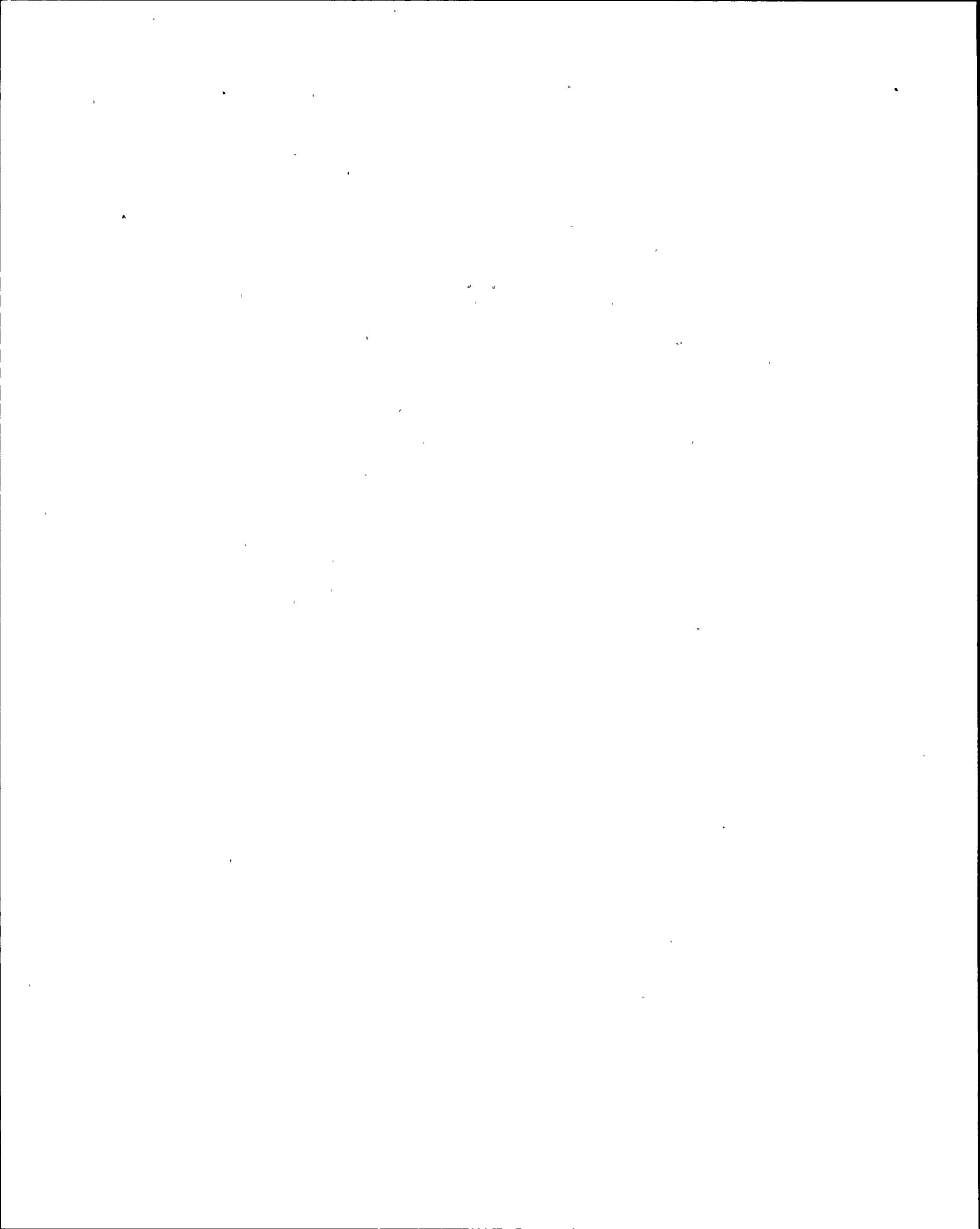
- a. Plant Process Computer System
- b. Manual calculation using operable excore detectors.
- c. Incore Moveable Detectors
- d. Manual calculation using estimated current for N43 lower.



QUESTION: 034 (1.00)

HOW is the accident mode of operation for 1B Containment Recirc Fan different than the normal mode?

- a. HEPA filters are bypassed to prevent damage to them under the initial adverse environment of the accident.
- b. SW outlet throttle valves swap to the full open position to increase cooling flow.
- c. Discharge dampers shift to route air flow through charcoal filters.
- d. The fan shifts to high speed to increase containment atmosphere heat removal.



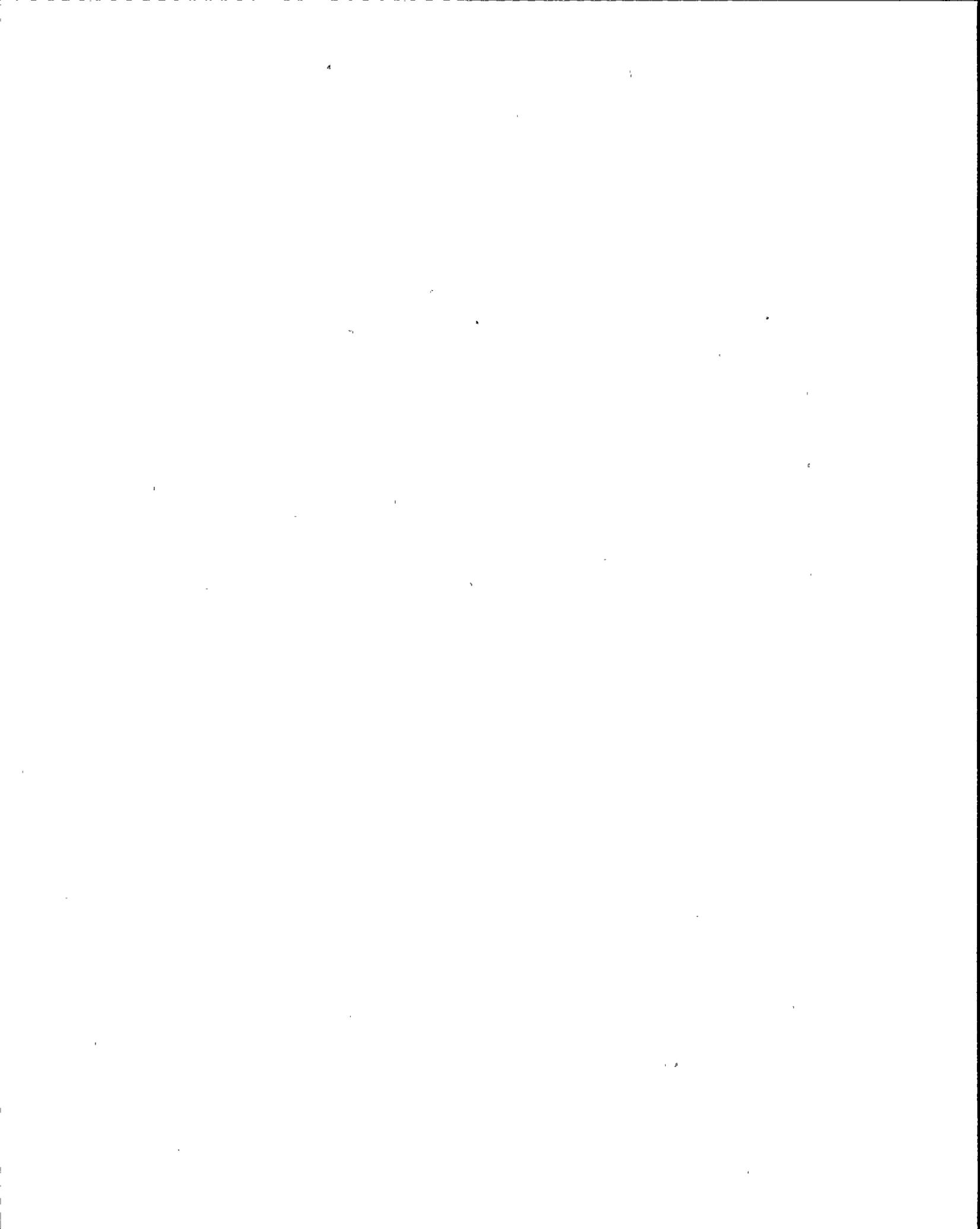
## QUESTION: 035 (1.00)

A release of radioactive liquid has just been automatically terminated by an R-18 alarm. The R-18 monitor is reading  $7 \times 10^4$  cpm above background and is steady.

Health Physics has resampled the Waste Condensate Tank (WCT) and has determined that it is releasable.

HOW can the release be resumed? (CHOOSE ONE)

- a. Obtain confirming analysis of WCT contents and manually override open the liquid waste release valve (RCV-018)
- b. Increase circulating water flow to dilute WCT effluent down below the setpoint for the R-18 alarm
- c. Increase the release rate from the WCT to flush the R-18 detector.
- d. Stop the release and perform a flush of the R-18 detector using deionized (DI) water.



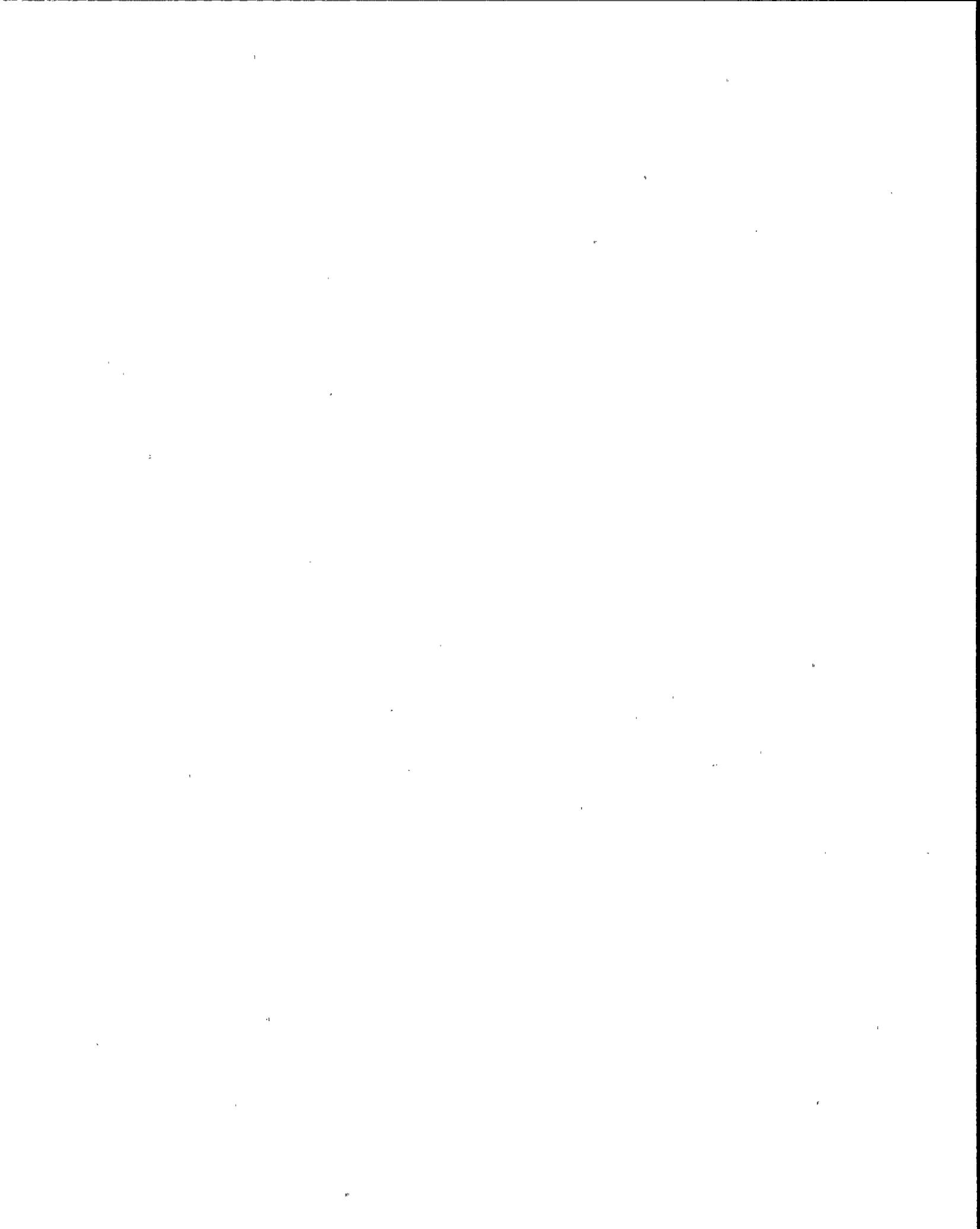
QUESTION: 036 (1.00)

A startup is in progress in accordance with O-1.2 (Plant Startup From Hot Shutdown To Full Load) (copy attached).

The final approach to criticality shows the actual critical rod position will differ from the estimated critical rod position by 650 pcm.

WHAT actions are required?? (CHOOSE ONE)

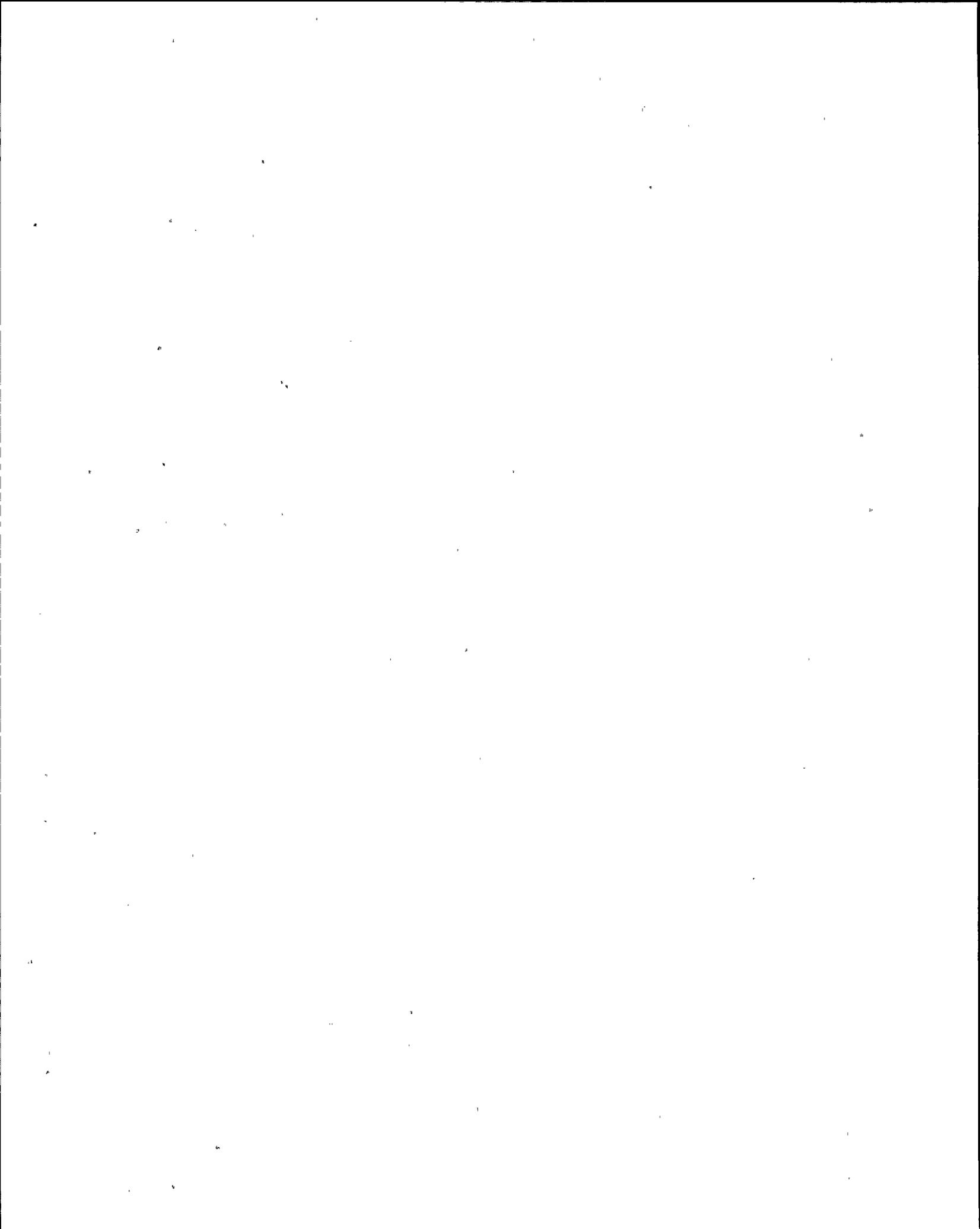
- a. As long as critical rod position will be above the rod insertion limit, the startup may continue.
- b. Stop the rod withdrawal and recalculate the ECP.
- c. Immediately insert all control rods and recalculate the ECP.
- d. Resume the approach to criticality using an inverse count rate (1/M) plot.



QUESTION: 037 (1.00)

The combined capacity of the pressurizer code safety valves is designed to (CHOOSE ONE):

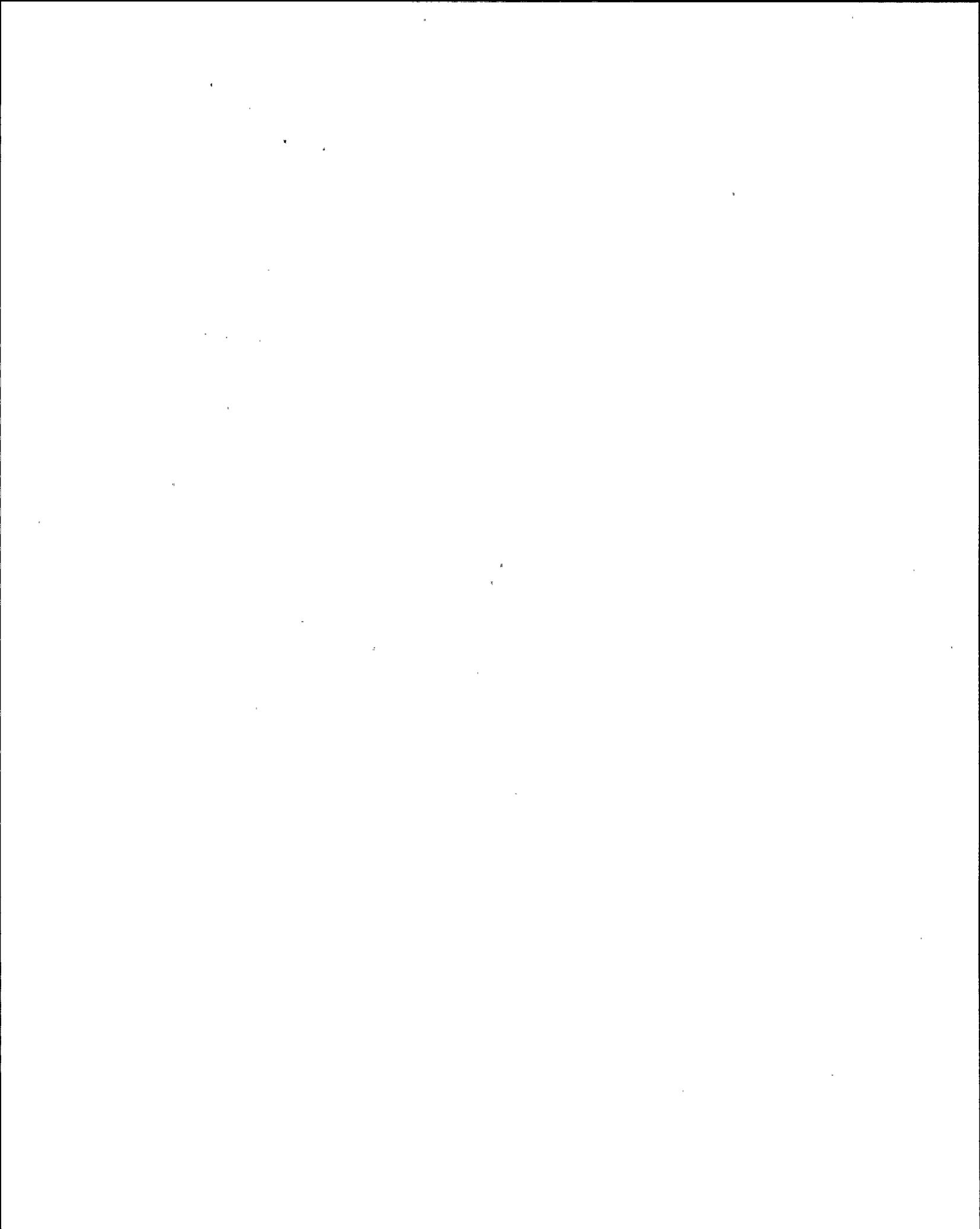
- a. Equal or exceed the pressurizer insurge resulting from a complete loss of load with no reactor trip or automatic control function except actuation of the S/G safety valves.
- b. Limit the pressure increase resulting from a complete loss of load to below the actuation setpoint of the power operated relief valves.
- c. Accommodate the surge resulting from a 50% step load reduction (without any automatic control) to prevent exceeding the pressurizer high pressure trip setpoint
- d. Prevent the RCS from reaching design pressure for a 50% step load reduction without any automatic control function actuation.



QUESTION: 038 (1.00)

WHICH of the following valves OPEN on a SI signal?

- a. Boric Acid Storage Tank to Charging Pumps Valve (MOV-350)
- b. Containment Spray Pump Discharge Valve (MOV-860A)
- c. Containment Recirc Fan SW Outlet Valve (AOV-4561)
- d. Containment Mini-Purge Exhaust Valve (AOV-7970)



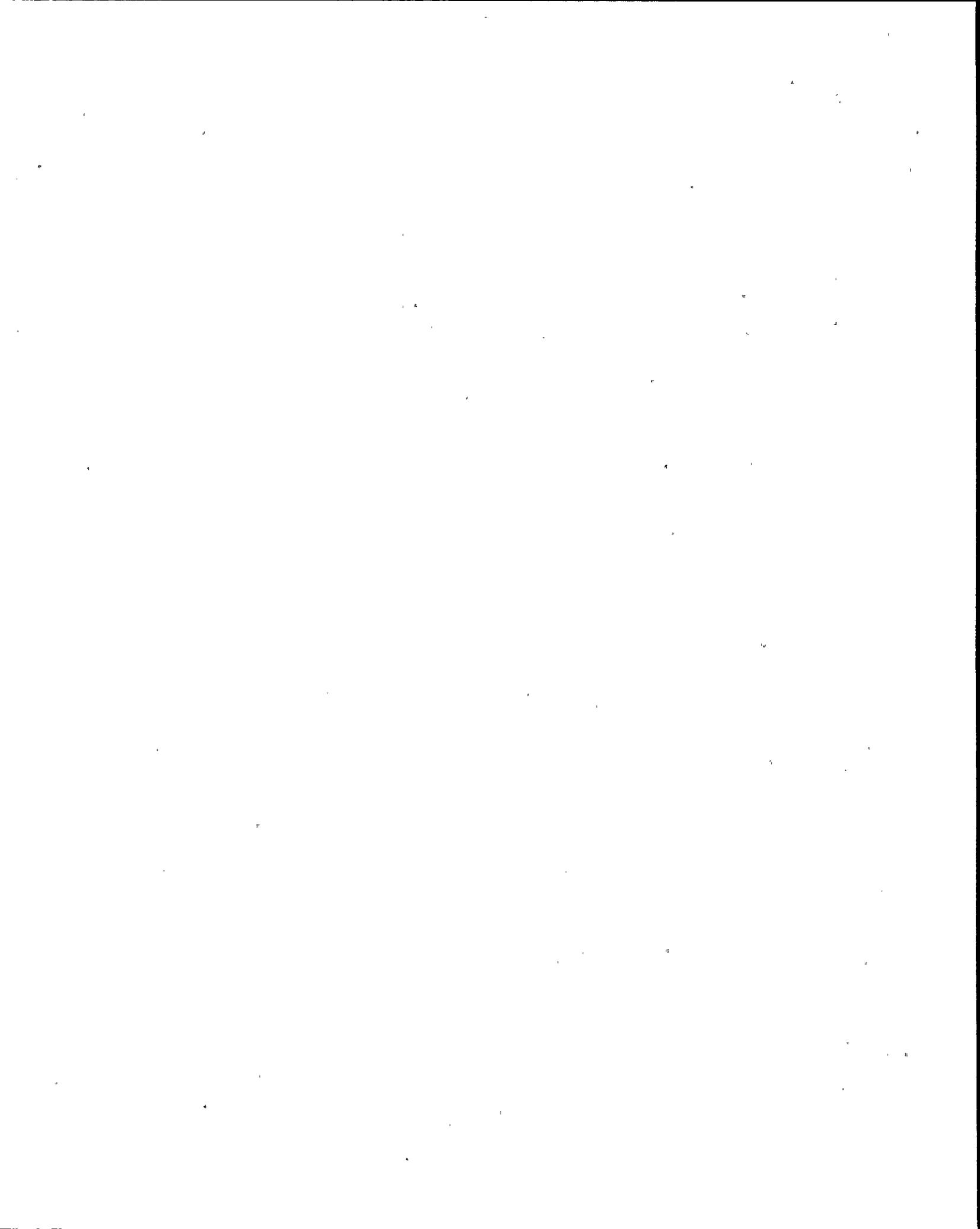
QUESTION: 039 (1.00)

Procedure O-2.2 (Plant Shutdown From Hot Shutdown To Cold Shutdown) lists the following precaution:

- 4.3.6 A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 330 degrees F unless:
- 1) the pressurizer water volume is less than 324 cubic feet (38% level), or
  - 2) the secondary water temperature of each steam generator is less than 0 degrees F above each of the RCS cold leg temperatures (T.S. Limit 50 degrees F)

WHAT is the reason for limiting secondary to cold leg delta T? (CHOOSE ONE):

- a. To prevent brittle fracture of the S/G carbon steel shell from excessive cooldown rate by RCS water.
- b. To prevent damage to RCP seals from thermal stresses to the impeller and shaft.
- c. To prevent a primary to secondary leak by pressurized thermal shock of the S/G U-tubes.
- d. To prevent overpressurization of the RCS due to expansion of water being heated in the S/G U-tubes.



QUESTION: 040 (1.00)

GIVEN the following:

A loss of off-site power has occurred with a reactor trip

Both Reactor coolant pumps are deenergized

Incore thermocouples reading 475 degrees F and decreasing

RCS cold leg temperatures reading 450 degrees F and decreasing

RCS pressure is 1700 psig

Pressurizer level has suddenly increased from 20% to 38% without any operator action

WHICH of the following is the reason for the change in pressurizer level?

- a. RCS pressure has decreased to the point where the safety injection pumps have begun injecting into the RCS.
- b. RCS cooldown has caused a cooldown of accumulator water, causing expansion of accumulator gas.
- c. RCS cooldown has caused saturated conditions and a steam void in the reactor vessel head area.
- d. Actuation of the pressurizer PORV's has caused a "swell" in pressurizer level.

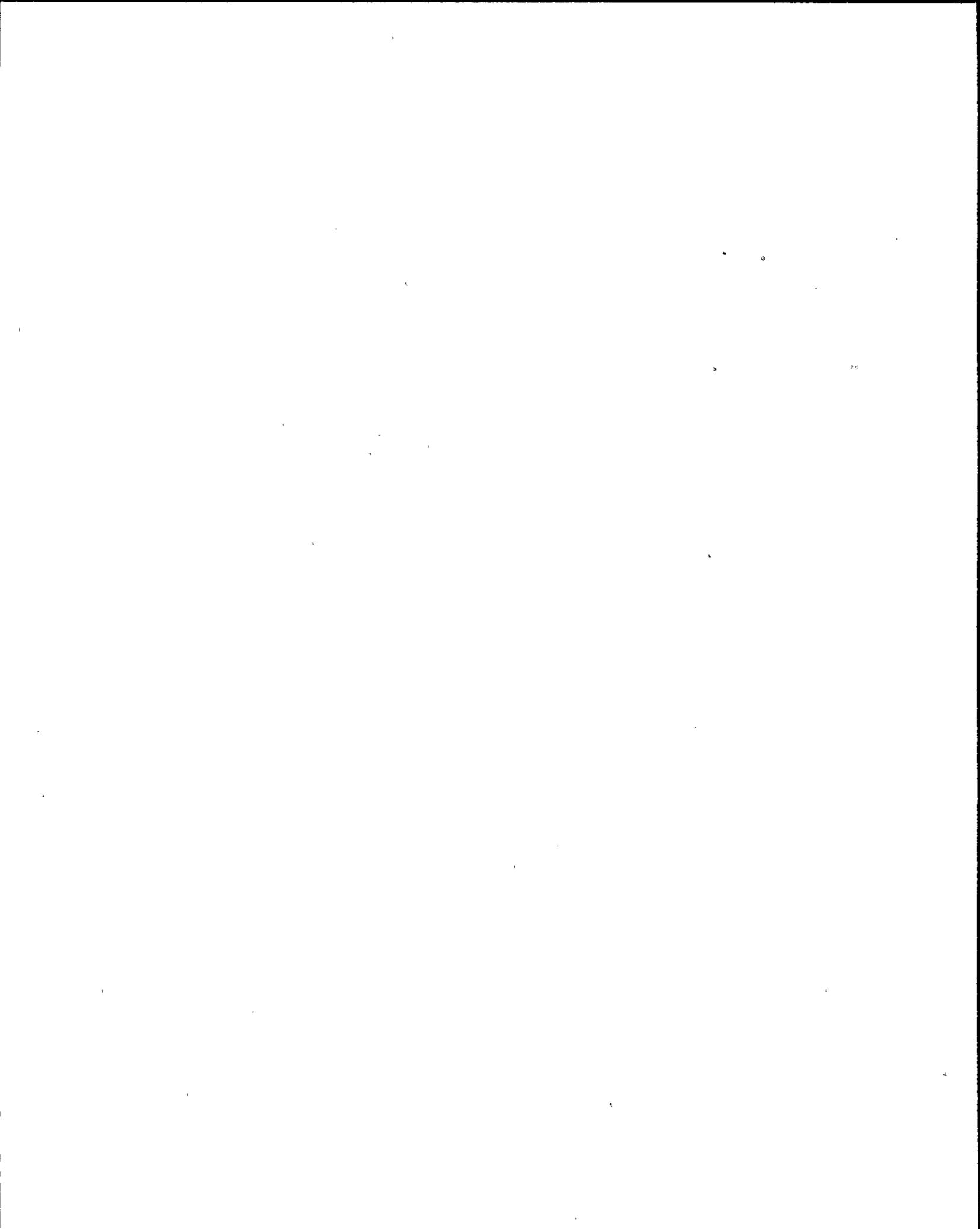


QUESTION: 041 (2.00)

For the instrument buses listed in COLUMN A, MATCH the single power source from COLUMN B that directly supplies the bus.

(Each choice in COLUMN B will be used ONCE or NOT AT ALL)

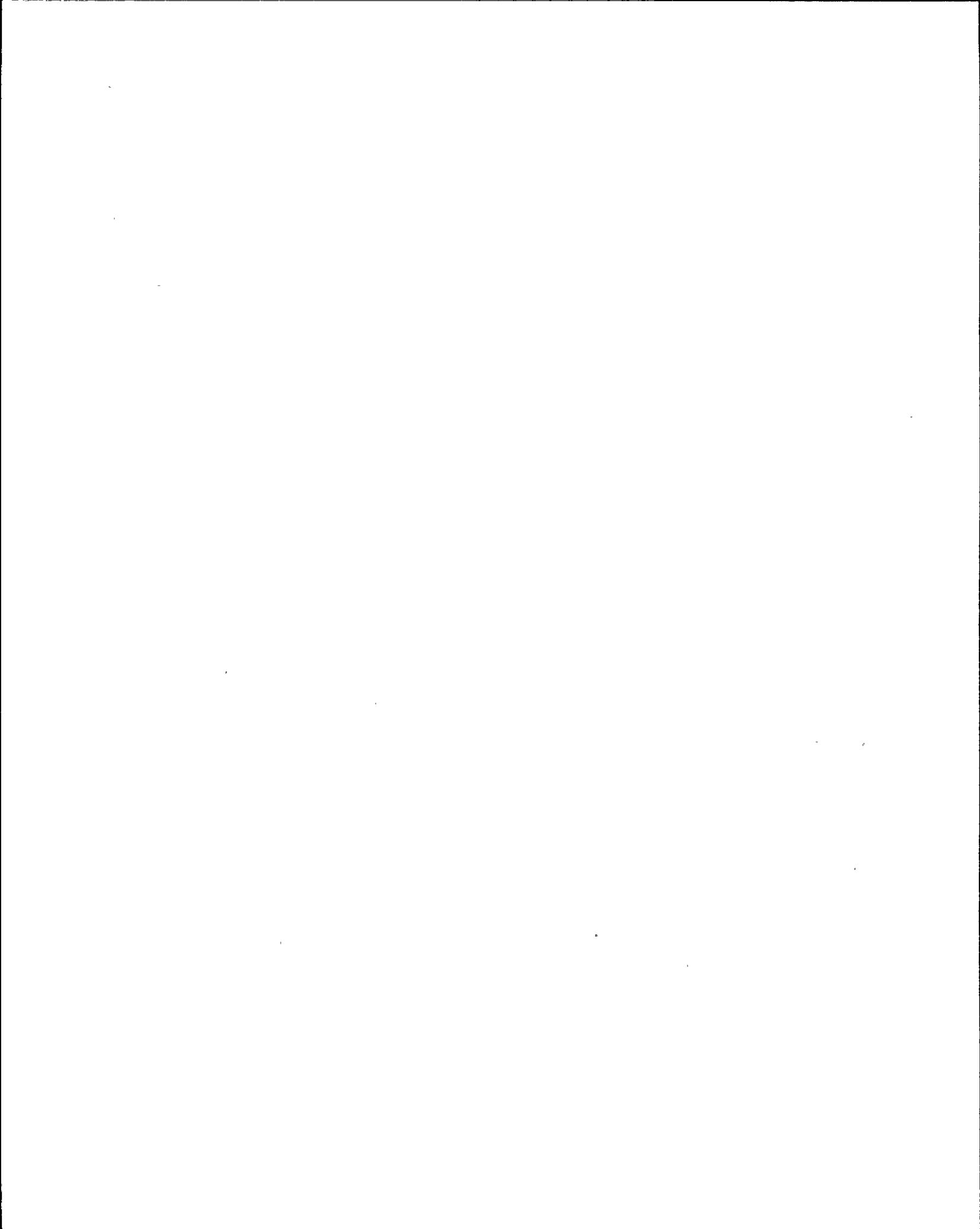
<u>COLUMN A</u>	<u>COLUMN B</u>
a) Instrument Bus 1A _____	1. MCC 1A
b) Instrument Bus 1B _____	2. MCC 1B
c) Instrument Bus 1C _____	3. MCC 1C
d) Instrument Bus 1D _____	4. MCC 1D
	5. Inverter 1A
	6. Inverter 1B
	7. Inverter MQ-483



QUESTION: 042 (1.00)

How are all control and shutdown rods normally verified on the bottom for a Reactor Trip?

- a. All demand position counters reset to zero
- b. On MRPI CRT
- c. P-A converter reading zero for all banks
- d. Breakers for Bus 13 and Bus 15 normal feed are open

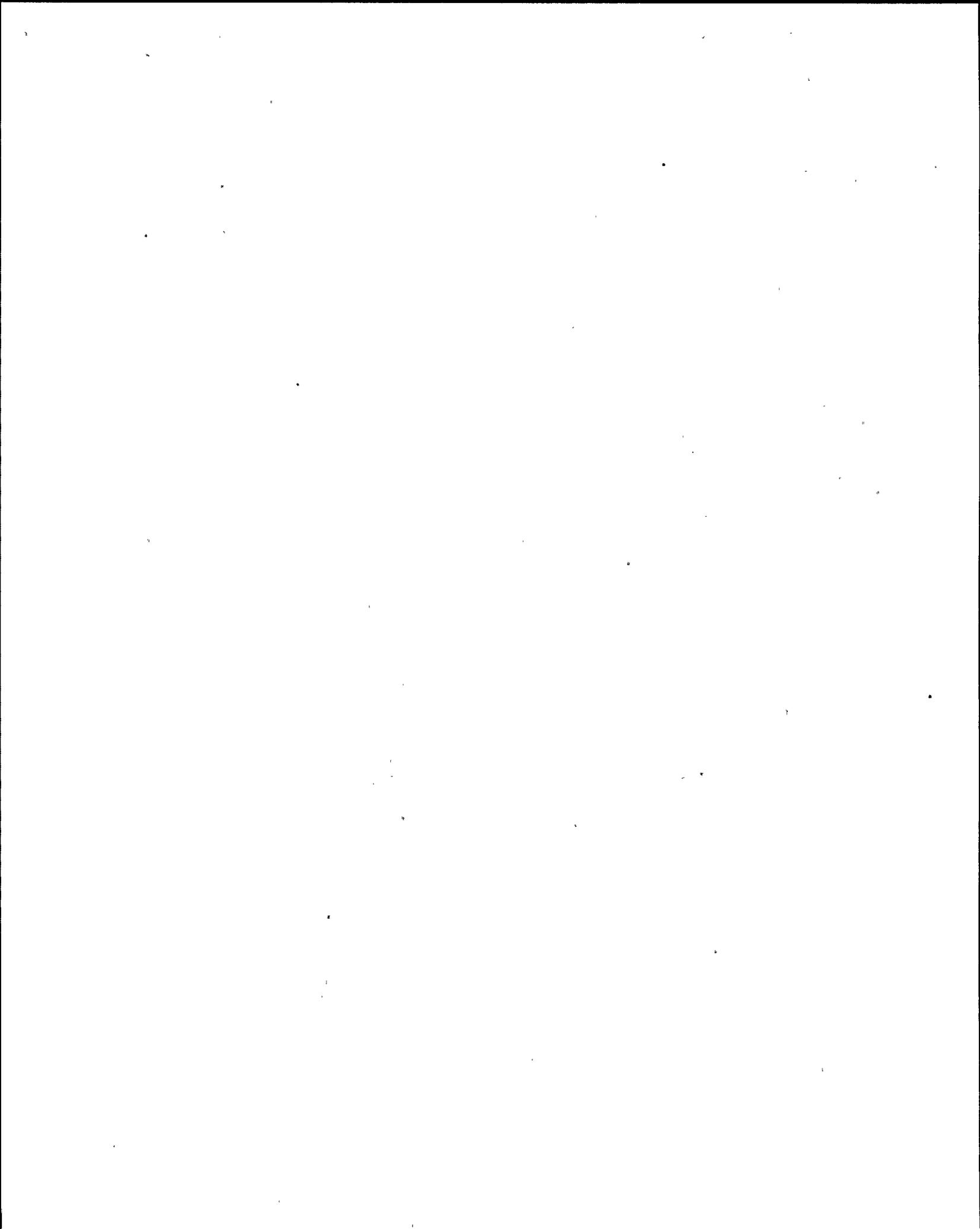


QUESTION: 043 (1.00)

When manually initiating containment spray, the operator presses only one of the manual pushbuttons on the MCB.

WHICH of the following occurs?

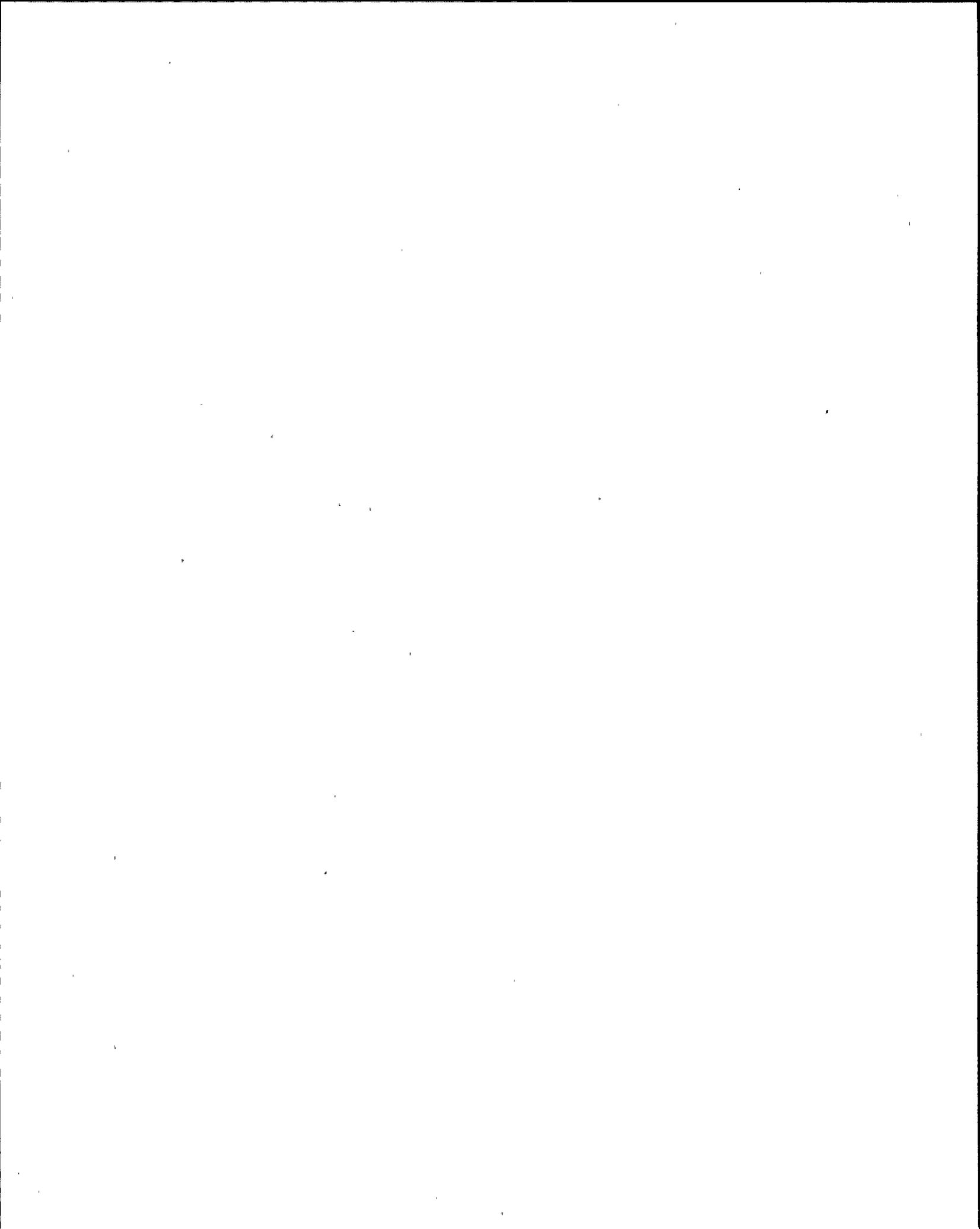
- a. One containment spray pump starts and its associated outlet valves open.
- b. Both spray pumps start, but no valves open.
- c. Containment ventilation isolation occurs, but no containment spray actuation occurs.
- d. No containment spray or ventilation isolation actuations occur.



QUESTION: 044 (1.00)

WHICH of the following is an ECCS acceptance criterion?

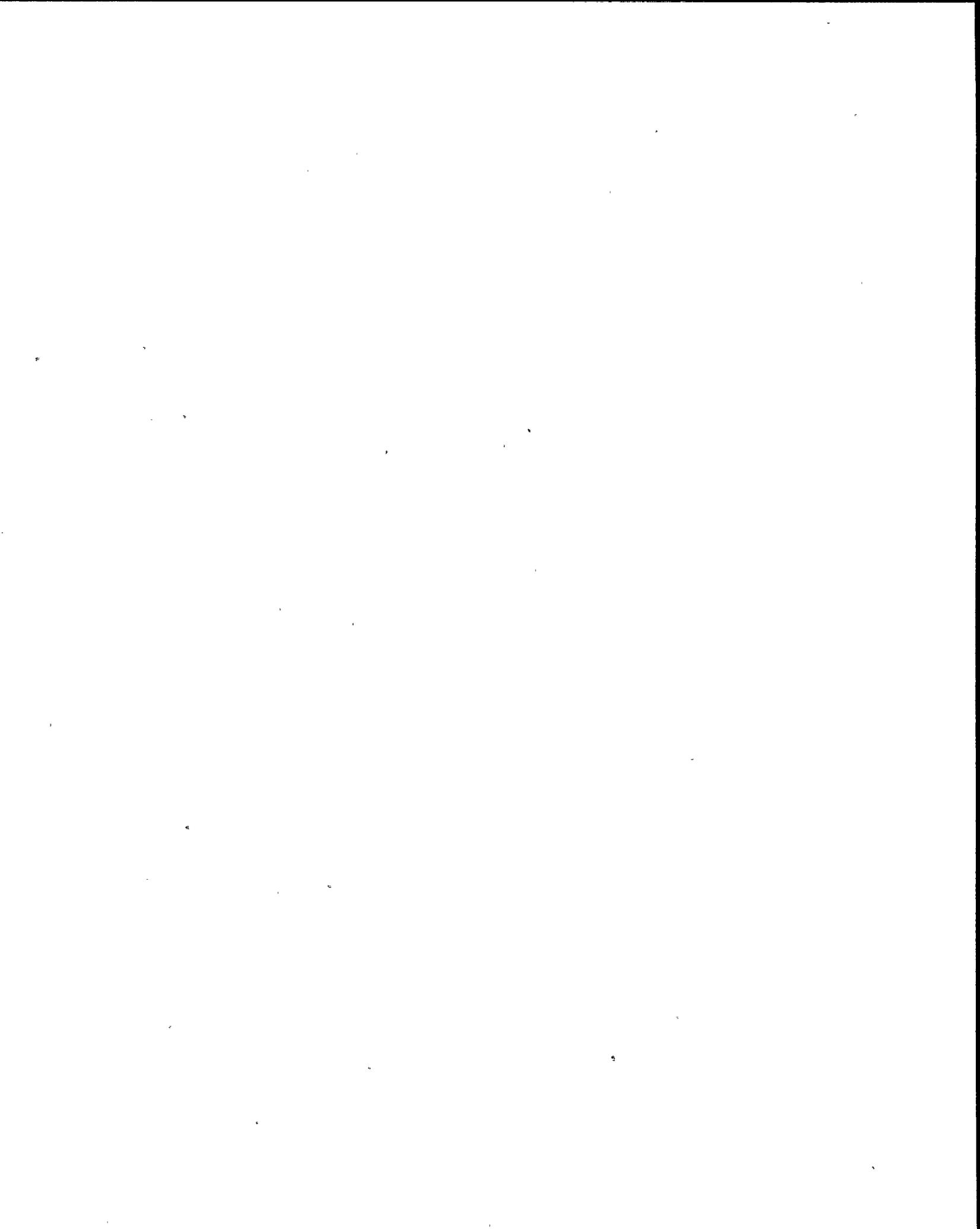
- a. Ensure calculated offsite dose rates following an accident remain within the guidelines of 10 CFR Part 100 limits.
- b. Provide capability for maintaining core cooling over a long period of time.
- c. Ensure that the Iodine released following an accident is less than or equal to 1% of the total amount of Iodine in the core.
- d. Maintain Peak Centerline Temperature following an accident to less than or equal to 4700 degrees F.



QUESTION: 045 (1.00)

Region 2 of the Spent Fuel Storage Racks has a higher allowable density loading of fuel than Region 1 due to (CHOOSE ONE):

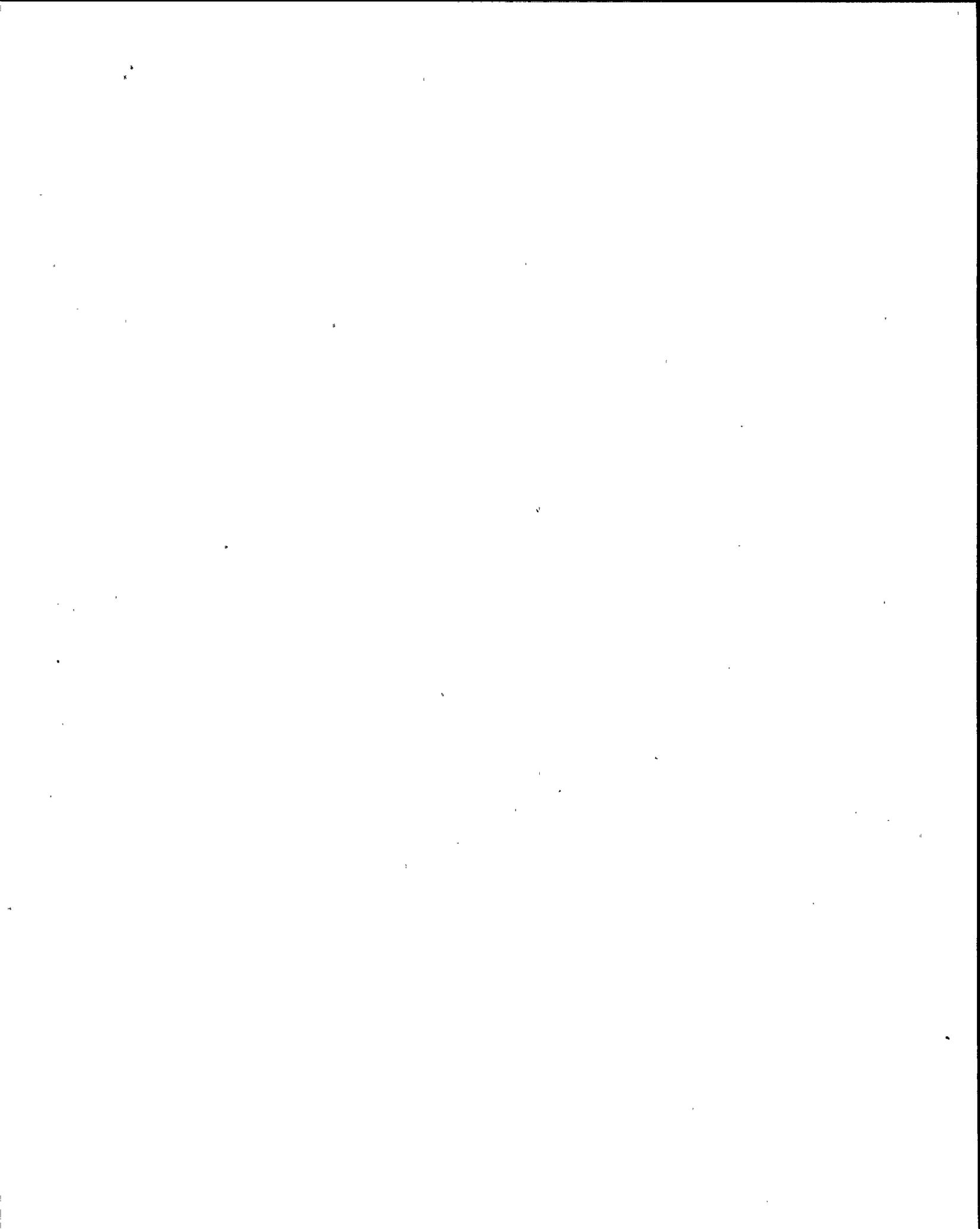
- a. Region 2 is used for the storage of new fuel only, prior to its transfer into the core.
- b. Region 2 is constructed with additional boron poison loading in the fuel racks.
- c. Region 2 has a higher soluble boron concentration in the water surrounding the fuel.
- d. Region 2 fuel racks are situated lower in the spent fuel pool, allowing more room for fuel assemblies.



QUESTION: 046 (1.00)

WHICH of the following is the function of the S/G feed ring J-tubes?

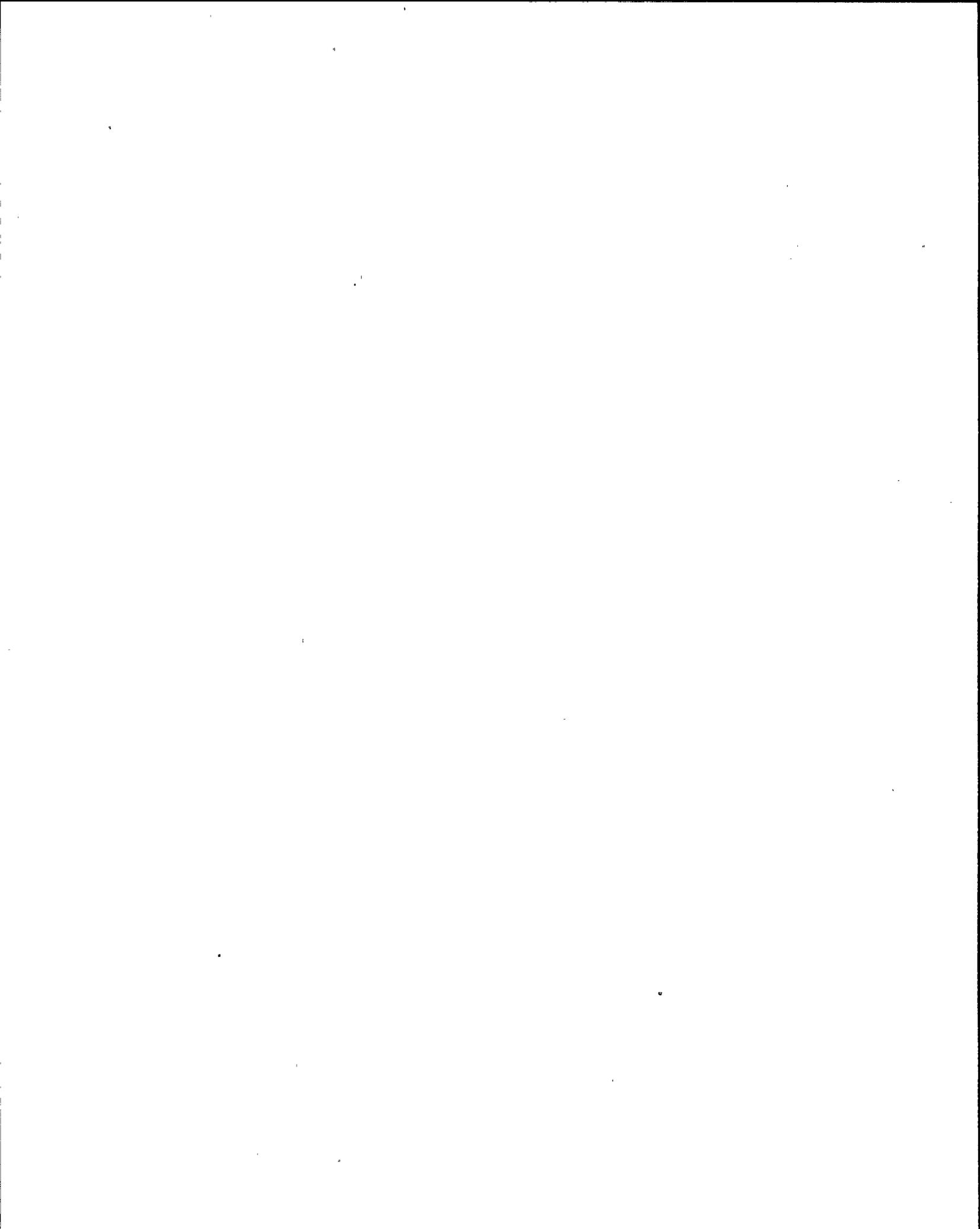
- a. Maintain the feed ring full of water during short periods of interrupted feed flow.
- b. Provide for even distribution of feedwater into the downcomer.
- c. Prevent erosion of the top layer of U-tubes from feed ring spray.
- d. Provide for rapid dispersion of volatile chemicals when they are added to the S/G.



QUESTION: 047 (1.00)

WHICH of the following reactor trips is designed to protect the core from a departure from nucleate boiling (DNB) condition?

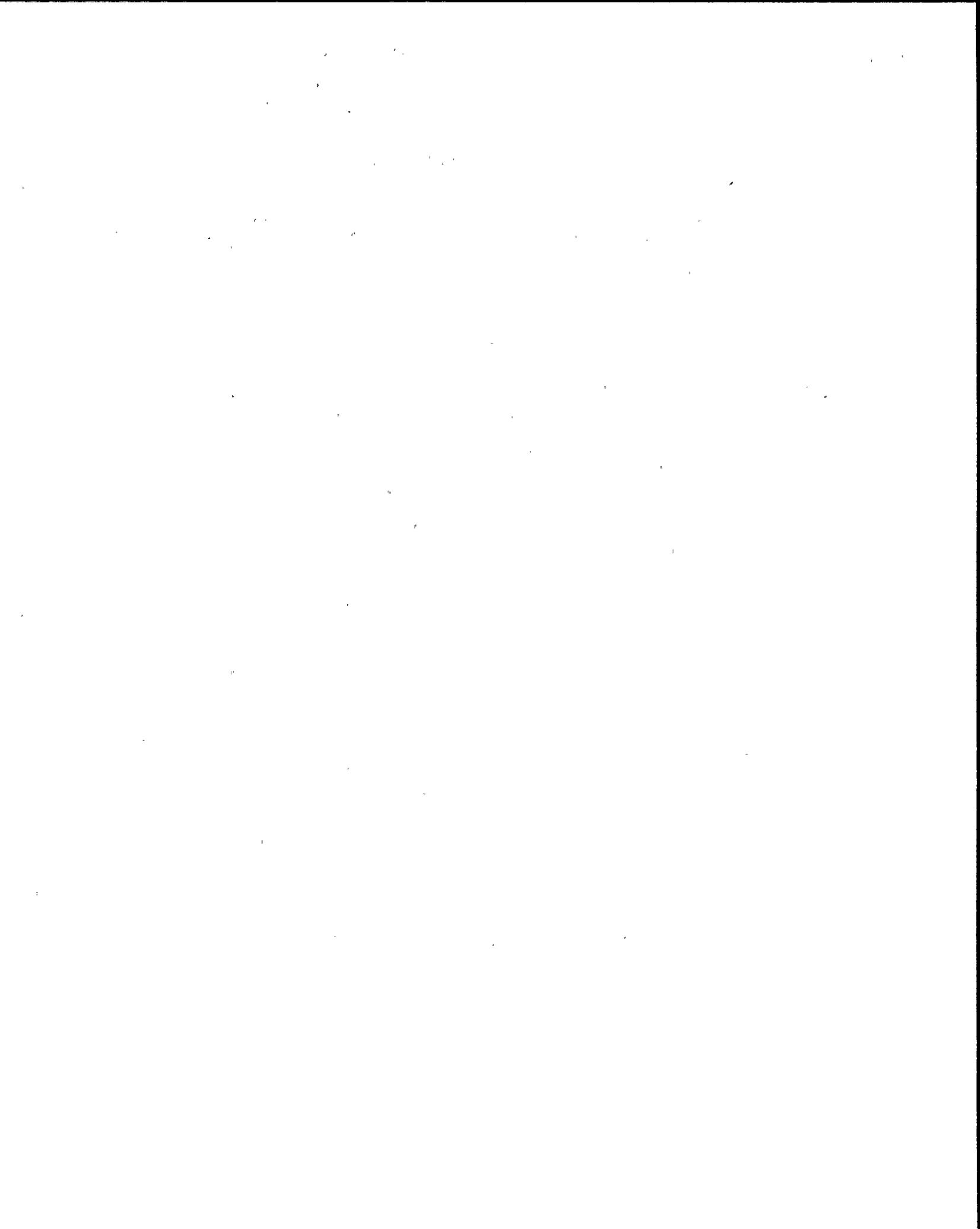
- a. Power Range High Flux (high setpoint)
- b. Pressurizer High Level
- c. Overpower Delta Temperature
- d. Reactor Coolant Loop Low Flow



QUESTION: 048 (1.00)

For an AUTO actuation of the HALON suppression system in the relay room, WHICH of the following lists the alarms that will be received on the control room's Fire Control Panel?

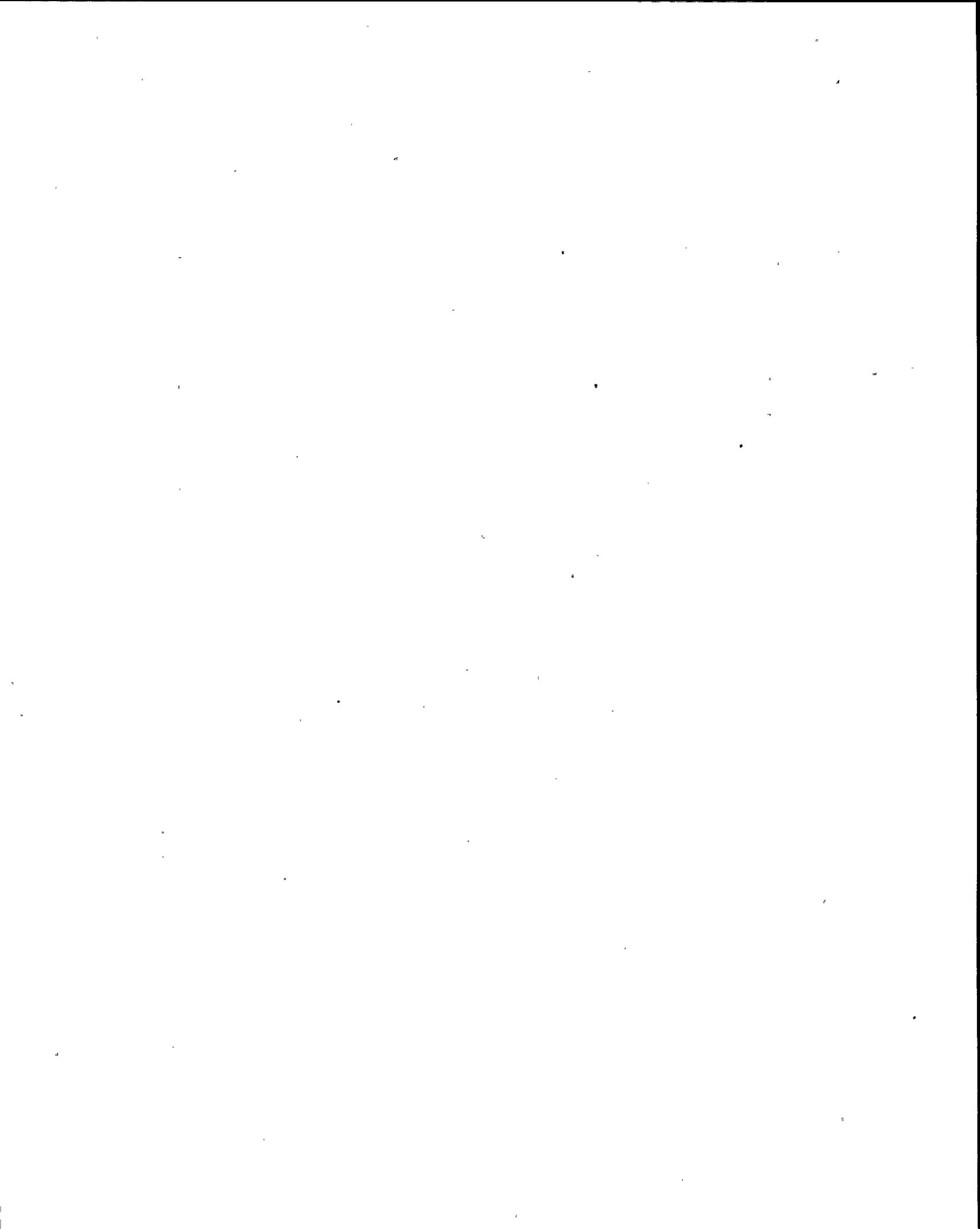
- a. First Alarm
- b. First Alarm, Second Alarm
- c. First Alarm, Second Alarm, Flow
- d. First Alarm, Second Alarm, Flow, Auto Defeat



QUESTION: 049 (1.00)

For a loss of all AC due to a loss of 12A and 12B Transformers, WHICH of the following methods could be used to restore offsite power for long term concerns? (diagram attached)

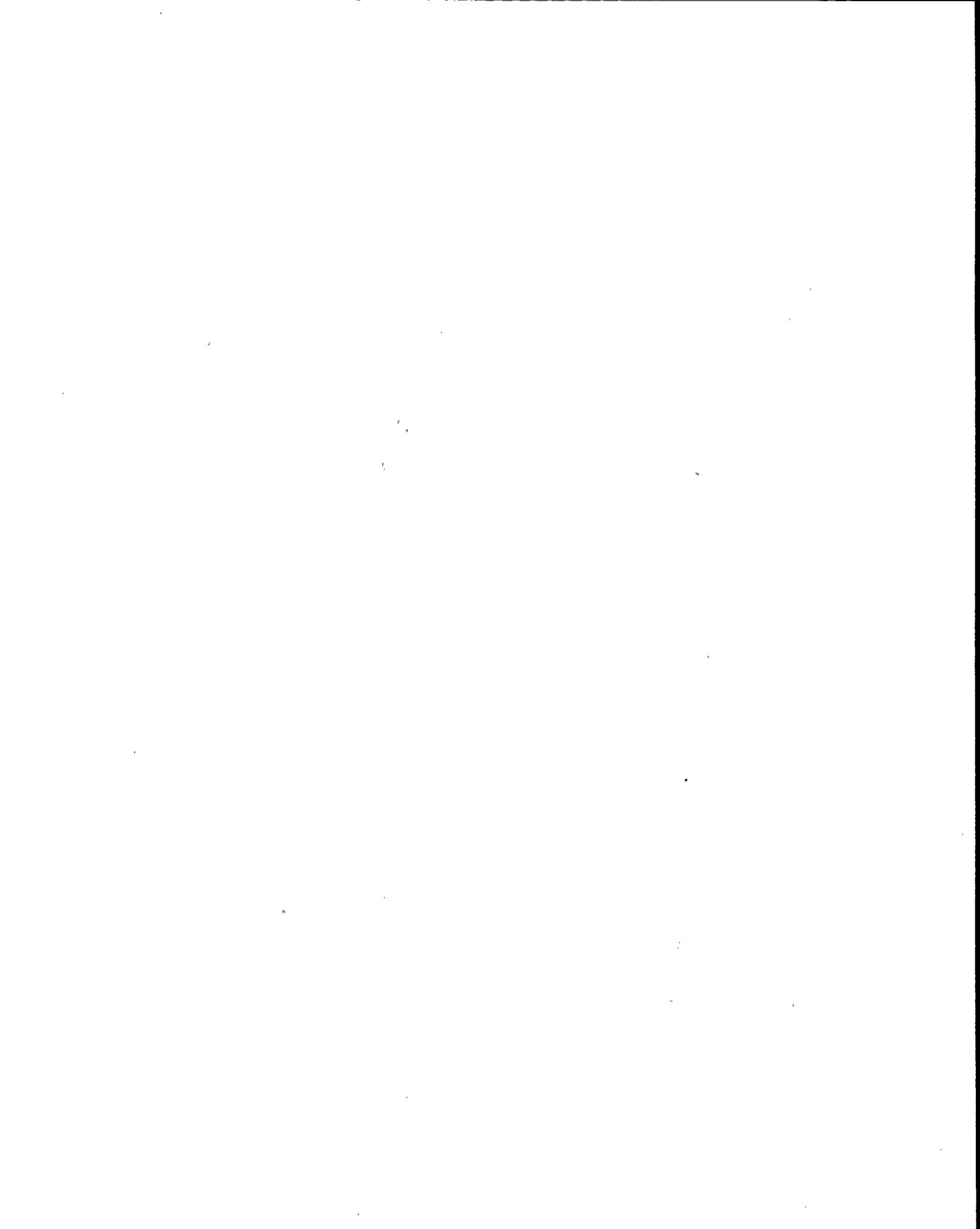
- a. 115kV Circuit 909 to Circuit 767 via the manual disconnect
- b. Offsite supply via #6 Transformer to the 4160V Buses
- c. Offsite supply via #6 Transformer and the Main Transformer
- d. Offsite supply via the Main Transformer and #11 Transformer



QUESTION: 050 (1.00)

WHICH of the following statements describes what will occur for a loss of main DC Distribution Panel 1A?

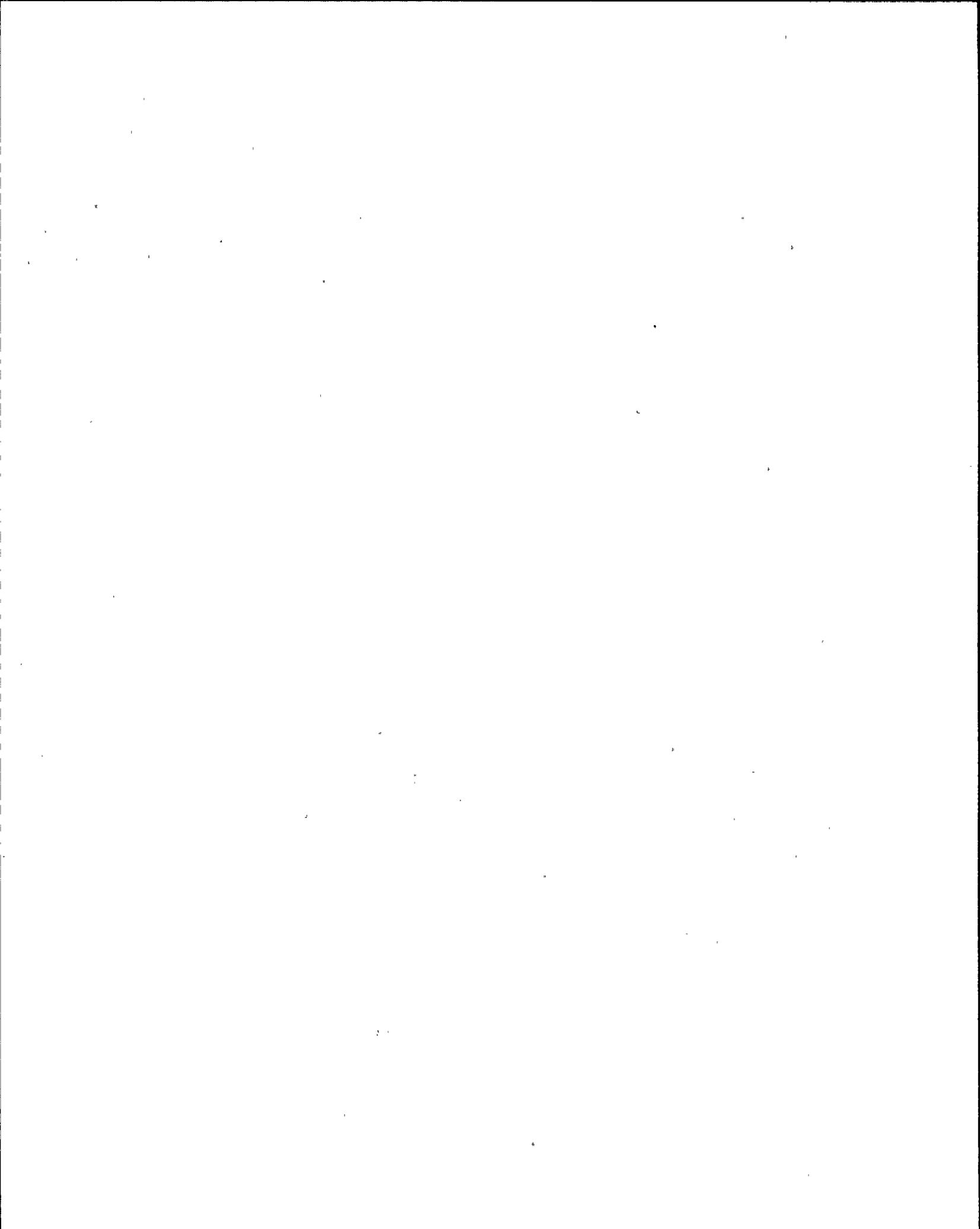
- a. DC Distribution Panel infeed will automatically swap from 1A 125V Battery to the TSC Battery.
- b. Operability of train A safeguards valves from the MCB will be lost.
- c. Both pressurizer PORV's will be inoperable.
- d. Instrument bus 1A will be deenergized.



QUESTION: 051 (1.00)

WHICH of the following D/G engine trips requires local actions at the D/G in order to be reset?

- a. overcrank
- b. low lube oil pressure
- c. overspeed
- d. local stop

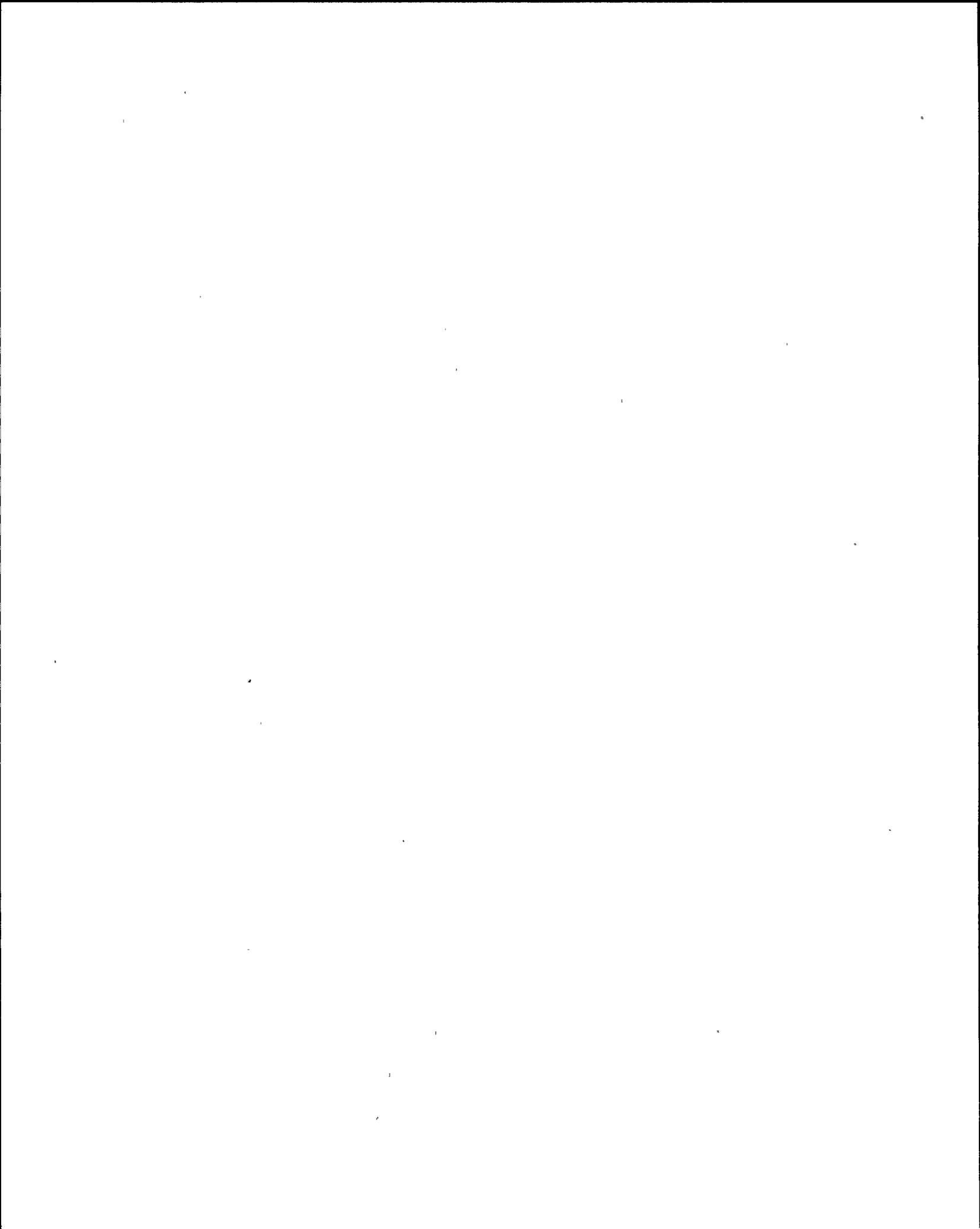


QUESTION: 052 (1.00)

During a station blackout, "A" D/G is carrying 1850 kW of load.

HOW much load of proportional heaters can be loaded onto the "A" D/G without exceeding its continuous service rating?

- a. 100 kW
- b. 200 kW
- c. 300 kW
- d. 400 kW



QUESTION: 053 (3.00)

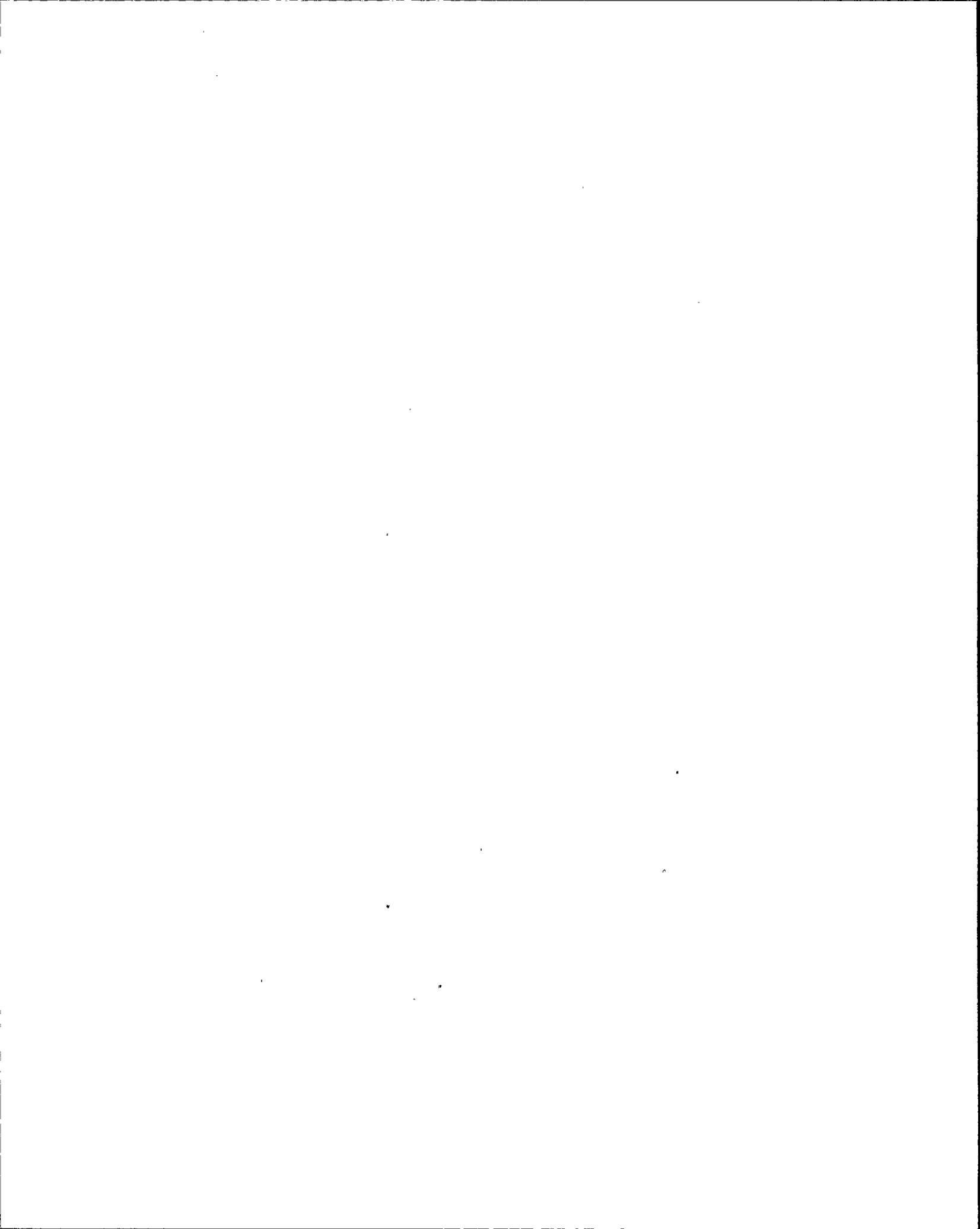
MATCH the most appropriate procedure listed in COLUMN B to which you would refer for an ALARM condition on the rad monitors listed in COLUMN A.  
(Each procedure in COLUMN B can be used once, more than once, or not at all)

COLUMN A

- a) R9 \_\_\_\_\_
- b) R14 \_\_\_\_\_
- c) R15 \_\_\_\_\_
- d) R17 \_\_\_\_\_
- e) R19 \_\_\_\_\_
- f) R30 \_\_\_\_\_

COLUMN B

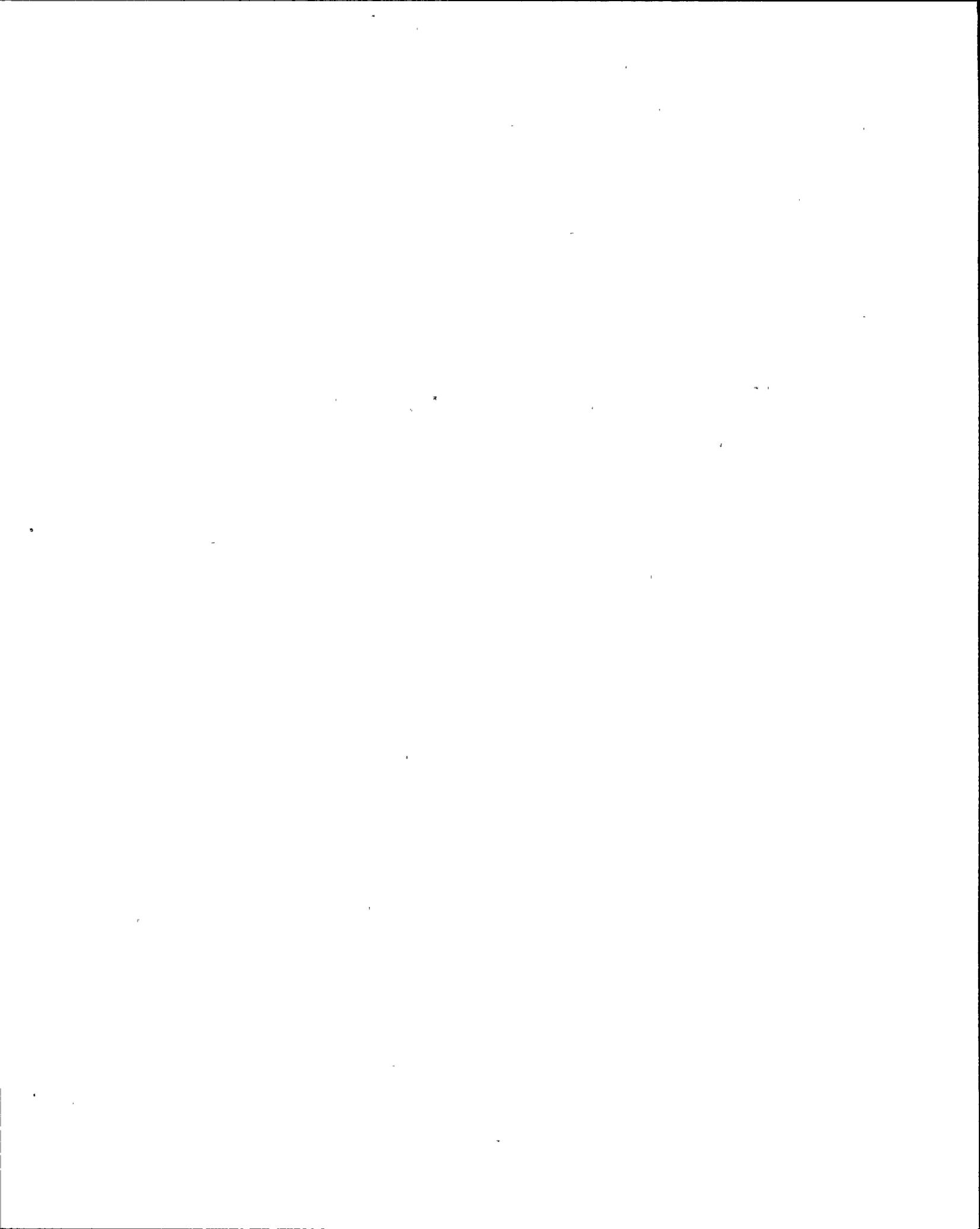
- 1. AP-CCW.1 (Leakage Into The Component Cooling Loop)
- 2. AP-CVCS.1 (CVCS Leak)
- 3. AP-RCP.1 (RCP Seal Malfunction)
- 4. AP-RCS.1 (Reactor Coolant Leak)
- 5. AP-RCS.3 (High Reactor Coolant Activity)
- 6. E-1 (Loss Of Reactor Or Secondary Coolant)
- 7. ER-RMS.1 (Locating Source Of High Activity - Plant Vent)
- 8. ER-SFP.1 (Loss Of Spent Fuel Pit Cooling)
- 9. O-6.10 (Plant Operation With S/G Tube Leak Indication)



QUESTION: 054 (1.00)

WHICH of the following statements describes why there is a 60 second delay between most turbine trips and generator trips?

- a. Maintaining RCP's on the generator prevents a reverse power trip of the generator.
- b. Maintaining RCP's on the generator will be less severe if a subsequent accident occurred.
- c. Maintaining RCP's on the generator allows sufficient time to transfer power supplies to the Aux Transformer.
- d. Maintaining RCP's on the generator will prevent the generator from overspeeding.



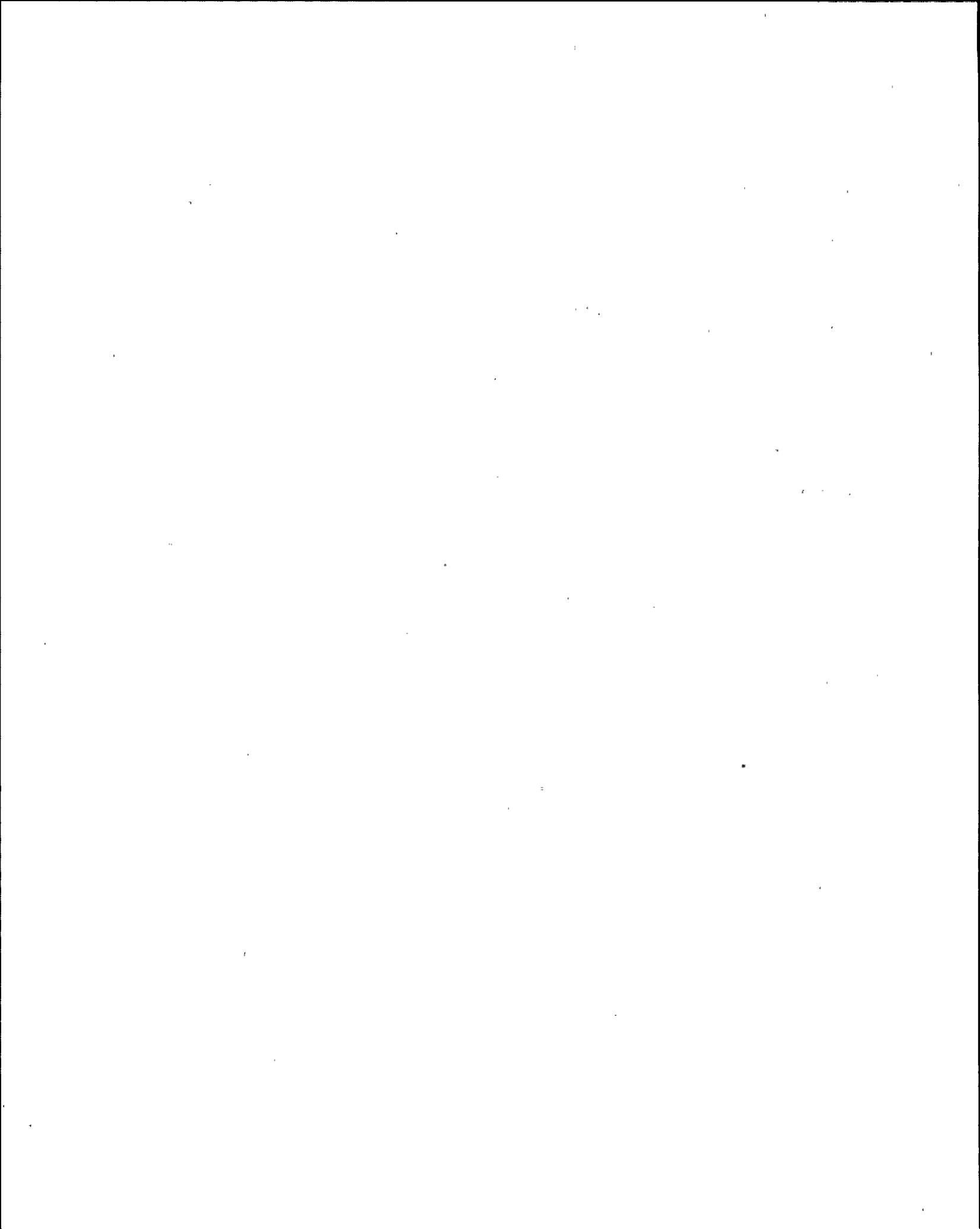
QUESTION: 055 (1.00)

Precaution 4.7 of O-2.3.1 (Draining And Operation At Reduced Inventory Of The Reactor Coolant System) lists the following table of recommended RHR loop flows vs. loop levels:

<u>Operation</u>	<u>"B" Loop Level</u>	<u>RHR Flow</u>
Head Removal	84 inches	<3000 GPM
RCP Seal Inspection	70 inches	<3000 GPM
Eductor Operation	18 inches	≤1000 GPM
S/G Inspection		
Loop Centerline	10 inches	≤800 GPM
RTD Work or S/G	6 inches	≤500 GPM
Bowl Deconning		

WHICH of the following is the reason for these recommended flows?

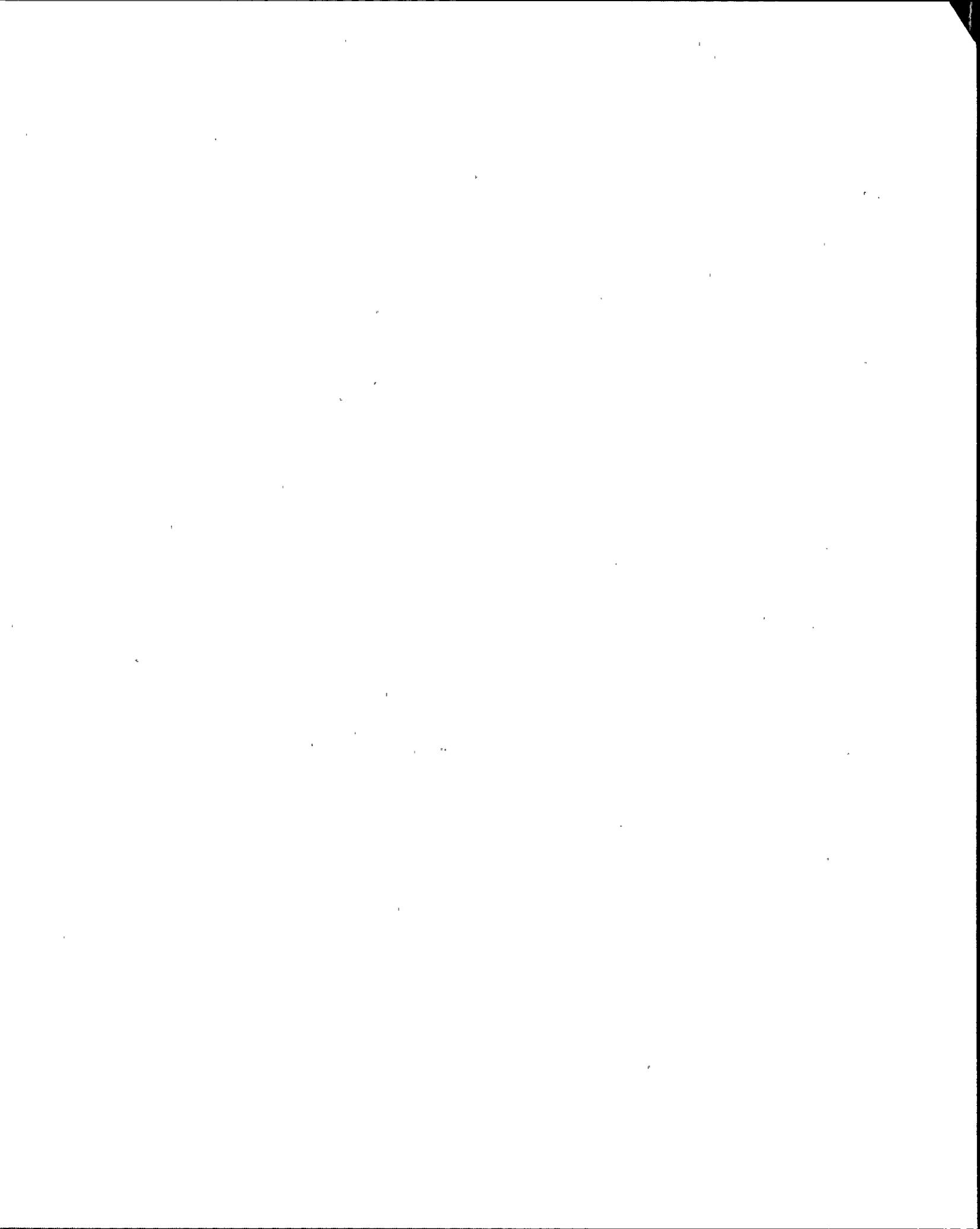
- a. Prevent loss of suction to RHR pumps.
- b. Prevent RHR pump runout.
- c. Prevent stratification of boron in the RCS.
- d. Prevent loss of RCS inventory.



QUESTION: 056 (1.00)

A leak in WHICH of the following heat exchangers would result in a loss of CCW OUT OF the CCW system?

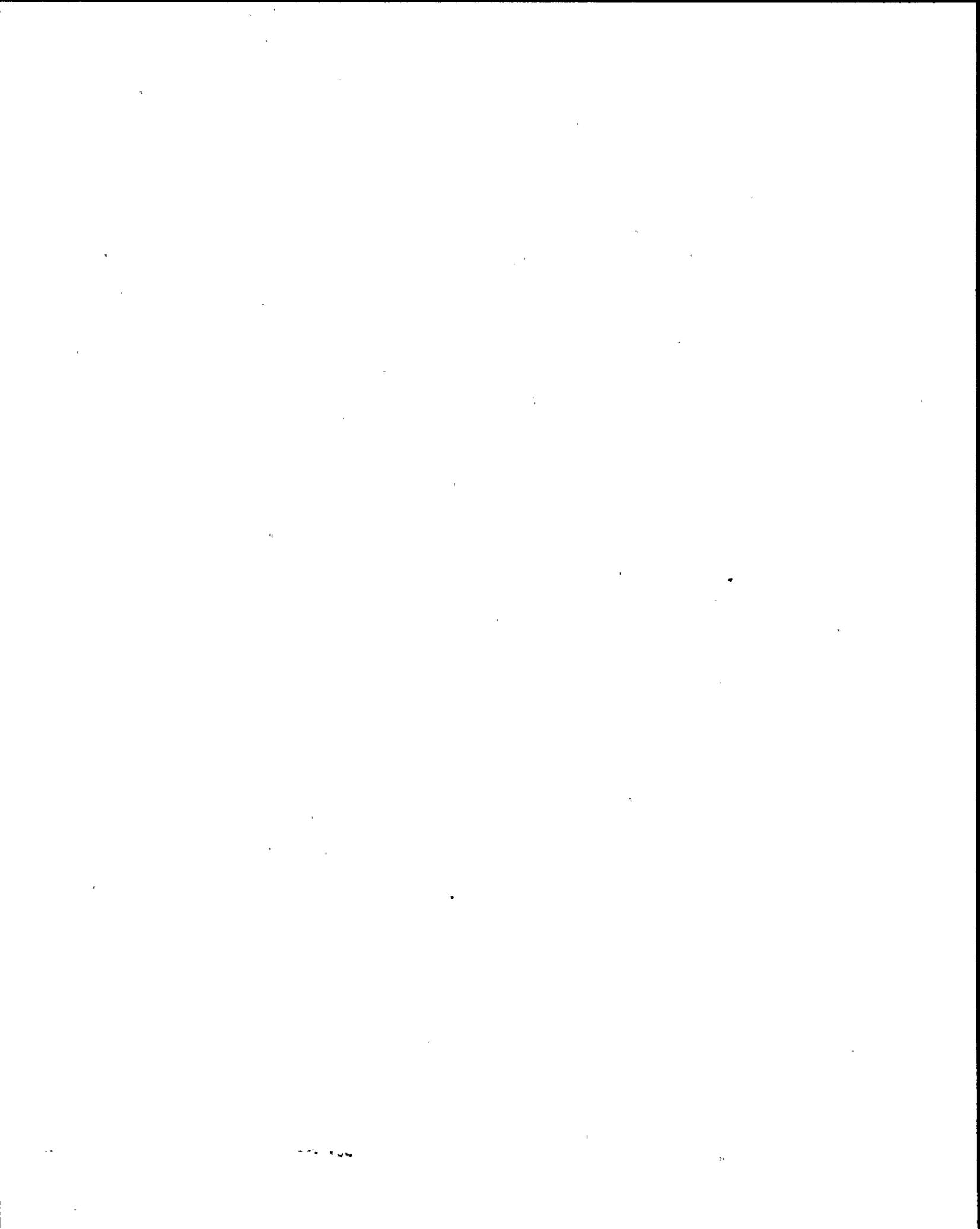
- a. RCP Motor Cooler heat exchanger
- b. Non-regenerative heat exchanger
- c. Excess letdown heat exchanger
- d. Sampling system heat exchanger



QUESTION: 057 (1.00)

WHICH of the following manipulator crane features helps prevent lifting a fuel assembly with excessive force?

- a. Dillon load cell indication
- b. Gripper interlock circuit
- c. Bridge - trolley interlock
- d. Slack cable limiting circuit



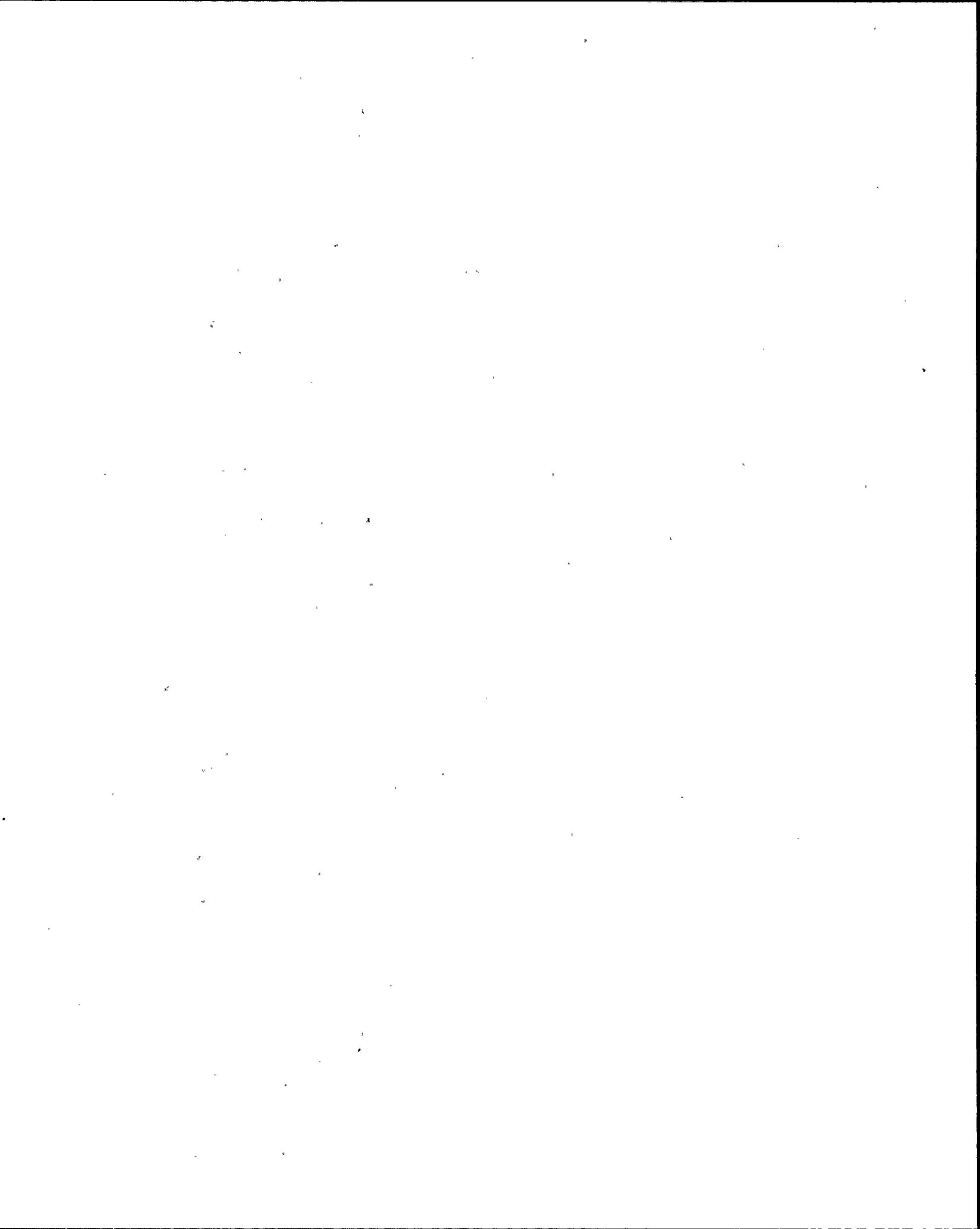
QUESTION: 058 (1.00)

CONSIDER the following two cases:

- I) A turbine runback from 45% power to no load conditions at 200% per minute (no reactor trip)
- II) A turbine trip from 45% power (no reactor trip)

Assuming that all control systems are operating in AUTO for both cases, a higher peak  $T_{avg}$  will result in (CHOOSE ONE):

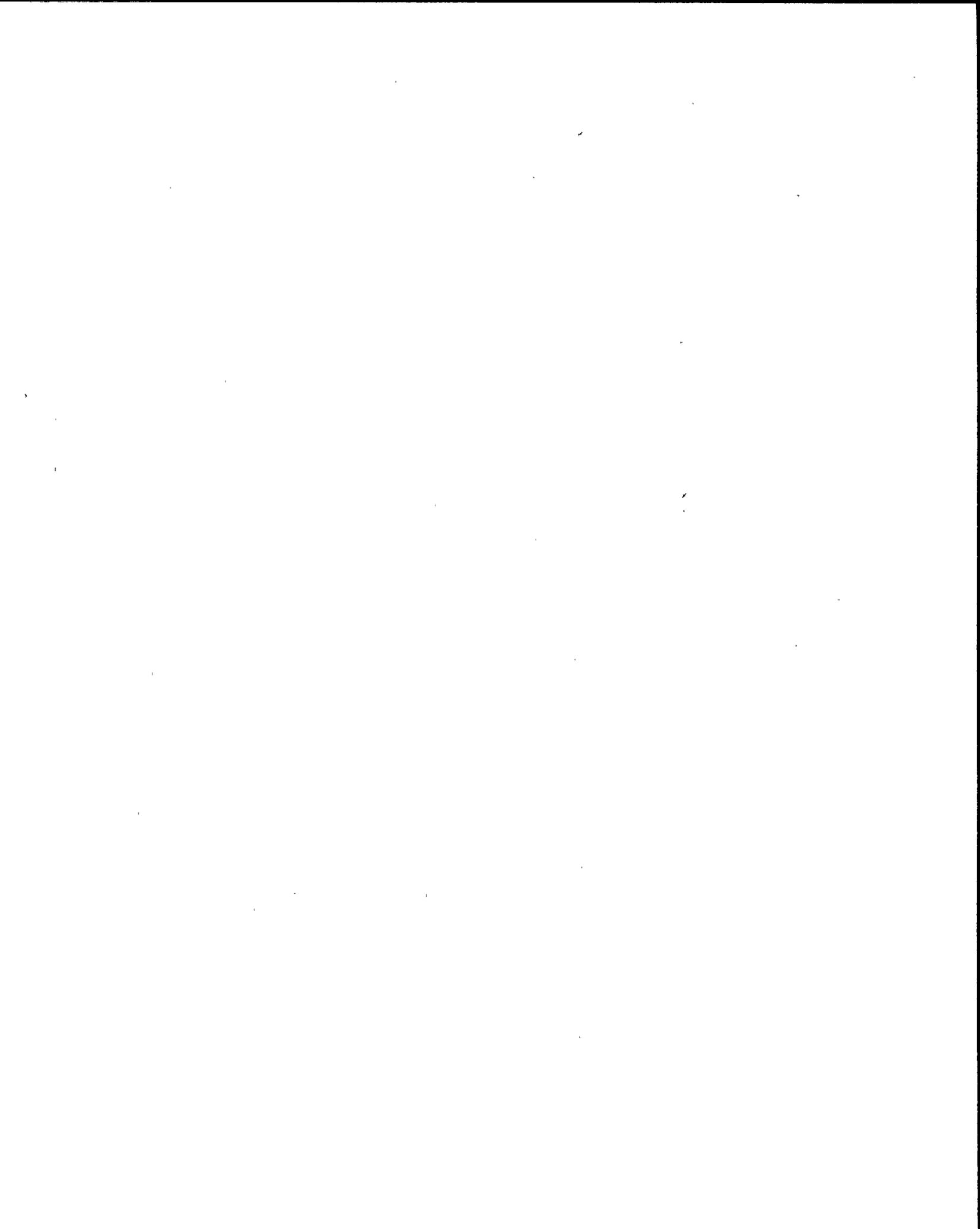
- a. Case I because the steam dumps will respond to a higher  $T_{ref}$  signal.
- b. Case II because the steam dumps will respond to a higher  $T_{ref}$  signal.
- c. Case I because the high and high-high bistables will trip at a higher  $\Delta T$  ( $T_{avg} - T_{ref}$ ).
- d. Case II because the high and high-high bistables will trip at a higher  $\Delta T$  ( $T_{avg} - T_{ref}$ ).



QUESTION: 059 (1.00)

In order to regain control of AOV-5392 (Instrument Air to Containment) following a SI, WHICH of the following sequences is correct?

- a. Reset SI, Reset CI, and Reset the x-y Relay.
- b. Reset SI, Reset the x-y Relay, Close the valve, and Reset CI.
- c. Reset SI, Reset CI, Reset CVI, and Close the valve.
- d. Reset SI, Reset the x-y Relay, Close the valve, and Reset CVI.



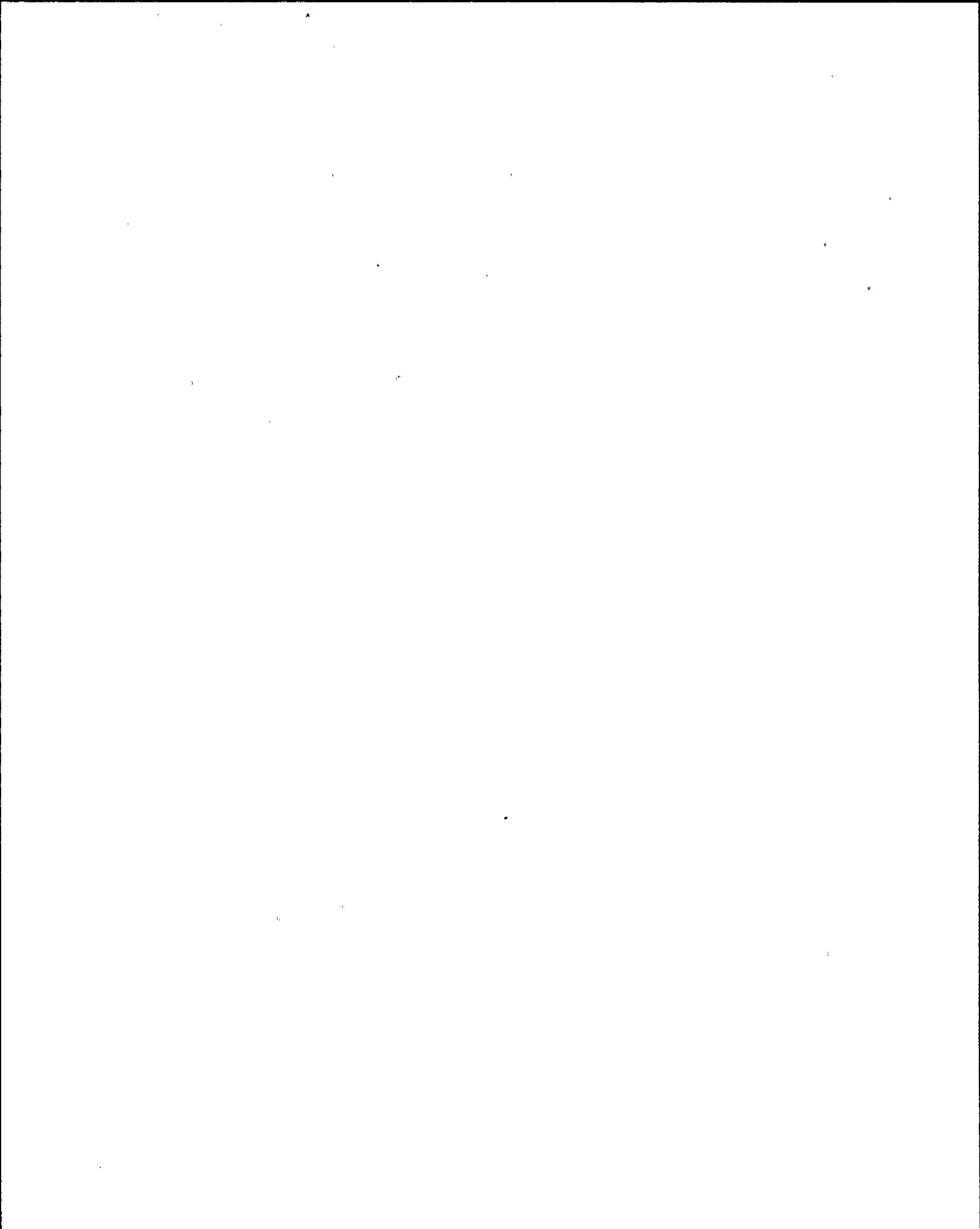
QUESTION: 060 (1.00)

GIVEN the following information:

Time	<u>1100</u>	<u>1200</u>
Tavg	573.5 degrees F	572 degrees F
Przr Level	49%	47%
PRT Level	70%	76%
PRT Temp.	120 degrees F	90 degrees F

WHICH of the following sources is the MOST LIKELY cause of the PRT level increasing?

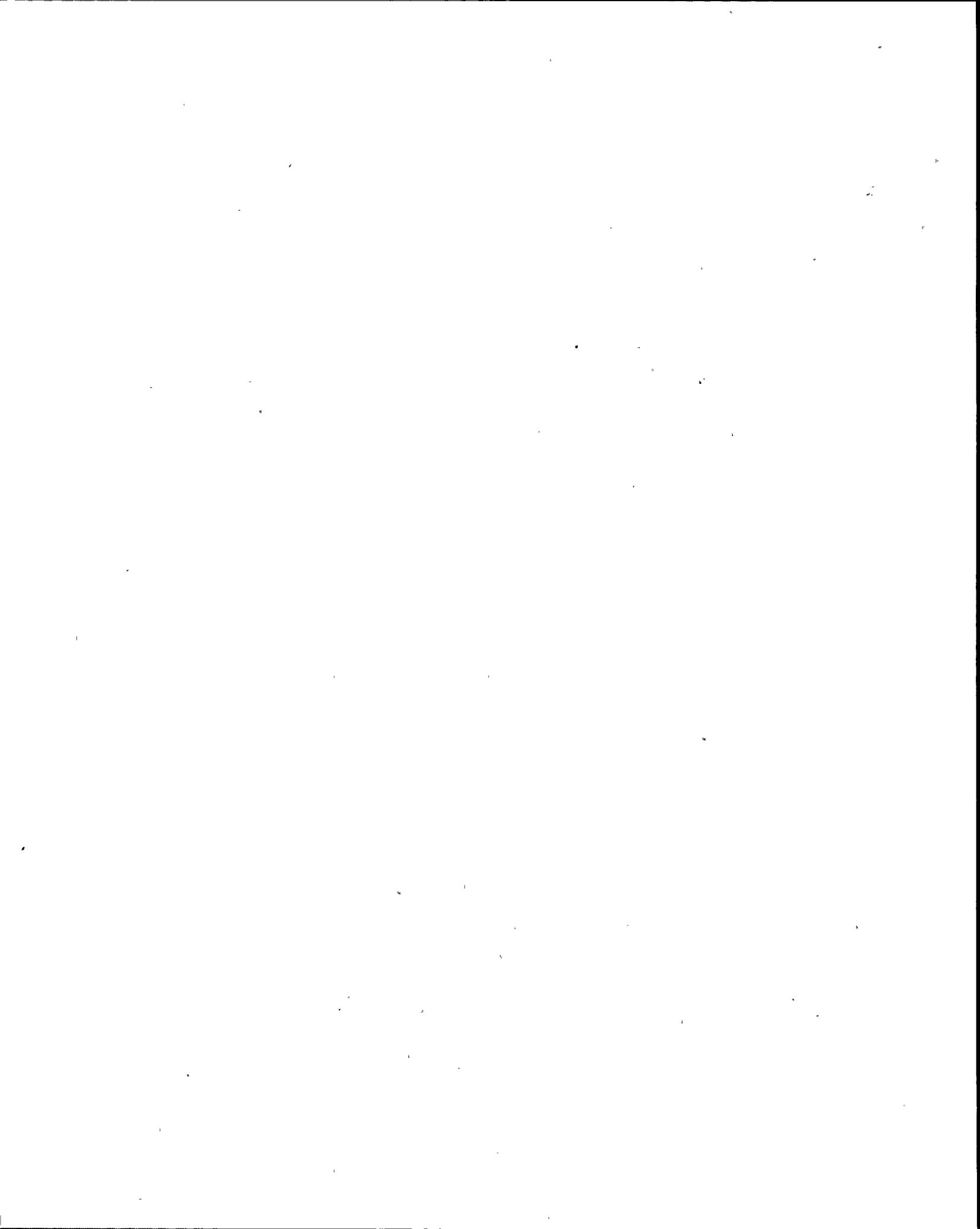
- a. Letdown Relief Valve (PCV-203)
- b. PRT Makeup Valve (AOV-508)
- c. Seal Return Relief (PCV-314)
- d. PORV Block Valve (MOV-516)



QUESTION: 061 (1.00)

WHICH of the following SW loads will be affected by a SW isolation signal?

- a. AFW alternate suction valves
- b. Charging pumps
- c. D/G jacket water cooler
- d. CCW heat exchanger



QUESTION: 062 (1.00)

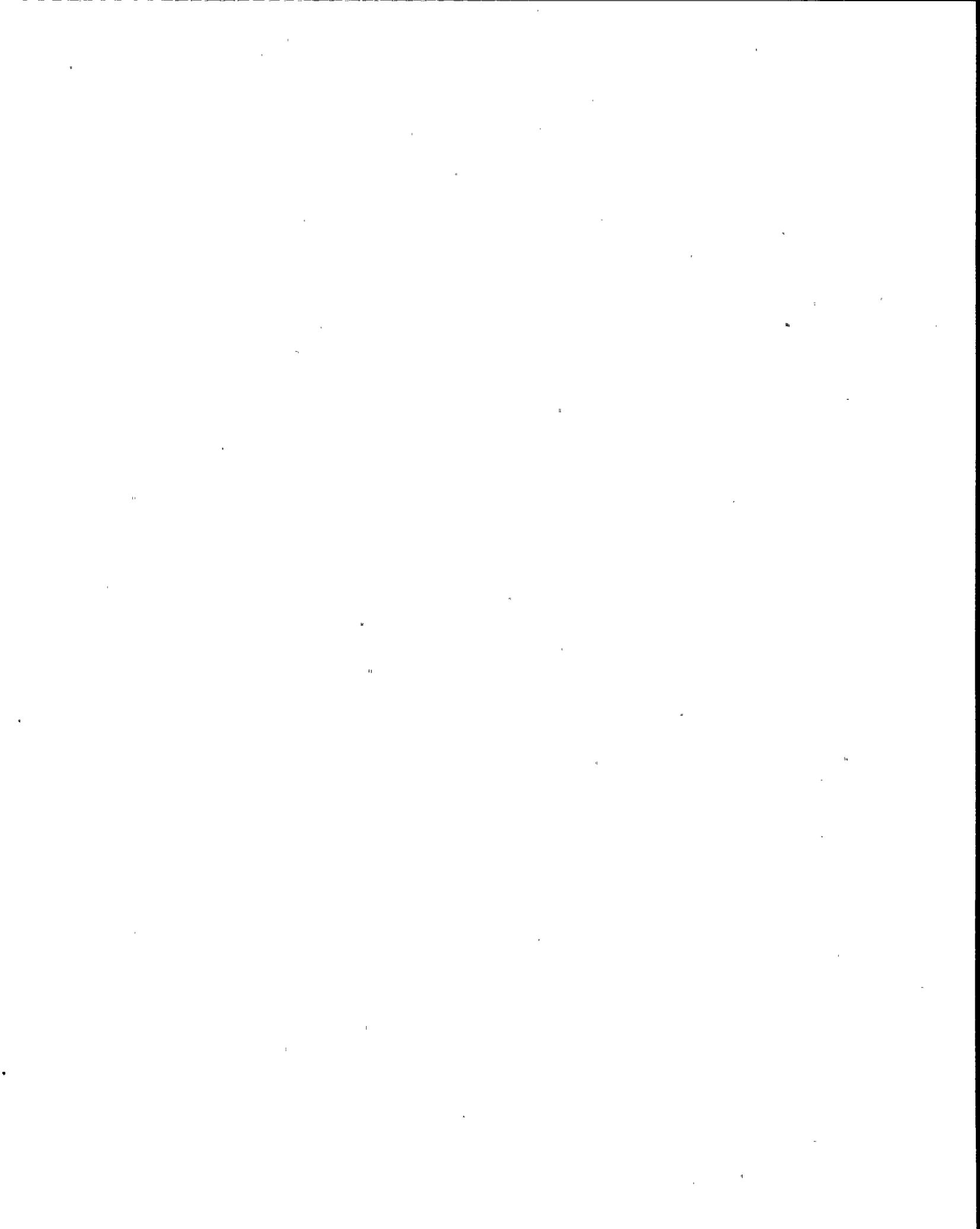
GIVEN the following:

Reactor power is 40%

Seal leakoff flow for "A" RCP goes from 1 gpm to off-scale high in 5 seconds.

WHAT are your actions? (CHOOSE ONE):

- a. Close the seal discharge isolation valve (AOV-270A), trip the reactor, and trip the "A" RCP.
- b. Trip the "A" RCP, and close the seal discharge isolation valve (AOV-270A).
- c. Verify the labyrinth seal d/p at 40-45 inches of water; if not, restore the d/p to 40-45 inches of water; verify VCT pressure greater than 15 psig; if not, restore pressure to greater than 15 psig.
- d. Verify both "A" and "B" RCP # 1 seal outlet temperatures are less than 215 degrees F; if not, trip the reactor and trip the "A" RCP, and monitor Attachment A of AP-RCP.1.

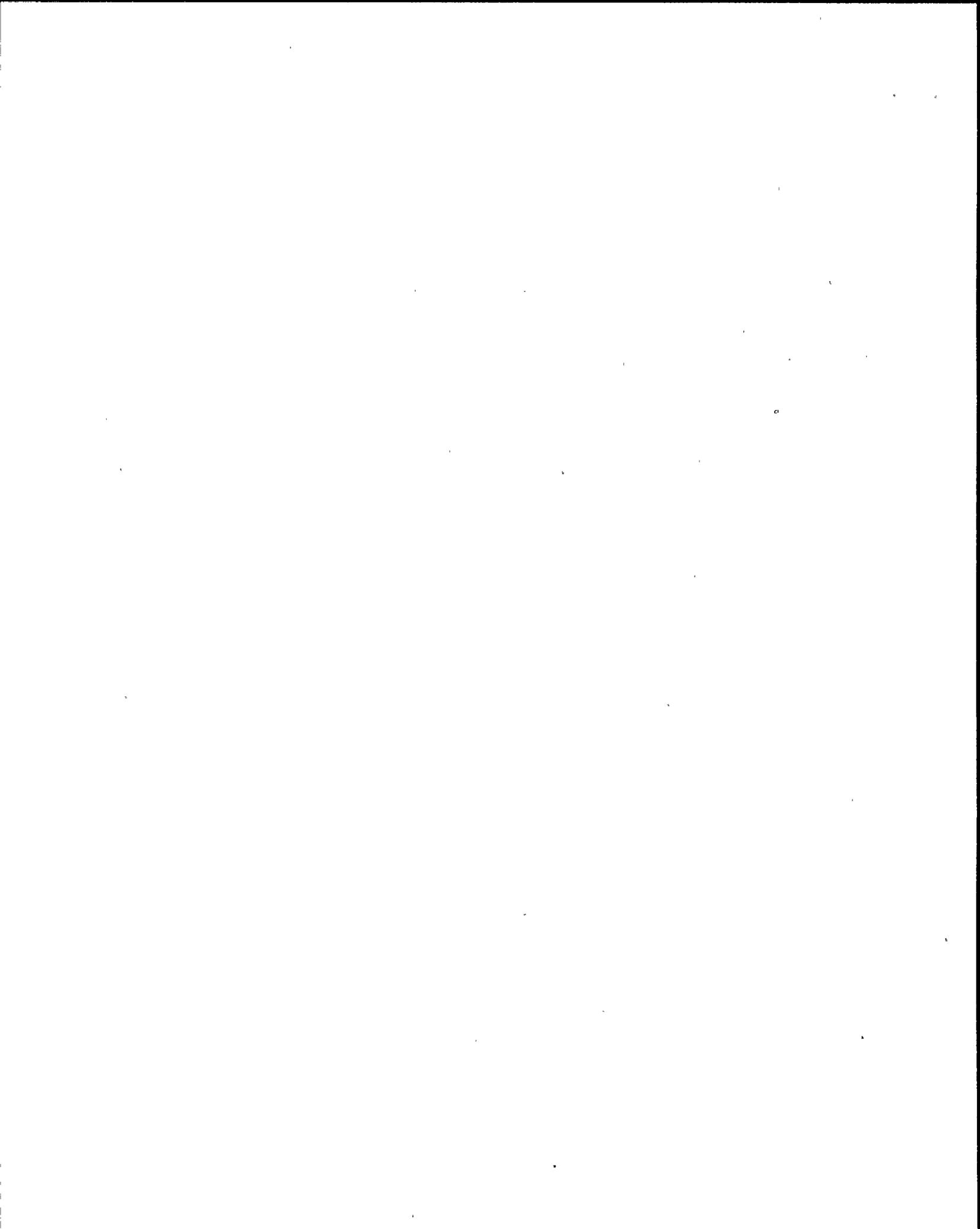


## QUESTION: 063 (1.00)

A reactor trip and SI has occurred, and a red path on SUBCRITICALITY has directed you to FR-S.1 (Response to Reactor Restart/ATWS) (copy attached)

Step 4 of FR-S.1 has the operator verify that RCS pressure is greater than 1400 psig. If it is not, and SI flow is indicated, immediate boration via MOV-350 is not attempted because (CHOOSE ONE):

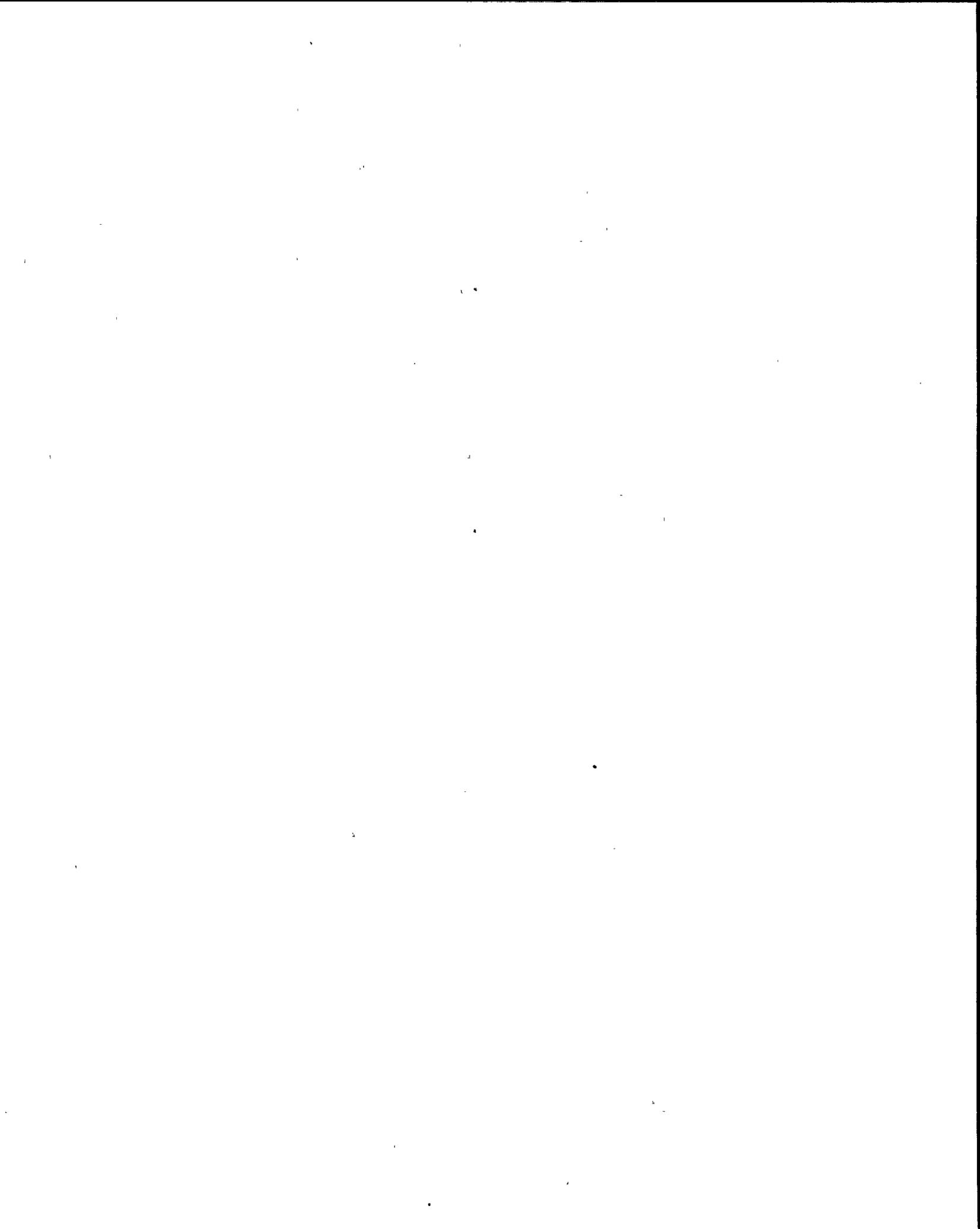
- a. RCP's have been tripped, and boration flow through the RCP seals is reduced.
- b. SI pumps will be injecting and are more effective at boron addition than charging pumps.
- c. A LOCA has occurred and immediate boration flow will be lost through the break and reduce boric acid inventory.
- d. A steam break has occurred and addition of too much boric acid may result in a positive value of Moderator Temperature Coefficient.



QUESTION: 064 (1.00)

WHICH of the following describes the conditions for considering CCW lost to a RCP as listed in AP-CCW.2 (Loss of CCW During Power Operation)?

- a. CCW return temperature is  $> 120$  degrees F or upper RCP motor bearing temperature is  $\geq 180$  degrees F .
- b. CCW flow is interrupted for  $> 5$  minutes or lower RCP motor bearing temperature is  $\geq 215$  degrees F .
- c. CCW return flow is low for  $> 2$  minutes or either RCP motor bearing temperature is  $\geq 180$  degrees F .
- d. CCW flow is interrupted for  $> 2$  minutes or either RCP motor bearing temperature is  $\geq 200$  degrees F .



QUESTION: 065 (1.00)

GIVEN the following conditions:

Reactor at 100% power (steady state)

The following alarms occur simultaneously:

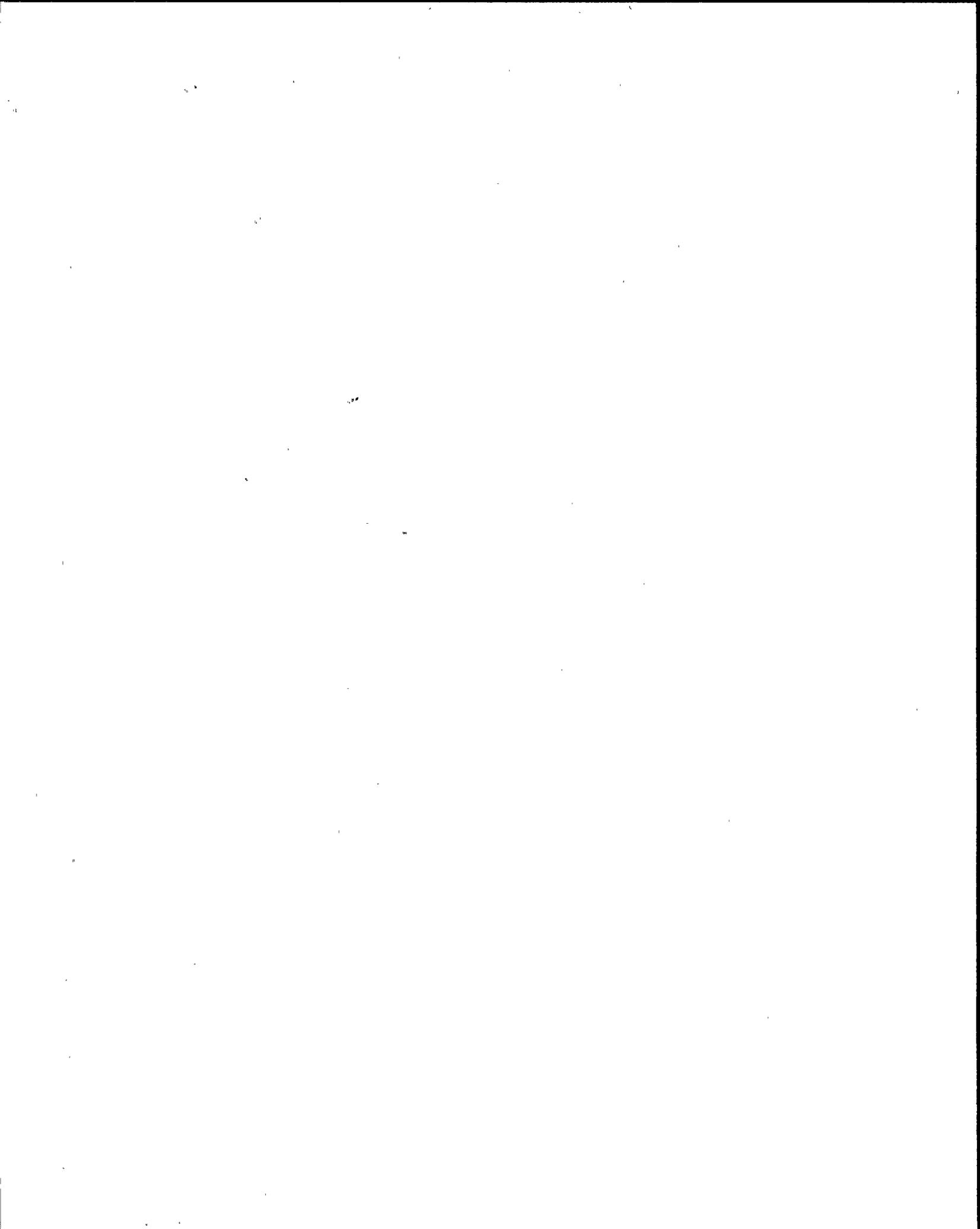
F-2 PRESSURIZER HI PRESS 2310 PSI

F-10 PRESSURIZER LO PRESS 2185 PSI

F-26 PZR HI PRESS CHANNEL ALERT 2377 PSI

WHICH of the following is the first action that should be performed? (copy of AP-PRZR.1 attached)

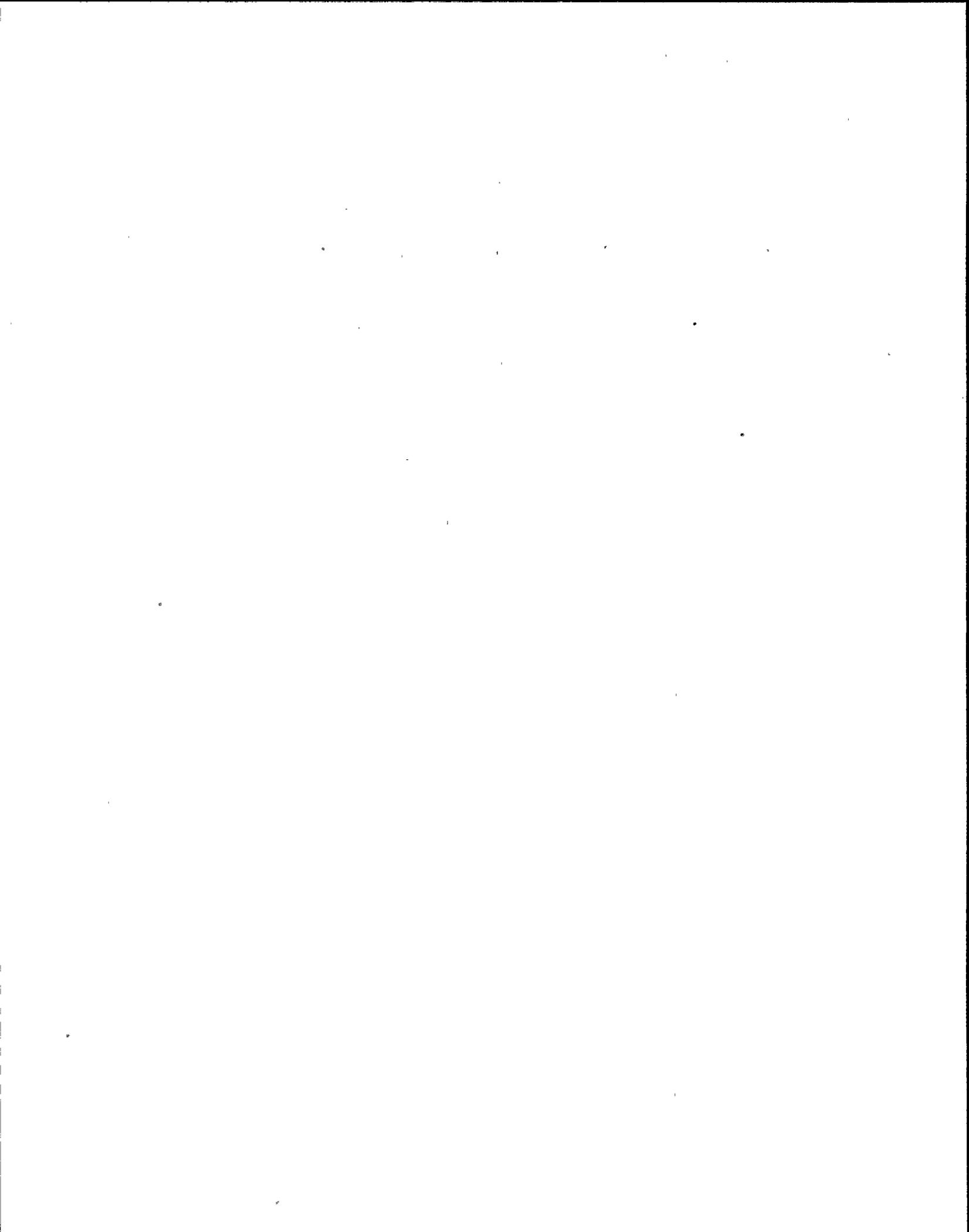
- a. Reduce turbine load to raise  $T_{avg}$  to restore actual pressurizer pressure (by insurge)
- b. Take controller PC-431K to manual (to close the spray valves)
- c. Trip the bistables for the failed pressurizer pressure channel (to comply with Tech Specs)
- d. Trip the reactor and go to E-0 (Low pressurizer pressure ATWS has occurred)



QUESTION: 066 (1.00)

WHICH of the following red paths is MOST LIKELY to occur for a steam line break on a single S/G outside containment, resulting in a reactor trip and SI? (Assume that all safeguards equipment functions as designed) (copy of CSFST's attached)

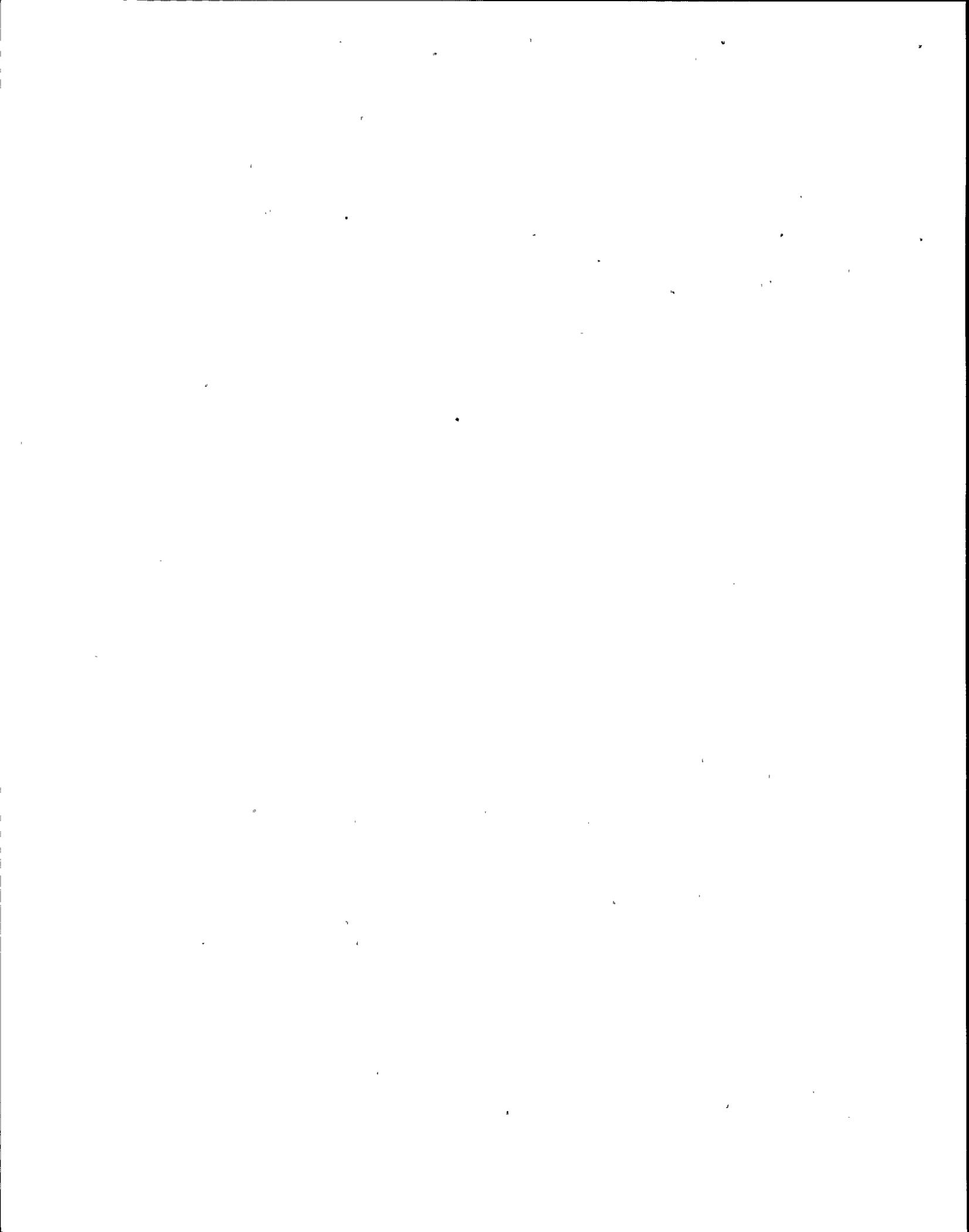
- a. Response to Inadequate Core Cooling (FR-C.1)
- b. Response to Loss of Secondary Heat Sink (FR-H.1)
- c. Response to Imminent Pressurized Thermal Shock Condition (FR-P.1)
- d. Response to High Containment Pressure (FR-Z.1)



QUESTION: 067 (1.00)

WHICH of the following values of condenser vacuum is the HIGHEST VALUE of vacuum at which automatic turbine trip should occur?

- a. 9 " Hg
- b. 14 " Hg
- c. 19 " Hg
- d. 24 " Hg

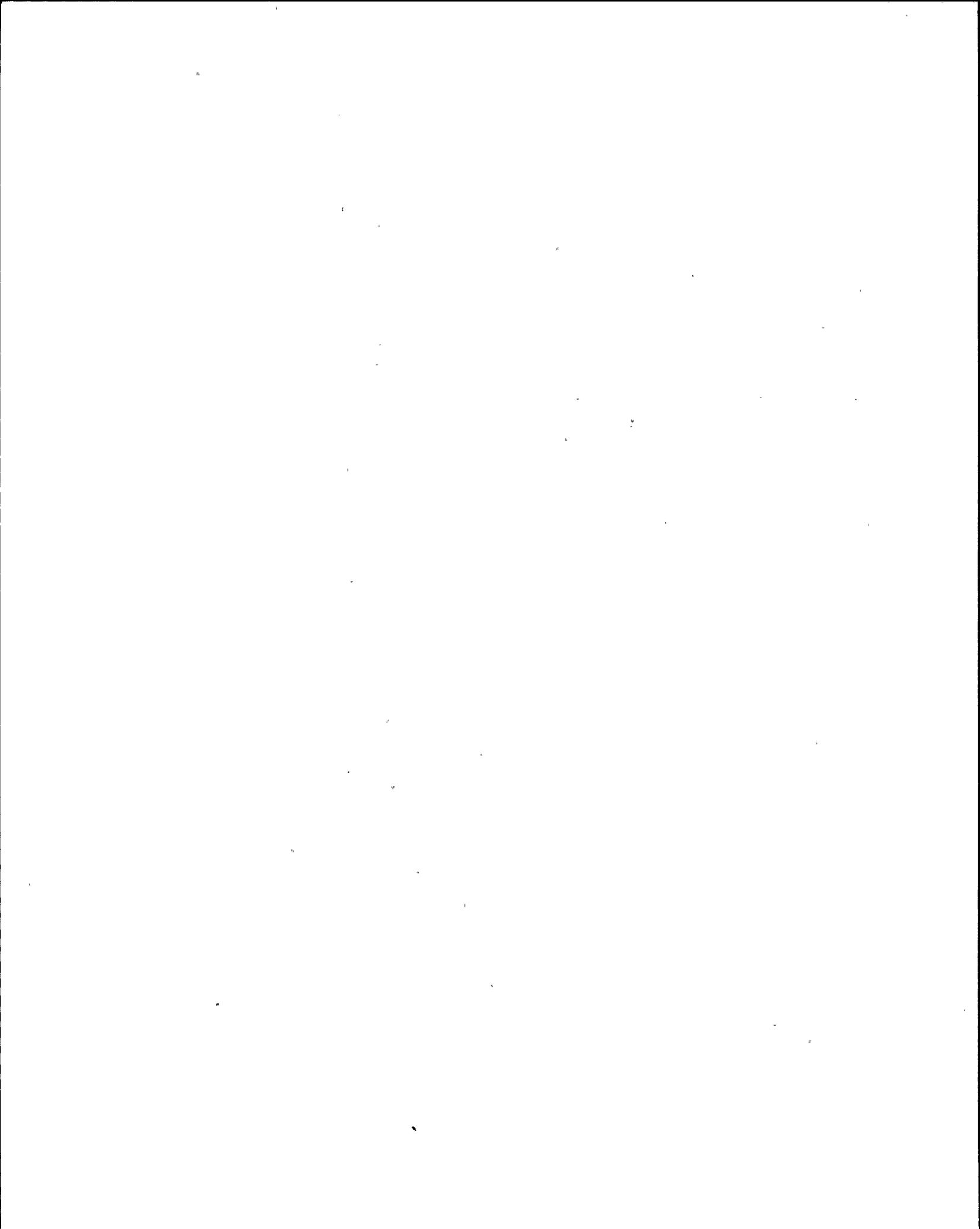


QUESTION: 068 (1.00)

When restoring power in ECA-0.0 (Loss of All AC Power), you are directed to verify at least one SW pump running for each running D/G.

The reason for this requirement is (CHOOSE ONE):

- a. To establish a heat sink for core cooling restoration.
- b. To establish cooling water for safeguards pump seals.
- c. To establish a stable D/G load to prevent D/G overspeed.
- d. To establish cooling water to D/G lube oil and jacket water heat exchangers.



QUESTION: 069 (1.00)

GIVEN the following:

125V DC Battery 1B is on open circuit

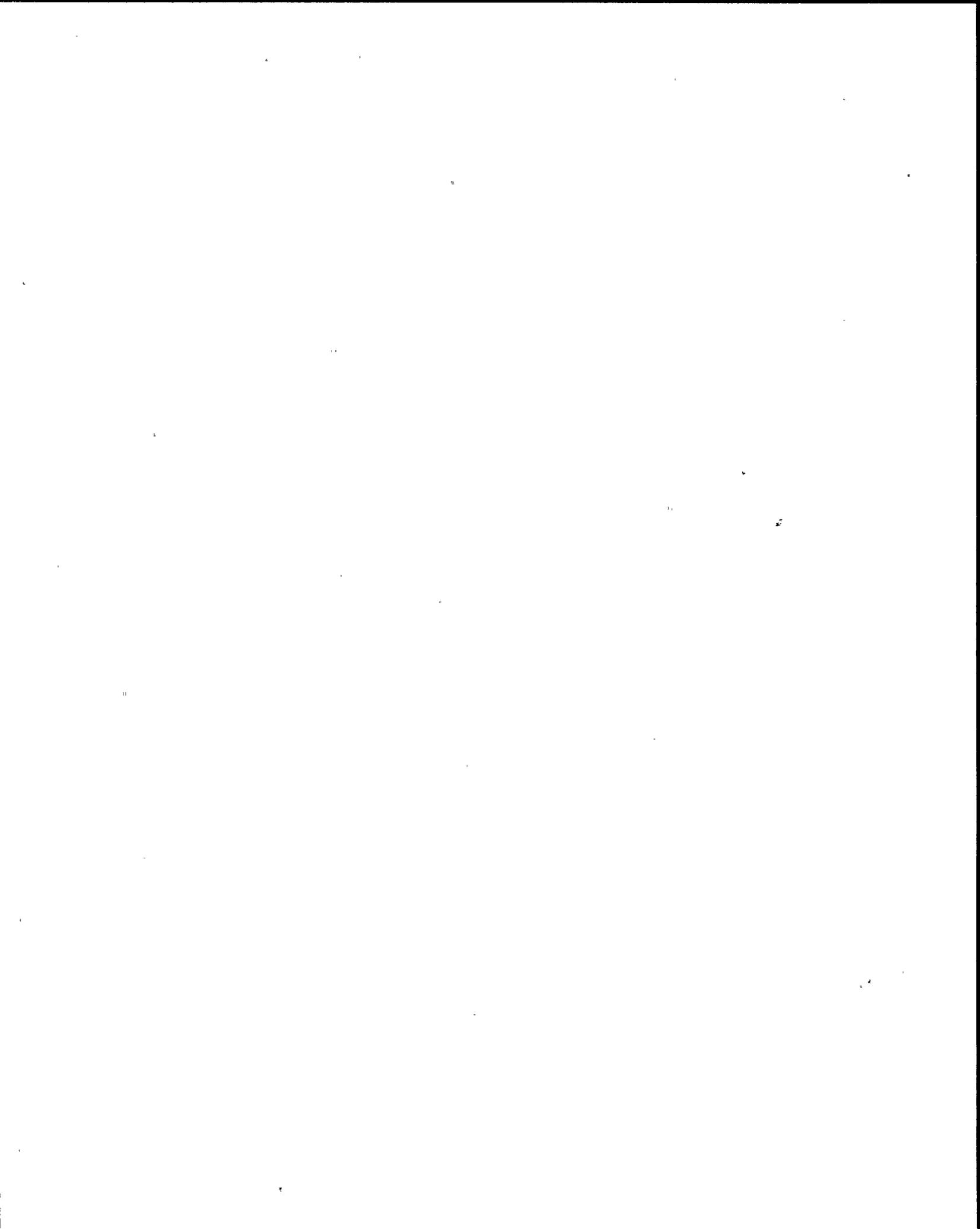
Inverter 1B is on its alternate supply

All other instrument buses are in a normal lineup.

An electrical fault causes de-energization of MCC 1D.

WHICH of the following instrument buses will be de-energized?

- a. Instrument Bus 1A
- b. Instrument Bus 1B
- c. Instrument Bus 1C
- d. Instrument Bus 1D



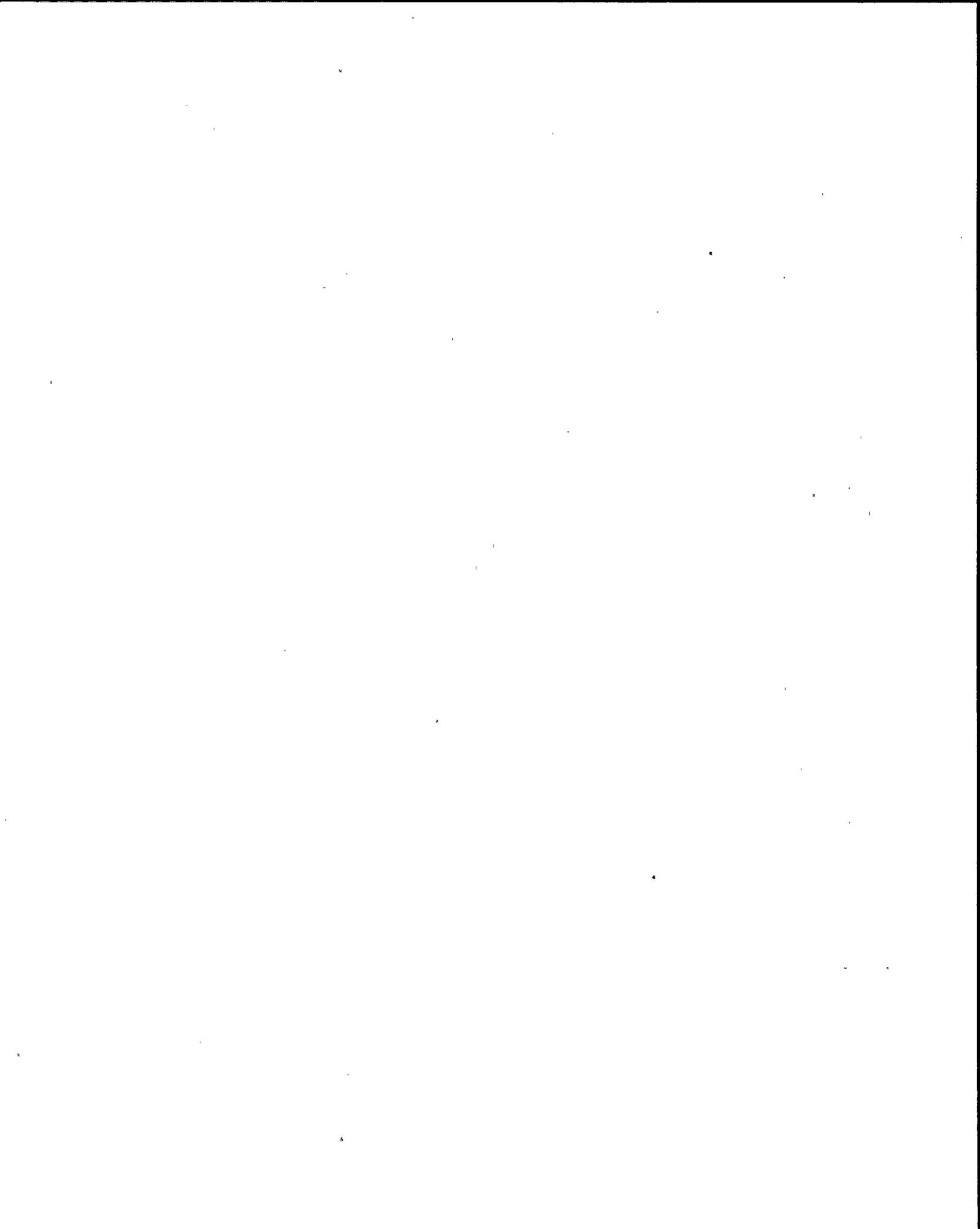
QUESTION: 070 (1.00)

A trash can fire has spread to some prints beside the MCB.

An operator enters with a pressurized water fire extinguisher.

The pressurized water extinguisher should (CHOOSE THE BEST ANSWER):

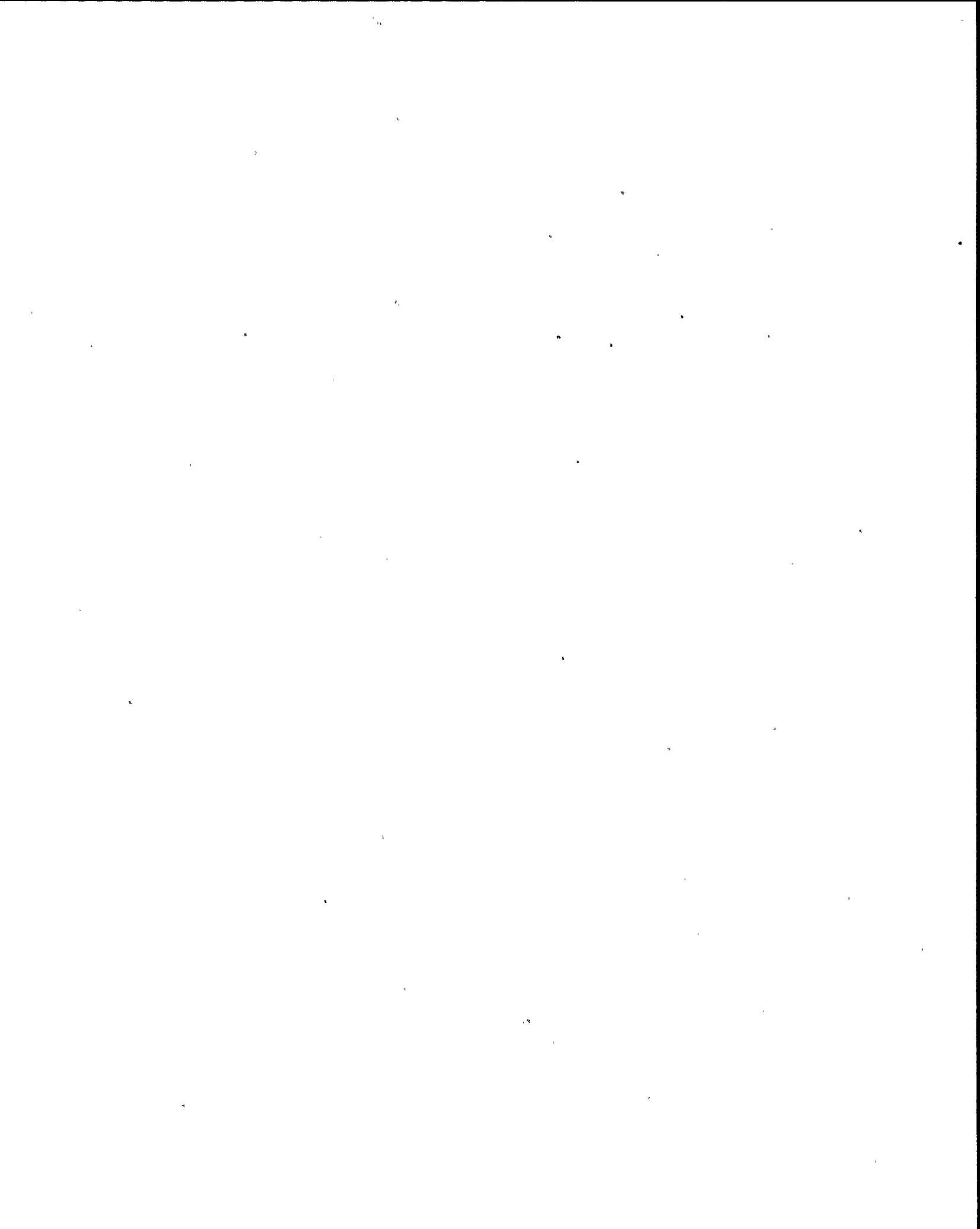
- a. be used because the fire is a class A fire
- b. not be used because of the possibility of spreading the fire from the force of the stream.
- c. be used because it will not have a toxic effect on Control Room personnel
- d. not be used because of the possibility of shorting various electrical circuits in the MCB.



QUESTION: 071 (1.00)

WHICH of the following groups of parameters read out at the IBELIP?

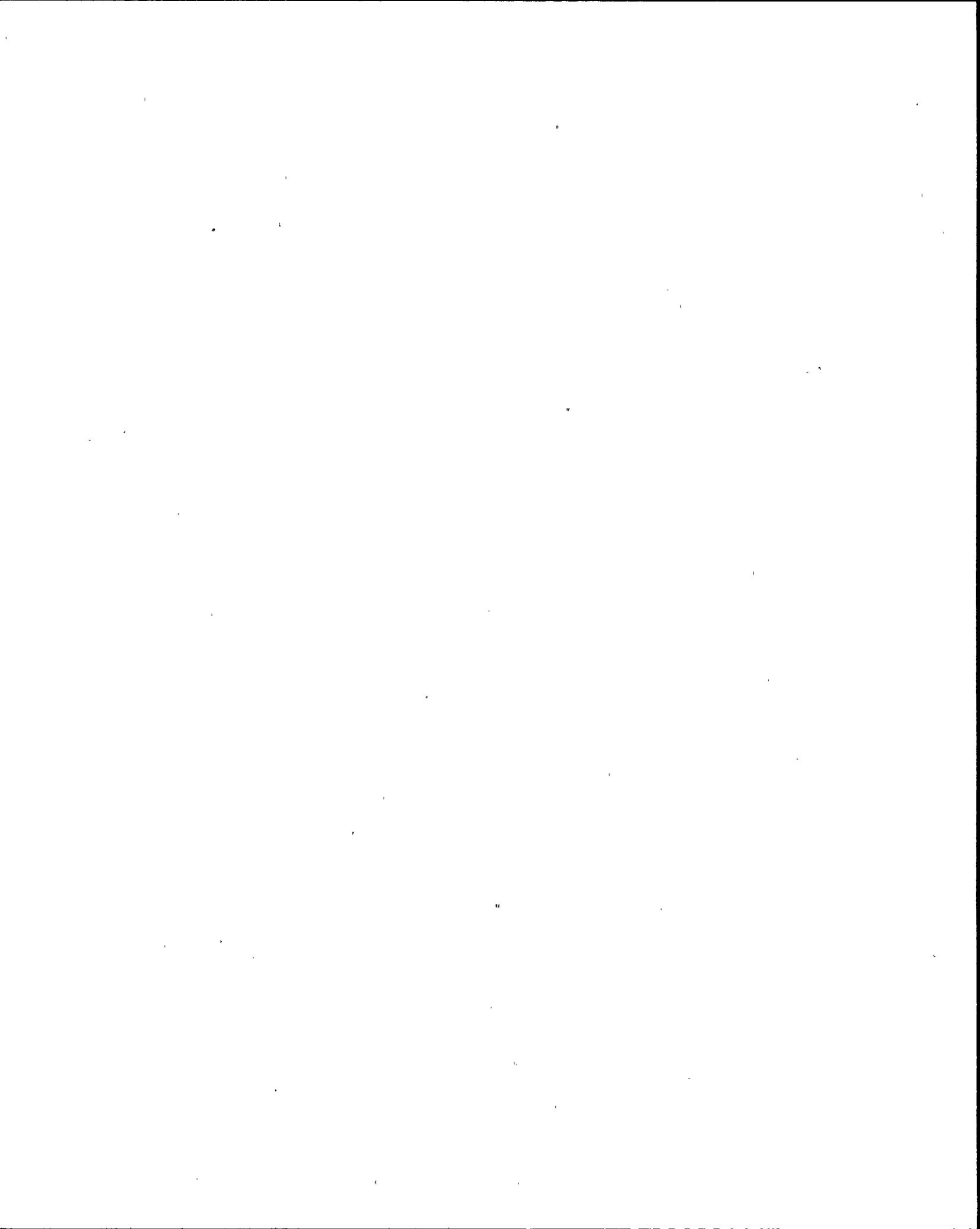
- a. RCS pressure, S/G pressure, S/G level, TDAFWP flow
- b. RCS Tavg, S/G pressure, S/G level, TDAFWP flow
- c. RCS hot leg temp, S/G level, TDAFWP flow, static inverter voltage
- d. RCS cold leg temp, RCS hot leg temp, S/G level, S/G pressure



QUESTION: 072 (1.00)

For a LOCA condition, degradation of WHICH of the following parameters is the basis for transitioning to ECA-1.2 (LOCA Outside Containment)? (copy of E-1 attached)

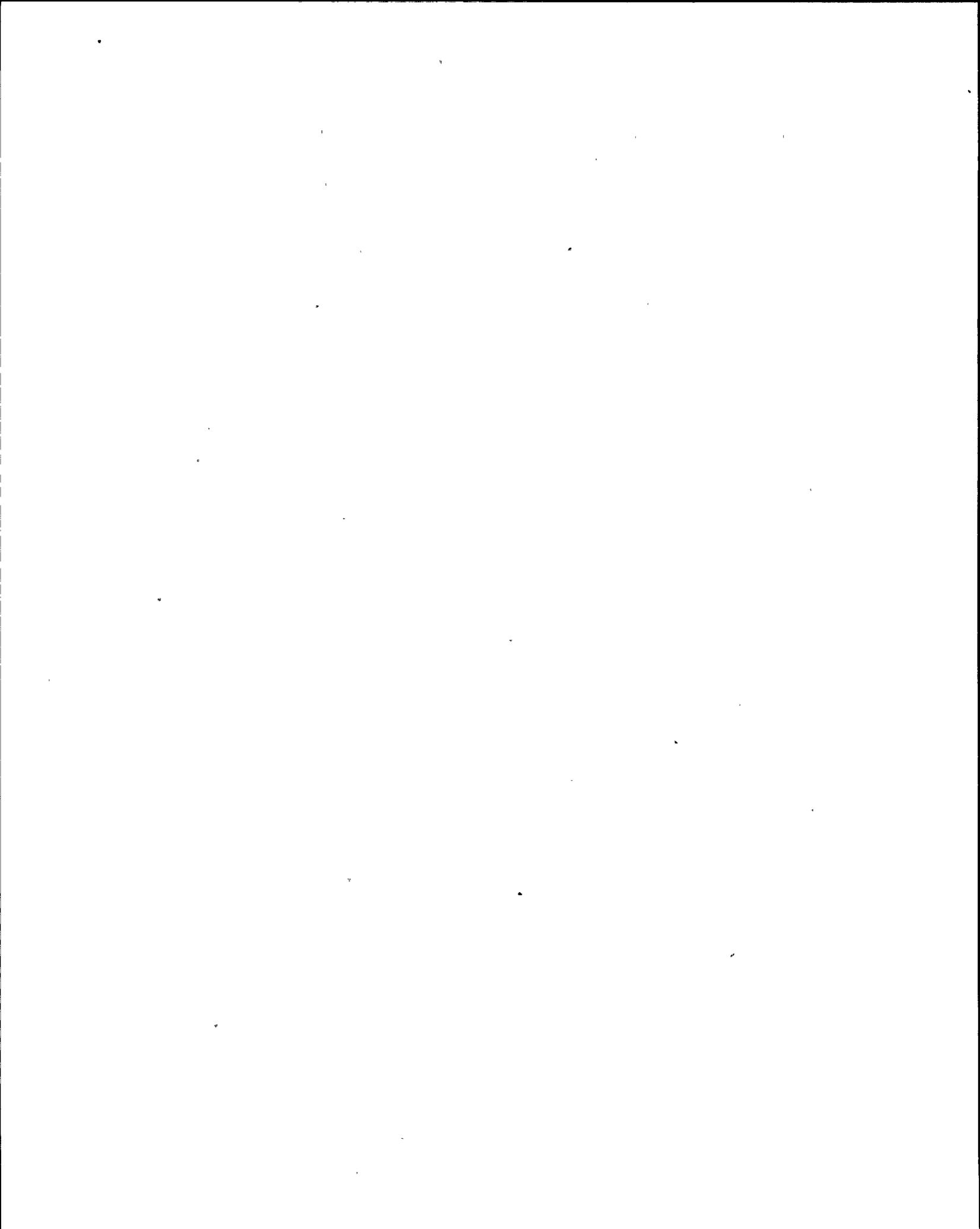
- a. Core cooling
- b. RWST inventory
- c. Safeguards bus loading
- d. Auxiliary building radiation levels



QUESTION: 073 (1.00)

For an Inadequate Core Cooling condition, procedural guidance is given in FR-C.1 to rapidly depressurize the S/G's. The basis for this step is to (CHOOSE ONE) (copy of FR-C.1 attached):

- a. Reduce RCS pressure to below the shutoff head for the RHR pumps.
- b. Establish natural circulation.
- c. Restore AFW flow to all intact S/G's.
- d. Establish conditions for the restart of the RCP's.



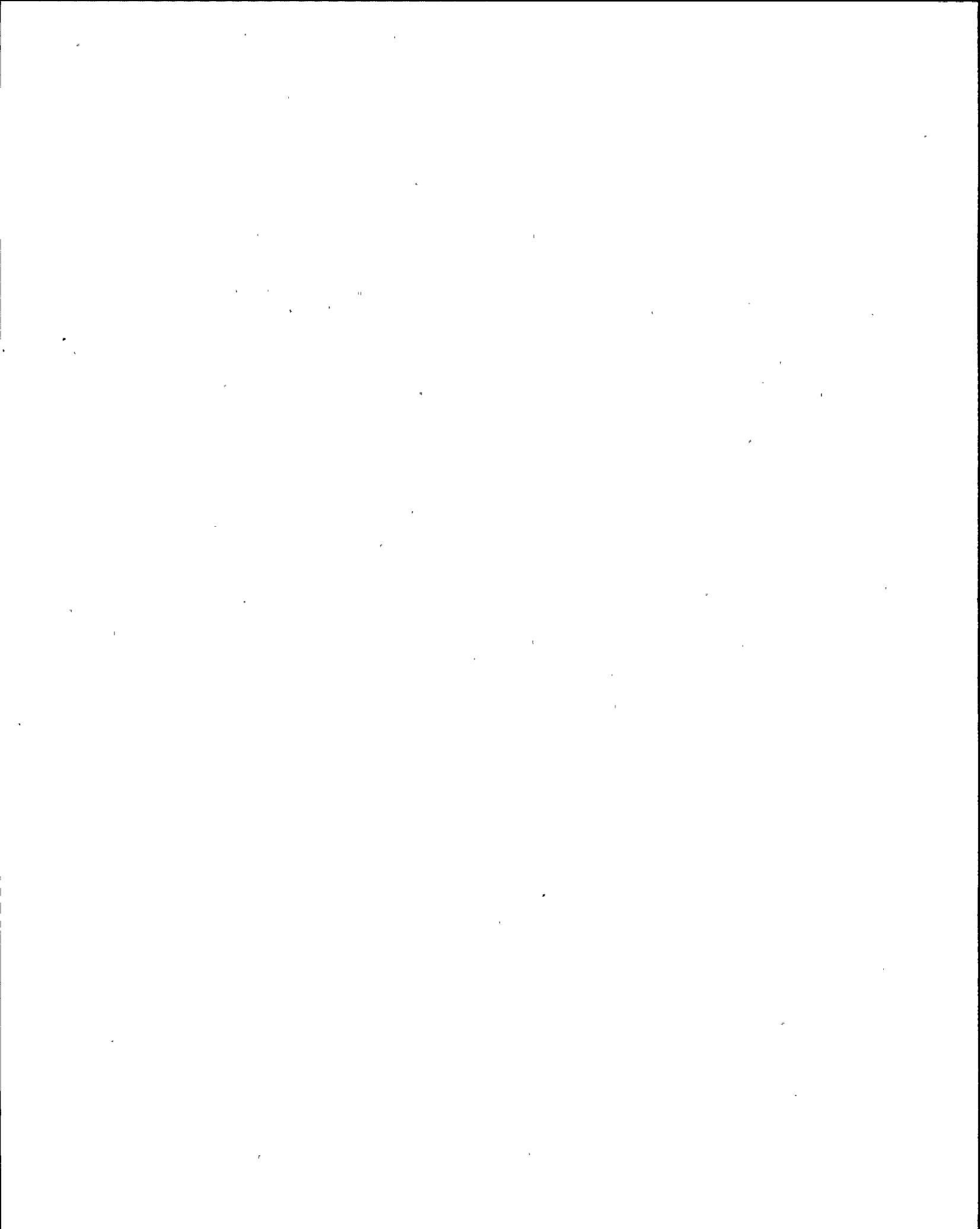
QUESTION: 074 (1.00)

AP-RCS.3 (High RCS Activity) contains the following CAUTION at the beginning of the procedure:

IF LETDOWN FLOW EXCEEDS 60 GPM WHEN USING AOV-202, D/P ACROSS THE CVCS DEMINERALIZERS SHOULD BE MONITORED TO VERIFY THAT FLOW IS CONTINUING THROUGH THE DI'S. HOWEVER, FLOW THROUGH THE DI'S SHOULD NOT EXCEED 90 GPM.

WHICH of the following is the basis for the 90 gpm limit?

- a. To prevent excessive radiation doses due to high flow of radioactive water through the DI.
- b. To prevent exceeding the design d/p for the retention screen in the DI and prevent loss of resin from the DI.
- c. To prevent exceeding the design heat rate of the DI and prevent degradation of the resin.
- d. To prevent channeling of the resin in the DI due to high flow and prevent a reduction in the DI's decontamination factor.

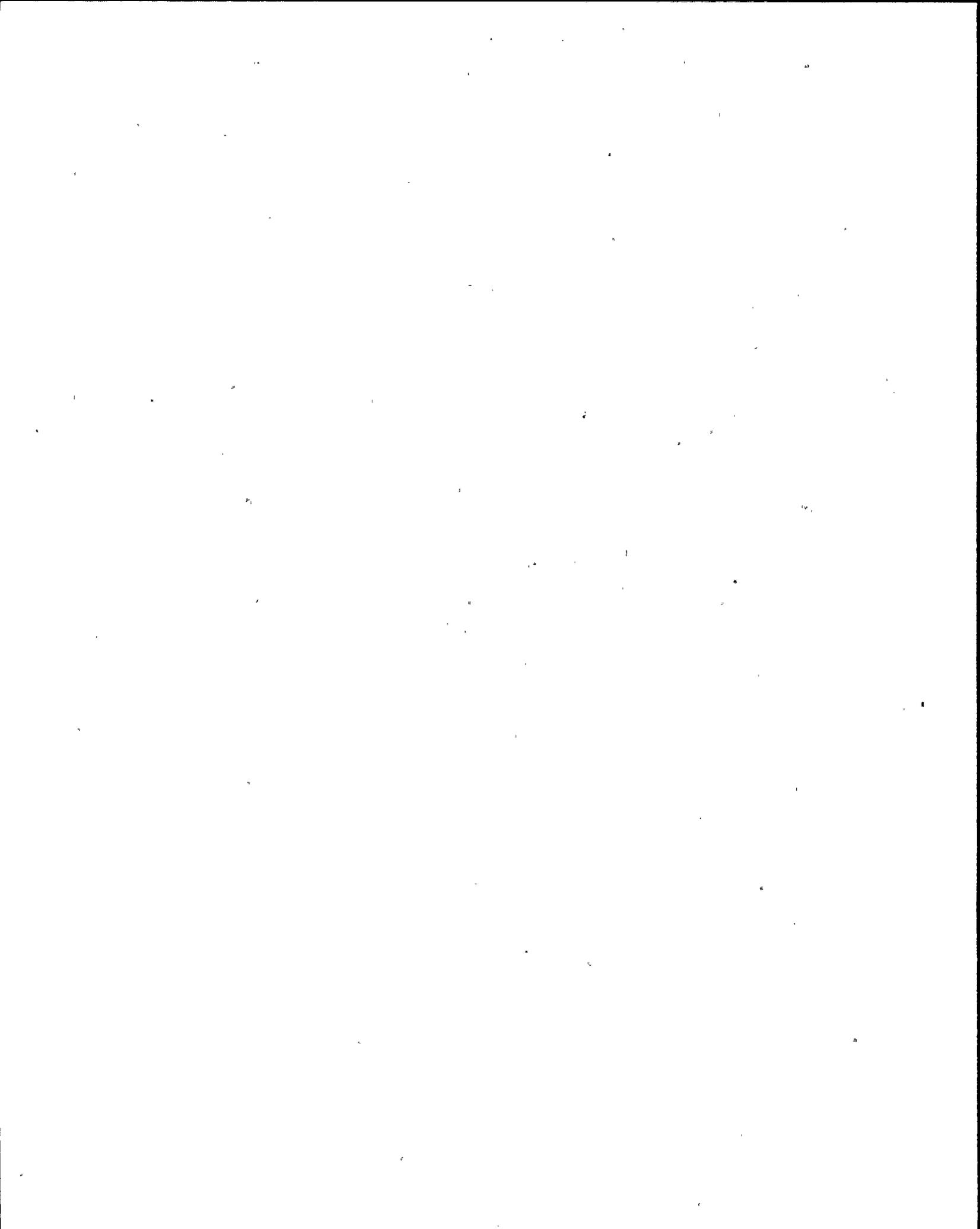


QUESTION: 075 (1.00)

WHICH of the following lists describes the major plant responses to a loss of any single instrument bus?

(assume no corrective action is taken by the operator)

- a.
  - 1) Delta T runback and rod stop
  - 2) Dropped rod runback and rod stop
  - 3) Average Tavg - Tref deviation alarm
- b.
  - 1) Average Tavg - Tavg deviation rod stop
  - 2) Dropped rod runback and rod stop
  - 3) Delta T runback and rod stop
- c.
  - 1) Overpower rod stop
  - 2) Average Tavg - Tref deviation alarm
  - 3) Delta T runback and rod stop
- d.
  - 1) Dropped rod runback and rod stop
  - 2) RCS Average Delta T Deviation Alarm
  - 3) Overpower Rod Stop



QUESTION: 076 (1.00)

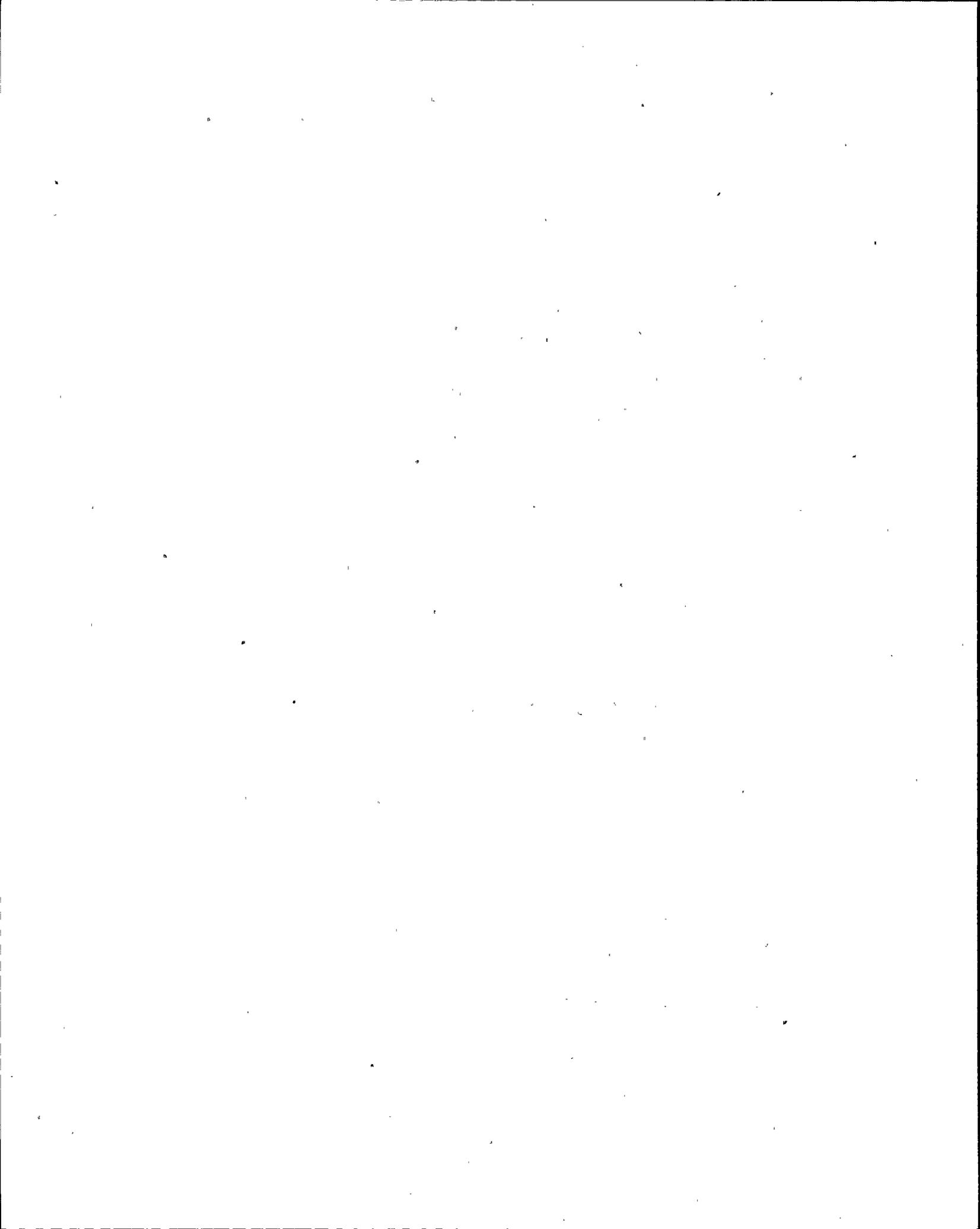
GIVEN the following information:

LOCA in progress  
Both RCP's running  
Significant voiding in the RCS exists  
Source range count rate is greater than the normal shutdown level

The CRF directs that both RCP's be tripped  
When they are finally tripped, the Source range count rate drops off significantly

WHICH of the following statements explains the reason for the decrease in SR count rate?

- a. Phase separation upon RCP trip removed voids from the core area, adding negative reactivity, making SR count rate decrease.
- b. Tripping the RCP's decreased core cooling, causing repressurization of the RCS, adding negative reactivity from the moderator pressure coefficient, making SR count rate decrease.
- c. Tripping the RCP's removed their heat input into the RCS, decreasing the bulk boiling in the RCS, causing fewer voids, attenuating more neutrons, and making SR count rate decrease.
- d. Phase separation upon RCP trip refilled the downcomer, attenuating more neutrons, making SR count rate decrease.



QUESTION: 077 (1.00)

In AP-RCC.1 (Continuous Control Rod Withdrawal/Insertion) the following CAUTION is listed at the beginning of the procedure:

IF ROD INSERTION IS OCCURRING, VERIFY THAT IN MOTION IS NOT REQUIRED BEFORE CONTINUING WITH THIS PROCEDURE

WHICH of the following would indicate a requirement for in motion?

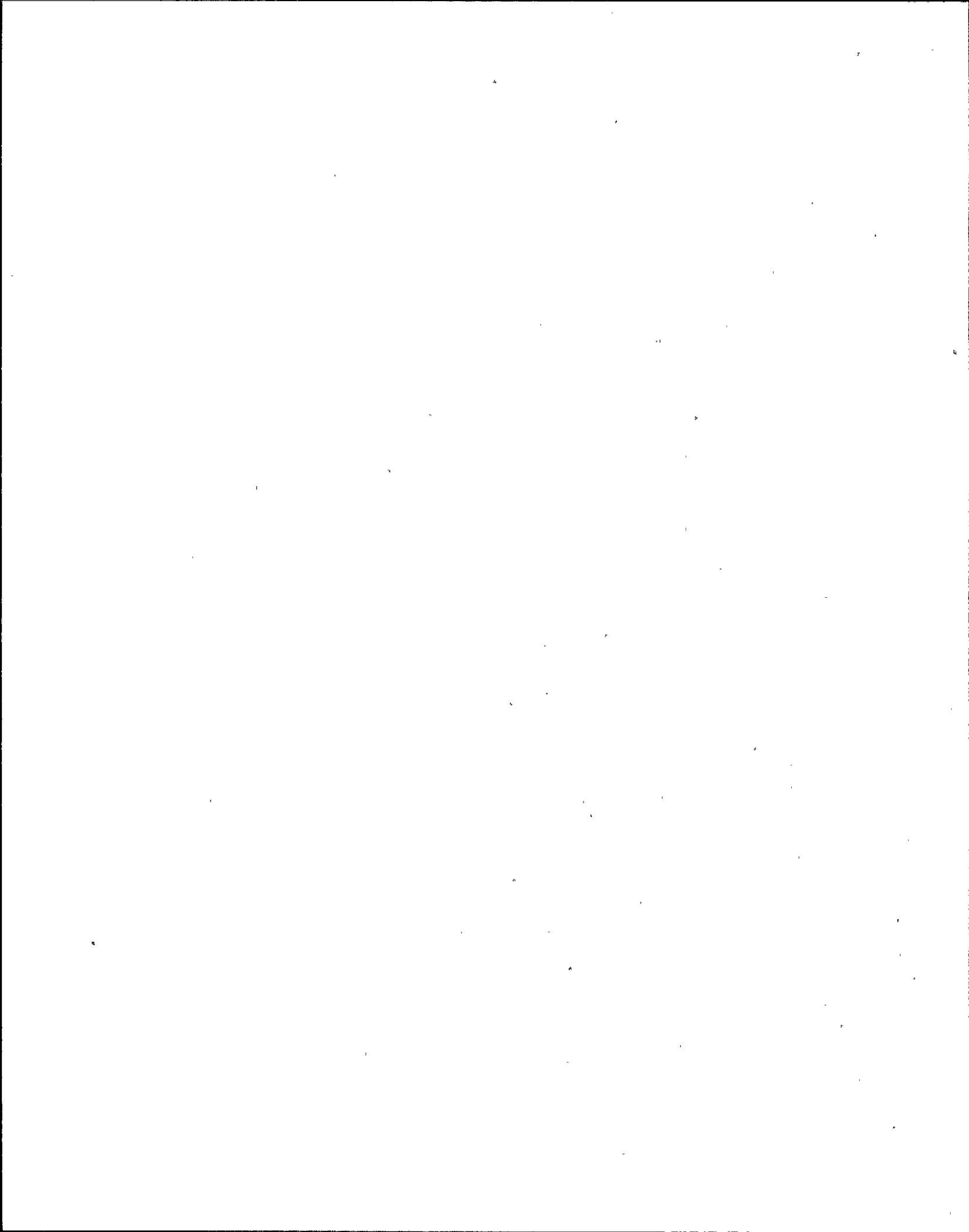
- a. A rod indicating on the bottom
- b.  $T_{avg} - T_{ref}$  deviation  $> 1.5$  degrees F
- c. The controlling bank indicating  $> 12$  steps above its insertion limit
- d. A rod indicating  $> 12$  steps below its bank demand position



QUESTION: 078 (1.00)

For a dropped control rod condition from 95% power, a dropped rod runback and rod stop blocks automatic outward rod motion only. WHICH of the following statements describes the reason that automatic inward rod motion is not blocked?

- a. To maintain  $T_{avg}$  matched with  $T_{ref}$  during the runback
- b. To prevent exceeding a quadrant power tilt of 1.02
- c. To maintain reactor power less than 100% of rated thermal power
- d. To prevent operation of the steam dumps

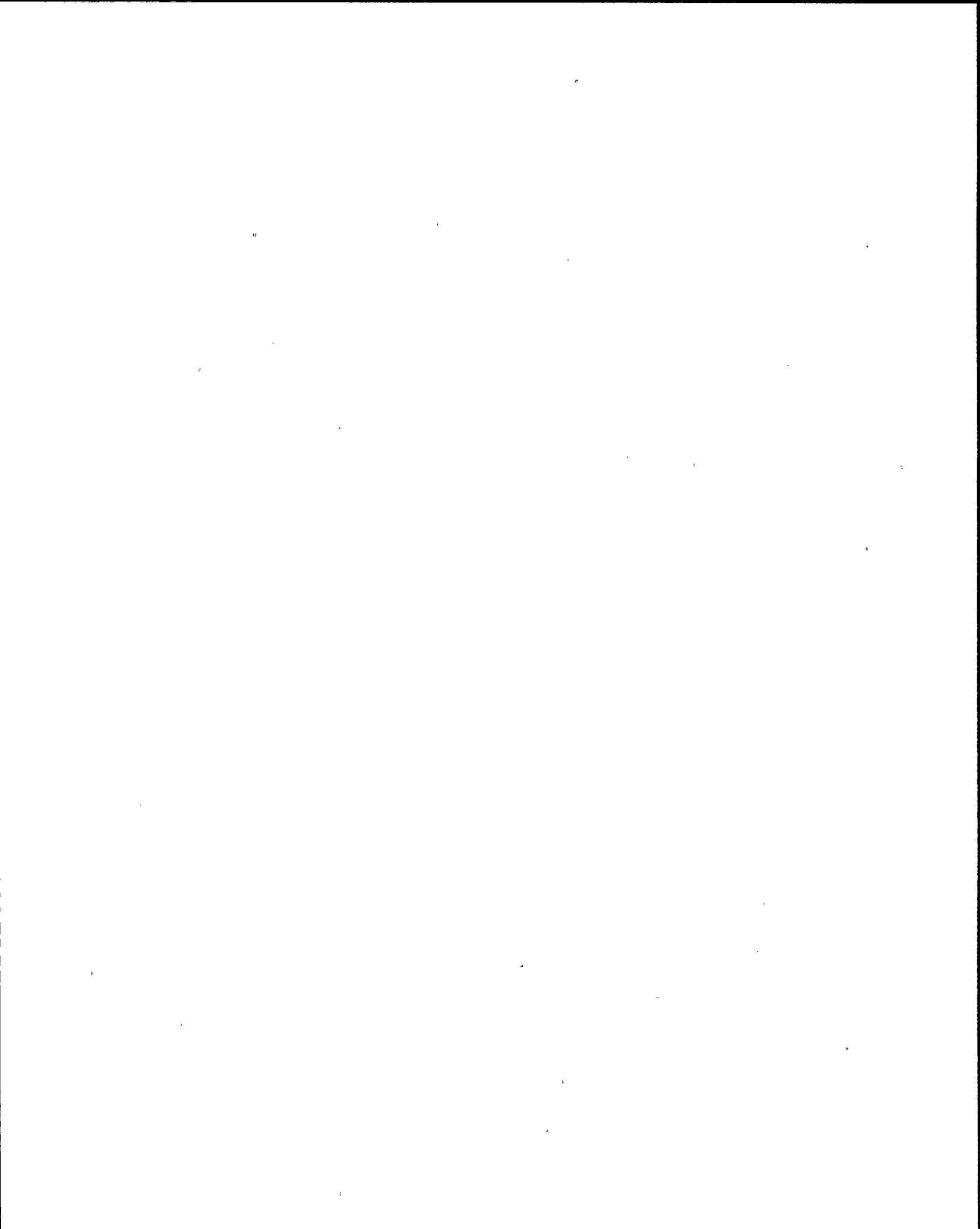


QUESTION: 079 (1.00)

For a valid reactor trip signal, it is noted while performing step 1 of E-0. that the rods are still at their respective positions prior to the trip.

WHICH of the following is the FIRST action to be performed?

- a. Open bus 13 and bus 15 normal feed breakers
- b. Manually insert control rods
- c. Initiate emergency boration
- d. Manually trip the reactor

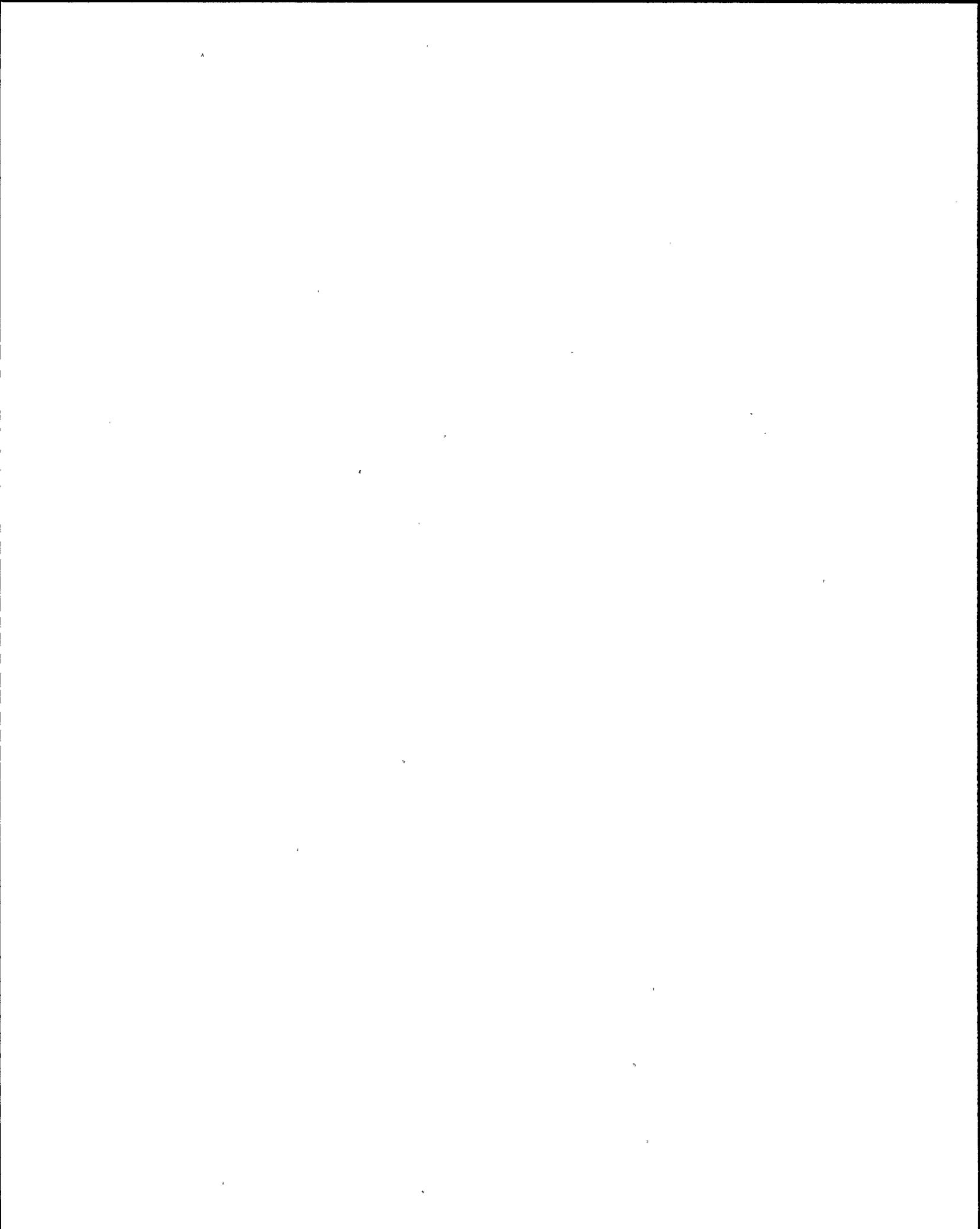


QUESTION: 080 (1.00)

The plant has just experienced a small break LOCA and is in the process of performing a natural circulation cooldown.

WHICH of the following is NOT an indication of natural circulation cooling as listed in ATTACHMENT NC to the EOP's?

- a. S/G levels - STABLE OR INCREASING
- b. RCS hot leg temperatures - STABLE OR DECREASING
- c. RCS cold leg temperatures - AT SATURATION TEMPERATURE FOR S/G PRESSURE
- d. Core exit thermocouples - STABLE OR DECREASING

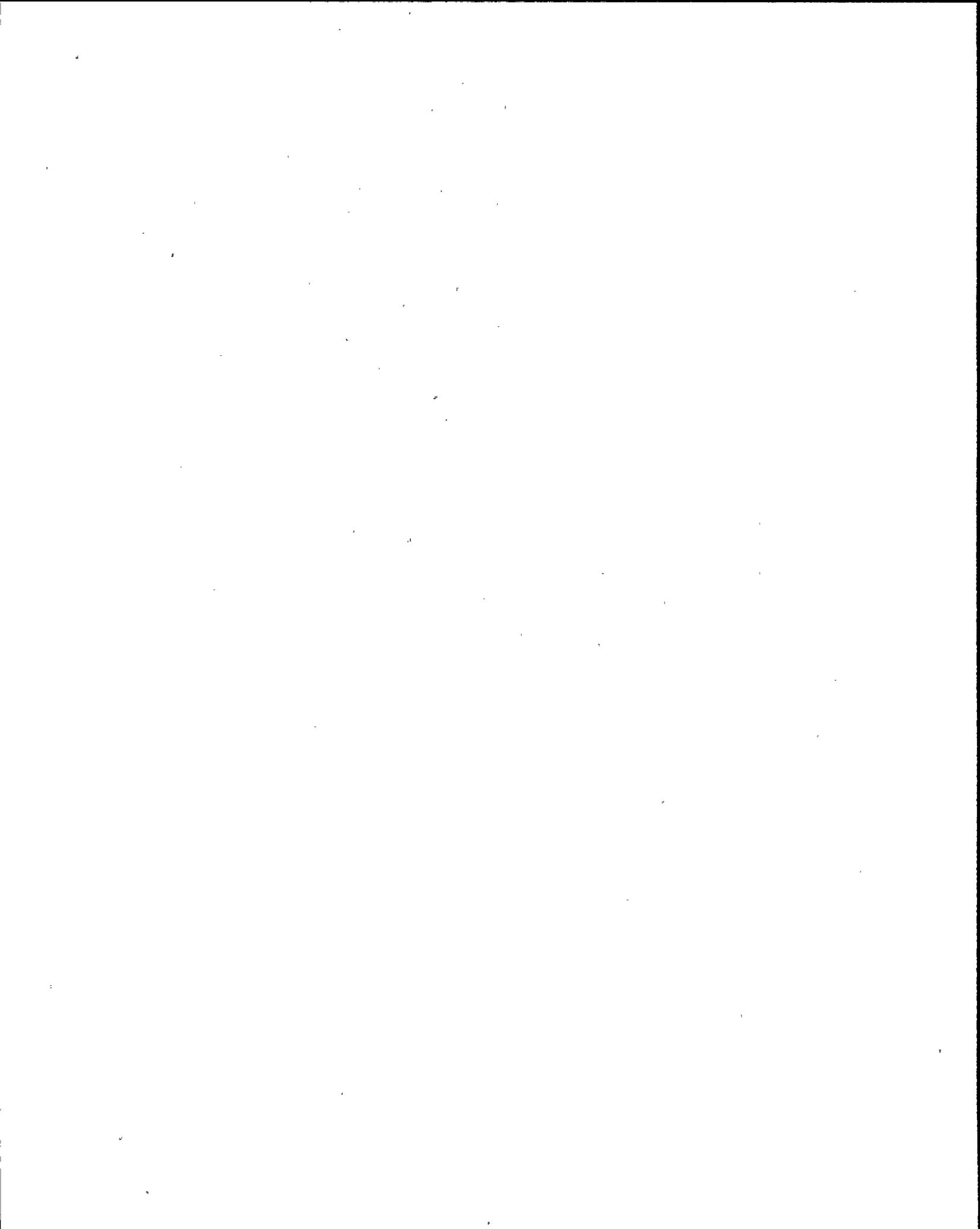


QUESTION: 081 (1.00)

Step 1 of E-1 (Loss of Reactor or Secondary Coolant) states "Check if RCP's Should Be Stopped."

WHICH of the following statements BEST describes the RCP trip criteria listed in E-1?

- a. At least one SI pump is running OR RCS pressure minus the maximum S/G pressure is less than 165 psig.
- b. At least one SI pump is running AND RCS pressure minus the maximum S/G pressure is less than 165 psig.
- c. At least two SI pumps are running OR RCS pressure minus the maximum S/G pressure is less than 175 psig.
- d. At least two SI pumps are running AND RCS pressure minus the maximum S/G pressure is less than 175 psig.



QUESTION: 082 (1.00)

GIVEN the following conditions:

Reactor power is 100% (steady state)  
Rod control is in manual  
Tavg = 569 degrees F  
Alarm A-2, VCT LEVEL 14%, is lit  
Alarm G-17, RMW FLOW DEVIATION, is lit  
VCT level = 12% (slowly trending down)  
Pressurizer level = 58% (stable)  
No RMS readings are above the normal, 100% power values

WHICH of the following procedures should be entered?

- a. AP-CVCS.1 (CVCS Leak)
- b. AP-RCS.1 (RCS Leak)
- c. ER-CVCS.1 (Reactor Makeup Control Malfunction)
- d. ECA-1.2 (LOCA Outside Containment)

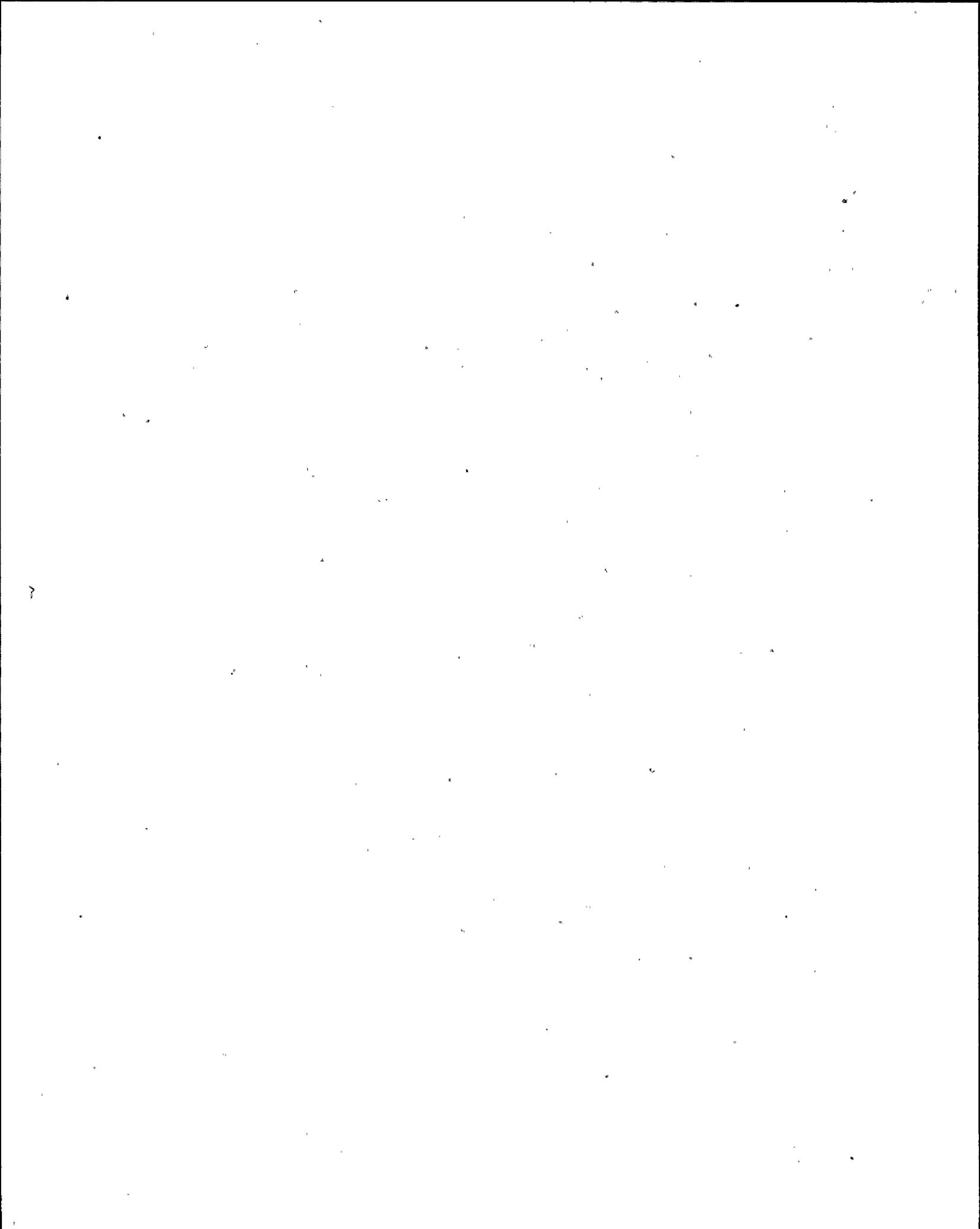


QUESTION: 083 (1.00)

For a loss of all RHR with "B" loop level above .64 inches

WHICH of the following statements describes how the RCDT pumps remove decay heat from the core when aligned in accordance with ER-RHR.1 (RCDT Pump Operation For Core Cooling)?

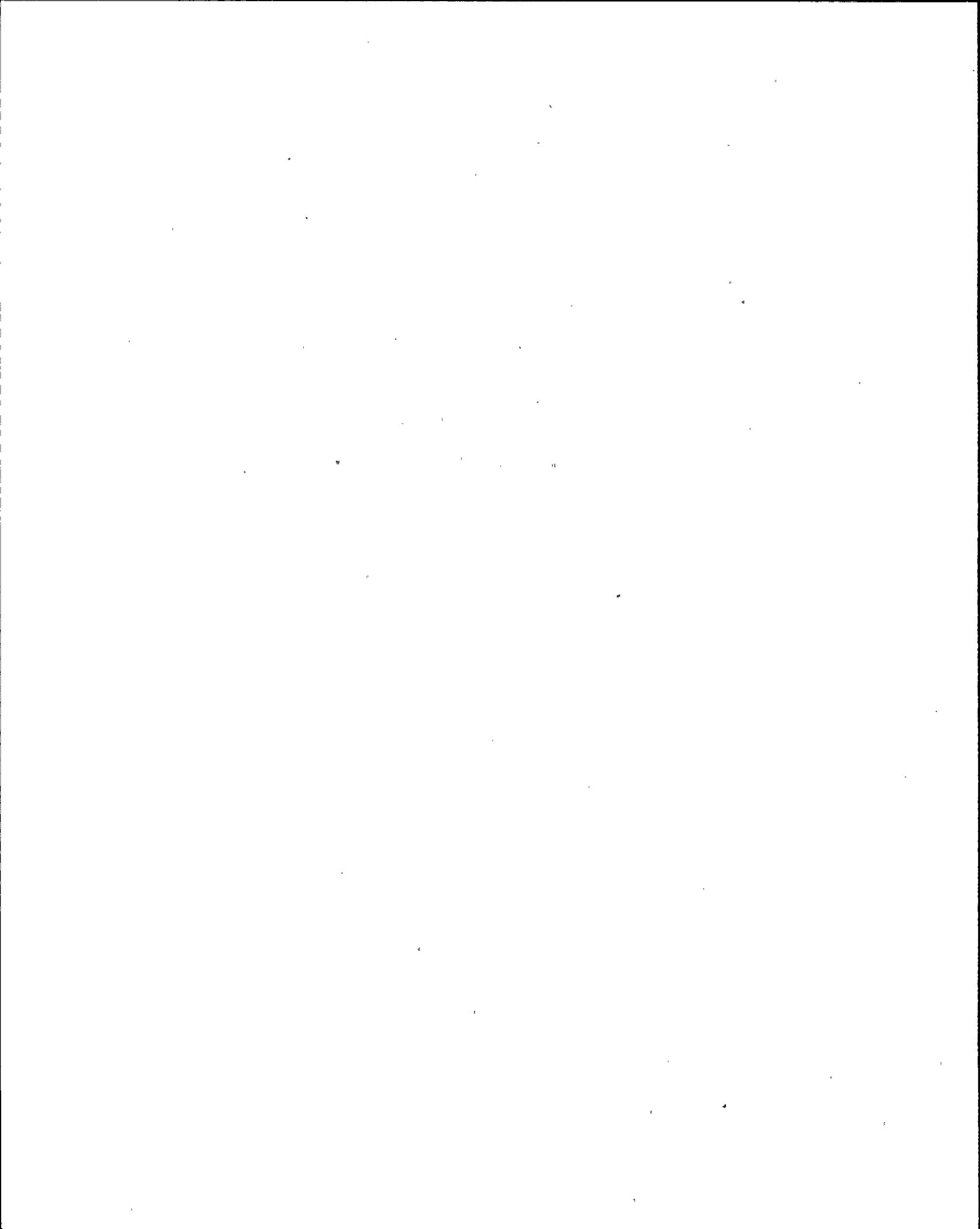
- a. The RCDT pumps cool by heat loss to the ambient environment.
- b. The RCDT pumps cool by discharging to the inlet of the RHR heat exchangers.
- c. The RCDT pumps cool by feed and bleed to the holdup tanks.
- d. The RCDT pumps cool by discharging to the inlet of the Spent Fuel Pool heat exchanger.



QUESTION: 084 (1.00)

WHICH of the following is the correct sequence of the immediate actions of FR-S.1 (Response to Reactor Restart/ ATWS)?

- a.
  - 1) Verify Reactor Trip
  - 2) Verify Turbine Stop Valves - CLOSED
  - 3) Check AFW Pumps Running
  - 4) Initiate Emergency Boration of RCS
  
- b.
  - 1) Verify Reactor Trip
  - 2) Verify Turbine Stop Valves - CLOSED
  - 3) Verify Both Trains Of AC Emergency Buses Energized To At Least 420 Volts
  - 4) Check If Any SI Annunciator - LIT
  
- c.
  - 1) Verify Reactor Trip
  - 2) Open Bus 13 And Bus 15 Normal Feed Breakers
  - 3) Manually Trip Reactor
  - 4) Initiate Emergency Boration of RCS
  
- d.
  - 1) Verify Reactor Trip
  - 2) Manually Trip Reactor
  - 3) Manually Trip Turbine
  - 4) Manually Insert Control Rods

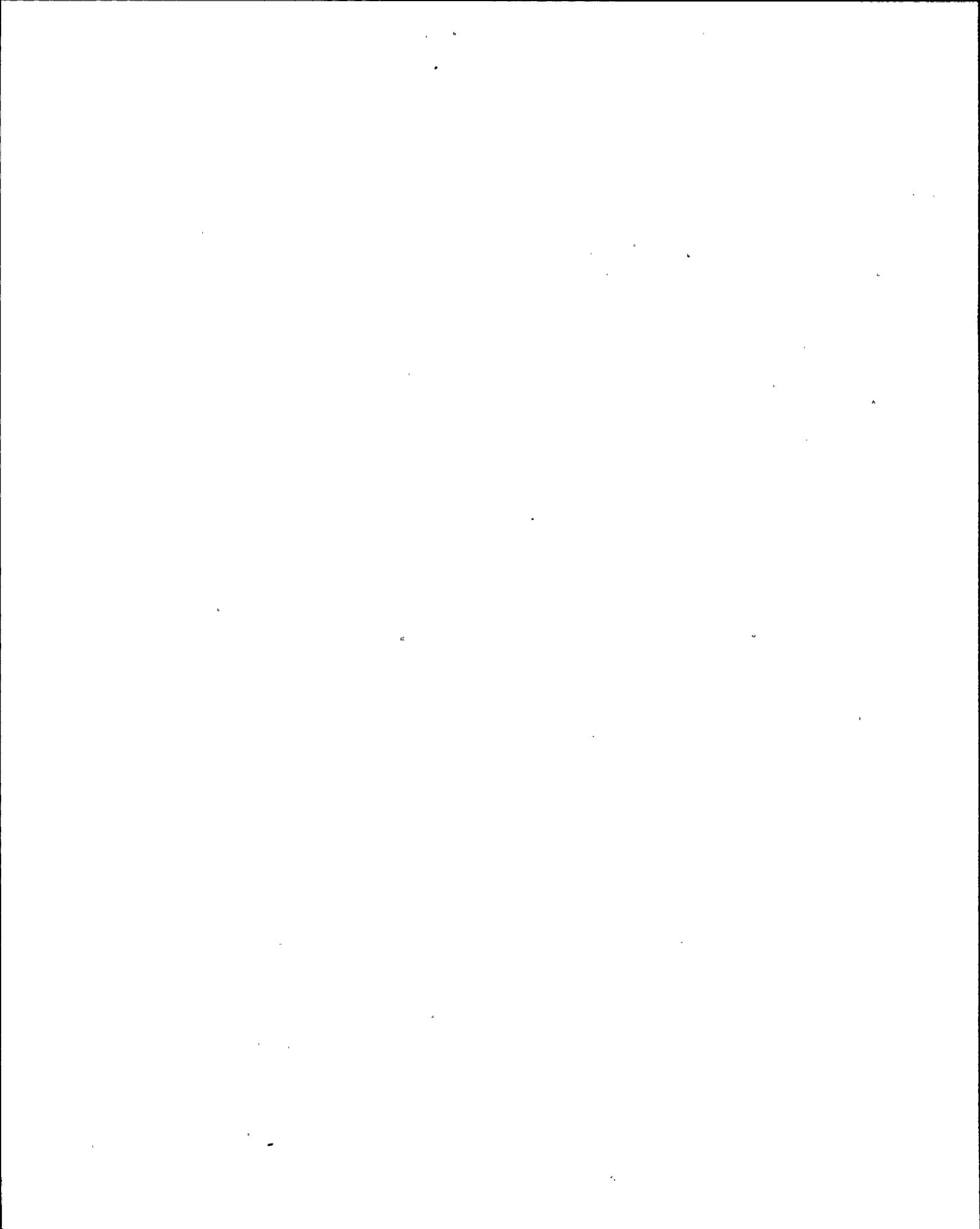


QUESTION: 085 (1.00)

During a startup with reactor power at  $1 \times 10^{-7}$  amps in the intermediate range, the N31 source range detector develops a low internal resistance due to its high voltage electrode contacting the casing.

WHICH of the following is the IMMEDIATE result due to the degradation of the detector?

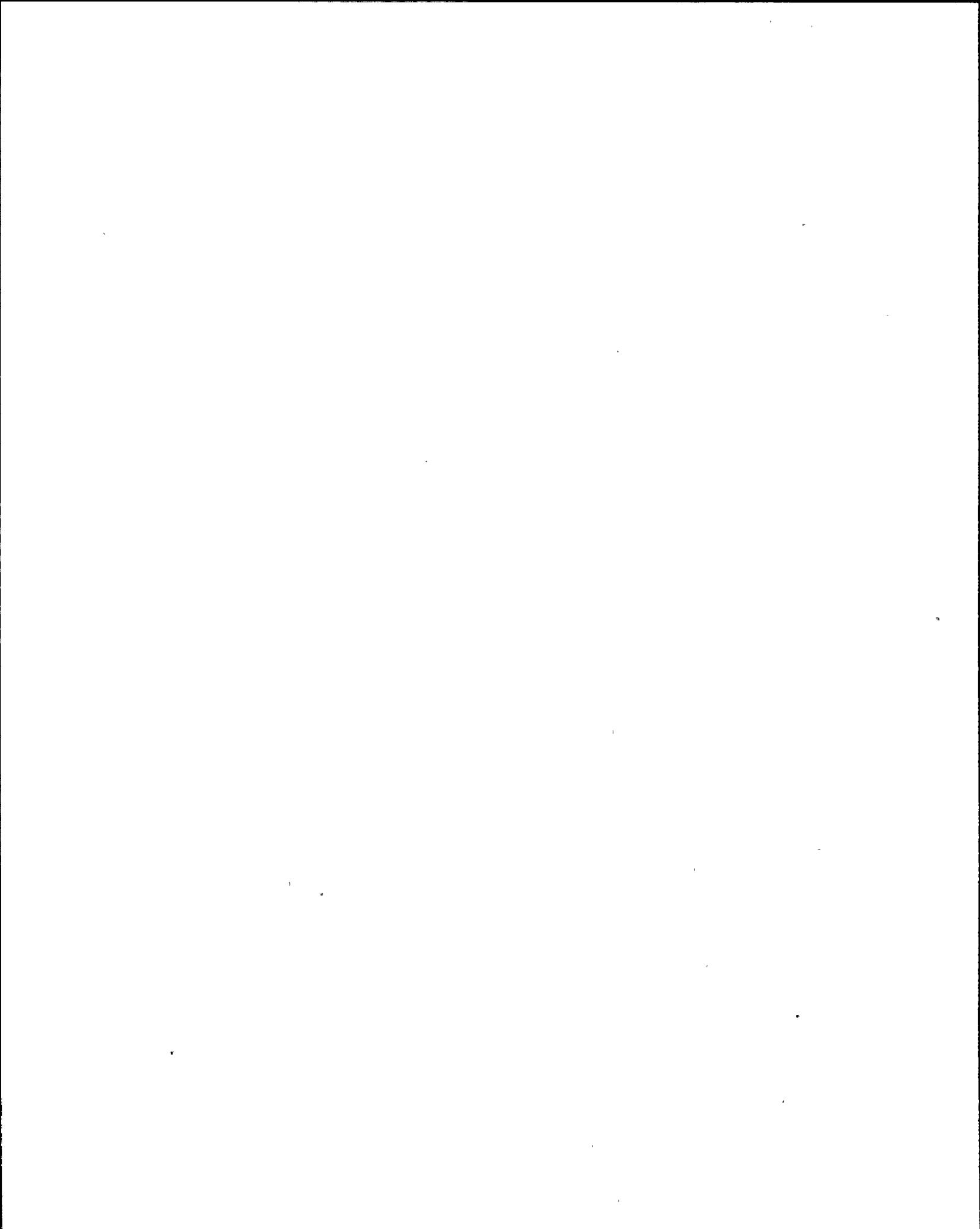
- a. SR High Flux Reactor Trip.
- b. Loss of High Flux At Shutdown Alarm indication.
- c. De-energization of IR power indication.
- d. No results will be seen until the detector is re-energized during the next shutdown.



QUESTION: 086 (1.00)

When operating under procedure O-6.10 (Plant Operation With Steam Generator Tube Leak Indication), WHICH of the following leakage rates is the MAXIMUM allowed for power operation?

- a. 260 cc/min (0.07 gpm)
- b. 370 cc/min (0.1 gpm)
- c. 3700 cc/min (1 gpm)
- d. 37,000 cc/min (10 gpm)



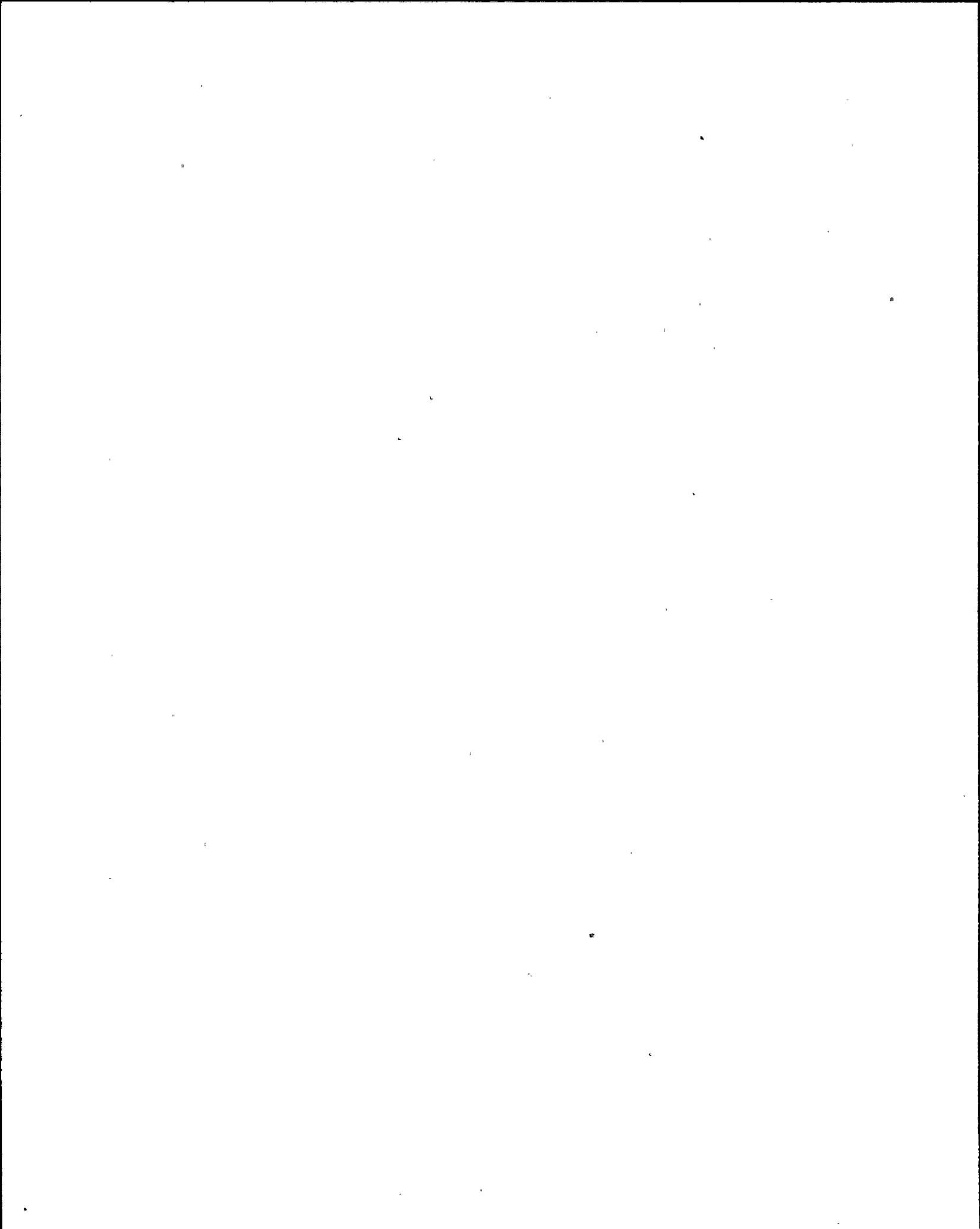
QUESTION: 087 (1.00)

GIVEN the following:

Procedure E-3 (Steam Generator Tube Rupture) in effect  
Safety Valve on the ruptured S/G has lifted and will not reseal

WHICH of the following procedures should be entered?

- a. E-1 (Loss of Reactor or Secondary Coolant)
- b. E-2 (Faulted Steam Generator Isolation)
- c. ECA-3.1 (SGTR With Loss of Reactor Coolant- Subcooled Recovery Desired)
- d. ES-3.1 (Post- SGTR Cooldown Using Backfill)



QUESTION: 088 (1.00)

GIVEN the following information:

Procedure AP-FW.1 (Partial or Complete Loss of Main Feedwater) is in effect (copy attached)

Reactor power = 90%

"A" and "B" Main Feedwater (MFW) pumps are both running

"A" MFW pump suction pressure = 215 psig

"B" MFW pump suction pressure = 217 psig

"A" S/G Feed Flow = 2.5E6 lbm/hr

"A" S/G Steam Flow = 3.1E6 lbm/hr

"B" S/G Feed Flow = 3.1E6 lbm/hr

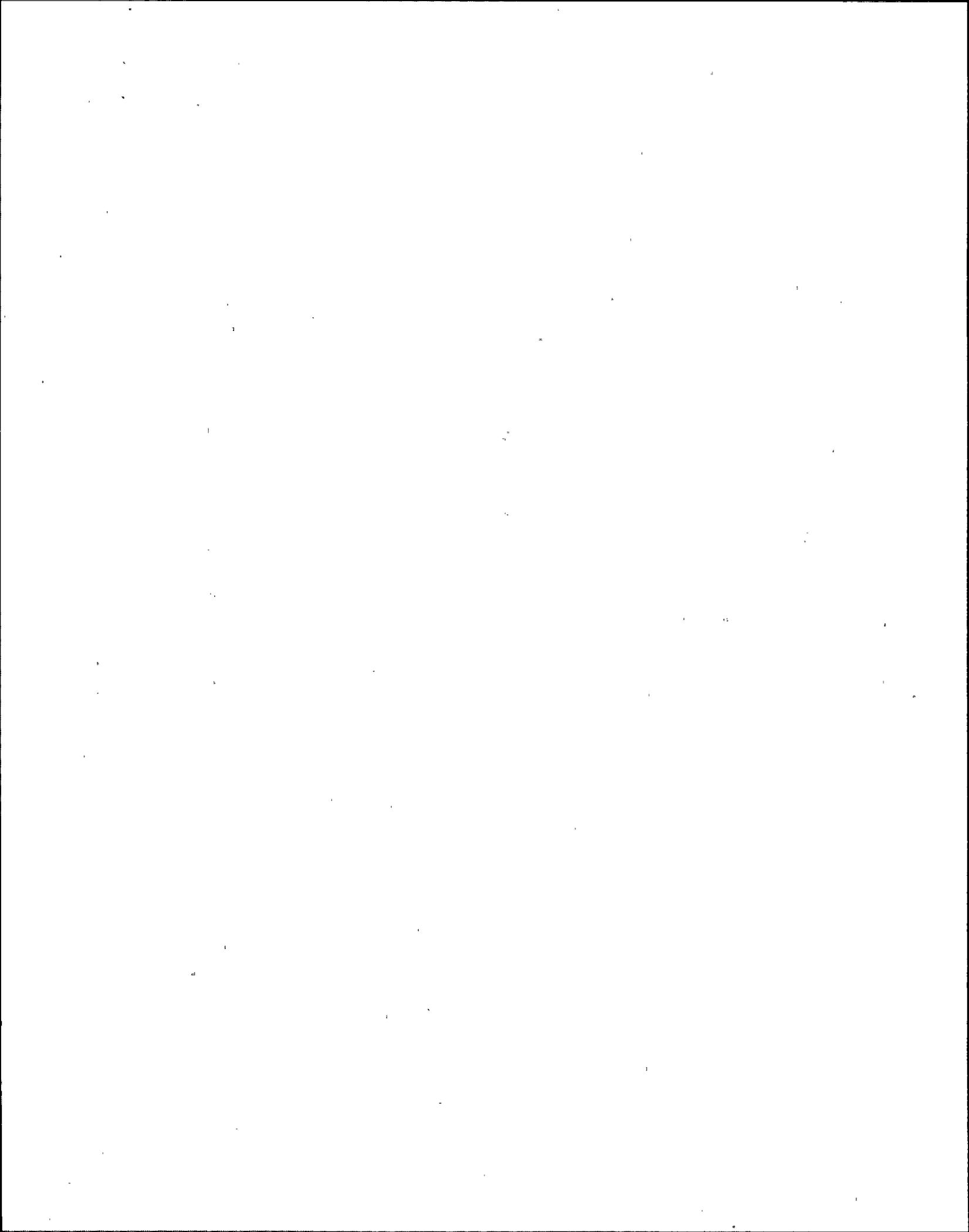
"B" S/G Steam Flow = 3.1E6 lbm/hr

"A" S/G Level = 49%

"B" S/G Level = 52%

WHICH of the following actions should be performed first?

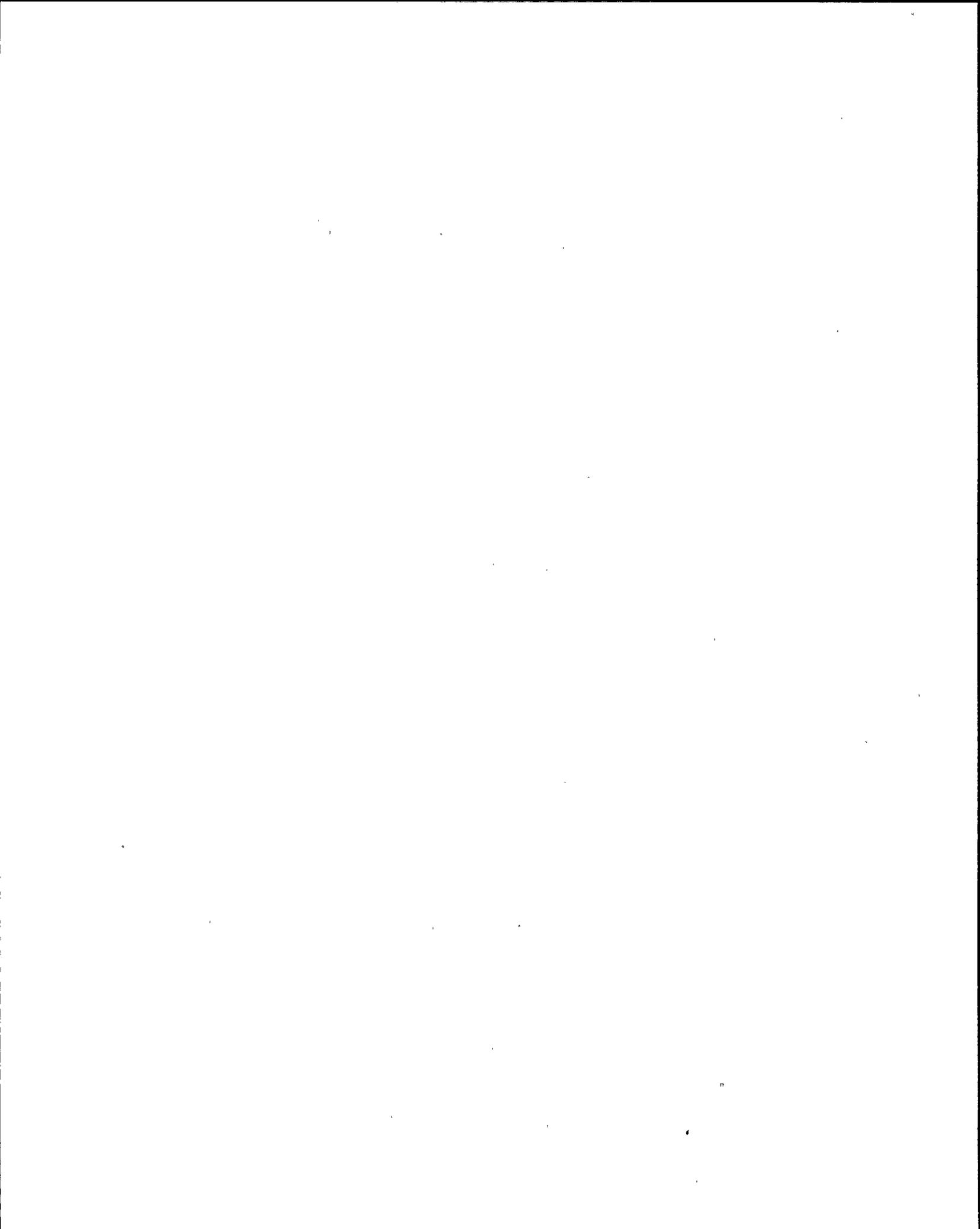
- a. Shift "A" MFW regulating valve (FCV-4269) to MANUAL.
- b. Start the standby condensate pump.
- c. Dispatch operators to search for Feedwater line leaks.
- d. Dispatch an operator to check for a closed "A" MFW pump discharge valve (MOV-3977).



QUESTION: 089 (1.00)

WHICH of the following indications would indicate a loss of detector voltage for a Victoreen RMS channel?

- a. Alarm light lit
- b. Fail light lit
- c. Rate light extinguished
- d. Range light extinguished

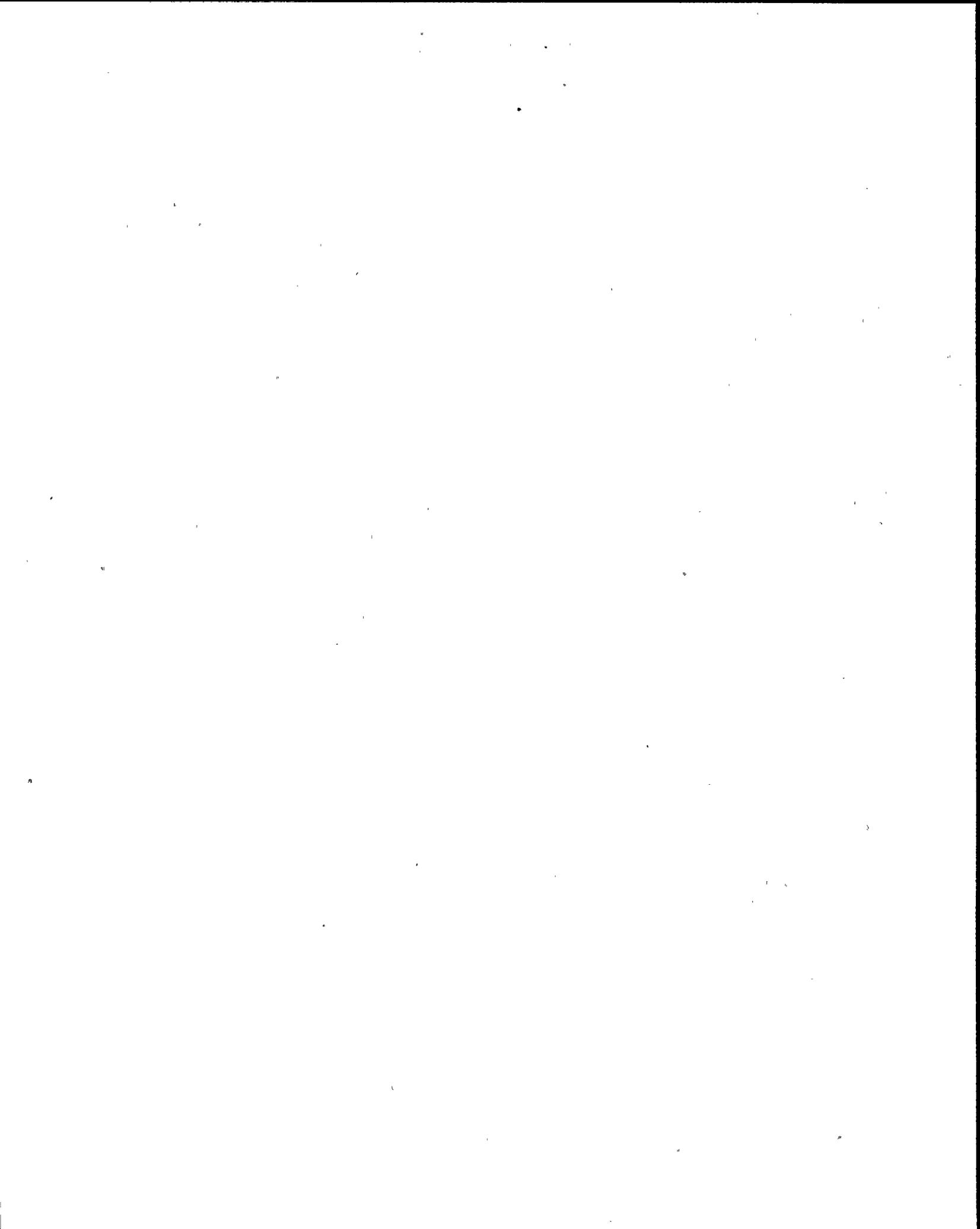


QUESTION: 090 (1.00)

Procedure P-9 lists a precaution to not operate the check source for area radiation monitors for more than 30 seconds at a time.

WHICH of the following is the reason for this precaution?

- a. To prevent burning out the G-M tube by prolonged exposure to the source.
- b. To minimize the radiation hazard to nearby personnel while the source is exposed.
- c. To prevent the detector from reaching its alarm setpoint and sounding a spurious alarm.
- d. To prevent burning out the check source solenoid by current heating of the coil.



QUESTION: 091 (1.00)

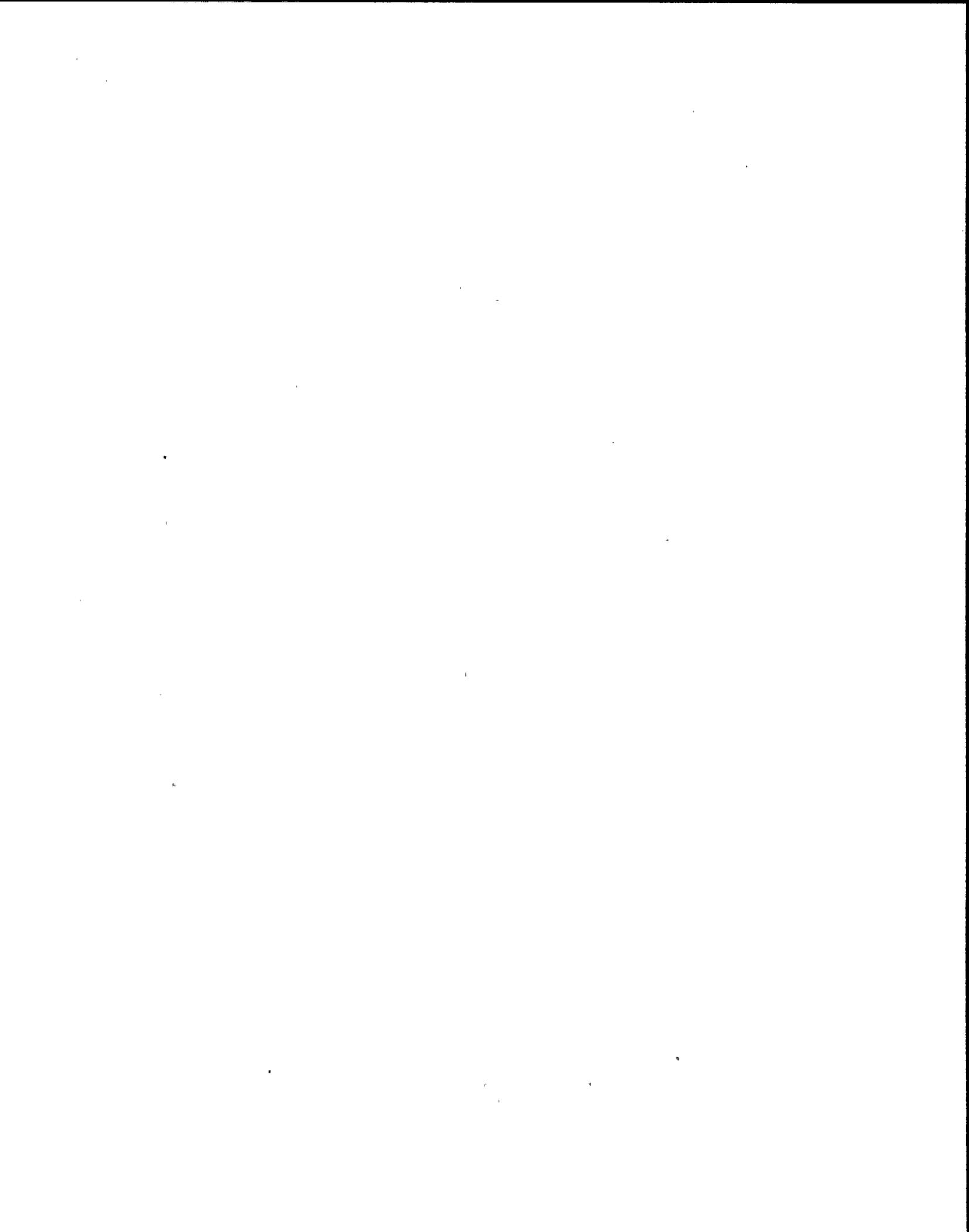
Step 2 of E-0 (Reactor Trip or Safety Injection) states:

"Verify Turbine Stop Valves - CLOSED"

If the response is not obtained, the procedure directs the operator to manually trip the turbine.

IF after manually tripping the turbine, the turbine trip still can NOT be verified, THEN WHICH of the following actions must be performed?

- a. Break condenser vacuum
- b. Run back the turbine to no load conditions
- c. Stop both EHC pumps
- d. Shut both Main Steam Isolation Valves

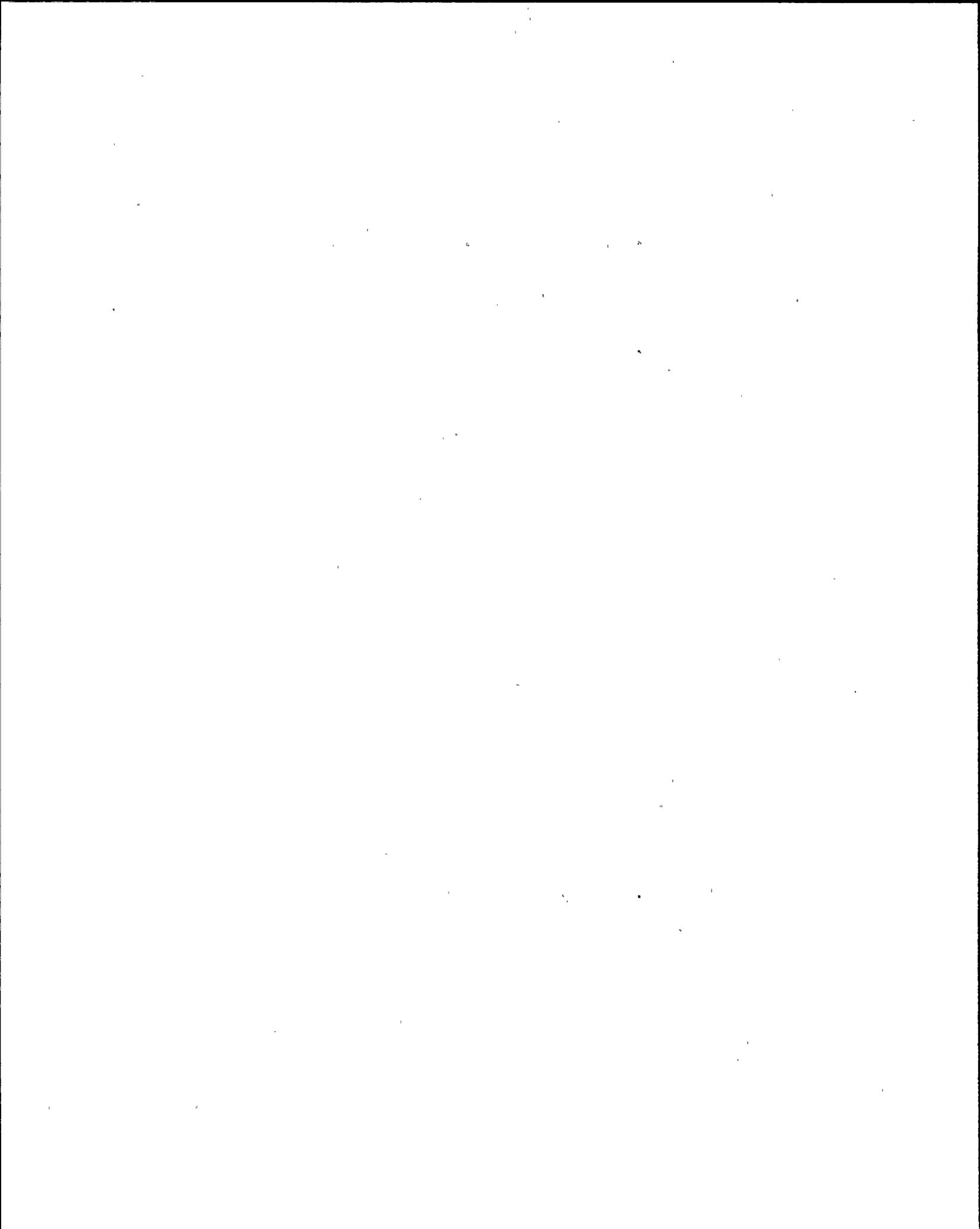


QUESTION: 092 (1.00)

Attachment 2 to Procedure RF-8.4 (Fuel and Core Component Movement in the Spent Fuel Pit) lists actions to be performed if a spent fuel assembly is dropped or damaged during movement in the spent fuel pool.

WHICH of the following fans should be started to "optimize filter flow and negative pressure in the Auxiliary Building"?

- a. Intermediate Building Exhaust Fan 1A
- b. Aux Building Supply Fan 1B
- c. Aux Building Exhaust Fan 1C
- d. Controlled Access Area Fan 1A



QUESTION: 093 (1.00)

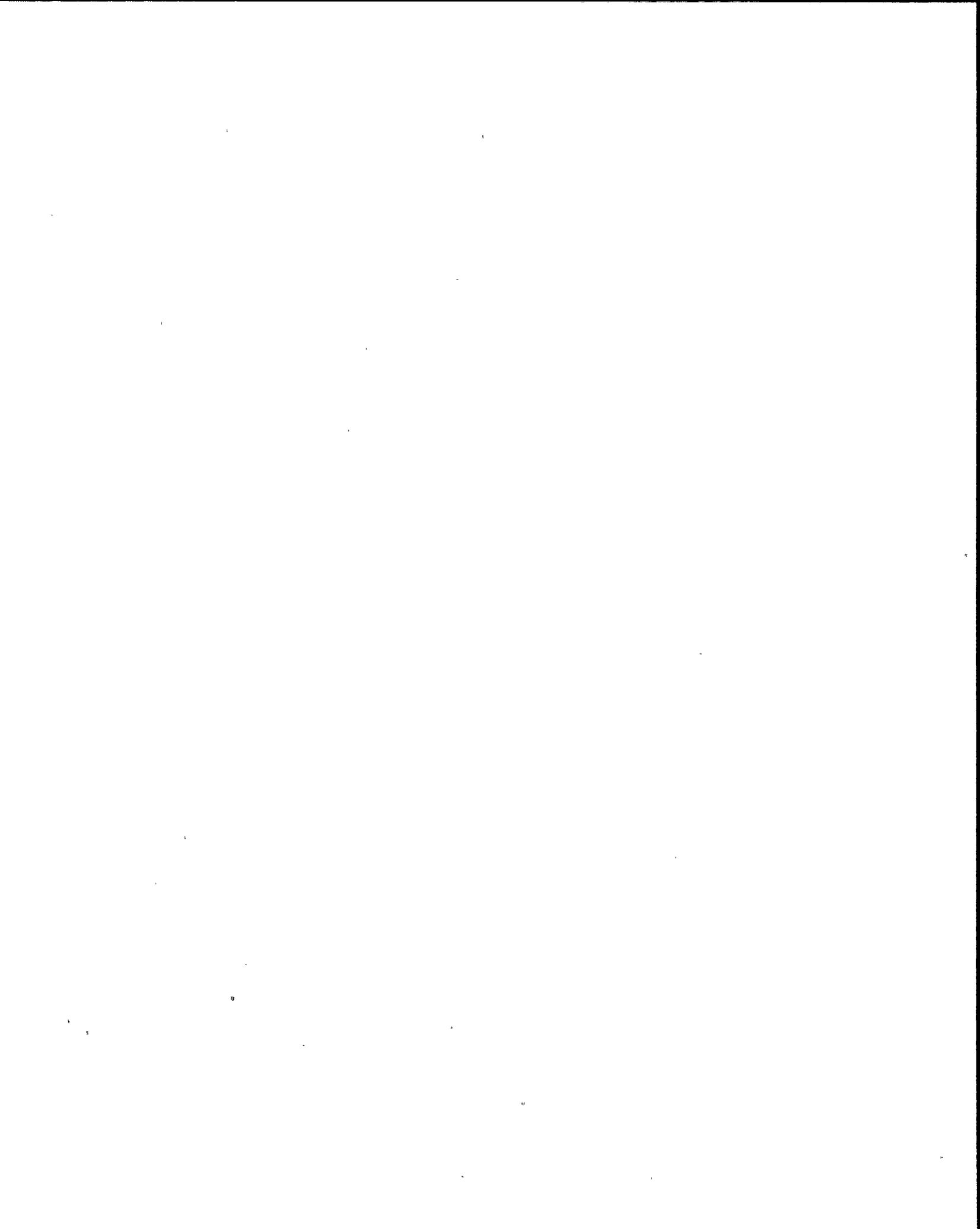
GIVEN the following information:

Alarm H-8, INSTRUMENT AIR LO PRESS, 100 PSI, lit

Instrument air (IA) pressure reads 75 psig and is slowly decreasing

WHICH of the following actions is your IMMEDIATE action as listed in AP-IA.1 (LOSS OF INSTRUMENT AIR)?

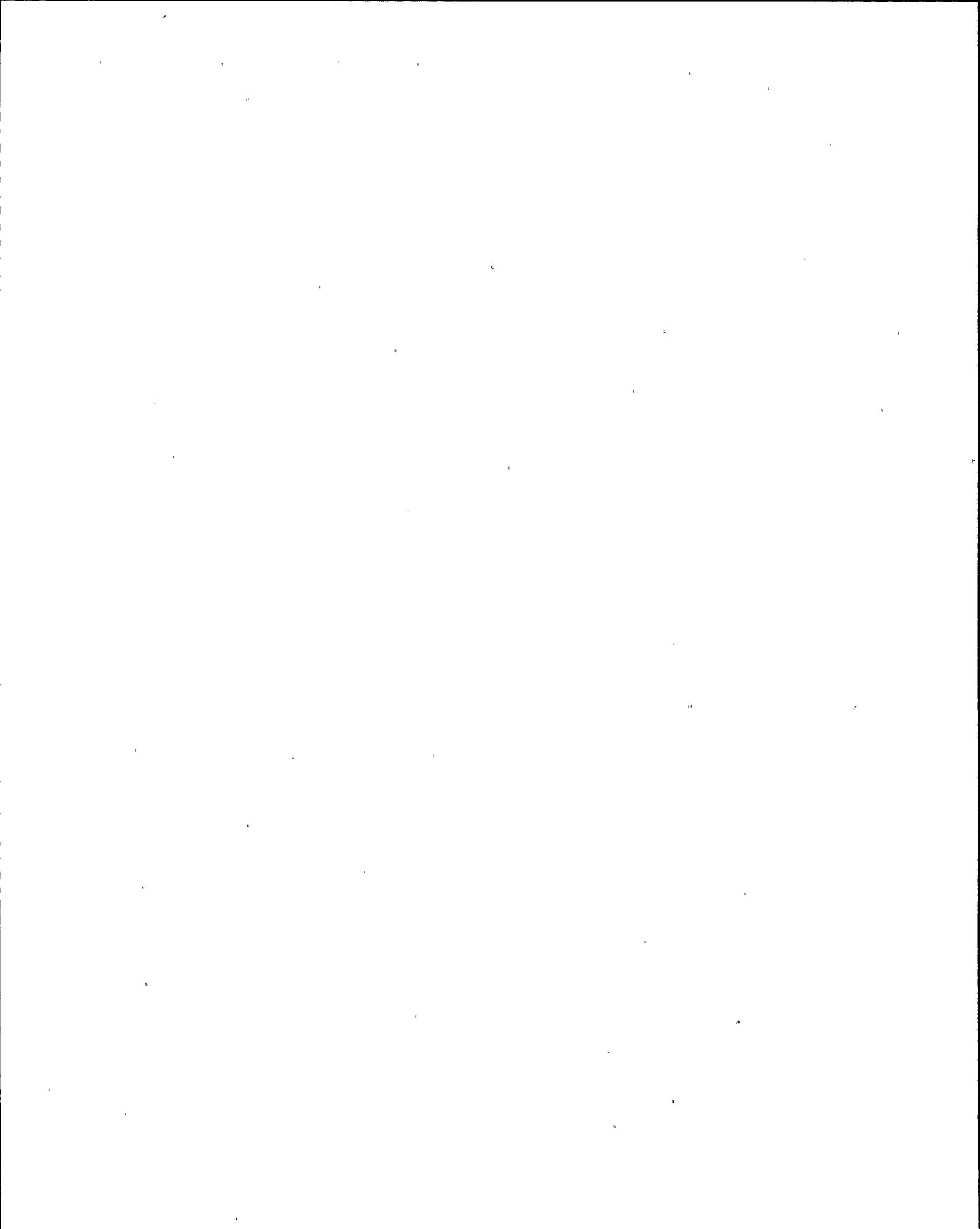
- a. Trip the reactor and go to E-0
- b. Start the standby IA compressor
- c. Start a service air compressor
- d. Isolate letdown



QUESTION: 094 (1.00)

For a blackout condition, WHY is the restoration of pressurizer heaters by ER-PRZR.1 within 1 hour so important? (CHOOSE ONE):

- a. To prevent reaching the low pressurizer pressure SI setpoint
- b. To maintain subcooling for continued operation of the RCP's
- c. To maintain subcooling for a natural circulation cooldown
- d. To maintain cooling flow to the RCP seals in the event of a loss of normal charging

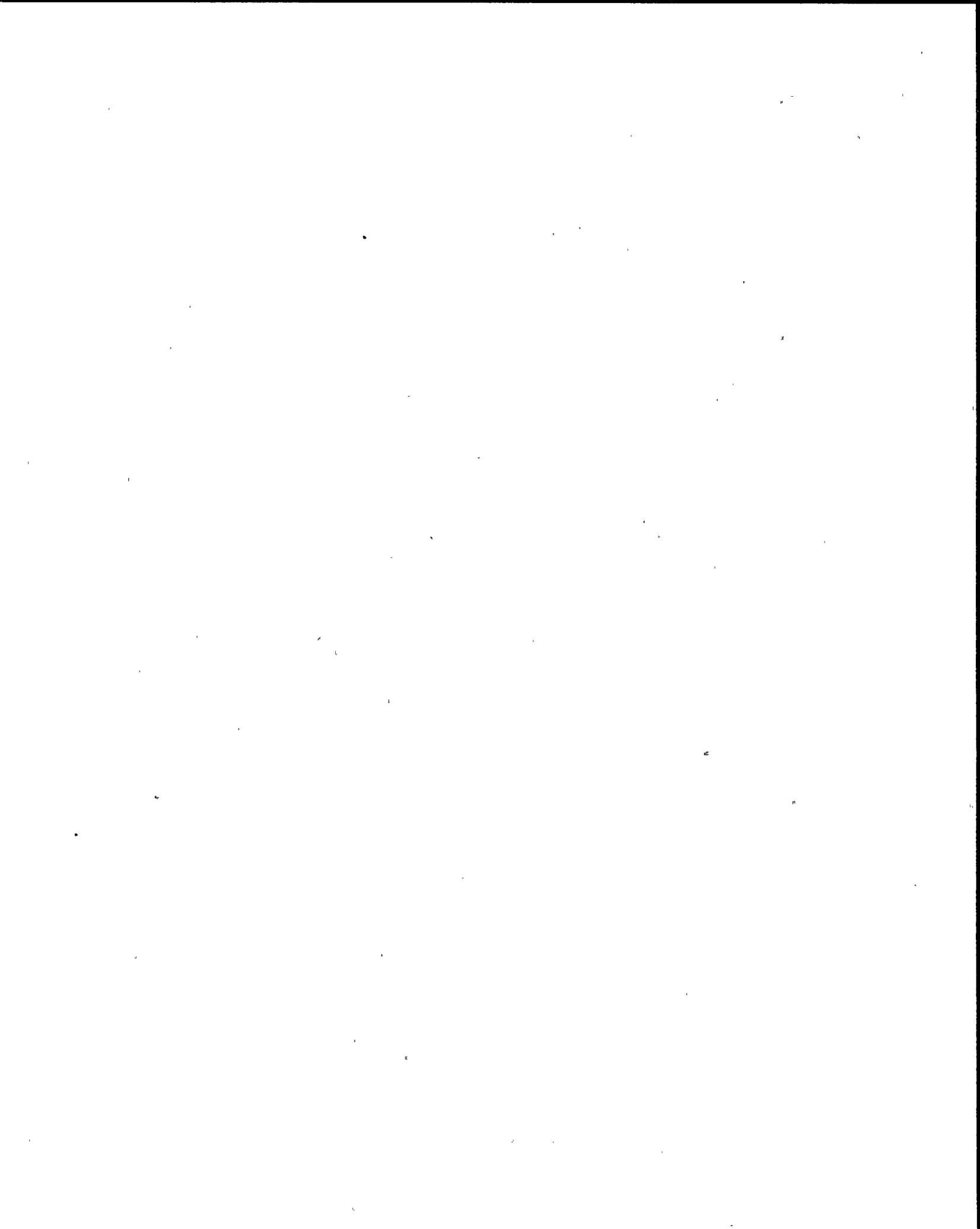


QUESTION: 095 (1.00)

WHICH of the following statements describes the policy at Ginna regarding Emergency Radiation Exposure?

- a. Exposures up to 100 Rem to save human life are authorized.
- b. After individuals have received an Emergency exposure they shall be removed from work involving radiation exposure for the remainder of their lifetime.
- c. Only one emergency exposure is authorized in an individual's lifetime.
- d. The Plant Superintendent must give prior authorization for each Emergency Exposure.

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



ANSWER: '001 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-RAD08C E.O. 1.5  
Ginna: A-52.2

KA 194001K101 3.6/3.7 B

194001K101 ..(KA's)

ANSWER: 002 (1.00)

a. (1.00)

REFERENCE:

Ginna: A-1401:5 Par. 3.3.2.3  
Ginna: LP-RAD08C E.O. 3.4

KA: 194001K102 3.7/4.1 R

194001K102 ..(KA's)

ANSWER: 003 (1.00)

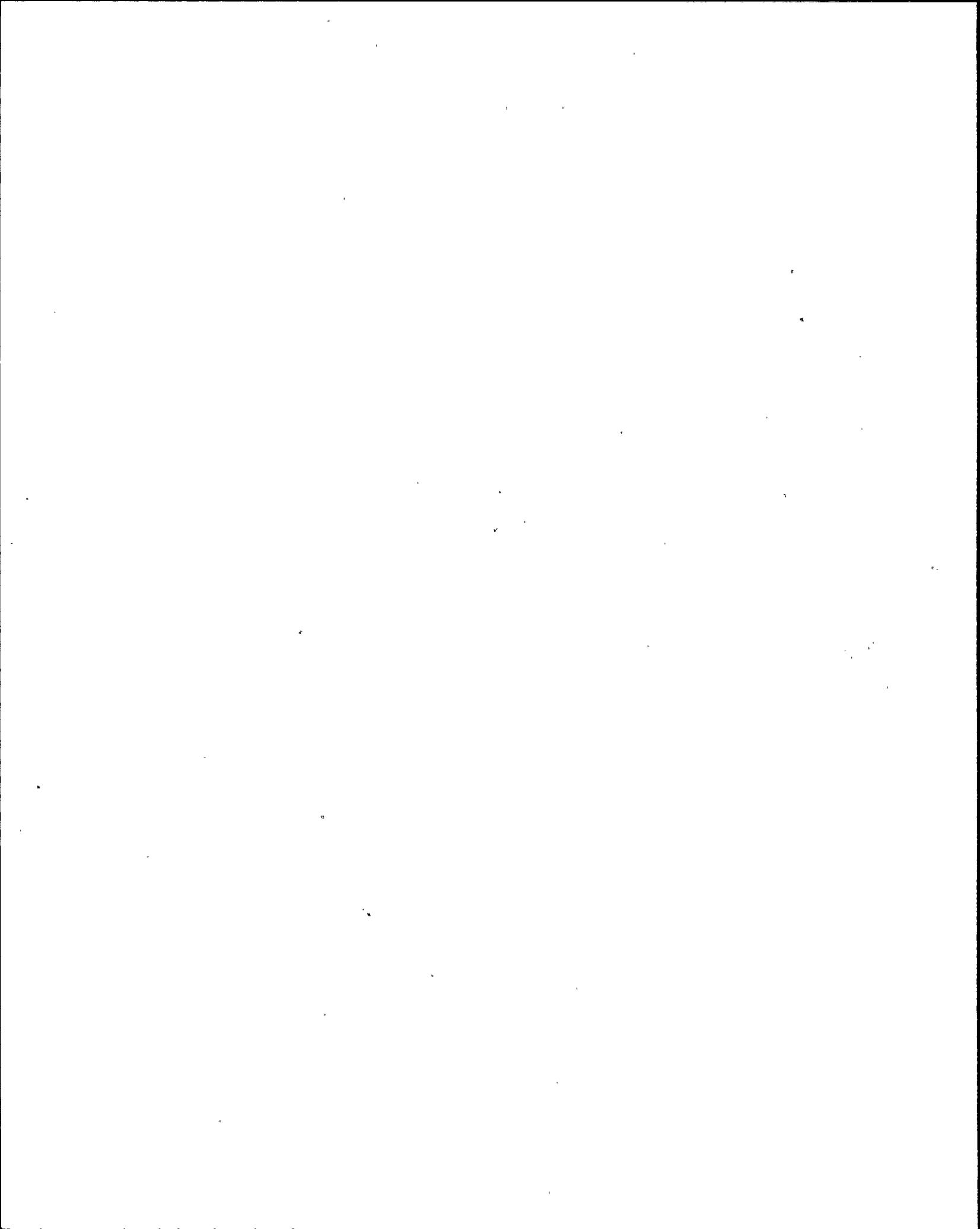
a. (1.00)

REFERENCE:

Ginna: A-1:10,11 Radiation Control Manual III.A.,B.,C.  
Ginna: LP-RAD62T E.O. 2.0

KA: 194001K104 3.3/3.5 B

194001K104 ..(KA's)



ANSWER: 004 (1.00)

b. (1.00)

REFERENCE:

Ginna: A-52.11:2,3 Par. 3.2

Ginna: LP-RAD03C E.O. 3.1

KA: 194001K105 3.1/3.4 B

194001K105 ..(KA's)

ANSWER: 005 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-RAD08C P.23 E.O. 3.6

Ginna:

KA:194001K107 3.6/3.7

194001K107 ..(KA's)

ANSWER: 006 (1.00)

d. (1.00)

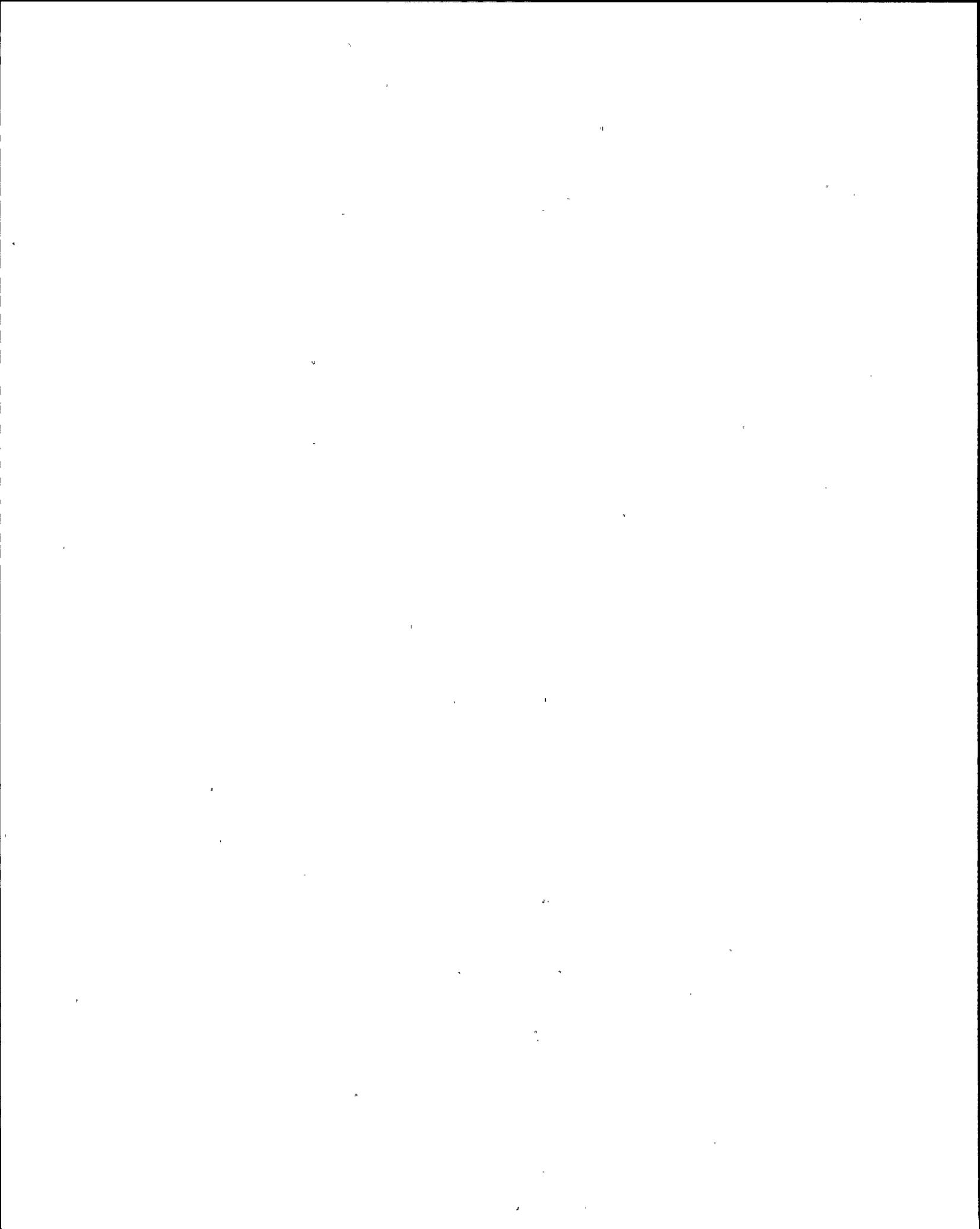
REFERENCE:

Ginna: A-1.6.4:10 Par. 3.3.3.3

Ginna: LP-RAD01C E01.2

KA:194001K114 3.3/3.6

194001K114 ..(KA's)



ANSWER: 007 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-R5901C P. 12  
Ginna: LP-R5901C EO 2.10

KA:194001K116 3.5/4.2

194001K116 ..(KA's)

ANSWER: 008 (1.00)

d. (1.00)

REFERENCE:

Ginna: SC-3.30.1  
Ginna: L.O. Qual Card Section IV, Admin Req'mt #6.

KA:194001A104 3.0/3.2

194001A104 ..(KA's)

ANSWER: 009 (1.00)

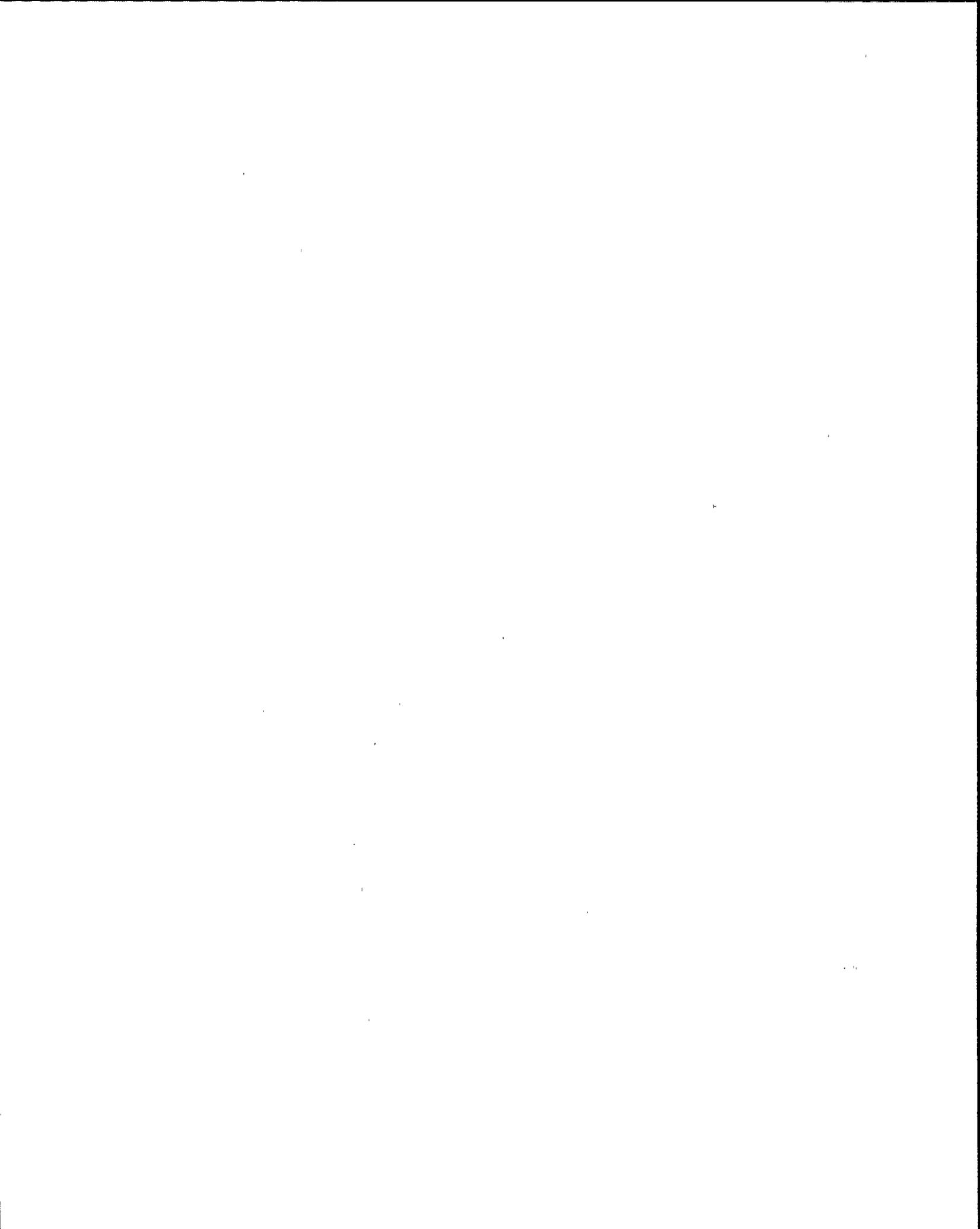
b. (1.00)

REFERENCE:

Ginna: A-25.1 Par. 3.2  
Ginna: LP-RAD04C EO 2.4

KA:194001A106 3.4/3.4

194001A106 ..(KA's)



ANSWER: 010 (1.00)

d. (1.00)

REFERENCE:

Ginna: A-52.1 Para. 3.5.1.2.2

Ginna: LP-RAD03C EO 1.3

KA:194001A112 3.1/4.1

194001A112 ..(KA's)

ANSWER: 011 (1.00)

d. (1.00)

REFERENCE:

Ginna: A-1401:11 Par. 3.4.2.1.A

Ginna: LP-RAD08C EO 3.4

KA:194001K102 3.7/4.1

194001K102 ..(KA's)

ANSWER: 012 (1.00)

d. (1.00)

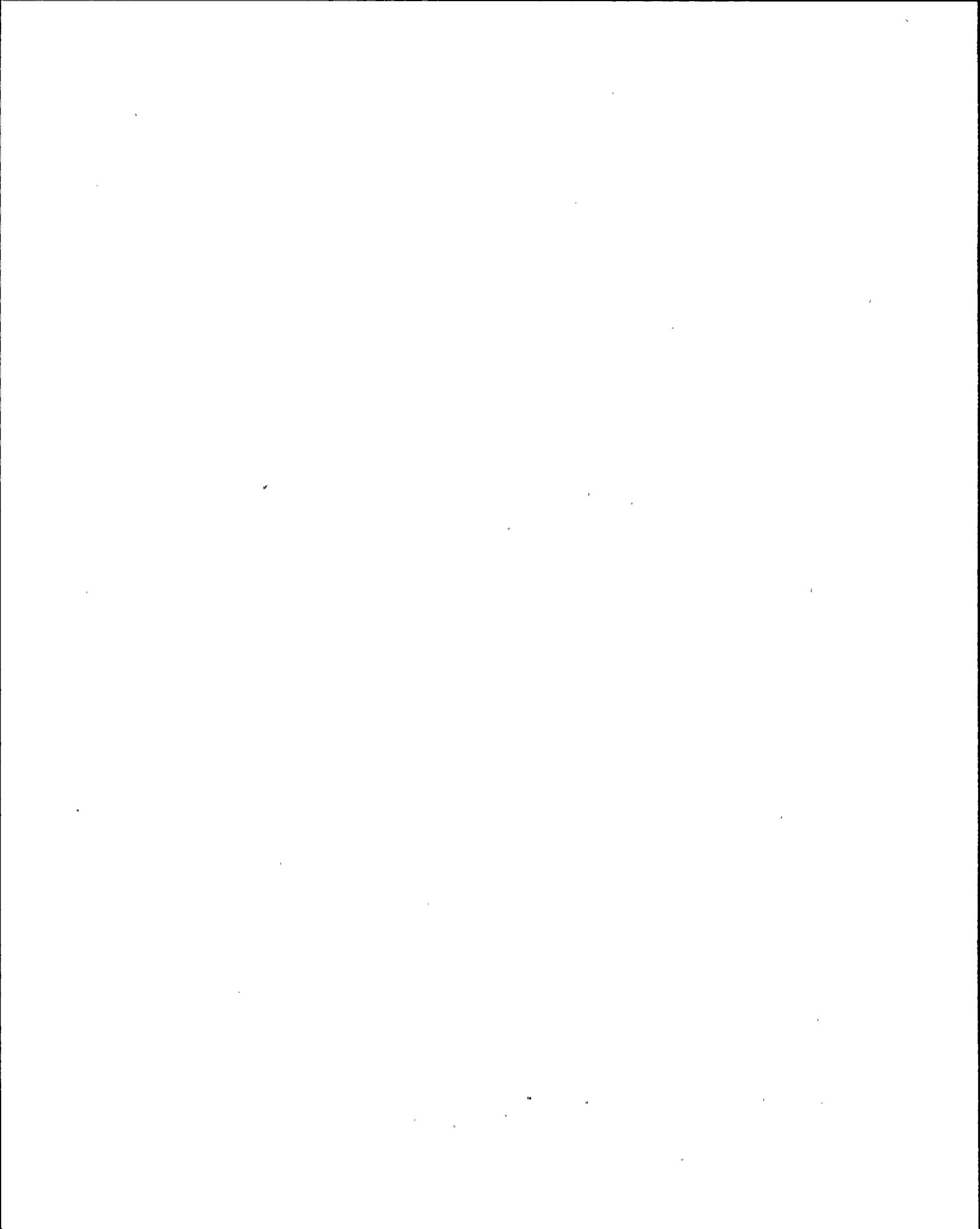
REFERENCE:

Ginna: LP-R3501C P. 15

Ginna: LP-R3501C EO 3.2

KA:000029K206 2.9/3.1

000029K206 ..(KA's)



ANSWER: 013 (1.00)

a. (1.00)

REFERENCE:

Ginna: System Description RGE-18

Ginna: LP-R1801C EO 3.2 also Q2 R1801C.03.02

KA:194001A113 4.3/4.1

194001A113 ..(KA's)

ANSWER: 014 (1.00)

b. (1.00)

REFERENCE:

Ginna: SAS Training Manual Par. 3.A.2.C.

Ginna: SAS Learning Goal 3.C

KA:194001A115 3.1/3.4

194001A115 ..(KA's)

ANSWER: 015 (1.00)

a. (1.00)

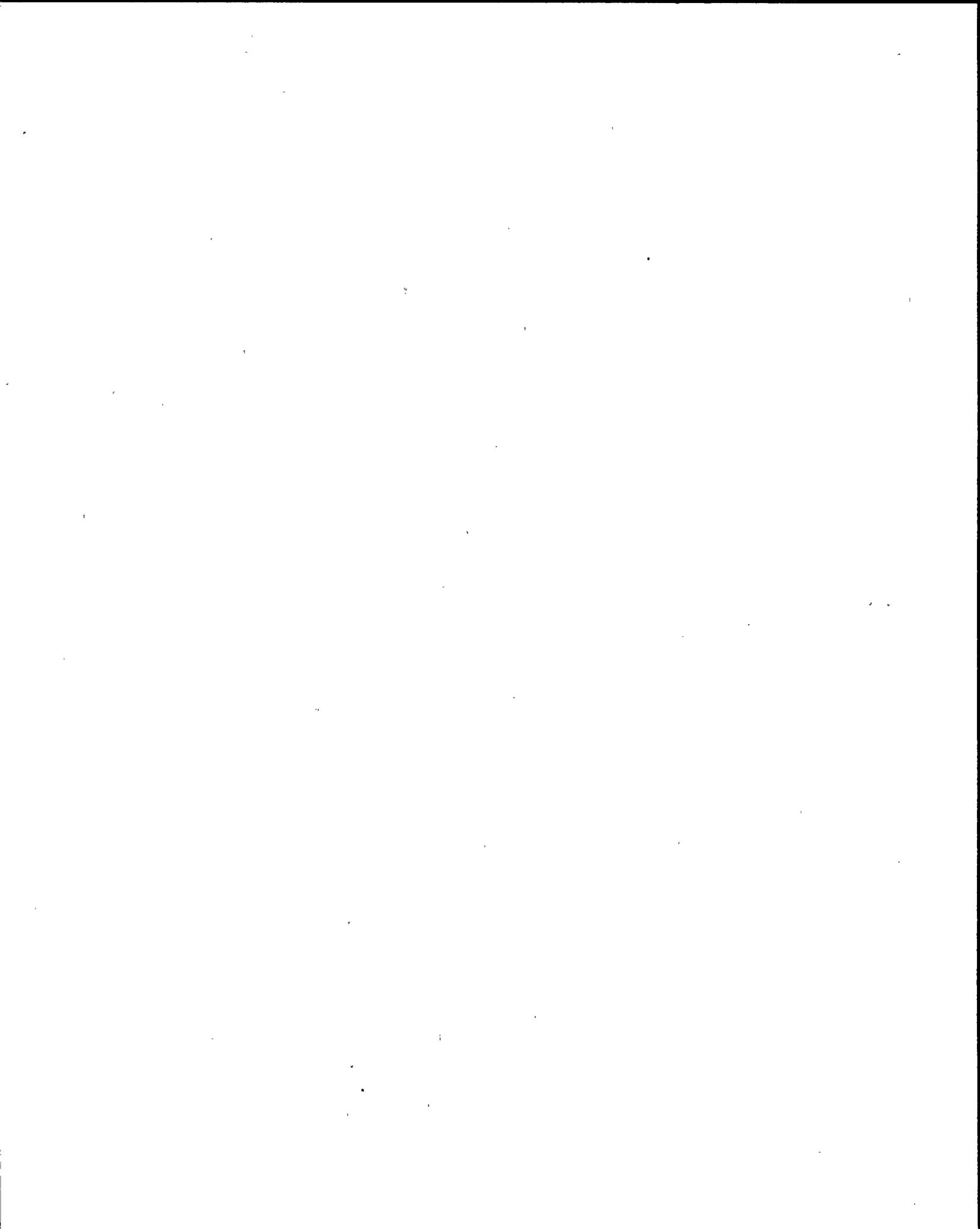
REFERENCE:

Ginna: Q0 RSC02C.99.01

Ginna: LP-RSC02C

KA:194001A116 3.2/4.4

194001A116 ..(KA's)



ANSWER: 016 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-RCS.2 Step 4  
Ginna: LP-RAP16C EO 1.3

KA:003000K504 3.2/3.5

003000K504 ..(KA's)

ANSWER: 017 (1.00)

c. (1.00)

REFERENCE:

Ginna: LER 89-004 EWR 4230  
Ginna: LP-RIE01C

KA:013000K404 4.3/4.5

013000K404 ..(KA's)

ANSWER: 018 (1.00)

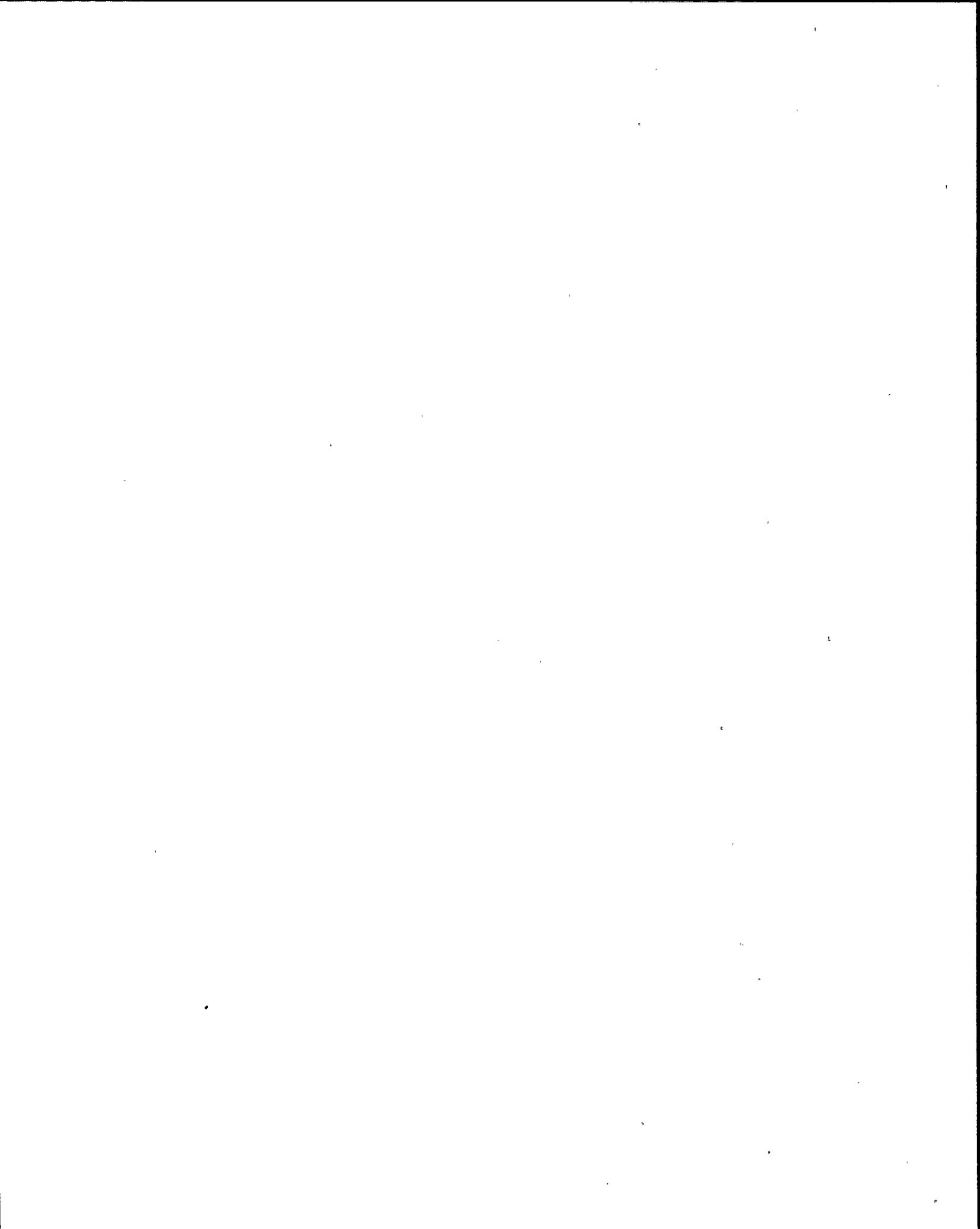
c. (1.00)

REFERENCE:

Ginna: P-6 Para. 2.10  
Ginna: LP-R3301C EO 3.6, 4.1

KA:015000G010 3.3/3.5

015000G010 ..(KA's)



ANSWER: 019 (1.00)

b. (1.00)

REFERENCE:

Ginna: System Description RGE-32 P. 2  
Ginna: LP-R3201C EO 2.4

KA:017020A401 3.8/4.1

017020A401 ..(KA's)

ANSWER: 020 (3.00)

- a) 4 (0.50)
- b) 8 (0.50)
- c) 11 (0.50)
- d) 9 (0.50)
- e) 5 (0.50)
- f) 2 (0.50)

REFERENCE:

Ginna: Diagram RGE-VC-5  
Ginna: LP-R1601C EO 2.2(C)

KA:004010A305 3.3/3.2

004010A305 ..(KA's)

ANSWER: 021 (1.00)

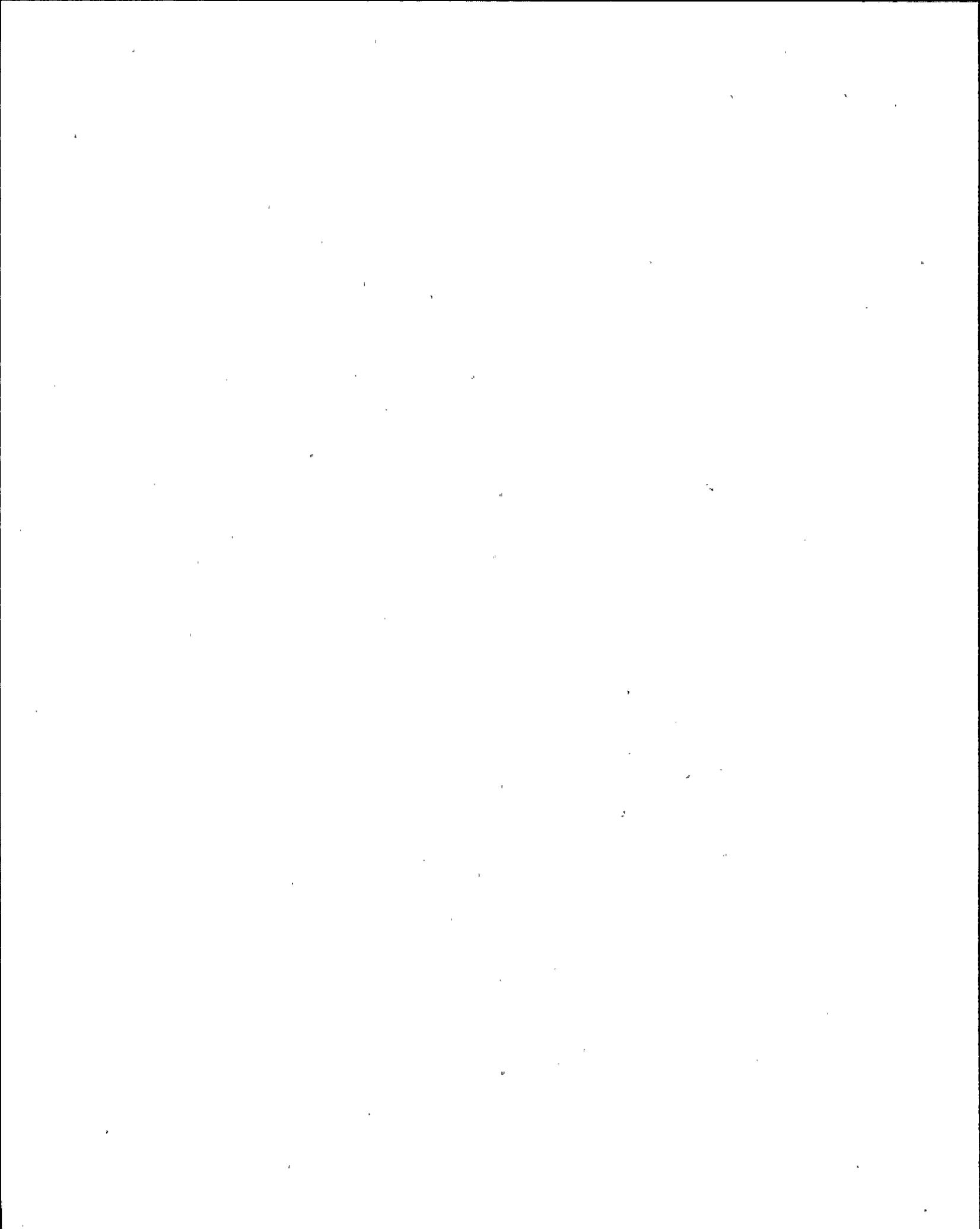
c. (1.00)

REFERENCE:

Ginna: O-5.1:2 Par. 4.3.2.1  
Ginna: LP-ROP12C EO 1.1

KA:001050A206 3.6/4.0

001050A206 ..(KA's)



ANSWER: '022 (1.00)

a. (1.00)

REFERENCE:

Ginna: FR-H.1 Step 8.  
Ginna:

KA:056000G015 2.7/2.9

056000G015 ..(KA's)

ANSWER: 023 (1.00)

d. (1.00)

REFERENCE:

Ginna: System Description RGE-22 P. 3.  
Ginna: LP-R2201C EO 2.2

KA:022000K101 3.5/3.7

022000K101 ..(KA's)

ANSWER: 024 (1.00)

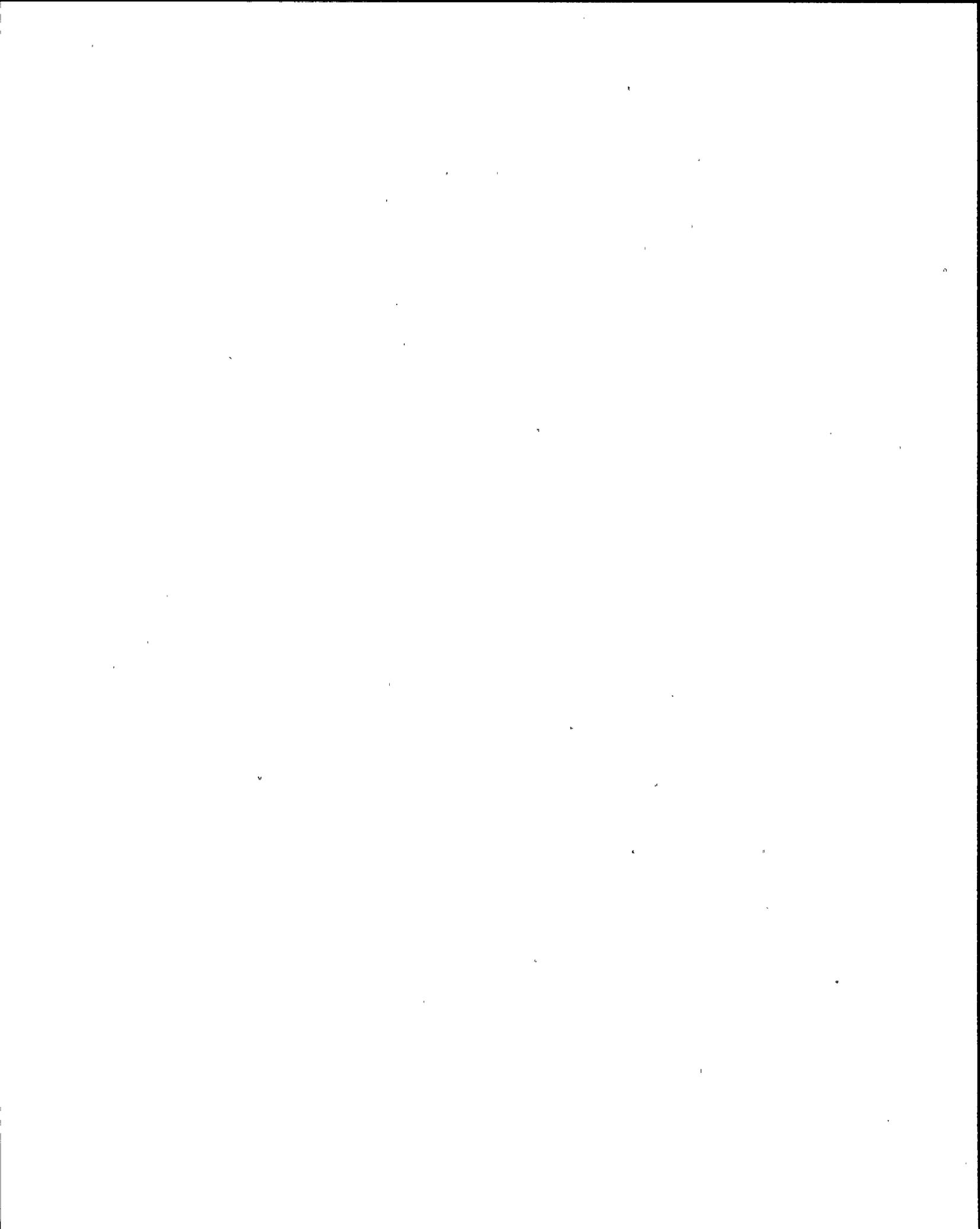
c. (1.00)

REFERENCE:

Ginna: LP-R4401C Par. 3.b.  
Ginna:

KA:059000K104 3.4/3.4

059000K104 ..(KA's)



ANSWER: 025 (1.00)

b. (1.00)

REFERENCE:

Ginna: AR-H-13, T/S 3.4.1,2  
Ginna:

KA:061000A104 3.9/3.9

061000A104 ..(KA's)

ANSWER: 026 (1.00)

d. (1.00)

REFERENCE:

Ginna: P-9:5 Par. 2.3.2.6 and P+ID 1273 (Waste Disposal Gas)  
Ginna:

KA:071000K305 3.2/3.2

071000K305 ..(KA's)

ANSWER: 027 (1.00)

b. (1.00)

REFERENCE:

Ginna: RF-8.4:3 Par. 4.1  
Ginna: LP-RRF08C EO 2.0,3.0

KA:072000K302

072000K302 ..(KA's)



ANSWER: 028 (1.00)

a. (1.00)

REFERENCE:

Ginna: Simulator Malfunction CVC-11  
Ginna: LP-RAP55S EO 1.1

KA:004020A203 3.2/3.1

004020A203 ..(KA's)

ANSWER: 029 (1.00)

c. (1.00)

REFERENCE:

Ginna: System Description RGE-42 and Drawing AF-2  
Ginna: LP-R4201C EO 6.0

KA:061000g009 3.8/3.9

061000G009 ..(KA's)

ANSWER: 030 (1.00)

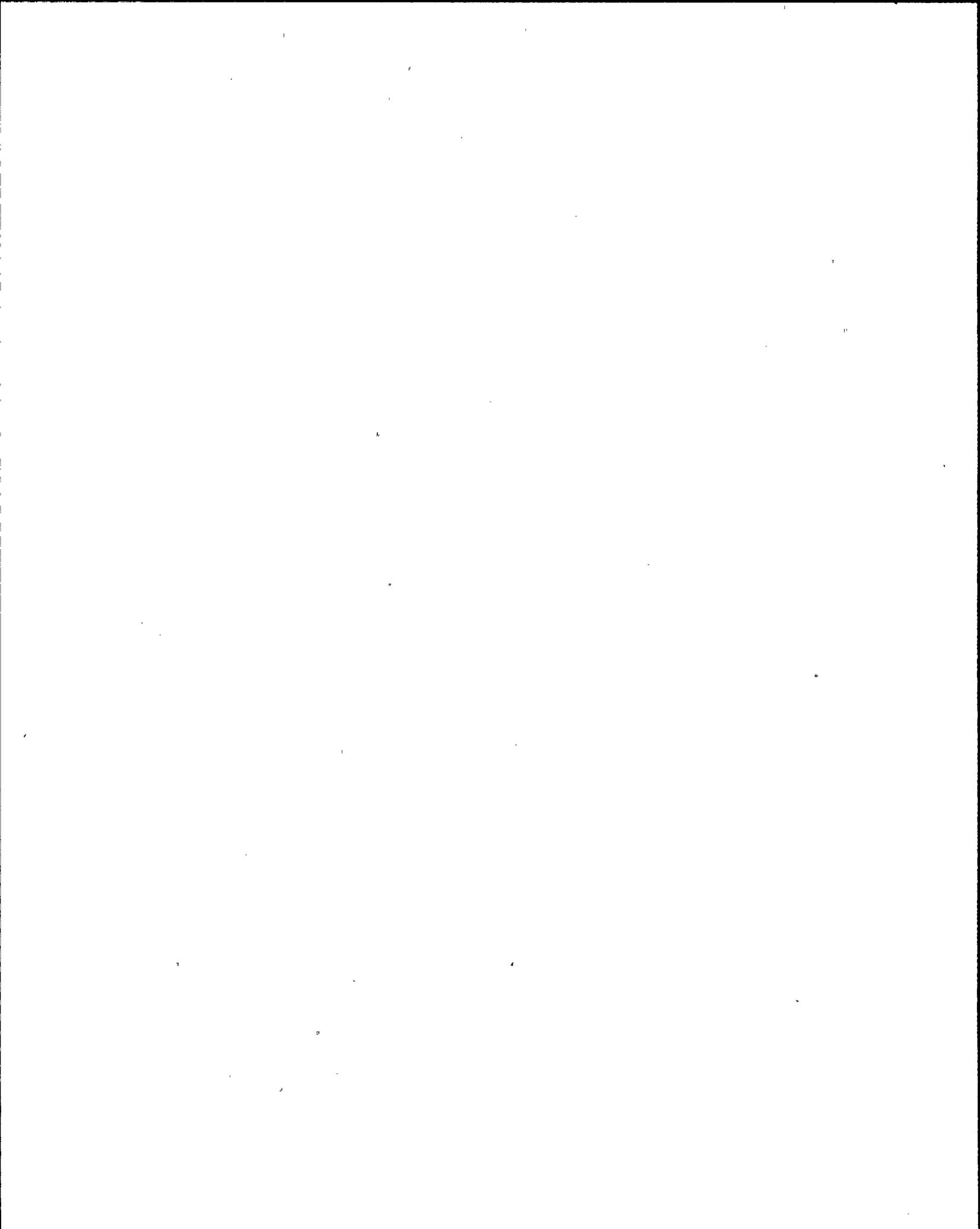
a. (1.00)

REFERENCE:

Ginna: LP-R3201C P. 5  
Ginna:

KA:017020G005 2.8/3.4

017000G005 ..(KA's)



ANSWER: 031 (1.00)

b. (1.00)

REFERENCE:

Ginna: AP-RCS.2 and T/S 3.1.1.1.b.

Ginna: LP-RTS01C EO 1.9

KA: 003000K201 3.1/3.1

003000K201 ..(KA's)

ANSWER: 032 (1.00)

a. (1.00)

REFERENCE:

Ginna: RGE-44 P.7 and LP-R4401C Par. 3.b.

Ginna: LP-R4401C EO 3.3

KA:059000K419 3.2/3.4

059000K419 ..(KA's)

ANSWER: 033 (1.00)

c. (1.00)

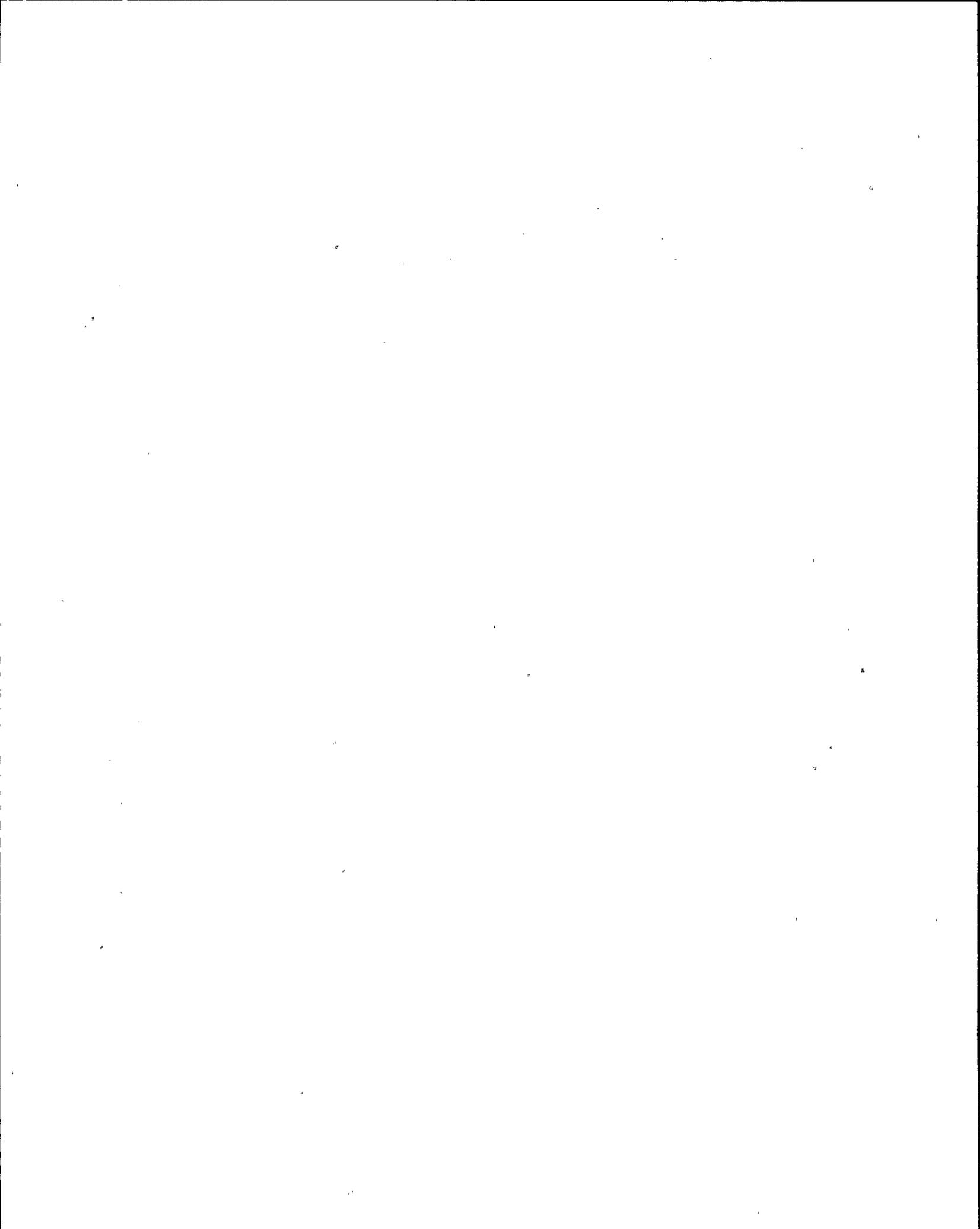
REFERENCE:

Ginna: O-6.4 Par.4.3

Ginna: LP-ROP59T EO 1.0(I)

KA:015020K504 3.2/3.6

015020K504 ..(KA's)



ANSWER: 034 (1.00)

b. (1.00)

REFERENCE:

Ginna: RGE-22 P.3 and LP-R2201C P. 7.  
Ginna: LP-R2201C EO 2.1

KA:022000A301 4.1/4.3

022000A301 ..(KA's)

ANSWER: 035 (1.00)

d. (1.00)

REFERENCE:

Ginna: AR-RMS-18  
Ginna:

KA:068000G008 2.6/2.8

068000G008 ..(KA's)

ANSWER: 036 (1.00)

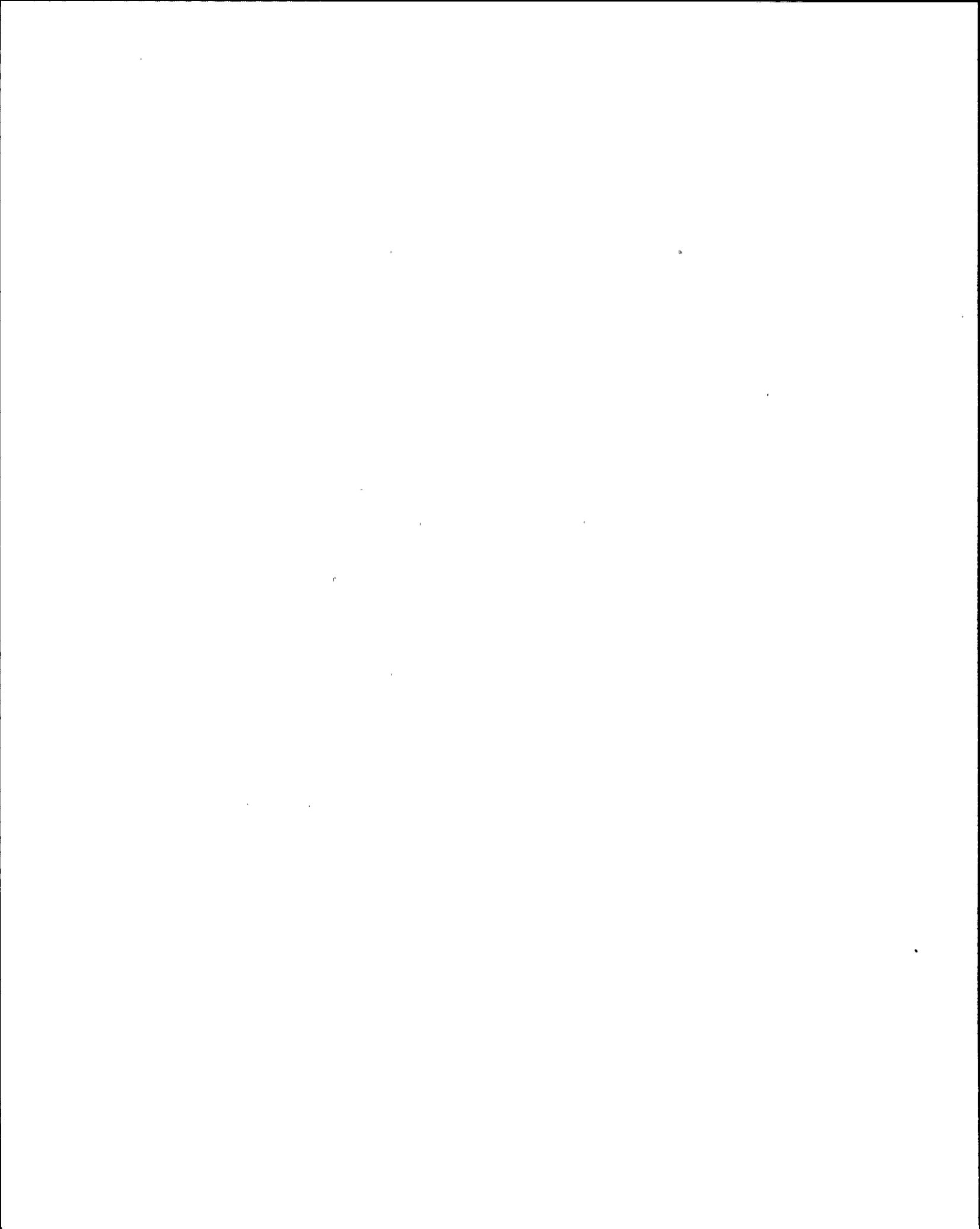
b. (1.00)

REFERENCE:

Ginna: O-1.2 Step 5.2.13  
Ginna: LP-ROP01C EO 1.1

KA:001000A106 4.1/4.4

001000A106 ..(KA's)



ANSWER: 037 (1.00)

a. (1.00)

REFERENCE:

Ginna: RGE-14 P. 6

Ginna: LP-R1401C EO 2.3

KA:002000K612 3.0/3.5

002000K612 ..(KA's)

ANSWER: 038 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R2201C

Ginna:

KA:006030K404 3.9/4.1

006030K404 ..(KA's)

ANSWER: 039 (1.00)

d. (1.00)

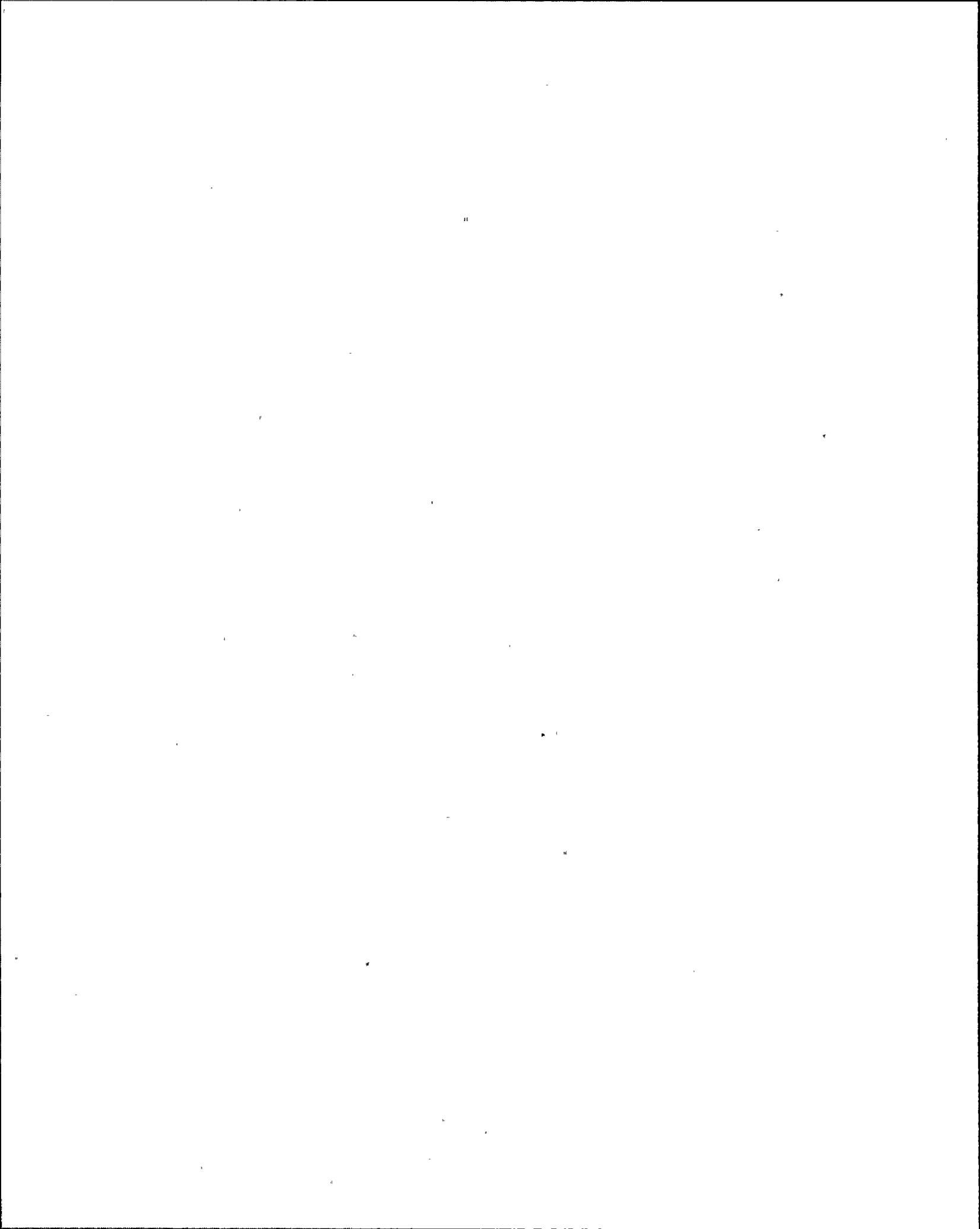
REFERENCE:

Ginna: T.S. Bases 3.1.1.1.K

Ginna: LP-ROP04C EO 1.1

KA:010000A104 3.6/3.8

010000A104 ..(KA's)



ANSWER: 040 (1.00)

c. (1.00)

REFERENCE:

Ginna: ES-0.2 Step 14  
Ginna:

KA:011000K510 3.7/4.0

011000K510 ..(KA's)

ANSWER: 041 (2.00)

a) 5. (0.50)

b) 3. (0.50)

c) 6. (0.50)

d) 2. (0.50)

REFERENCE:

Ginna: RGE-9, Drawing GT-6  
Ginna: LP-R0901C EO 2.1

KA:012000K201 3.3/3.7

012000K201 ..(KA's)

ANSWER: 042 (1.00)

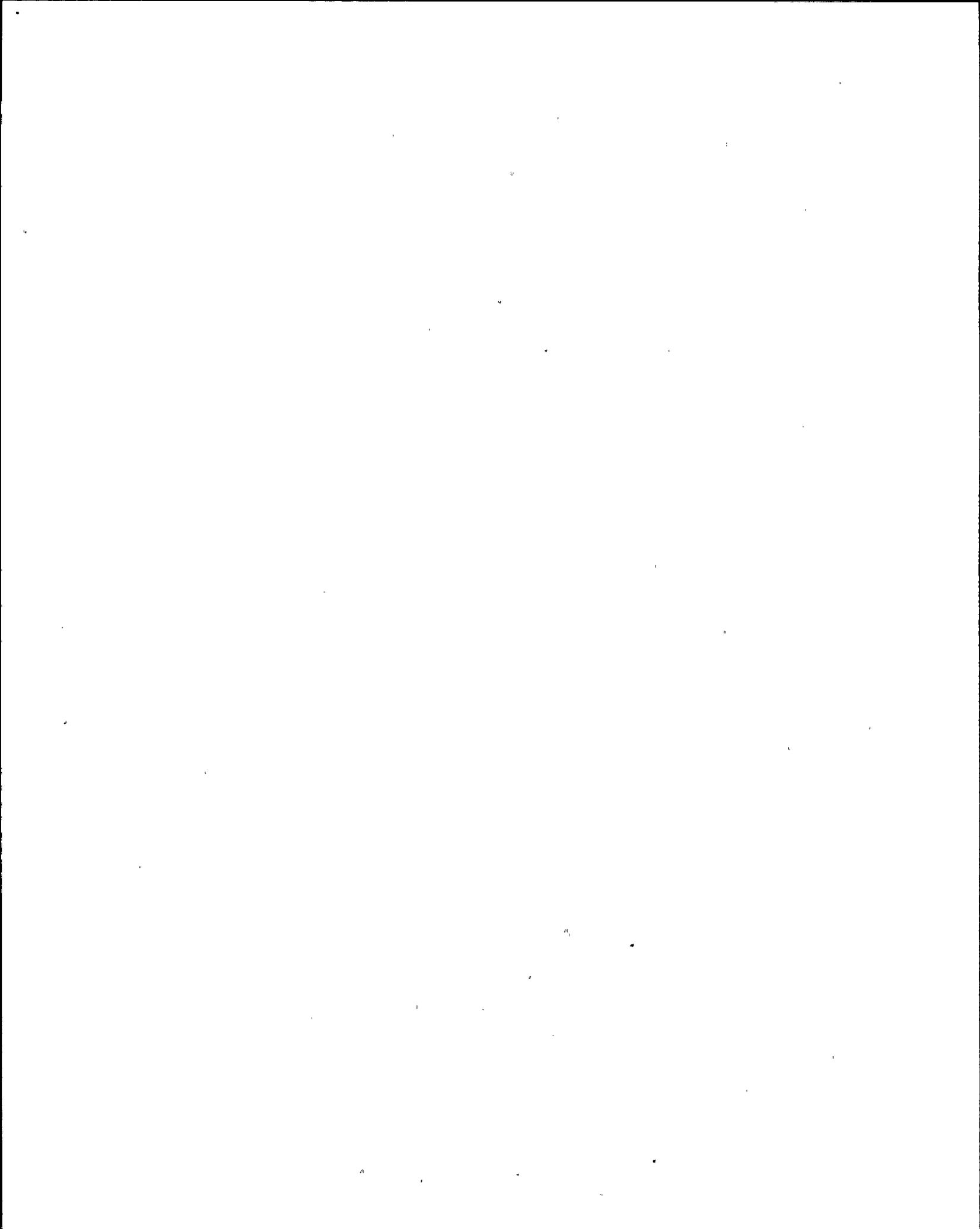
b. (1.00)

REFERENCE:

Ginna: LP-R3101C P. 13  
Ginna: LP-R3101C EO 1.7.d.

KA:014000A205 3.9/4.1

014000A205 ..(KA's)



ANSWER: 043 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-R2401C P. 7  
Ginna: LP-R2401C EO 3.1

KA:026020G007 3.5/3.7

026020G007 ..(KA's)

ANSWER: 044 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R2701C P. 5.  
Ginna: LP-R2701C EO 1.2

KA:006030K601 3.7/3.9

006030K601 ..(KA's)

ANSWER: 045 (1.00)

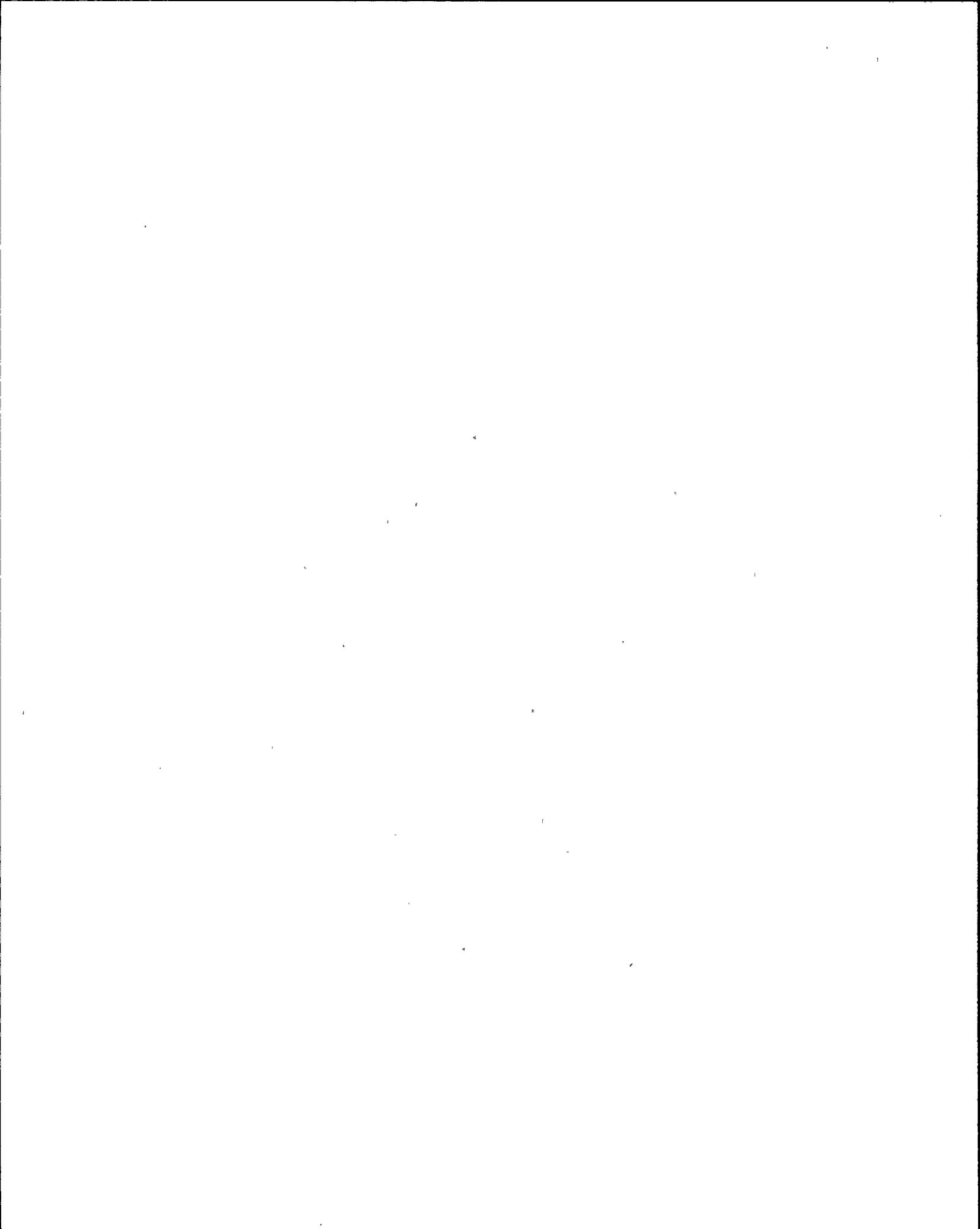
b. (1.00)

REFERENCE:

Ginna: LP-R3601C P.5.  
Ginna: LP-R3601C EO 2.2

KA:033000K405 3.1/3.3

033000K405 ..(KA's)



ANSWER: 046 (1.00)

a. (1.00)

REFERENCE:

Ginna: RGE-40 P. 1

Ginna: LP-R4001C EO 2.4

KA:035010K101 4.2/4.5

035010K101 ..(KA's)

ANSWER: 047 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-RTS22C P. 5

Ginna: LP-RTS22C EO 1.3(C)

KA:012000K501 3.3/3.8

012000K501 ..(KA's)

ANSWER: 048 (1.00)

c. (1.00)

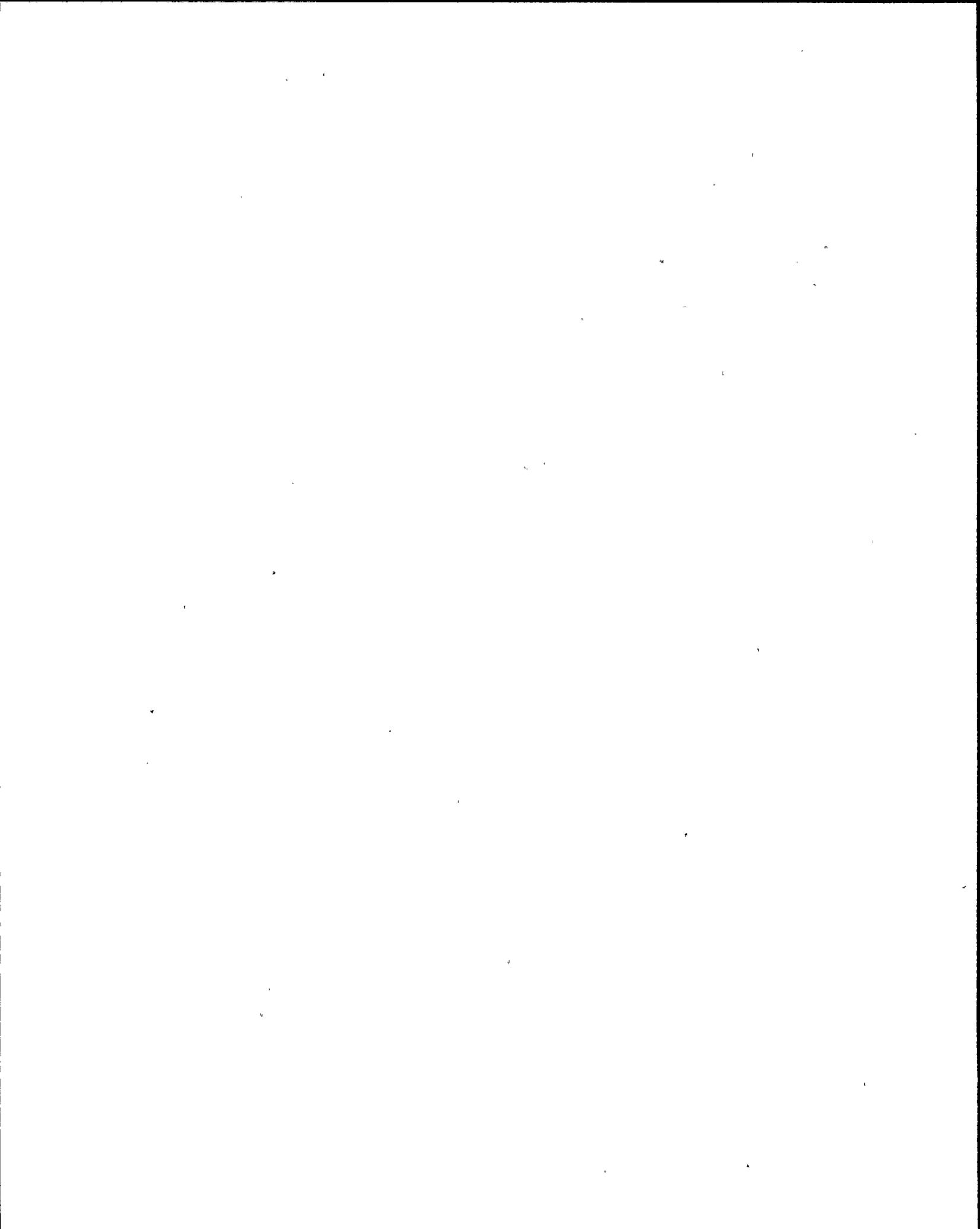
REFERENCE:

Ginna: LP-R5901C P. 13

Ginna: LP-R5901C EO 3.2

KA:086000A402 3.5/3.5

086000A402 ..(KA's)



ANSWER: 049 (1.00)

d. (1.00)

REFERENCE:

Ginna: ER-ELEC.3  
Ginna: LP-R0503C EO 3.1

KA:062000K104 3.7/4.2

062000K104 ..(KA's)

ANSWER: 050 (1.00)

b. (1.00)

REFERENCE:

Ginna: ER-ELEC.2  
Ginna: LP-RAP53T EO 7.0

KA:063000K302 3.5/3.7

063000K302 ..(KA's)

ANSWER: 051 (1.00)

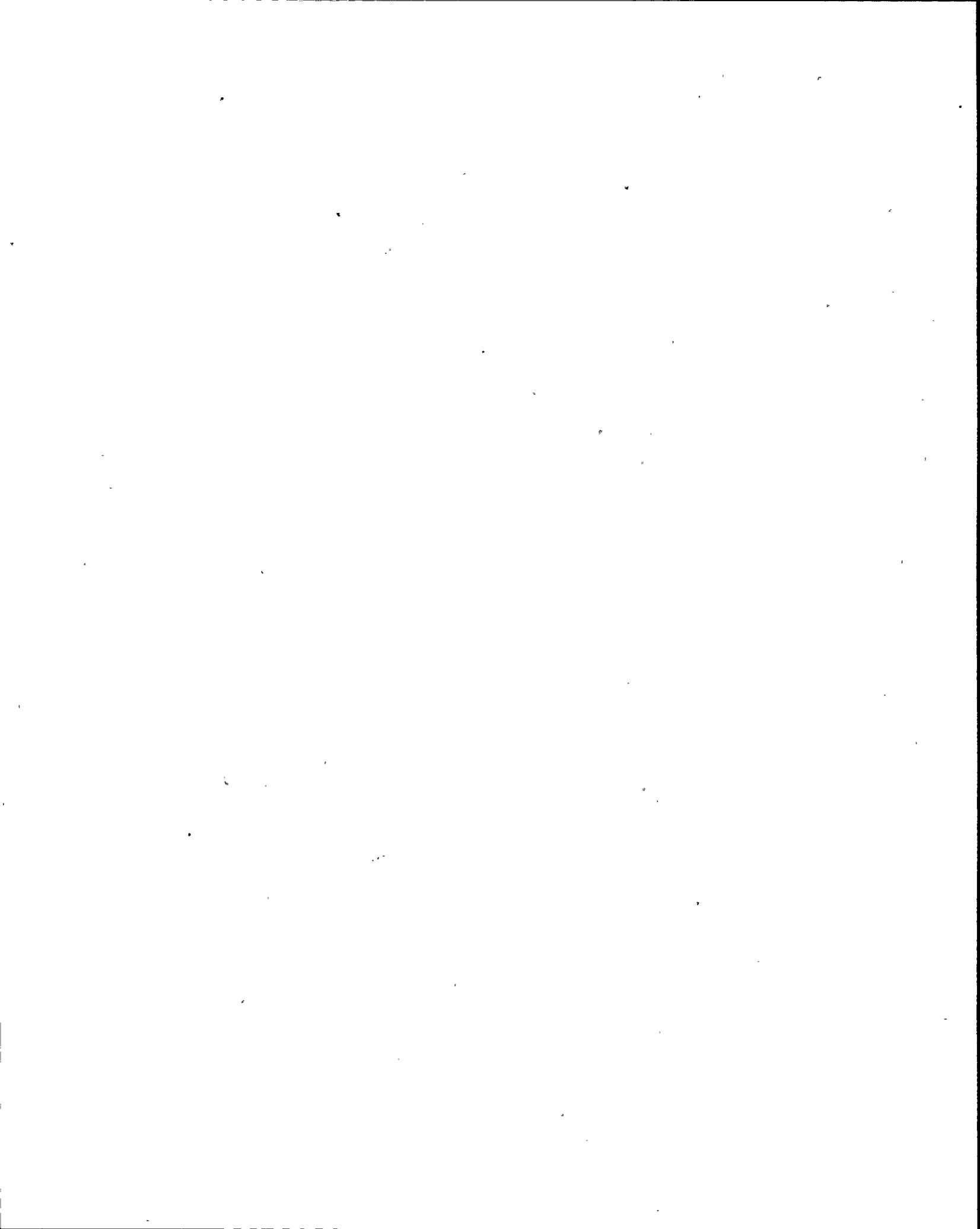
c. (1.00)

REFERENCE:

Ginna: LP-R0801C Pp. 15, 16  
Ginna: LP-R0801C EO 7.3(C)

KA:064000K402 3.9/4.2

064000K402 ..(KA's)



ANSWER: 052 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-R0801C P. 7  
Ginna: LP-R0801C EO 3.2(C)

KA:064050A403 3.3/3.4

064050A403 ..(KA's)

ANSWER: 053 (3.00)

- a) 5. (0.50)
- b) 7. (0.50)
- c) 9. (0.50)
- d) 1. (0.50)
- e) 9. (0.50)
- f) 6. (0.50)

REFERENCE:

Ginna: AR-RMS Procedures  
Ginna: AP Lesson Plans EO 1.2  
KA:073000G015 3.5/3.8

073000G015 ..(KA's)

ANSWER: 054 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R0501C P. 15  
Ginna: LP-R0501C EO 1.13

KA:045010K423 3.4/3.6

045010K423 ..(KA's)



ANSWER: 055 (1.00)

a. (1.00)

REFERENCE:

Ginna: O-2.3.1

Ginna: LP-ROP06C EO 1.1

KA:005000A102 3.3/3.4

005000A102 ..(KA's)

ANSWER: 056 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-RAP01S P. 3.

Ginna: LP-RSE00S EO 2

KA:008000K102 3.3/3.4

008000K102 ..(KA's)

ANSWER: 057 (1.00)

a. (1.00)

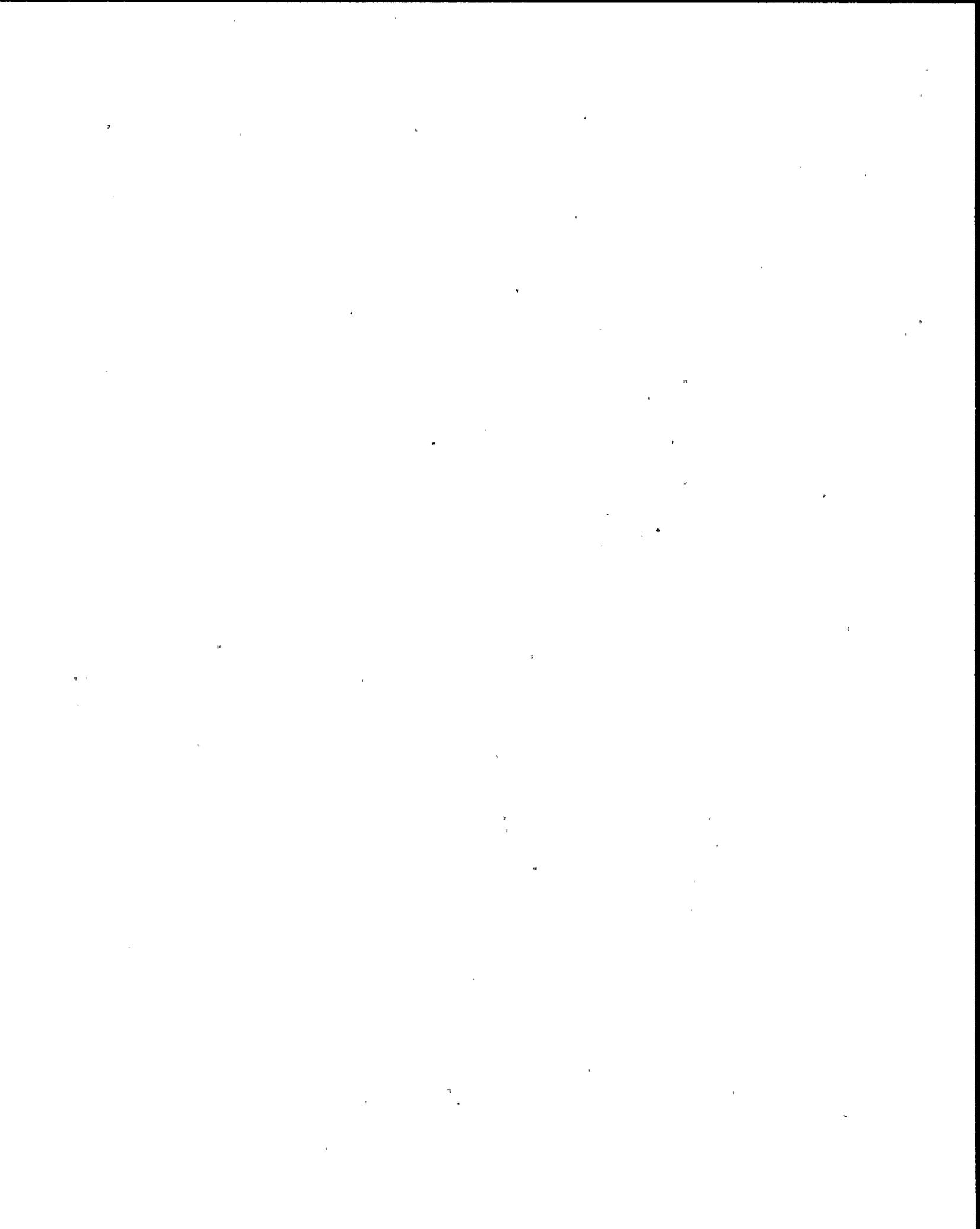
REFERENCE:

Ginna: LP-R3701C P. 6

Ginna: LP-R3701C EO 2.2

KA:034000K403 2.6/3.3

034000K403 ..(KA's)



ANSWER: 058 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R4501C

Ginna: LP-R4501C EO 2.1

KA:041020K105 3.5/3.6

041020K105 ..(KA's)

ANSWER: 059 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-R2101C P. 9

Ginna: LP-R2101C EO 3.2

KA:103000A301 3.9/4.2

103000A301 ..(KA's)

ANSWER: 060 (1.00)

b. (1.00)

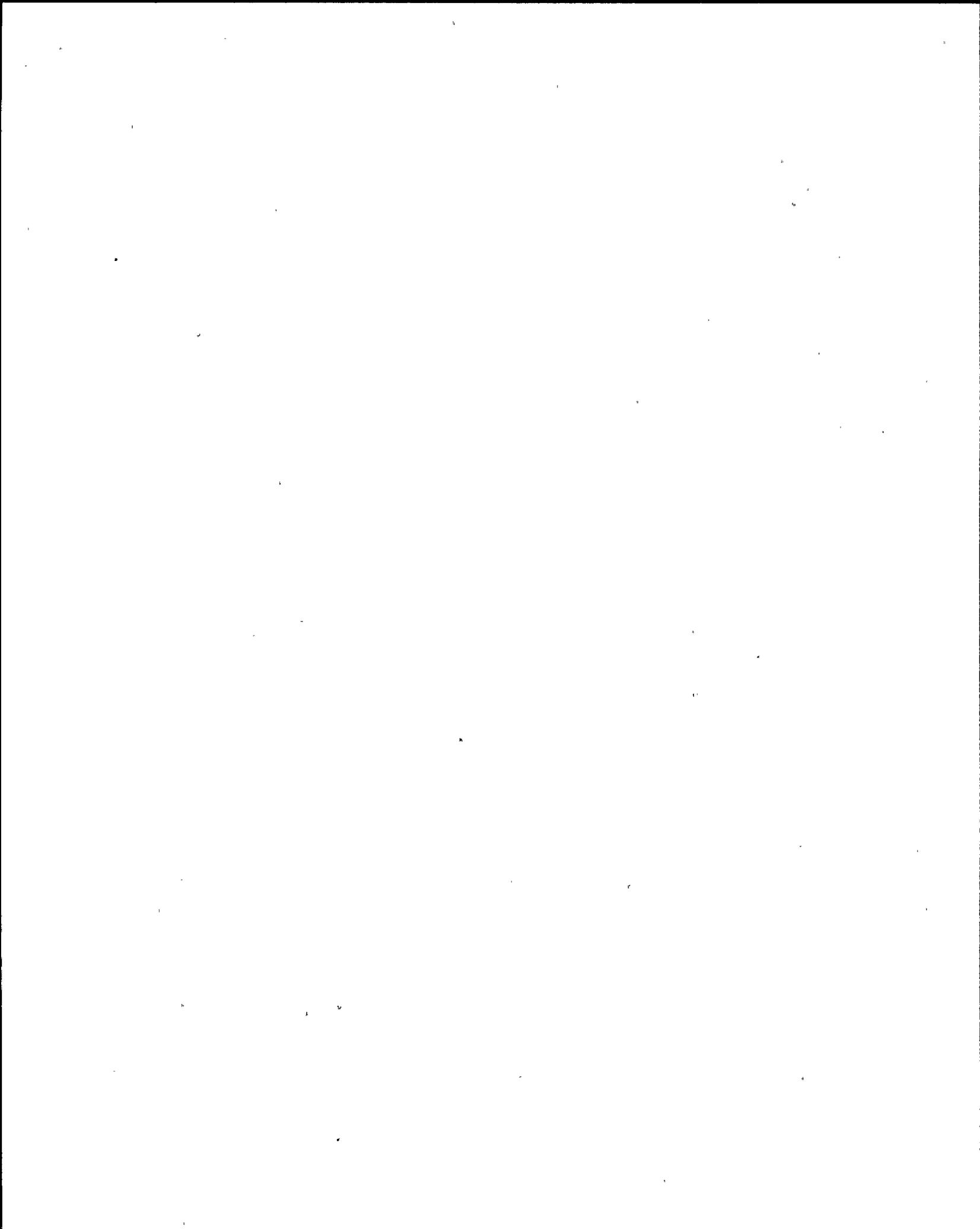
REFERENCE:

Ginna: LP-R1401C EO 5.1

Ginna:

KA:007000A301 2.7/2.9

007000A301 ..(KA's)



ANSWER: 061 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-R5101C P. 5  
Ginna: LP-R5101C EO 1.3

KA:076000A302 3.7/3.7

076000A302 ..(KA's)

ANSWER: 062 (1.00)

a. (1.00)

REFERENCE:

Ginna: AP-RCP.1 Step 1.  
Ginna: LP-RAP14C EO 1.3(C)

KA:000015A122 4.0/4.2

000015A122 ..(KA's)

ANSWER: 063 (1.00)

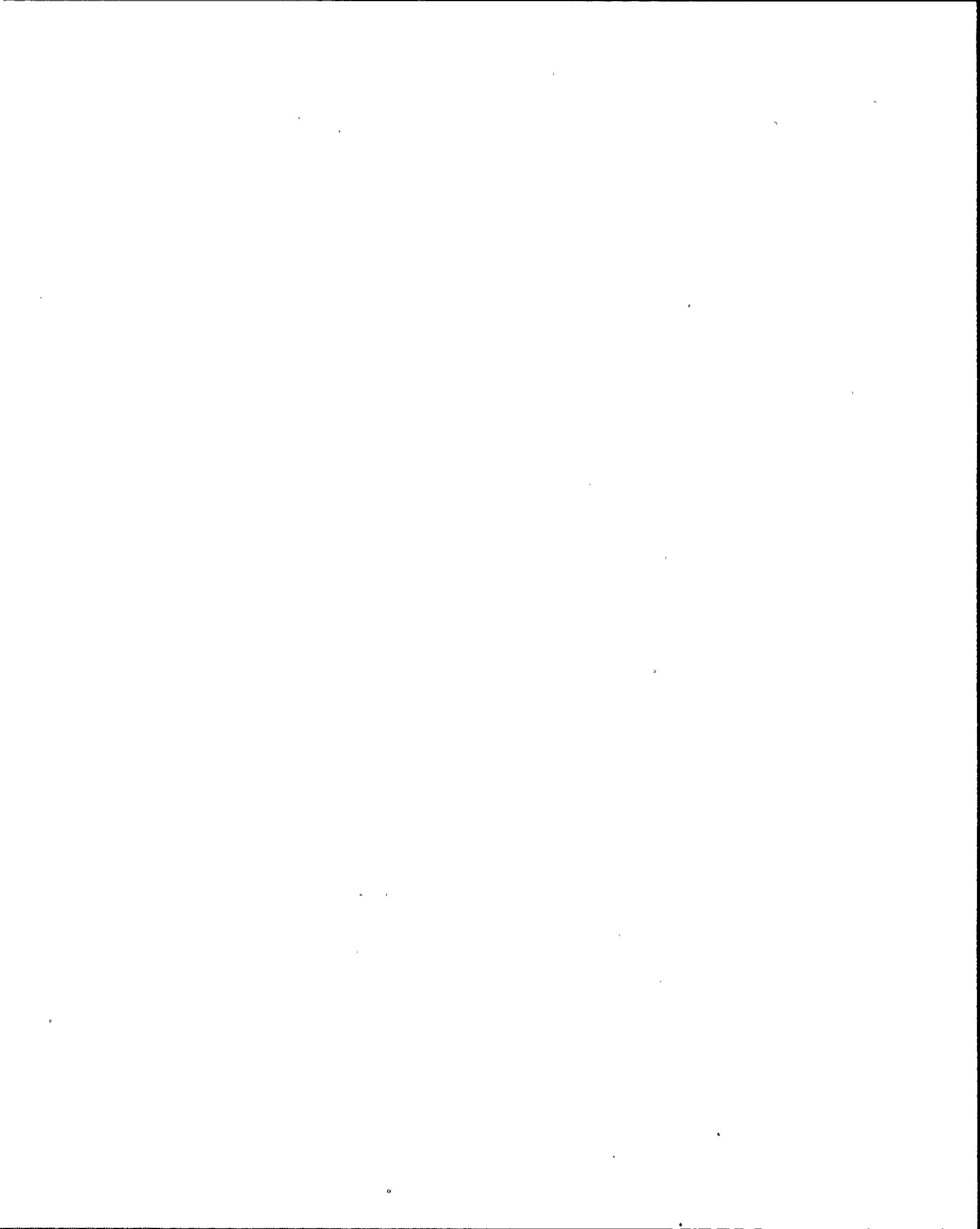
b. (1.00)

REFERENCE:

Ginna: FR-S.1 Step 4  
Ginna: LP-RFRS1C EO 1.3

KA:000024K302 4.2/4.4

000024K302 ..(KA's)



ANSWER: 064 (1.00)

d. (1.00)

REFERENCE:

Ginna: AP-CCW.2 P. 3  
Ginna: LP-RAP02C EO 1.3

KA:000026G011 3.4/3.7  
000026G011 ..(KA's)

ANSWER: 065 (1.00)

b. (1.00)

REFERENCE:

Ginna: Question Bank # Q0 RAP11C.02.01  
Ginna: LP-RAP11C EO 2.1(C)

KA:000027A215 3.7/4.0  
000027A215 ..(KA's)

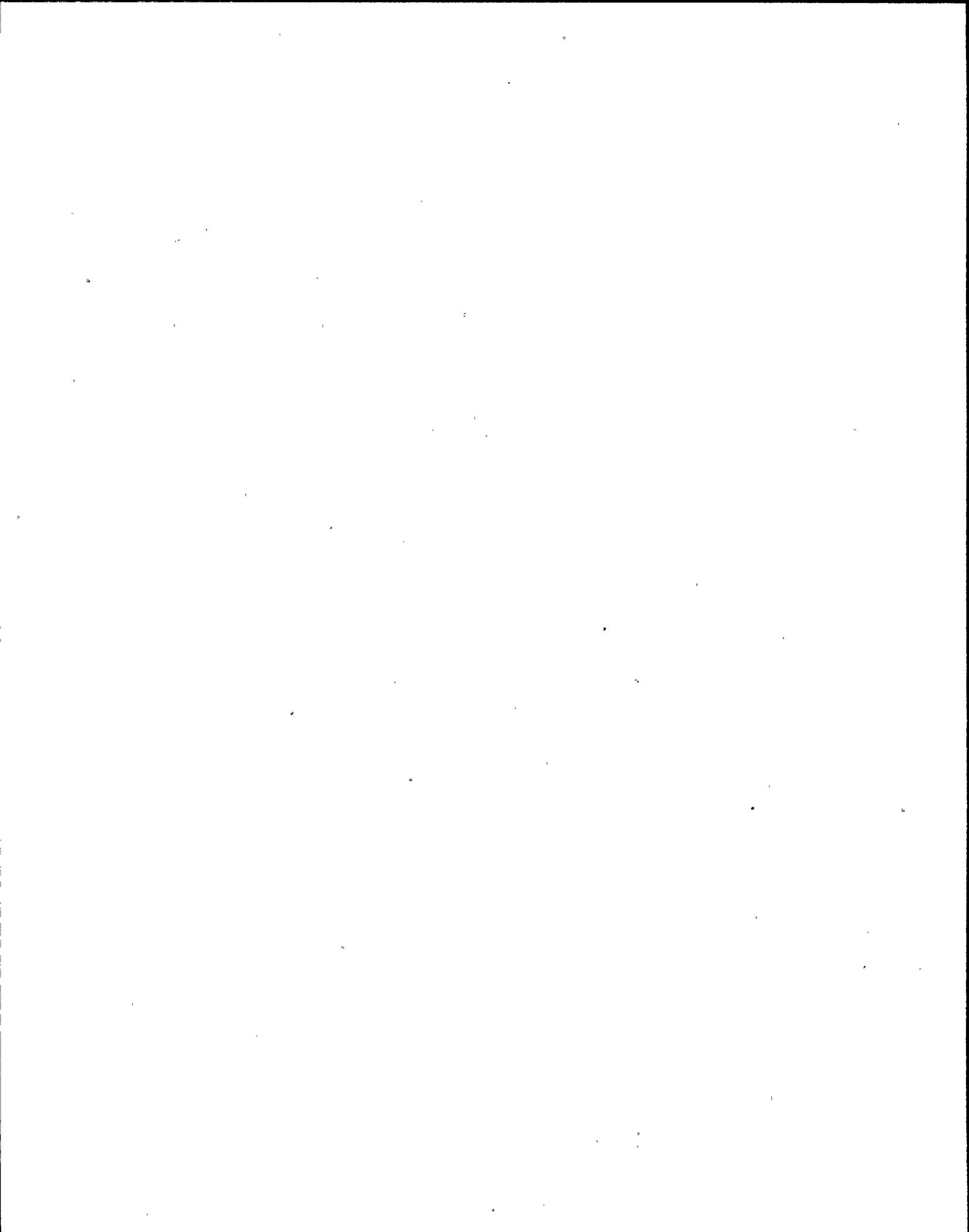
ANSWER: 066 (1.00)

c. (1.00)

REFERENCE:

Ginna: WOG/ERG  
Ginna:

KA:000040K101 4.1/4.4  
000040K101 ..(KA's)



ANSWER: 067 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-TURB.4 Step 1  
Ginna: LP-RAP23C

KA:000051A202 3.9/4.1

000051A202 ..(KA's)

ANSWER: 068 (1.00)

d. (1.00)

REFERENCE:

Ginna: ECA 0.0 Step 5.c  
Ginna:

KA:000055A106 4.1/4.5

000055A106 ..(KA's)

ANSWER: 069 (1.00)

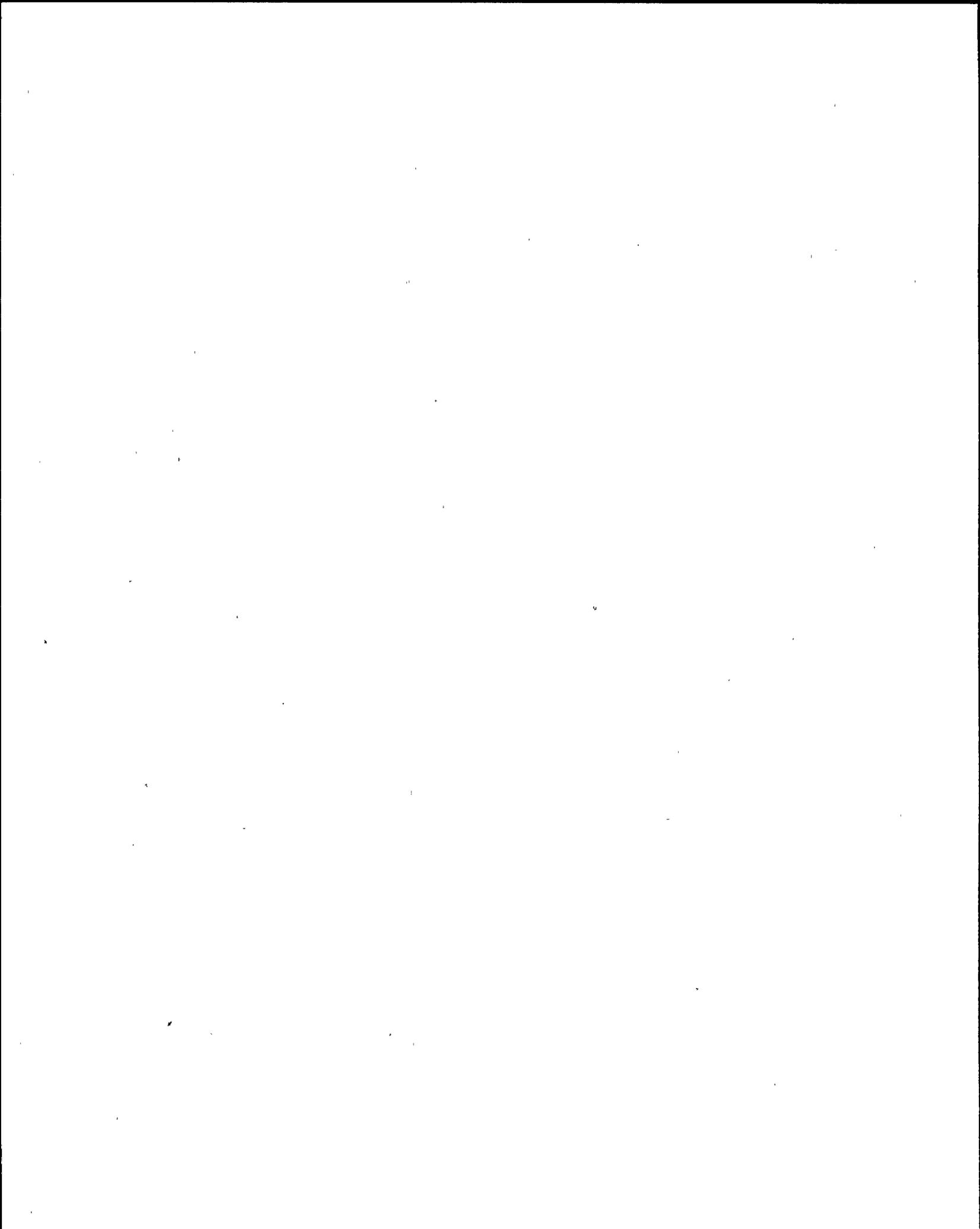
c. (1.00)

REFERENCE:

Ginna: RGE-9, Drawing GT-6  
Ginna: LP-R0901C EO2.1

KA:000057G011 3.8/3.8

000057G011 ..(KA's)



ANSWER: . 070 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-RSC62D

Ginna: LP-RSC62D Obj. 6

KA:000067K102 3.1/3.9

000067K102 ..(KA's)

ANSWER: 071 (1.00)

*a. d. (1.00) see facility comments*

REFERENCE:

Ginna: LP-R5401C P. 7

Ginna: LP-R5401C EO 4.4(C)

KA:000068K201 3.9/4.0

000068K201 ..(KA's)

ANSWER: 072 (1.00)

d. (1.00)

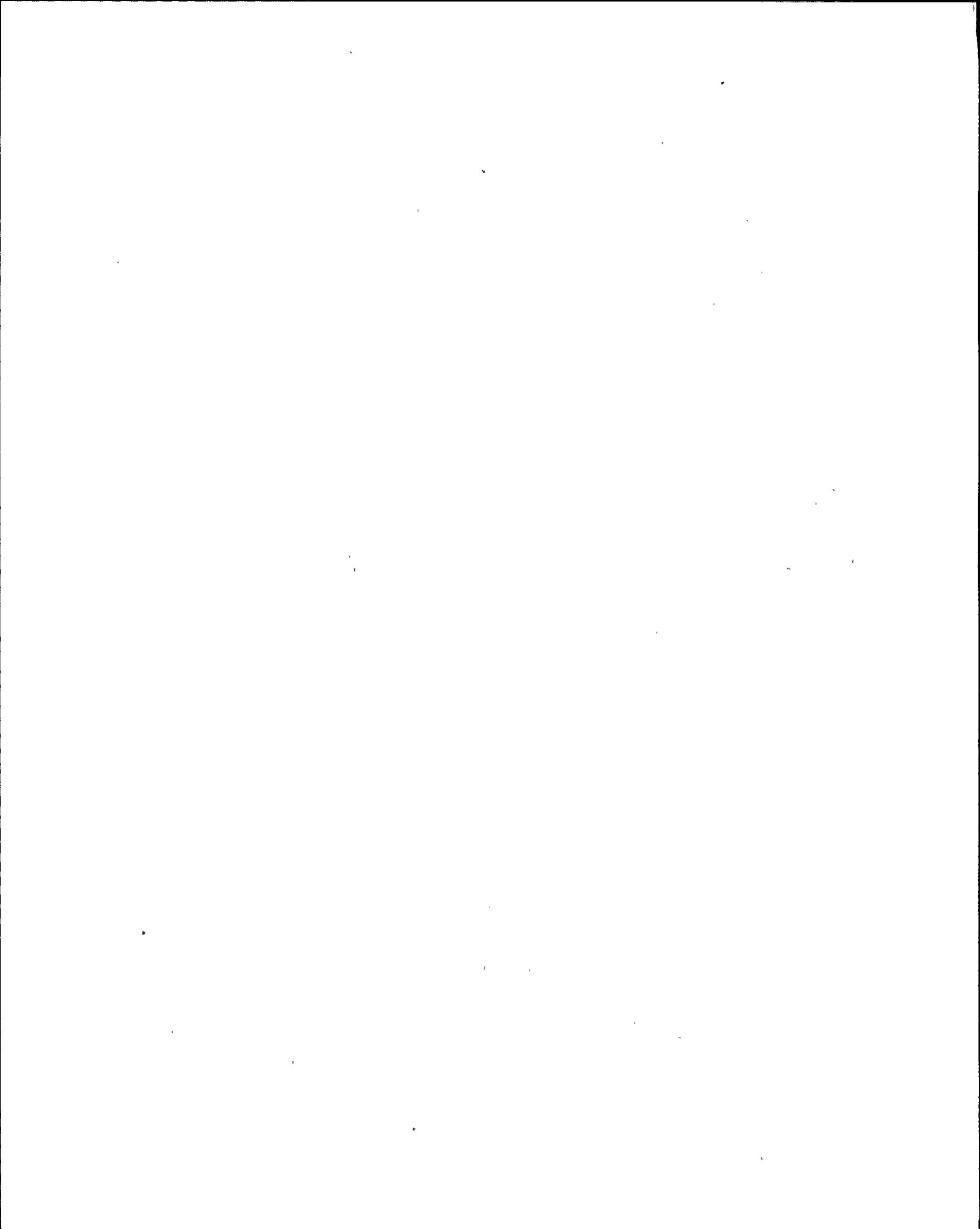
REFERENCE:

Ginna: WOG/ERG

Ginna: LP-REC12C EO 1.1

KA:000069K301 3.8/4.2

000069K301 ..(KA's)



ANSWER: 073 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-RFRC1C P.6  
Ginna: LP-RFRC1C EO 1.2

KA:000074K205 3.9/4.1

000074K205 ..(KA's)

ANSWER: 074 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R1601C P. 11  
Ginna: LP-RAP17C EO 1.3(C)

KA:000076K306 3.2/3.8

000076K306 ..(KA's)

ANSWER: 075 (1.00)

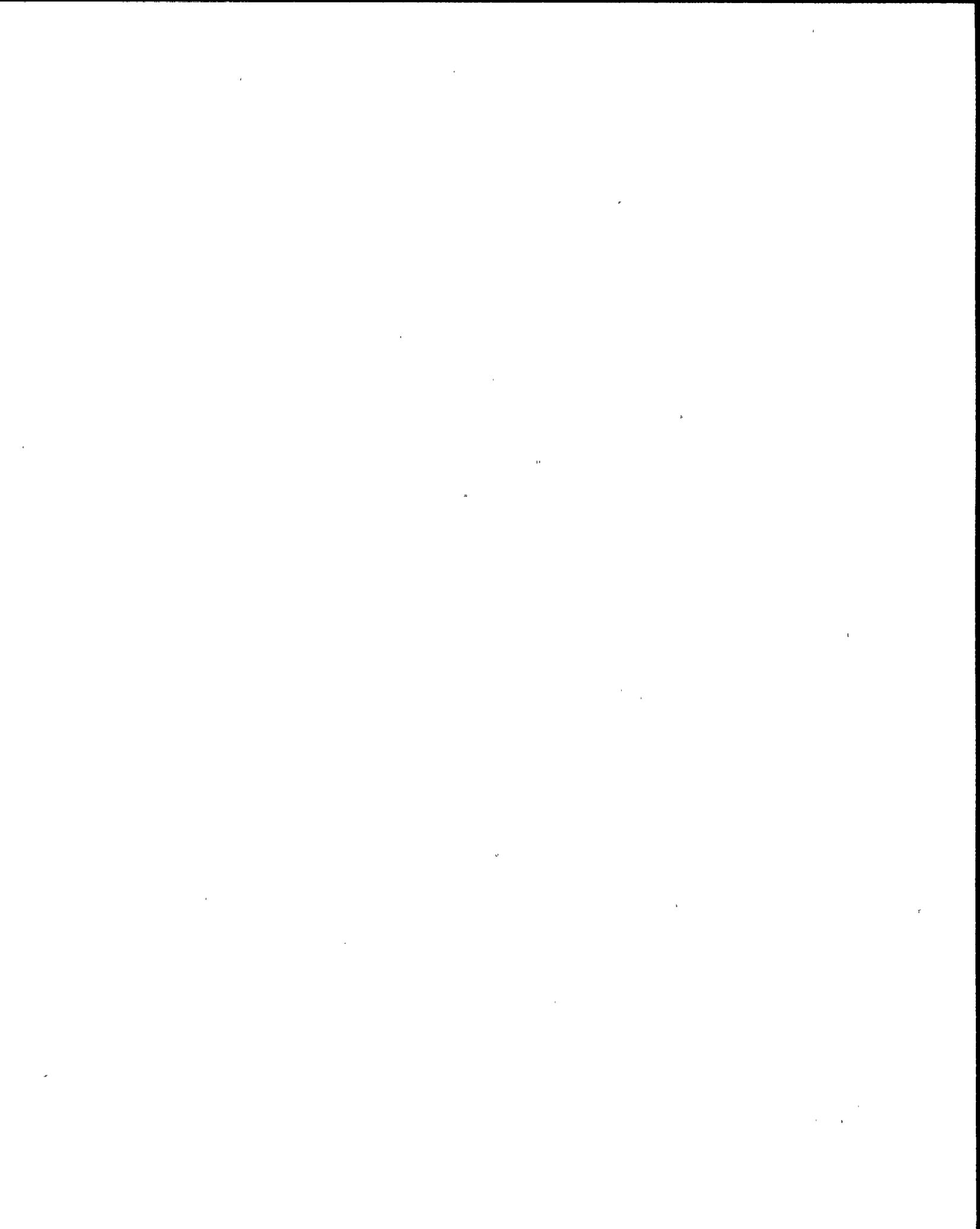
b. (1.00)

REFERENCE:

Ginna: Q 0 RIC12C.01.01  
Ginna: LP-RIC12C EO 1.1

KA:000057A219 4.0/4.3

000057A219 ..(KA's)



ANSWER: 076 (1.00)

d. (1.00)

REFERENCE:

Ginna: Q 2 RMC09C.99.01  
Ginna: LP-RMC 09C EO 1.3

KA:000074K102 4.6/4.8

000074K102 ..(KA's)

ANSWER: 077 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-RAP57T Question 5.1  
Ginna: LP-RAP57T EO 5.0

KA:000001K206 3.0/3.1

000001K206 ..(KA's)

ANSWER: 078 (1.00)

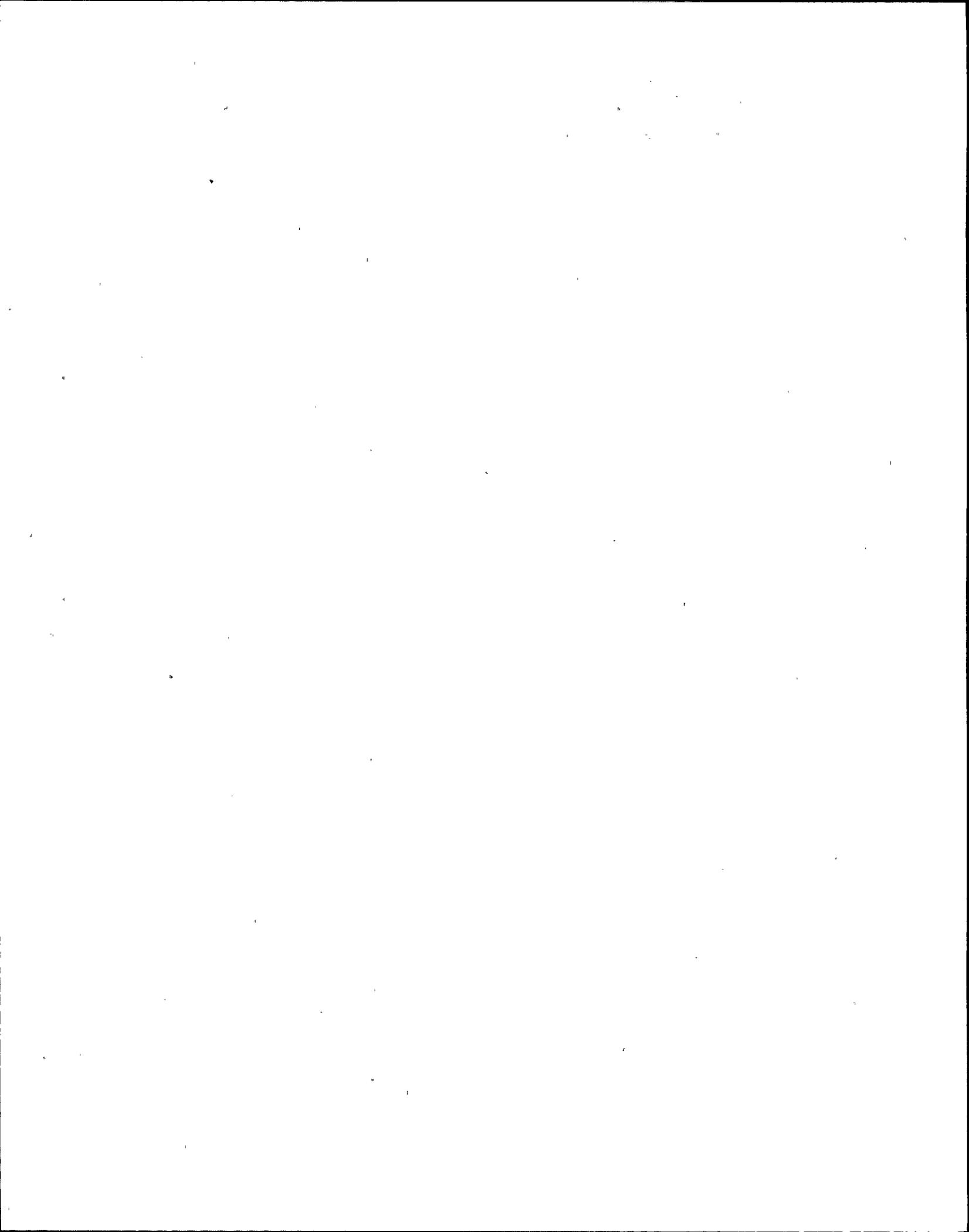
a. (1.00)

REFERENCE:

Ginna: LP-RAP21C P. 3  
Ginna: LP-RAP21C EO 1.3(C)

KA:000003K102 3.1/3.4

000003K102 ..(KA's)



ANSWER: 079 (1.00)

d. (1.00)

REFERENCE:

Ginna: E-0 Step 1  
Ginna: LP-REP00C EO 1.4

KA:000007A202 4.1/4.3

000007A202 ..(KA's)

ANSWER: 080 (1.00)

a. (1.00)

REFERENCE:

Ginna: Attachment NC  
Ginna: LP-RHT11C EO 1.6(C)

KA:000009K101

000009K101 ..(KA's)

ANSWER: 081 (1.00)

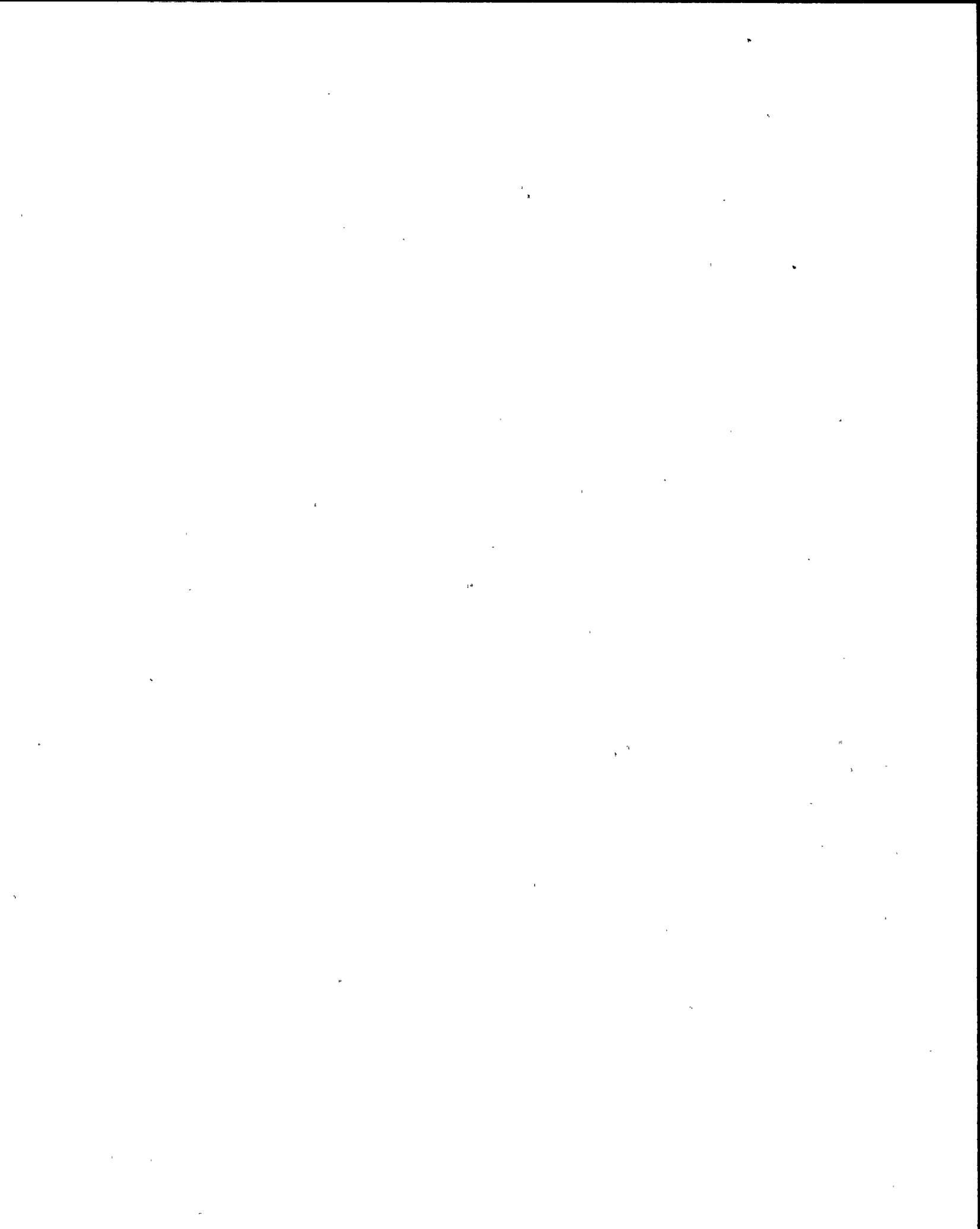
d. (1.00)

REFERENCE:

Ginna: E-1 Step 1  
Ginna: LP-REP03C EO 1.2, 1.3

KA:000011A103 4.0/4.0

000011A103 ..(KA's)



ANSWER: ,082 (1.00)

c. (1.00)

REFERENCE:

Ginna: ER-CVCS.1 Par.2.0  
Ginna:

KA:000022G011 3.3/3.6

000022G011 ..(KA's)

ANSWER: 083 (1.00)

b. (1.00)

REFERENCE:

Ginna: P+ID 33013 - 1247  
Ginna: LP-R3801C EO 2.1

KA:000025K301 3.1/3.4

000025K301 ..(KA's)

ANSWER: 084 (1.00)

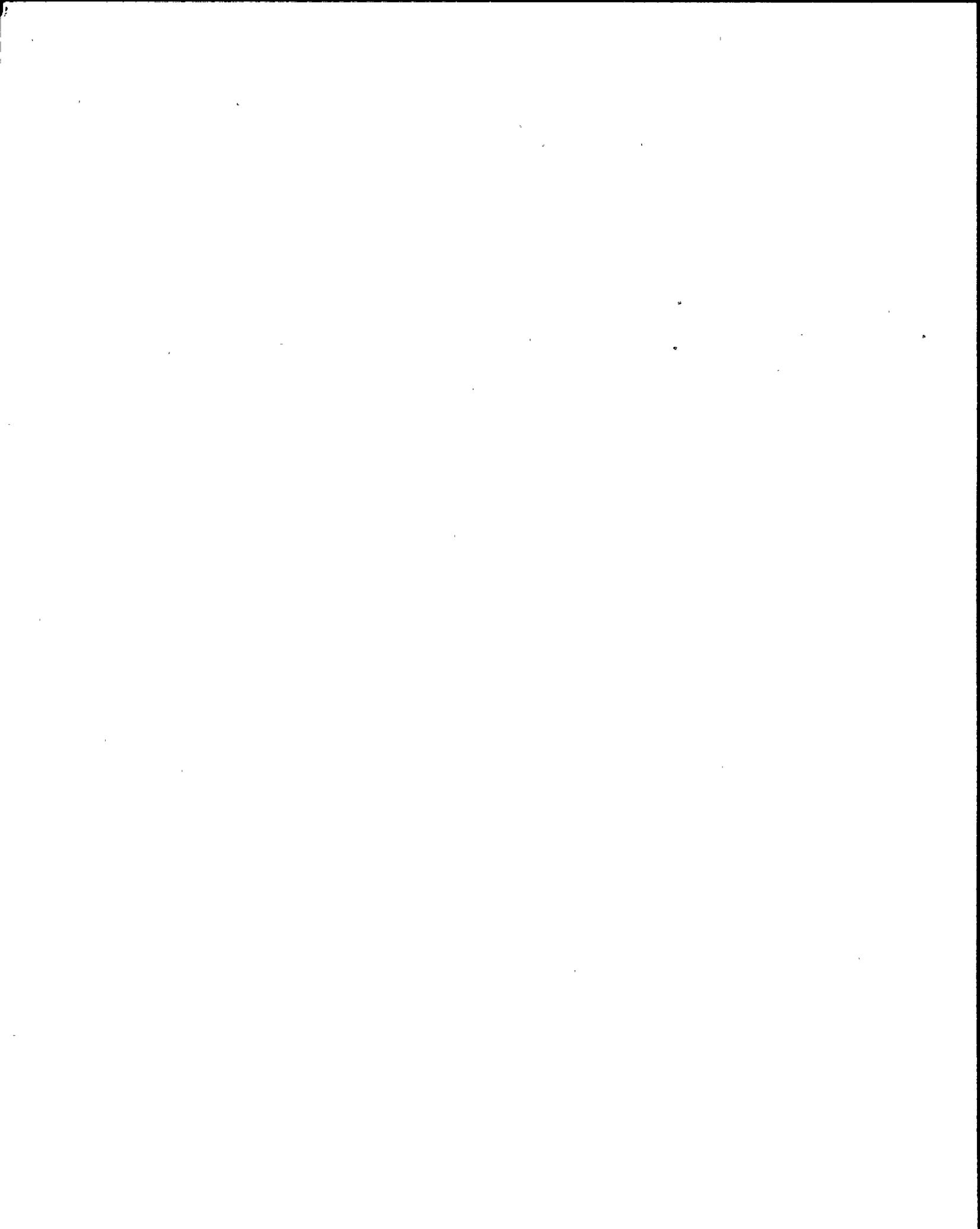
a. (1.00)

REFERENCE:

Ginna: FR-S.1  
Ginna: LP-RFRS1C EO 1.3

KA:000029G010 4.5/4.5

000029G010 ..(KA's)



ANSWER: . 085 (1.00)

d. (1.00)

REFERENCE:

Ginna: LER 90-003

Ginna: LP-R3301C EO 3.6.a

KA:000032K101 2.5/3.1

000032K101 ..(KA's)

ANSWER: 086 (1.00)

b. (1.00)

REFERENCE:

Ginna: O-6.10 and T/S

Ginna: LP-ROP60T EO 4.0 C

KA:000037A210 3.2/4.1

000037A210 ..(KA's)

ANSWER: 087 (1.00)

c., b. (1.00) *See facility comments*

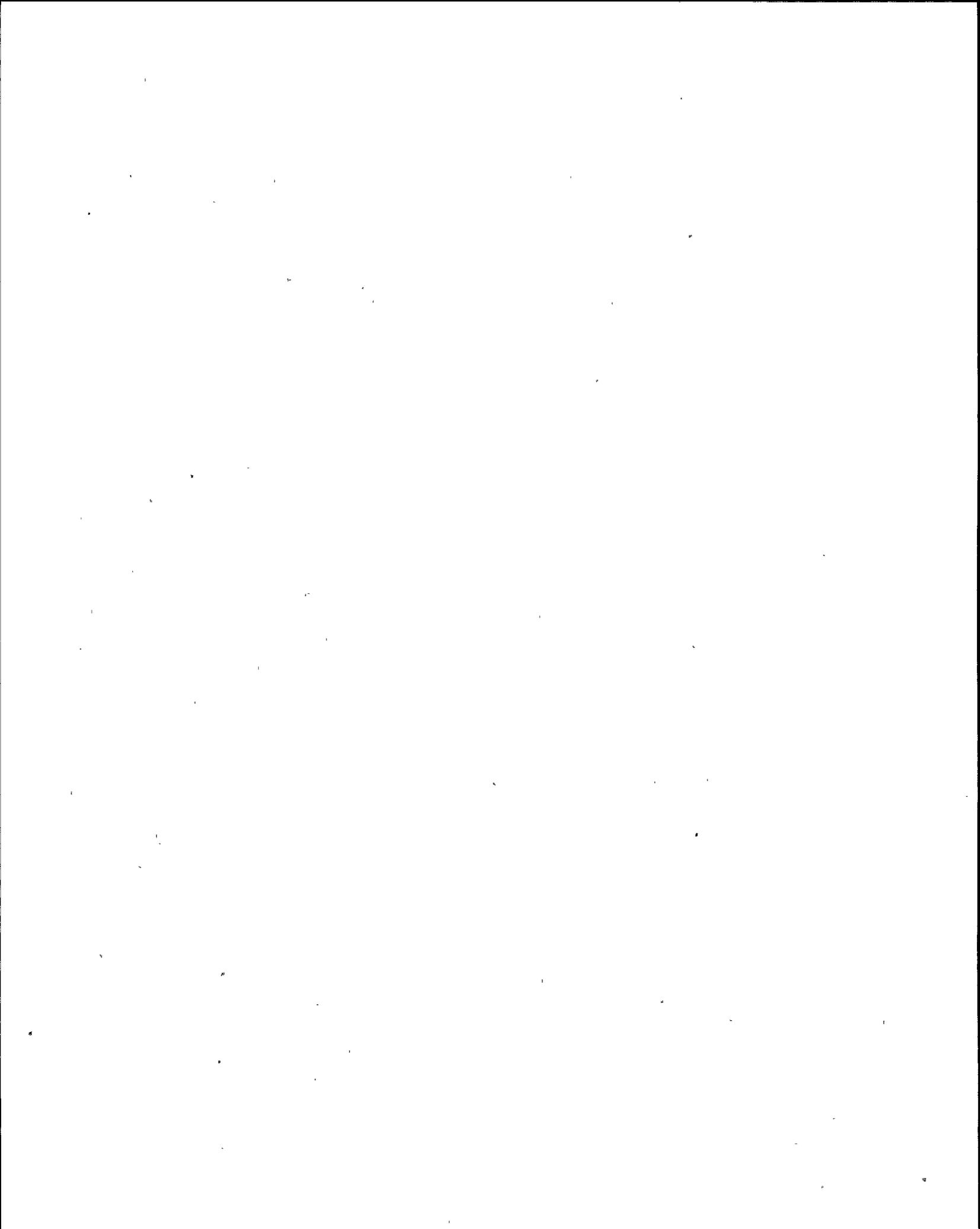
REFERENCE:

Ginna: E-3 Step 3.e

Ginna: LP-REC31C EO 1.1

KA:000038G011 4.2/4.3

000038G011 ..(KA's)



ANSWER: 088 (1.00)

a. (1.00)

REFERENCE:

Ginna: AP-FW.1 Step 4  
Ginna: LP-RAP09C EO 2.1 (C)

KA:000054K304 4.4/4.6

000054K304 ..(KA's)

ANSWER: 089 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R3901C P. 5  
Ginna: LP-R3901C EO 4.1

KA:000059A201 3.2/3.5

000059A201 ..(KA's)

ANSWER: 090 (1.00)

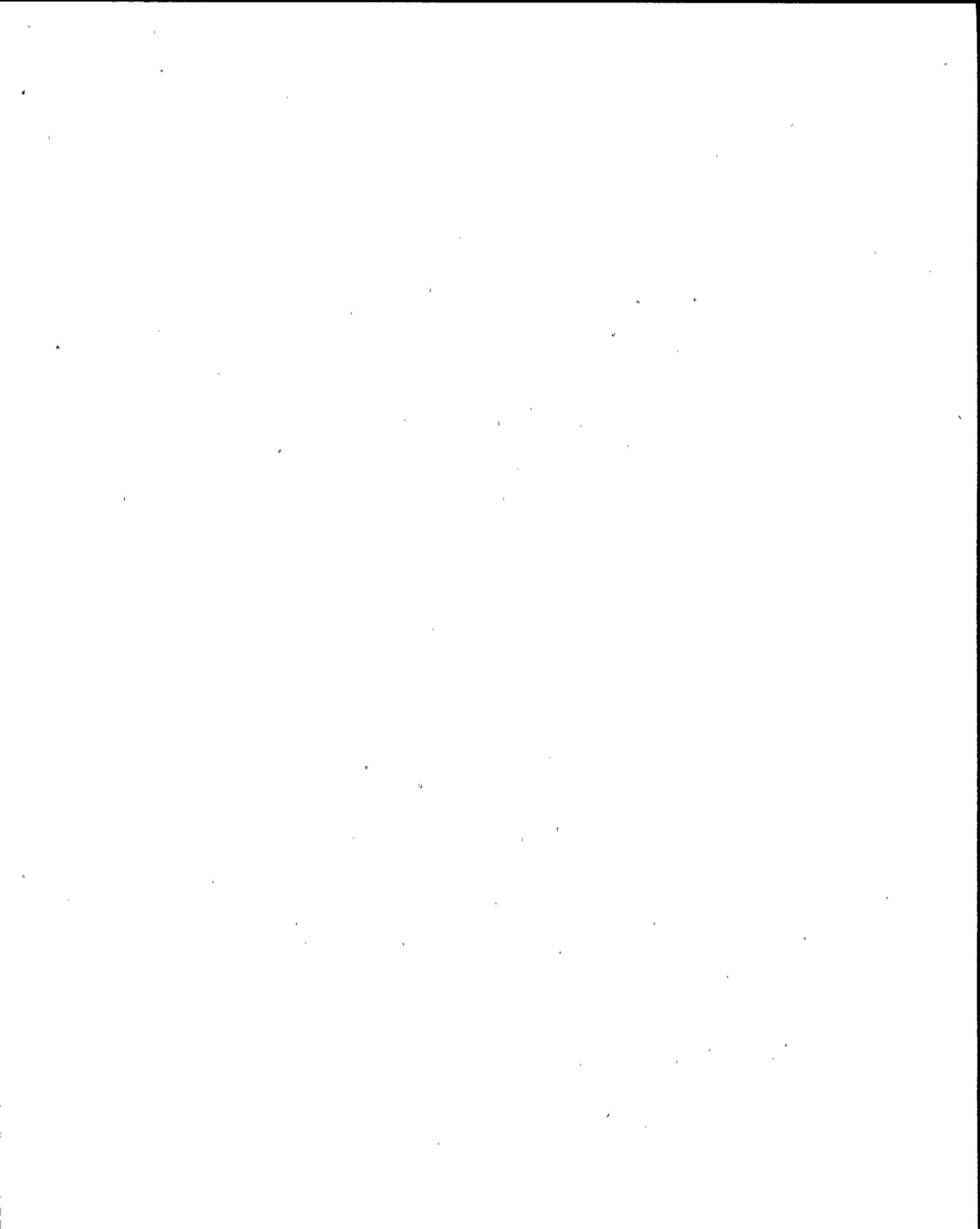
d. (1.00)

REFERENCE:

Ginna: P-9 Par. 2.1.4  
Ginna: LP-R3901C EO 2.5

KA:000061G007 2.9/2.9

000061G007 ..(KA's)



ANSWER: 091 (1.00)

d. (1.00)

REFERENCE:

Ginna: E-0 Step 2  
Ginna: LP-REP00C EO 1.4

KA:000007A107 4.3/4.3

000007A107 ..(KA's)

ANSWER: 092 (1.00)

c. (1.00)

REFERENCE:

Ginna: RGE-VNT-2  
Ginna: LP-R2201C EO 2.4

KA:000036K303 3.7/4.1

000036K303 ..(KA's)

ANSWER: 093 (1.00)

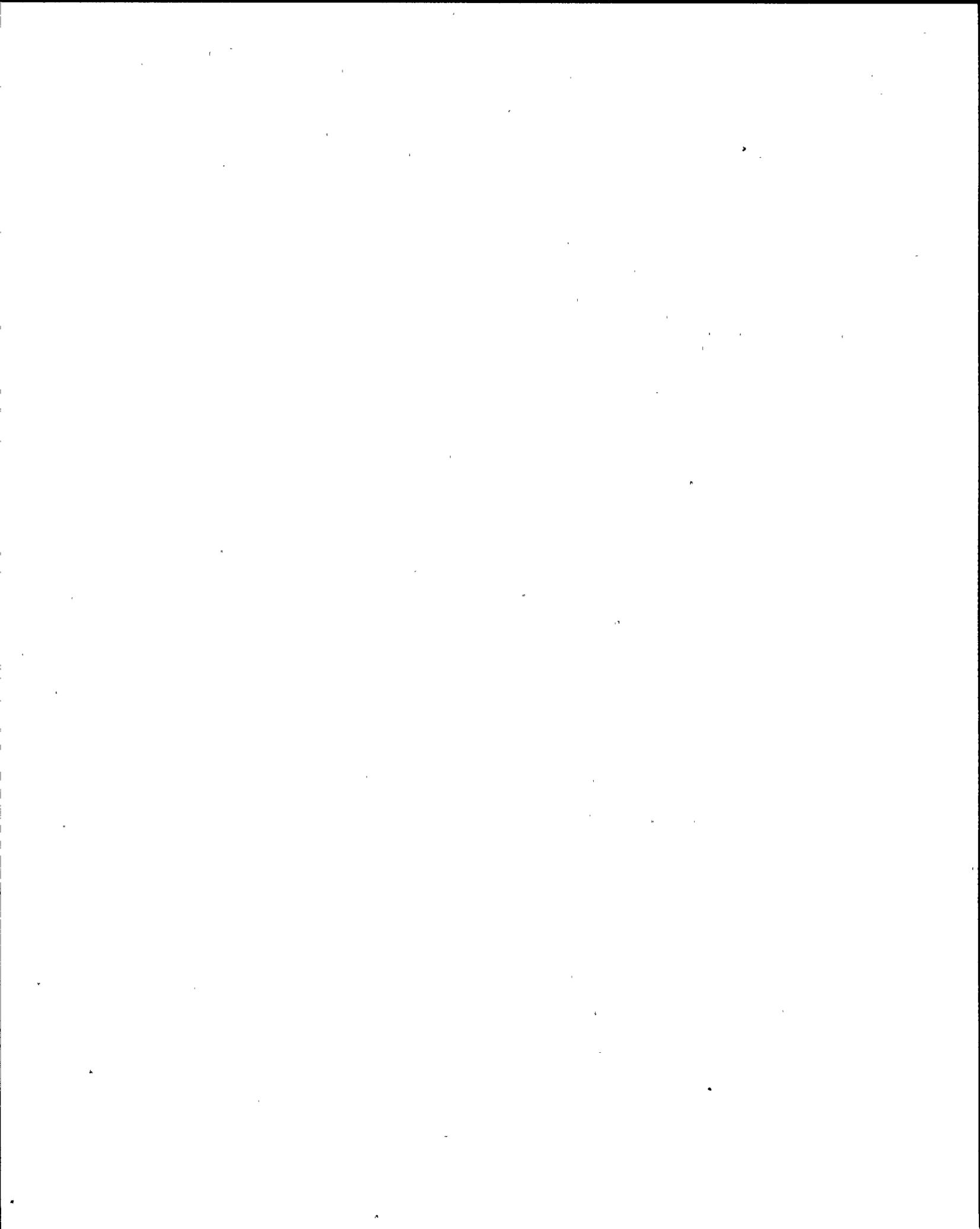
b. (1.00)

REFERENCE:

Ginna: AP-IA.1 Step 1  
Ginna: LP-RAP10C EO 2.1

KA:000065A206

000065A206 ..(KA's)



ANSWER: 094 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-ELEC.1 Step 19  
Ginna:

KA:000056K101 3.7/4.2

000056K101 ..(KA's)

ANSWER: 095 (1.00)

c. (1.00)

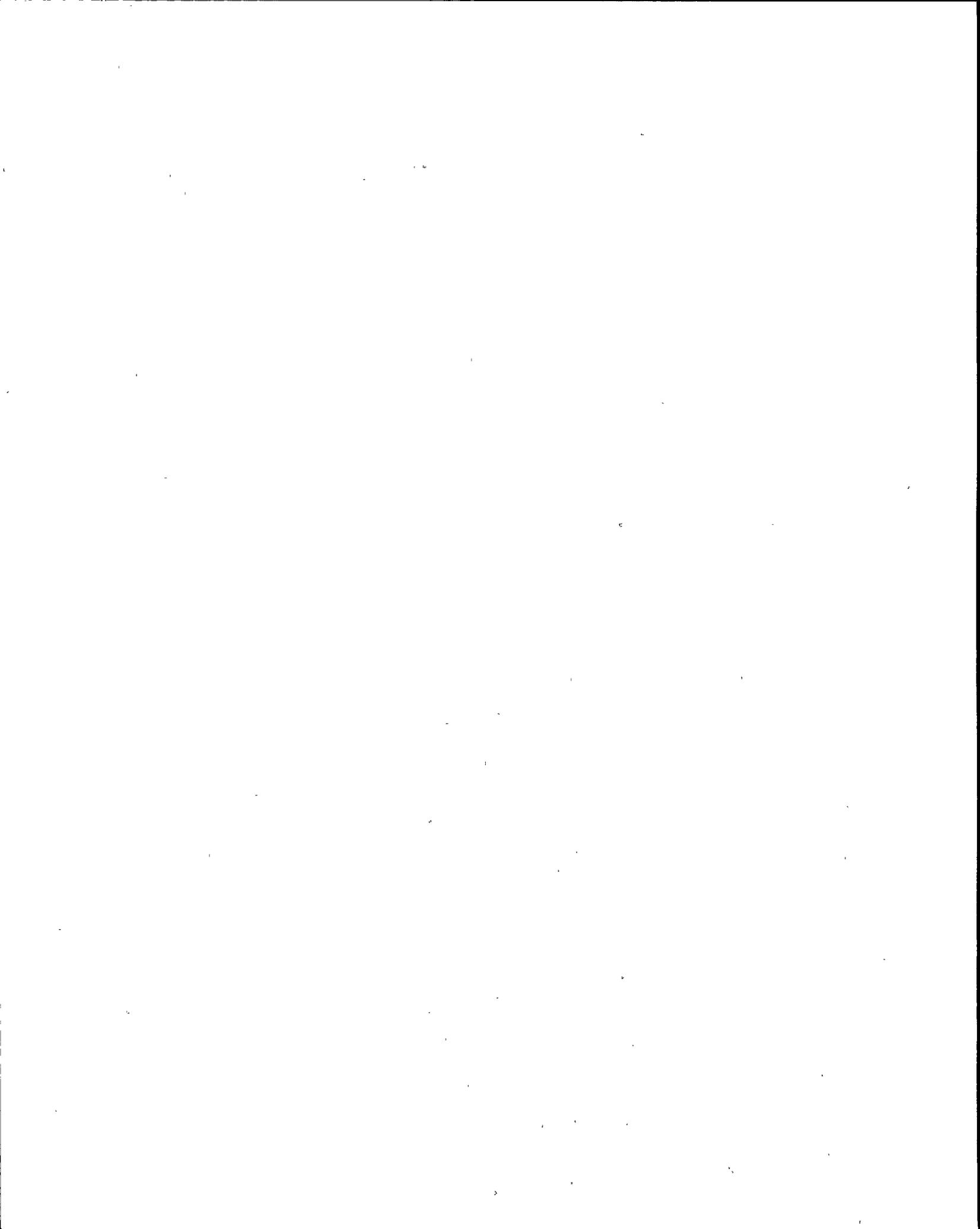
REFERENCE:

Ginna: A-1:13 Par. III. D.  
Ginna: LP-RAD62T EO 5.0, 6.0

KA:194001K103 2.8/3.4

194001K103 ..(KA's)

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

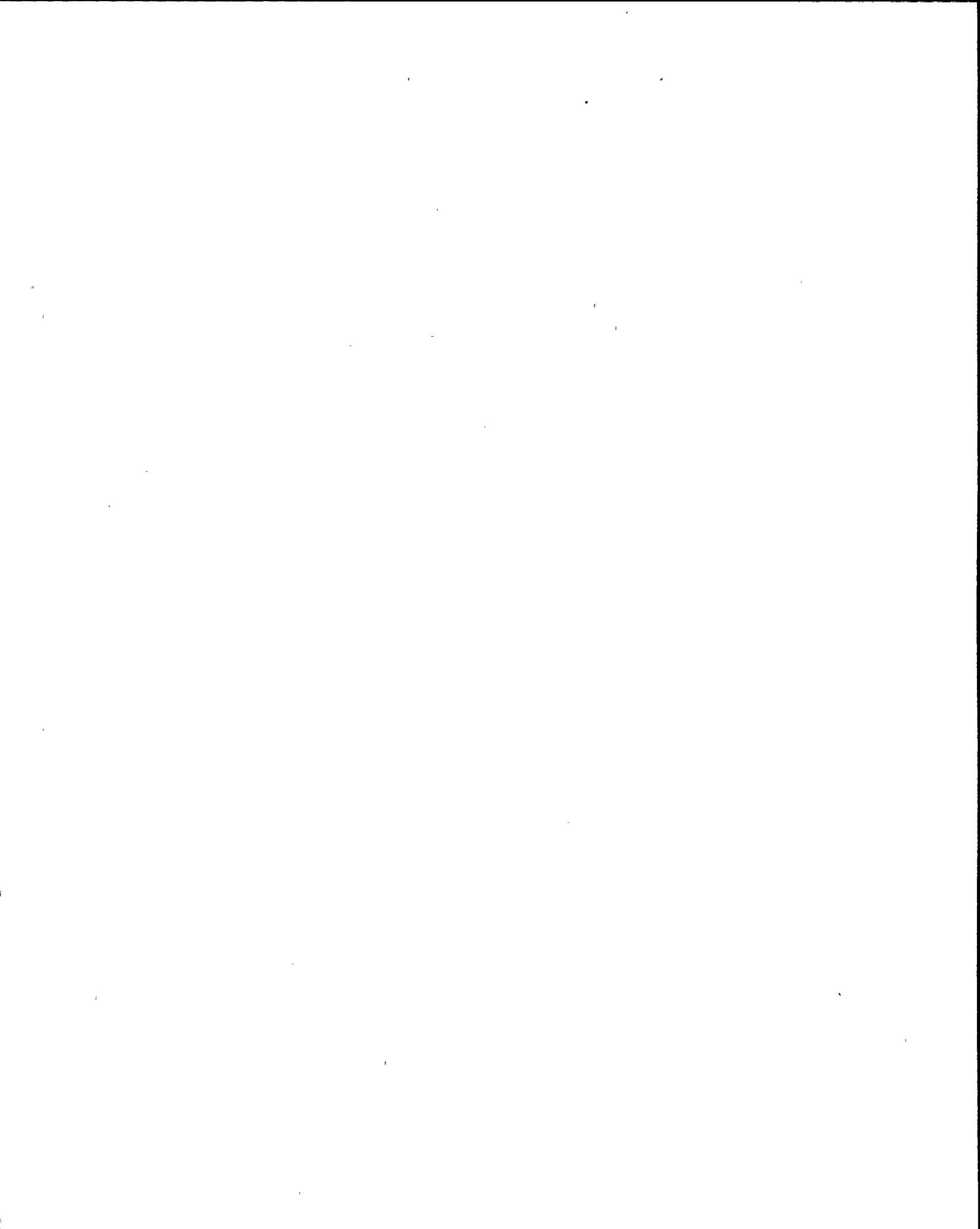


A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice)

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

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 001 | a | b | c | d | _____ |
| 002 | a | b | c | d | _____ |
| 003 | a | b | c | d | _____ |
| 004 | a | b | c | d | _____ |
| 005 | a | b | c | d | _____ |
| 006 | a | b | c | d | _____ |
| 007 | a | b | c | d | _____ |
| 008 | a | b | c | d | _____ |
| 009 | a | b | c | d | _____ |
| 010 | a | b | c | d | _____ |
| 011 | a | b | c | d | _____ |
| 012 | a | b | c | d | _____ |
| 013 | a | b | c | d | _____ |
| 014 | a | b | c | d | _____ |
| 015 | a | b | c | d | _____ |
| 016 | a | b | c | d | _____ |
| 017 | a | b | c | d | _____ |
| 018 | a | b | c | d | _____ |
| 019 | a | b | c | d | _____ |



A N S W E R S H E E T

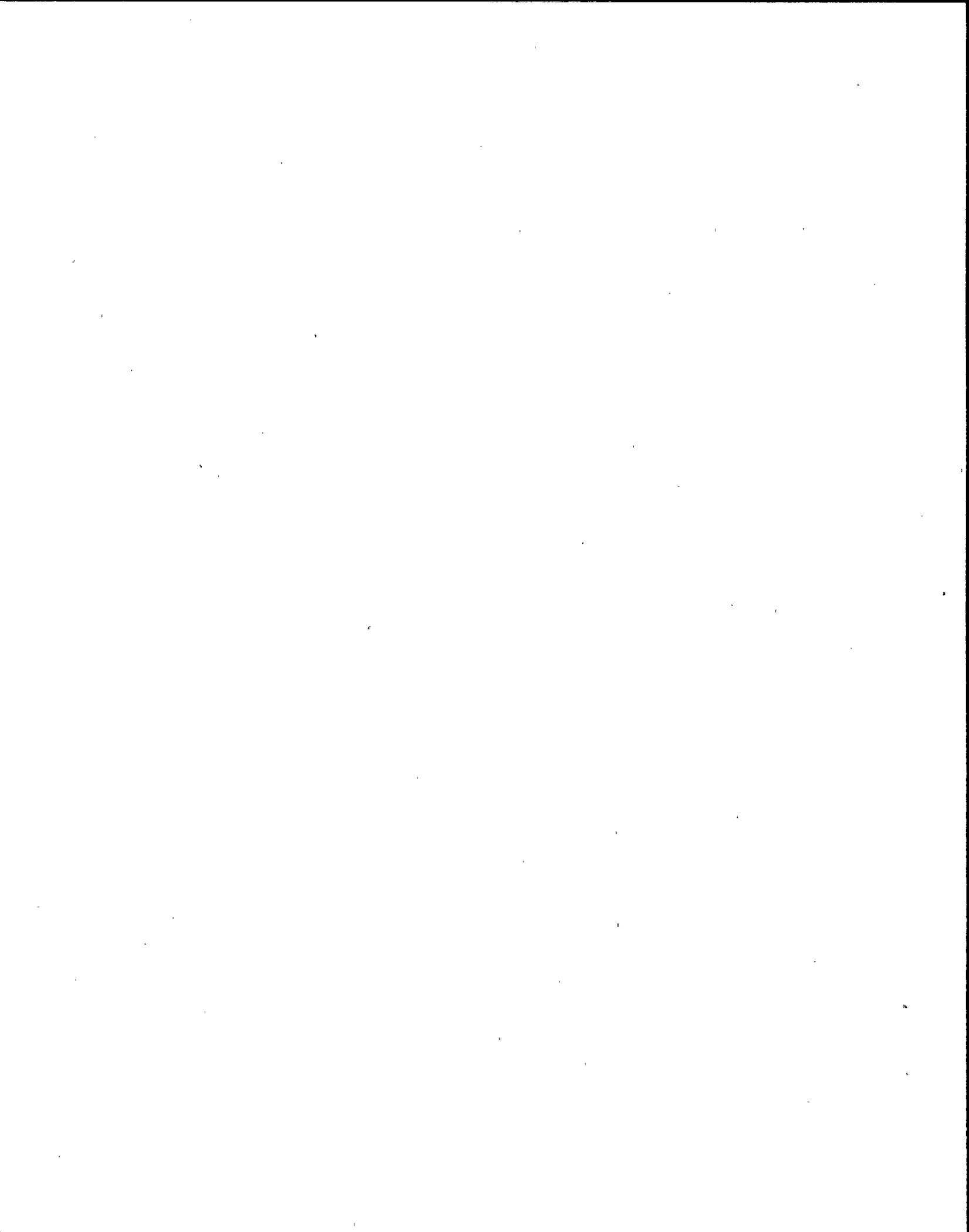
Multiple Choice (Circle or X your choice)

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

020 match with selected number in the blank

- a \_\_\_\_\_
- b \_\_\_\_\_
- c \_\_\_\_\_
- d \_\_\_\_\_
- e \_\_\_\_\_
- f \_\_\_\_\_

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 021 | a | b | c | d | _____ |
| 022 | a | b | c | d | _____ |
| 023 | a | b | c | d | _____ |
| 024 | a | b | c | d | _____ |
| 025 | a | b | c | d | _____ |
| 026 | a | b | c | d | _____ |
| 027 | a | b | c | d | _____ |
| 028 | a | b | c | d | _____ |
| 029 | a | b | c | d | _____ |
| 030 | a | b | c | d | _____ |
| 031 | a | b | c | d | _____ |
| 032 | a | b | c | d | _____ |
| 033 | a | b | c | d | _____ |
| 034 | a | b | c | d | _____ |
| 035 | a | b | c | d | _____ |
| 036 | a | b | c | d | _____ |
| 037 | a | b | c | d | _____ |



A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

038 a b c d \_\_\_\_\_

039 a b c d \_\_\_\_\_

040 a b c d \_\_\_\_\_

041 match with selected number in the blank

a \_\_\_\_\_

b \_\_\_\_\_

c \_\_\_\_\_

d \_\_\_\_\_

042 a b c d \_\_\_\_\_

043 a b c d \_\_\_\_\_

044 a b c d \_\_\_\_\_

045 a b c d \_\_\_\_\_

046 a b c d \_\_\_\_\_

047 a b c d \_\_\_\_\_

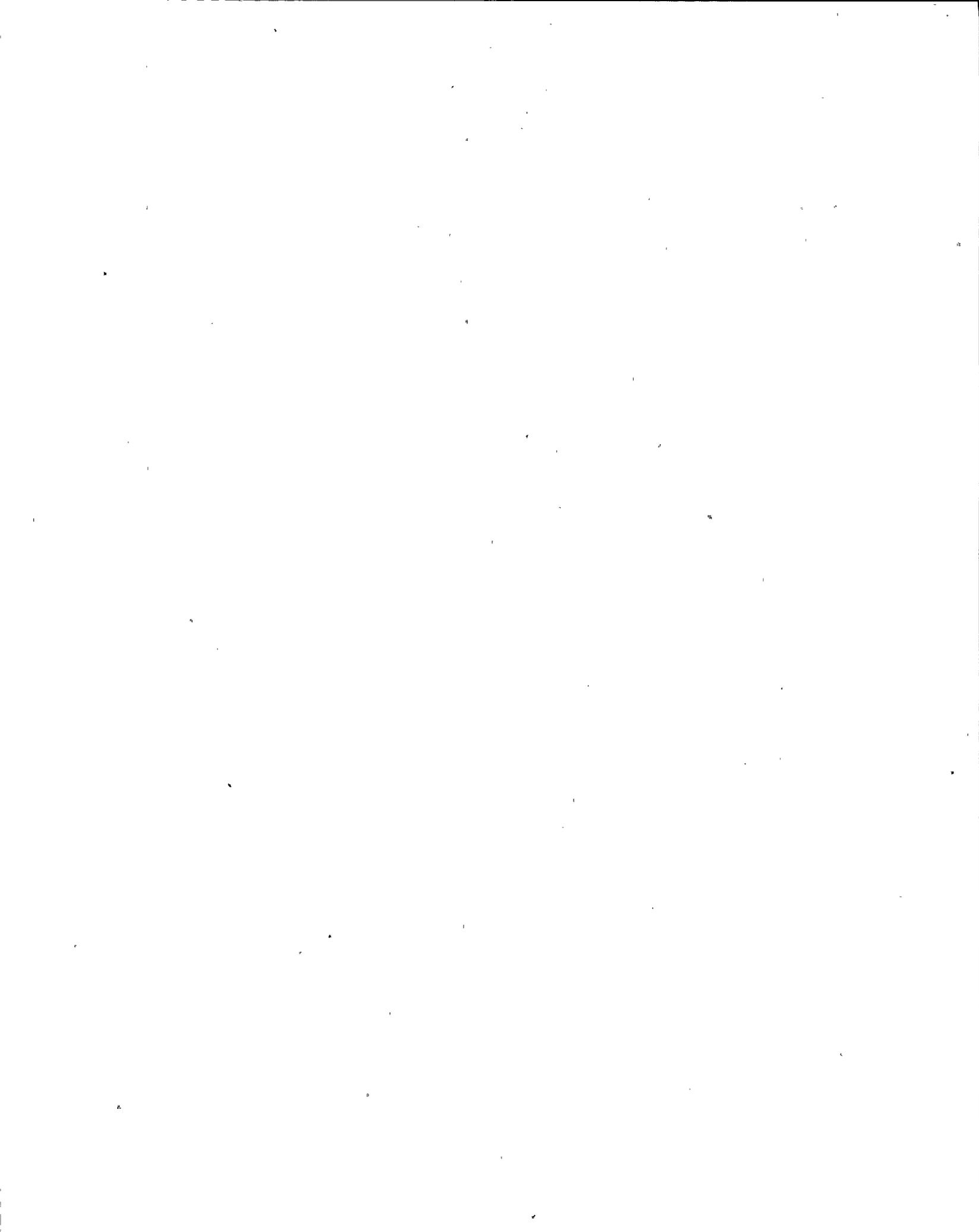
048 a b c d \_\_\_\_\_

049 a b c d \_\_\_\_\_

050 a b c d \_\_\_\_\_

051 a b c d \_\_\_\_\_

052 a b c d \_\_\_\_\_



A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice)

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

053    match with selected number in the blank

a    \_\_\_\_\_

b    \_\_\_\_\_

c    \_\_\_\_\_

d    \_\_\_\_\_

e    \_\_\_\_\_

f    \_\_\_\_\_

054        a        b        c        d        \_\_\_\_\_

055        a        b        c        d        \_\_\_\_\_

056        a        b        c        d        \_\_\_\_\_

057        a        b        c        d        \_\_\_\_\_

058        a        b        c        d        \_\_\_\_\_

059        a        b        c        d        \_\_\_\_\_

060        a        b        c        d        \_\_\_\_\_

061        a        b        c        d        \_\_\_\_\_

062        a        b        c        d        \_\_\_\_\_

063        a        b        c        d        \_\_\_\_\_

064        a        b        c        d        \_\_\_\_\_

065        a        b        c        d        \_\_\_\_\_

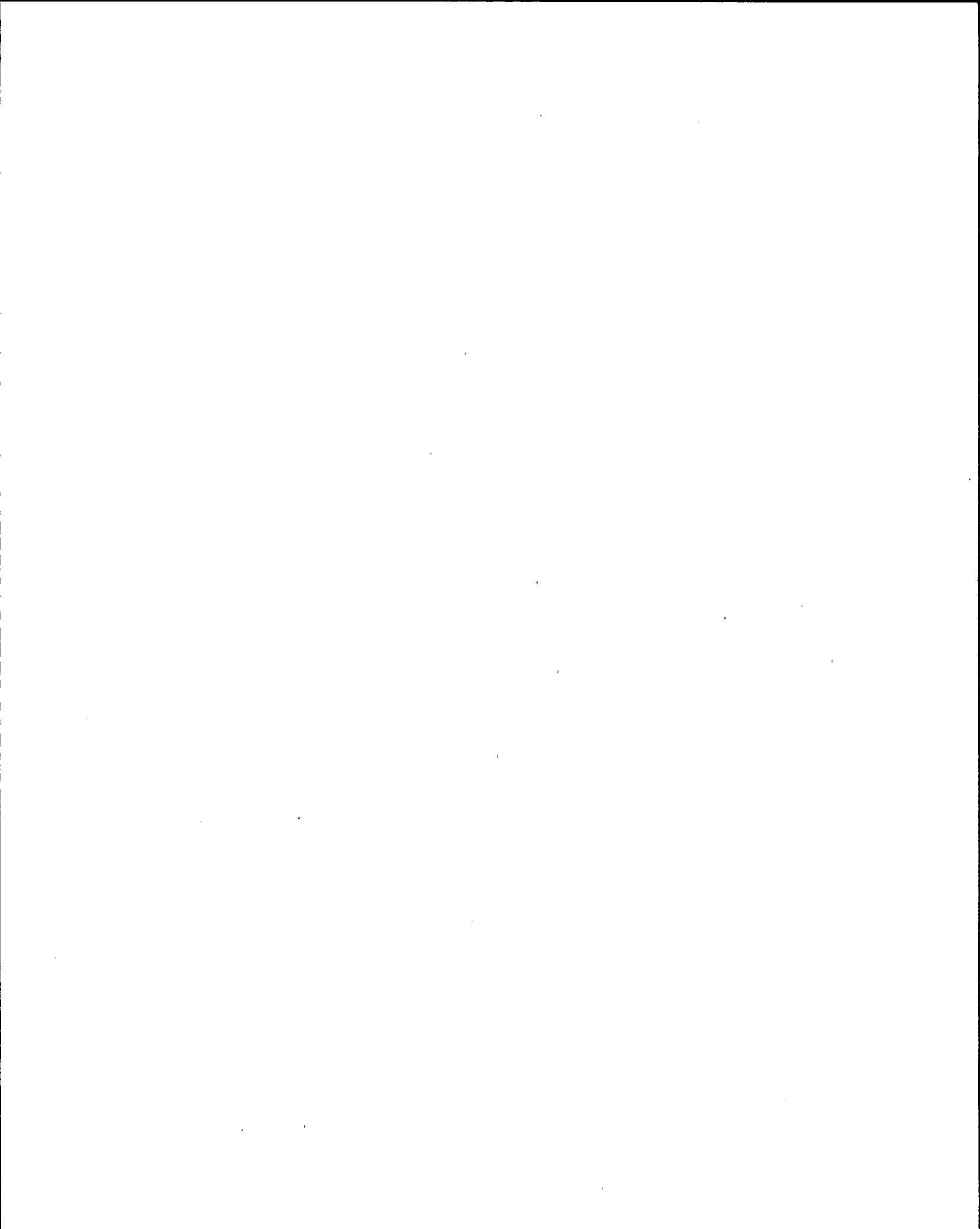
066        a        b        c        d        \_\_\_\_\_

067        a        b        c        d        \_\_\_\_\_

068        a        b        c        d        \_\_\_\_\_

069        a        b        c        d        \_\_\_\_\_

070        a        b        c        d        \_\_\_\_\_



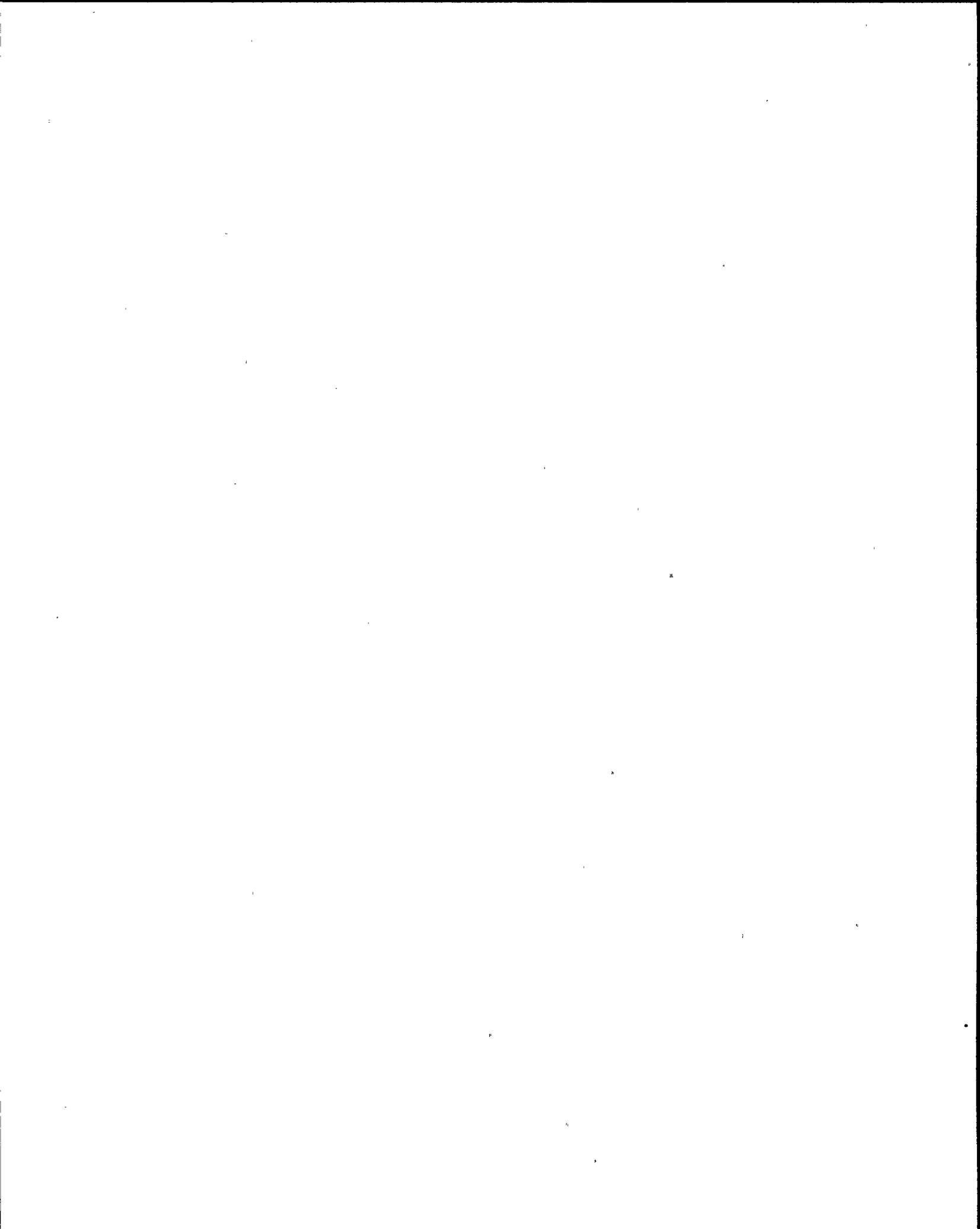
A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

- 071 a b c d \_\_\_\_\_
- 072 a b c d \_\_\_\_\_
- 073 a b c d \_\_\_\_\_
- 074 a b c d \_\_\_\_\_
- 075 a b c d \_\_\_\_\_
- 076 a b c d \_\_\_\_\_
- 077 a b c d \_\_\_\_\_
- 078 a b c d \_\_\_\_\_
- 079 a b c d \_\_\_\_\_
- 080 a b c d \_\_\_\_\_
- 081 a b c d \_\_\_\_\_
- 082 a b c d \_\_\_\_\_
- 083 a b c d \_\_\_\_\_
- 084 a b c d \_\_\_\_\_
- 085 a b c d \_\_\_\_\_
- 086 a b c d \_\_\_\_\_
- 087 a b c d \_\_\_\_\_
- 088 a b c d \_\_\_\_\_
- 089 a b c d \_\_\_\_\_
- 090 a b c d \_\_\_\_\_
- 091 a b c d \_\_\_\_\_
- 092 a b c d \_\_\_\_\_
- 093 a b c d \_\_\_\_\_
- 094 a b c d \_\_\_\_\_
- 095 a b c d \_\_\_\_\_

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



## A N S W E R   K E Y

001        c

002        a

003        a

004        b

005        c

006        d

007        d

008        d

009        b

010        d

011        d

012        d

013        a

014        b

015        a

016        c

017        c

018        c

019        b

020    match with selected number in the blank

a    4

b    8

c    11

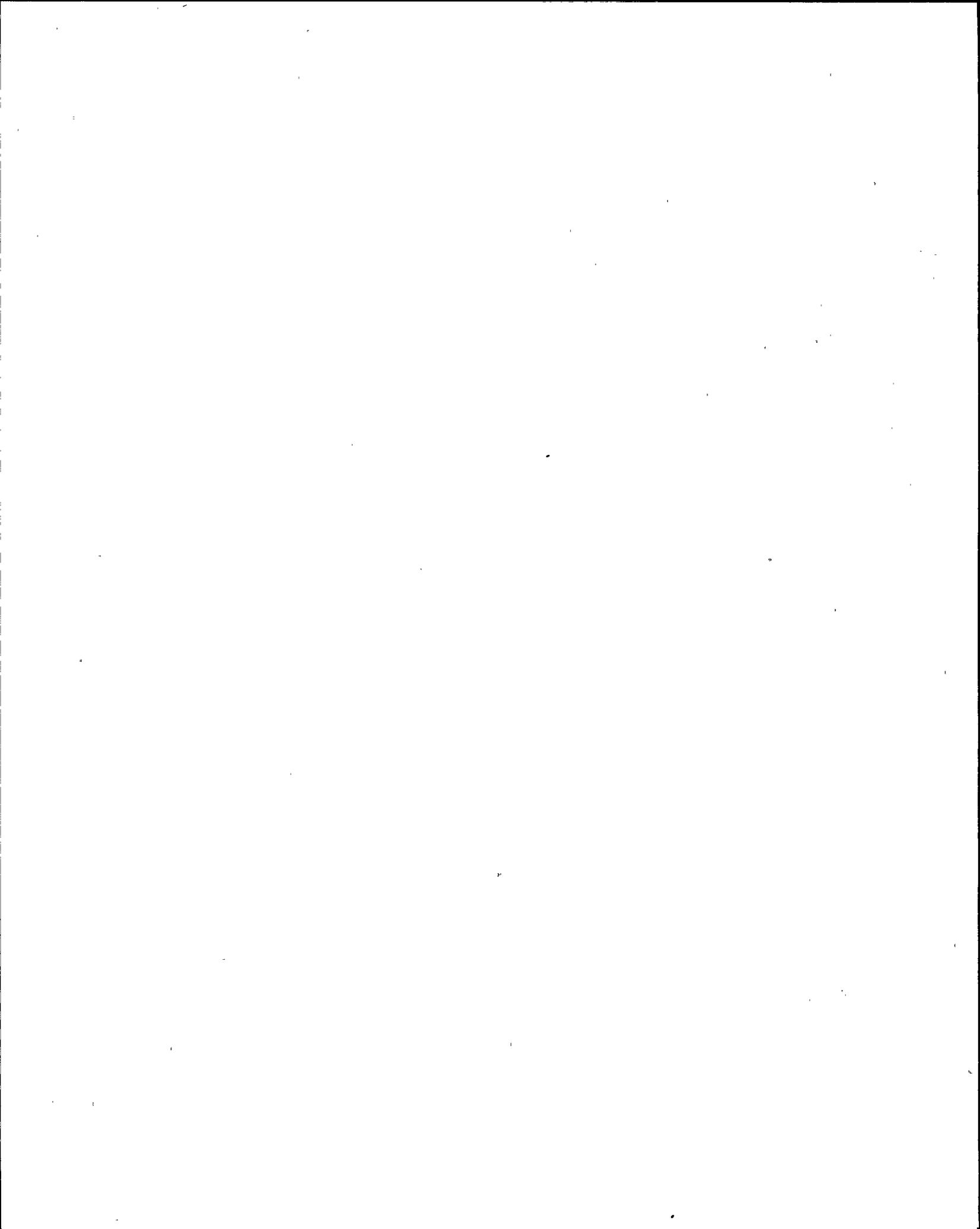
d    9

e    5

f    2

021        c

022        a



023 d

024 c

025 b

026 d

027 b

028 a

029 c

030 a

031 b

032 a

033 c

034 b

035 d

036 b

037 a

038 c

039 d

040 c

041 match with selected number in the blank

a 5

b 3

c 6

d 2

042 b

043 d

044 b

045 b

046 a



## ANSWER KEY

047 d

048 c

049 d

050 b

051 c

052 a

053 match with selected number in the blank

a 5

b 7

c 9

d 1

e 9

f 6

054 b

055 a

056 a

057 a

058 c

059 a

060 b

061 d

062 a

063 b

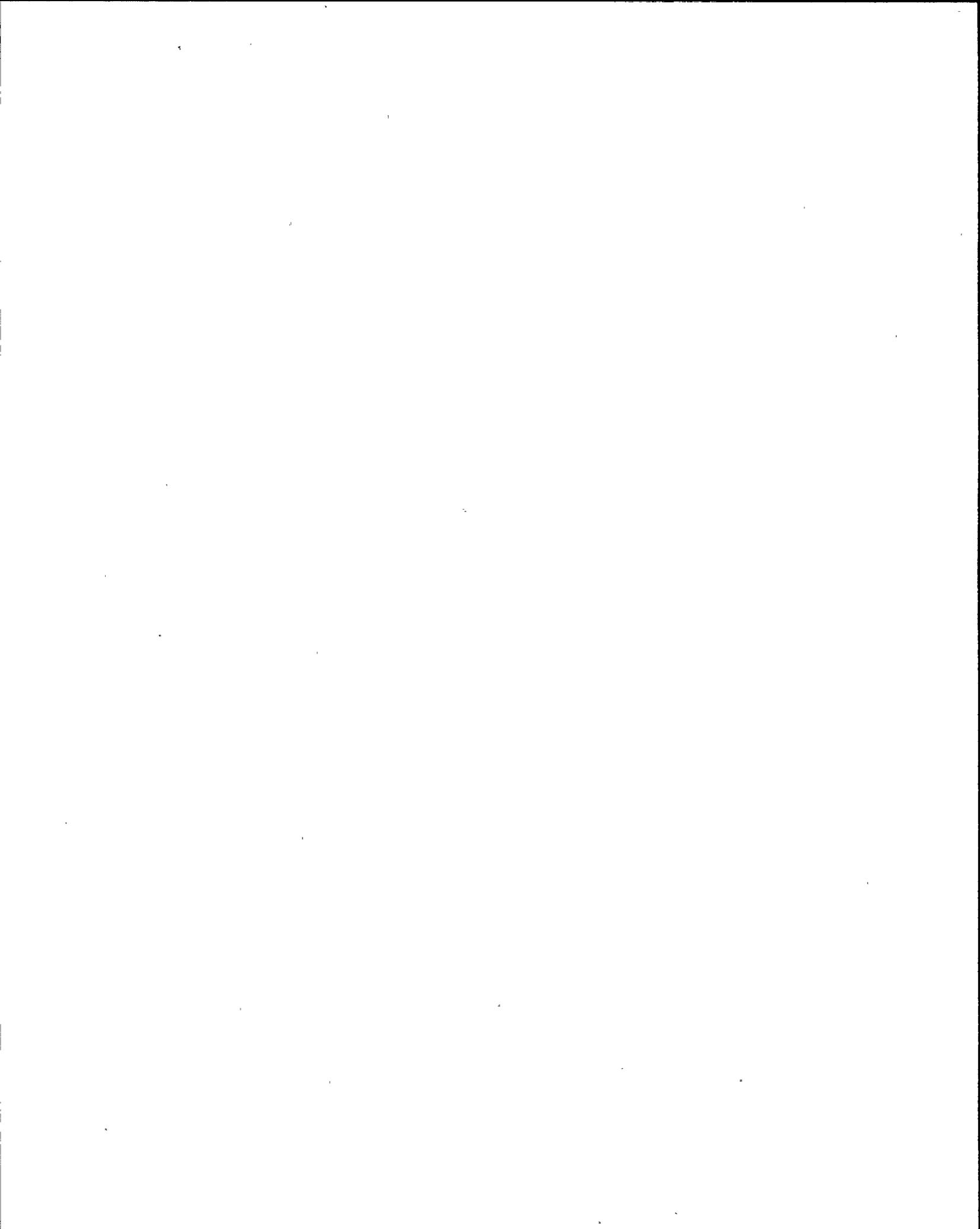
064 d

065 b

066 c

067 c

068 d



A N S W E R   K E Y

069     c

070     d

071     *x d. see facility comments*

072     d

073     a

074     b

075     b

076     d

077     b

078     a

079     d

080     a

081     d

082     c

083     b

084     a

085     d

086     b

087     *c, b. see facility comments*

088     a

089     b

090     d

091     d

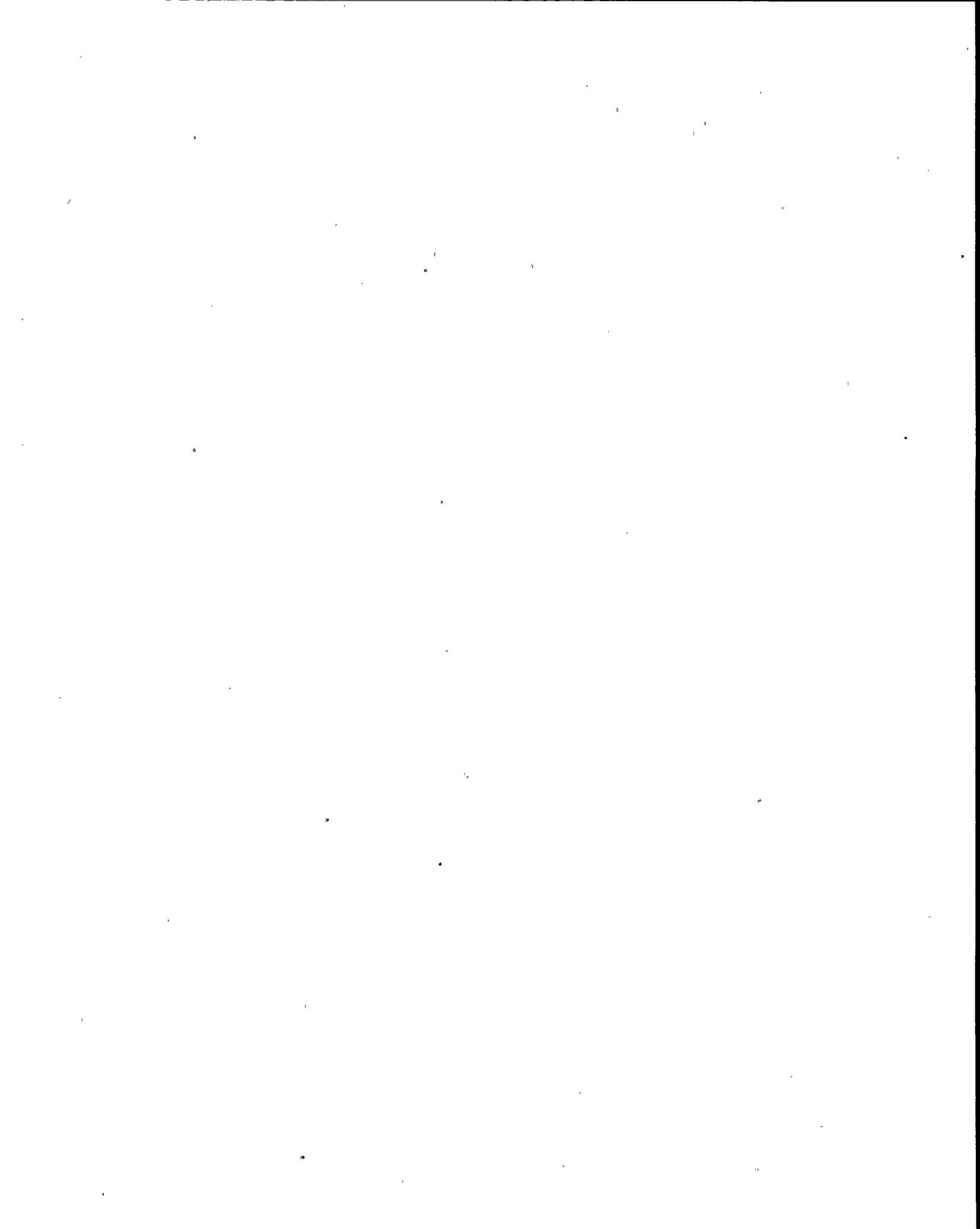
092     c

093     b

094     c

095     c

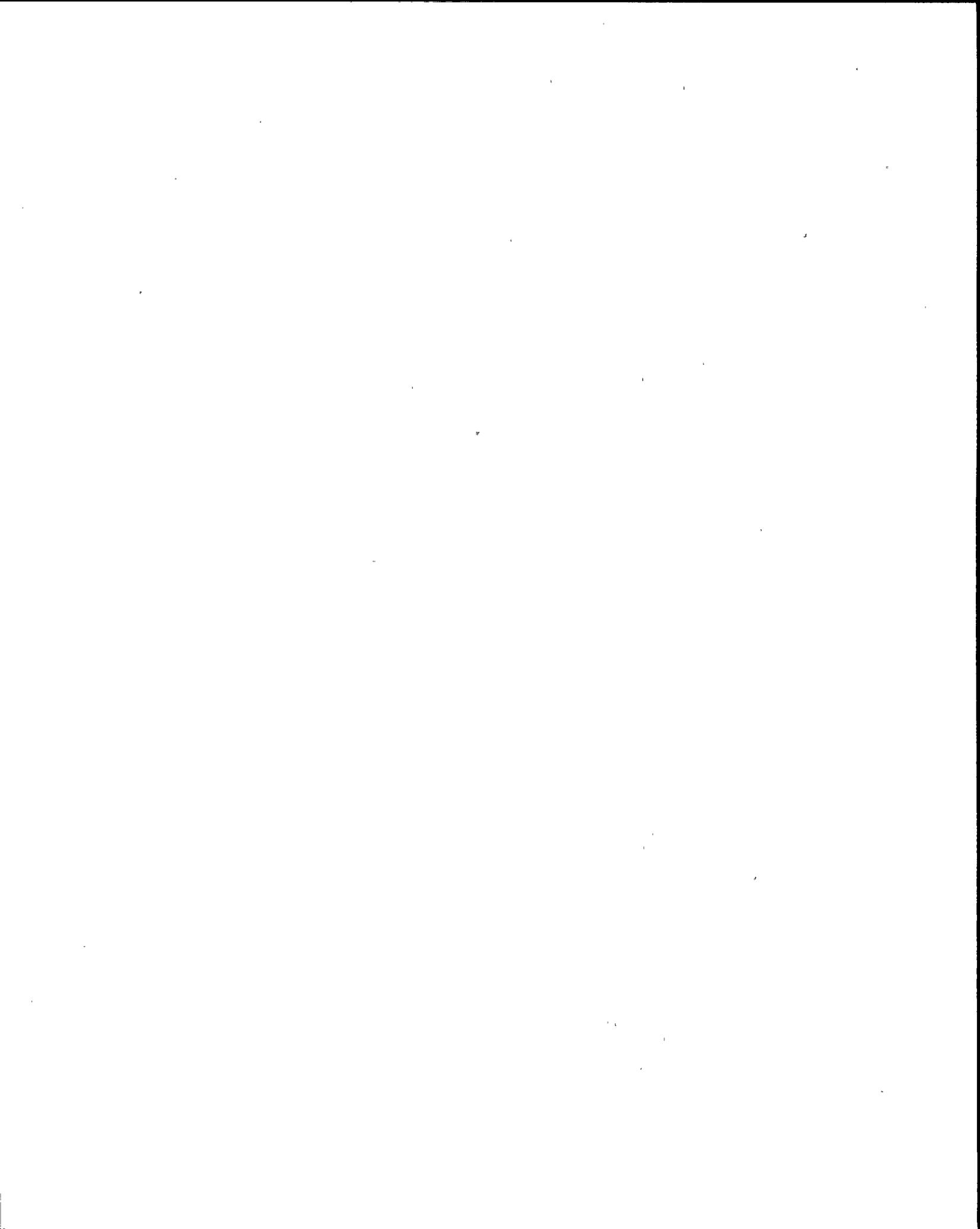
(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)



## TEST CROSS REFERENCE

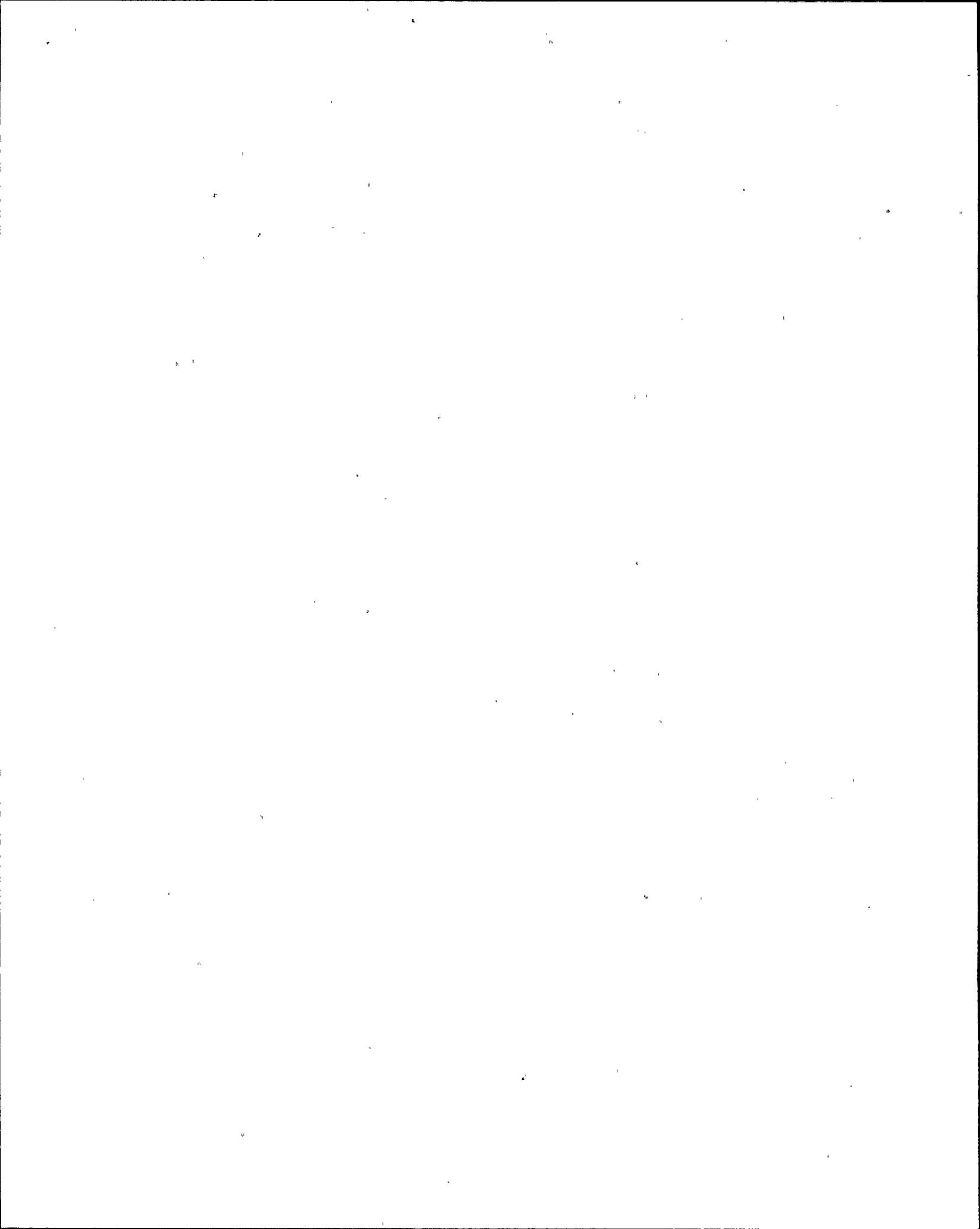
Page 1

<u>QUESTION</u>	<u>VALUE</u>	<u>REFERENCE</u>
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003	1.00	9000003
004	1.00	9000004
005	1.00	9000005
006	1.00	9000006
007	1.00	9000007
008	1.00	9000008
009	1.00	9000009
010	1.00	9000010
011	1.00	9000100
012	1.00	9000103
013	1.00	9000011
014	1.00	9000012
015	1.00	9000013
016	1.00	9000014
017	1.00	9000015
018	1.00	9000016
019	1.00	9000017
020	3.00	9000018
021	1.00	9000019
022	1.00	9000020
023	1.00	9000021
024	1.00	9000022
025	1.00	9000023
026	1.00	9000024
027	1.00	9000025
028	1.00	9000026
029	1.00	9000027
030	1.00	9000028
031	1.00	9000029
032	1.00	9000030
033	1.00	9000031
034	1.00	9000032
035	1.00	9000033
036	1.00	9000034
037	1.00	9000035
038	1.00	9000036
039	1.00	9000037
040	1.00	9000038
041	2.00	9000039
042	1.00	9000040
043	1.00	9000041
044	1.00	9000042
045	1.00	9000043
046	1.00	9000044
047	1.00	9000045
048	1.00	9000046
049	1.00	9000047
050	1.00	9000048
051	1.00	9000049
052	1.00	9000050
053	3.00	9000051



TEST CROSS REFERENCE

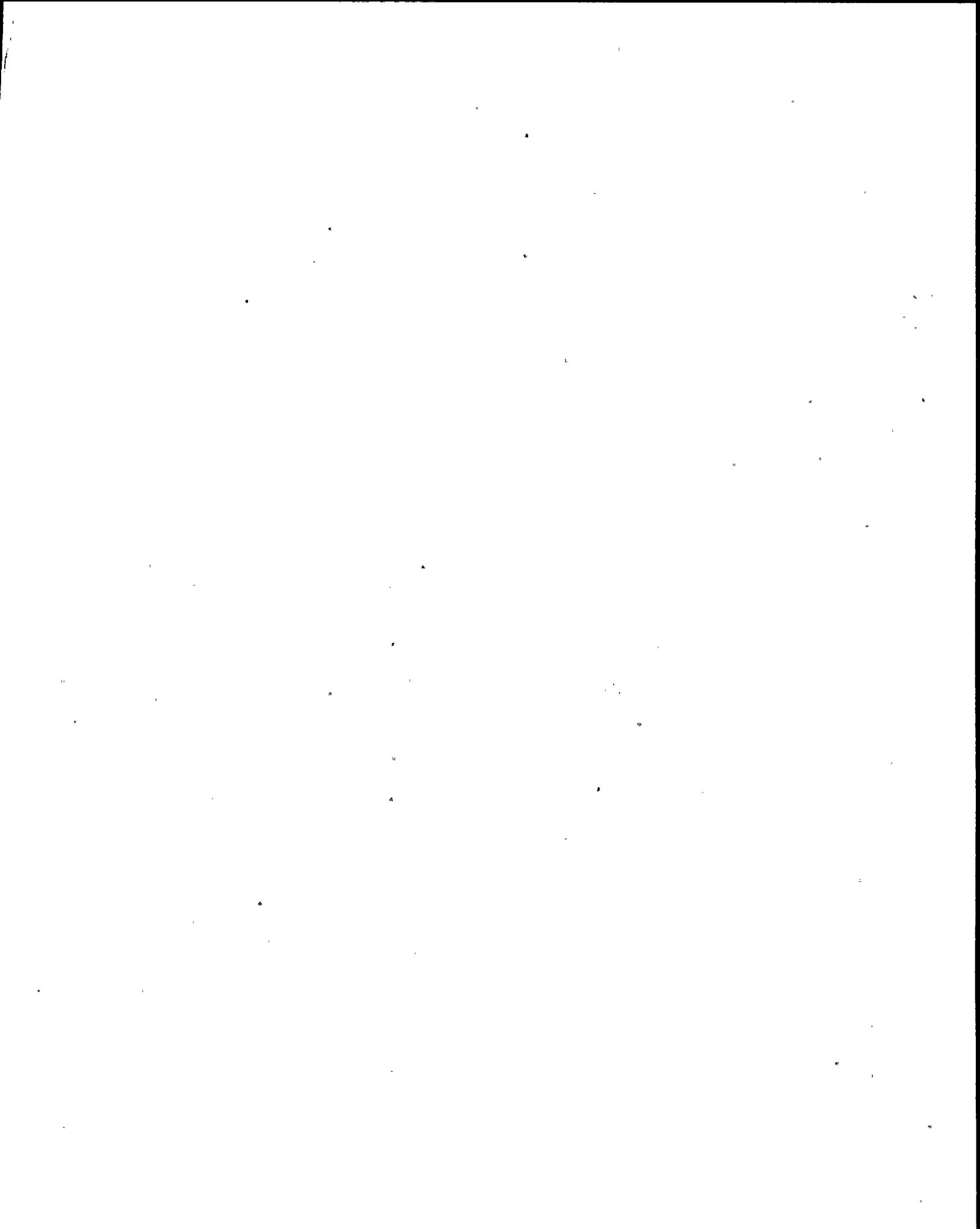
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061	1.00	9000059
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066	1.00	9000065
067	1.00	9000066
068	1.00	9000067
069	1.00	9000068
070	1.00	9000069
071	1.00	9000070
072	1.00	9000071
073	1.00	9000072
074	1.00	9000073
075	1.00	9000074
076	1.00	9000075
077	1.00	9000076
078	1.00	9000077
079	1.00	9000078
080	1.00	9000079
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083	1.00	9000082
084	1.00	9000083
085	1.00	9000084
086	1.00	9000086
087	1.00	9000087
088	1.00	9000088
089	1.00	9000089
090	1.00	9000090
091	1.00	9000091
092	1.00	9000093
093	1.00	9000094
094	1.00	9000095
095	1.00	9000096
-----		
	100.00	
-----		
	100.00	



Attachment 2

Master Senior Reactor Operator Examination

with Answer Key



U. S. NUCLEAR REGULATORY COMMISSION  
SENIOR REACTOR OPERATOR LICENSE EXAMINATION  
REGION 1

FACILITY: Ginna

REACTOR TYPE: PWR-WEC2

DATE ADMINISTERED: 90/09/10

CANDIDATE:

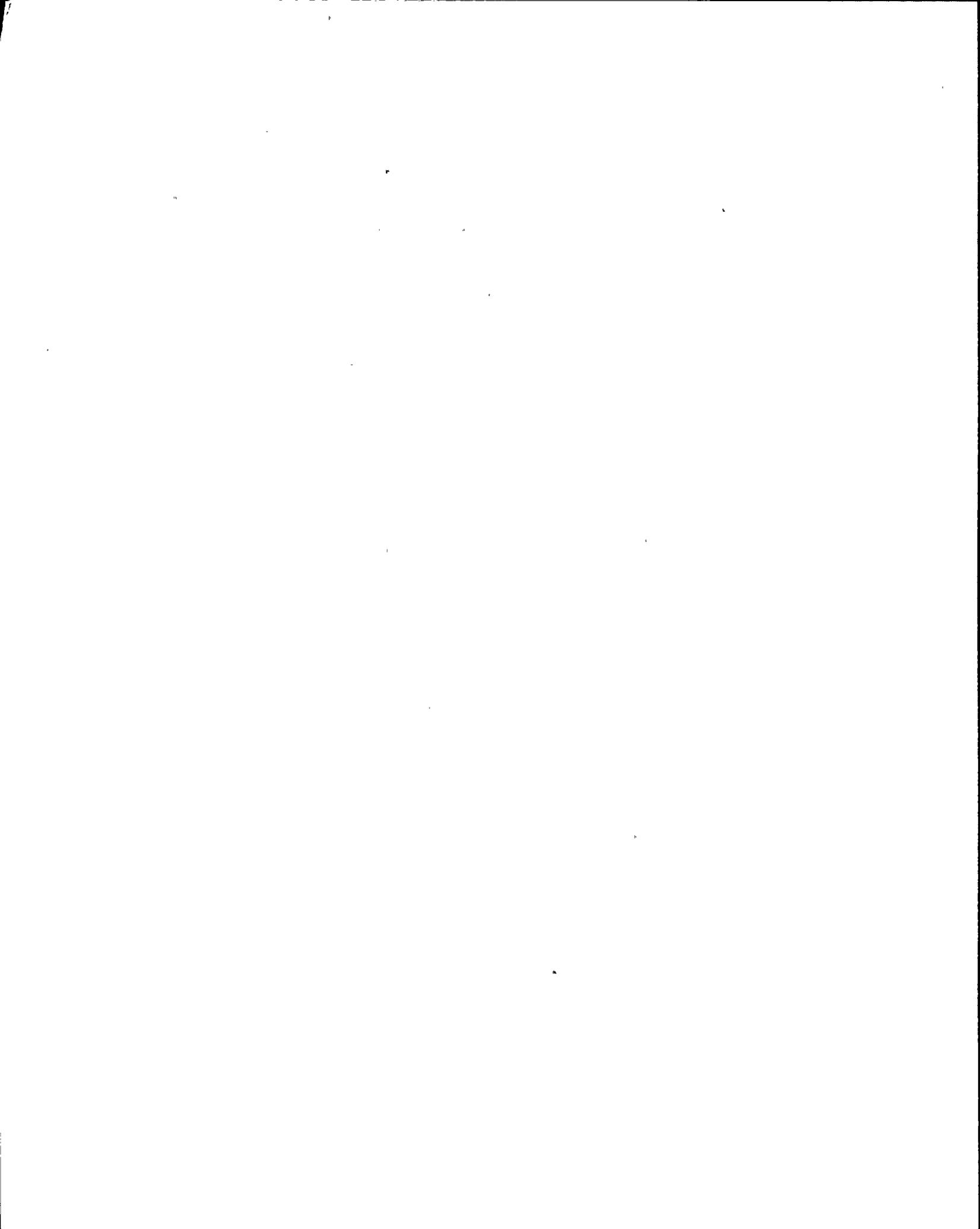
INSTRUCTIONS TO CANDIDATE:

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

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
96	100.00		

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

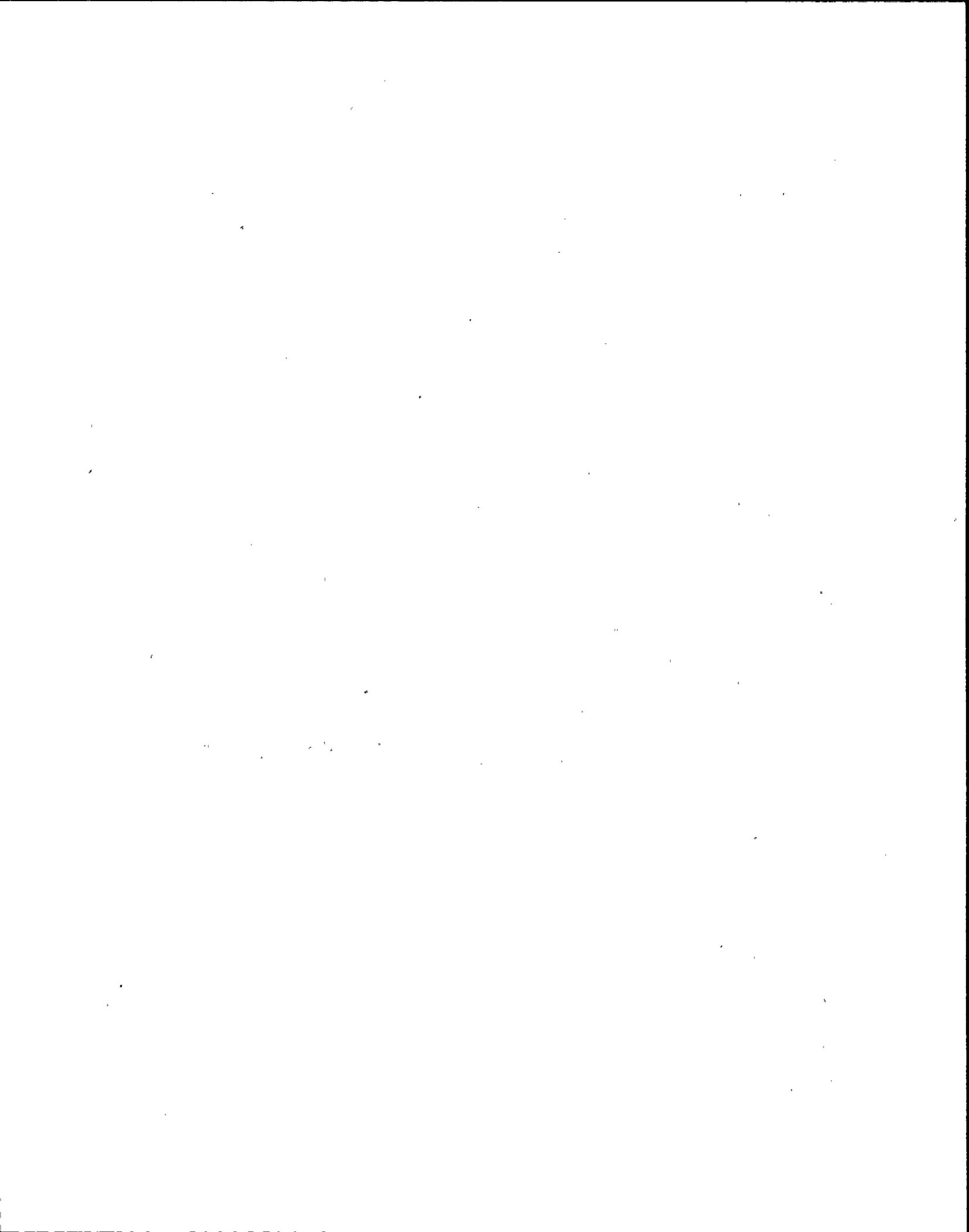
\_\_\_\_\_  
Candidate's Signature



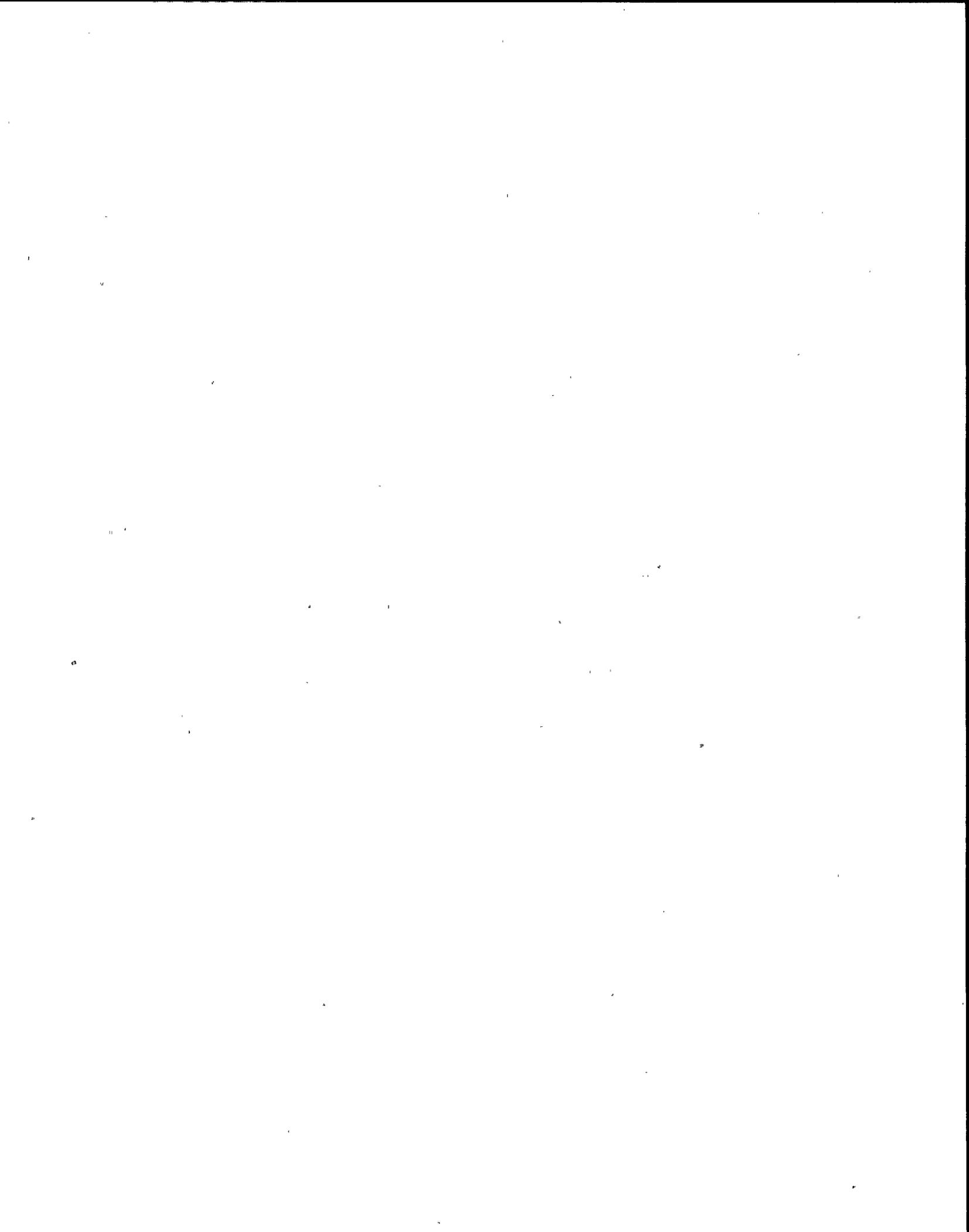
## NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must 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. This must be done after you complete the examination.
3. Restroom trips are to be limited and only one candidate at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
4. Use black ink or dark pencil only to facilitate legible reproductions.
5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet.
6. Fill in the date on the cover sheet of the examination (if necessary).
7. You may write your answers on the examination question page or on a separate sheet of paper. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.
8. If you write your answers on the examination question page and you need more space to answer a specific question, use a separate sheet of the paper provided and insert it directly after the specific question. DO NOT WRITE ON THE BACK SIDE OF THE EXAMINATION QUESTION PAGE.
9. Print your name in the upper right-hand corner of the first page of answer sheets whether you use the examination question pages or separate sheets of paper. Initial each of the following answer pages.
10. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.
11. If you are using separate sheets, number each answer and skip at least 3 lines between answers to allow space for grading.
12. Write "Last Page" on the last answer sheet.
13. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.



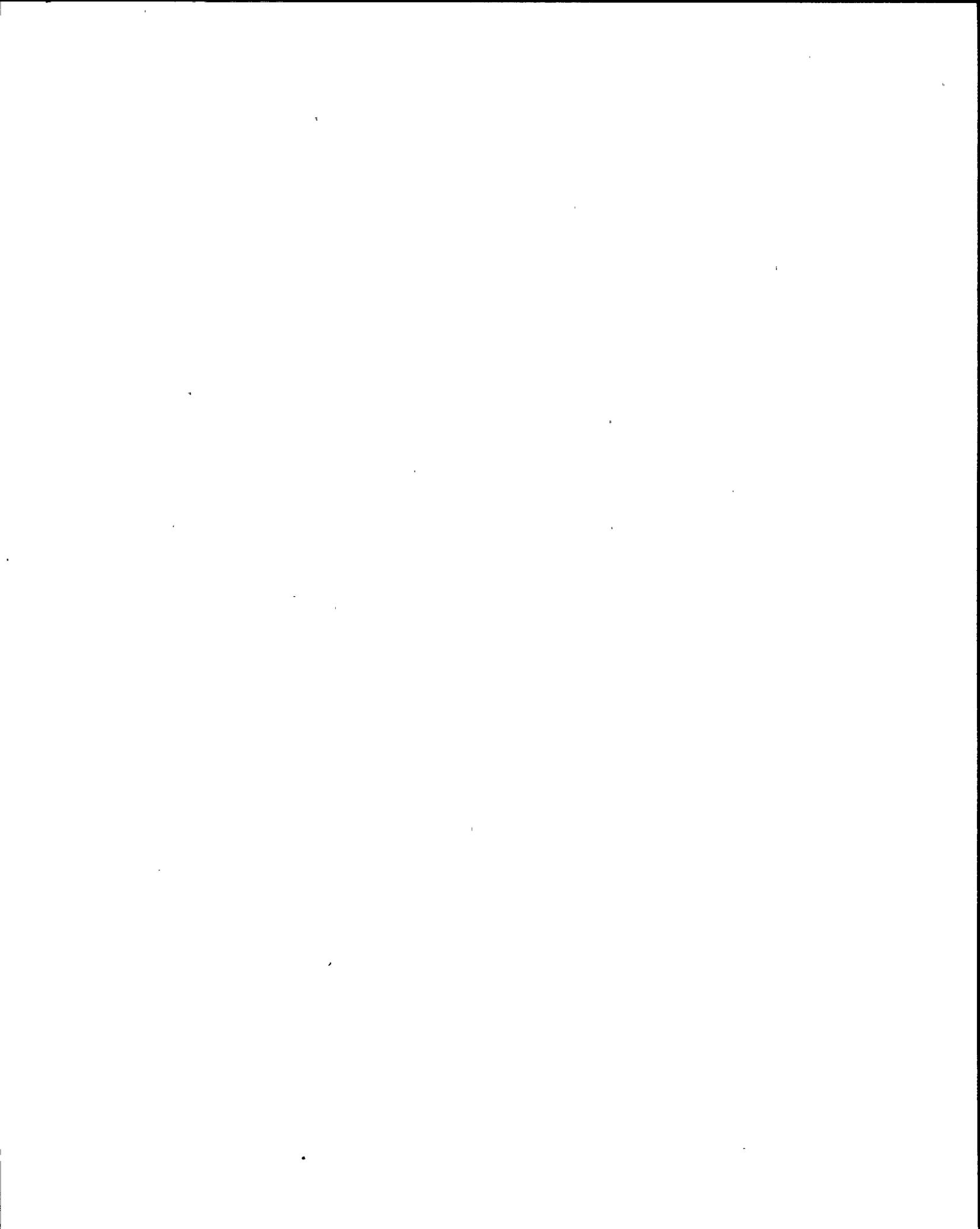
14. The point value for each question is indicated in parentheses after the question. The amount of blank space on an examination question page is NOT an indication of the depth of answer required.
15. Show all calculations, methods, or assumptions used to obtain an answer.
16. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK. NOTE: partial credit will NOT be given on multiple choice questions.
17. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.
18. If the intent of a question is unclear, ask questions of the examiner only.
19. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
20. To pass the examination, you must achieve an overall grade of 80% or greater.
21. There is a time limit of (4 1/2) hours for completion of the examination. (or some other time if less than the full examination is taken.)
22. When you are done and have turned in your examination, leave the examination area as defined by the examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.



QUESTION: 001 (1.00)

WHICH of the following statements describes the preferred method of verifying a valve locked closed in accordance with Admin. Procedure A-52.2 (Control of Locked Valve and Breaker Operation)?

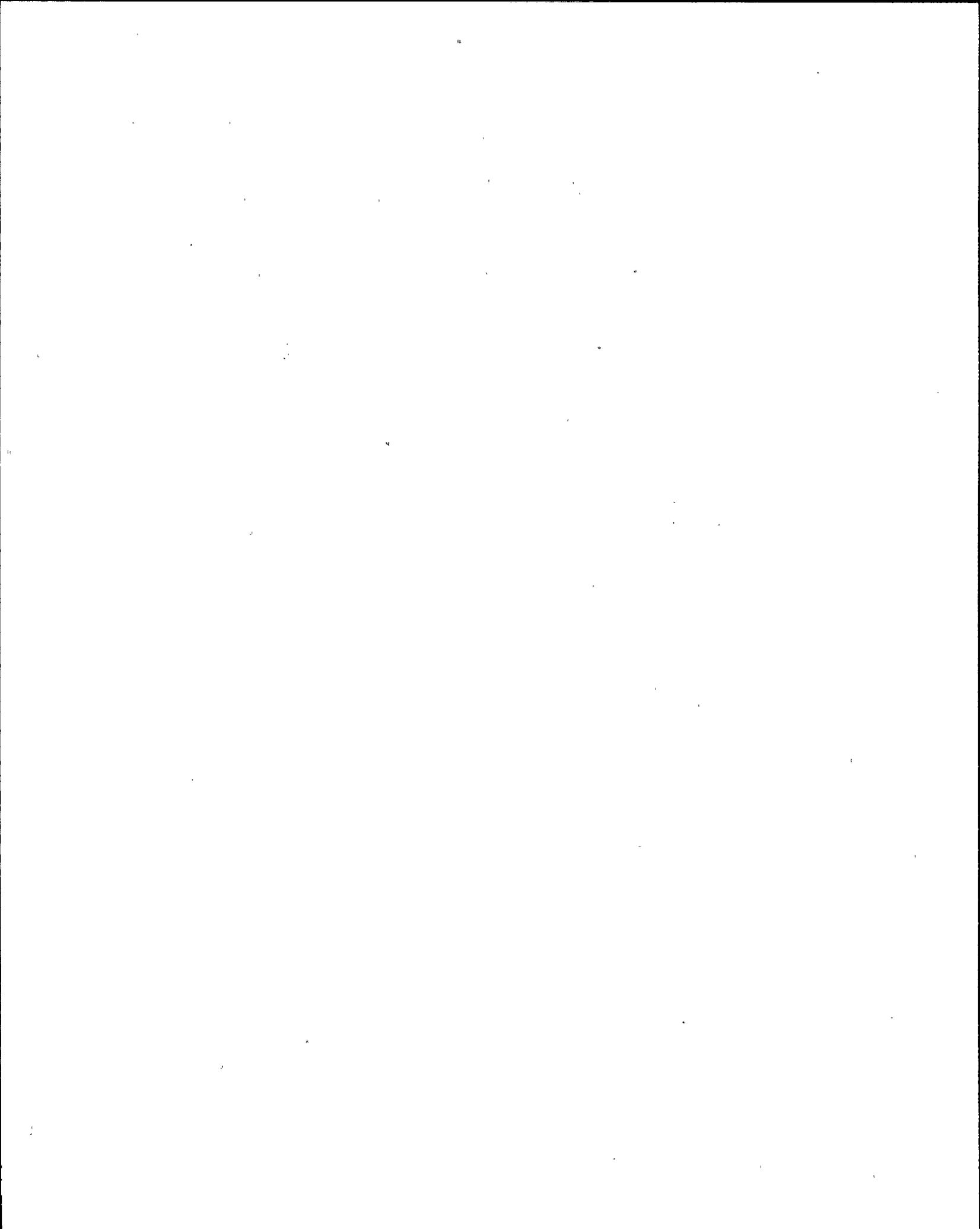
- a. Ensure that the locking device is intact and properly installed.
- b. Unlock the locking device, crack the valve off its seat and immediately reseal it, reinstall the locking device.
- c. Without removing the locking device, attempt to close the valve.
- d. Without removing the locking device, crack the valve off its seat and immediately reseal it.



QUESTION: 002 (1.00)

WHICH of the following statements describe measures that demonstrate the practice of keeping radiation exposures at Ginna "as low as is reasonably achievable (ALARA)"?

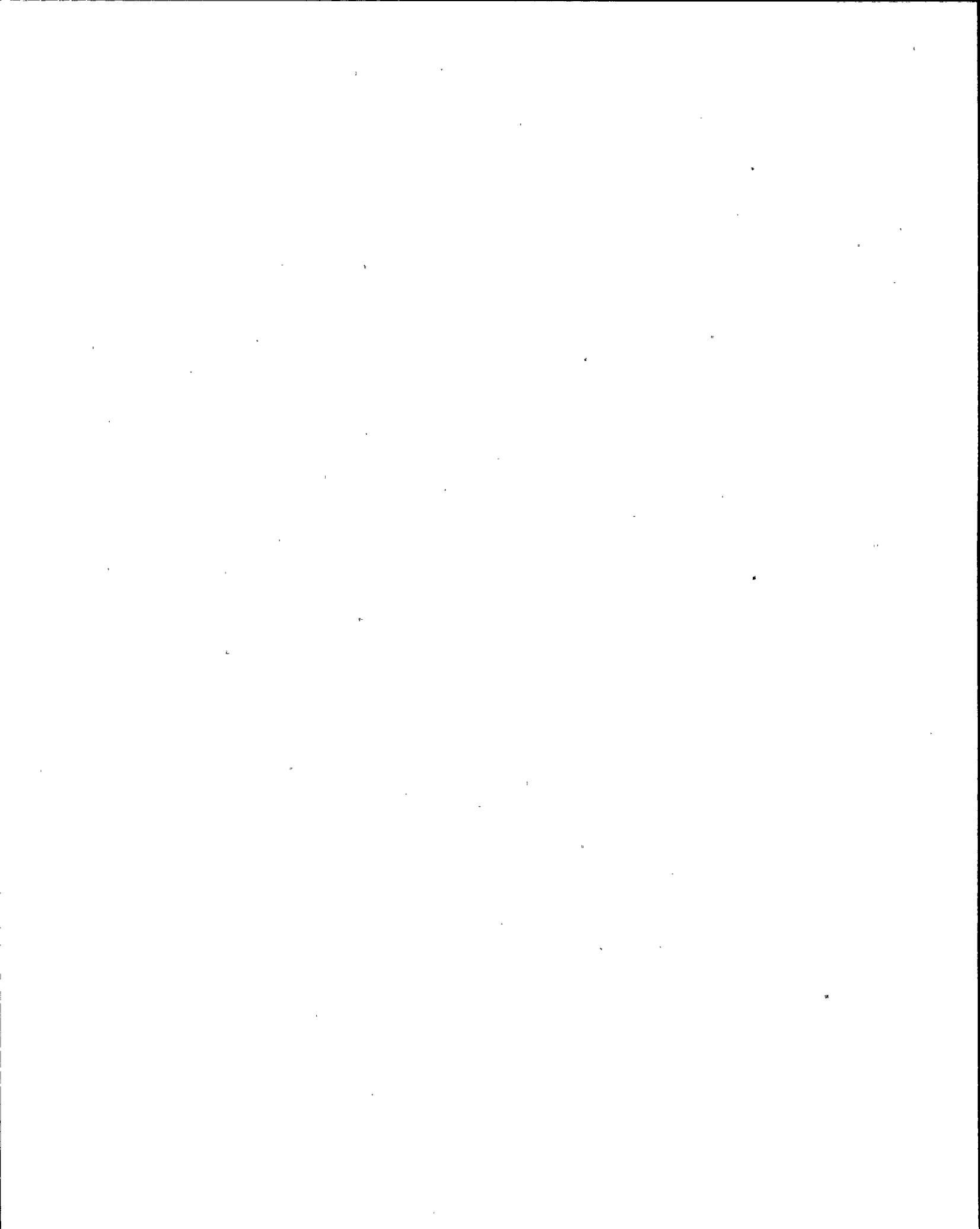
- a. Maintaining quarterly whole body exposures less than 2.0 Rem for personnel older than 19 years of age.
- b. Maintaining quarterly whole body exposures less than 1.25 Rem for personnel older than 18 years of age without a NRC Form-4 on file.
- c. Maintaining quarterly exposures to the skin of the whole body less than 7.5 Rem for personnel older than 18 years of age.
- d. Maintaining cumulative occupational exposure for personnel with a NRC Form-4 on file less than  $5(N-18)$ , where N is the individual's age in years.



QUESTION: 003 (1.00)

An electrician desires to check the routing of a cable in the Main Control Board (MCB). WHICH of the following statements describes the proper conduct within the MCB area?

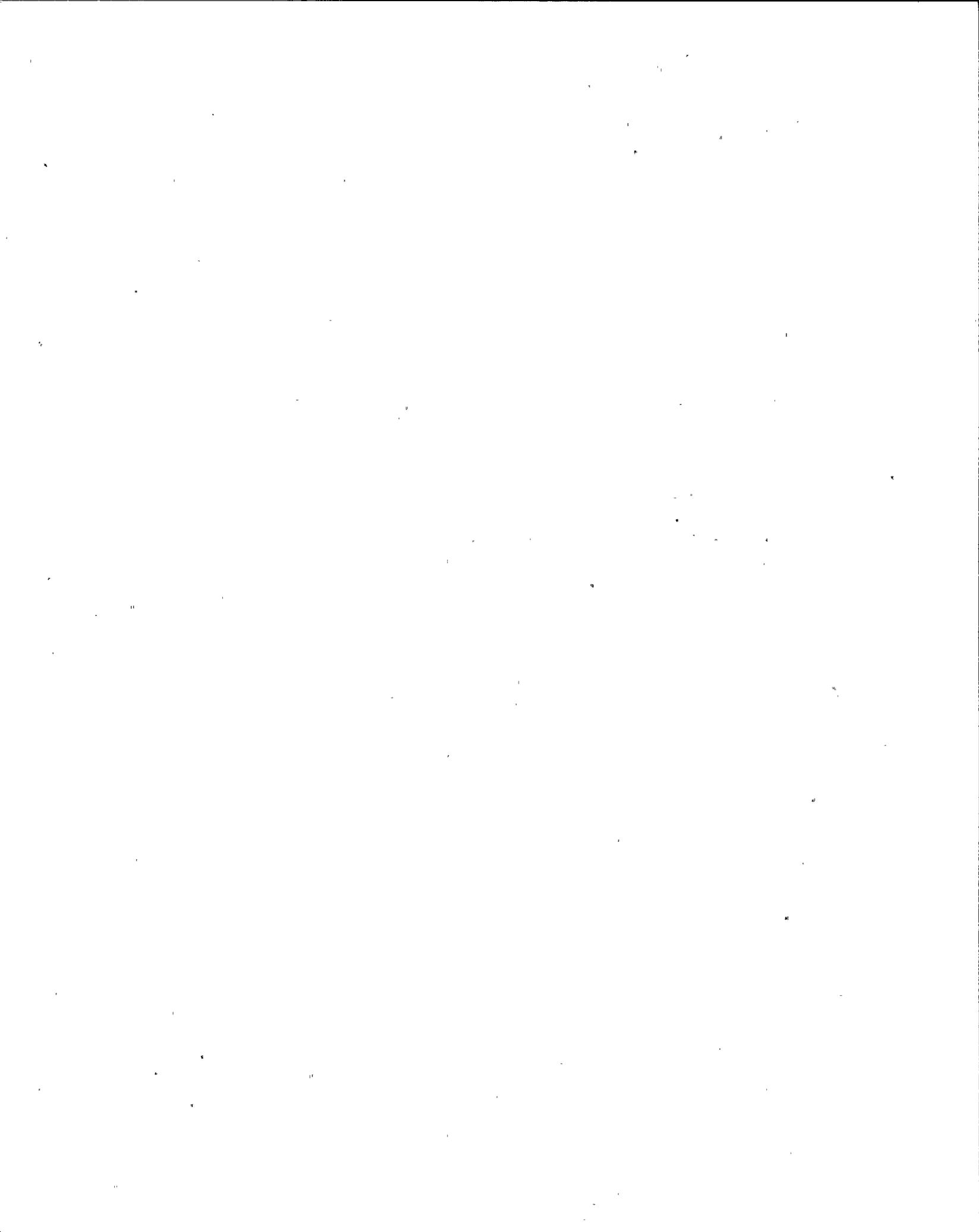
- a. The electrician's job must be authorized by a work request and by use of the Access Authorization Log maintained by the Shift Supervisor.
- b. Entry into the MCB area must be approved by an on-shift licensed operator.
- c. If the electrician's work is distracting to the operators, approval to request the electrician to leave must come from the Shift Supervisor.
- d. If working with another electrician, the HCO must authorize the discussion of non-job related subjects between the electricians.



QUESTION: 004 (1.00)

WHICH of the following statements describes the practice recommended for removal of fuses under an electrical hold?

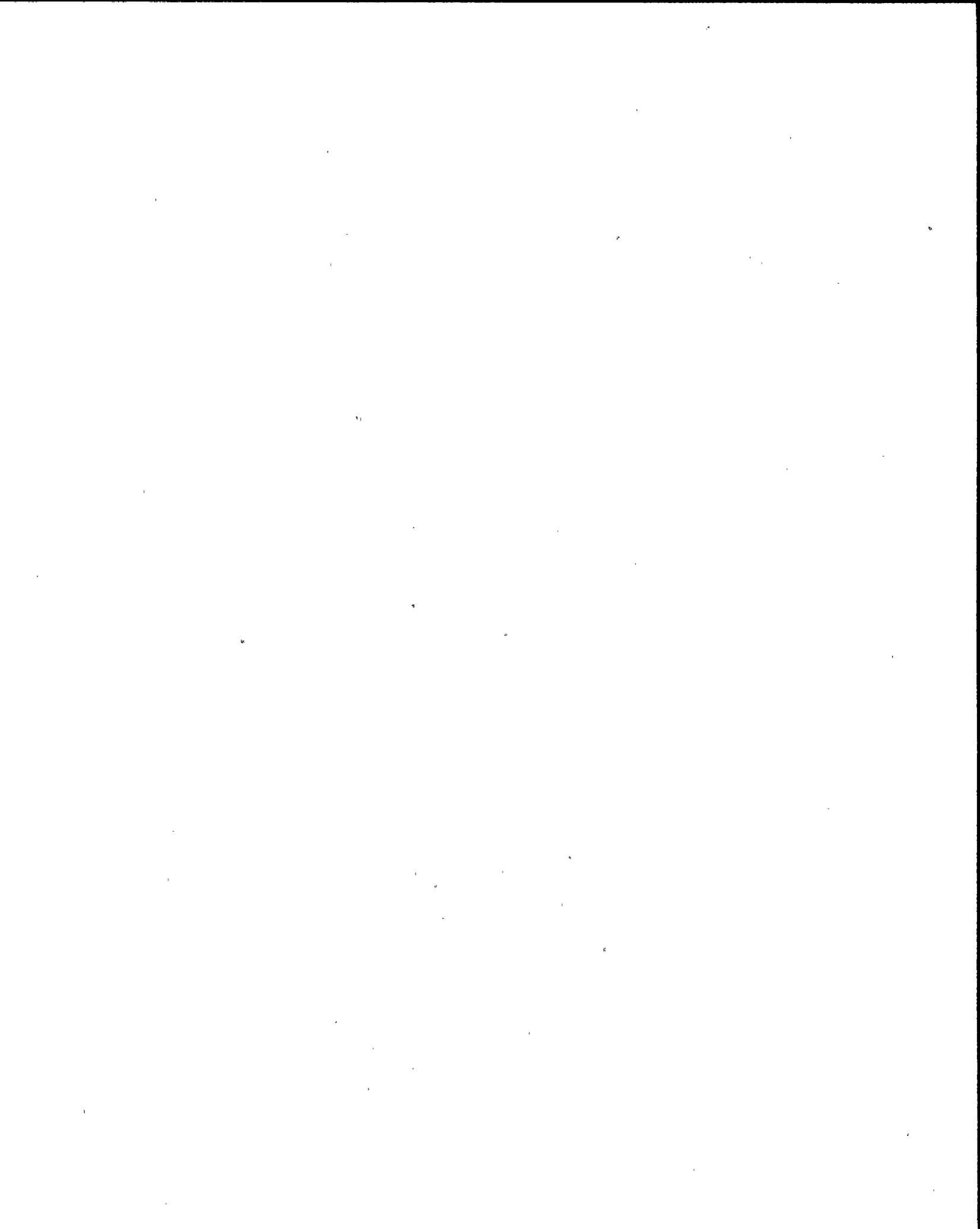
- a. Fuse ferrules should be taped, and the fuse inserted into one clip only of the fuse holder to ensure the proper fuse is installed when the hold is released.
- b. Fuses should be physically removed from the breaker, cubicle, or cabinet in which they were previously installed and taken to the Control Room for the duration of the hold.
- c. Fuses should be kept in an envelope and attached to either the hold card or the fuse clip from which they were removed to ensure they are not lost or mixed with fuses of different ratings.
- d. Fuses shall be kept in the possession of the person removing them until release of the hold.



QUESTION: 005 (1.00)

WHICH of the following samples is NOT required in all cases prior to entry into a confined space?

- a. Oxygen concentration
- b. Carbon monoxide concentration
- c. Lower flammability limit
- d. Nitrogen concentration



QUESTION: 006 (1.00)

How are communications established between the remote shutdown crew in the event of a fire in the Control Room?

- a. By using the station page circuit and headphones located in the Appendix R locker outside the Control Room.
- b. By using channel two of the normal two-way radio circuit.
- c. By using a sound-powered phone circuit established between the various control stations.
- d. By activation of a dedicated circuit off the Appendix R repeater, using two-way radios.

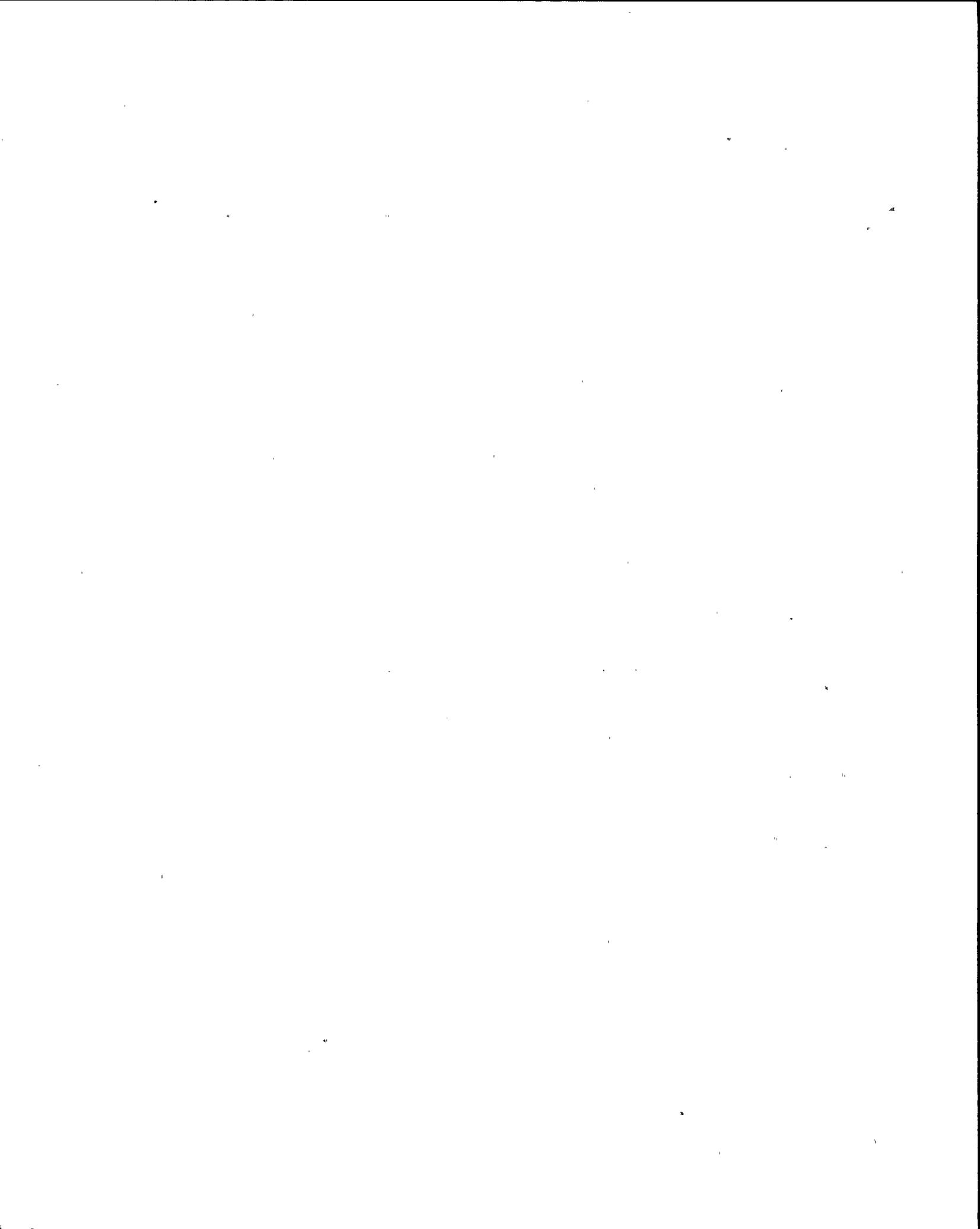


QUESTION: 007 (1.00)

The plant has just tripped from 100% power.

WHICH of the following statements describes the information that should be included in the Ginna Station Event Report (A-25.1)?

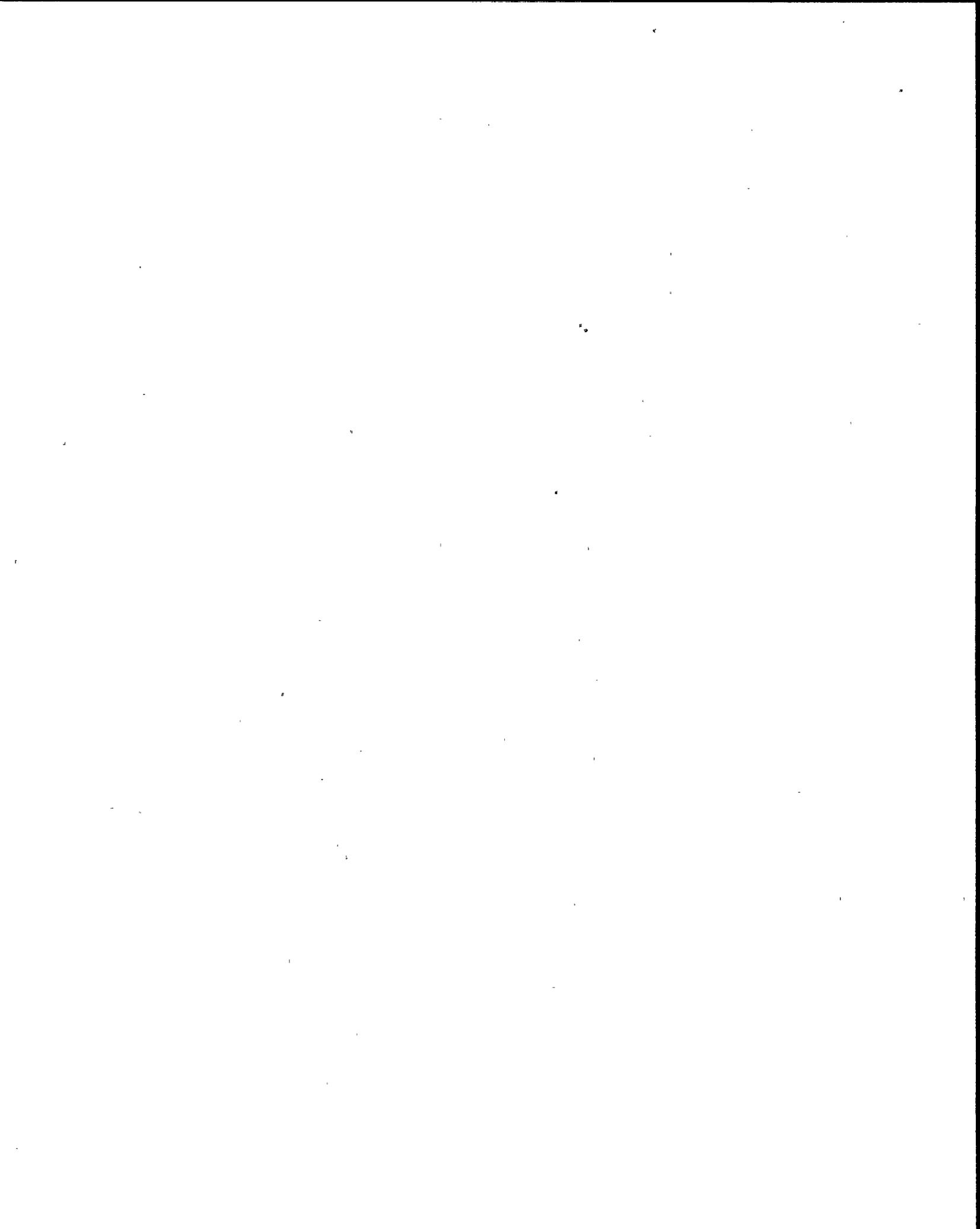
- a. Time of the trip  
Names of Control Room (CR) personnel present  
First-out alarm received  
Unusual alarms received after the trip
- b. Activities in progress at the time of the trip  
Abnormal trends in plant parameters before the trip  
First-out alarm received  
Immediate corrective actions taken by CR personnel  
Unusual alarms received before and after the trip
- c. Activities in progress at the time of the trip  
Time of the trip  
Names of CR personnel present  
Event classification of the trip  
Tech spec action statements in effect before and after the trip  
Power level at time of the trip  
Boron concentration before and after the trip
- d. First-out alarm received  
Immediate corrective actions taken by CR personnel  
List of all procedures entered after the trip  
Log of all borations made after the trip



QUESTION: 008 (1.00)

WHICH of the following AO activities requires direct supervision by an active licensed individual?

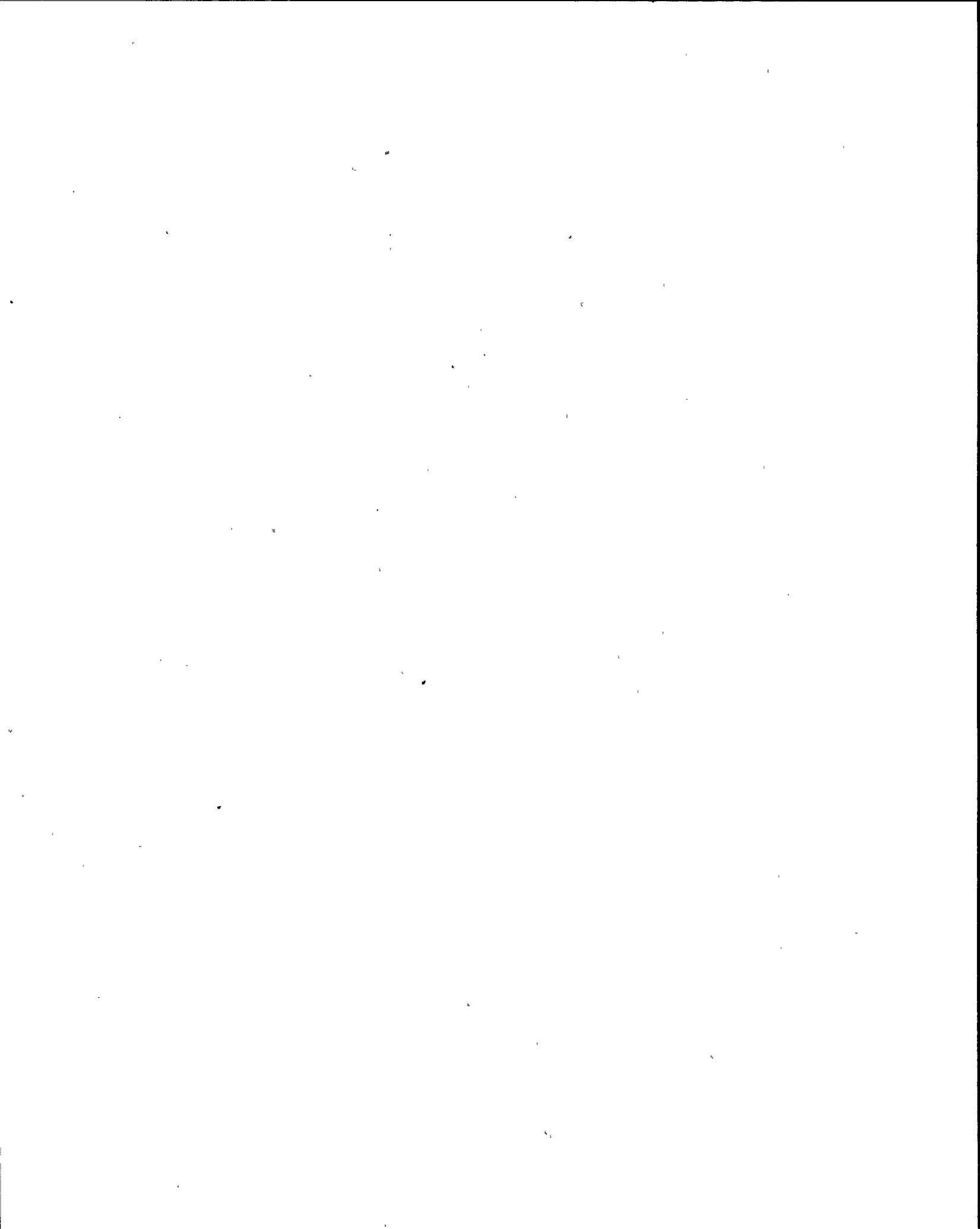
- a. Performance of an alarm check at 1A D/G Alarm panel.
- b. On a startup, adjusting gland seal condenser vacuum.
- c. Adding oil to the TDAFWP oil reservoir.
- d. During a shutdown, opening V-356 (BAST to charging pumps).



QUESTION: 009 (1.00)

To perform an alternate dilution, WHICH of the following sequences properly explains the steps necessary with the Reactor Makeup Control starting in AUTO?

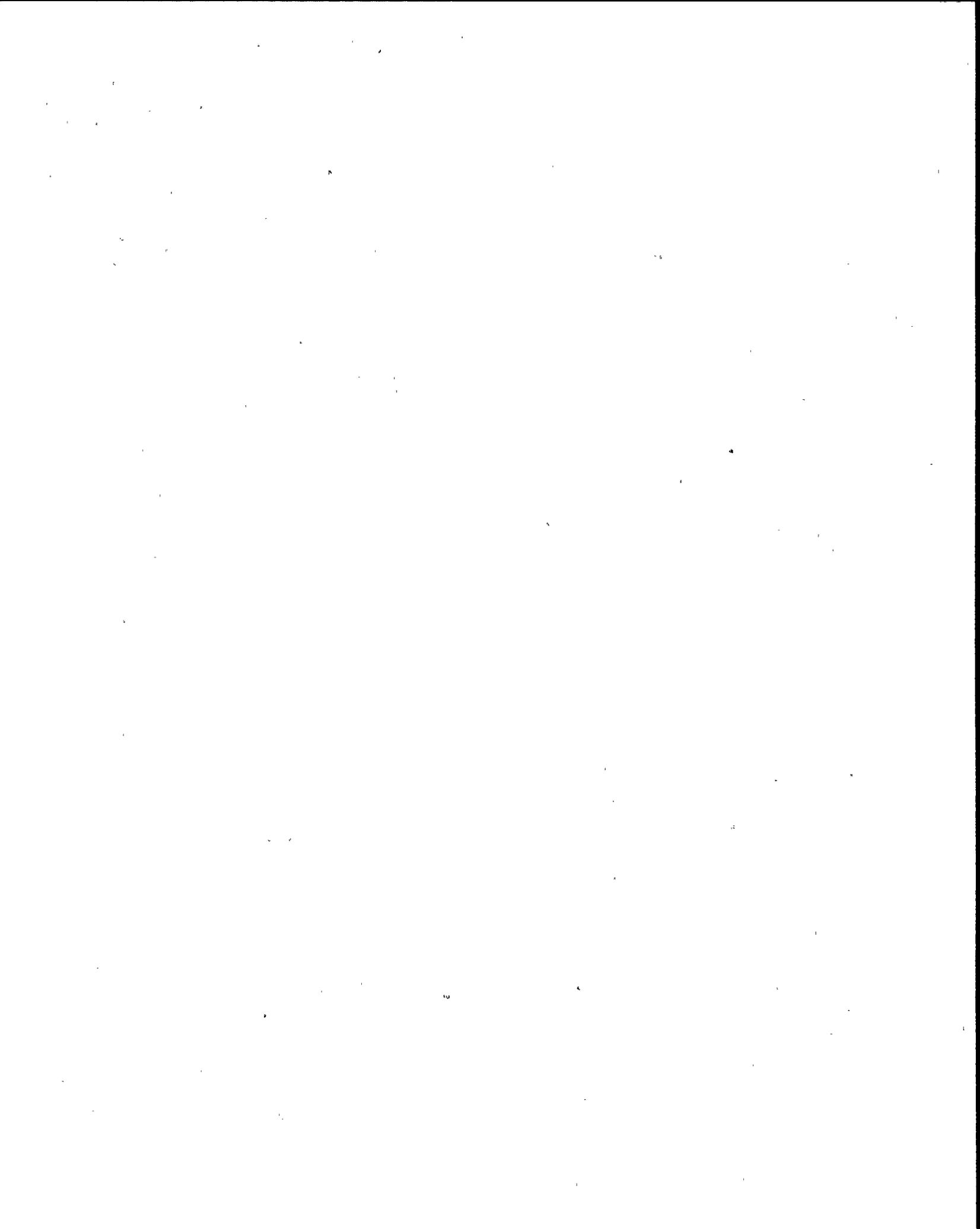
- a.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Set makeup water batch integrator to desired gallons
  - 3) Set desired flow rate for FCV-111
  - 4) Take control switch to start
  
- b.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Take controller for valve FCV-110C to manual and close FCV-110C
  - 3) Set desired flow rate for FCV-111
  - 4) Take control switch to start
  
- c.
  - 1) Take makeup selector switch to alternate dilute
  - 2) Take controller for valve FCV-110B to manual and close FCV-110B
  - 3) Set makeup water batch integrator to desired gallons
  - 4) Set desired flow rate for FCV-111
  - 5) Take control switch to start
  
- d.
  - 1) Start a RMW pump
  - 2) Take controller for FCV-111 to manual and open FCV-111
  - 3) Set makeup water batch integrator to desired gallons
  - 4) Take control switch to start



QUESTION: 010 (1.00)

WHICH of the following describes the purpose of the "Top Level Release" Key for the PRIMARY CRT of the Safety Assessment System (SAS)?

- a. To change modes between the various top level displays regardless of which top level display is selected on the secondary CRT.
- b. To view the various secondary displays when the secondary CRT is already selected to a secondary display.
- c. To view the various Critical Safety Function (CSF) Displays when the secondary CRT is already selected to a top level display.
- d. To view the Safety System Readiness Monitor (SSRM) displays when the secondary CRT is already selected to a CSF display.



QUESTION: 011 (1.00)

For a trip of "A" Reactor Coolant Pump below P-8, WHICH of the following correctly describes the effect on the "A" S/G level immediately after the trip?

- a. "A" S/G level decreases to follow the new programmed level for the lower value of turbine impulse chamber pressure.
- b. "A" S/G level increases in response to a higher steam flow as sensed from a lower steam pressure.
- c. "A" S/G level decreases due to the density increase of the water in the downcomer being cooled by colder RCS water.
- d. "A" S/G level increases due to an increased steam flow to compensate for a lower enthalpy rise across the U-tubes.

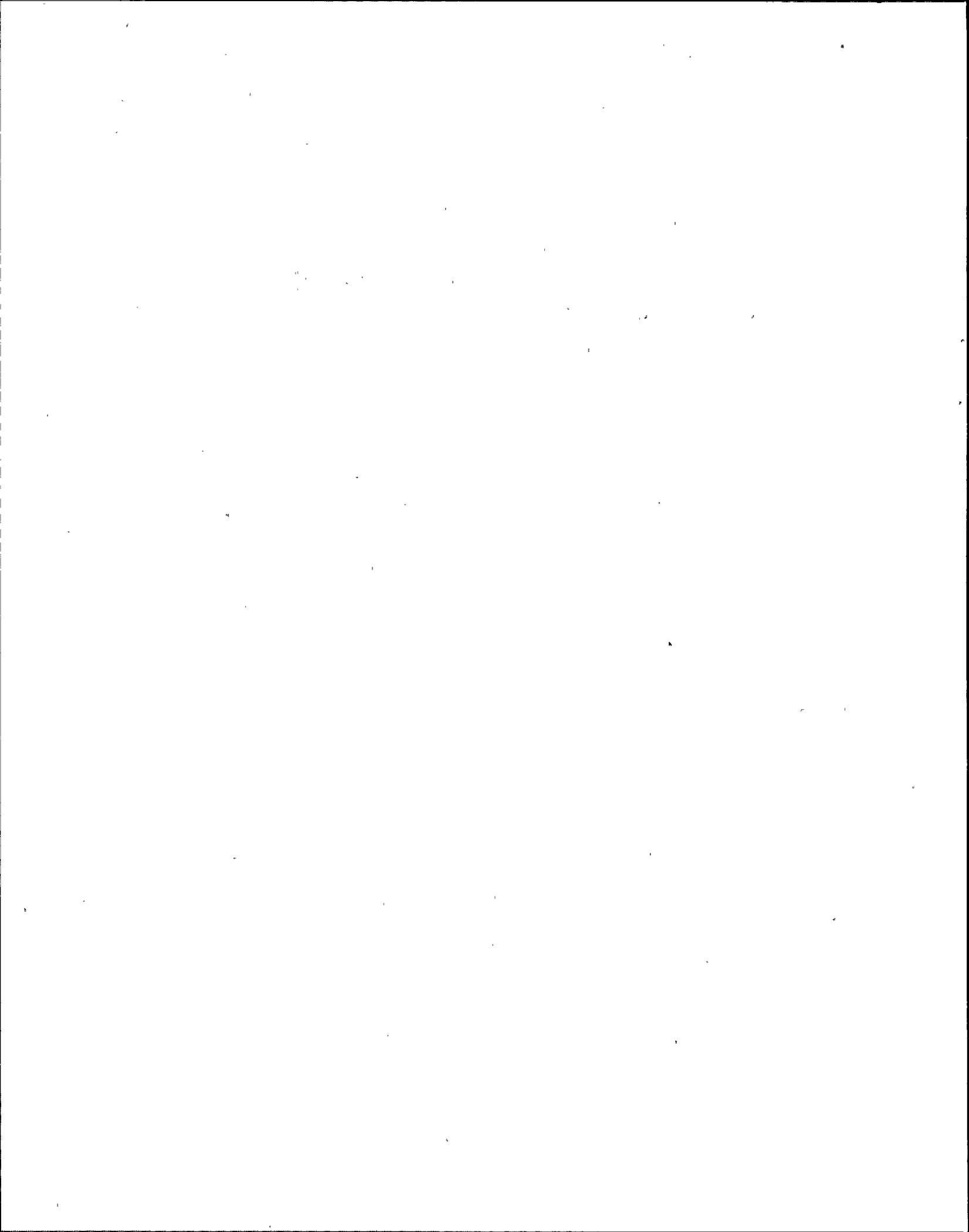


QUESTION: 012 (1.00)

A recent modification to the AMSAC circuitry moved the input point for the "armed" indication to the plant process computer system (PPCS) upstream of the manual block/arm switch.

The purpose of this modification was to (CHOOSE ONE):

- a. Provide electrical isolation between the PPCS and MCB alarm circuits and the Reactor Protection circuitry.
- b. Allow operators to block AMSAC from the MCB at any power level.
- c. Provide status of AMSAC to operators when it is blocked to prevent unblocking AMSAC with an actuation signal present.
- d. Provide <sup>an</sup> ~~and~~ alarm telling the operators to ensure AMSAC is manually unblocked prior to 50% power.

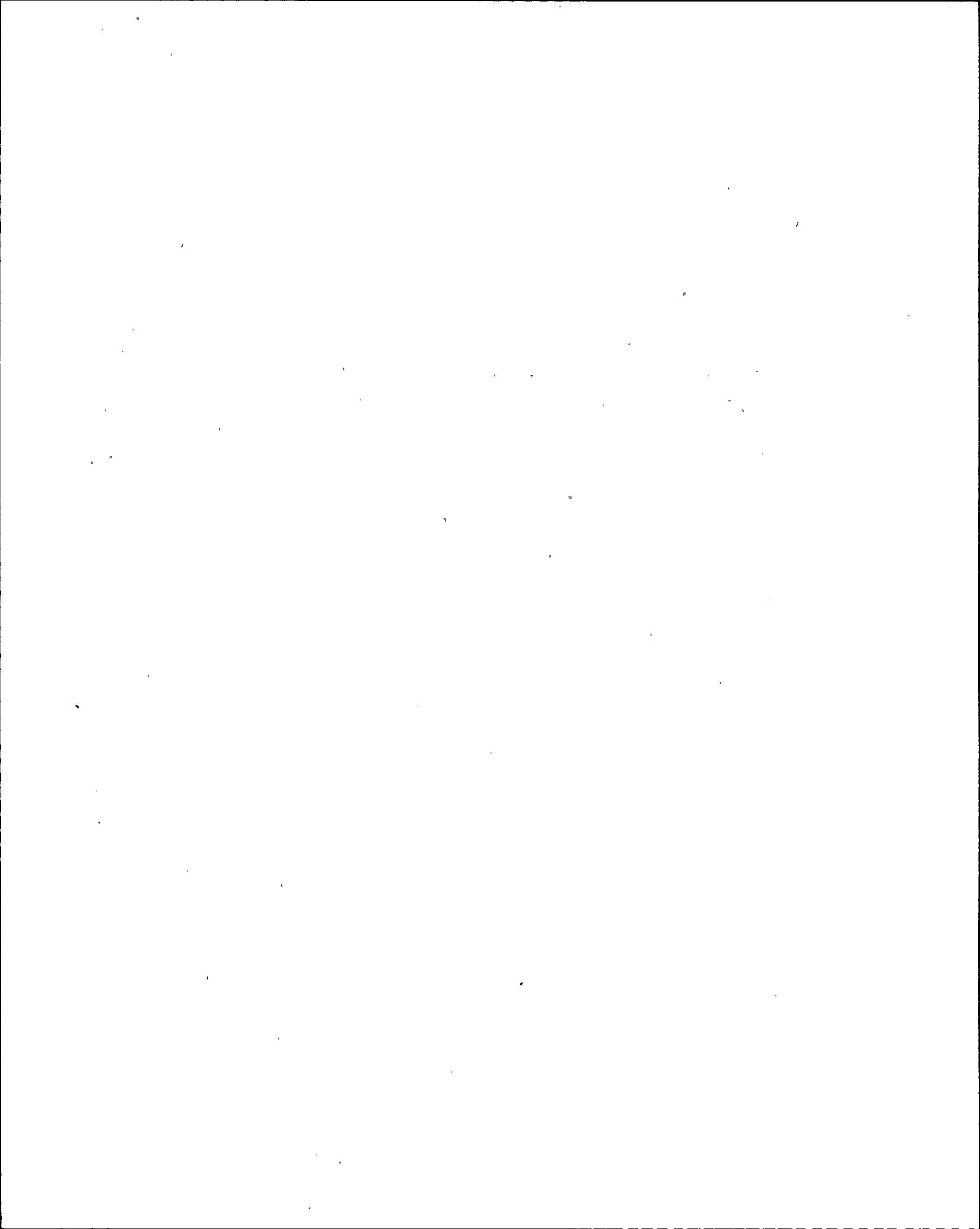


QUESTION: 013 (1.00)

The Incore Thermocouple System provides output to indication panels and to the PPCS.

WHICH of the following statements describes WHAT will happen if power is lost to one or both readouts?

- a. If power is lost to either an indication panel or the PPCS, the other output will continue to provide indication for the affected thermocouples.
- b. If power is lost to the PPCS, the indication panel will continue to provide indication for the affected thermocouples.
- c. If power is lost to an indication panel, the PPCS will continue to provide indication for the affected thermocouples.
- d. If power is lost to either an indication panel or the PPCS, the other output will be disabled and the affected thermocouples cannot be monitored.



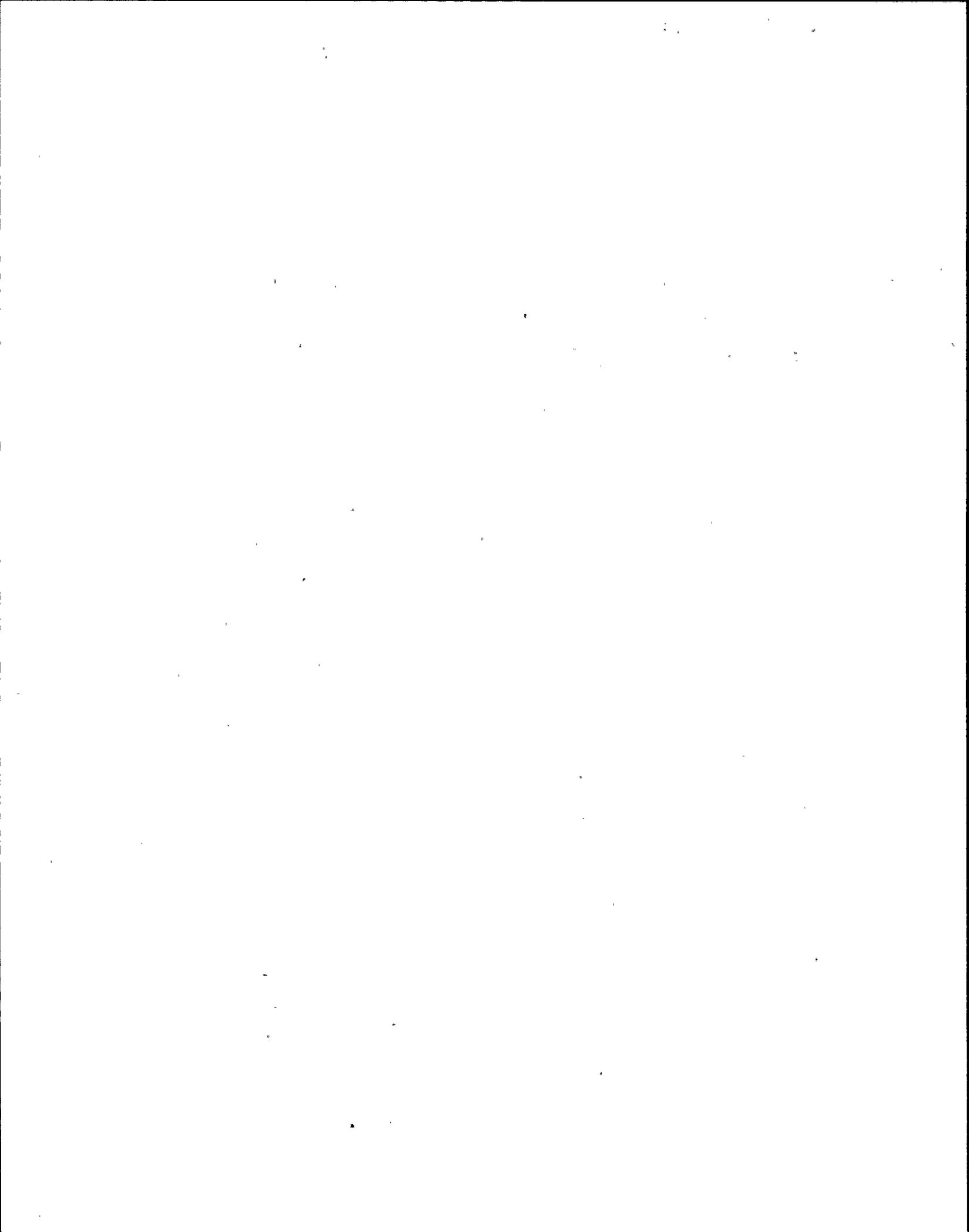
QUESTION: 014 (3.00)

MATCH the following VCT setpoints in COLUMN B to the automatic functions in COLUMN A. (Each setpoint will be used either once or not at all.)

COLUMN A

COLUMN B

- |  |                  |
|--|------------------|
| a) High level divert solenoid deenergizes, allowing valve LCV-112A to direct flow back to the VCT. _____ | 1) 90% on LT-139 |
|  | 2) 86% on LT-112 |
| b) Auto makeup stops. _____  | 3) 83% on LT-139 |
|  | 4) 75% on LT-112 |
| c) Valve LCV-112B opens, then valve LCV-112C closes, shifting charging pump suction to the RWST. _____   | 5) 40% on LT-139 |
|  | 6) 40% on LT-112 |
| d) Low level alarm. _____  | 7) 30% on LT-139 |
| e) Valve LCV-112A modulates to the closed position, directing full flow to the VCT. _____                | 8) 30% on LT-112 |
|  | 9) 14% on LT-112 |
| f) High level alarm. _____   | 10) 9% on LT-139 |
|  | 11) 5% on LT-112 |
|  | 12) 0% on LT-139 |

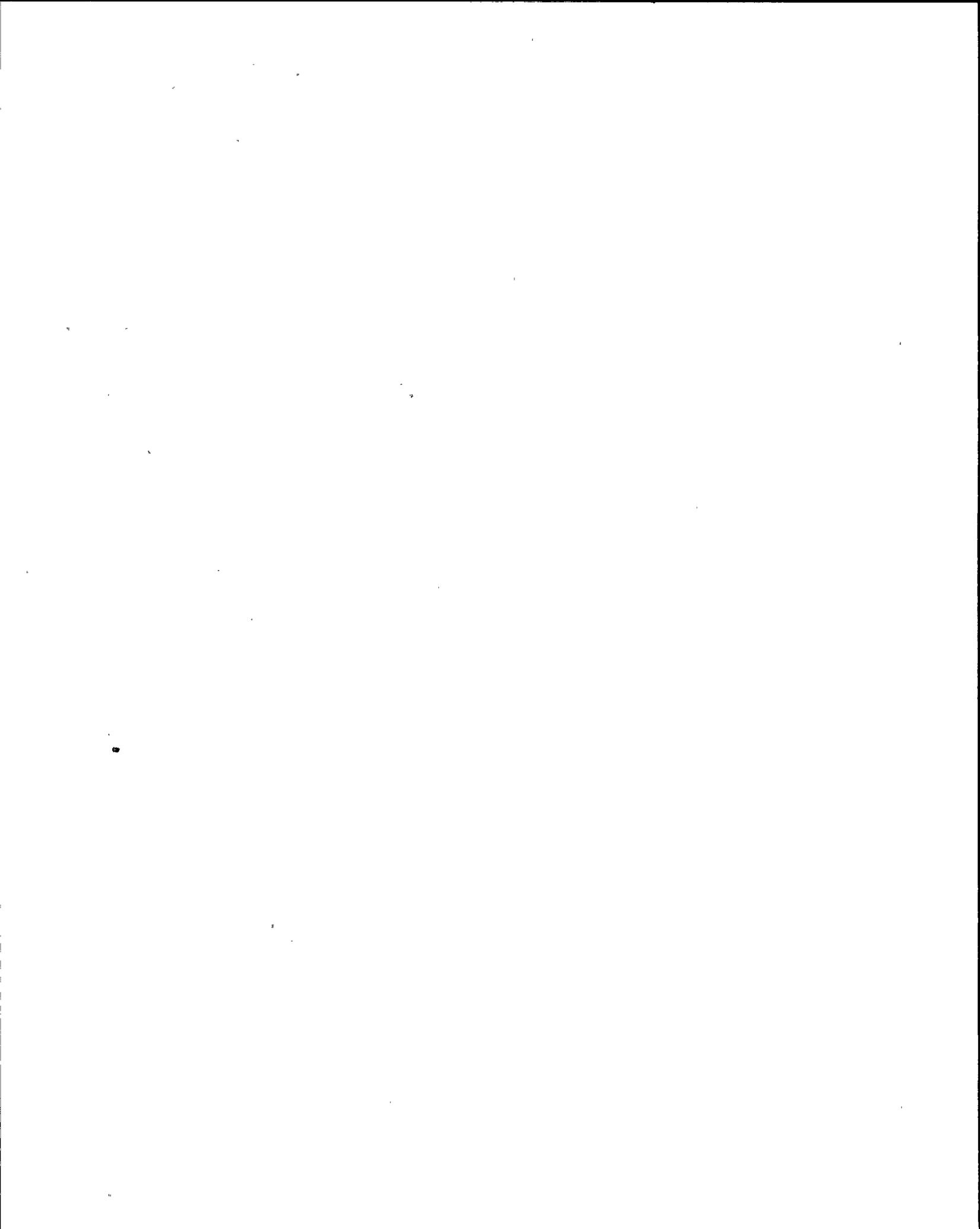


QUESTION: 015 (1.00)

While decreasing unit load from 100% to 92% at 3% per hour, the AFD decreases below the target band.

WHICH of the following actions is required by O-5.1 (Load Reductions)?  
(copy of procedure attached)

- a. Continue the load decrease, while monitoring rod position to ensure the Rod Insertion Limit is not exceeded.
- b. Stop the load decrease, borate rods out to restore AFD to the target band, then wait for equilibrium Xenon conditions to resume load decrease.
- c. Reduce power to less than 90%, borate to restore AFD to the target band, and log the duration that the band was exceeded.
- d. Stop the load decrease, wait for Xenon to build up in the lower core, then resume the load decrease when AFD restores itself to the target band.



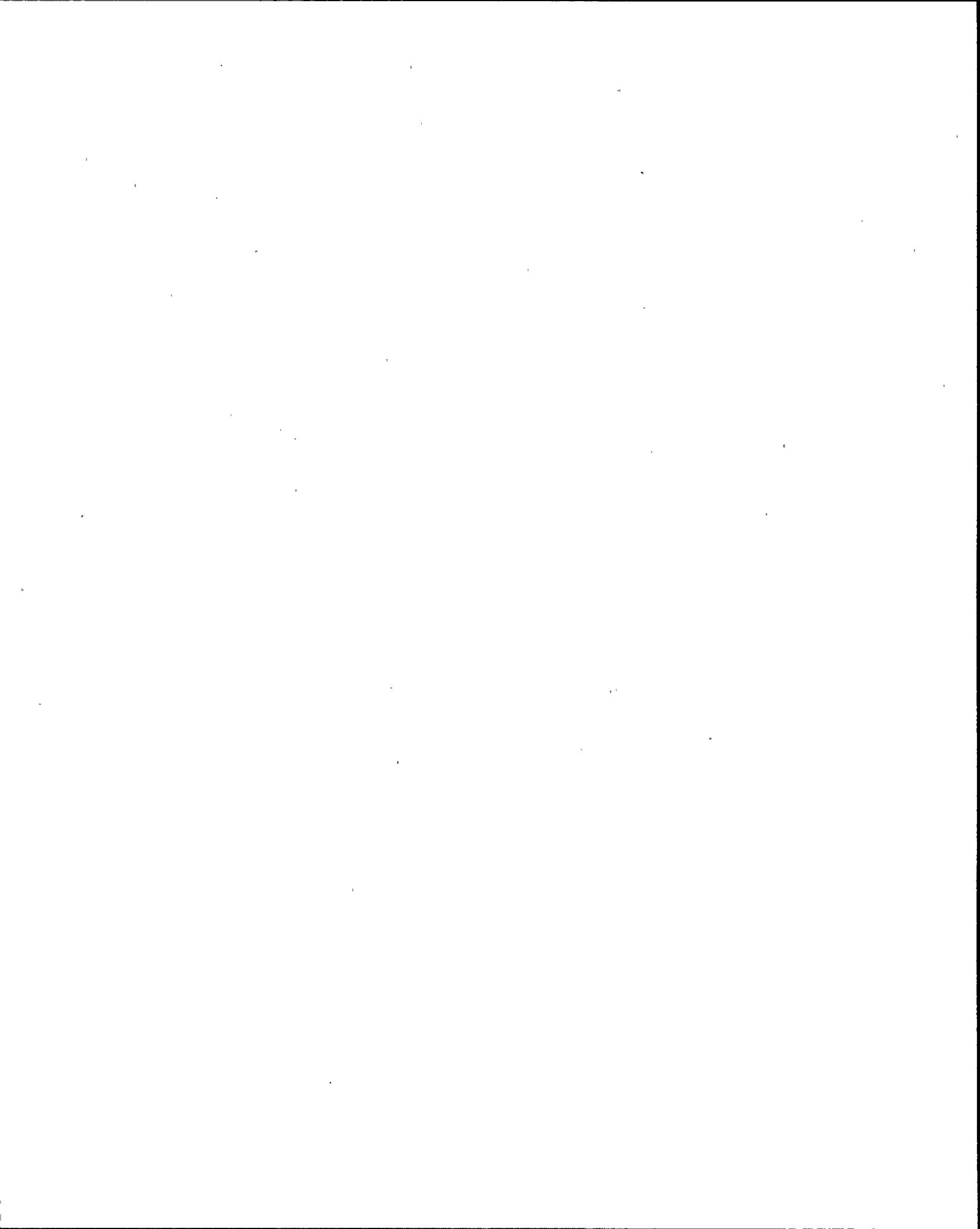
QUESTION: 016 (1.00)

GIVEN the following:

A reactor trip has occurred from a loss of both Main Feed Pumps. All AFW pumps and Standby AFW pumps are inoperable.

WHICH of the following conditions must be met to feed the S/G's with the condensate pumps?

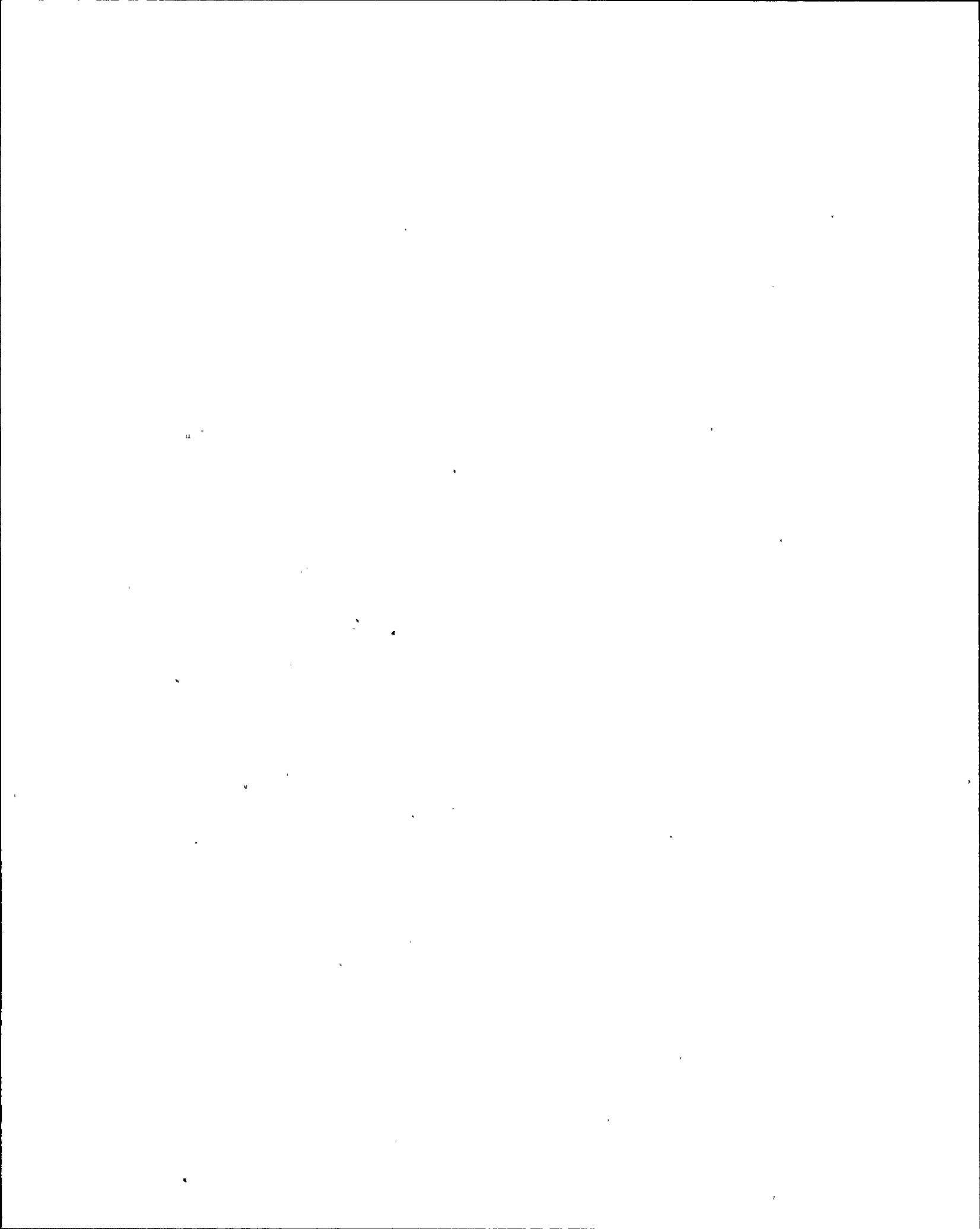
- a. Depressurize at least one S/G to less than 380 psig.
- b. Establish condenser vacuum for operation of steam dumps.
- c. Actuate SI and CI.
- d. Open at least one pressurizer PORV to establish an RCS bleed path.



QUESTION: 017 (1.00)

WHICH of the following sequences describes the air flow path through the Containment Recirc Fans during NORMAL operation?

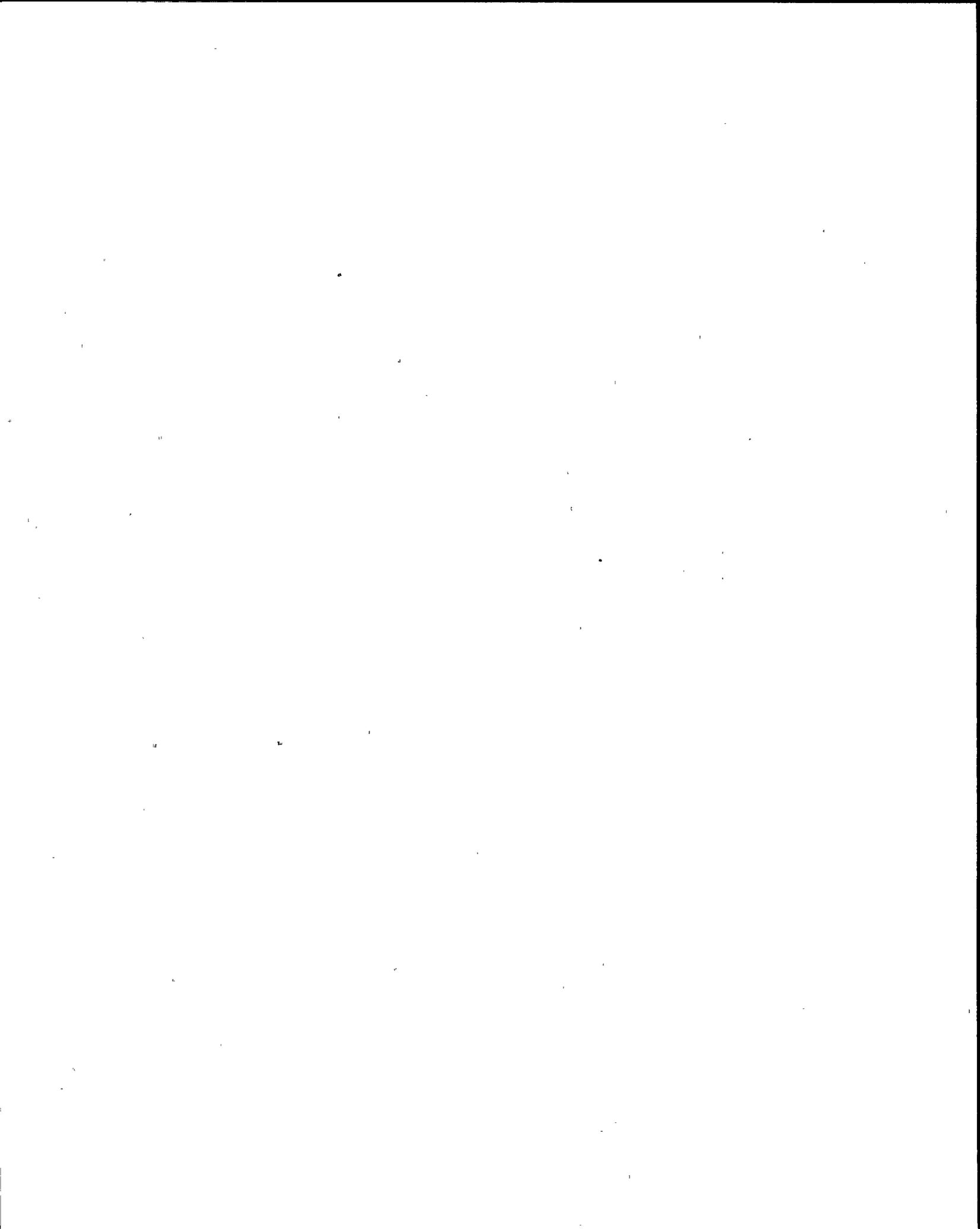
- a. Inlet louvers, cooling coils, HEPA filters, moisture separators, fan, distribution header.
- b. HEPA filters, inlet louvers, moisture separators, cooling coils, fan, distribution header.
- c. Cooling coils, inlet louvers, fan, HEPA filters, moisture separators, fan, distribution header.
- d. Inlet louvers, cooling coils, moisture separators, HEPA filters, fan, distribution header.



QUESTION: 018 (1.00)

If, while moving fuel in the Spent Fuel Pit, RMS channel R5 (Spent Fuel Pool Area Radiation Monitor) becomes inoperable, under WHICH of the following conditions may fuel movement continue?

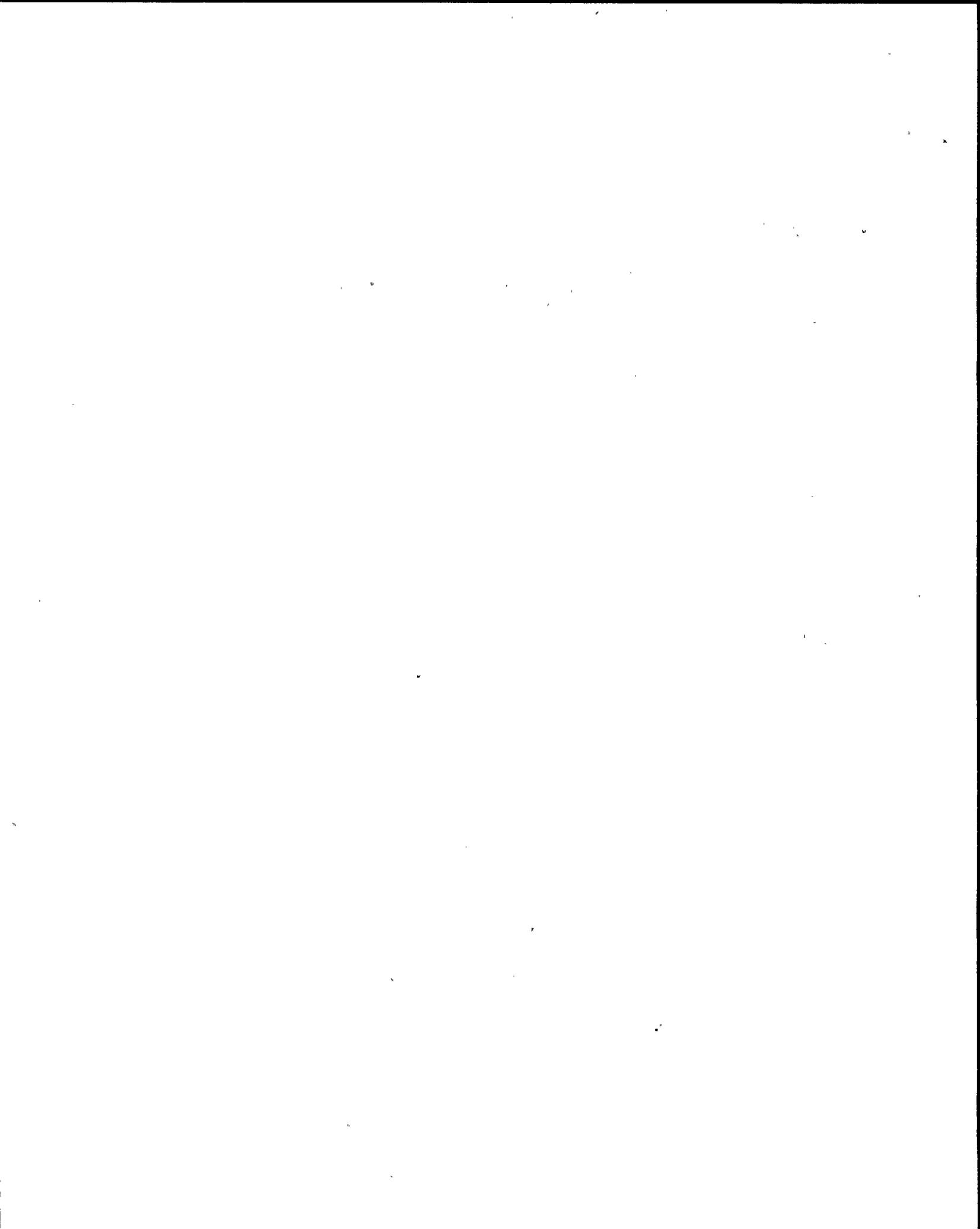
- a. The fuel assemblies being handled must have decayed greater than or equal to 60 days since irradiation.
- b. A local radiation monitor on the spent fuel pit bridge must be verified operable.
- c. Aux building exhaust fan 1C must be running and the charcoal adsorber bank in service.
- d. The overload cutout for the auxiliary building crane shall be reduced to 1200 lbs to prevent heavy loads from being lifted over the spent fuel racks.



QUESTION: 019 (1.00)

WHICH of the following statements describes what will occur when the Auxiliary Feedwater Bypass Switches are in DEFEAT?

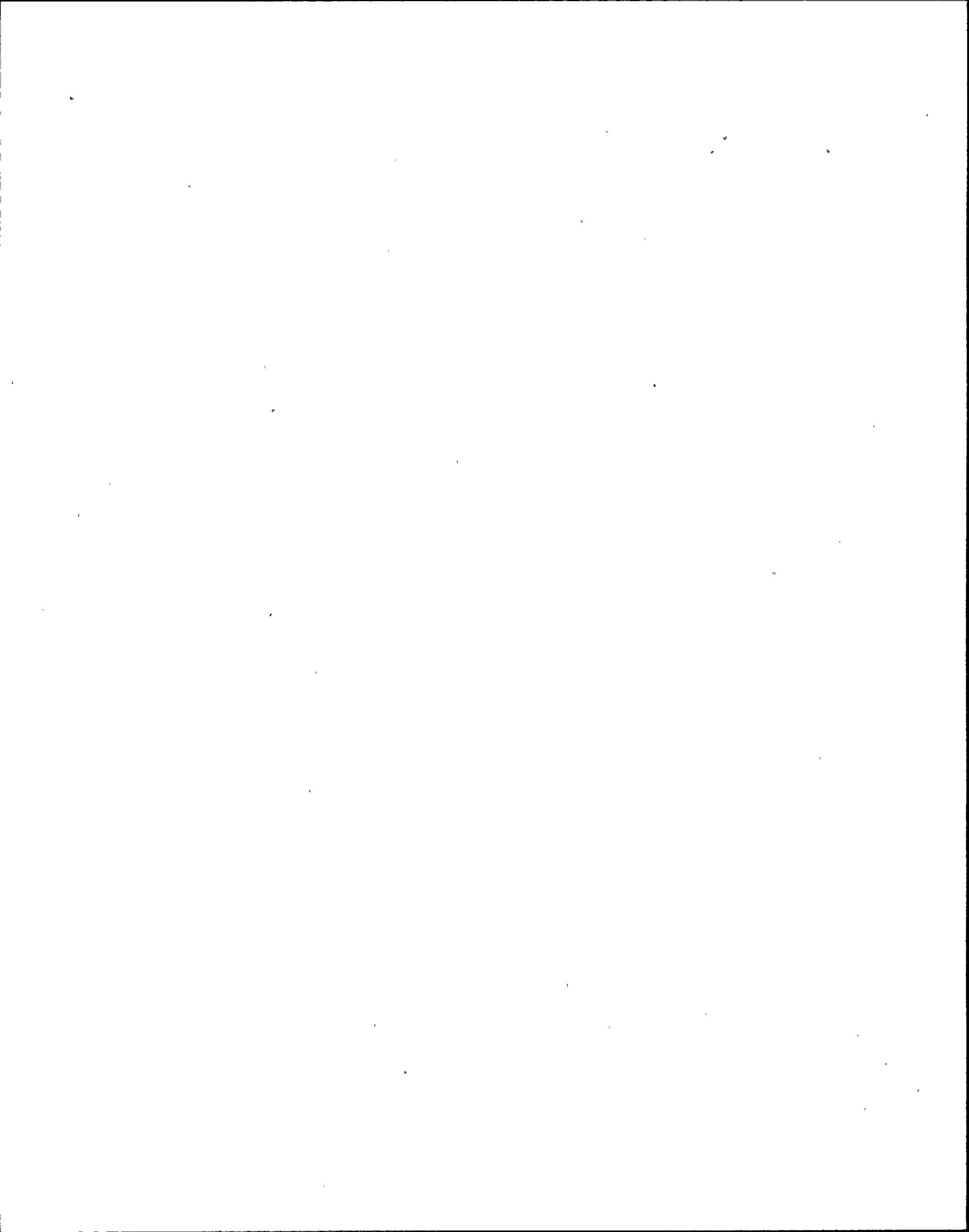
- a. If an SI occurs, the AOV bypass valves 4480 and 4481 will not close.
- b. If a Lo-Lo S/G level (2/3) occurs on either S/G, the AOV bypass valves 4480 and 4481 will not close.
- c. If the turbine is latched with both Main Feed Pumps tripped, the MDAFW pumps will auto start.
- d. If an AMSAC actuation occurs, the MDAFW pumps will not auto start.



QUESTION: 020 (1.00)

HOW MANY thermocouples must be operable in each quadrant to satisfy Tech Spec requirements?

- a. 4
- b. 5
- c. 6
- d. 7



QUESTION: 021 (1.00)

GIVEN the following information:

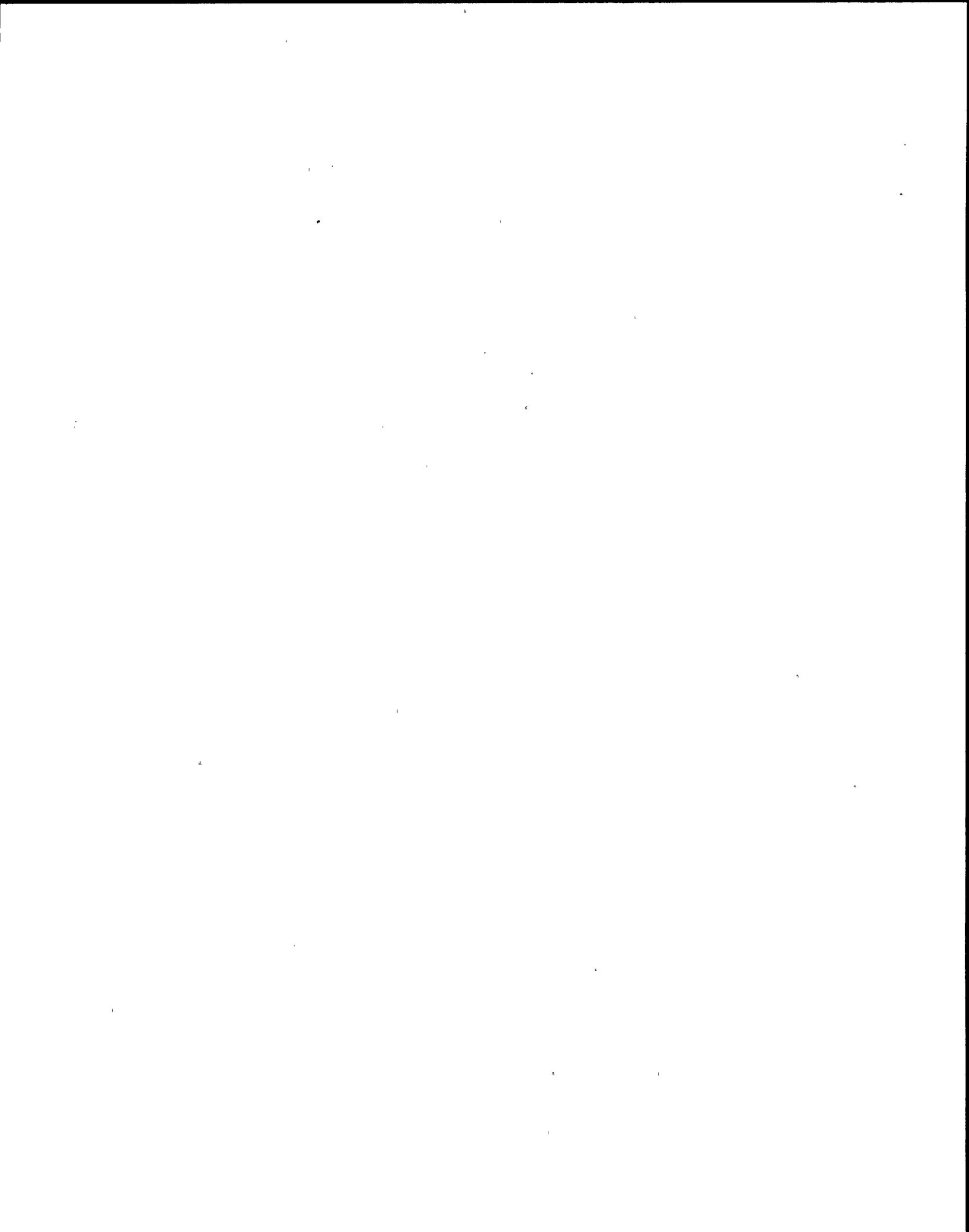
Plant startup is in progress

Reactor power is 25%

11B-12B Bus tie breaker trips open prior to swapping 11B to #11 Unit  
Aux Transformer, resulting in the deenergization of 11B Bus.

WHICH of the following actions is the most immediate priority?

- a. Perform a Shutdown Margin calculation
- b. Reduce power to less than 8.5%
- c. Demonstrate the operability of both Emergency Diesel Generators
- d. Determine the cause of the breaker trip and reenergize 11B Bus from #11 Transformer



QUESTION: 022 (1.00)

GIVEN the following conditions:

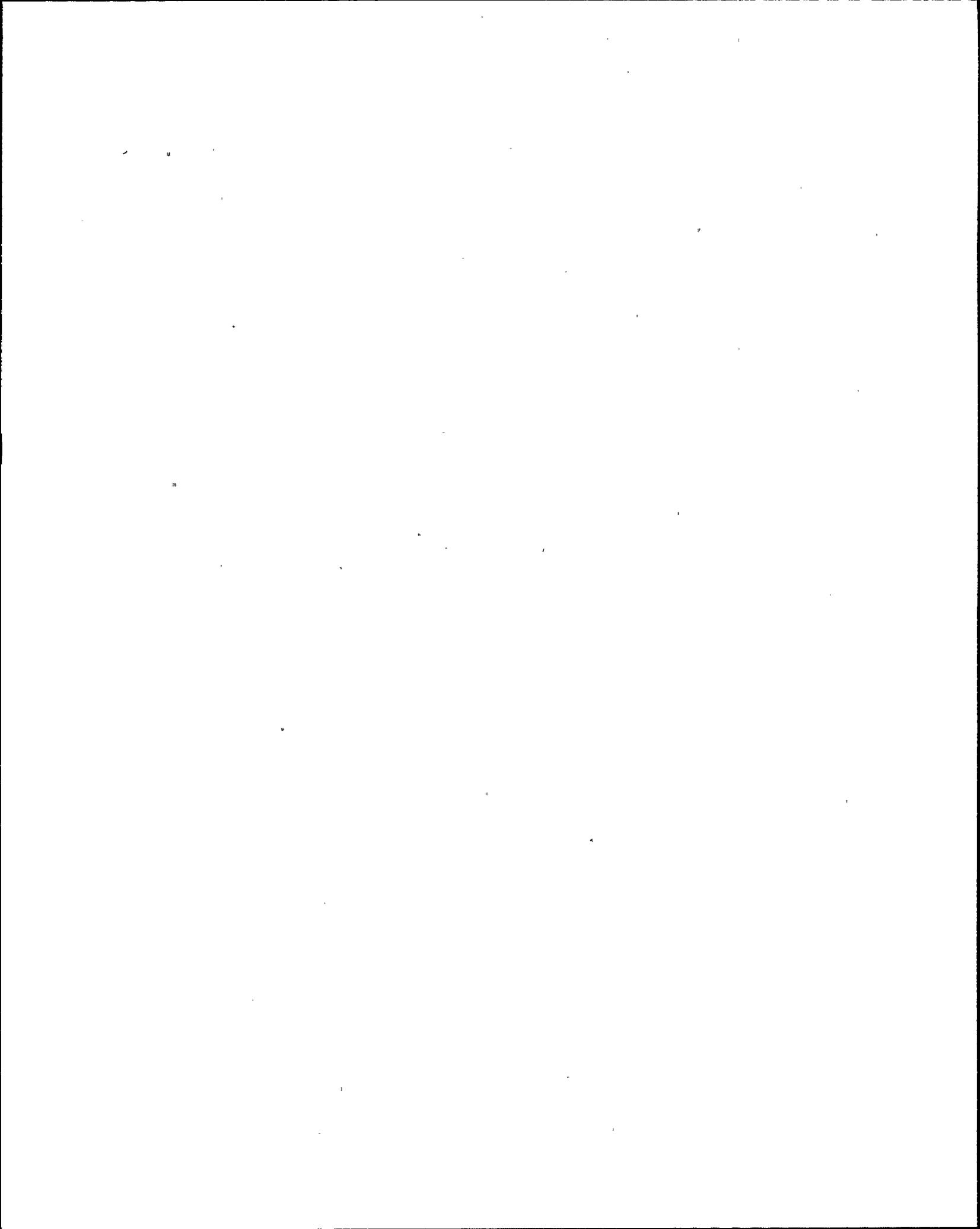
Reactor power =80%

The lower detector for N43 is open circuited (due to a broken cable)

Procedure O-6.4 requires the core quadrant power tilt to be calculated once a day with one excore nuclear channel out of service and power greater than 75%.

WHICH of the following is acceptable for determining core quadrant power tilt under the above conditions?

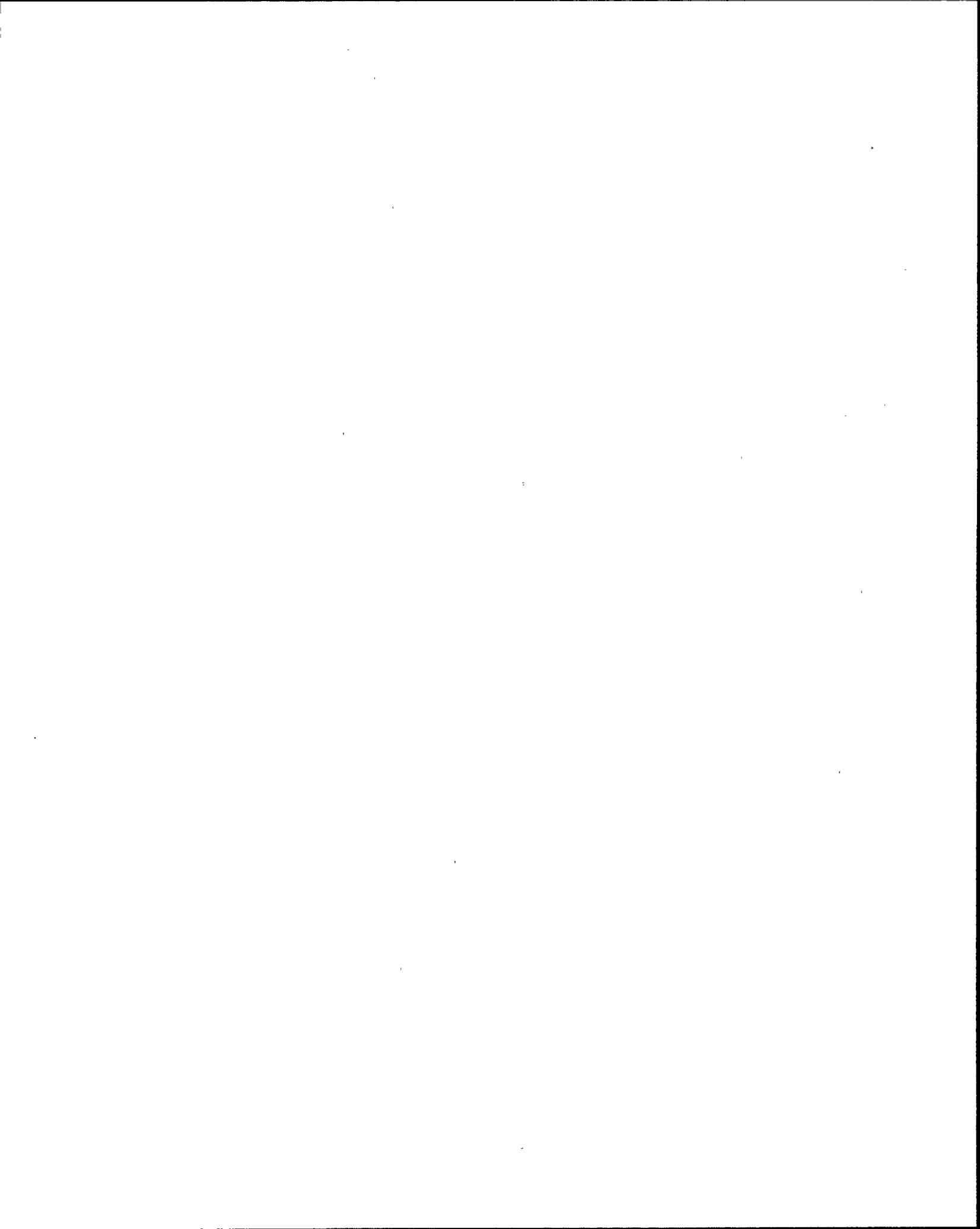
- a. Plant Process Computer System
- b. Manual calculation using operable excore detectors.
- c. Incore Moveable Detectors
- d. Manual calculation using estimated current for N43 lower.



QUESTION: 023 (1.00)

HOW is the accident mode of operation for 1B Containment Recirc Fan different than the normal mode?

- a. HEPA filters are bypassed to prevent damage to them under the initial adverse environment of the accident.
- b. SW outlet throttle valves swap to the full open position to increase cooling flow.
- c. Discharge dampers shift to route air flow through charcoal filters.
- d. The fan shifts to high speed to increase containment atmosphere heat removal.

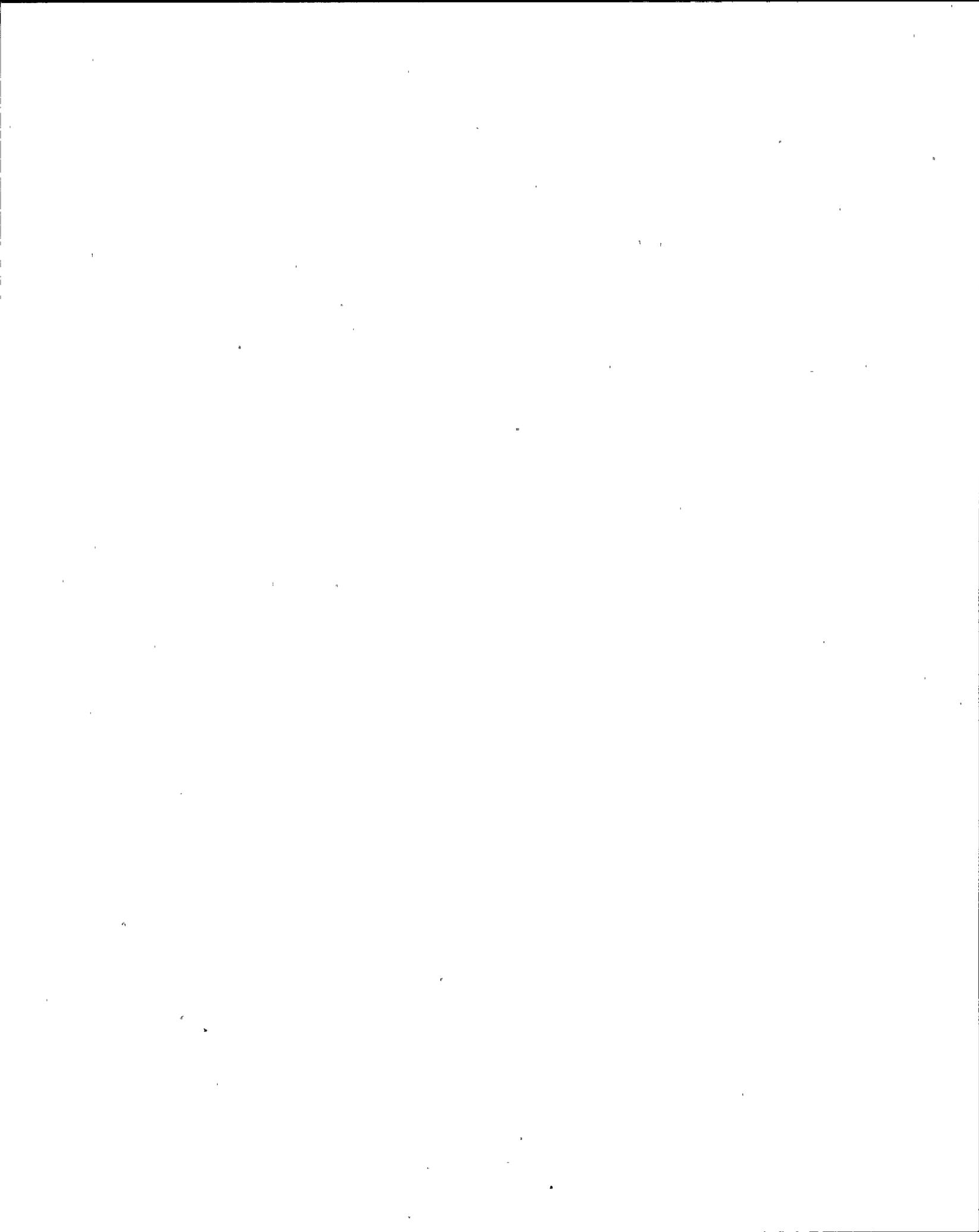


QUESTION: 024 (1.00)

A startup is in progress in accordance with O-1.2 (Plant Startup From Hot Shutdown To Full Load) (copy attached). The final approach to criticality shows the actual critical rod position will differ from the estimated critical rod position by 650 pcm.

WHAT actions are required?? (CHOOSE ONE)

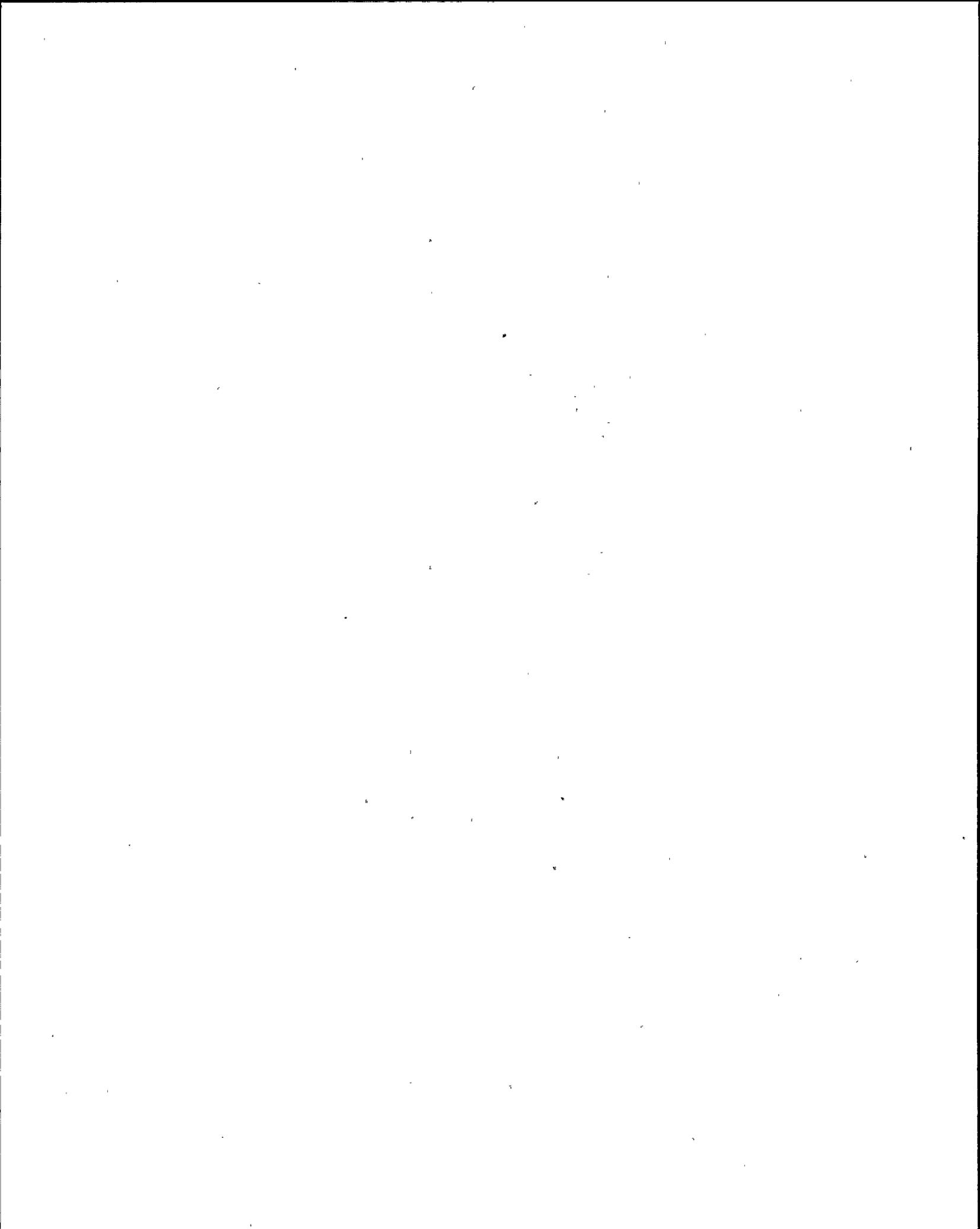
- a. As long as critical rod position will be above the rod insertion limit, the startup may continue.
- b. Stop the rod withdrawal and recalculate the ECP.
- c. Immediately insert all control rods and recalculate the ECP.
- d. Resume the approach to criticality using an inverse count rate (1/M) plot.



QUESTION: 025 (1.00)

The combined capacity of the pressurizer code safety valves is designed to (CHOOSE ONE):

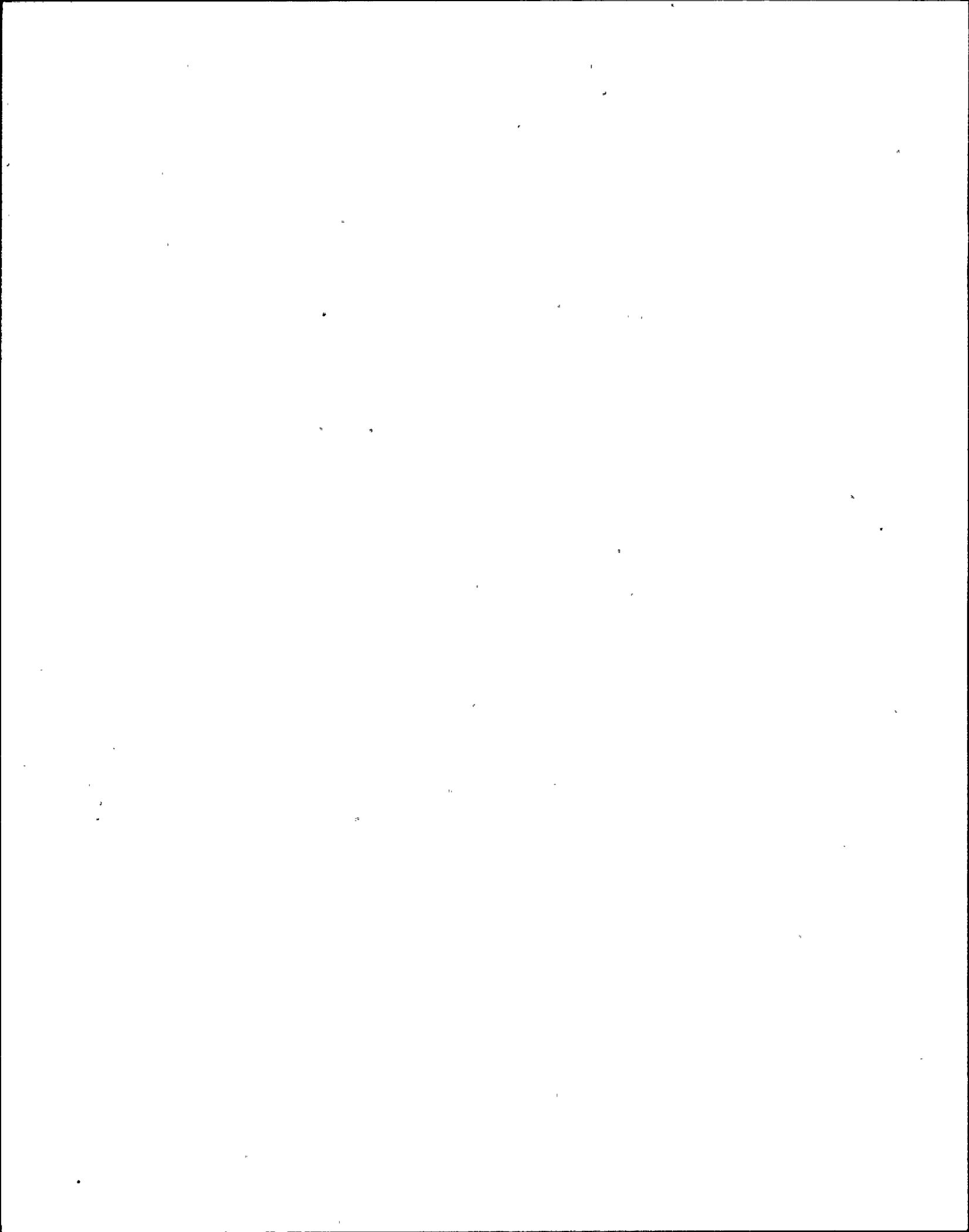
- a. Equal or exceed the pressurizer insurge resulting from a complete loss of load with no reactor trip or automatic control function except actuation of the S/G safety valves.
- b. Limit the pressure increase resulting from a complete loss of load to below the actuation setpoint of the power operated relief valves.
- c. Accommodate the surge resulting from a 50% step load reduction (without any automatic control) to prevent exceeding the pressurizer high pressure trip setpoint
- d. Prevent the RCS from reaching design pressure for a 50% step load reduction without any automatic control function actuation.



QUESTION: 026 (1.00)

WHICH of the following valves OPEN on a SI signal?

- a. Boric Acid Storage Tank to Charging Pumps Valve (MOV-350)
- b. Containment Spray Pump Discharge Valve (MOV-860A)
- c. Containment Recirc Fan SW Outlet Valve (AOV-4561)
- d. Containment Mini-Purge Exhaust Valve (AOV-7970)



QUESTION: 027 (1.00)

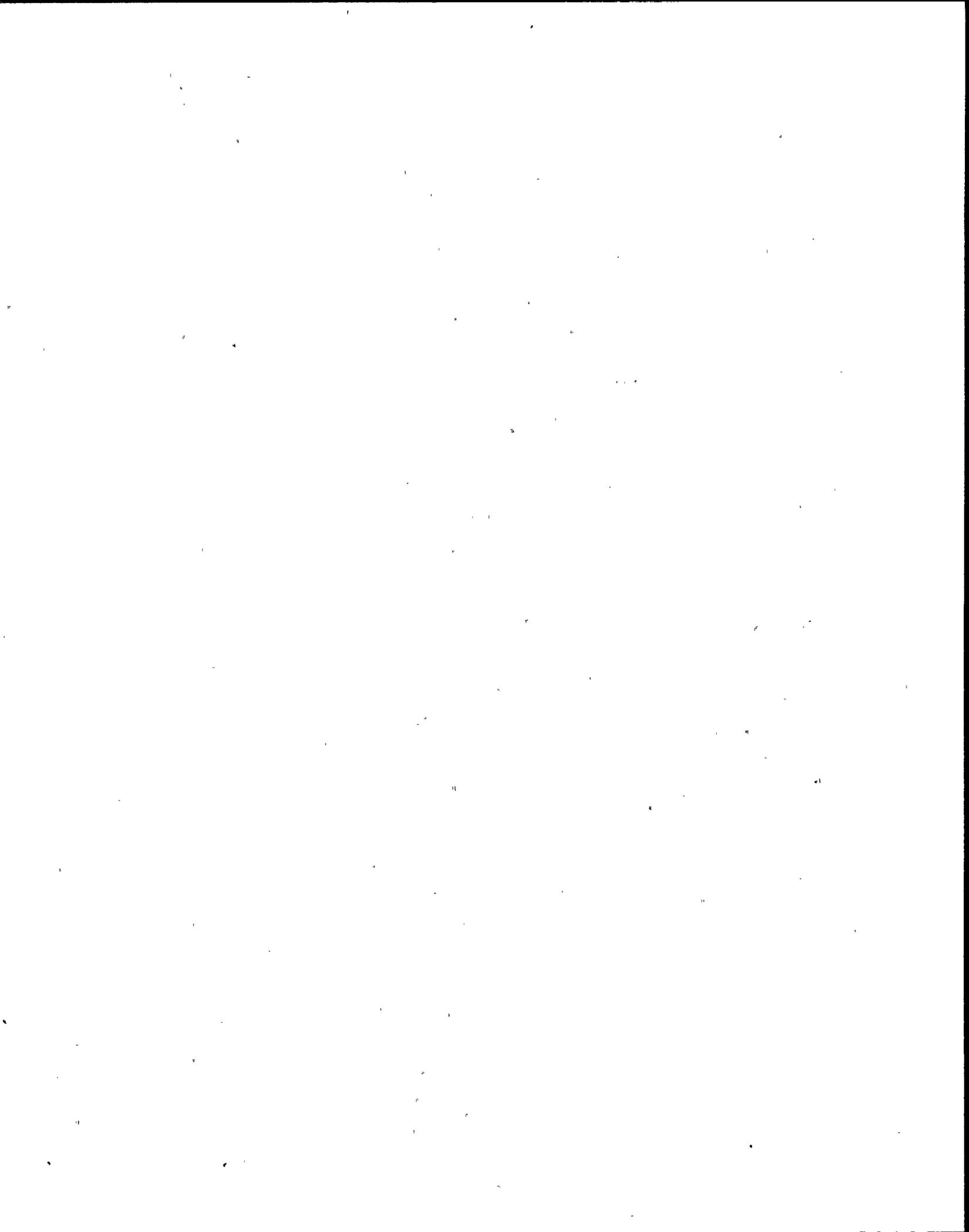
Procedure O-2.2 (Plant Shutdown From Hot Shutdown To Cold Shutdown) lists the following precaution:

4.3.6 A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 330 degrees F unless:

- 1) the pressurizer water volume is less than 324 cubic feet (38% level), or
- 2) the secondary water temperature of each steam generator is less than 0 degrees F above each of the RCS cold leg temperatures (T.S. Limit 50 degrees F)

WHAT is the reason for limiting secondary to cold leg delta T? (CHOOSE ONE):

- a. To prevent brittle fracture of the S/G carbon steel shell from excessive cooldown rate by RCS water.
- b. To prevent damage to RCP seals from thermal stresses to the impeller and shaft.
- c. To prevent a primary to secondary leak by pressurized thermal shock of the S/G U-tubes.
- d. To prevent overpressurization of the RCS due to expansion of water being heated in the S/G U-tubes.



QUESTION: 028 (1.00)

GIVEN the following:

A loss of off-site power has occurred with a reactor trip

Both Reactor coolant pumps are deenergized

Incore thermocouples reading 475 degrees F and decreasing

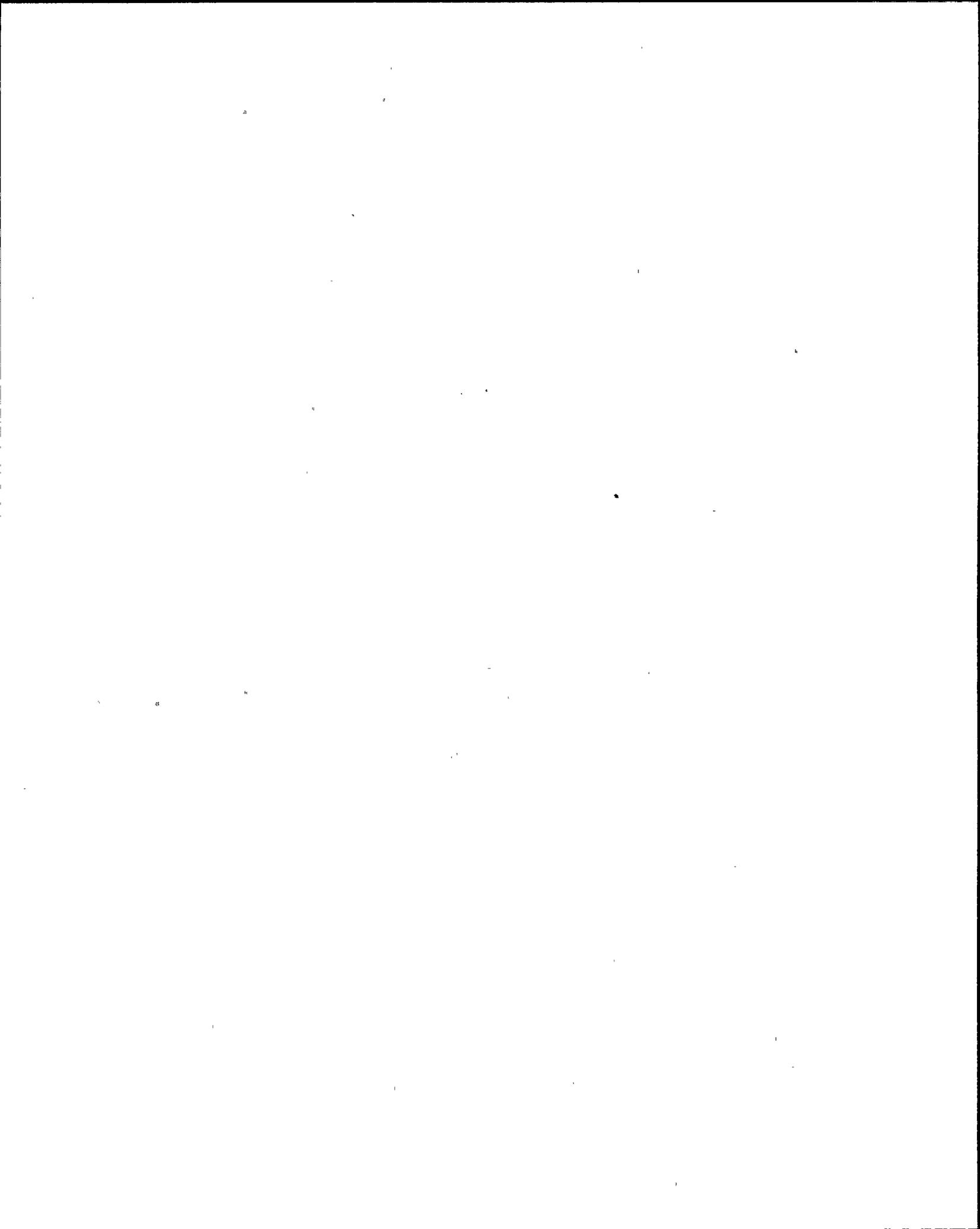
RCS cold leg temperatures reading 450 degrees F and decreasing

RCS pressure is 1700 psig

Pressurizer level has suddenly increased from 20% to 38% without any operator action

WHICH of the following is the reason for the change in pressurizer level?

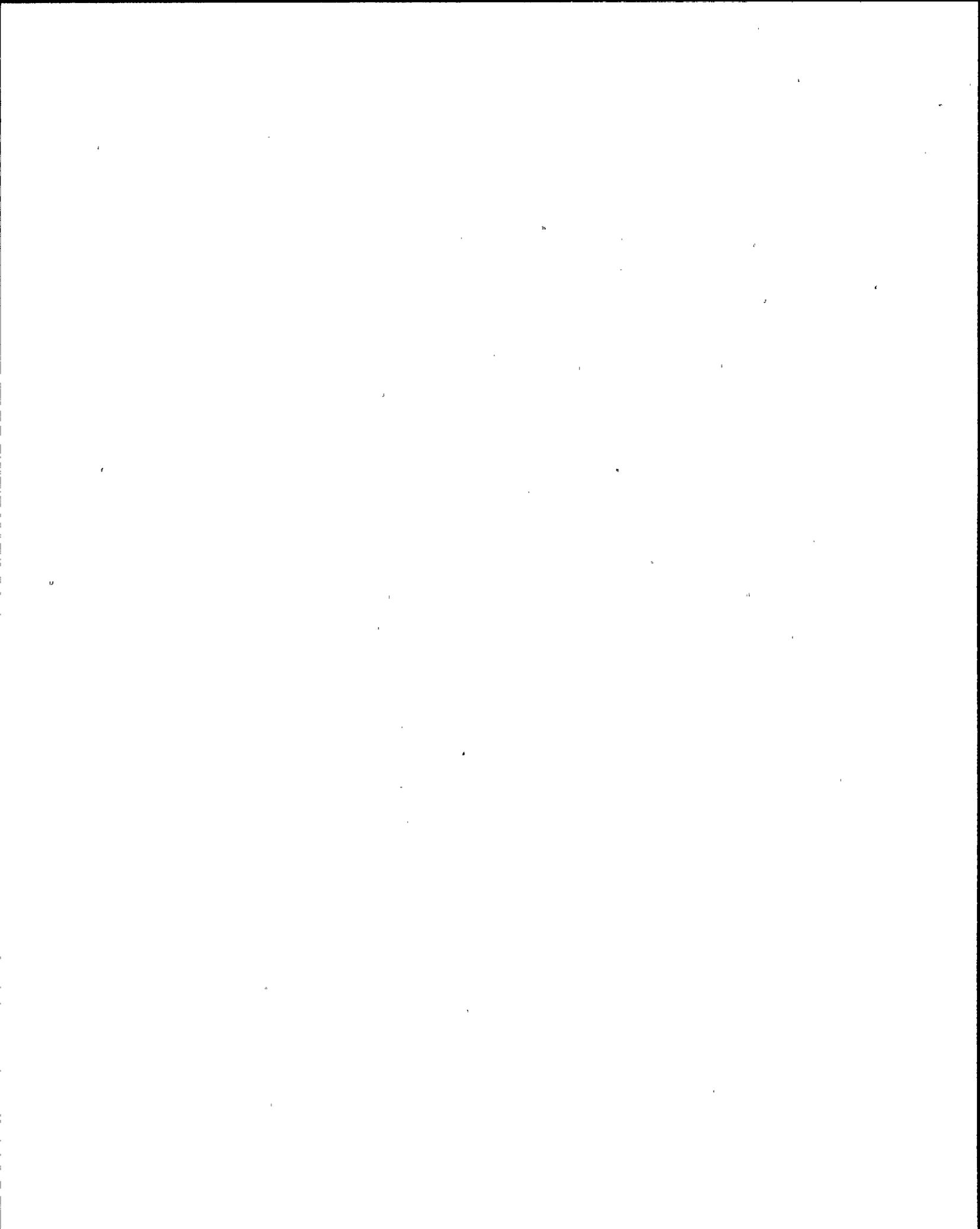
- a. RCS pressure has decreased to the point where the safety injection pumps have begun injecting into the RCS.
- b. RCS cooldown has caused a cooldown of accumulator water, causing expansion of accumulator gas.
- c. RCS cooldown has caused saturated conditions and a steam void in the reactor vessel head area.
- d. Actuation of the pressurizer PORV's has caused a "swell" in pressurizer level.



QUESTION: 029 (1.00)

How are all control and shutdown rods normally verified on the bottom for a Reactor Trip?

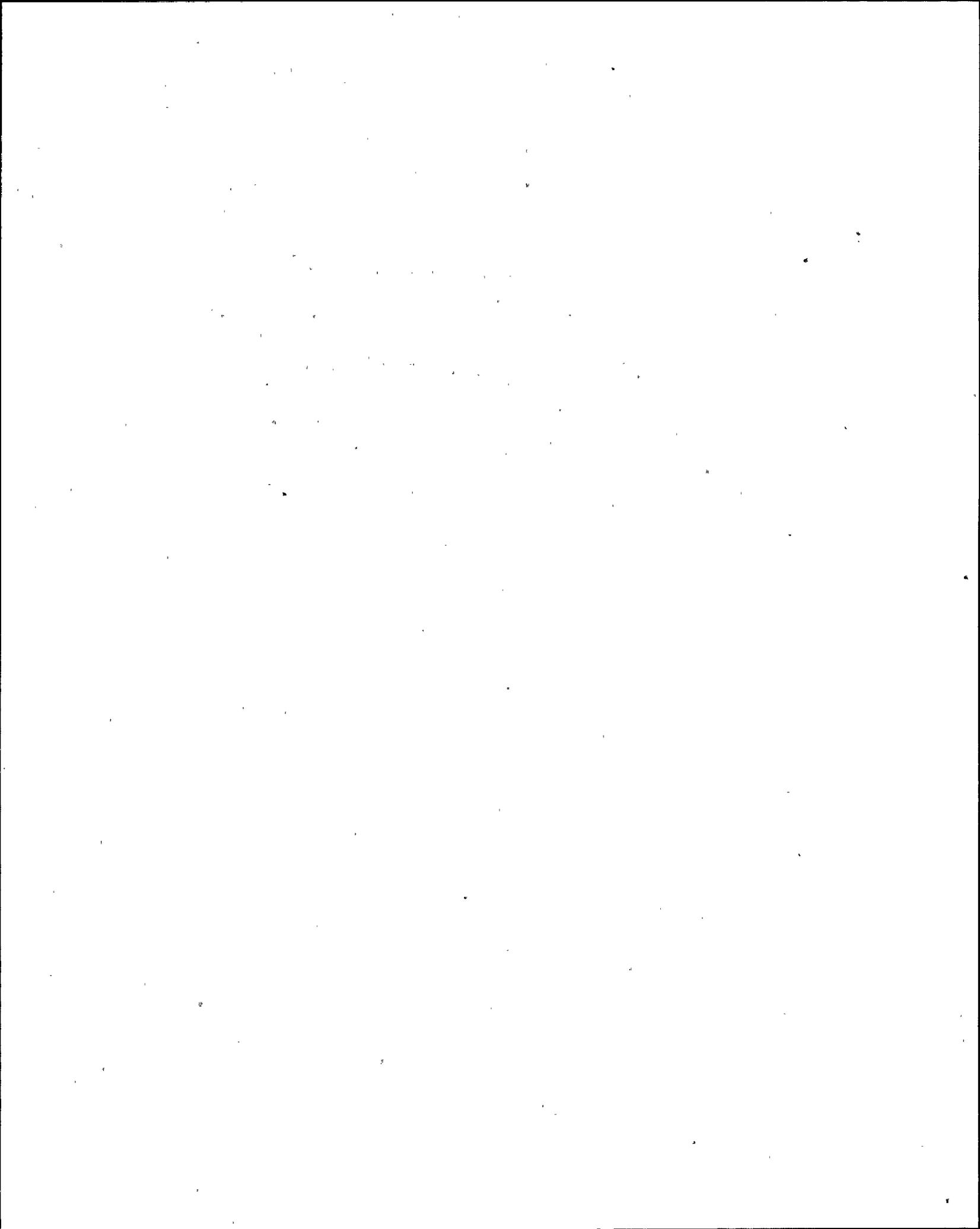
- a. All demand position counters reset to zero
- b. On MRPI CRT
- c. P-A converter reading zero for all banks
- d. Breakers for Bus 13 and Bus 15 normal feed are open



QUESTION: 030 (1.00)

WHICH of the following is an ECCS acceptance criterion?

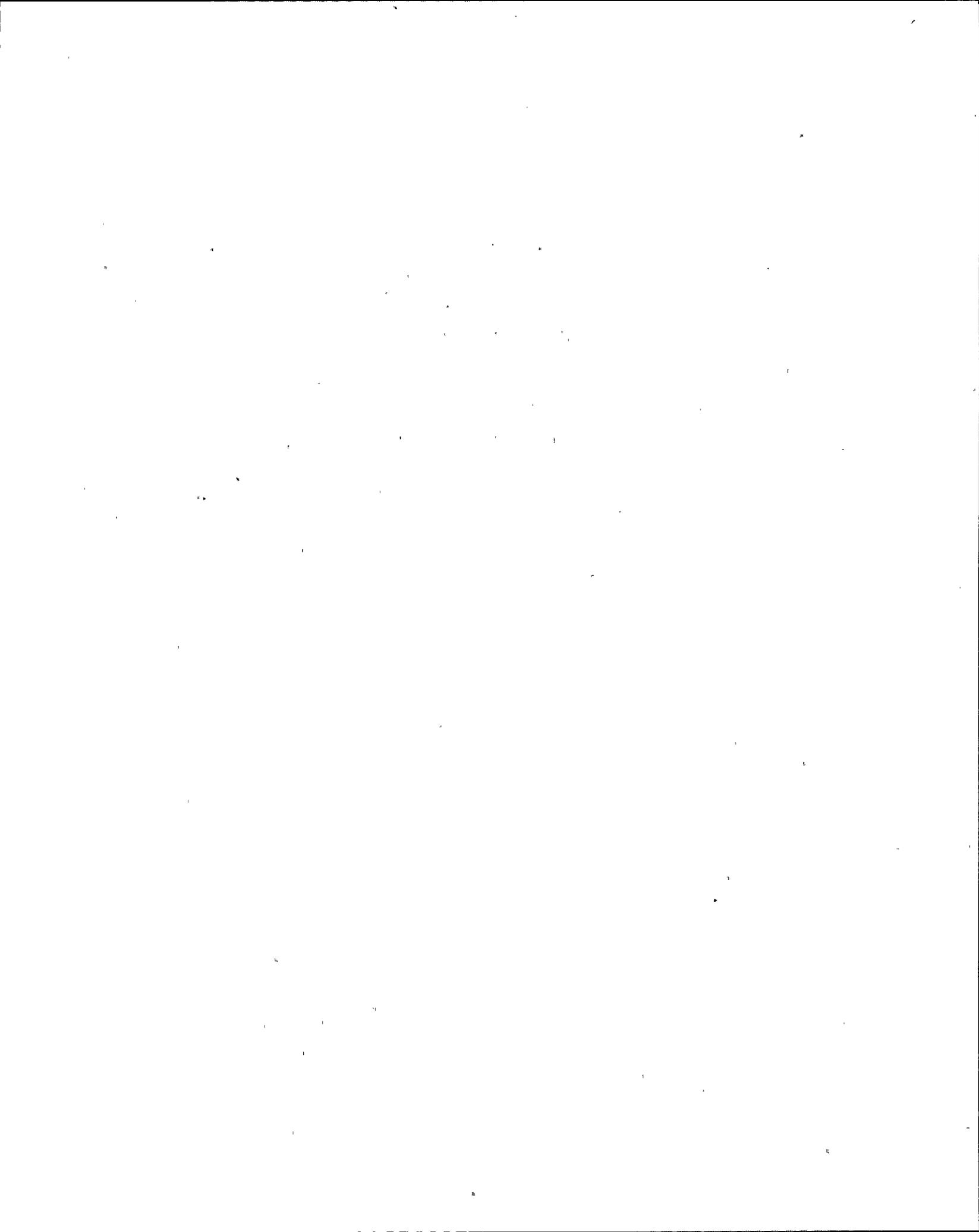
- a. Ensure calculated offsite dose rates following an accident remain within the guidelines of 10 CFR Part 100 limits.
- b. Provide capability for maintaining core cooling over a long period of time.
- c. Ensure that the Iodine released following an accident is less than or equal to 1% of the total amount of Iodine in the core.
- d. Maintain Peak Centerline Temperature following an accident to less than or equal to 4700 degrees F.



QUESTION: 031 (1.00)

Region 2 of the Spent Fuel Storage Racks has a higher allowable density loading of fuel than Region 1 due to (CHOOSE ONE):

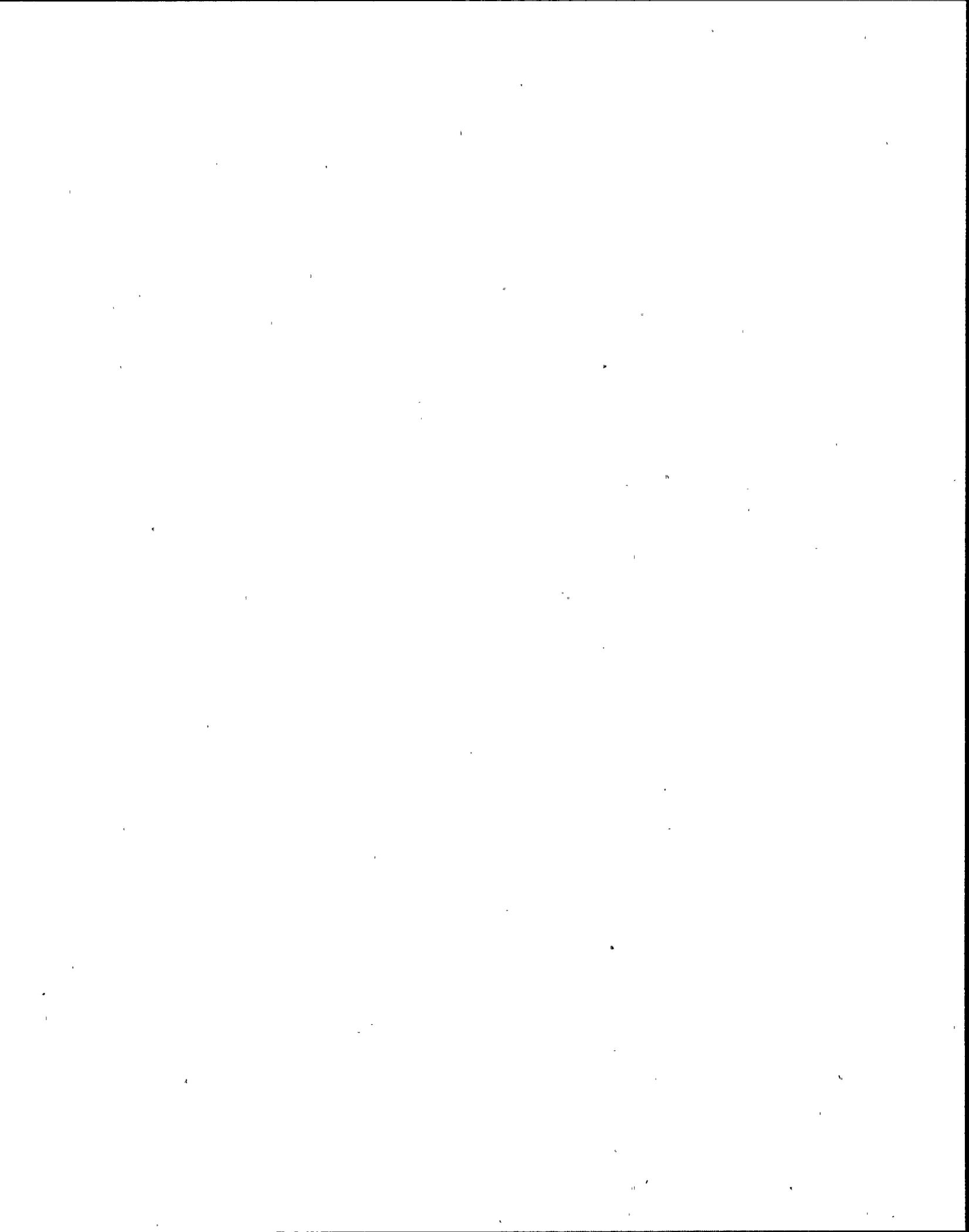
- a. Region 2 is used for the storage of new fuel only, prior to its transfer into the core.
- b. Region 2 is constructed with additional boron poison loading in the fuel racks.
- c. Region 2 has a higher soluble boron concentration in the water surrounding the fuel.
- d. Region 2 fuel racks are situated lower in the spent fuel pool, allowing more room for fuel assemblies.



QUESTION: 032 (1.00)

WHICH of the following is the function of the S/G feed ring J-tubes?

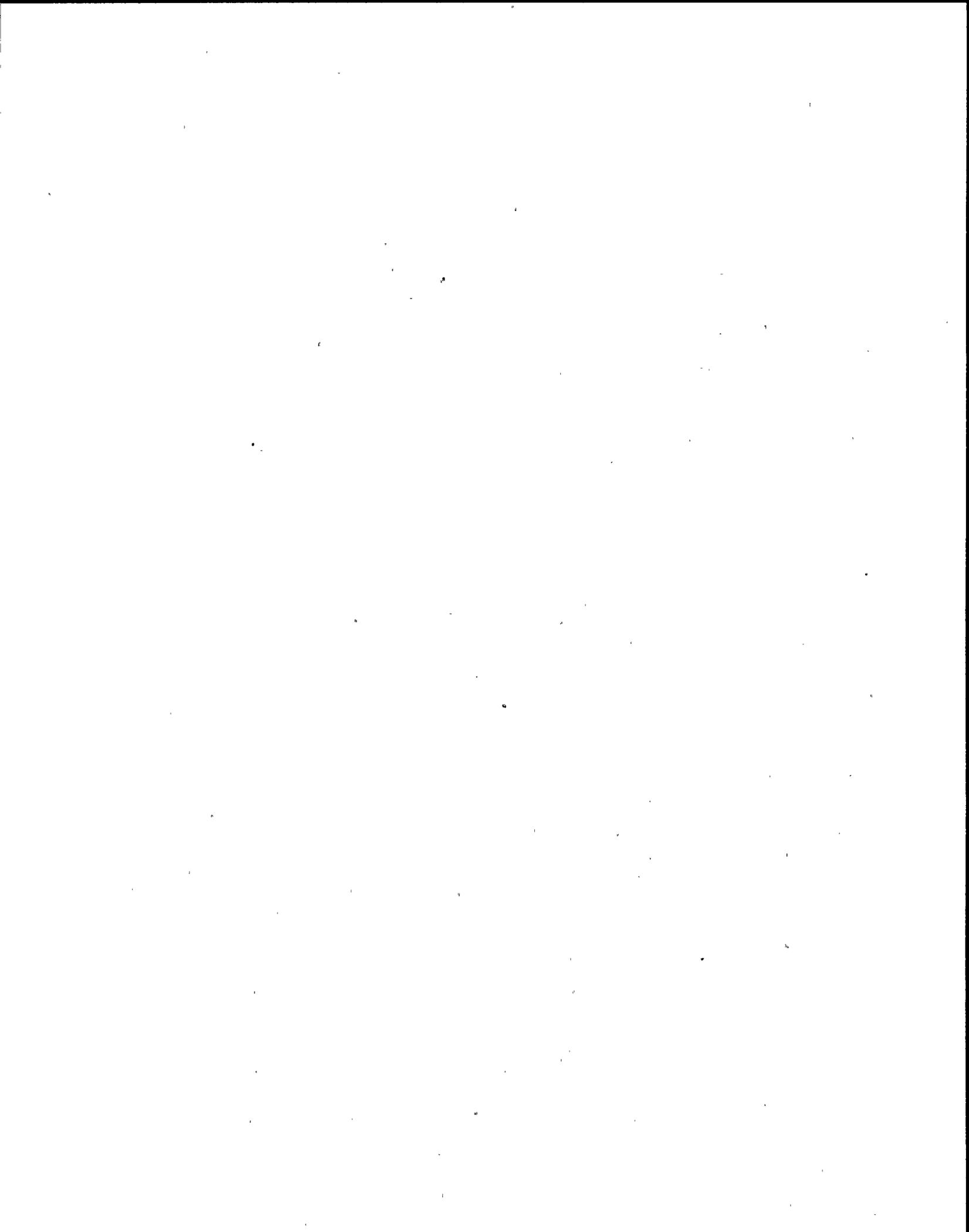
- a. Maintain the feed ring full of water during short periods of interrupted feed flow.
- b. Provide for even distribution of feedwater into the downcomer.
- c. Prevent erosion of the top layer of U-tubes from feed ring spray.
- d. Provide for rapid dispersion of volatile chemicals when they are added to the S/G.



QUESTION: 033 (1.00)

WHICH of the following reactor trips is designed to protect the core from a departure from nucleate boiling (DNB) condition?

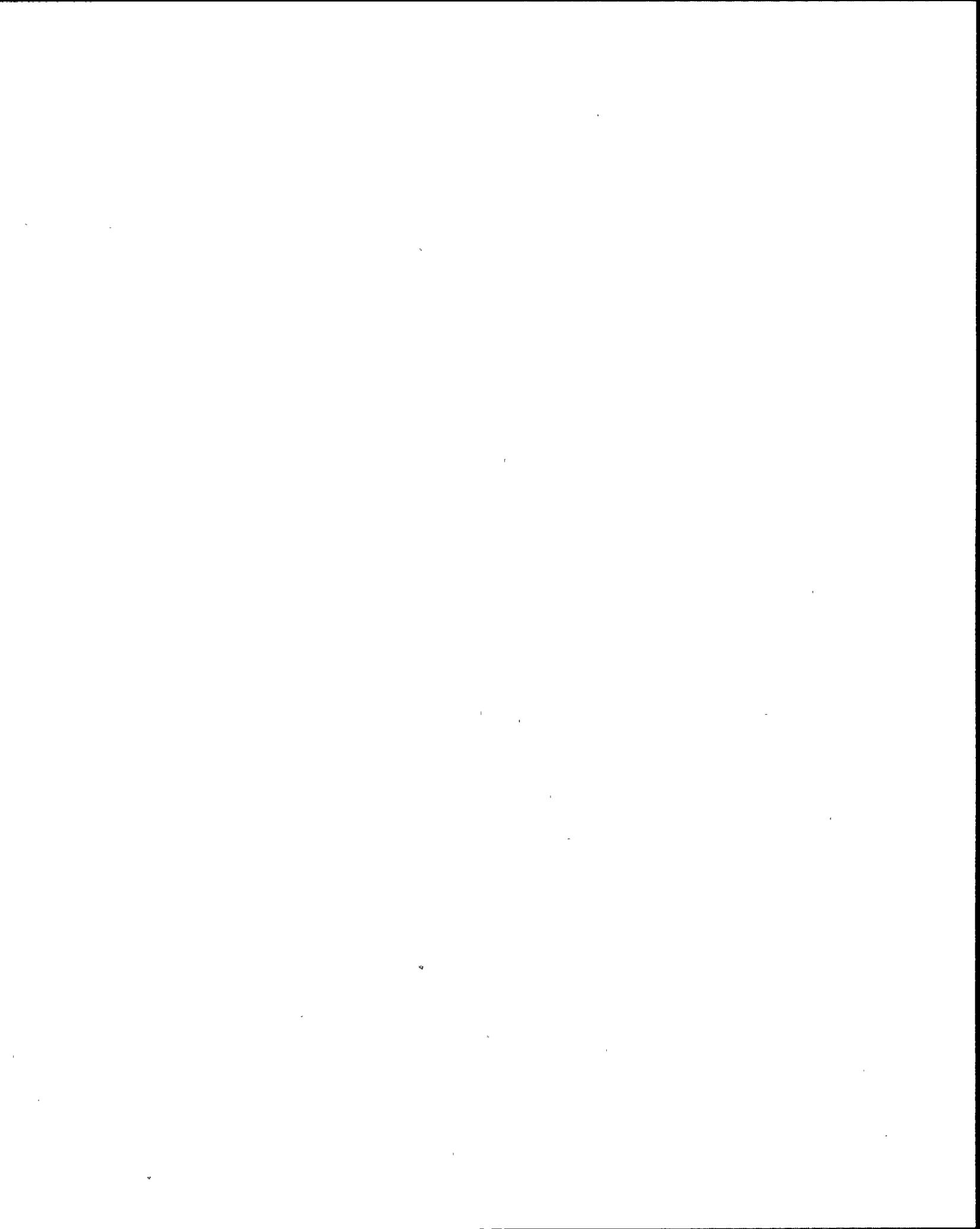
- a. Power Range High Flux (high setpoint)
- b. Pressurizer High Level
- c. Overpower Delta Temperature
- d. Reactor Coolant Loop Low Flow



QUESTION: 034 (1.00)

For an AUTO actuation of the HALON suppression system in the relay room, WHICH of the following lists the alarms that will be received on the control room's Fire Control Panel?

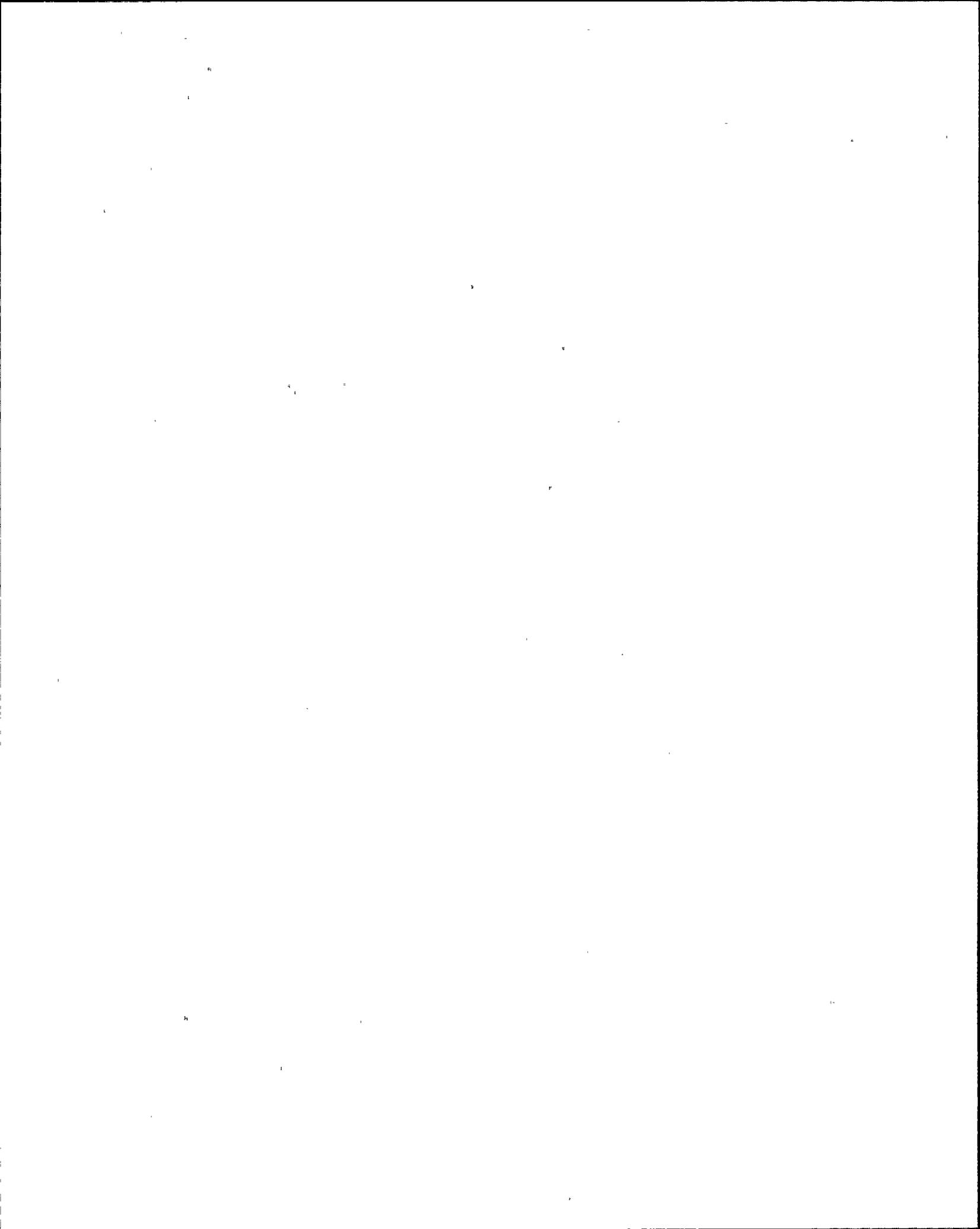
- a. First Alarm
- b. First Alarm, Second Alarm
- c. First Alarm, Second Alarm, Flow
- d. First Alarm, Second Alarm, Flow, Auto Defeat



QUESTION: 035 (1.00)

For a loss of all AC due to a loss of 12A and 12B Transformers, WHICH of the following methods could be used to restore offsite power for long term concerns? (diagram attached)

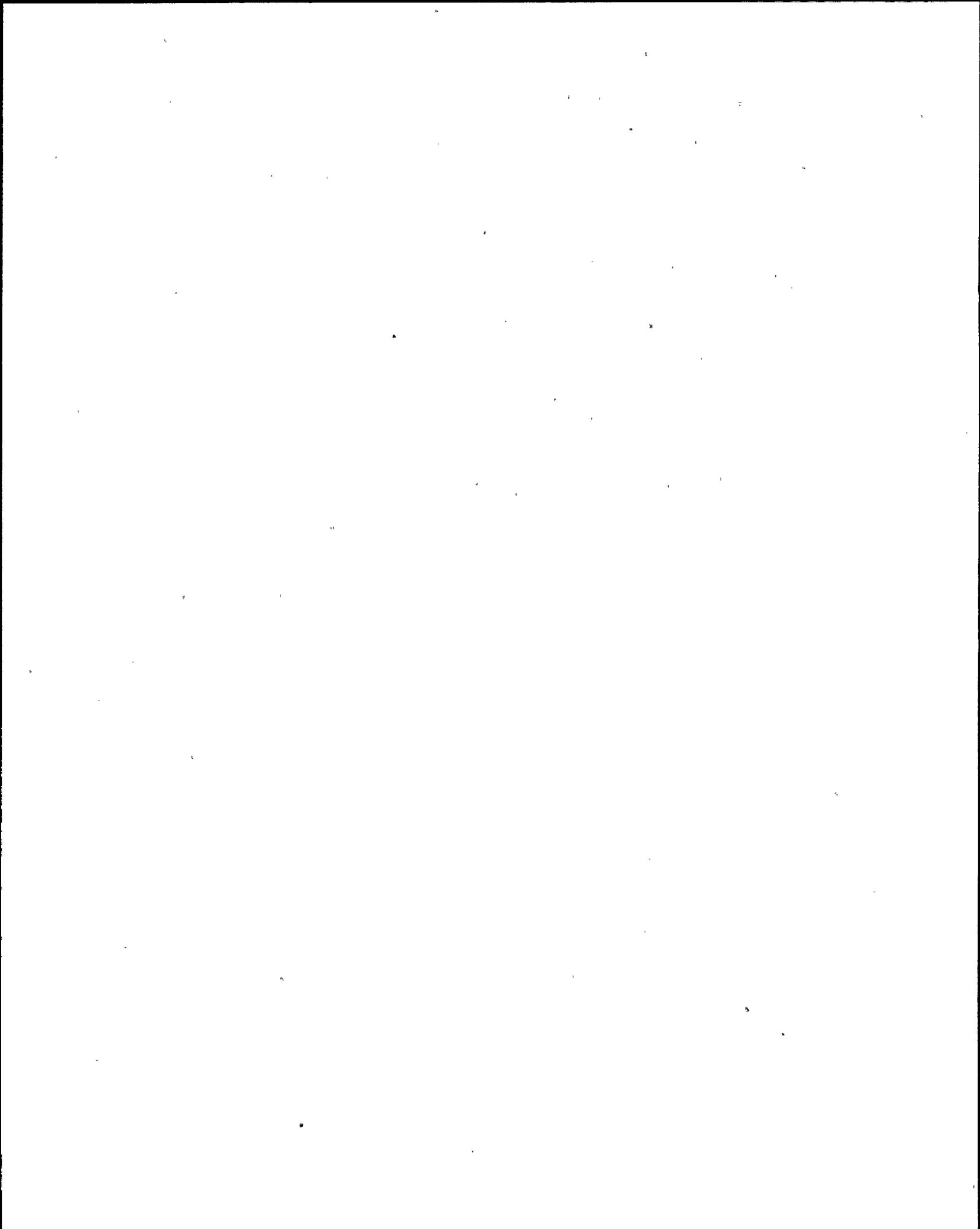
- a. 115kV Circuit 909 to Circuit 767 via the manual disconnect
- b. Offsite supply via #6 Transformer to the 4160V Buses
- c. Offsite supply via #6 Transformer and the Main Transformer
- d. Offsite supply via the Main Transformer and #11 Transformer



QUESTION: 036 (1.00)

WHICH of the following statements describes what will occur for a loss of main DC Distribution Panel 1A?

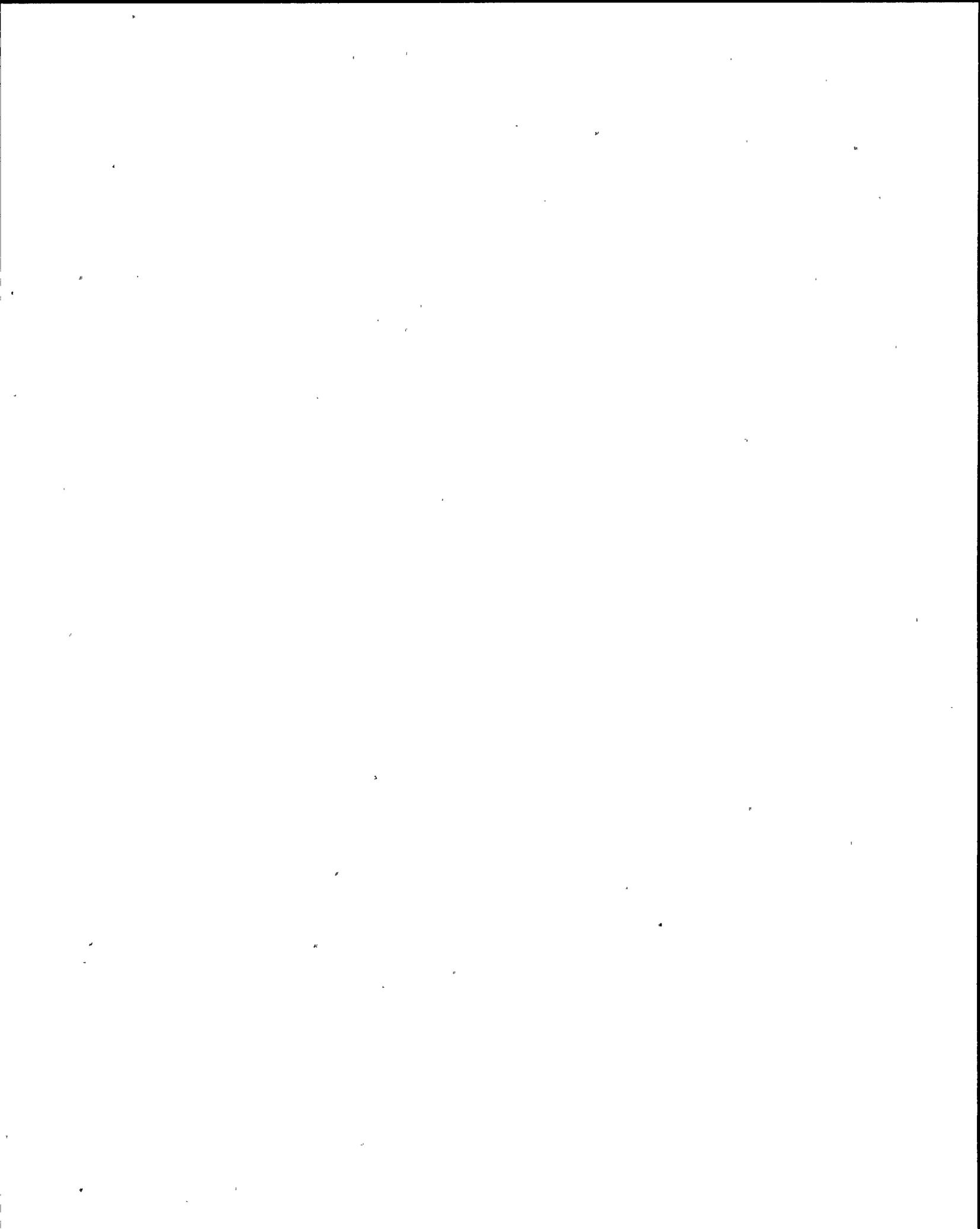
- a. DC Distribution Panel infeed will automatically swap from 1A 125V Battery to the TSC Battery.
- b. Operability of train A safeguards valves from the MCB will be lost.
- c. Both pressurizer PORV's will be inoperable.
- d. Instrument bus 1A will be deenergized.



QUESTION: 037 (1.00)

WHICH of the following D/G engine trips requires local actions at the D/G in order to be reset?

- a. overcrank
- b. low lube oil pressure
- c. overspeed
- d. local stop

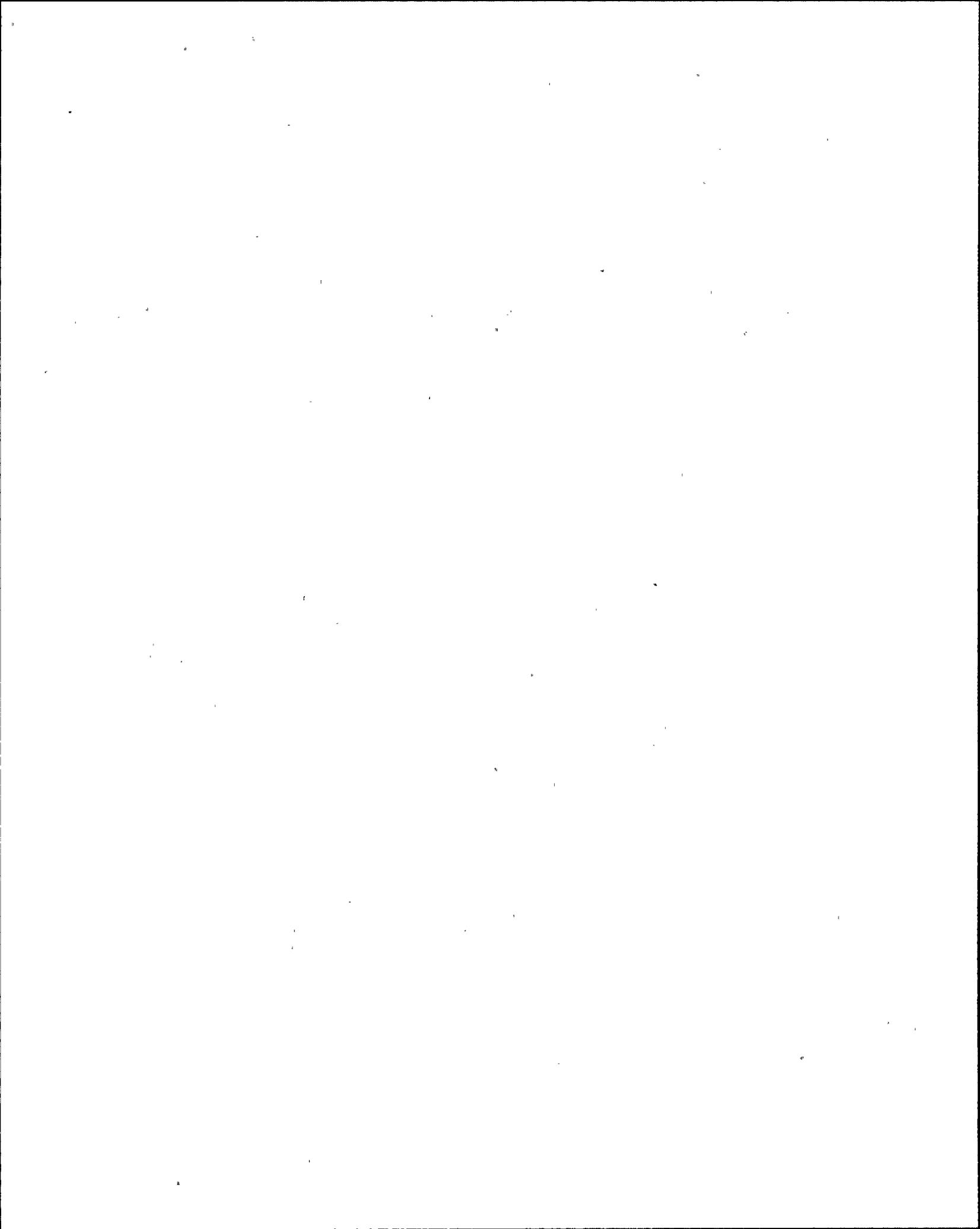


QUESTION: 038 (1.00)

During a station blackout, "A" D/G is carrying 1850 kW of load.

HOW much load of proportional heaters can be loaded onto the "A" D/G without exceeding its continuous service rating?

- a. 100 kW
- b. 200 kW
- c. 300 kW
- d. 400 kW



QUESTION: 039 (3.00)

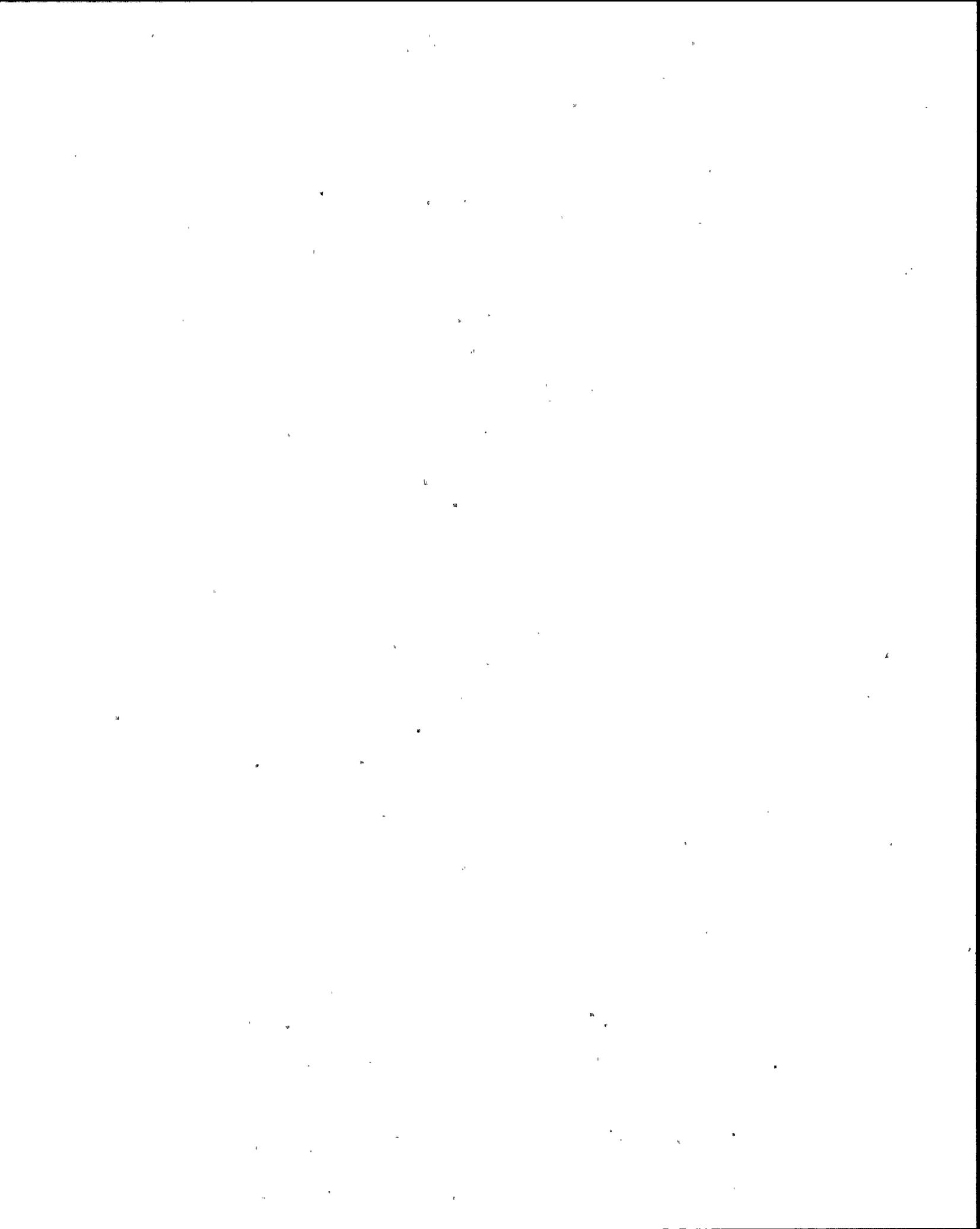
MATCH the most appropriate procedure listed in COLUMN B to which you would refer for an ALARM condition on the rad monitors listed in COLUMN A.  
(Each procedure in COLUMN B can be used once, more than once, or not at all)

## COLUMN A

- a) R9 \_\_\_\_\_
- b) R14 \_\_\_\_\_
- c) R15 \_\_\_\_\_
- d) R17 \_\_\_\_\_
- e) R19 \_\_\_\_\_
- f) R30 \_\_\_\_\_

## COLUMN B

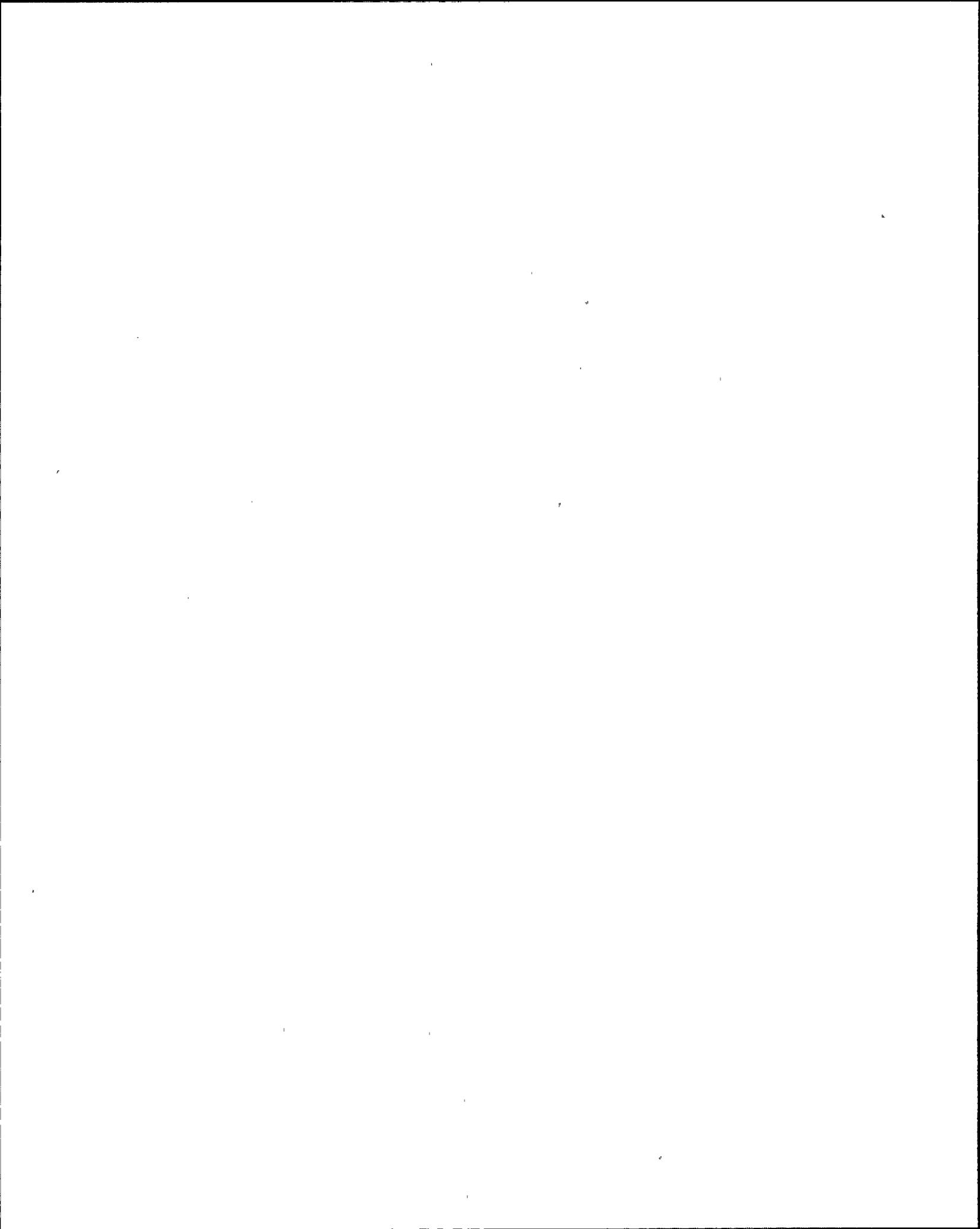
- 1. AP-CCW.1 (Leakage Into The Component Cooling Loop)
- 2. AP-CVCS.1 (CVCS Leak)
- 3. AP-RCP.1 (RCP Seal Malfunction)
- 4. AP-RCS.1 (Reactor Coolant Leak)
- 5. AP-RCS.3 (High Reactor Coolant Activity)
- 6. E-1 (Loss Of Reactor Or Secondary Coolant)
- 7. ER-RMS.1 (Locating Source Of High Activity - Plant Vent)
- 8. ER-SFP.1 (Loss Of Spent Fuel Pit Cooling)
- 9. O-6.10 (Plant Operation With S/G Tube Leak Indication)



QUESTION: 040 (1.00)

WHICH of the following statements describes why there is a 60 second delay between most turbine trips and generator trips?

- a. Maintaining RCP's on the generator prevents a reverse power trip of the generator.
- b. Maintaining RCP's on the generator will be less severe if a subsequent accident occurred.
- c. Maintaining RCP's on the generator allows sufficient time to transfer power supplies to the Aux Transformer.
- d. Maintaining RCP's on the generator will prevent the generator from overspeeding.



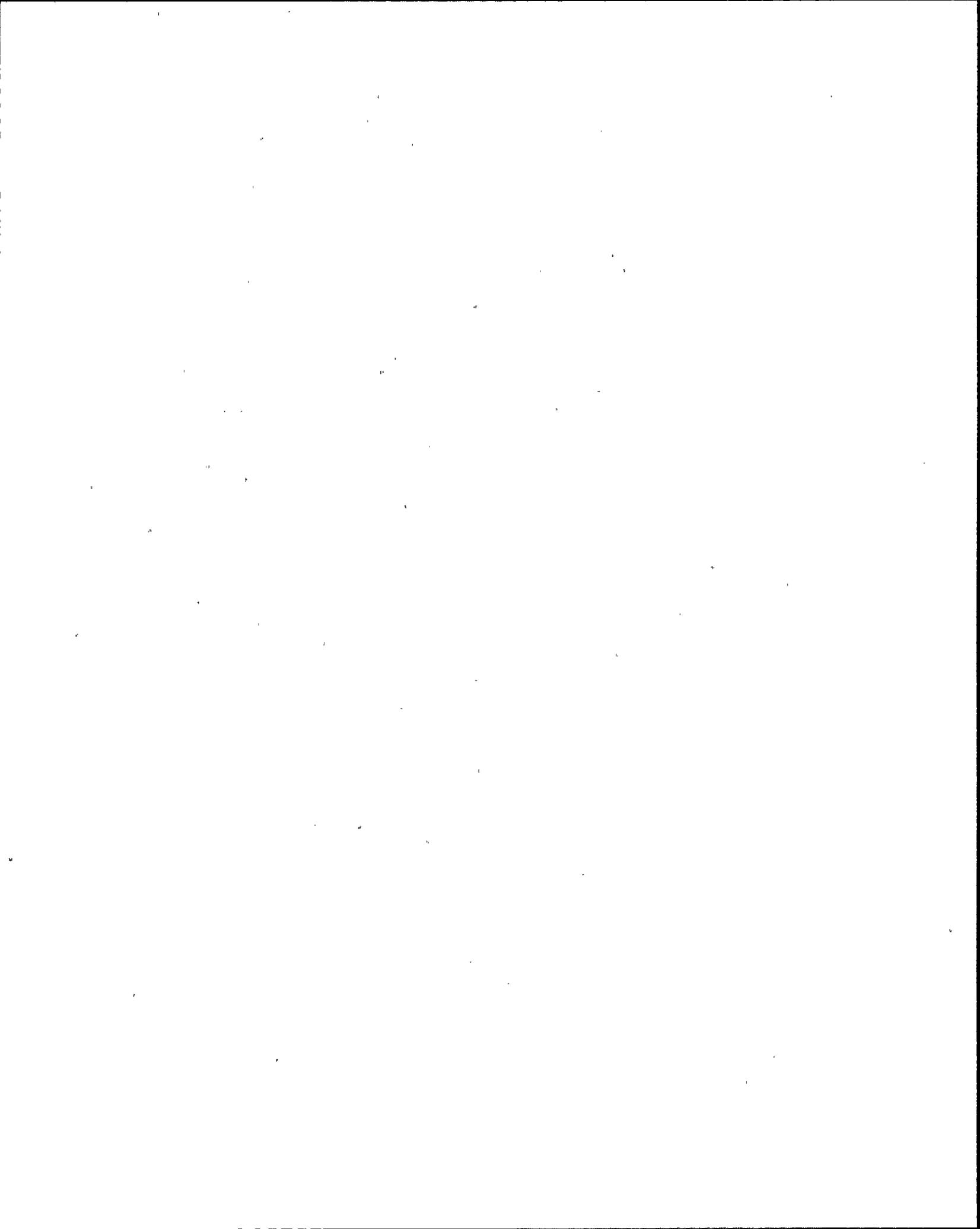
QUESTION: 041 (1.00)

Precaution 4.7 of O-2.3.1 (Draining And Operation At Reduced Inventory Of The Reactor Coolant System) lists the following table of recommended RHR loop flows vs. loop levels:

<u>Operation</u>	<u>"B" Loop Level</u>	<u>RHR Flow</u>
Head Removal	84 inches	<3000 GPM
RCP Seal Inspection	70 inches	<3000 GPM
Eductor Operation	18 inches	≤1000 GPM
S/G Inspection		
Loop Centerline	10 inches	≤800 GPM
RTD Work or S/G	6 inches	≤500 GPM
Bowl Deconning		

WHICH of the following is the reason for these recommended flows?

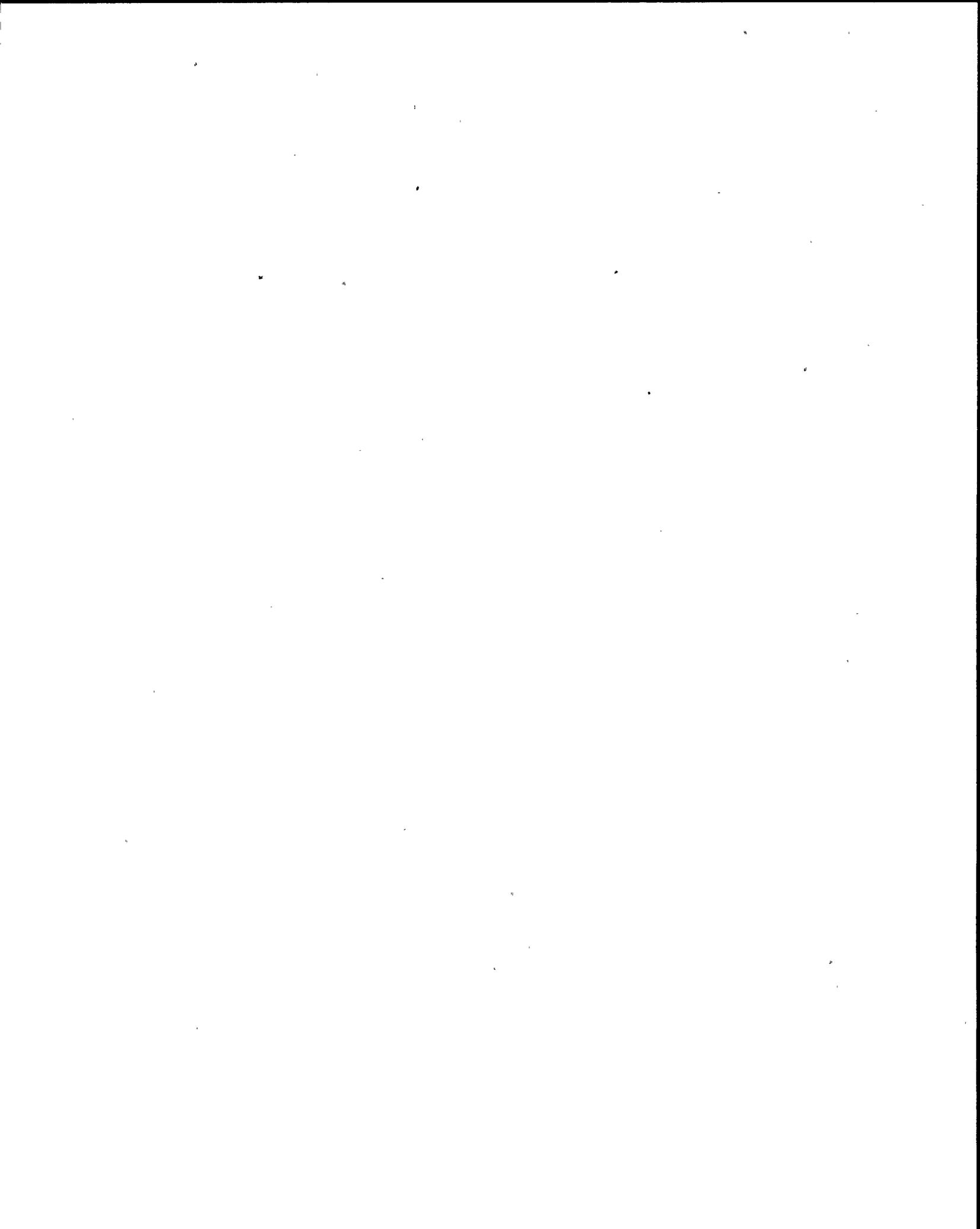
- Prevent loss of suction to RHR pumps.
- Prevent RHR pump runout.
- Prevent stratification of boron in the RCS.
- Prevent loss of RCS inventory.



QUESTION: 042 (1.00)

WHICH of the following manipulator crane features helps prevent lifting a fuel assembly with excessive force?

- a. Dillon load cell indication
- b. Gripper interlock circuit
- c. Bridge - trolley interlock
- d. Slack cable limiting circuit



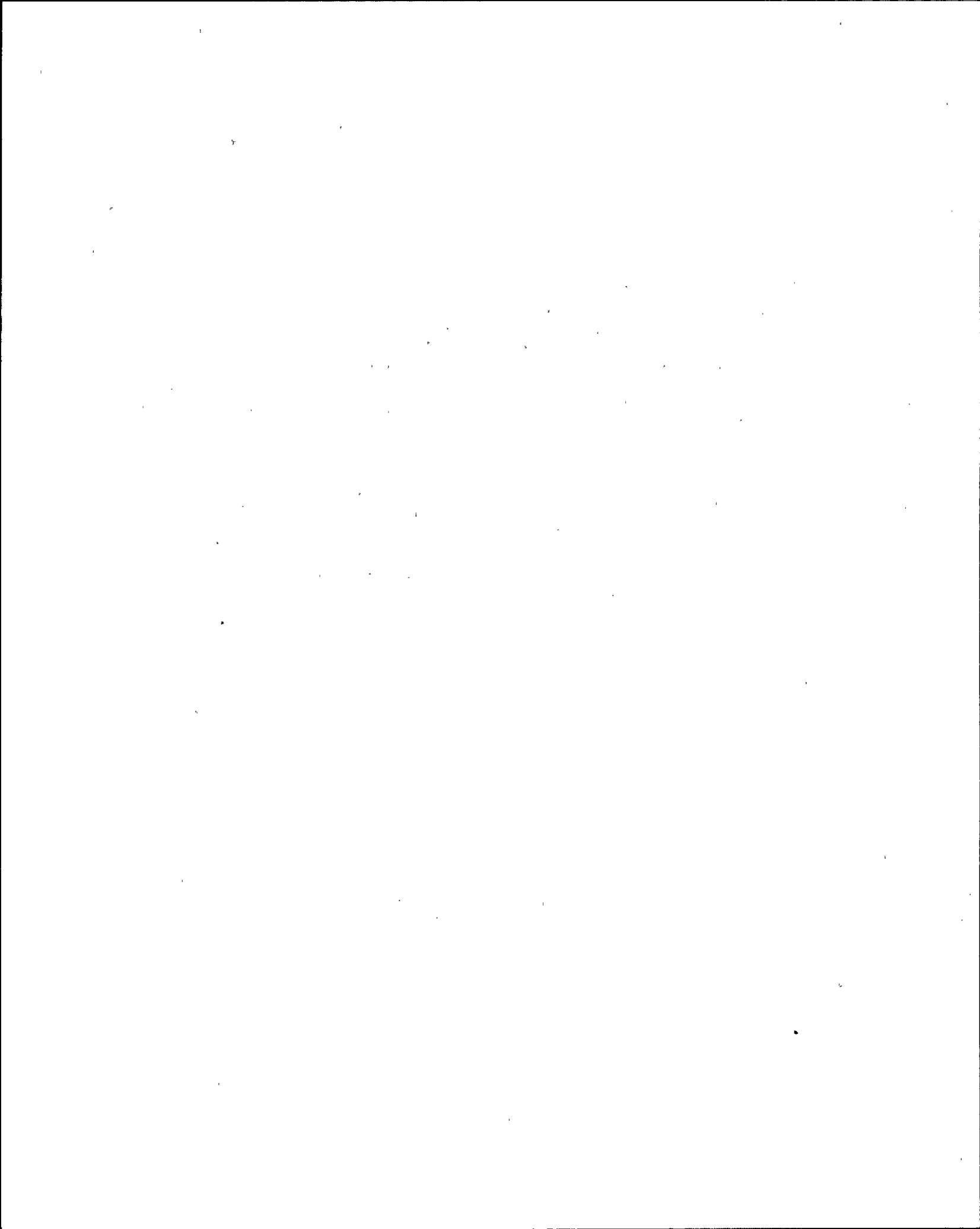
QUESTION: 043 (1.00)

CONSIDER the following two cases:

- I) A turbine runback from 45% power to no load conditions at 200% per minute (no reactor trip)
- II) A turbine trip from 45% power (no reactor trip)

Assuming that all control systems are operating in AUTO for both cases, a higher peak  $T_{avg}$  will result in (CHOOSE ONE):

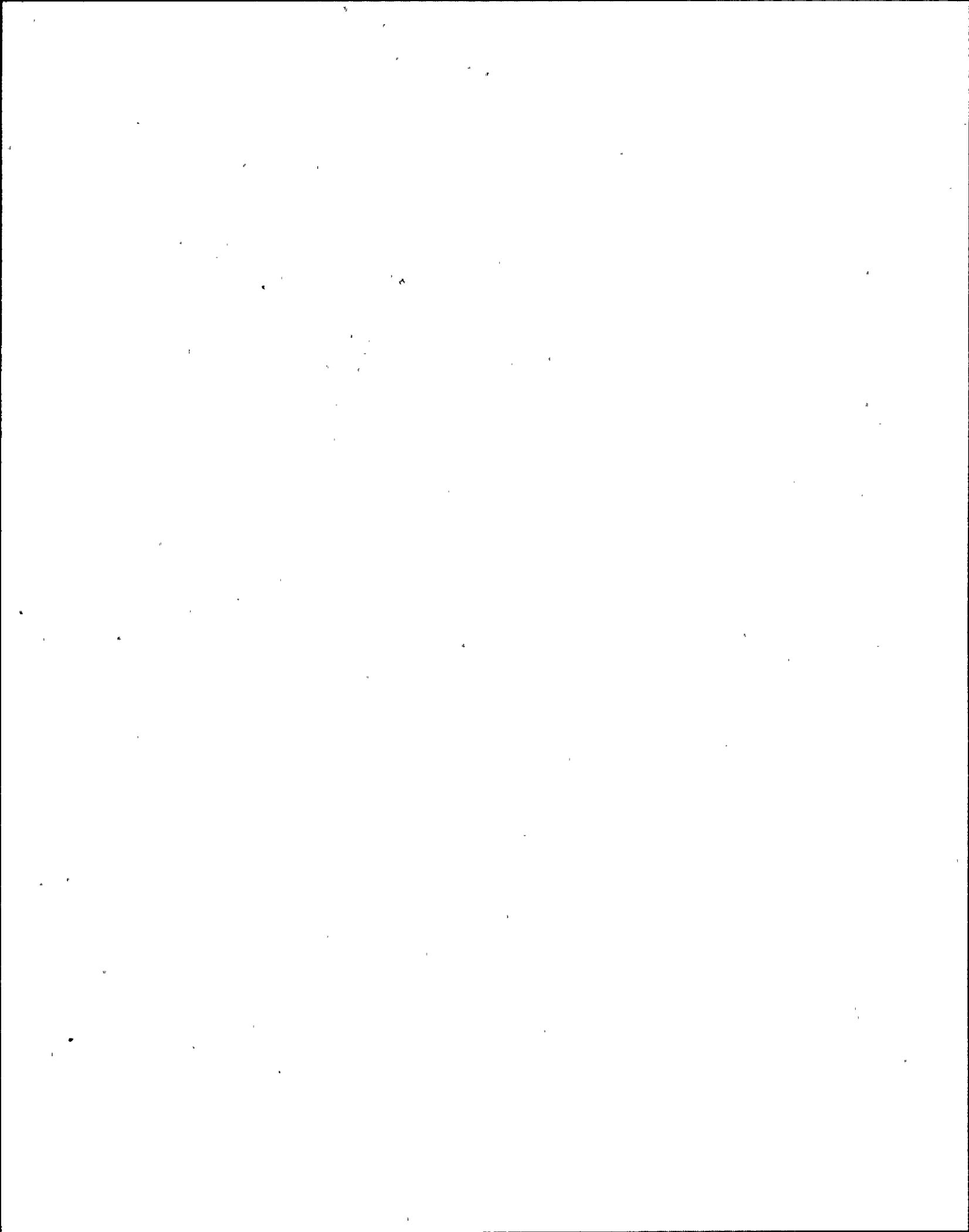
- a. Case I because the steam dumps will respond to a higher  $T_{ref}$  signal.
- b. Case II because the steam dumps will respond to a higher  $T_{ref}$  signal.
- c. Case I because the high and high-high bistables will trip at a higher  $\Delta T$  ( $T_{avg} - T_{ref}$ ).
- d. Case II because the high and high-high bistables will trip at a higher  $\Delta T$  ( $T_{avg} - T_{ref}$ ).



QUESTION: 044 (1.00)

In order to regain control of AOV-5392 (Instrument Air to Containment) following a SI, WHICH of the following sequences is correct?

- a. Reset SI, Reset CI, and Reset the x-y Relay.
- b. Reset SI, Reset the x-y Relay, Close the valve, and Reset CI.
- c. Reset SI, Reset CI, Reset CVI, and Close the valve.
- d. Reset SI, Reset the x-y Relay, Close the valve, and Reset CVI.



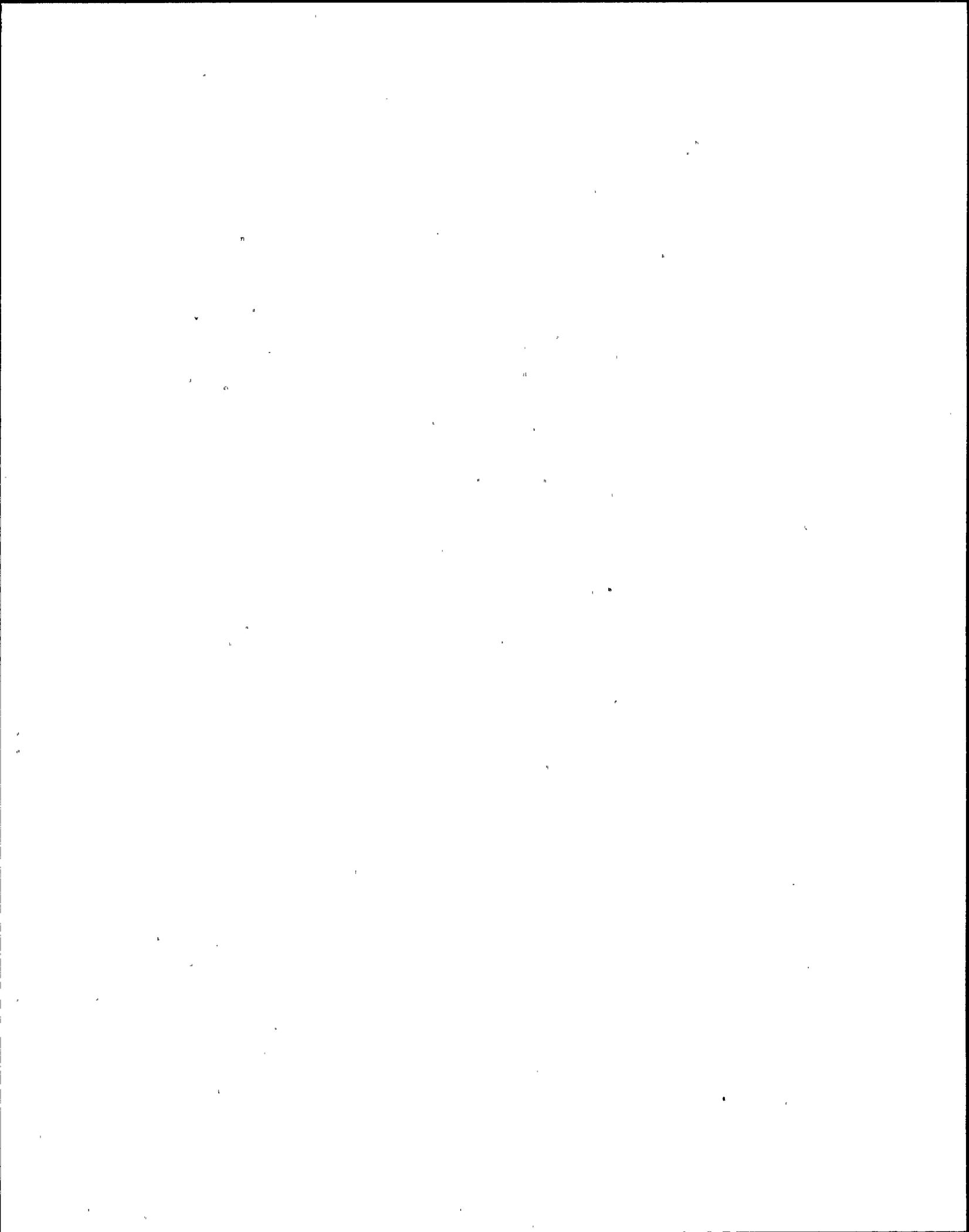
QUESTION: 045 (1.00)

GIVEN the following information:

Time	<u>1100</u>	<u>1200</u>
Tavg	573.5 degrees F	572 degrees F
Przr Level	49%	47%
PRT Level	70%	76%
PRT Temp.	120 degrees F	90 degrees F

WHICH of the following sources is the MOST LIKELY cause of the PRT level increasing?

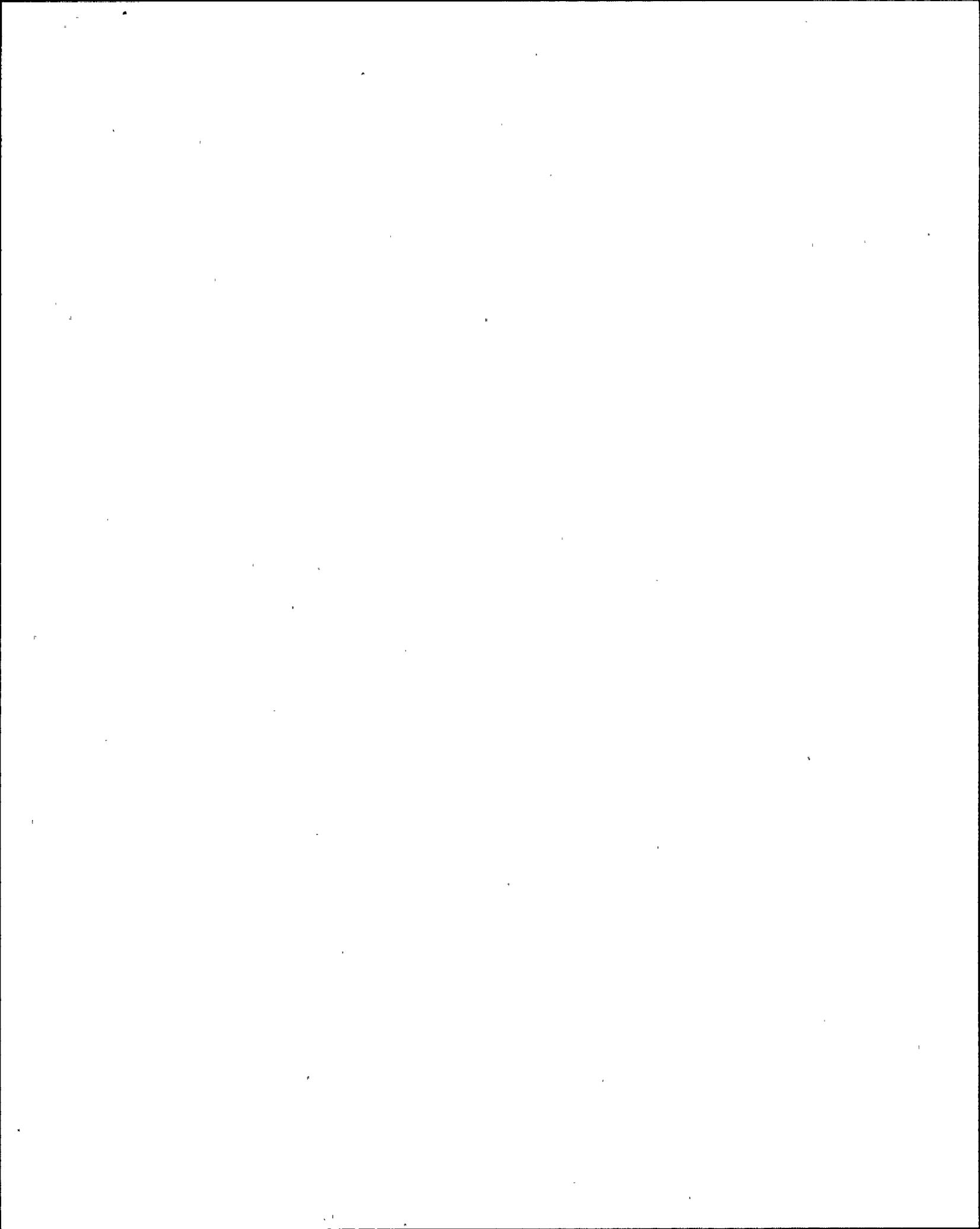
- a. Letdown Relief Valve (PCV-203)
- b. PRT Makeup Valve (AOV-508)
- c. Seal Return Relief (PCV-314)
- d. PORV Block Valve (MOV-516)



QUESTION: 046 (1.00)

WHICH of the following SW loads will be affected by a SW isolation signal?

- a. AFW alternate suction valves
- b. Charging pumps
- c. D/G jacket water cooler
- d. CCW heat exchanger



QUESTION: 047 (1.00)

GIVEN the following:

Reactor power is 40%

Seal leakoff flow for "A" RCP goes from 1 gpm to off-scale high in 5 seconds.

WHAT are your actions? (CHOOSE ONE):

- a. Close the seal discharge isolation valve (AOV-270A), trip the reactor, and trip the "A" RCP.
- b. Trip the "A" RCP, and close the seal discharge isolation valve (AOV-270A).
- c. Verify the labyrinth seal d/p at 40-45 inches of water; if not, restore the d/p to 40-45 inches of water; verify VCT pressure greater than 15 psig; if not, restore pressure to greater than 15 psig.
- d. Verify both "A" and "B" RCP # 1 seal outlet temperatures are less than 215 degrees F; if not, trip the reactor and trip the "A" RCP, and monitor Attachment A of AP-RCP.1.

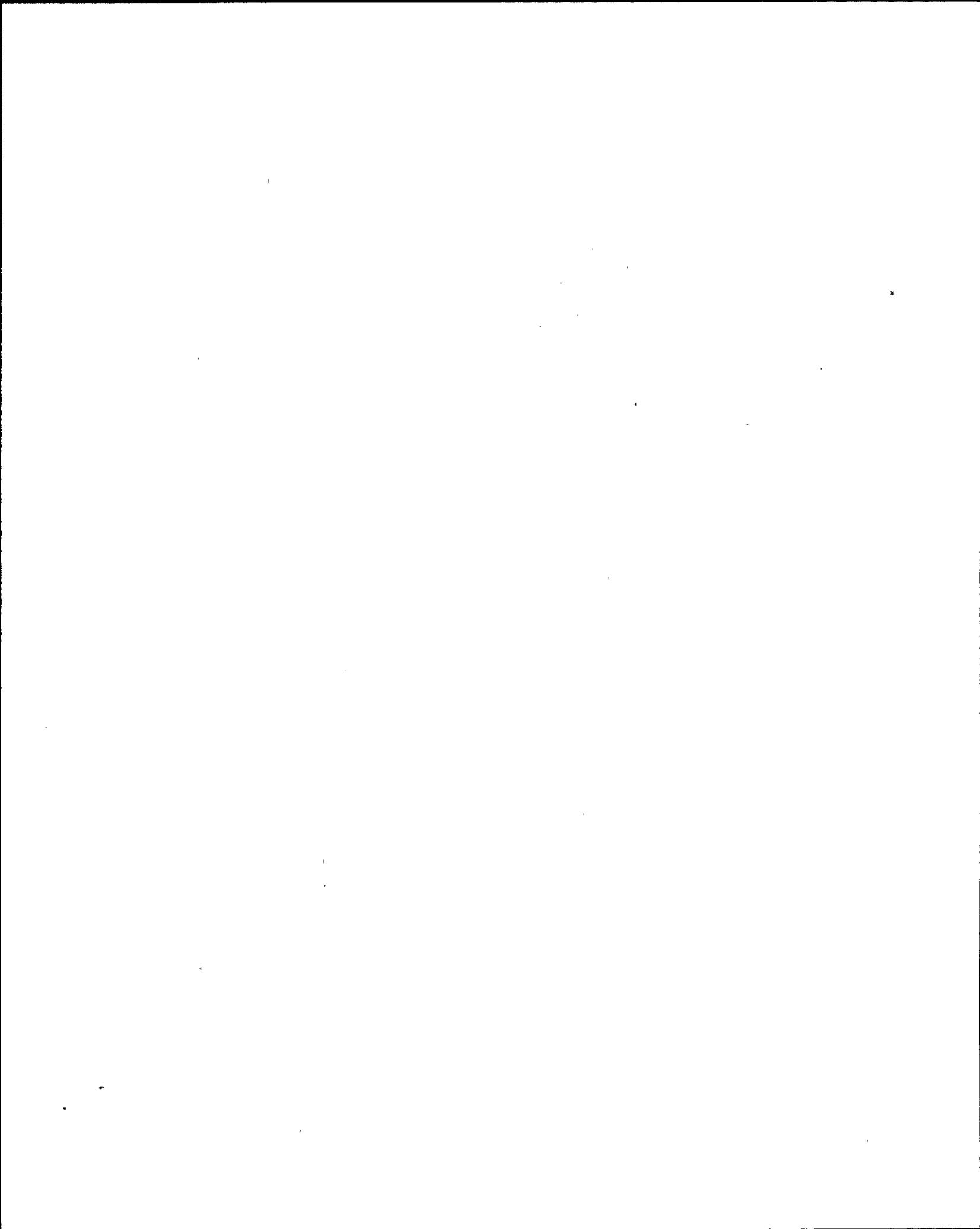


QUESTION: 048 (1.00)

A reactor trip and SI has occurred, and a red path on SUBCRITICALITY has directed you to FR-S.1 (Response to Reactor Restart/ATWS) (copy attached)

Step 4 of FR-S.1 has the operator verify that RCS pressure is greater than 1400 psig. If it is not, and SI flow is indicated, immediate boration via MOV-350 is not attempted because (CHOOSE ONE):

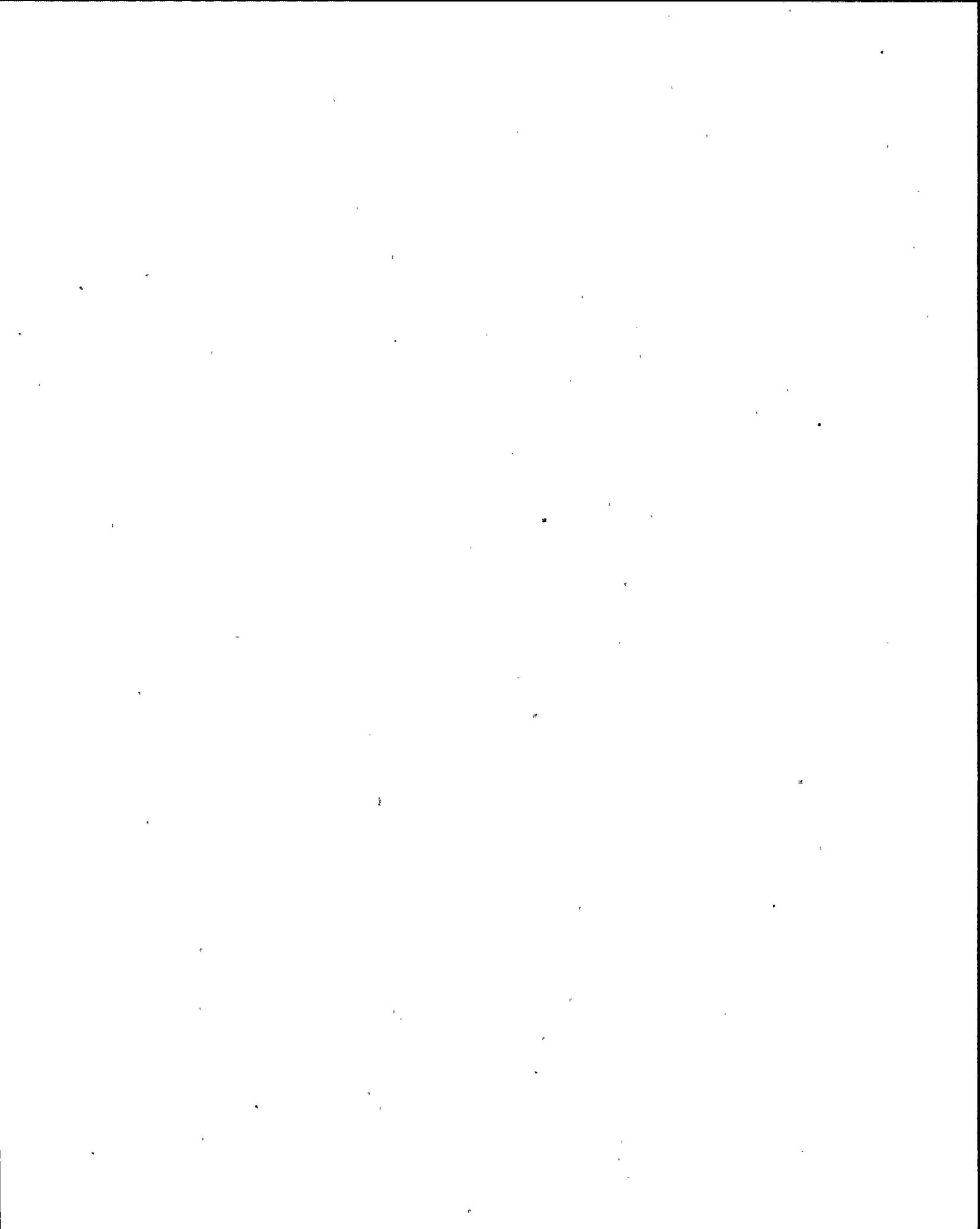
- a. RCP's have been tripped, and boration flow through the RCP seals is reduced.
- b. SI pumps will be injecting and are more effective at boron addition than charging pumps.
- c. A LOCA has occurred and immediate boration flow will be lost through the break and reduce boric acid inventory.
- d. A steam break has occurred and addition of too much boric acid may result in a positive value of Moderator Temperature Coefficient.



QUESTION: 049 (1.00)

WHICH of the following describes the conditions for considering CCW lost to a RCP as listed in AP-CCW.2 (Loss of CCW During Power Operation)?

- a. CCW return temperature is  $> 120$  degrees F or upper RCP motor bearing temperature is  $\geq 180$  degrees F .
- b. CCW flow is interrupted for  $> 5$  minutes or lower RCP motor bearing temperature is  $\geq 215$  degrees F .
- c. CCW return flow is low for  $> 2$  minutes or either RCP motor bearing temperature is  $\geq 180$  degrees F .
- d. CCW flow is interrupted for  $> 2$  minutes or either RCP motor bearing temperature is  $\geq 200$  degrees F .



QUESTION: 050 (1.00)

GIVEN the following conditions:

Reactor at 100% power (steady state).

The following alarms occur simultaneously:

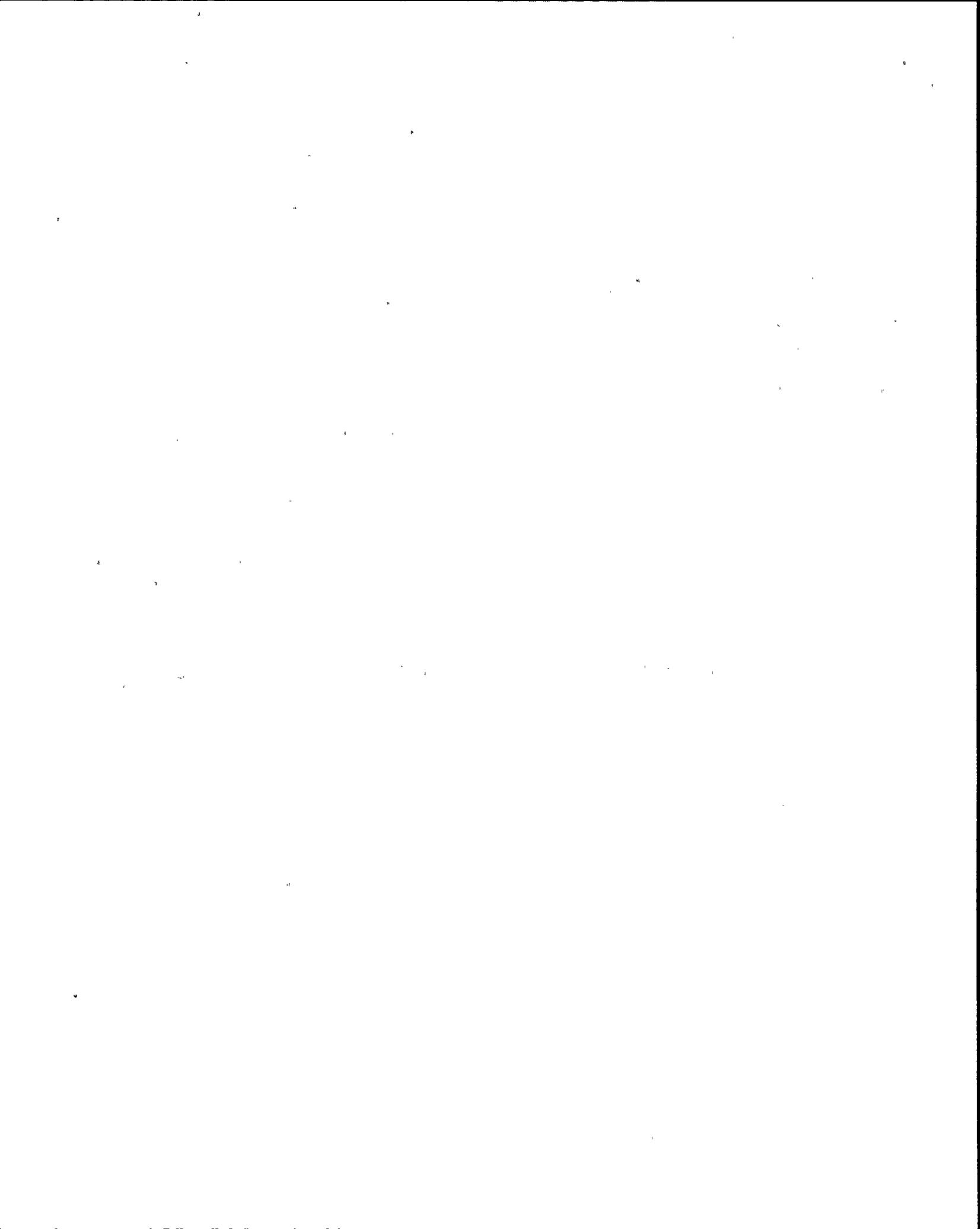
F-2 PRESSURIZER HI PRESS 2310 PSI

F-10 PRESSURIZER LO PRESS 2185 PSI

F-26 PZR HI PRESS CHANNEL ALERT 2377 PSI

WHICH of the following is the first action that should be performed? (copy of AP-PRZR.1 attached)

- a. Reduce turbine load to raise  $T_{avg}$  to restore actual pressurizer pressure (by insurge)
- b. Take controller PC-431K to manual (to close the spray valves)
- c. Trip the bistables for the failed pressurizer pressure channel (to comply with Tech Specs)
- d. Trip the reactor and go to E-0 (Low pressurizer pressure ATWS has occurred)



QUESTION: 051 (1.00)

WHICH of the following red paths is MOST LIKELY to occur for a steam line break on a single S/G outside containment, resulting in a reactor trip and SI? (Assume that all safeguards equipment functions as designed) (copy of CSFST's attached)

- a. Response to Inadequate Core Cooling (FR-C.1)
- b. Response to Loss of Secondary Heat Sink (FR-H.1)
- c. Response to Imminent Pressurized Thermal Shock Condition (FR-P.1)
- d. Response to High Containment Pressure (FR-Z.1)

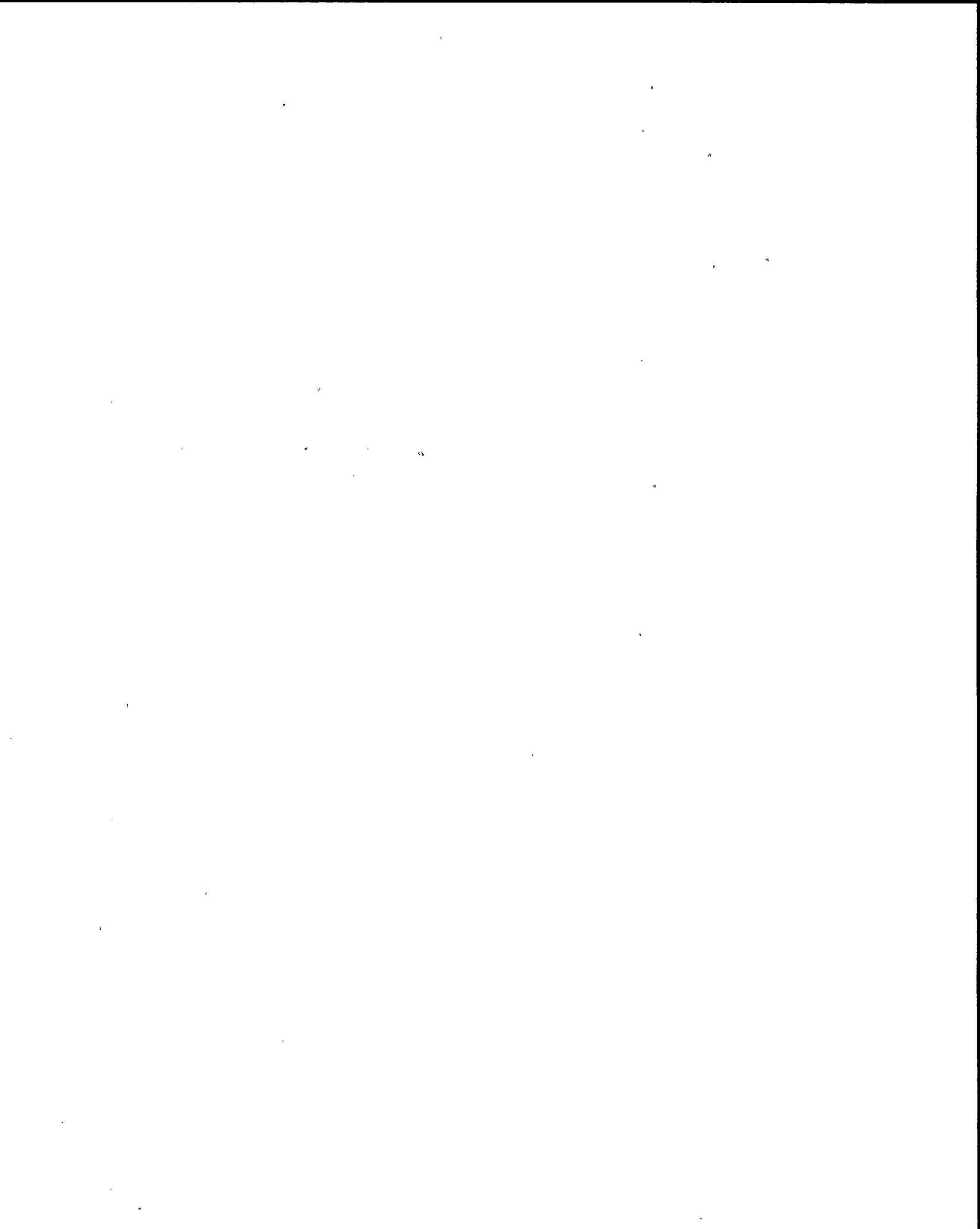


QUESTION: 052 (1.00)

When restoring power in ECA-0.0 (Loss of All AC Power), you are directed to verify at least one SW pump running for each running D/G.

The reason for this requirement is (CHOOSE ONE):

- a. To establish a heat sink for core cooling restoration.
- b. To establish cooling water for safeguards pump seals.
- c. To establish a stable D/G load to prevent D/G overspeed.
- d. To establish cooling water to D/G lube oil and jacket water heat exchangers.



QUESTION: 053 (1.00)

GIVEN the following:

125V DC Battery 1B is on open circuit

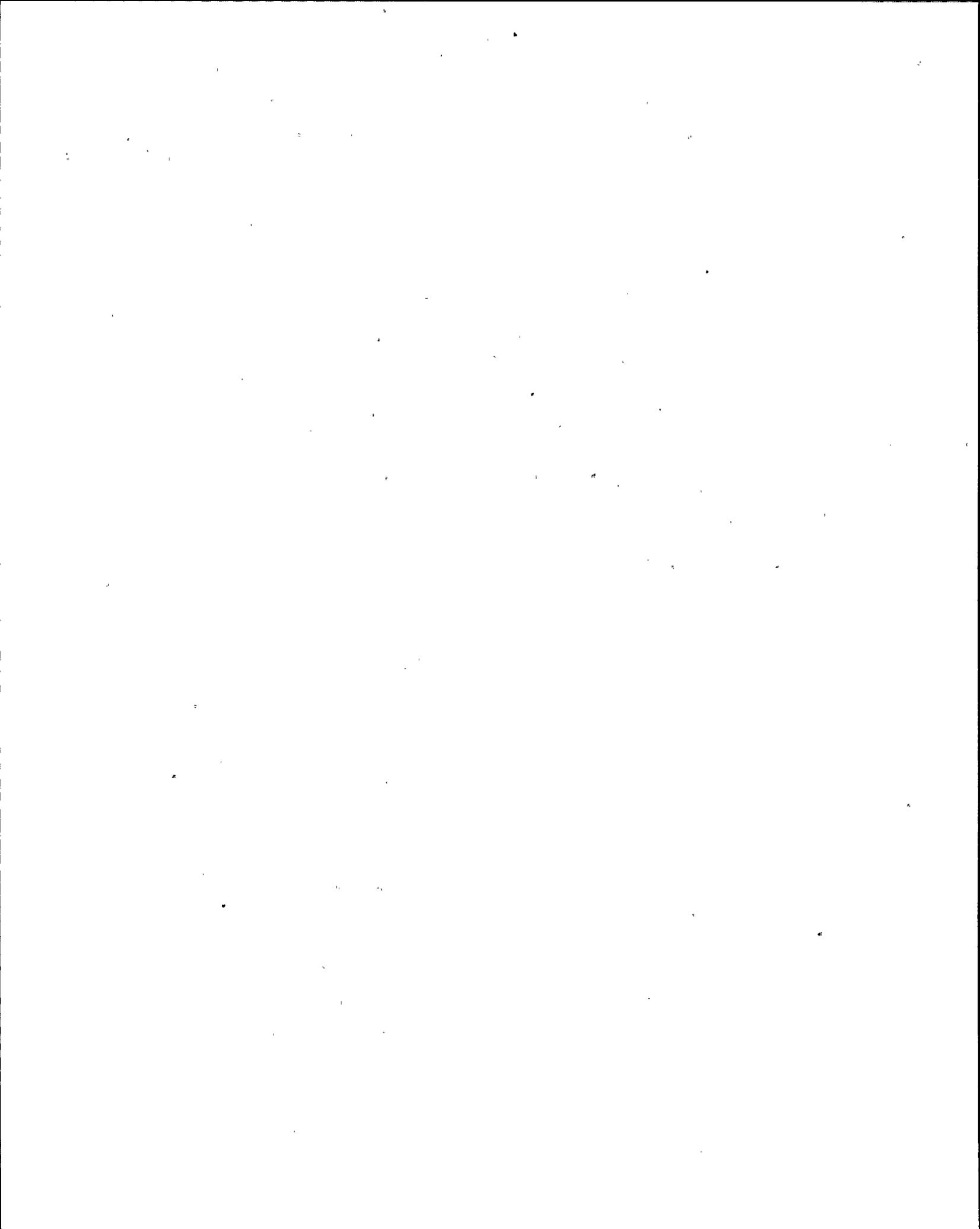
Inverter 1B is on its alternate supply

All other instrument buses are in a normal lineup.

An electrical fault causes de-energization of MCC 1D.

WHICH of the following instrument buses will be de-energized?

- a. Instrument Bus 1A
- b. Instrument Bus 1B
- c. Instrument Bus 1C
- d. Instrument Bus 1D



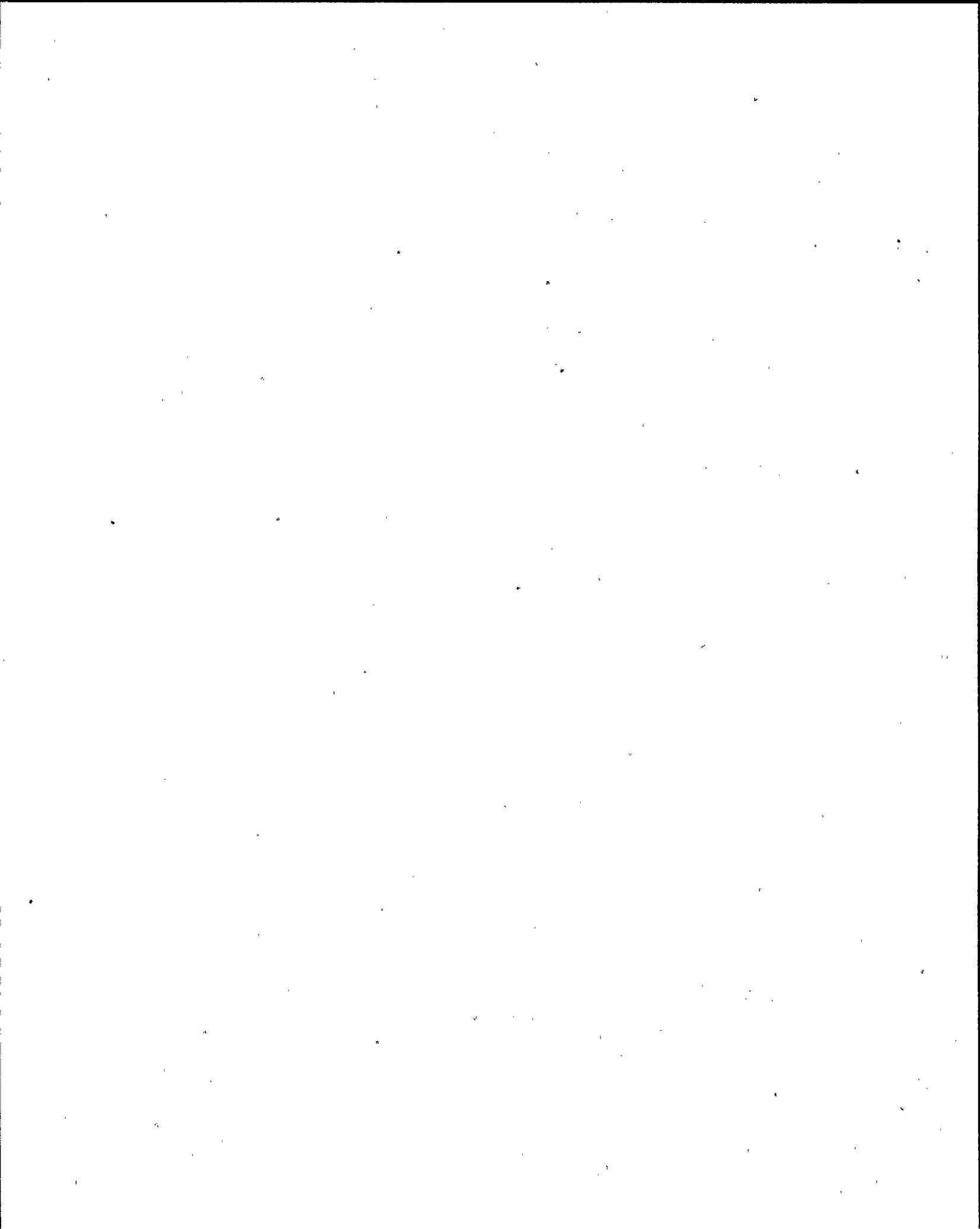
QUESTION: 054 (1.00)

A trash can fire has spread to some prints beside the MCB.

An operator enters with a pressurized water fire extinguisher.

The pressurized water extinguisher should (CHOOSE THE BEST ANSWER):

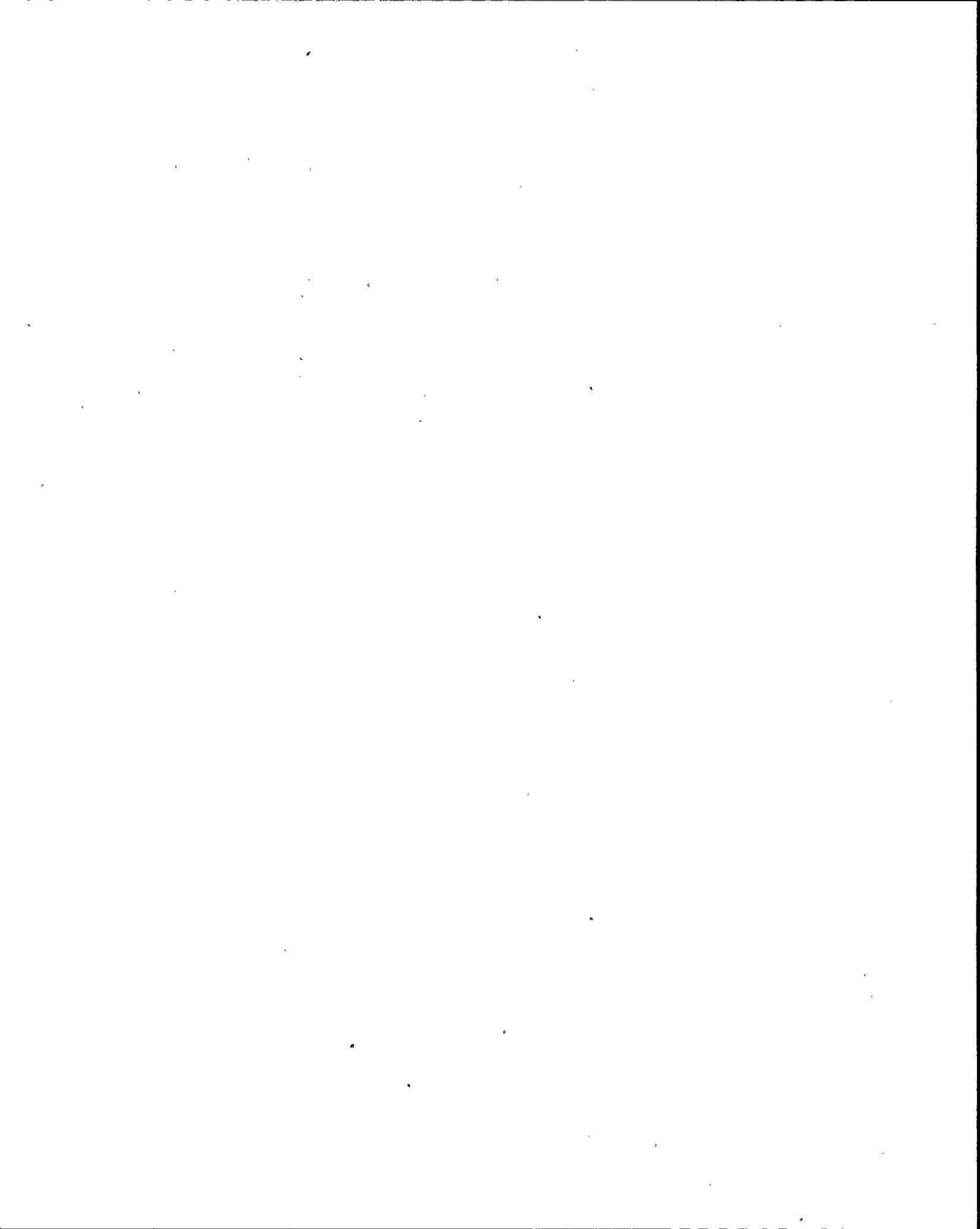
- a. be used because the fire is a class A fire
- b. not be used because of the possibility of spreading the fire from the force of the stream.
- c. be used because it will not have a toxic effect on Control Room personnel
- d. not be used because of the possibility of shorting various electrical circuits in the MCB.



QUESTION: 055 (1.00)

WHICH of the following groups of parameters read out at the IBELIP?

- a. RCS pressure, S/G pressure, S/G level, TDAFWP flow
- b. RCS Tavg, S/G pressure, S/G level, TDAFWP flow
- c. RCS hot leg temp, S/G level, TDAFWP flow, static inverter voltage
- d. RCS cold leg temp, RCS hot leg temp, S/G level, S/G pressure



QUESTION: 056 (1.00)

For a LOCA condition, degradation of WHICH of the following parameters is the basis for transitioning to ECA-1.2 (LOCA Outside Containment)? (copy of E-1 attached)

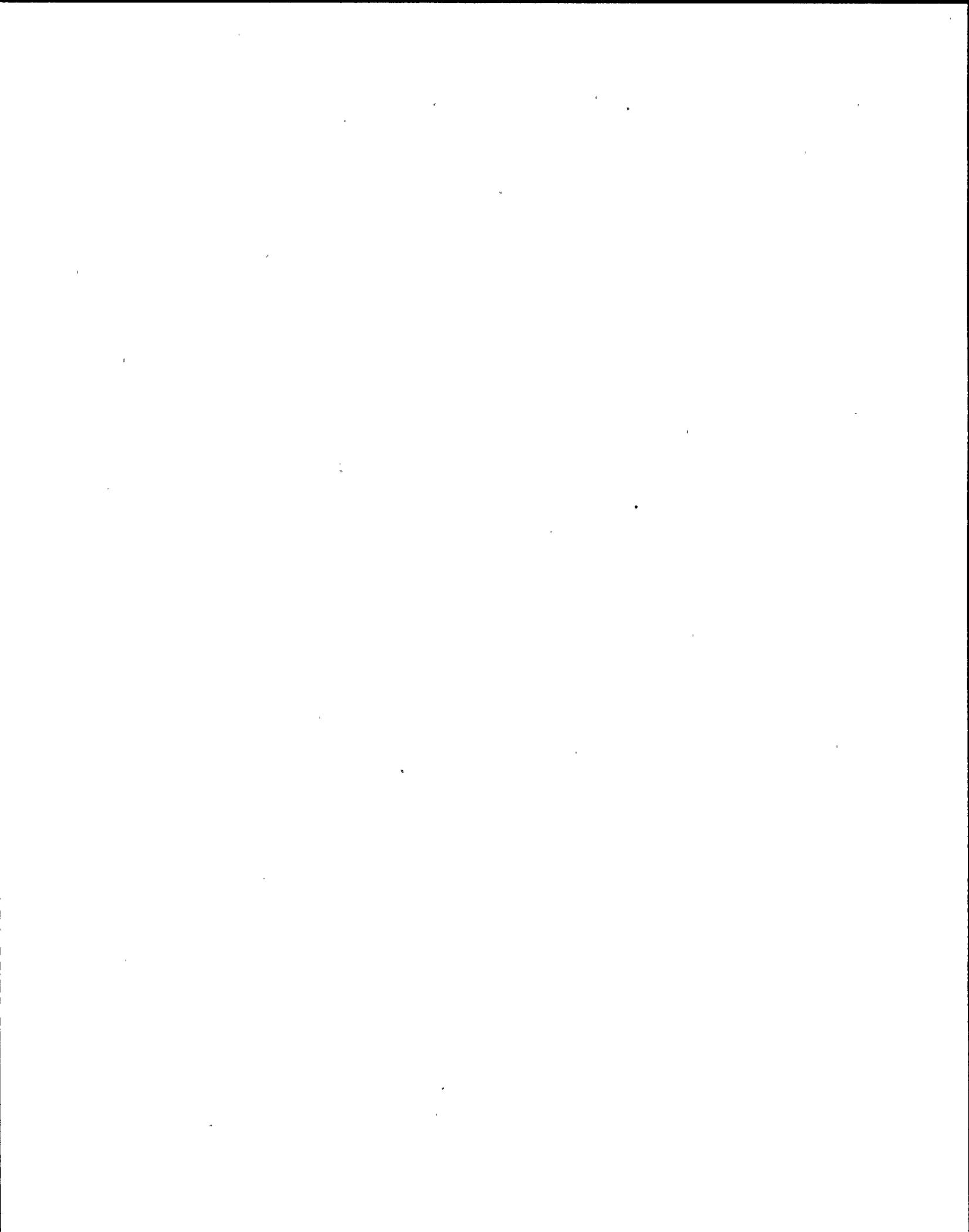
- a. Core cooling
- b. RWST inventory
- c. Safeguards bus loading
- d. Auxiliary building radiation levels



QUESTION: 057 (1.00)

For an Inadequate Core Cooling condition, procedural guidance is given in FR-C.1 to rapidly depressurize the S/G's. The basis for this step is to (CHOOSE ONE) (copy of FR-C.1 attached):

- a. Reduce RCS pressure to below the shutoff head for the RHR pumps.
- b. Establish natural circulation.
- c. Restore AFW flow to all intact S/G's.
- d. Establish conditions for the restart of the RCP's.



QUESTION: 058 (1.00)

AP-RCS.3 (High RCS Activity) contains the following CAUTION at the beginning of the procedure:

IF LETDOWN FLOW EXCEEDS 60 GPM WHEN USING AOV-202, D/P ACROSS THE CVCS DEMINERALIZERS SHOULD BE MONITORED TO VERIFY THAT FLOW IS CONTINUING THROUGH THE DI'S. HOWEVER, FLOW THROUGH THE DI'S SHOULD NOT EXCEED 90 GPM.

WHICH of the following is the basis for the 90 gpm limit?

- a. To prevent excessive radiation doses due to high flow of radioactive water through the DI.
- b. To prevent exceeding the design d/p for the retention screen in the DI and prevent loss of resin from the DI.
- c. To prevent exceeding the design heat rate of the DI and prevent degradation of the resin.
- d. To prevent channeling of the resin in the DI due to high flow and prevent a reduction in the DI's decontamination factor.

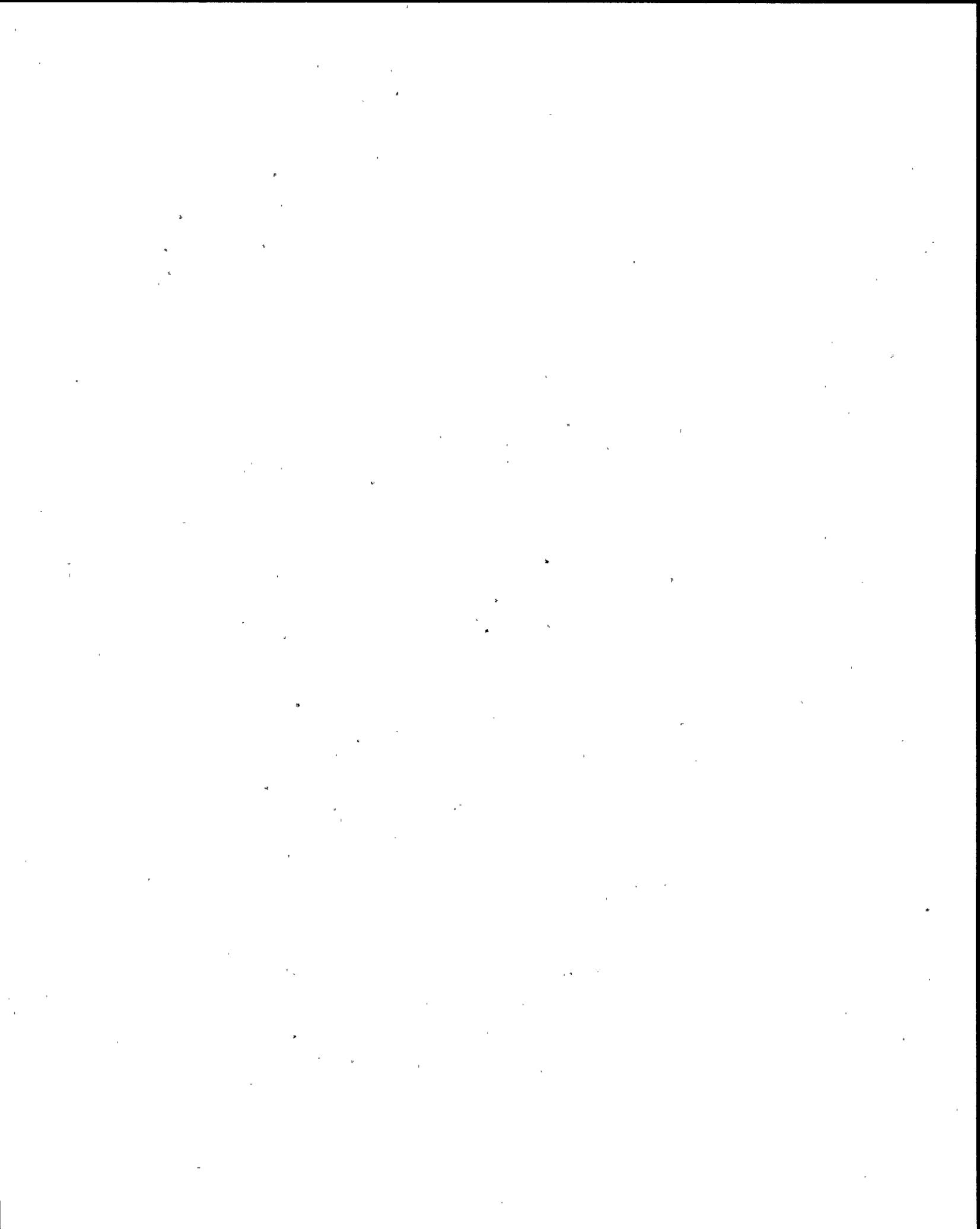


QUESTION: 059 (1.00)

WHICH of the following lists describes the major plant responses to a loss of any single instrument bus?

(assume no corrective action is taken by the operator)

- a.
  - 1) Delta T runback and rod stop
  - 2) Dropped rod runback and rod stop
  - 3) Average Tavg - Tref deviation alarm
  
- b.
  - 1) Average Tavg - Tavg deviation rod stop
  - 2) Dropped rod runback and rod stop
  - 3) Delta T runback and rod stop
  
- c.
  - 1) Overpower rod stop
  - 2) Average Tavg - Tref deviation alarm
  - 3) Delta T runback and rod stop
  
- d.
  - 1) Dropped rod runback and rod stop
  - 2) RCS Average Delta T Deviation Alarm
  - 3) Overpower Rod Stop



QUESTION: 060 (1.00)

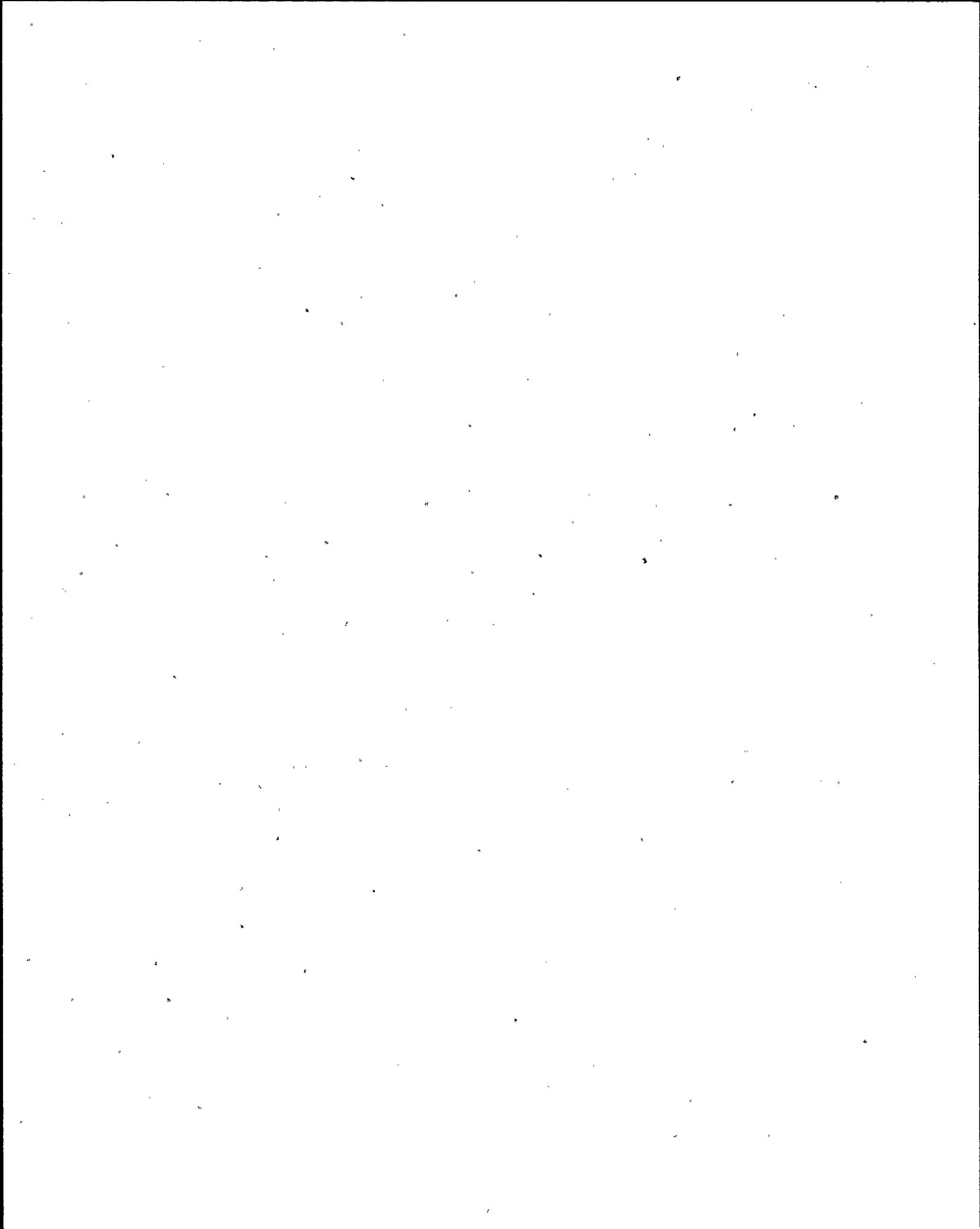
GIVEN the following information:

LOCA in progress  
Both RCP's running  
Significant voiding in the RCS exists  
Source range count rate is greater than the normal shutdown level

The CRF directs that both RCP's be tripped  
When they are finally tripped, the Source range count rate drops off significantly

WHICH of the following statements explains the reason for the decrease in SR count rate?

- a. Phase separation upon RCP trip removed voids from the core area, adding negative reactivity, making SR count rate decrease.
- b. Tripping the RCP's decreased core cooling, causing repressurization of the RCS, adding negative reactivity from the moderator pressure coefficient, making SR count rate decrease.
- c. Tripping the RCP's removed their heat input into the RCS, decreasing the bulk boiling in the RCS, causing fewer voids, attenuating more neutrons, and making SR count rate decrease.
- d. Phase separation upon RCP trip refilled the downcomer, attenuating more neutrons, making SR count rate decrease.



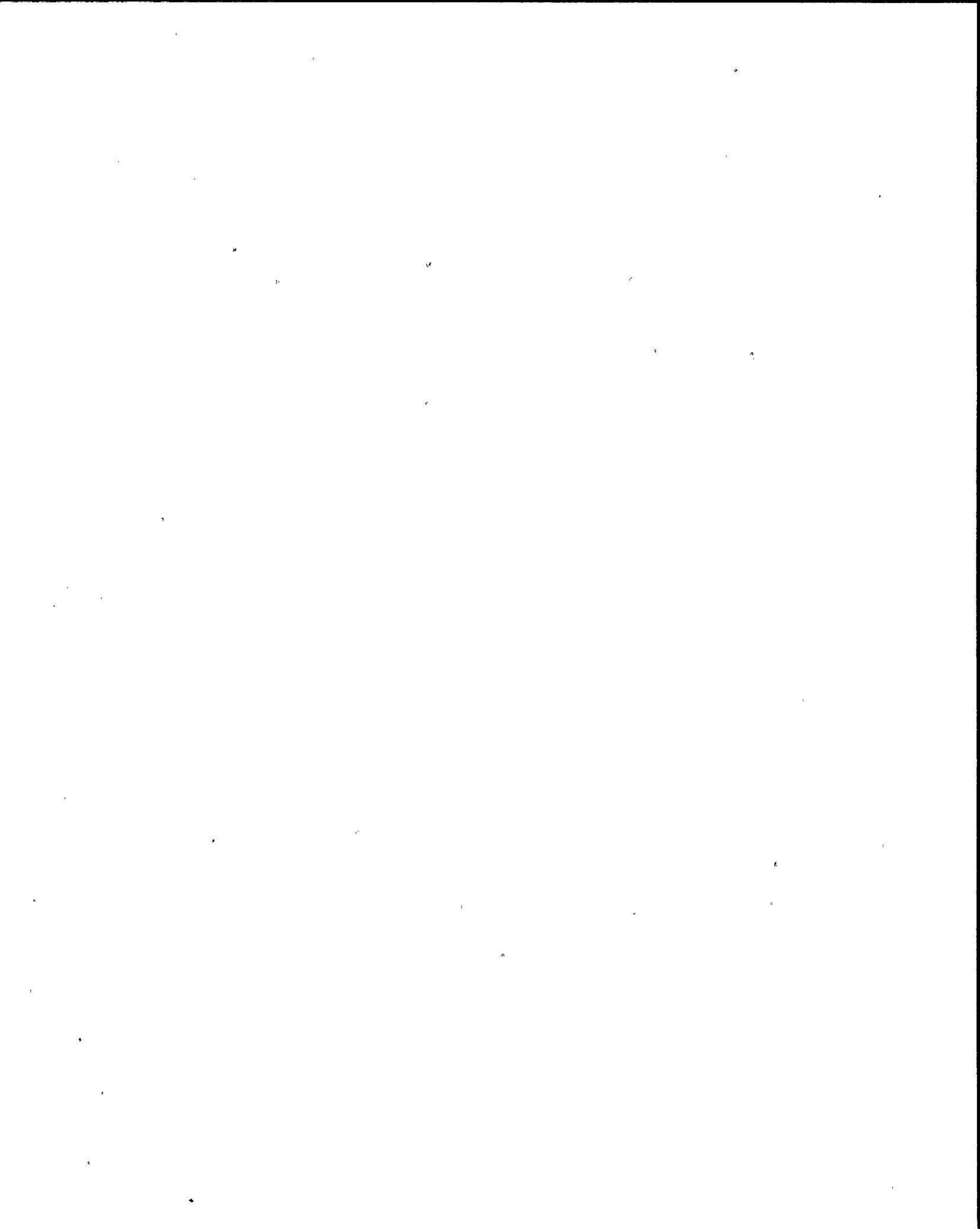
QUESTION: 061 (1.00)

In AP-RCC.1 (Continuous Control Rod Withdrawal/Insertion) the following CAUTION is listed at the beginning of the procedure:

IF ROD INSERTION IS OCCURRING, VERIFY THAT IN MOTION IS NOT REQUIRED BEFORE CONTINUING WITH THIS PROCEDURE

WHICH of the following would indicate a requirement for in motion?

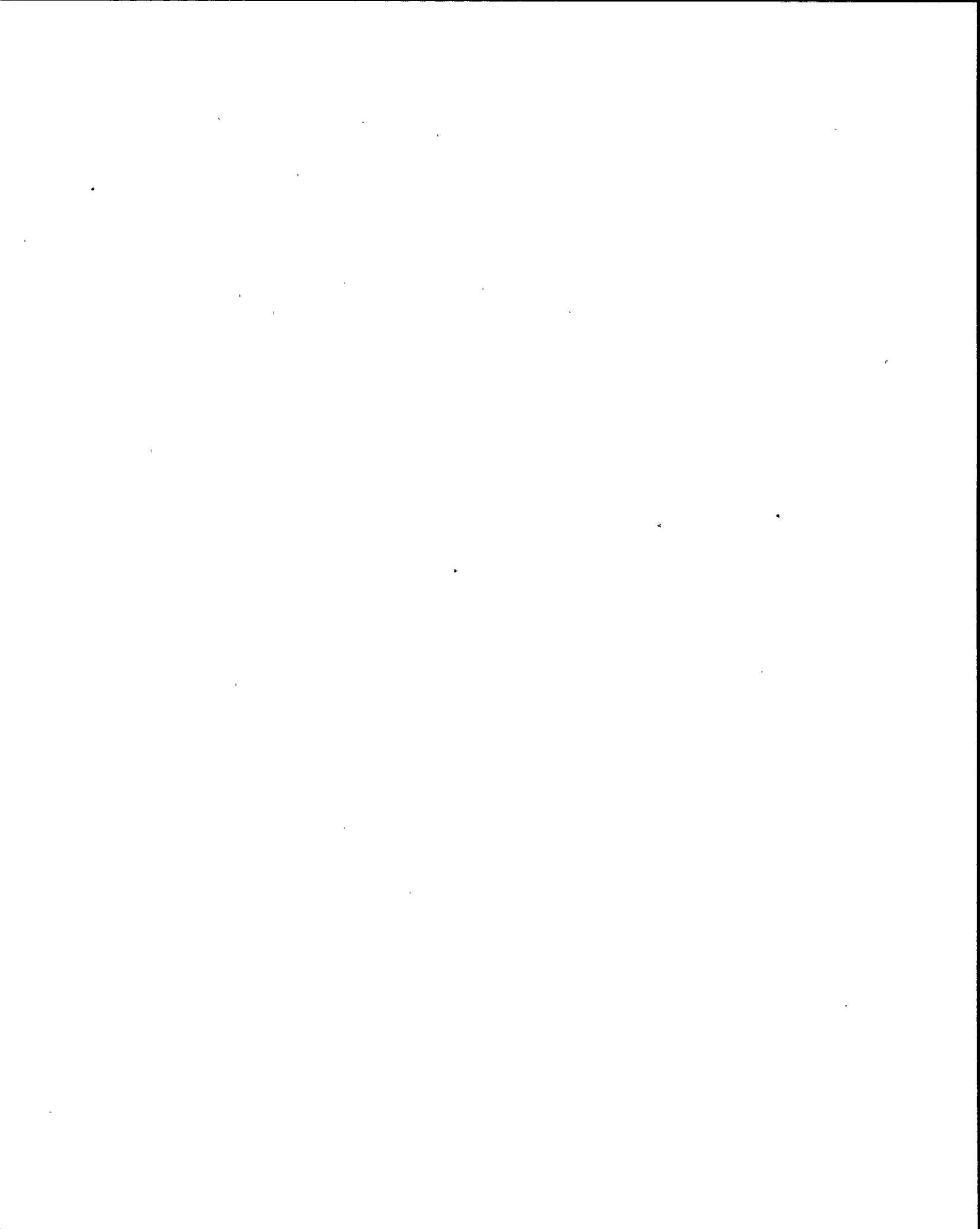
- a. A rod indicating on the bottom
- b.  $T_{avg} - T_{ref}$  deviation  $> 1.5$  degrees F
- c. The controlling bank indicating  $> 12$  steps above its insertion limit
- d. A rod indicating  $> 12$  steps below its bank demand position



QUESTION: 062 (1.00)

For a dropped control rod condition from 95% power, a dropped rod runback and rod stop blocks automatic outward rod motion only. WHICH of the following statements describes the reason that automatic inward rod motion is not blocked?

- a. To maintain  $T_{avg}$  matched with  $T_{ref}$  during the runback
- b. To prevent exceeding a quadrant power tilt of 1.02
- c. To maintain reactor power less than 100% of rated thermal power
- d. To prevent operation of the steam dumps

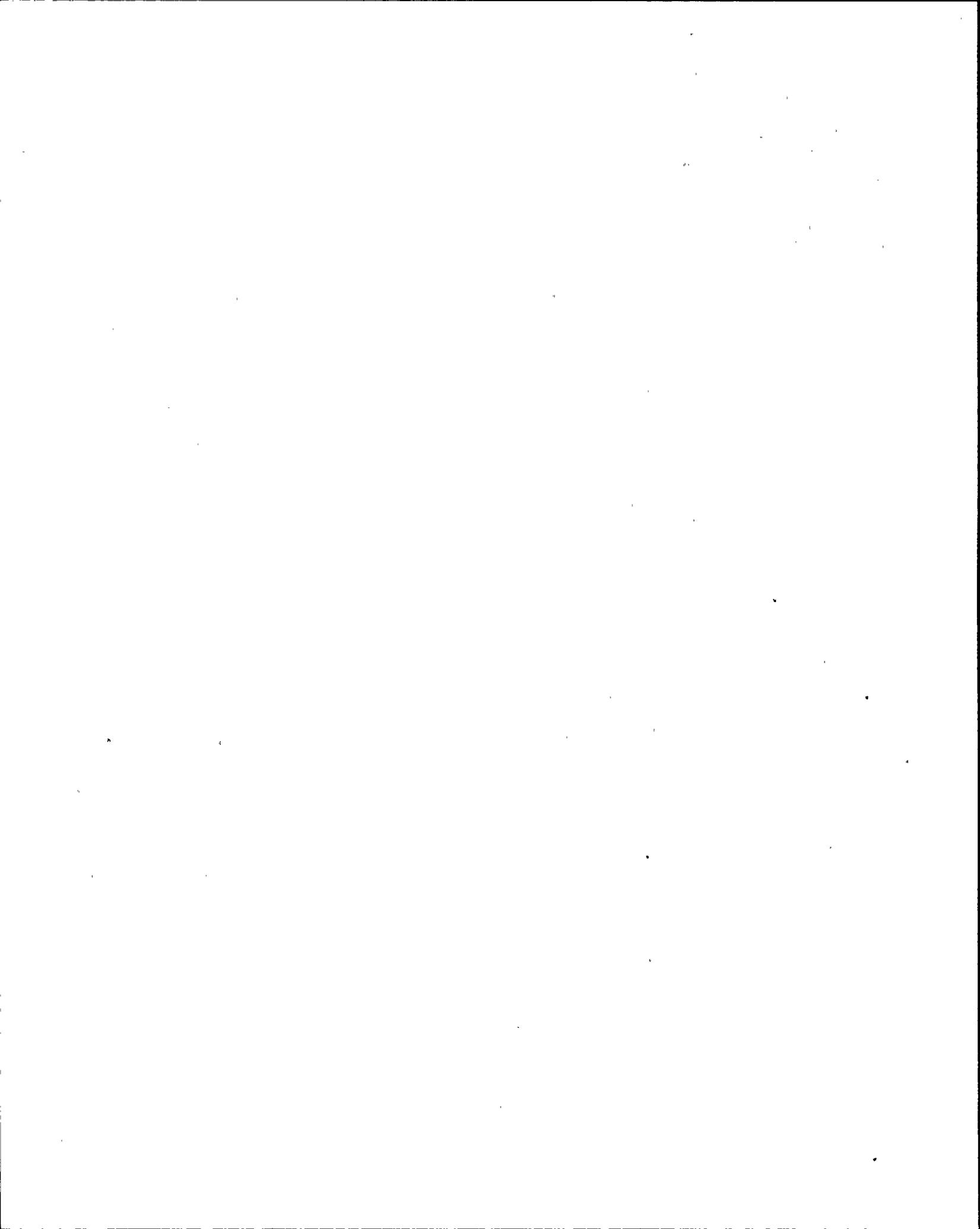


QUESTION: 063 (1.00)

For a valid reactor trip signal, it is noted while performing step 1 of E-0 that the rods are still at their respective positions prior to the trip.

WHICH of the following is the FIRST action to be performed?

- a. Open bus 13 and bus 15 normal feed breakers
- b. Manually insert control rods
- c. Initiate emergency boration
- d. Manually trip the reactor

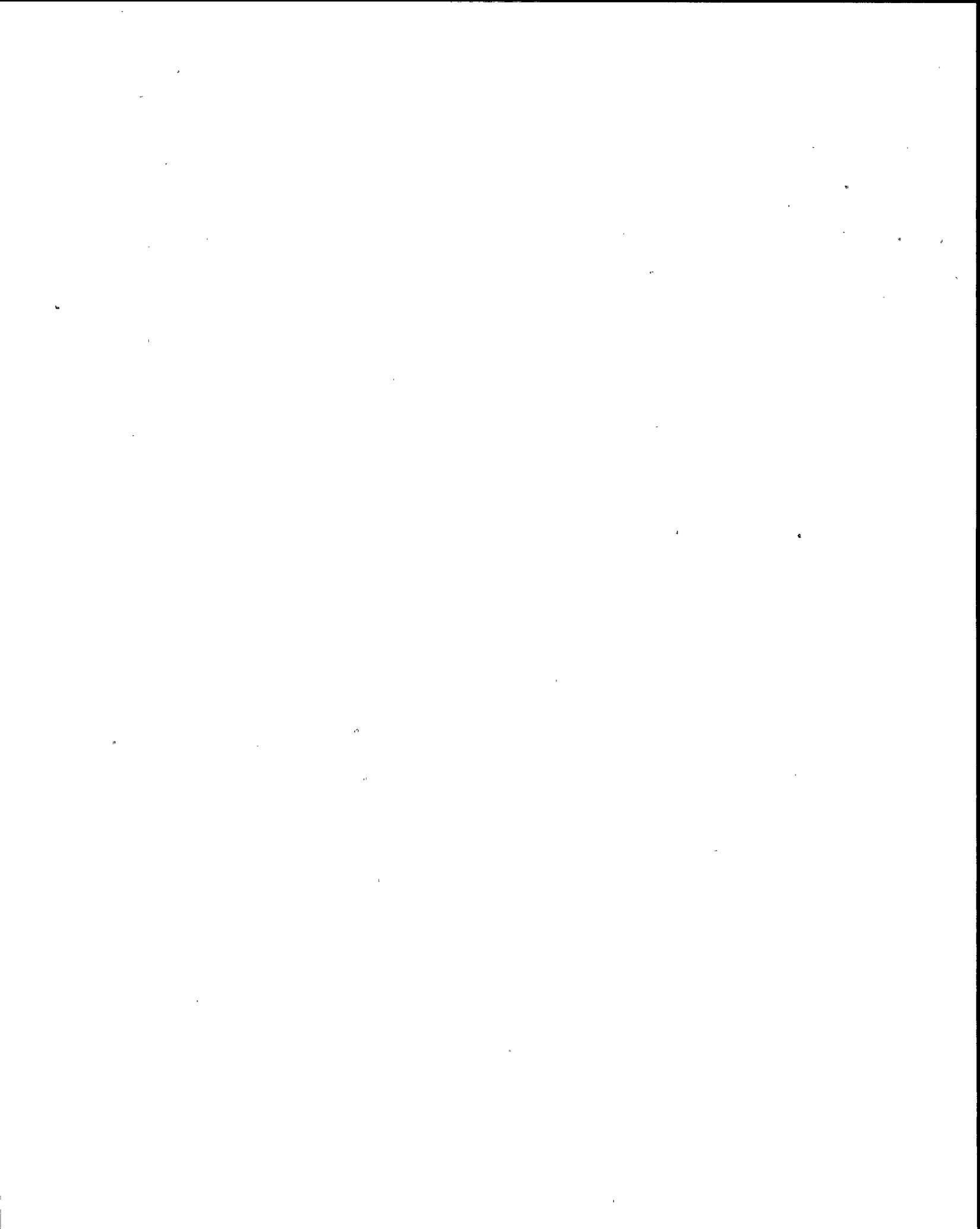


QUESTION: 064 (1.00)

The plant has just experienced a small break LOCA and is in the process of performing a natural circulation cooldown.

WHICH of the following is NOT an indication of natural circulation cooling as listed in ATTACHMENT NC to the EOP's?

- a. S/G levels - STABLE OR INCREASING
- b. RCS hot leg temperatures - STABLE OR DECREASING
- c. RCS cold leg temperatures - AT SATURATION TEMPERATURE FOR S/G PRESSURE
- d. Core exit thermocouples - STABLE OR DECREASING

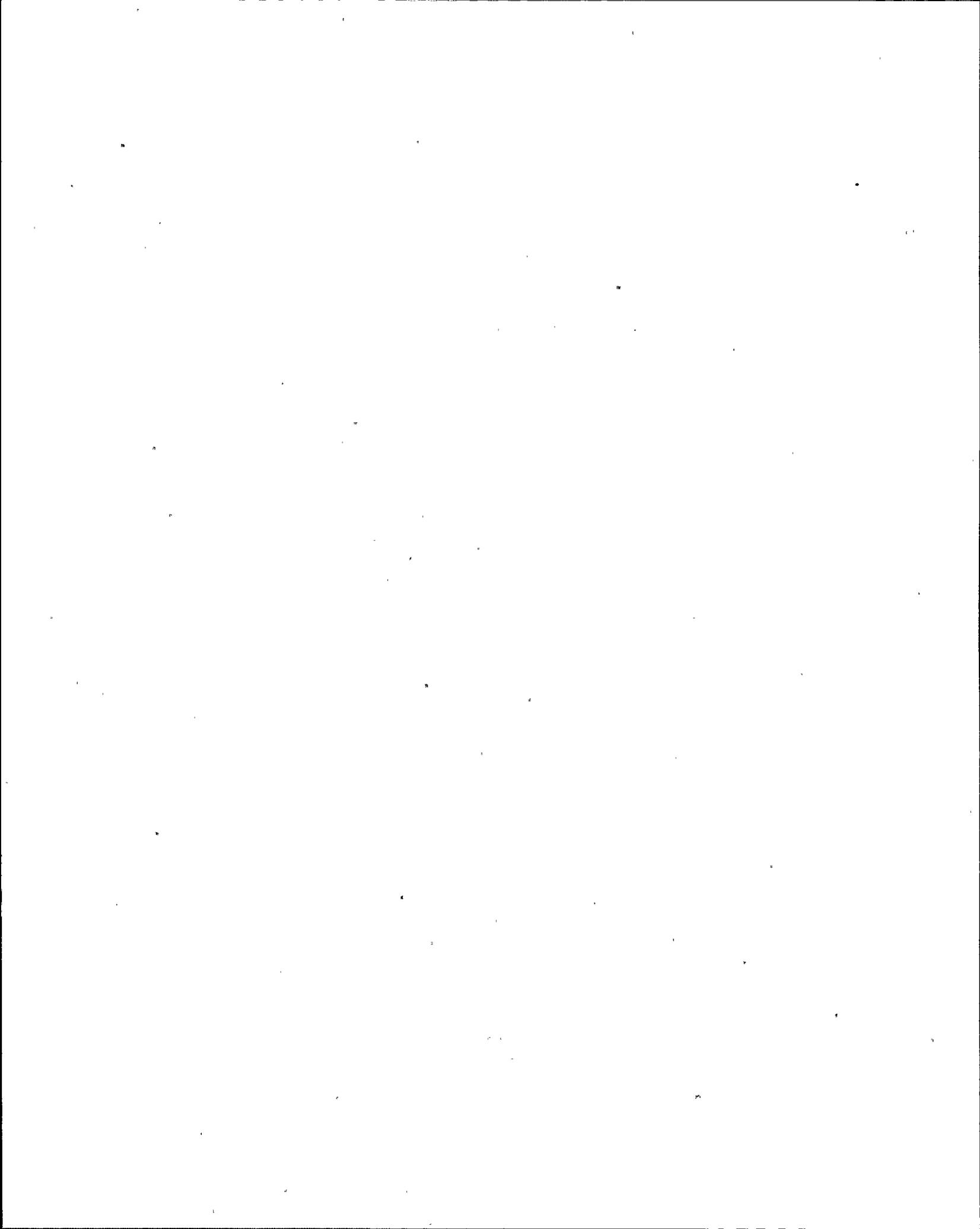


QUESTION: 065 (1.00)

Step 1 of E-1 (Loss of Reactor or Secondary Coolant) states "Check if RCP's Should Be Stopped."

WHICH of the following statements describes the RCP trip criteria listed in E-1?

- a. At least one SI pump is running OR RCS pressure minus the maximum S/G pressure is less than 165 psig.
- b. At least one SI pump is running AND RCS pressure minus the maximum S/G pressure is less than 165 psig.
- c. At least two SI pumps are running OR RCS pressure minus the maximum S/G pressure is less than 175 psig.
- d. At least two SI pumps are running AND RCS pressure minus the maximum S/G pressure is less than 175 psig.



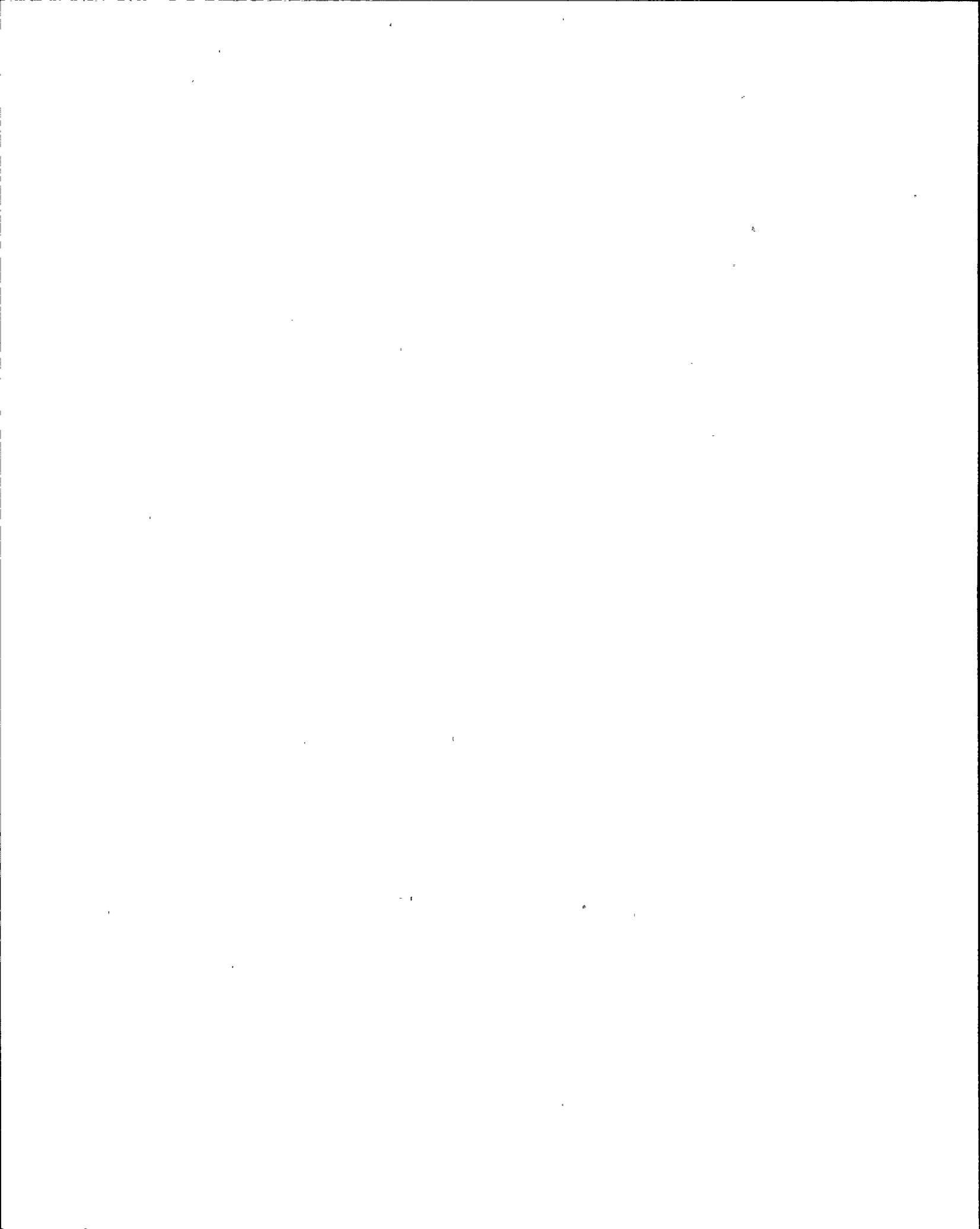
QUESTION: 066 (1.00)

GIVEN the following conditions:

Reactor power is 100% (steady state)  
Rod control is in manual  
Tavg = 569 degrees F  
Alarm A-2, VCT LEVEL 14%, is lit  
Alarm G-17, RMW FLOW DEVIATION, is lit  
VCT level = 12% (slowly trending down)  
Pressurizer level = 58% (stable)  
No RMS readings are above the normal, 100% power values

WHICH of the following procedures should be entered?

- a. AP-CVCS.1 (CVCS Leak)
- b. AP-RCS.1 (RCS Leak)
- c. ER-CVCS.1 (Reactor Makeup Control Malfunction)
- d. ECA-1.2 (LOCA Outside Containment)



QUESTION: 067 (1.00)

For a loss of all RHR with "B" loop level above 64 inches

WHICH of the following statements describes how the RCDT pumps remove decay heat from the core when aligned in accordance with ER-RHR.1 (RCDT Pump Operation For Core Cooling)?

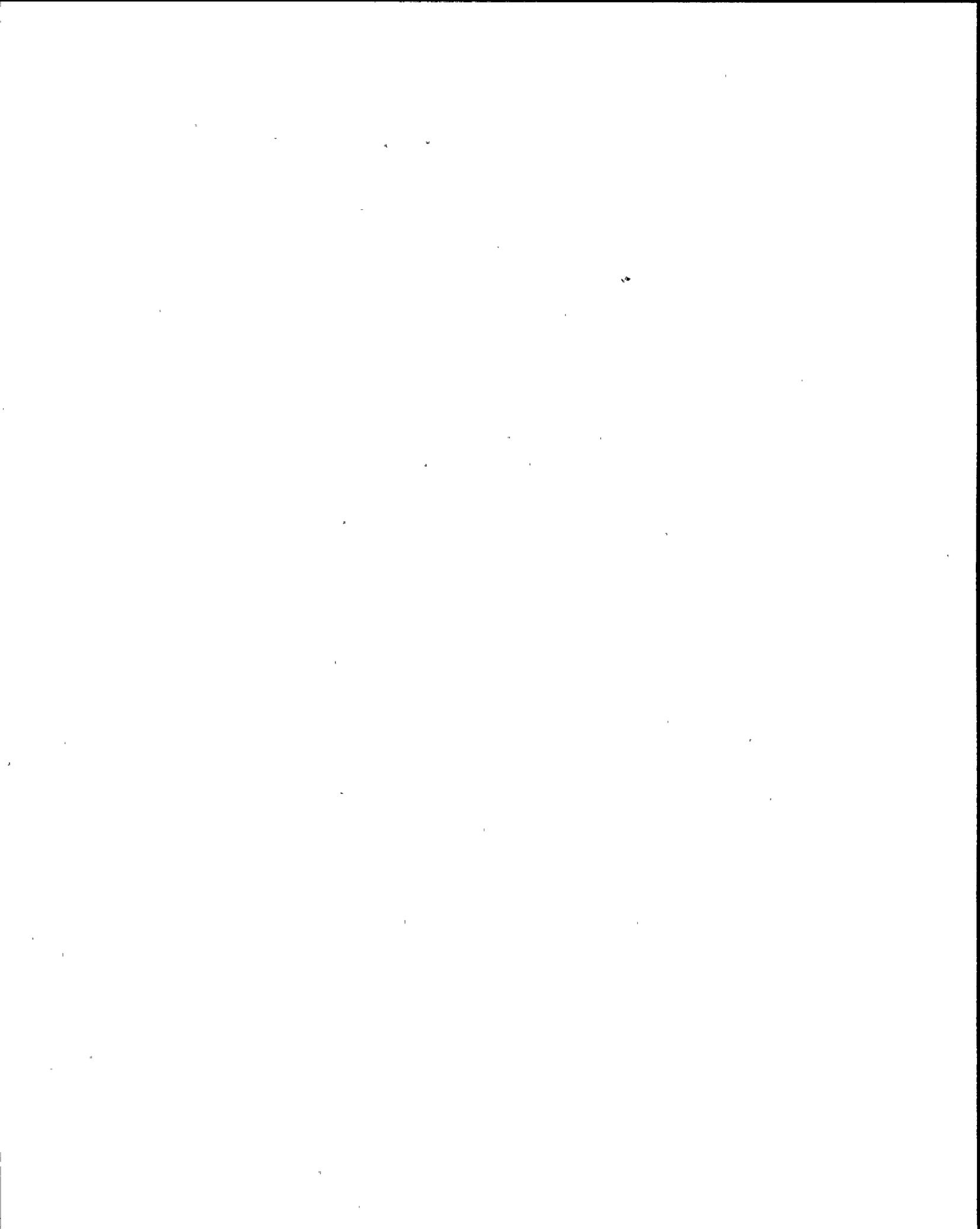
- a. The RCDT pumps cool by heat loss to the ambient environment.
- b. The RCDT pumps cool by discharging to the inlet of the RHR heat exchangers.
- c. The RCDT pumps cool by feed and bleed to the holdup tanks.
- d. The RCDT pumps cool by discharging to the inlet of the Spent Fuel Pool heat exchanger.



QUESTION: 068 (1.00)

WHICH of the following is the correct sequence of the immediate actions of FR-S.1 (Response to Reactor Restart/ ATWS)?

- a.
  - 1) Verify Reactor Trip
  - 2) Verify Turbine Stop Valves :- CLOSED
  - 3) Check AFW Pumps Running
  - 4) Initiate Emergency Boration of RCS
  
- b.
  - 1) Verify Reactor Trip
  - 2) Verify Turbine Stop Valves - CLOSED
  - 3) Verify Both Trains Of AC Emergency Buses Energized To At Least 420 Volts
  - 4) Check If Any SI Annunciator - LIT
  
- c.
  - 1) Verify Reactor Trip
  - 2) Open Bus 13 And Bus 15 Normal Feed Breakers
  - 3) Manually Trip Reactor
  - 4) Initiate Emergency Boration of RCS
  
- d.
  - 1) Verify Reactor Trip
  - 2) Manually Trip Reactor
  - 3) Manually Trip Turbine
  - 4) Manually Insert Control Rods

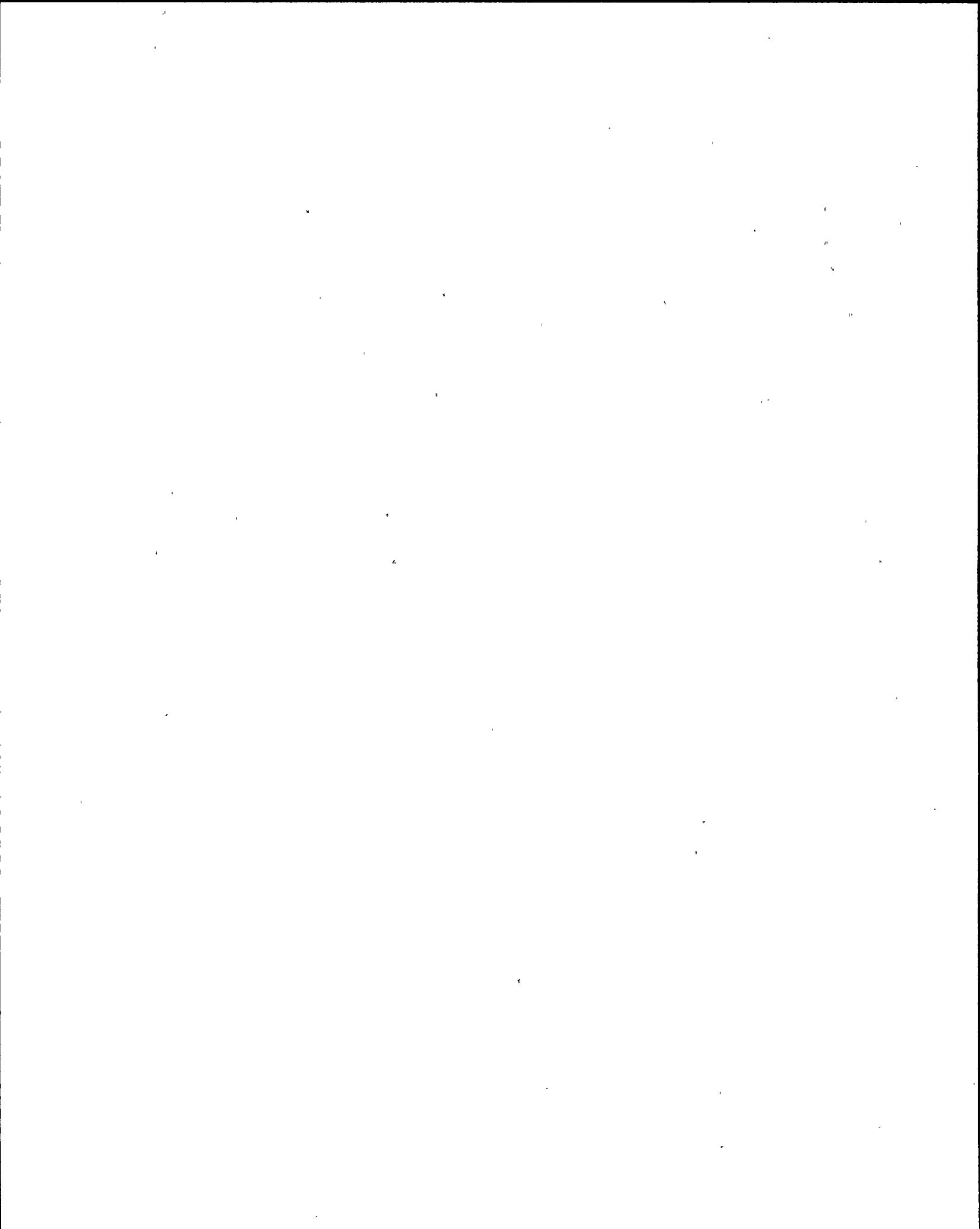


QUESTION: 069 (1.00)

During a startup with reactor power at  $1 \times 10^{-7}$  amps in the intermediate range, the N31 source range detector develops a low internal resistance due to its high voltage electrode contacting the casing.

WHICH of the following is the IMMEDIATE result due to the degradation of the detector?

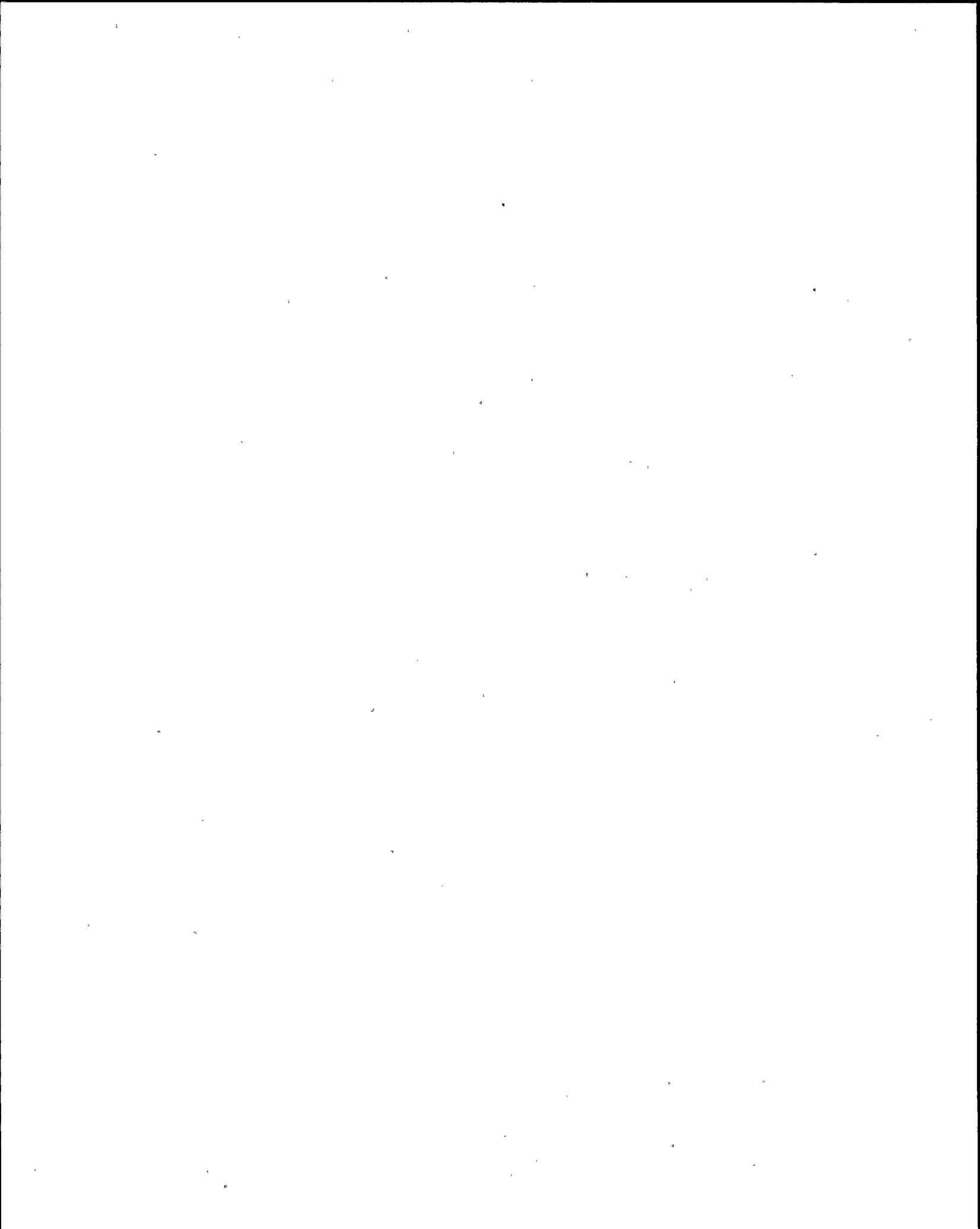
- a. SR High Flux Reactor Trip.
- b. Loss of High Flux At Shutdown Alarm indication.
- c. De-energization of IR power indication.
- d. No results will be seen until the detector is re-energized during the next shutdown.



QUESTION: 070 (1.00)

When operating under procedure O-6.10 (Plant Operation With Steam Generator Tube Leak Indication), WHICH of the following leakage rates is the MAXIMUM allowed for power operation?

- a. 260 cc/min (0.07 gpm)
- b. 370 cc/min (0.1 gpm)
- c. 3700 cc/min (1 gpm)
- d. 37,000 cc/min (10 gpm)



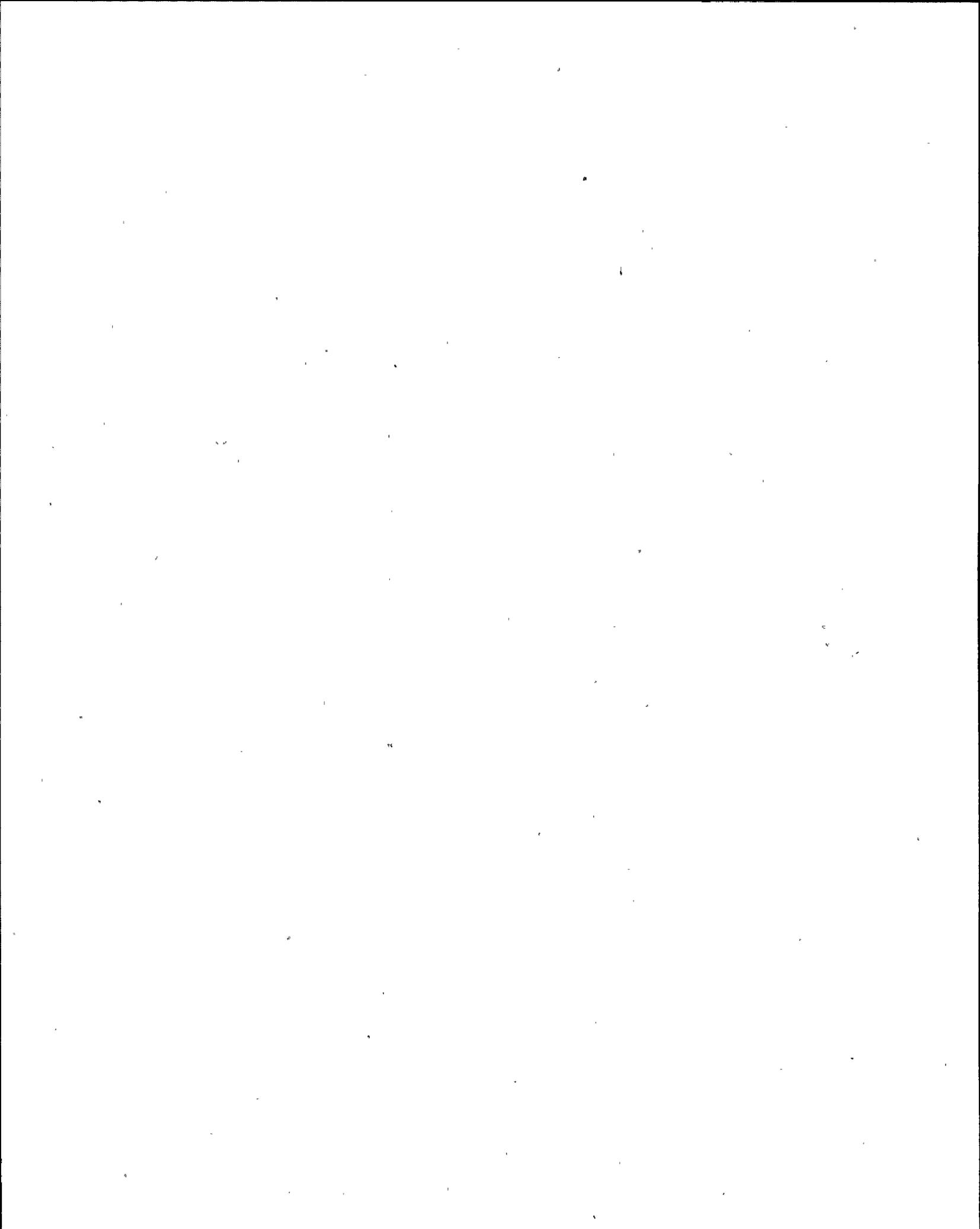
QUESTION: 071 (1.00)

GIVEN the following:

Procedure E-3 (Steam Generator Tube Rupture) in effect  
Safety Valve on the ruptured S/G has lifted and will not reseal

WHICH of the following procedures should be entered?

- a. E-1 (Loss of Reactor or Secondary Coolant)
- b. E-2 (Faulted Steam Generator Isolation)
- c. ECA-3.1 (SGTR With Loss of Reactor Coolant- Subcooled Recovery Desired)
- d. ES-3.1 (Post- SGTR Cooldown Using Backfill)



QUESTION: 072 (1.00)

GIVEN the following information:

Procedure AP-FW.1 (Partial or Complete Loss of Main Feedwater) is in effect (copy attached)

Reactor power = 90%

"A" and "B" Main Feedwater (MFW) pumps are both running

"A" MFW pump suction pressure = 215 psig

"B" MFW pump suction pressure = 217 psig

"A" S/G Feed Flow = 2.5E6 lbm/hr

"A" S/G Steam Flow = 3.1E6 lbm/hr

"B" S/G Feed Flow = 3.1E6 lbm/hr

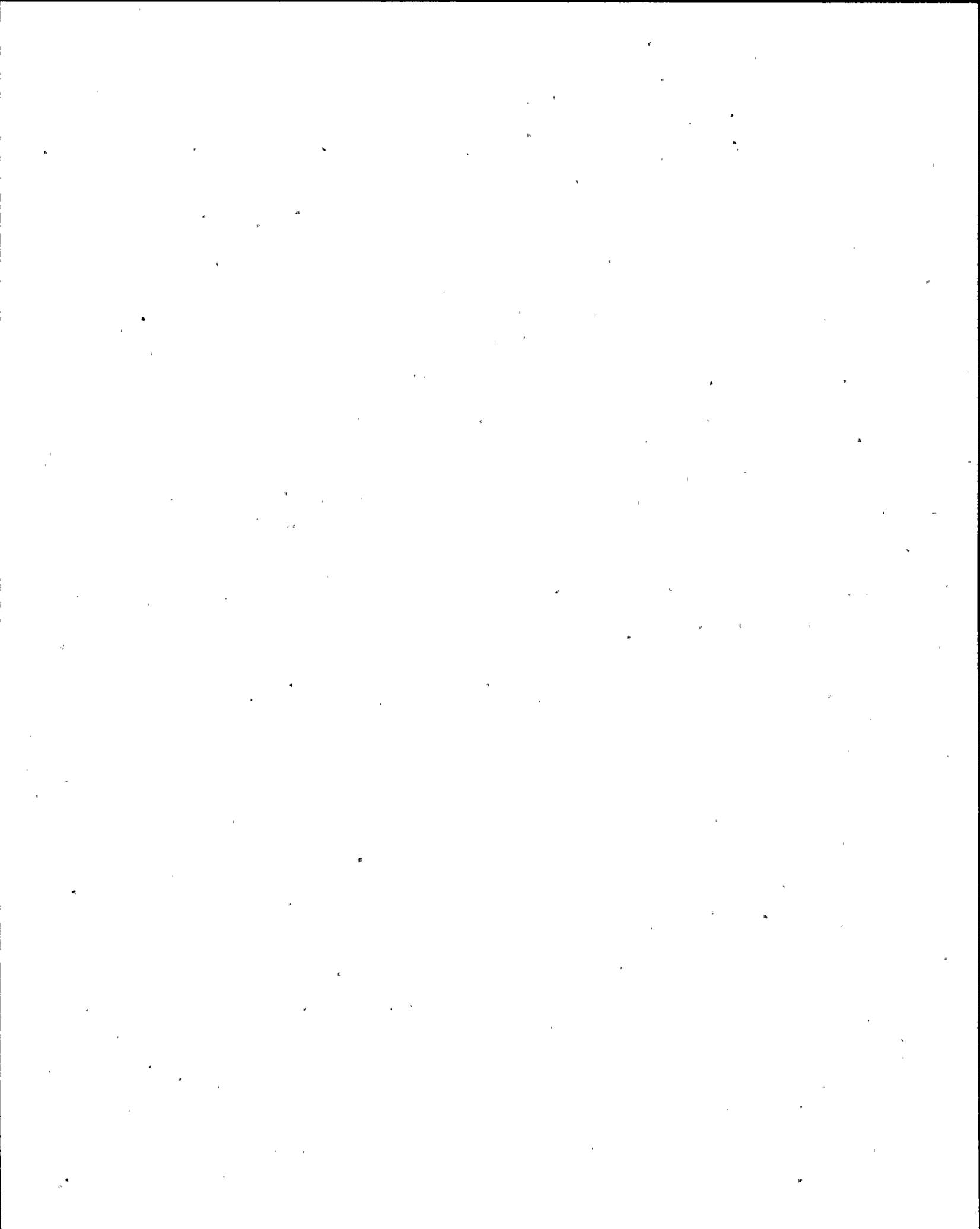
"B" S/G Steam Flow = 3.1E6 lbm/hr

"A" S/G Level = 49%

"B" S/G Level = 52%

WHICH of the following actions should be performed first?

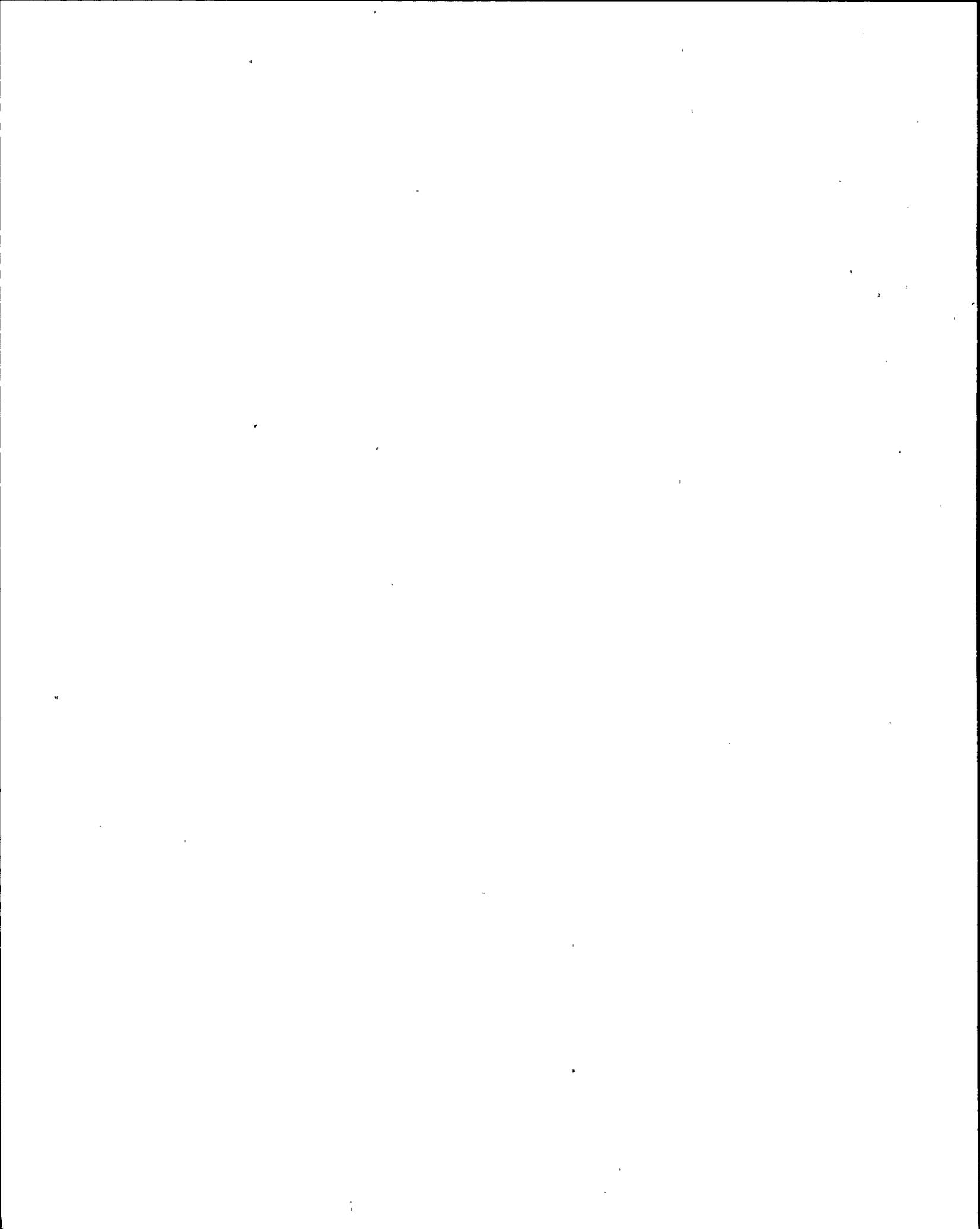
- a. Shift "A" MFW regulating valve (FCV-4269) to MANUAL.
- b. Start the standby condensate pump.
- c. Dispatch operators to search for Feedwater line leaks.
- d. Dispatch an operator to check for a closed "A" MFW pump discharge valve (MOV-3977).



QUESTION: 073 (1.00)

WHICH of the following indications would indicate a loss of detector voltage for a Victoreen RMS channel?

- a. Alarm light lit
- b. Fail light lit
- c. Rate light extinguished
- d. Range light extinguished



QUESTION: 074 (1.00)

Step 2 of E-0 (Reactor Trip or Safety Injection) states:

"Verify Turbine Stop Valves - CLOSED"

If the response is not obtained, the procedure directs the operator to manually trip the turbine.

IF after manually tripping the turbine, the turbine trip still can NOT be verified, THEN WHICH of the following actions must be performed?

- a. Break condenser vacuum
- b. Run back the turbine to no load conditions
- c. Stop both EHC pumps
- d. Shut both Main Steam Isolation Valves



QUESTION: 075 (1.00)

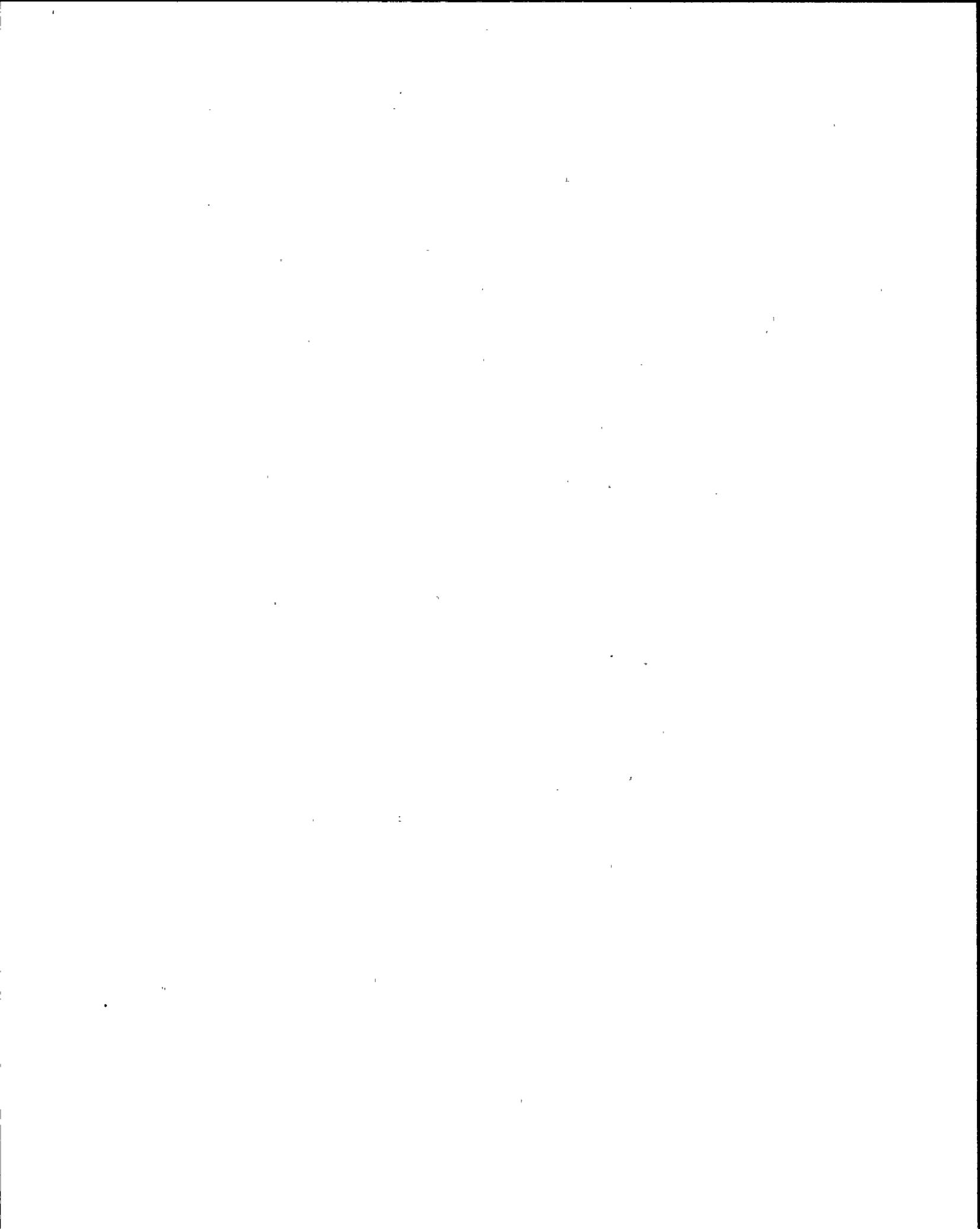
GIVEN the following information:

Alarm H-8, INSTRUMENT AIR LO PRESS, 100 PSI, lit

Instrument air (IA) pressure reads 75 psig and is slowly decreasing

WHICH of the following actions is your IMMEDIATE action as listed in AP-IA.1 (LOSS OF INSTRUMENT AIR)?

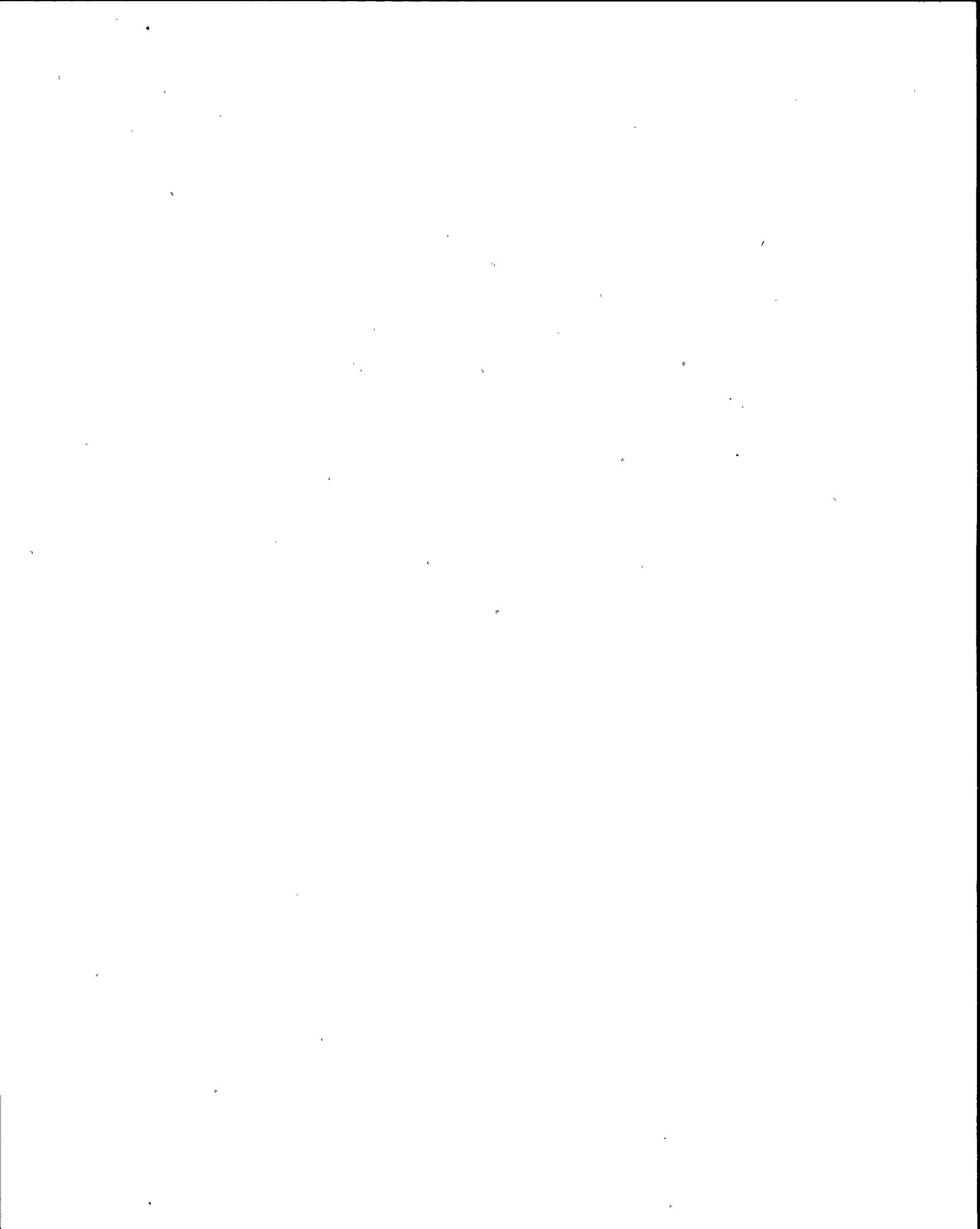
- a. Trip the reactor and go to E-0
- b. Start the standby IA compressor
- c. Start a service air compressor
- d. Isolate letdown



QUESTION: 076 (1.00)

For a blackout condition, WHY is the restoration of pressurizer heaters by ER-PRZR.1 within 1 hour so important (CHOOSE ONE):

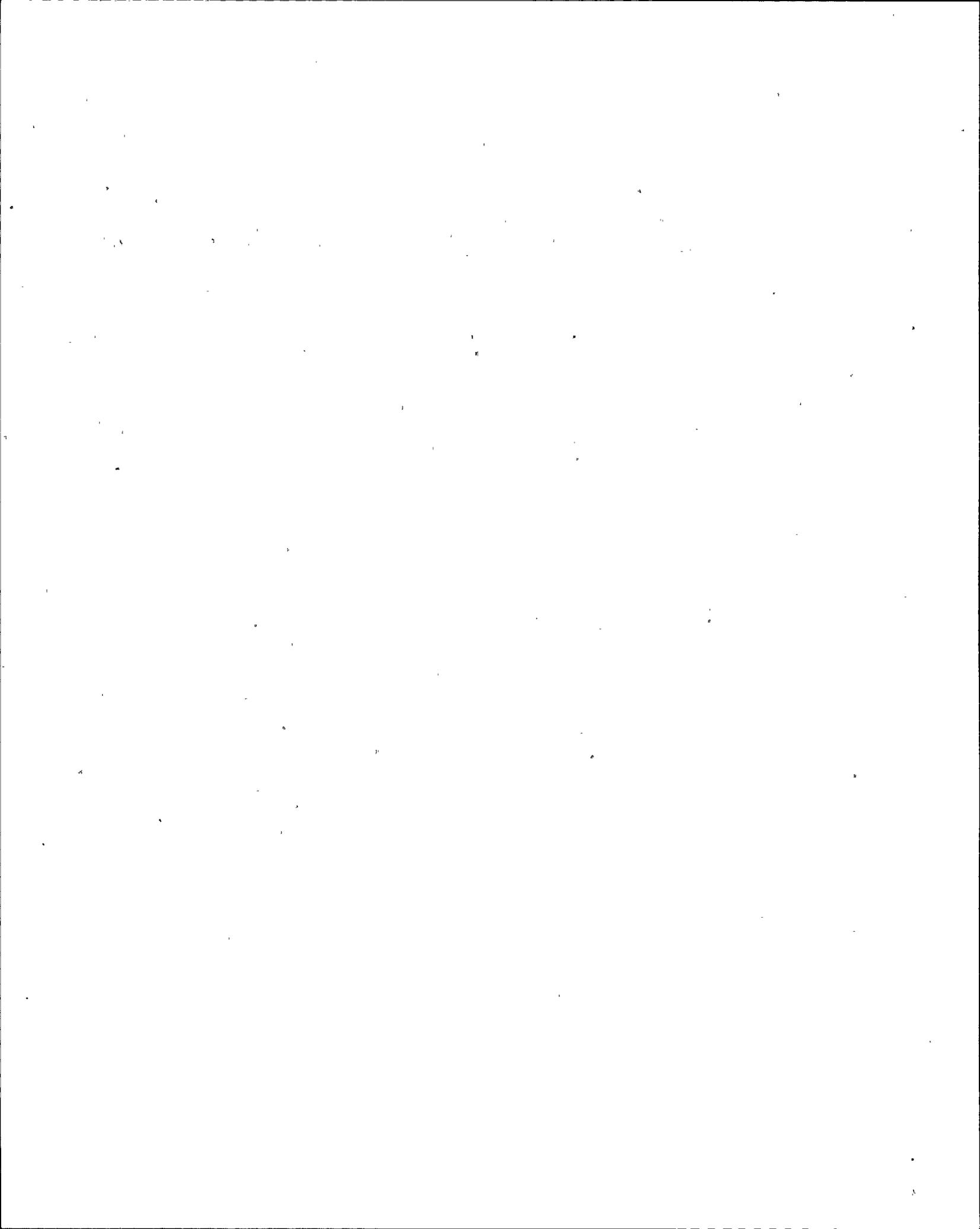
- a. To prevent reaching the low pressurizer pressure SI setpoint
- b. To maintain subcooling for continued operation of the RCP's
- c. To maintain subcooling for a natural circulation cooldown
- d. To maintain cooling flow to the RCP seals in the event of a loss of normal charging



QUESTION: 077 (1.00)

WHICH of the following statements describes the policy at Ginna regarding Emergency Radiation Exposure?

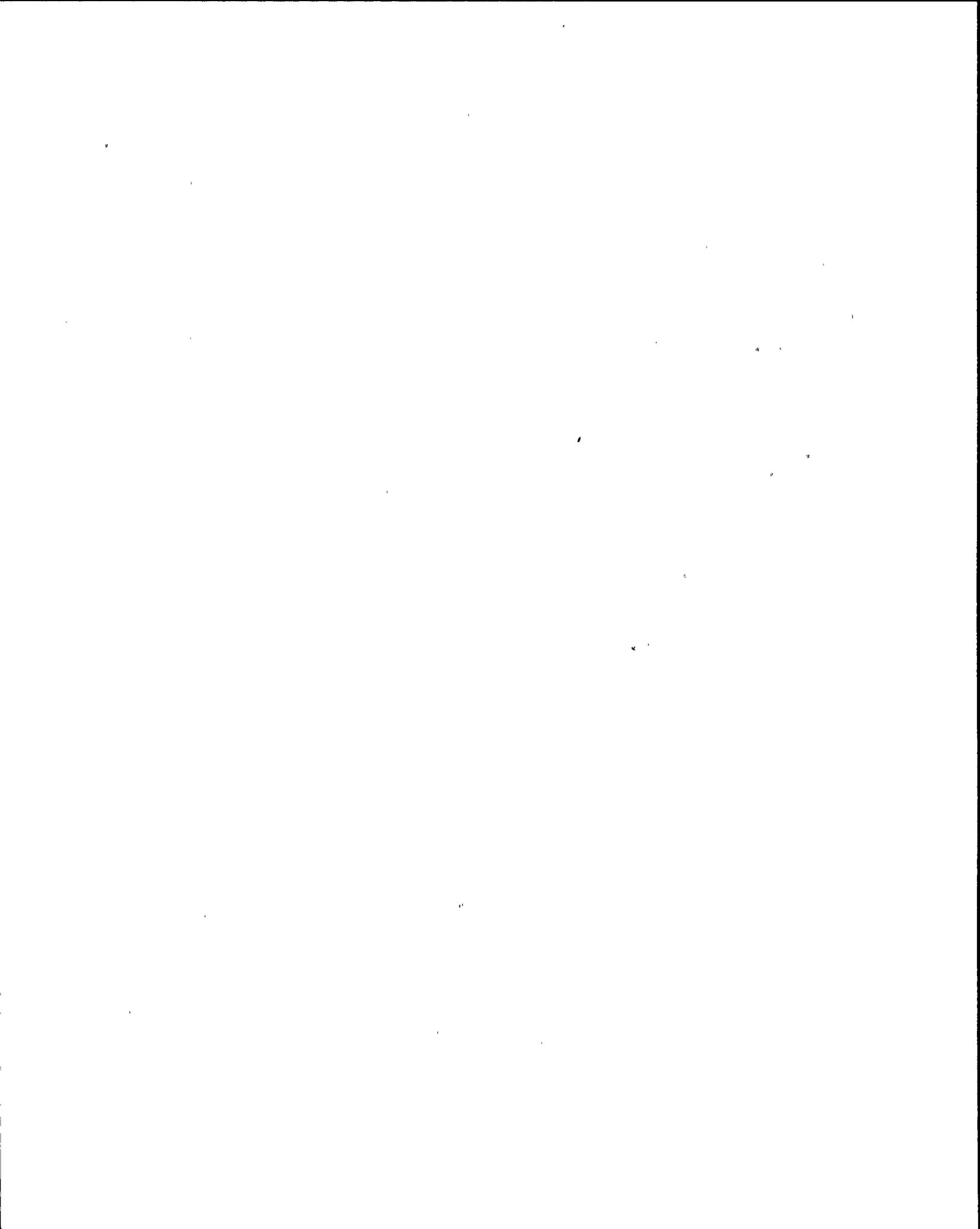
- a. Exposures up to 100 Rem to save human life are authorized.
- b. After individuals have received an Emergency exposure they shall be removed from work involving radiation exposure for the remainder of their lifetime.
- c. Only one emergency exposure is authorized in an individual's lifetime.
- d. The Plant Superintendent must give prior authorization for each Emergency Exposure.



QUESTION: 078 (1.00)

WHICH of the following statements describes the proper procedure for isolating in the CLOSED position for HOLD purposes, a pneumatically operated valve that FAILS OPEN?

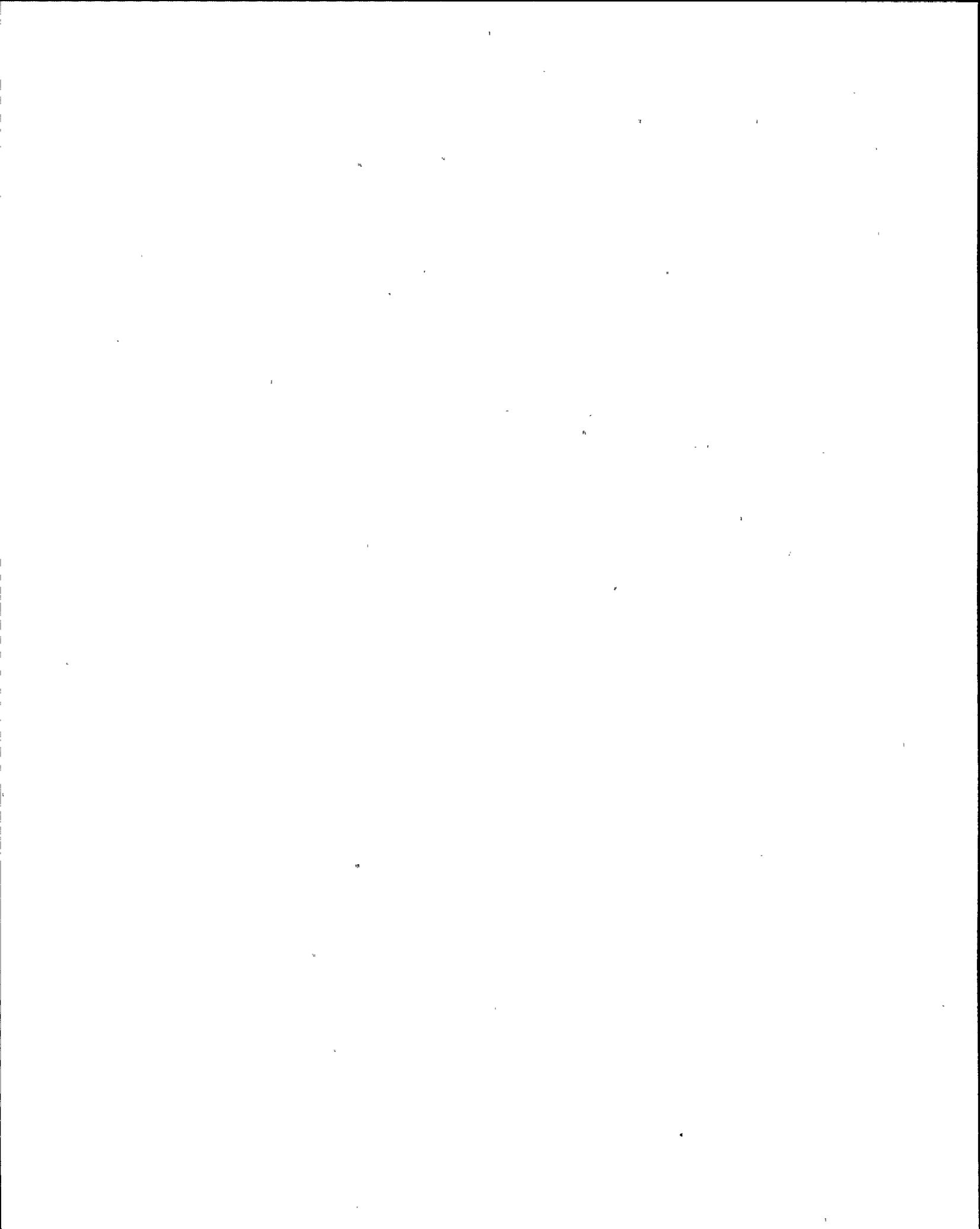
- a. Close the valve  
Install a HOLD tag on the remote operating switch  
Isolate the air supply to the valve  
Install a HOLD tag on the CLOSED air supply valve
- b. Close the valve  
Install a HOLD tag on the remote operating switch and on the air line where it enters the valve actuator.
- c. Close the valve  
Install a blocking device or gag  
Install a HOLD tag on the valve
- d. Close the valve  
Install a blocking device or gag  
Isolate the air supply  
Install HOLD tags on the valve and the air supply isolation valve.



QUESTION: 079 (1.00)

When using a manual trip pushbutton to trip the reactor in the event of an ATWS, how are the trip coils affected? (CHOOSE ONE):

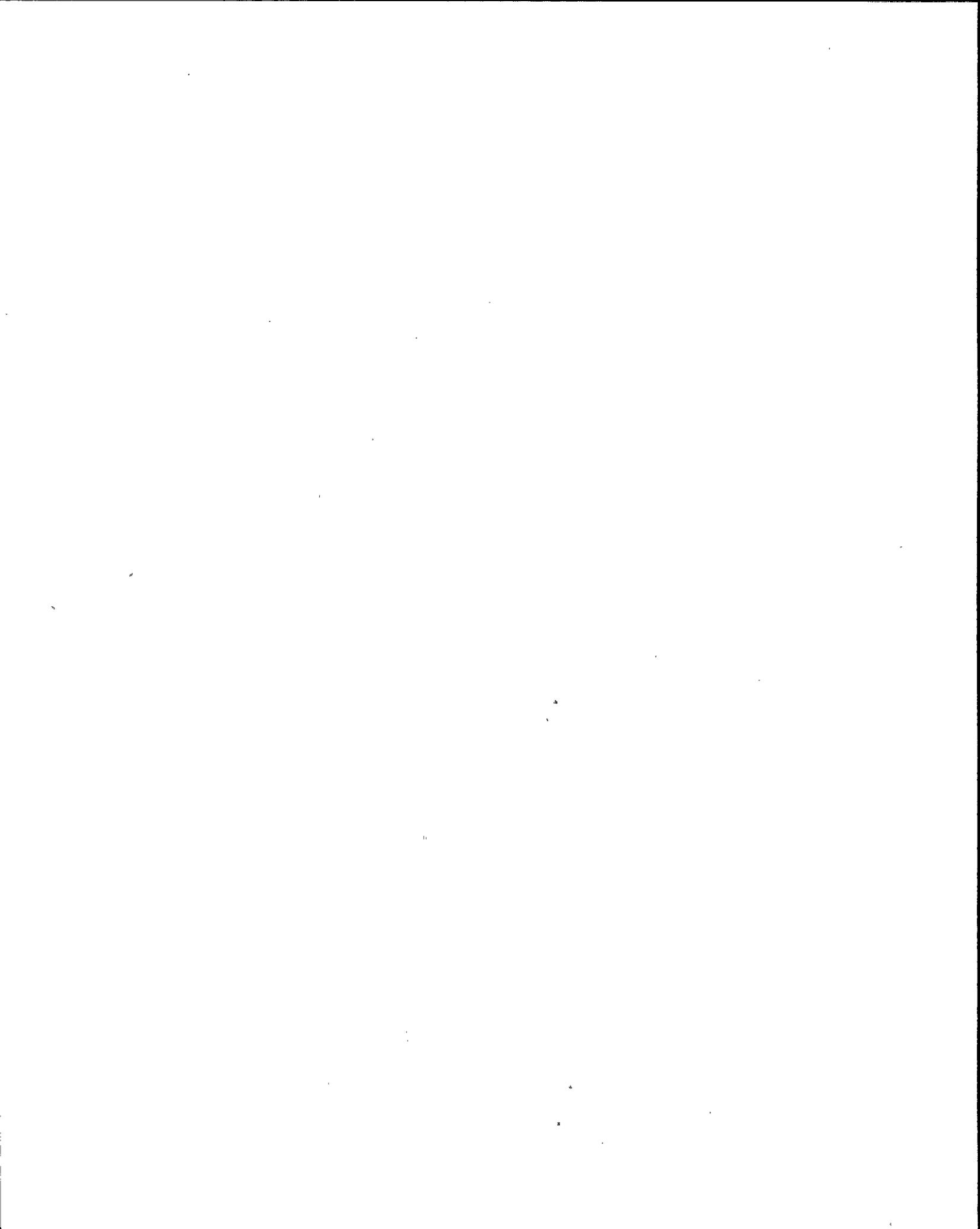
- a. UV coils and shunt coils are all de-energized.
- b. UV coils only are de-energized, the shunt coils are unaffected.
- c. Shunt coils only are energized, the UV coils are unaffected.
- d. UV coils are de-energized, the shunt coils are energized.



QUESTION: 080 (1.00)

WHICH of the following individuals does NOT have to review and approve, prior to implementation, a temporary change notice - permanent for Procedure O-1.2 (Plant Startup from Hot Shutdown to Full Load)?

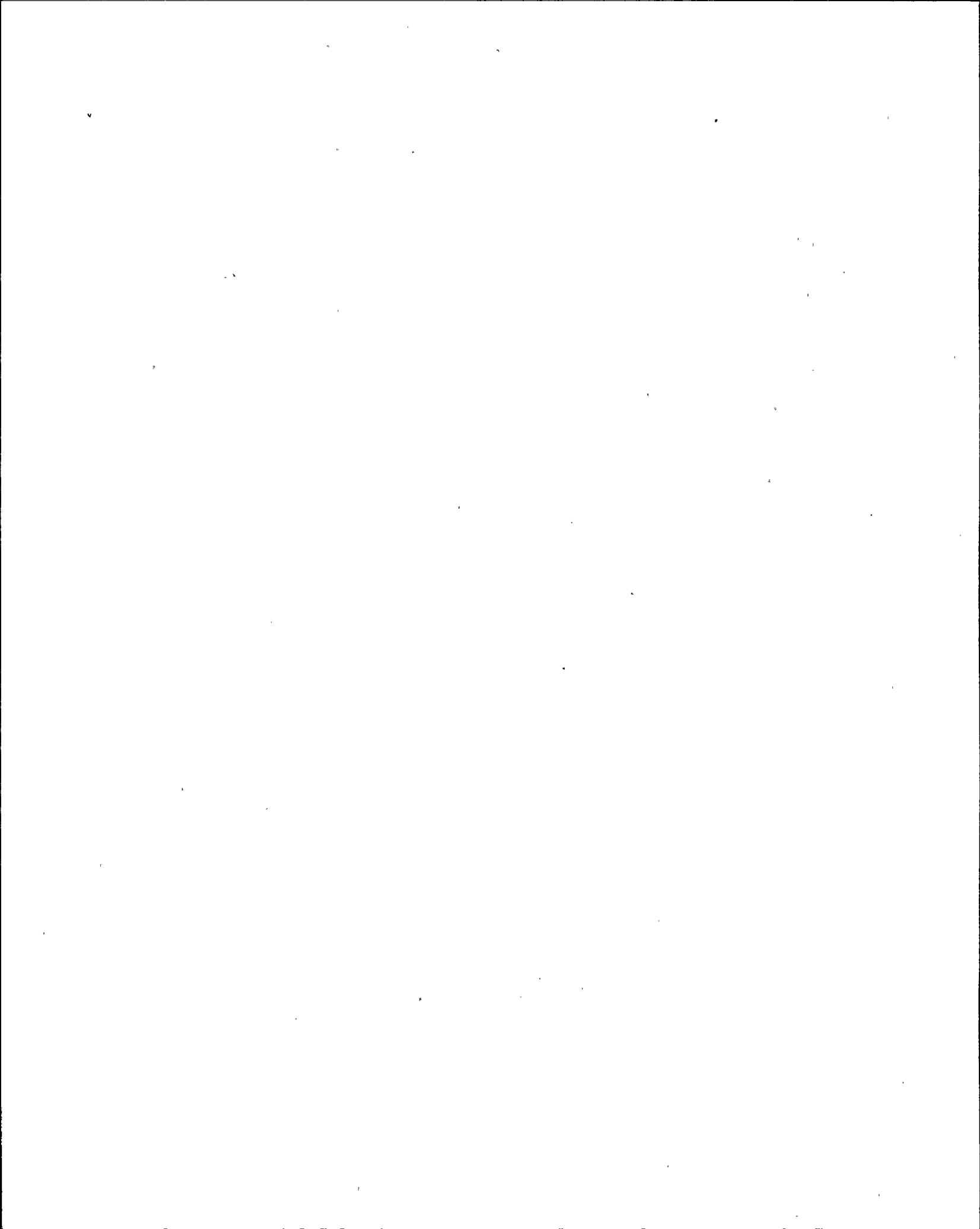
- a. Shift Supervisor
- b. Duty Engineer
- c. Operations Manager
- d. Superintendent - Ginna Production



QUESTION: 081 (1.00)

During abnormal or emergency conditions, entry into the various procedures used is NORMALLY the authority of (CHOOSE ONE):

- a. Head Control Operator
- b. Control Operator
- c. Control Room Foreman
- d. Shift Supervisor

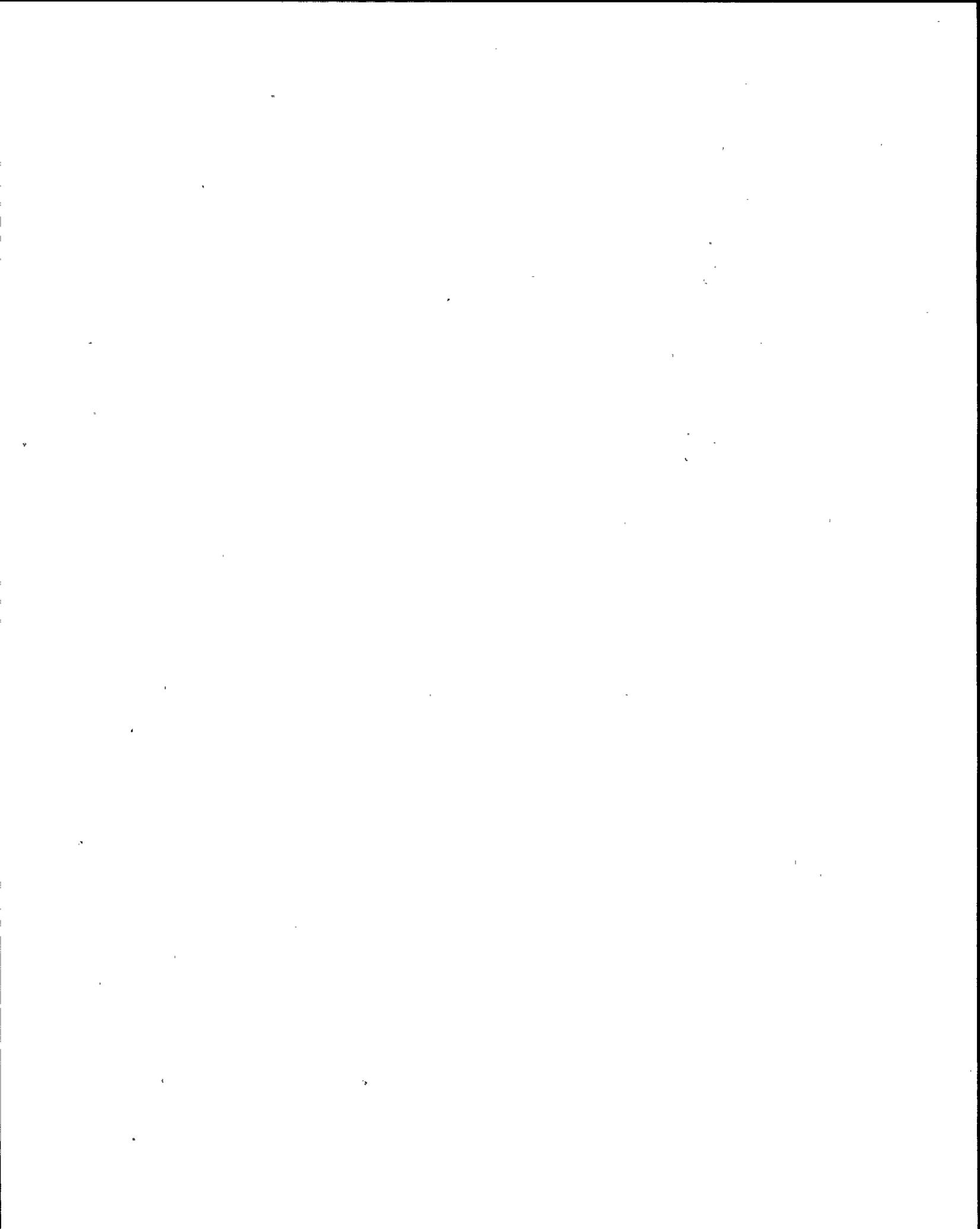


QUESTION: 082 (1.00)

If RCS specific activity exceeds the limits established by Tech Specs, the plant must be subcritical and cooled down to less than 500 degrees F within 8 hours.

WHICH of the following is the reason for cooldown below 500 degrees F?

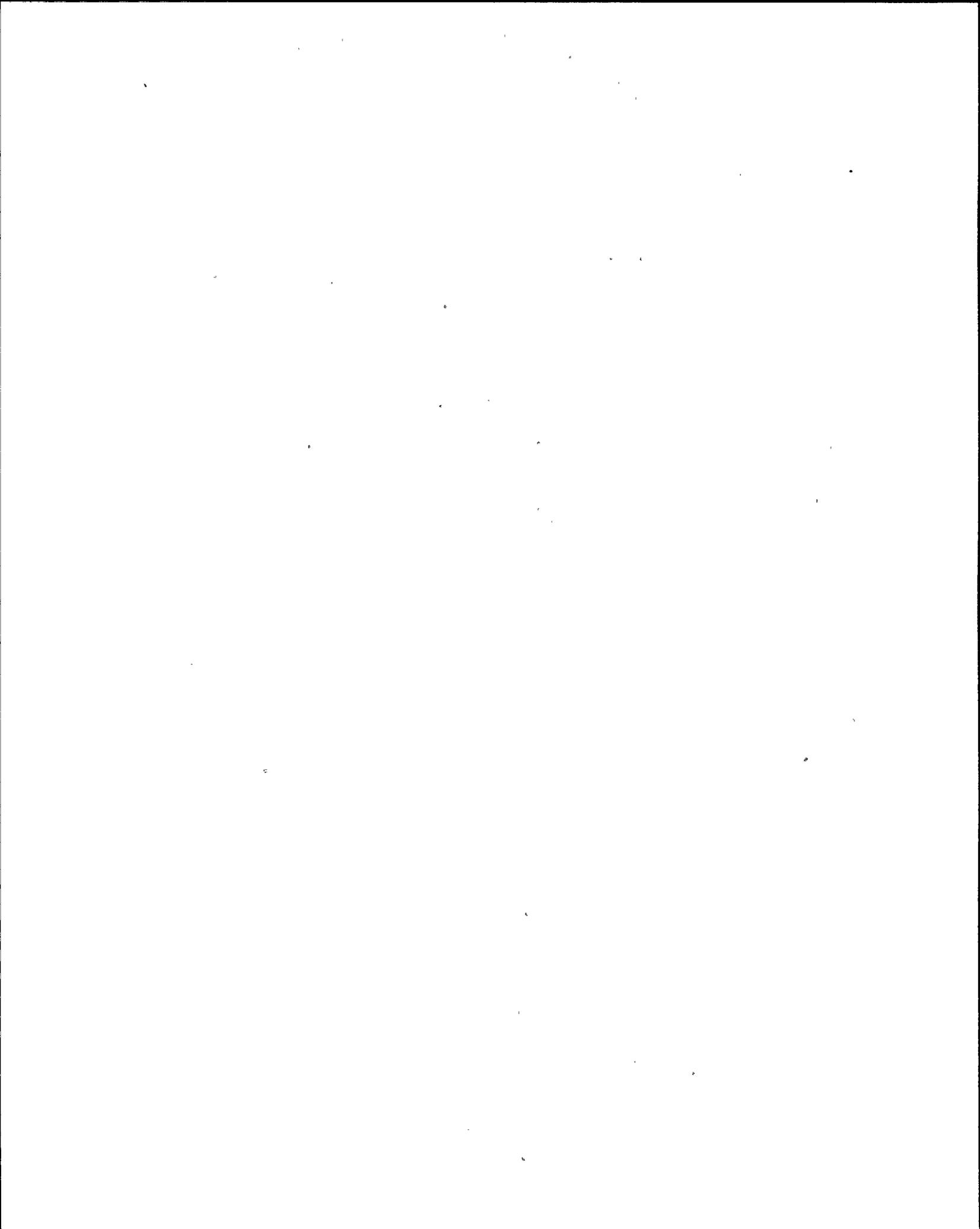
- a. To increase the solubility of gaseous radionuclides in the RCS in the event of a LOCA.
- b. To ensure the peak containment pressure in the event of a large break LOCA will remain below the design value.
- c. To maintain S/G pressure below the setpoint of the secondary side relief valves in the event of a SGTR.
- d. To ensure that Main Steamline Isolation will occur in the event of a high steam flow signal coincident with a SI signal.



QUESTION: 083 (1.00)

WHICH of the following events requires IMMEDIATE notification to the NRC?

- a. A reactor coolant pump start in cold shutdown results in an RCS pressure transient that actuates the Overpressure Protection System.
- b. A hydrostatic test of the pressurizer spray line inadvertently pressurizes the RCS to 2750 psig while in cold shutdown.
- c. Cold shutdown setpoint testing of the pressurizer code safety valves shows that both valves had a lift setpoint of 2585 psig since the last refueling.
- d. The PRT rupture disk ruptures during a containment mini-purge, causing a containment ventilation isolation.

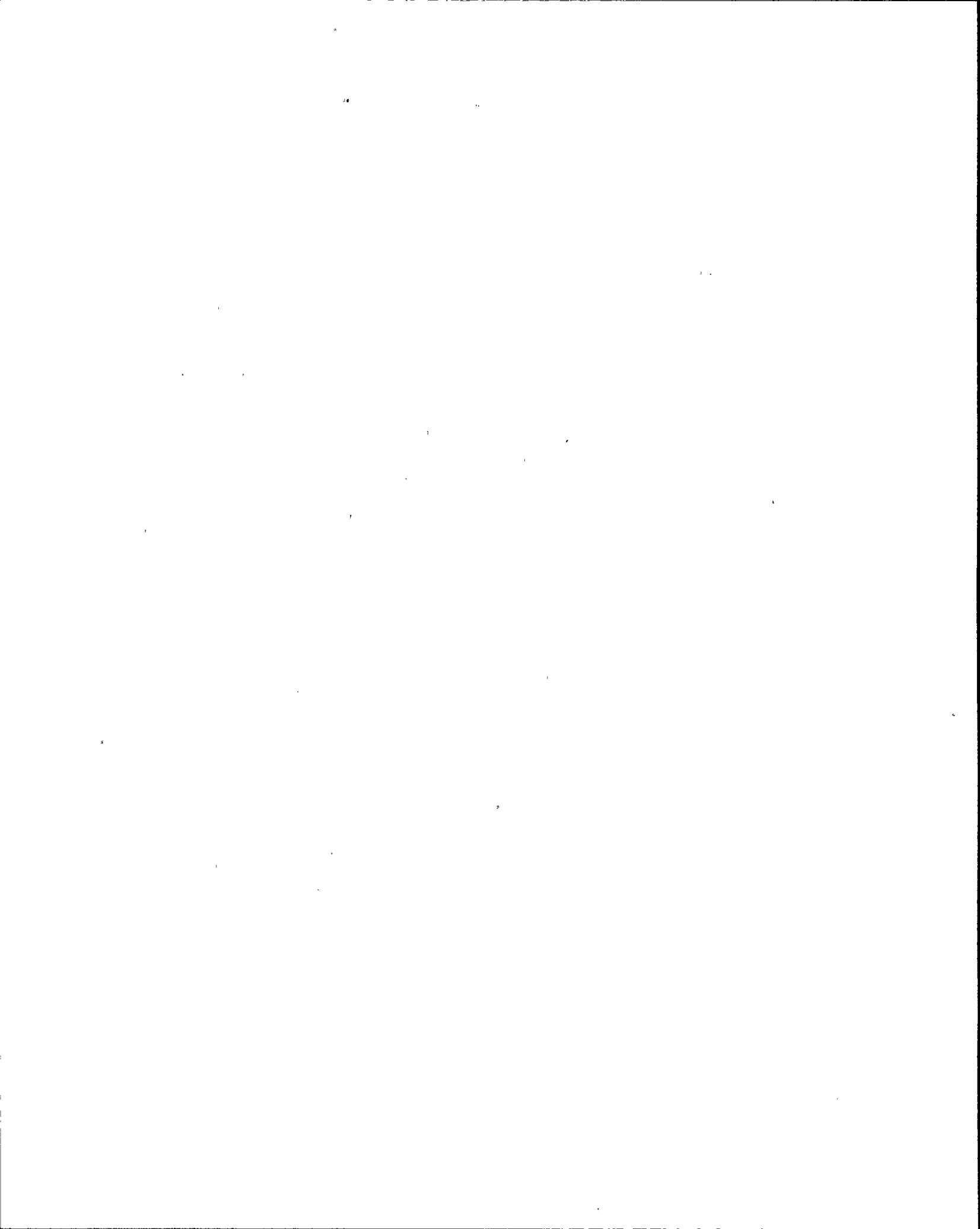


QUESTION: 084 (1.00)

Tech Spec L.C.O. 3.9.2.6(a) limits the total Curie content of a Waste Gas Decay Tank to 100,000 Ci.

WHICH of the following is the BASIS for this limit?

- a. To limit the total body gamma exposure to  $\leq .5$  Rem at the nearest exclusion boundary in the event of an uncontrolled release of the tank contents.
- b. To limit the thyroid dose at the site boundary to  $\leq$  10CFR100 limits during a planned release of the tank contents.
- c. To limit radiation levels in the area of the Waste Gas Decay Tank.
- d. To limit the explosive hazard to the Gaseous Waste Treatment System due to heating by gamma decay of the tank contents.



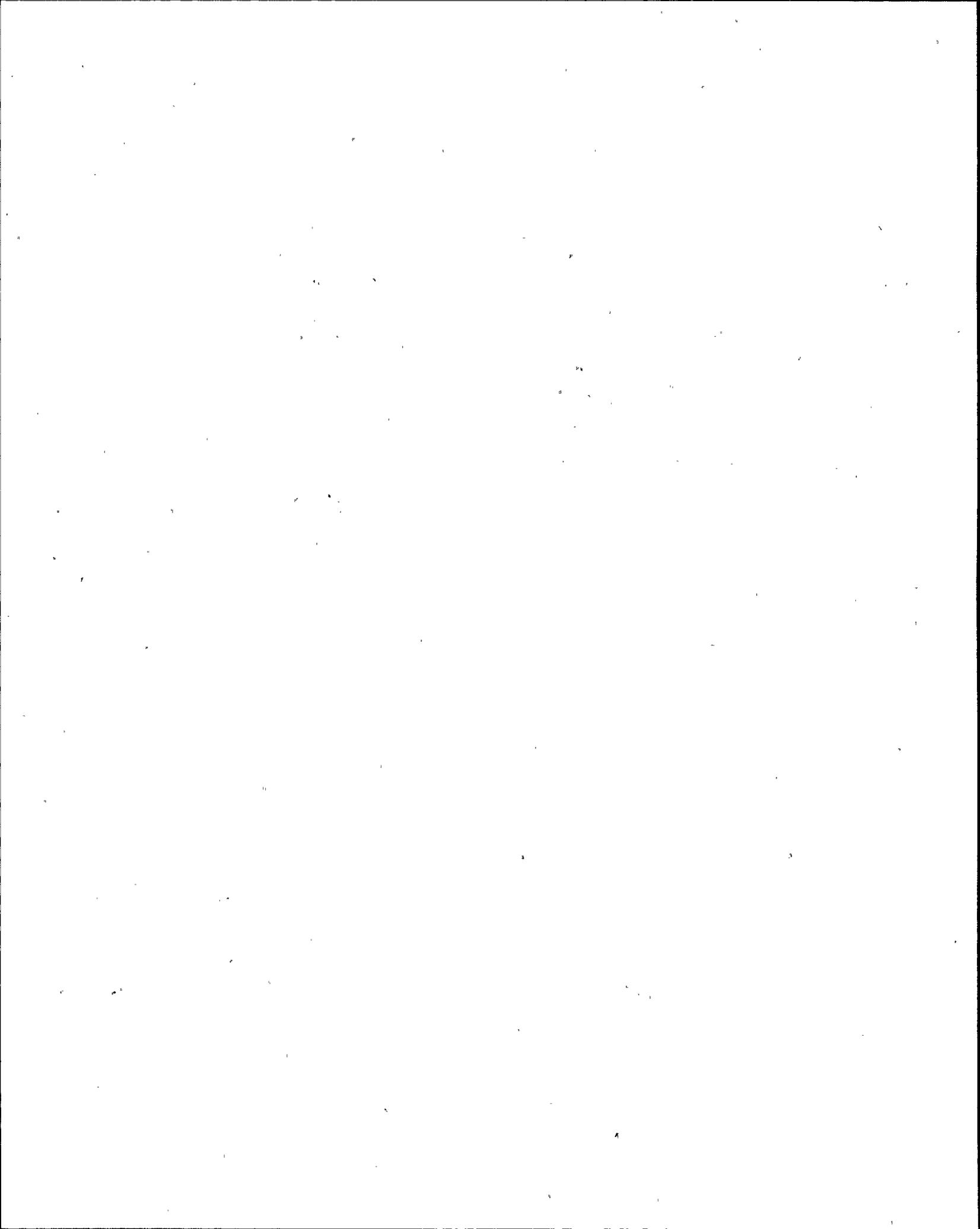
QUESTION: 085 (1.00)

Procedure FR-H.5 (Response to Steam Generator Low Level) states in Step 4:

"IF affected S/G(s) wide range level is less than 35 inches (110 inches adverse CNMT), THEN establish AFW flow to the affected S/G(s) at a rate not to exceed 100 gpm"

WHICH of the following is the reason for this limit?

- a. To minimize thermal stresses to S/G components.
- b. To minimize water hammer to the S/G feed ring.
- c. To prevent Reactor restart from an excessive cooldown.
- d. To prevent exceeding Reactor vessel cooldown rate.



QUESTION: 086 (1.00)

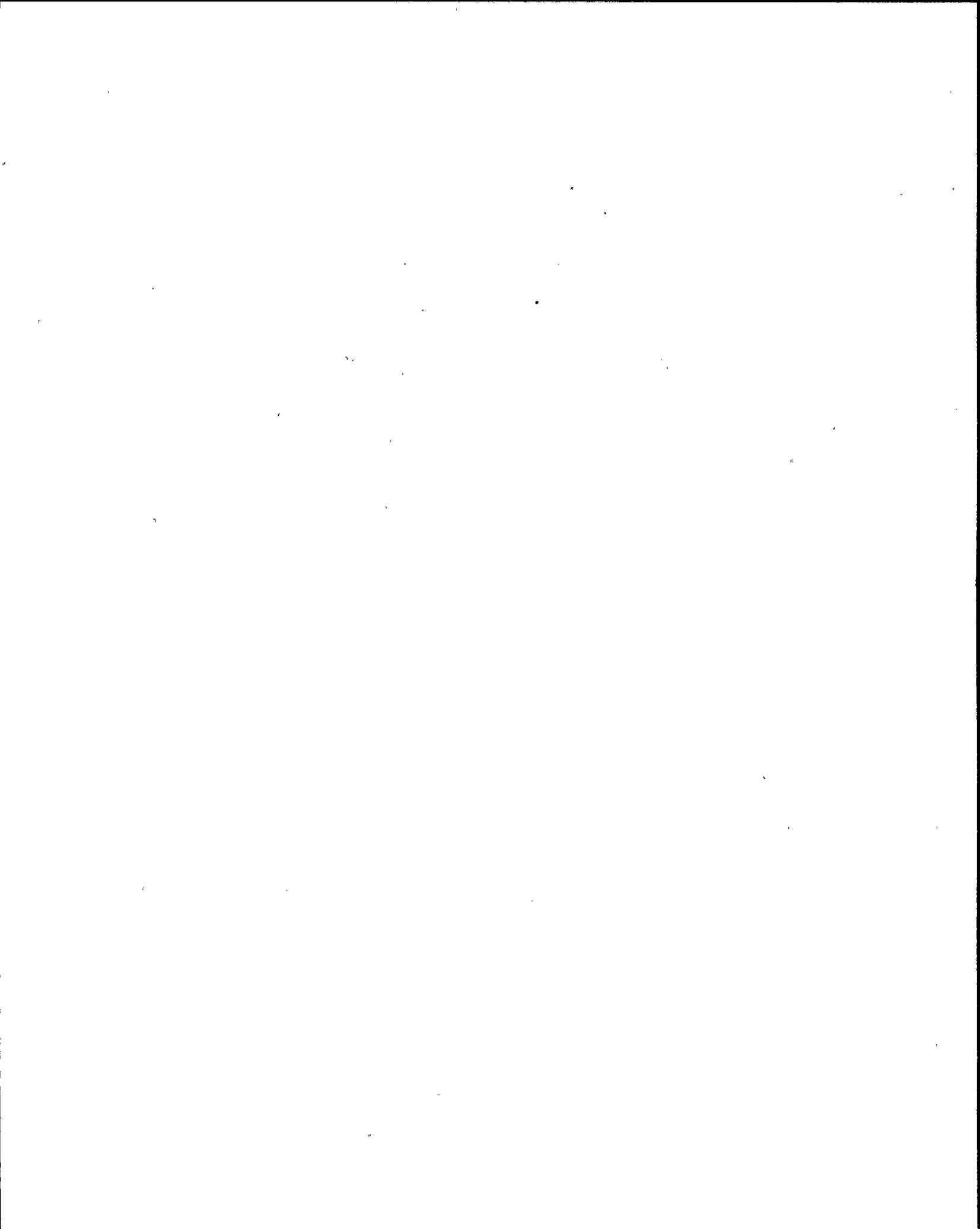
GIVEN the following:

A spent fuel assembly develops a small leak of fission product gases due to damage during handling

All auxiliary building ventilation is in a normal lineup

WHICH of the following RMS detectors will respond first to the leak?

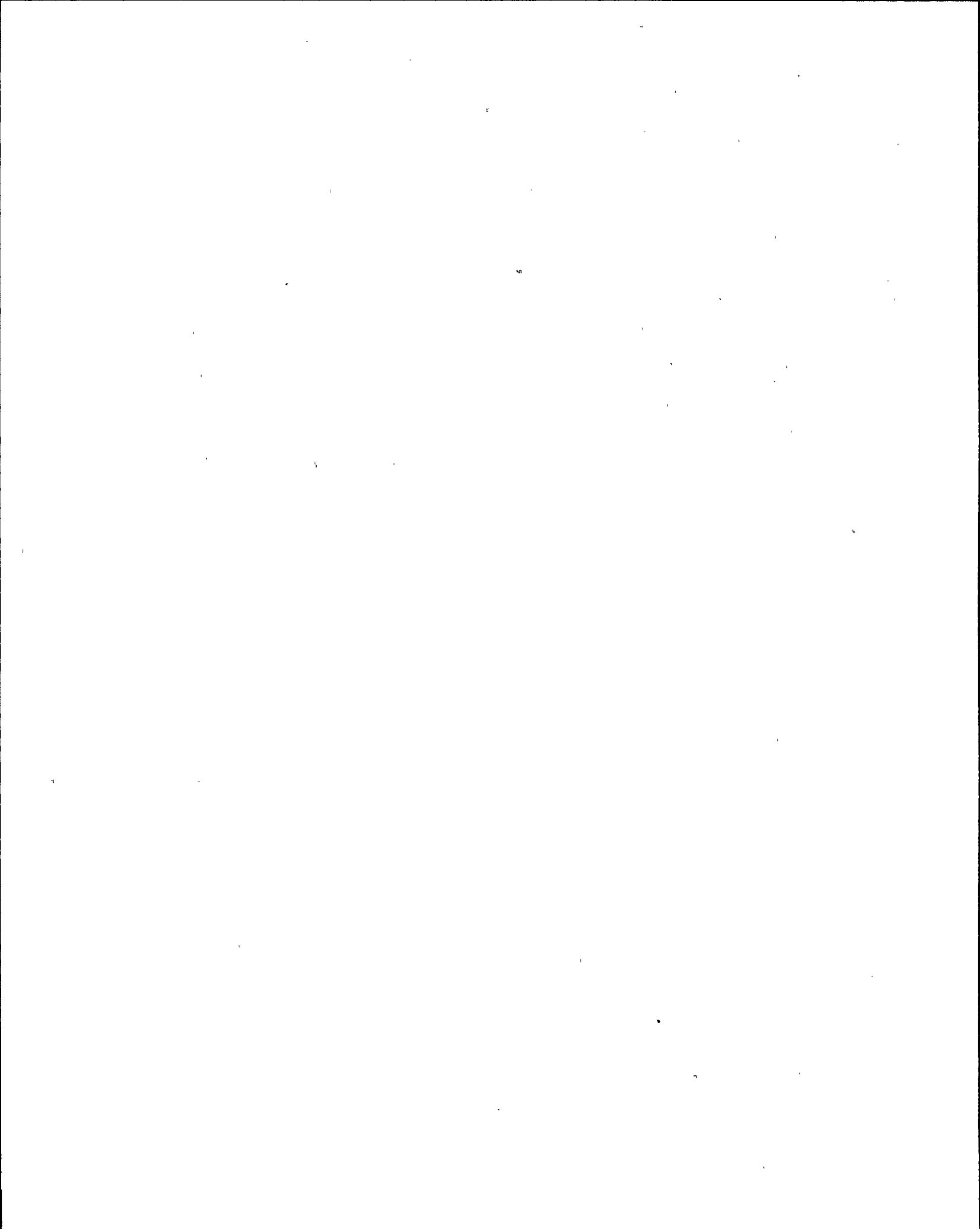
- a. R5 (Spent Fuel Pit Area Monitor)
- b. R9 (Letdown Line Monitor)
- c. R10B (Plant Vent Iodine Monitor)
- d. R8 (Drumming Station Area Monitor)



QUESTION: 087 (1.00)

WHICH of the following describes the major action categories of Procedure FR-I.2 (Response to Low Pressurizer Level)?

- a. Verify containment isolation, restore SI flow
- b. Draw a bubble, verify letdown isolation and restore charging flow
- c. Verify letdown isolation and establish charging flow, increase charging flow or operate SI pumps to restore level
- d. Verify SI pump flow, depressurize to maximize ECCS injection



QUESTION: 088 (1.00)

GIVEN the following:

Alarm F-21, COND HI PRESS 20" HG OR LOSS OF BOTH CIRC WTR PMPS

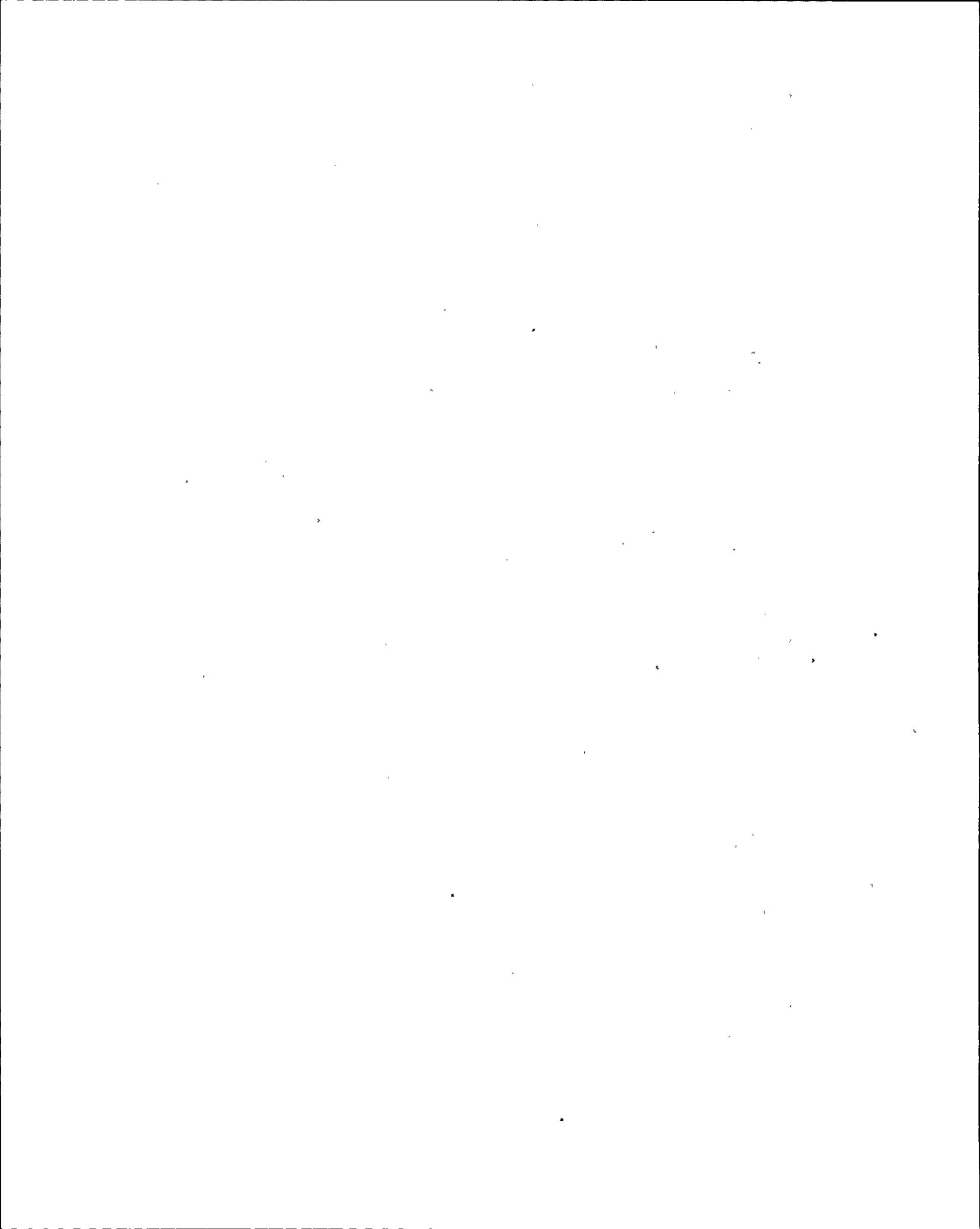
Both Circ Water Pumps indicate - OFF

All Turbine Stop Valves indicate - CLOSED

Reactor power = 10%

WHICH of the following actions should be performed IMMEDIATELY?

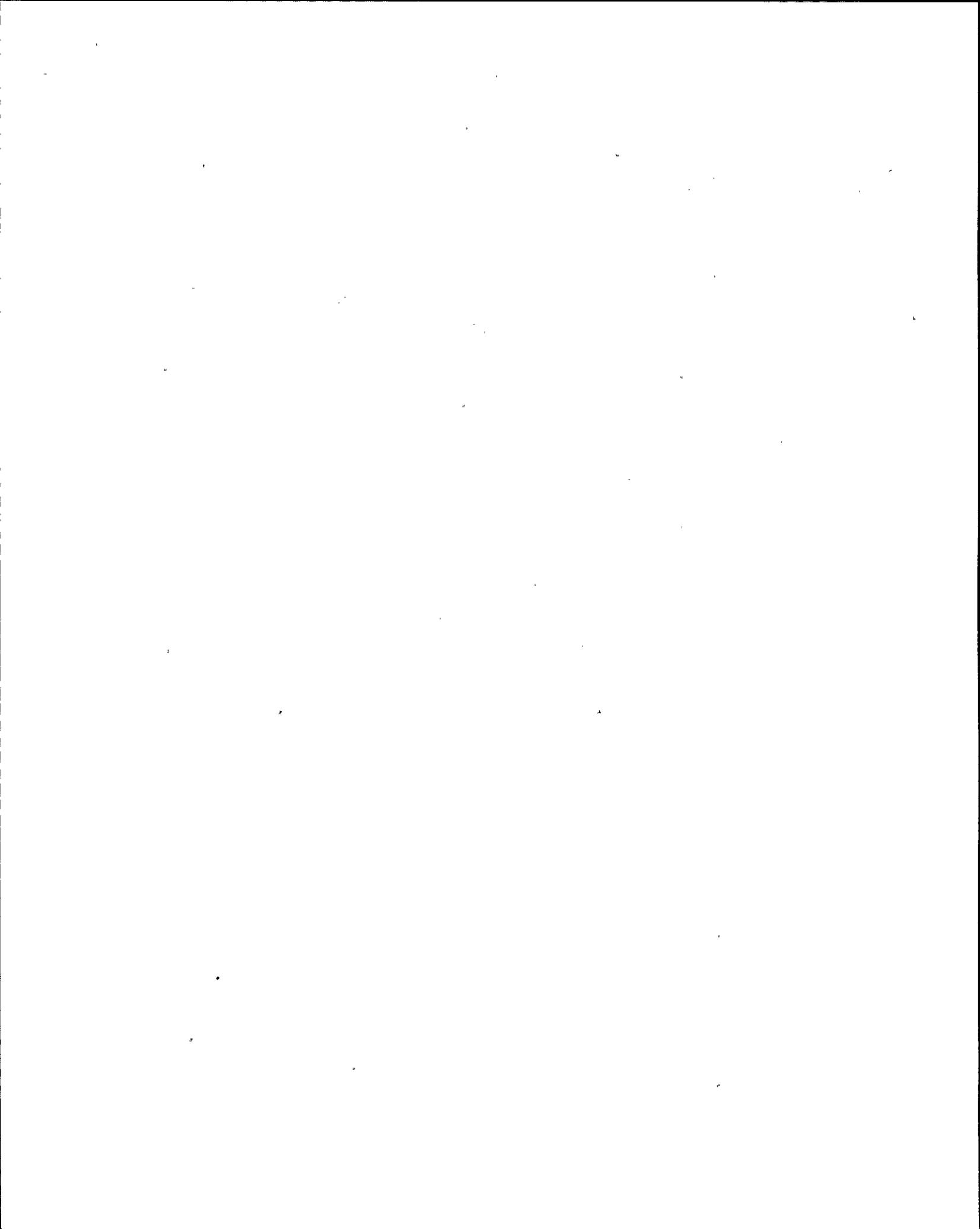
- a. Manually insert control rods to decrease reactor power to <8%
- b. Take the steam dump mode selector switch to manual and manually adjust controller HC484 to CLOSE the steam dump valves.
- c. Manually trip the reactor and go to E-0
- d. Take the controllers for the S/G Atmospheric Relief Valves to MANUAL and OPEN the valves to match Tav<sub>g</sub> to Tref.



QUESTION: 089 (1.00)

For long-term cooling following a LOCA, WHICH of the following is the reason for the shift to hot-leg recirculation approximately 24 hours after the accident?

- a. To increase natural circulation flow through the core.
- b. To remove non-condensable gases that have accumulated in the vessel head region.
- c. To flush concentrated boric acid from the reactor core.
- d. To depressurize the RCS below the shutoff head for the SI pumps.



QUESTION: 090 (1.00)

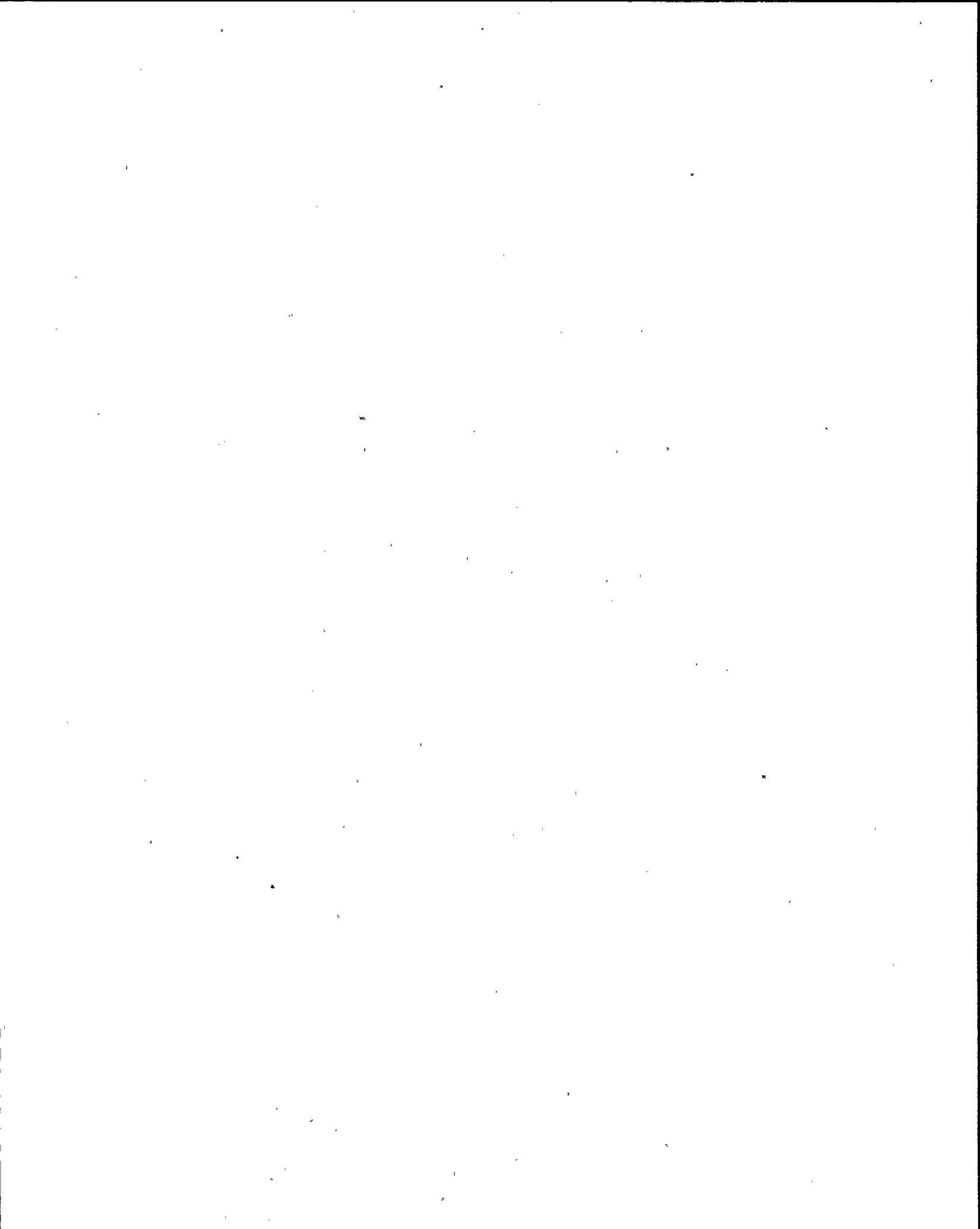
GIVEN the following:

A fire in the Control Room has forced evacuation of the Control Room crew to the local operating stations.

The Shift Supervisor has directed that the RCS be borated to the Xe-free, Cold Shutdown condition.

WHICH of the following methods should be used to accomplish this?

- a. Manually open the RWST suction valve to the charging pumps (LCV-112B).
- b. Depressurize the RCS to initiate Safety Injection.
- c. Start a Boric Acid transfer pump and manually open the Emergency Boric Acid supply valve (MOV-350).
- d. Select the Reactor Makeup Water (RMW) Mode Selector Switch to BORATE and select the RMW control switch to START.



QUESTION: 091 (1.00)

GIVEN the following information:

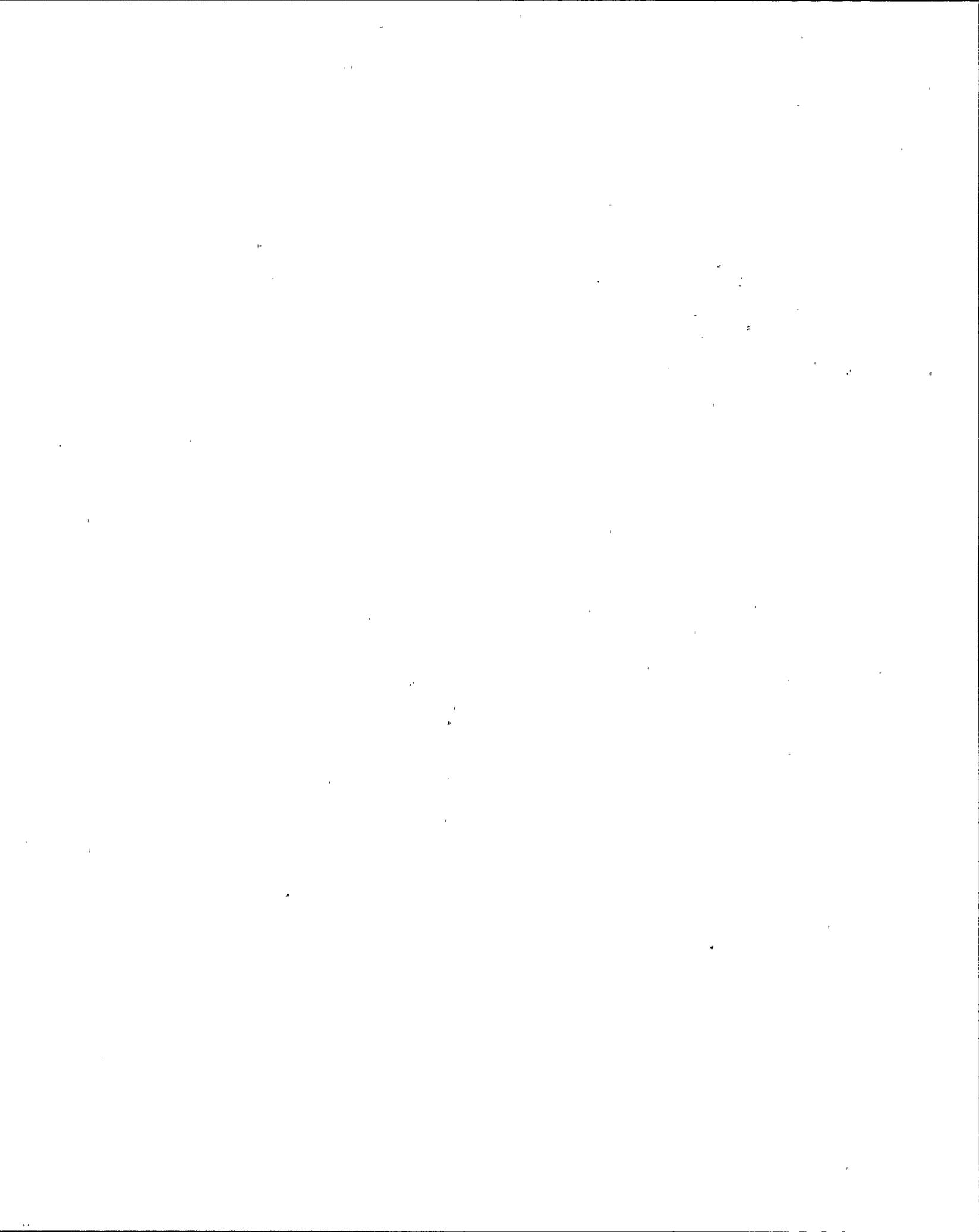
Procedure PT-1 (Rod Control System) surveillance is in progress

A rod in Shutdown Bank B is observed after movement to be reading 14 steps below bank demand indication

While reducing power to comply with recovery procedure ER-RCC.2, a rod in Control Bank D is observed to be reading 15 steps above its bank demand indicator.

WHICH of the following is the required action(s) by Tech Specs?

- a. Continue power decrease to <75% power, and verify the operability of the bank demand position indicators by use of the moveable incore detectors immediately after rod motion and once every 8 hours.
- b. Continue power decrease to <75% power, and reduce the high neutron flux trip setpoint to  $\leq$  85% rated power within the next 4 hours.
- c. Within 1 hour, initiate action to place the unit in at least hot shutdown within the next 8 hours.
- d. Be in hot shutdown within 6 hours.



QUESTION: 092 (1.00)

GIVEN the following:

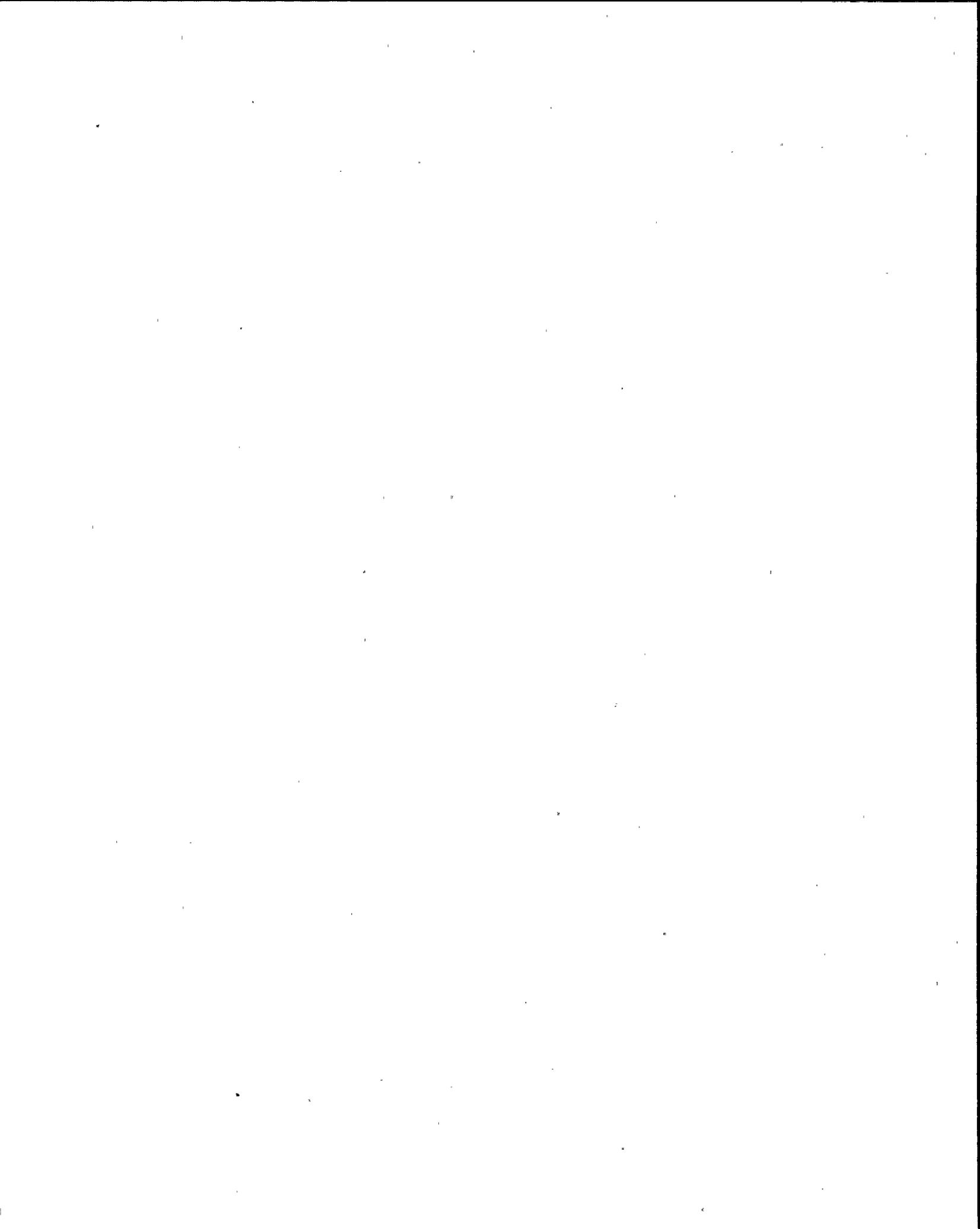
Startup in progress

Reactor Power is 3% of Rated Thermal Power

N36 IR indication starts fluctuating in 0.5 decade oscillations

WHICH of the following actions should be taken in accordance with Tech Spec Table 3.5-1 (attached)?

- a. Stop the startup, pull the control power fuses, and troubleshoot the problem prior to resuming the startup.
- b. Select rod control to manual to bypass the IR high flux rod stop
- c. Stop the startup and be within hot shutdown within 6 hours
- d. Bypass the level trip and resume the startup

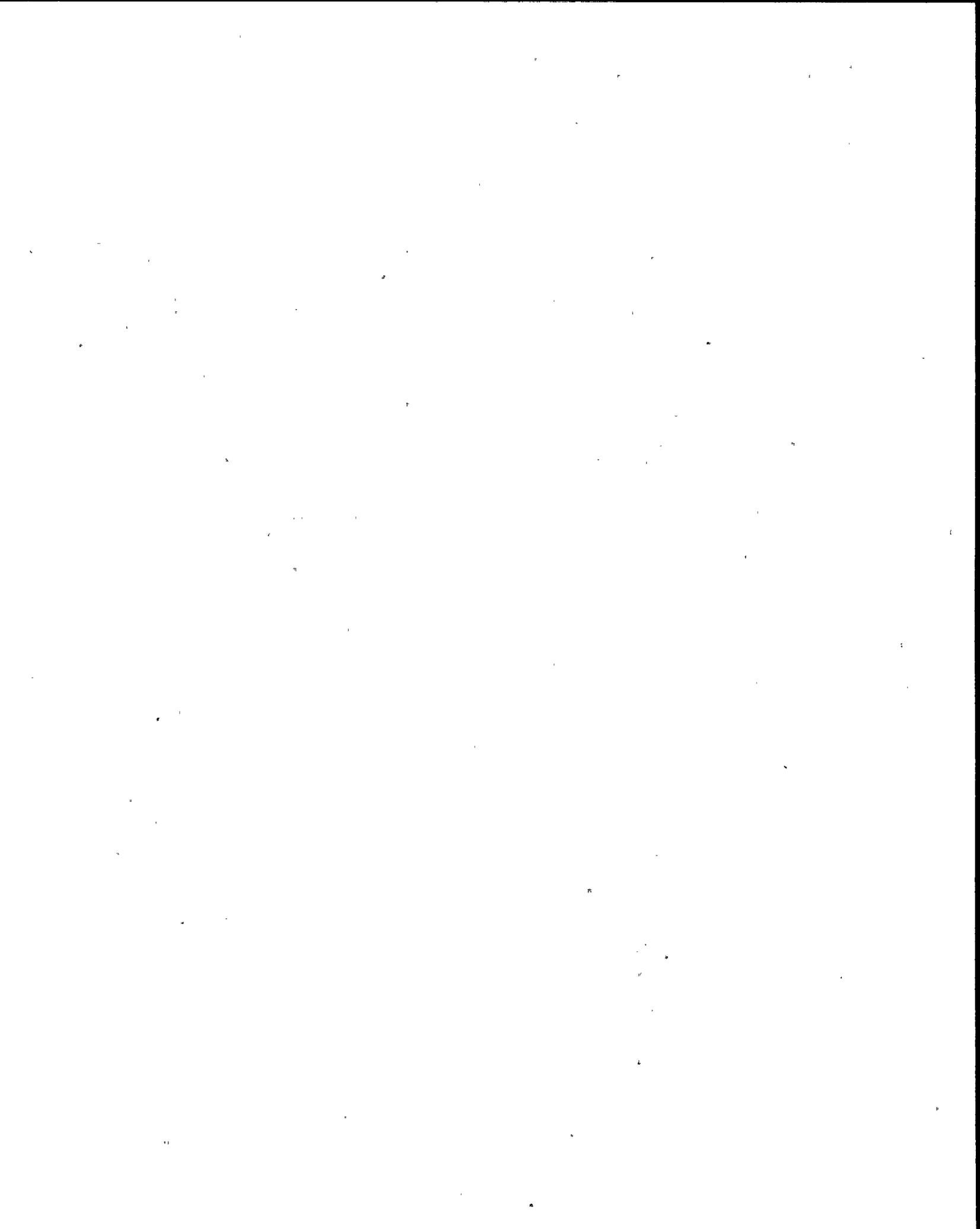


QUESTION: 093 (1.00)

Step 8.c of ES-3.1 (POST-SGTR COOLDOWN USING BACKFILL) (copy attached) ensures that the ruptured S/G level is - "GREATER THAN 5% (25% adverse CNMT)".

WHICH of the following is the reason for this step?

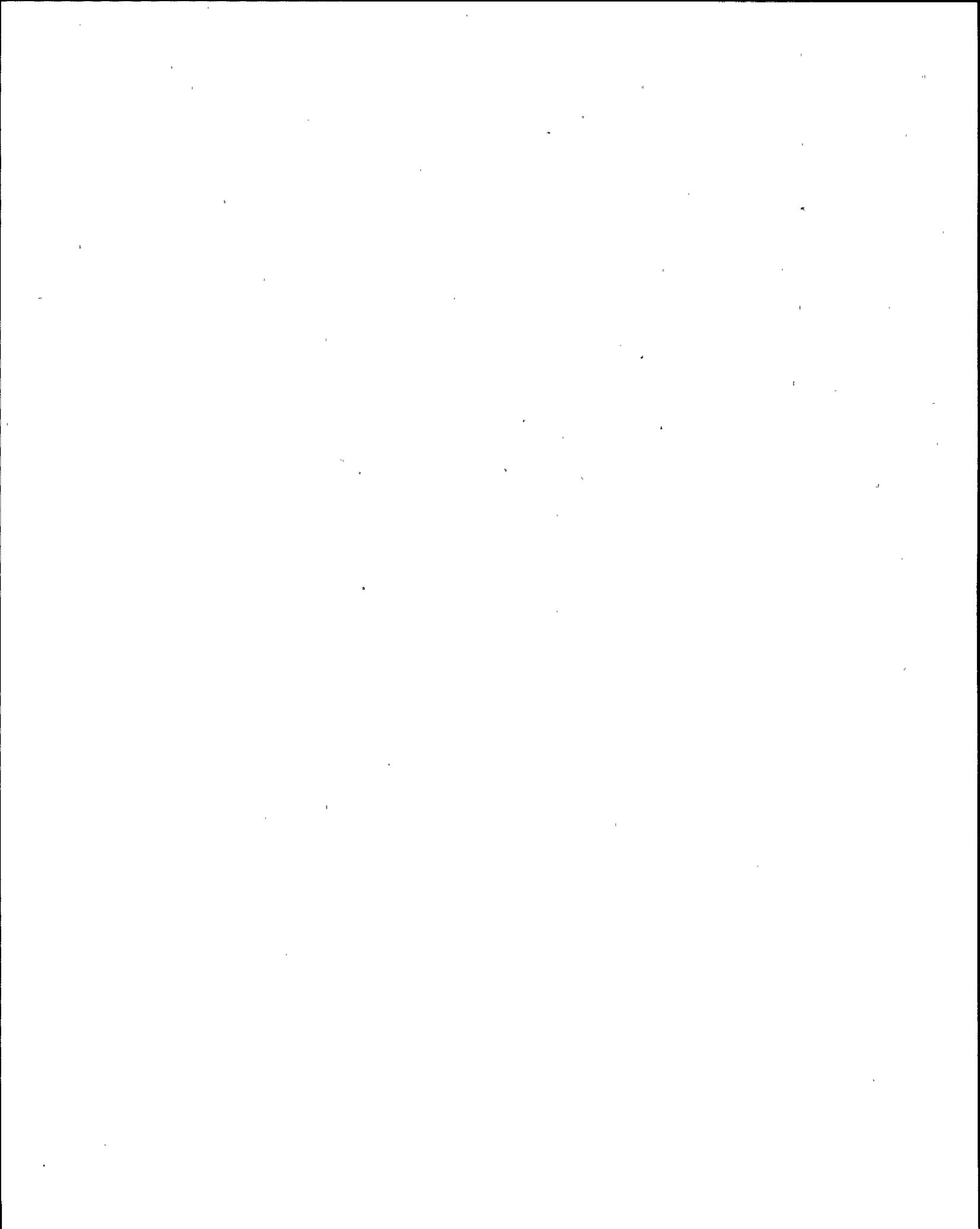
- a. Ensure that S/G U-tubes do not become uncovered and collapse the steam bubble in the S/G by contact with the subcooled RCS water.
- b. Ensure that makeup to the S/G from the AFW system is kept submerged and does not flash to steam when entering the feed ring.
- c. Ensure that a heat sink is kept available in the event of a loss of the unaffected S/G as a heat sink.
- d. Maintain sufficient makeup capacity to the RCS for the backfill.



QUESTION: 094 (1.00)

Following initial notification of a General Emergency, New York state and Wayne and Monroe counties should be updated as to the status of the emergency every (CHOOSE ONE):

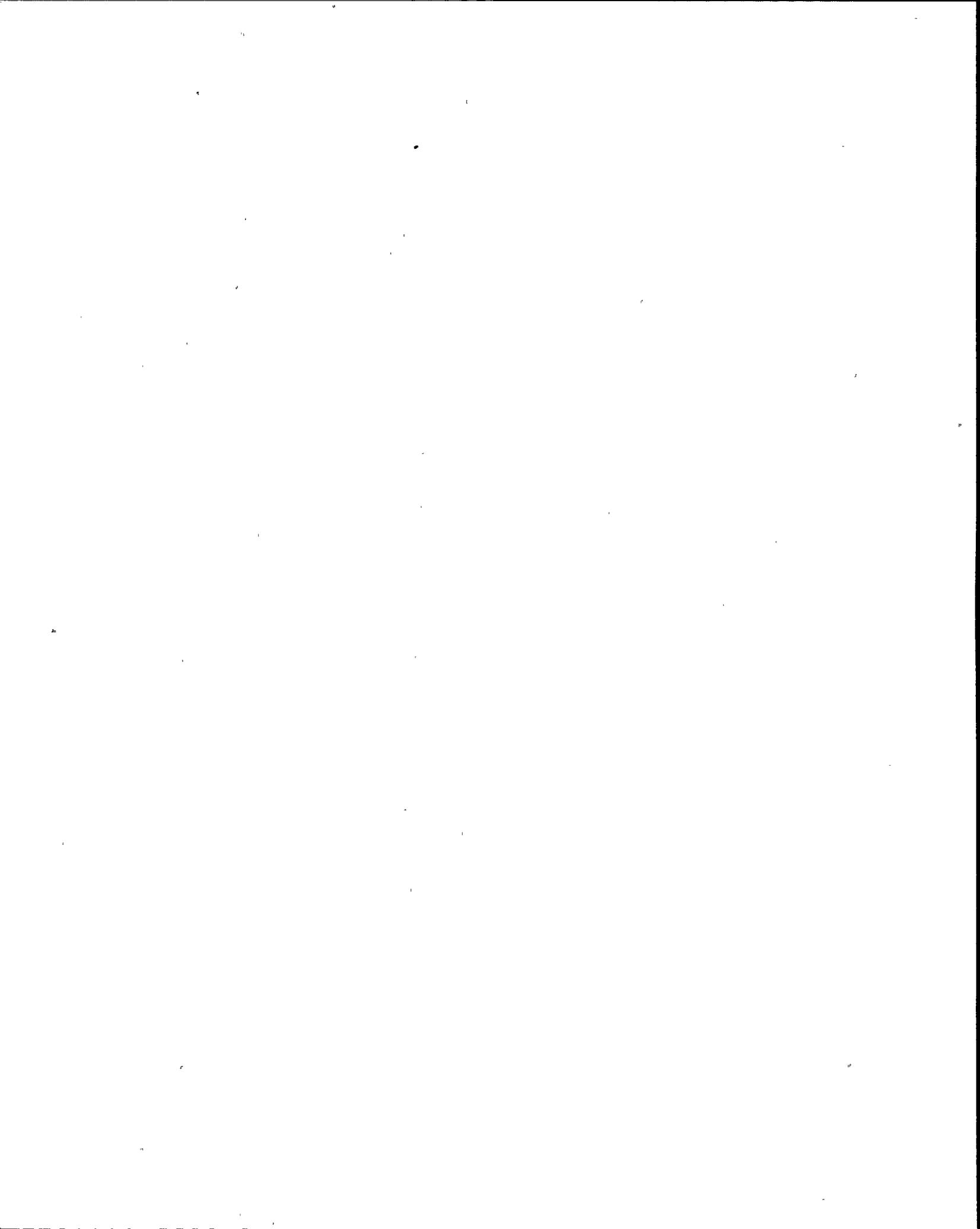
- a. 15 min
- b. 30 min
- c. 1 hr
- d. 2 hrs



QUESTION: 095 (1.00)

WHICH of the following is the lowest emergency classification at which the Emergency Operations Facility (EOF) must be activated?

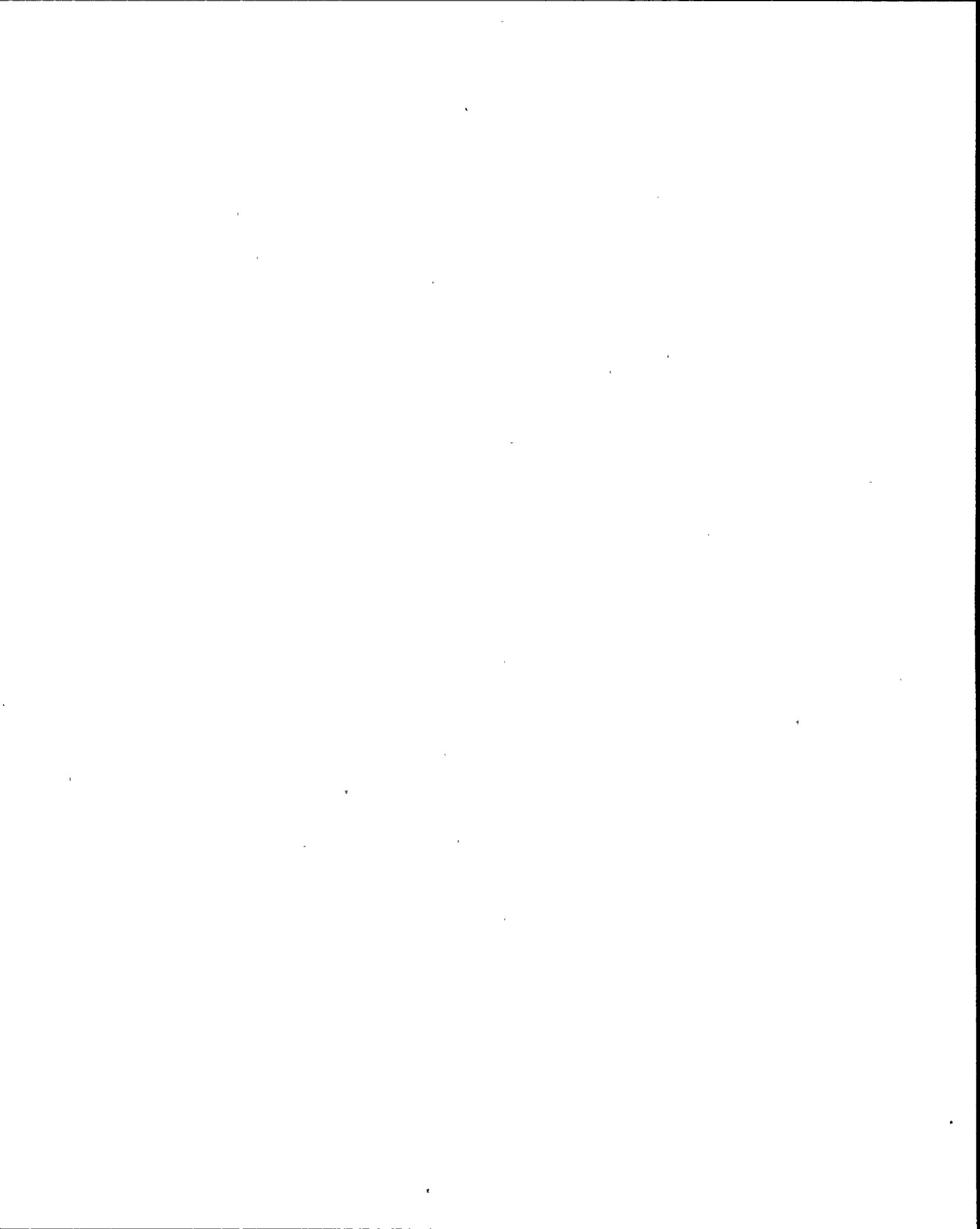
- a. Unusual Event
- b. Alert
- c. Site Area Emergency
- d. General Emergency



QUESTION: 096 (1.00)

For a job where oxy-acetylene cutting operations are being performed, WHICH of the following statements describes the conditions that must be met to secure the continuous firewatch?

- a. Cutting operations must stop for the period the firewatch is away.
- b. Additional extinguishing equipment must be brought to the job site, after which, the firewatch may leave and a worker may assume the firewatch duty in addition to his/her other duties.
- c. A minimum of thirty minutes must have elapsed since the completion of the cutting operations.
- d. Any disabled fire detection instrumentation must be restored, at which time the firewatch may leave.



ANSWER: 001 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-RAD08C E.O. 1.5  
Ginna: A-52.2

KA 194001K101 3.6/3.7 B

194001K101 ..(KA's)

ANSWER: 002 (1.00)

a. (1.00)

REFERENCE:

Ginna: A-1:10,11 Radiation Control Manual III.A.,B.,C.  
Ginna: LP-RAD62T E.O. 2.0

KA: 194001K104 3.3/3.5 B

194001K104 ..(KA's)

ANSWER: 003 (1.00)

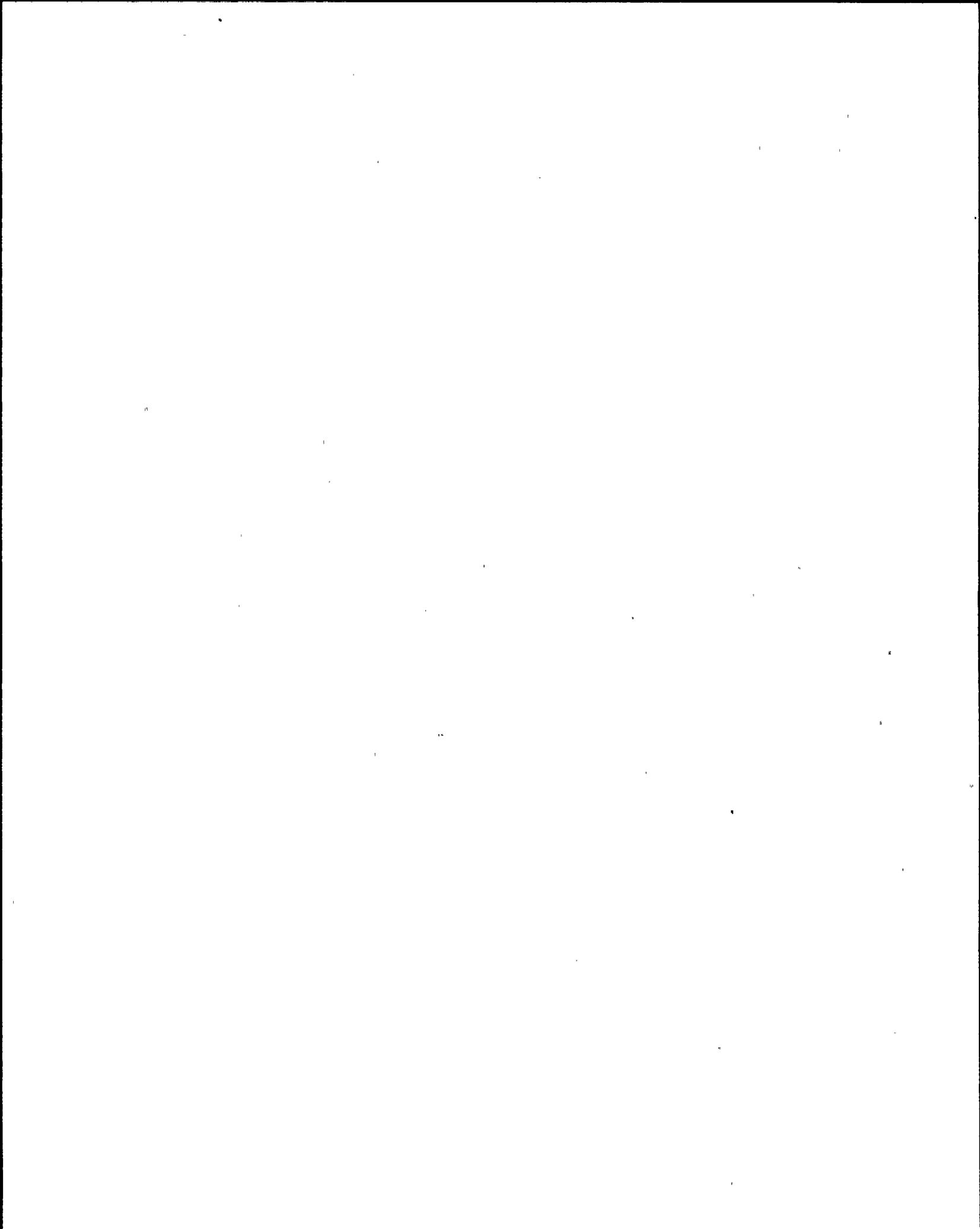
b. (1.00)

REFERENCE:

Ginna: A-52.11:2,3 Par. 3.2  
Ginna: LP-RAD03C E.O. 3.1

KA: 194001K105 3.1/3.4 B

194001K105 ..(KA's)



ANSWER: 004 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-RAD08C P.23 E.O. 3.6  
Ginna:

KA:194001K107 3.6/3.7

194001K107 ..(KA's)

ANSWER: 005 (1.00)

d. (1.00)

REFERENCE:

Ginna: A-1.6.4:10 Par. 3.3.3.3  
Ginna: LP-RAD01C EO1.2

KA:194001K114 3.3/3.6

194001K114 ..(KA's)

ANSWER: 006 (1.00)

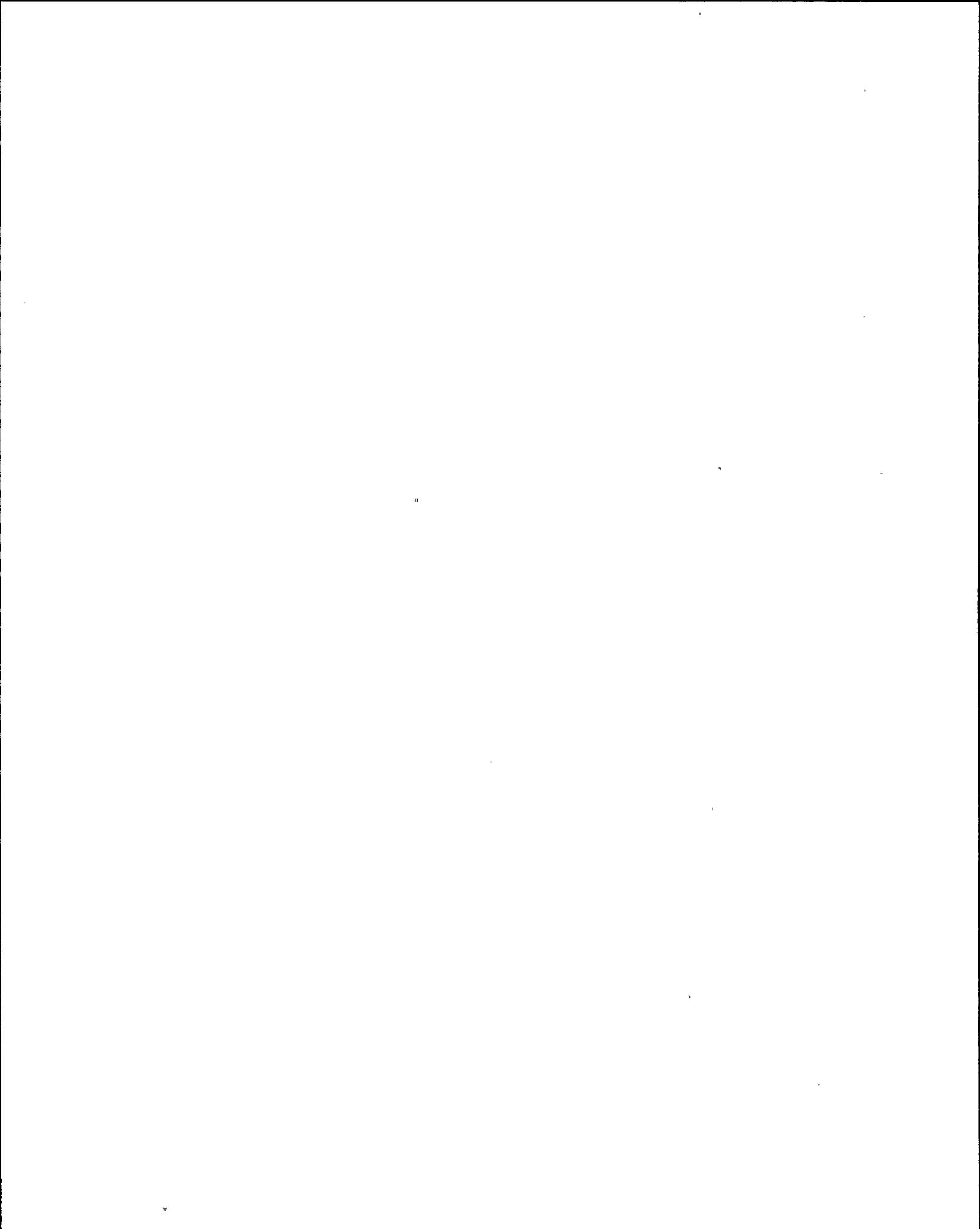
d. (1.00)

REFERENCE:

Ginna: SC-3.30.1  
Ginna: L.O. Qual Card Section IV, Admin Req'mt #6.

KA:194001A104 3.0/3.2

194001A104 ..(KA's)



ANSWER: 007 (1.00)

b. (1.00)

REFERENCE:

Ginna: A-25.1 Par. 3.2  
Ginna: LP-RAD04C EO 2.4

KA:194001A106 3.4/3.4

194001A106 ..(KA's)

ANSWER: 008 (1.00)

d. (1.00)

REFERENCE:

Ginna: A-52.1 Para. 3.5.1.2.2  
Ginna: LP-RAD03C EO 1.3

KA:194001A112 3.1/4.1

194001A112 ..(KA's)

ANSWER: 009 (1.00)

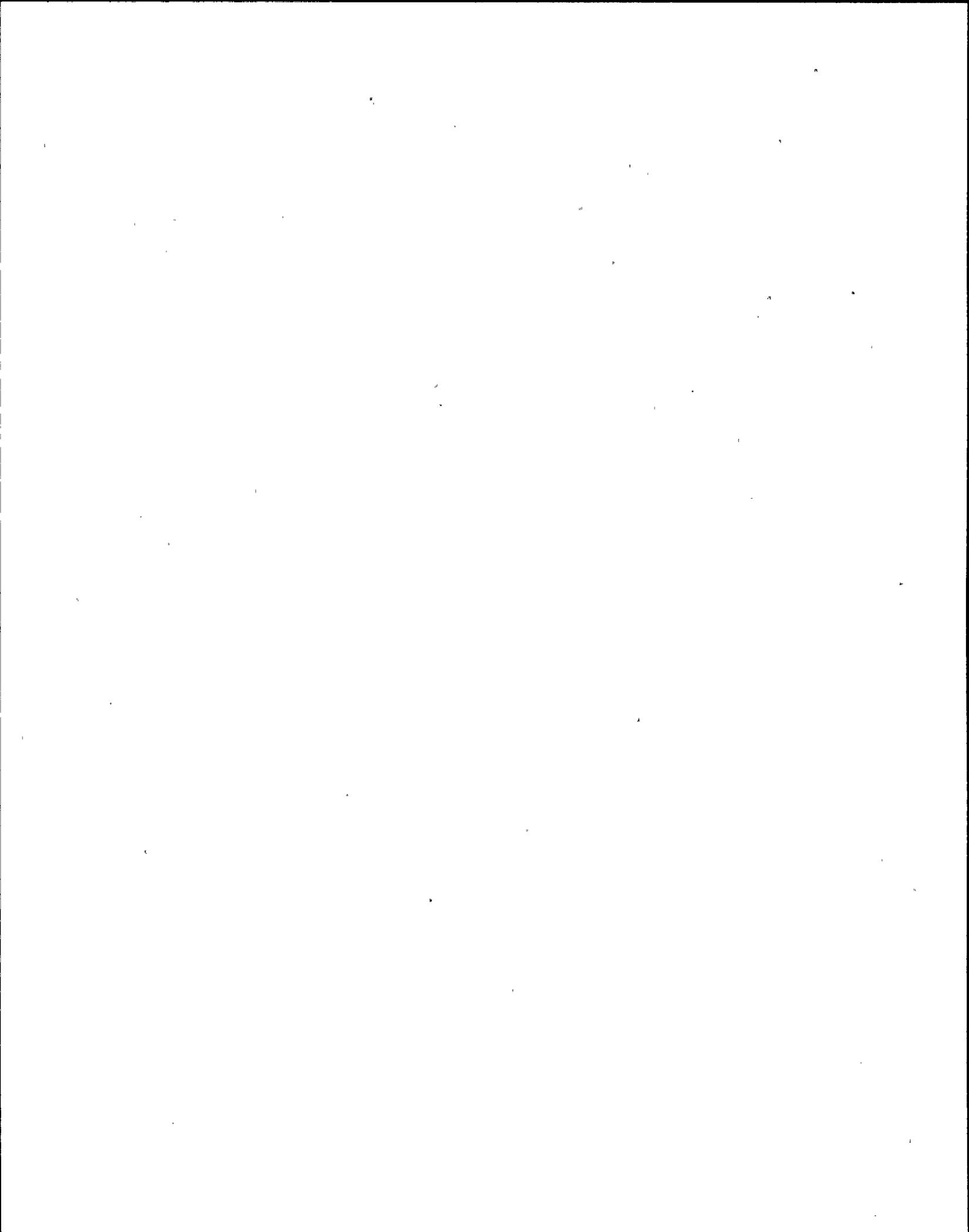
a. (1.00)

REFERENCE:

Ginna: System Description RGE-18  
Ginna: LP-R1801C EO 3.2 also Q2 R1801C.03.02

KA:194001A113 4.3/4.1

194001A113 ..(KA's)



ANSWER: 010 (1.00)

b: (1.00)

REFERENCE:

Ginna: SAS Training Manual Par. 3.A.2.C.  
Ginna: SAS Learning Goal 3.C

KA:194001A115 3.1/3.4

194001A115 ..(KA's)

ANSWER: 011 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-RCS.2 Step 4  
Ginna: LP-RAP16C EO 1.3

KA:003000K504 3.2/3.5

003000K504 ..(KA's)

ANSWER: 012 (1.00)

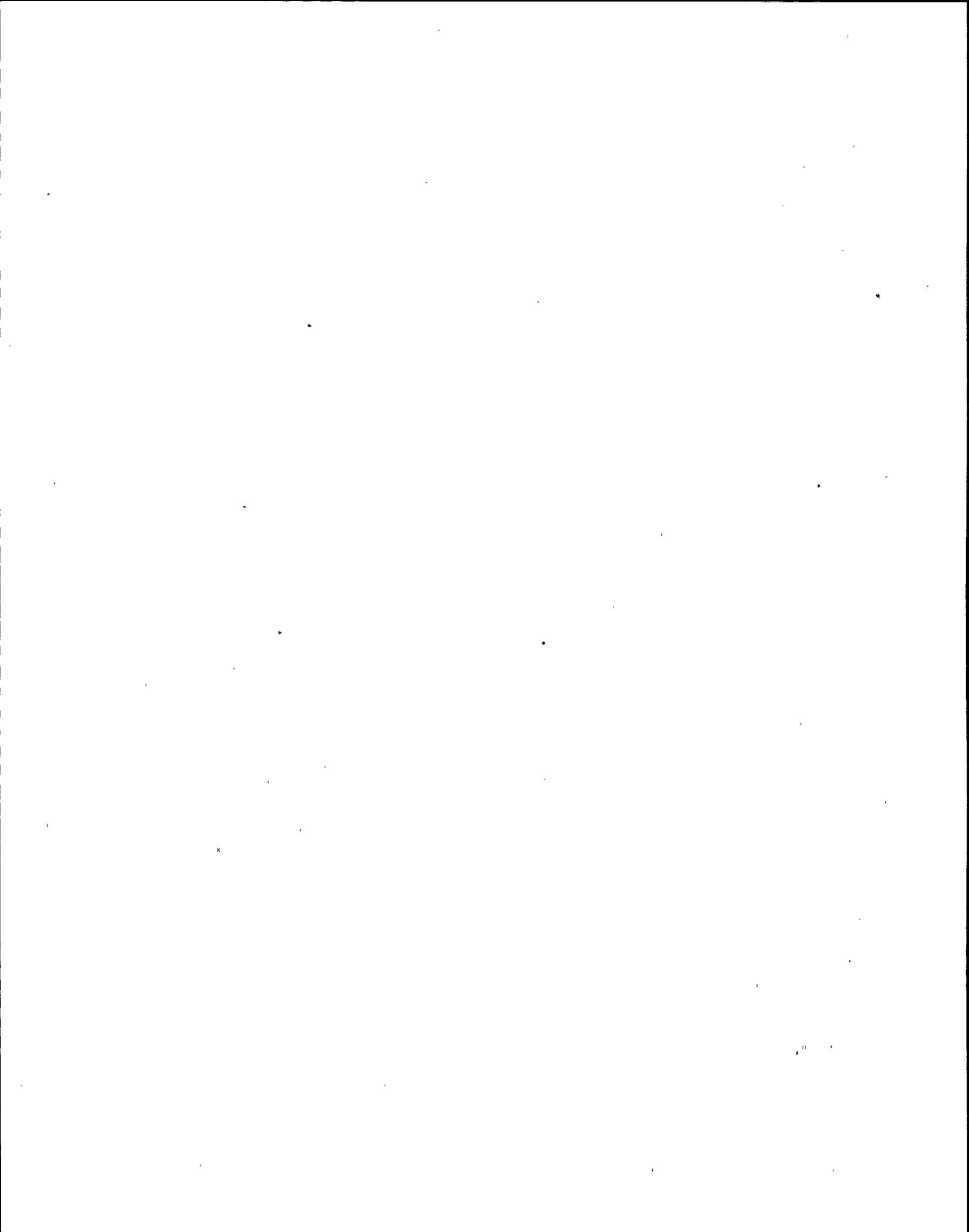
c. (1.00)

REFERENCE:

Ginna: LER 89-004 EWR 4230  
Ginna: LP-RIE01C

KA:013000K404 4.3/4.5

013000K404 ..(KA's)



ANSWER: 013 (1.00)

b. (1.00)

REFERENCE:

Ginna: System Description RGE-32 P. 2  
Ginna: LP-R3201C EO 2.4

KA:017020A401 3.8/4.1

017020A401 ..(KA's)

ANSWER: 014 (3.00)

- a) 4 (0.50)
- b) 8 (0.50)
- c) 11 (0.50)
- d) 9 (0.50)
- e) 5 (0.50)
- f) 2 (0.50)

REFERENCE:

Ginna: Diagram RGE-VC-5  
Ginna: LP-R1601C EO 2.2(C)

KA:004010A305 3.3/3.2

004010A305 ..(KA's)

ANSWER: 015 (1.00)

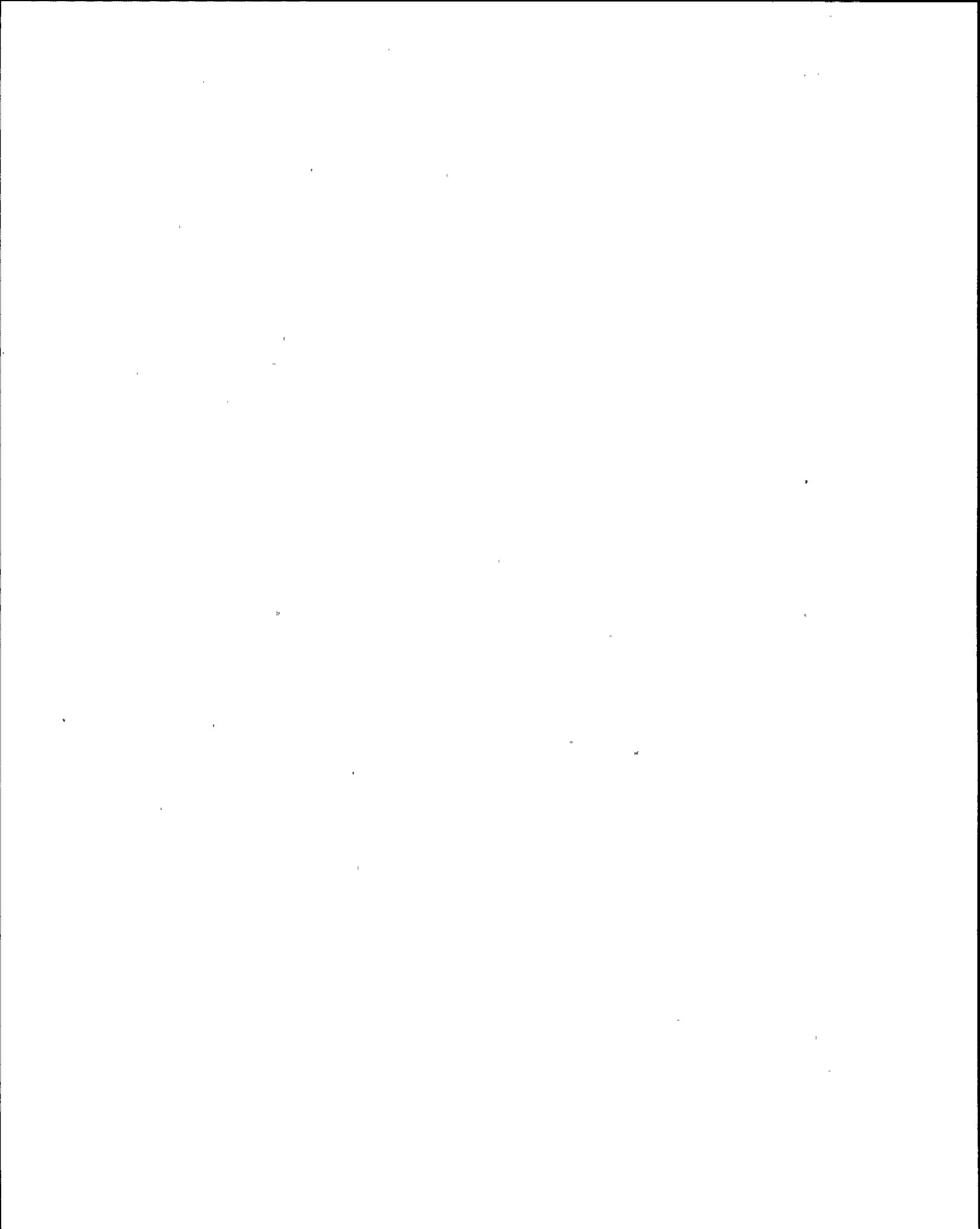
c. (1.00)

REFERENCE:

Ginna: O-5.1:2 Par. 4.3.2.1  
Ginna: LP-ROP12C EO 1.1

KA:001050A206 3.6/4.0

001050A206 ..(KA's)



ANSWER: 016 (1.00)

a. (1.00)

REFERENCE:

Ginna: FR-H.1 Step 8.  
Ginna:

KA:056000G015 2.7/2.9

056000G015 ..(KA's)

ANSWER: 017 (1.00)

d. (1.00)

REFERENCE:

Ginna: System Description RGE-22 P. 3.  
Ginna: LP-R2201C EO 2.2

KA:022000K101 3.5/3.7

022000K101 ..(KA's)

ANSWER: 018 (1.00)

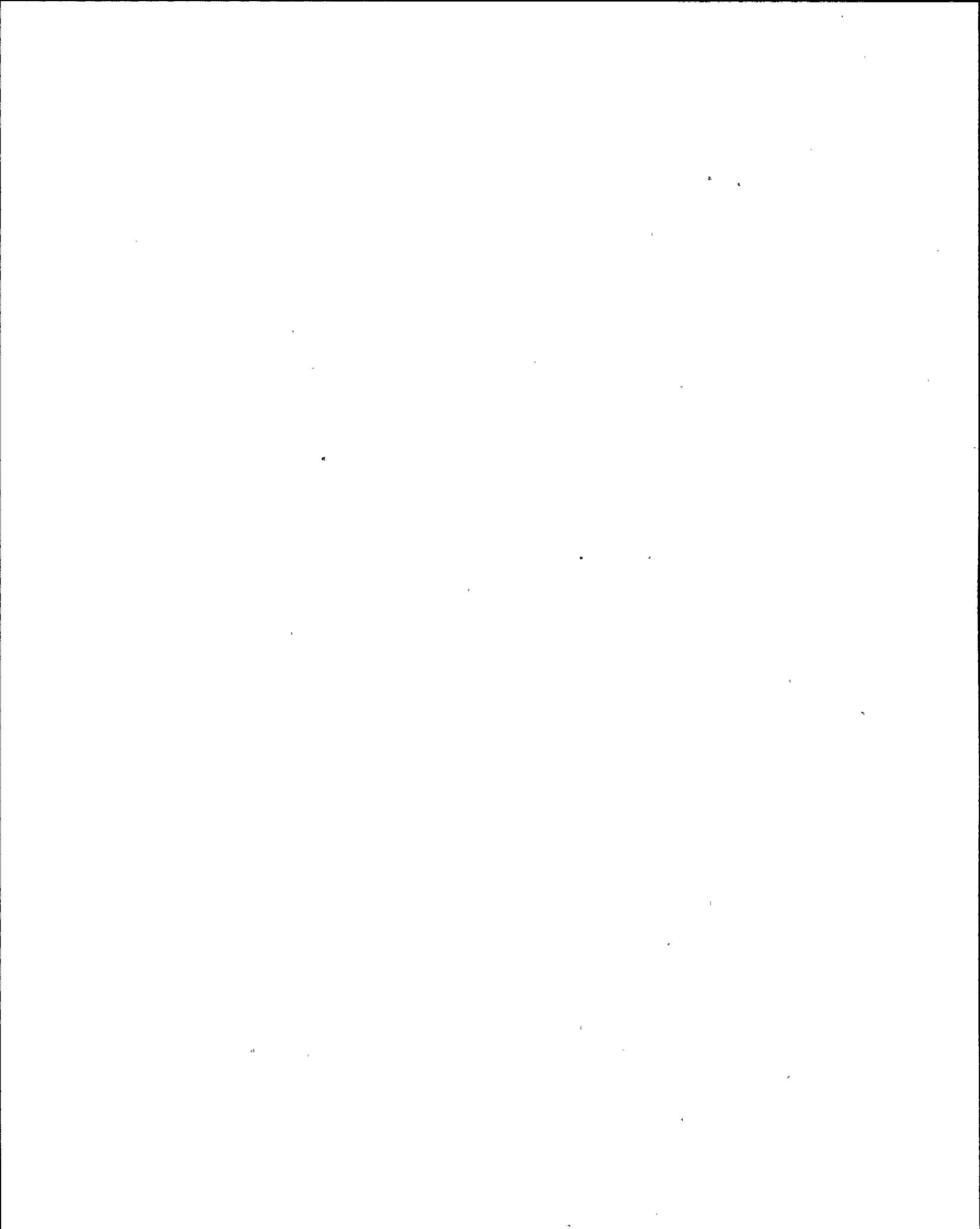
b. (1.00)

REFERENCE:

Ginna: RF-8.4:3 Par. 4.1  
Ginna: LP-RRF08C EO 2.0,3.0

KA:072000K302

072000K302 ..(KA's)



ANSWER: 019 (1.00)

c. (1.00)

REFERENCE:

Ginna: System Description RGE-42 and Drawing AF-2

Ginna: LP-R4201C EO 6.0

KA:061000G009 3.8/3.9

061000G009 ..(KA's)

ANSWER: 020 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-R3201C P. 5

Ginna:

KA:017020G005 2.8/3.4

017000G005 ..(KA's)

ANSWER: 021 (1.00)

b. (1.00)

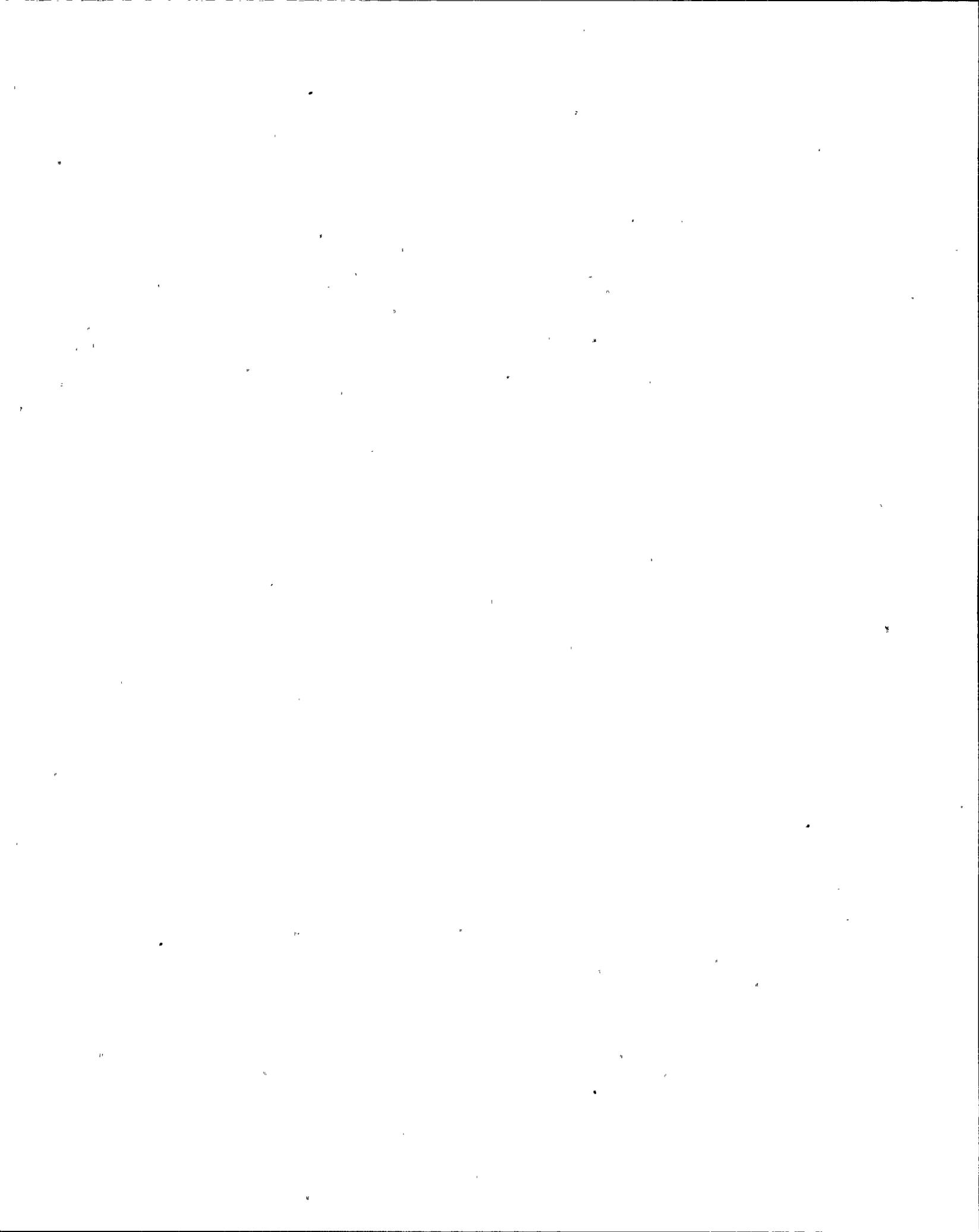
REFERENCE:

Ginna: AP-RCS.2 and T/S 3.1.1.1.b.

Ginna: LP-RTS01C EO 1.9

KA: 003000K201 3.1/3.1

003000K201 ..(KA's)



ANSWER: 022 (1.00)

c. (1.00)

REFERENCE:

Ginna: O-6.4 Par.4.3

Ginna: LP-ROP59T EO 1.0(I)

KA:015020K504 3.2/3.6

015020K504 ..(KA's)

ANSWER: 023 (1.00)

b. (1.00)

REFERENCE:

Ginna: RGE-22 P.3 and LP-R2201C P. 7.

Ginna: LP-R2201C EO 2.1

KA:022000A301 4.1/4.3

022000A301 ..(KA's)

ANSWER: 024 (1.00)

b. (1.00)

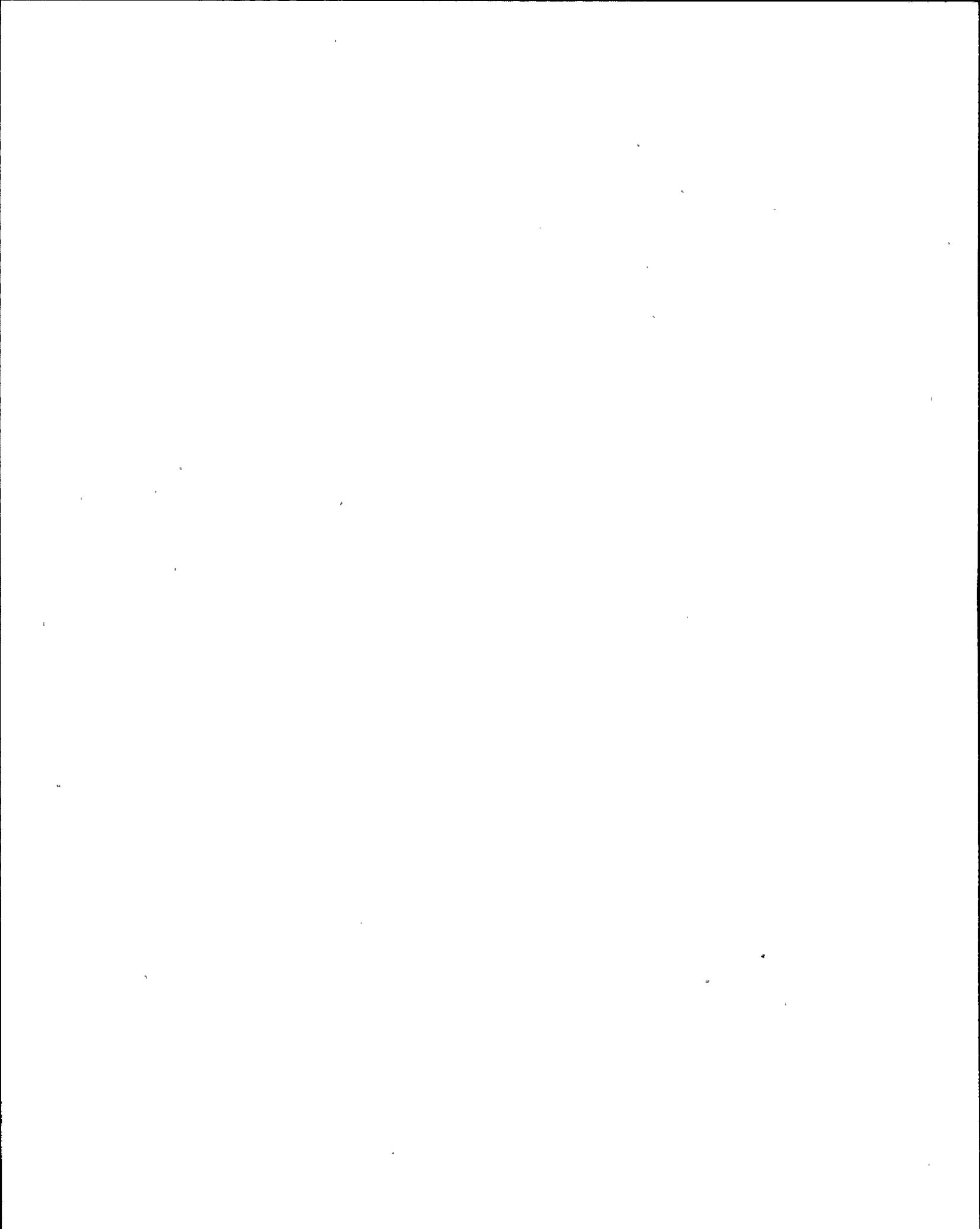
REFERENCE:

Ginna: O-1.2 Step 5.2.13

Ginna: LP-ROP01C EO 1.1

KA:001000A106 4.1/4.4

001000A106 ..(KA's)



ANSWER: 025 (1.00)

a. (1.00)

REFERENCE:

Ginna: RGE-14 P. 6

Ginna: LP-R1401C EO 2.3

KA:002000K612 3.0/3.5

002000K612 ..(KA's)

ANSWER: 026 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R2201C

Ginna:

KA:006030K404 3.9/4.1

006030K404 ..(KA's)

ANSWER: 027 (1.00)

d. (1.00)

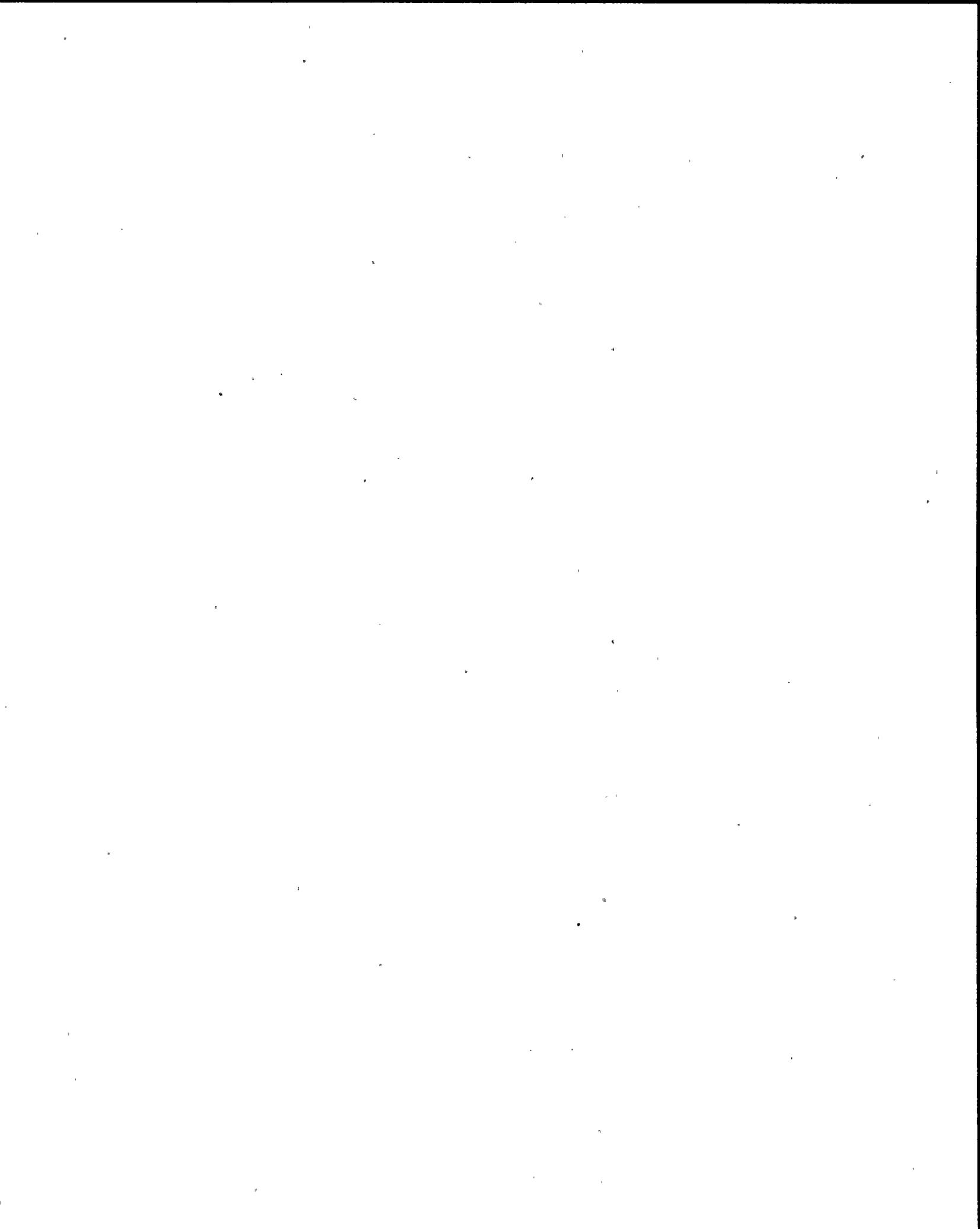
REFERENCE:

Ginna: T.S. Bases 3.1.1.1.K

Ginna: LP-ROP04C EO 1.1

KA:010000A104 3.6/3.8

010000A104 ..(KA's)



ANSWER: 028 (1.00)

c. (1.00)

REFERENCE:

Ginna: ES-0.2 Step 14  
Ginna:

KA:011000K510 3.7/4.0

011000K510 ..(KA's)

ANSWER: 029 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R3101C P. 13  
Ginna: LP-R3101C EO 1.7.d.

KA:014000A205 3.9/4.1

014000A205 ..(KA's)

ANSWER: 030 (1.00)

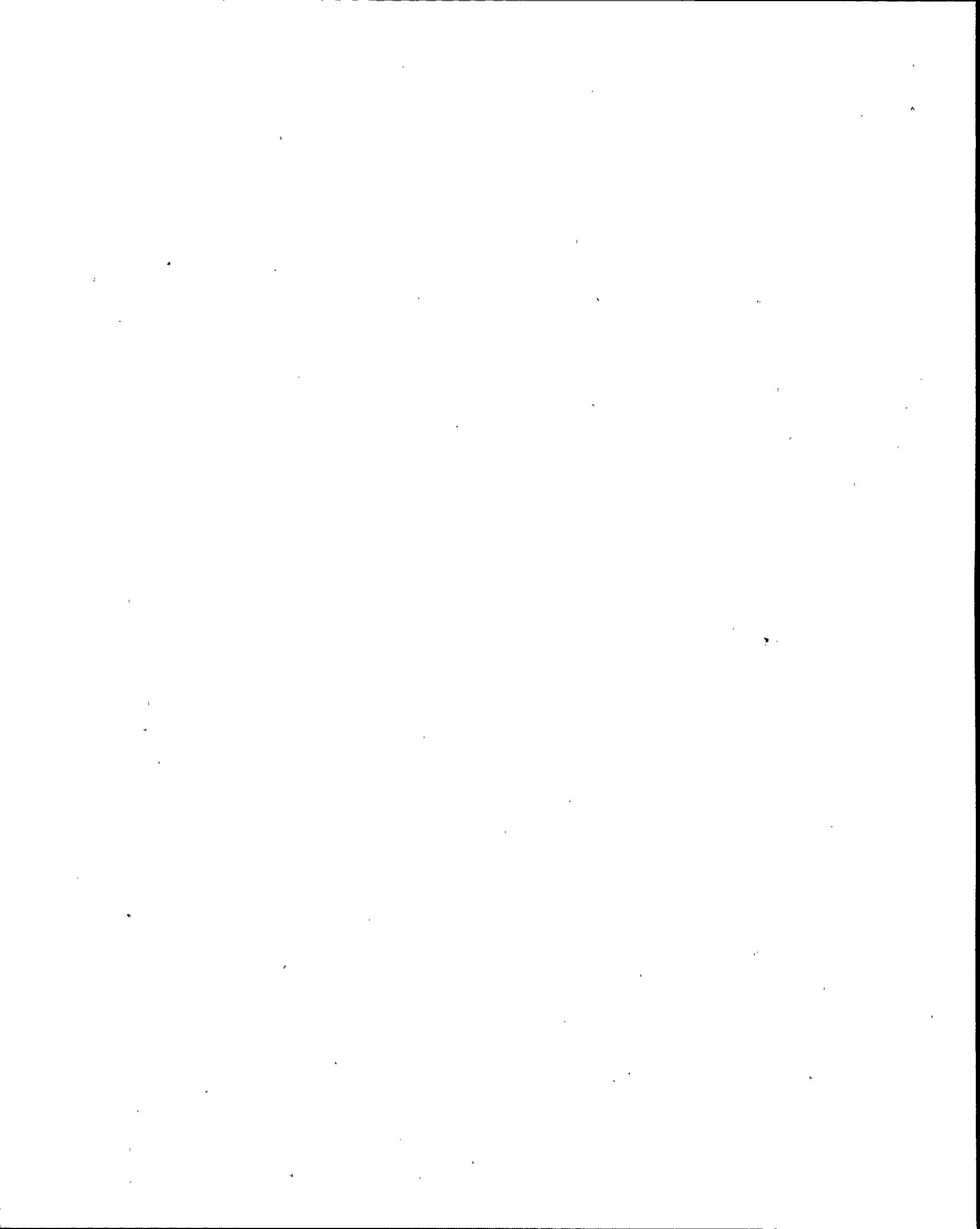
b. (1.00)

REFERENCE:

Ginna: LP-R2701C P. 5.  
Ginna: LP-R2701C EO 1.2

KA:006030K601 3.7/3.9

006030K601 ..(KA's)



ANSWER: 031 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R3601C P.5.  
Ginna: LP-R3601C EO 2.2

KA:033000K405 3.1/3.3

033000K405 ..(KA's)

ANSWER: 032 (1.00)

a. (1.00)

REFERENCE:

Ginna: RGE-40 P. 1  
Ginna: LP-R4001C EO 2.4

KA:035010K101 4.2/4.5

035010K101 ..(KA's)

ANSWER: 033 (1.00)

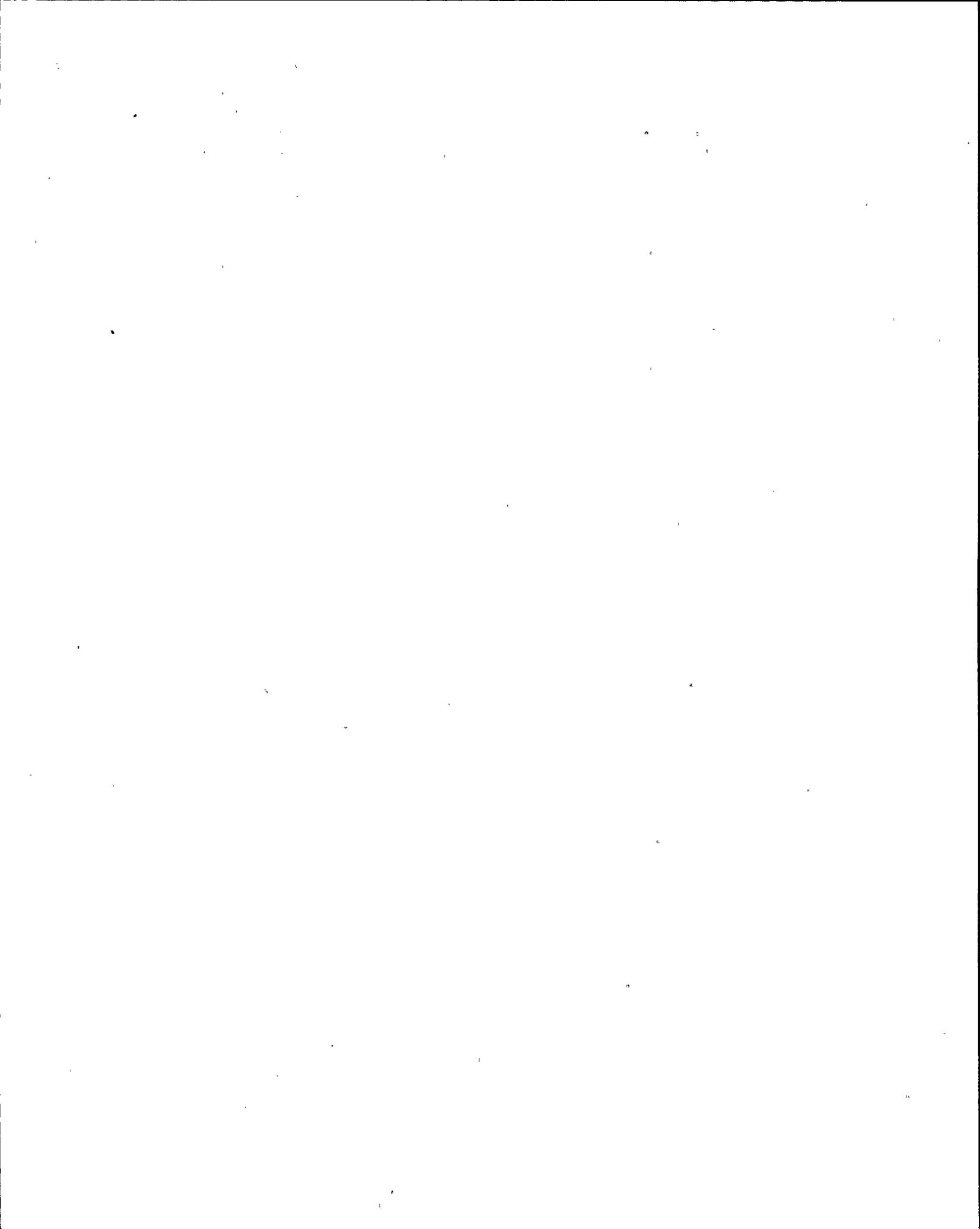
d. (1.00)

REFERENCE:

Ginna: LP-RTS22C P. 5  
Ginna: LP-RTS22C EO 1.3(C)

KA:012000K501 3.3/3.8

012000K501 ..(KA's)



ANSWER: 034 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R5901C P. 13  
Ginna: LP-R5901C EO 3.2

KA:086000A402 3.5/3.5

086000A402 ..(KA's)

ANSWER: 035 (1.00)

d. (1.00)

REFERENCE:

Ginna: ER-ELEC.3  
Ginna: LP-R0503C EO 3.1

KA:062000K104 3.7/4.2

062000K104 ..(KA's)

ANSWER: 036 (1.00)

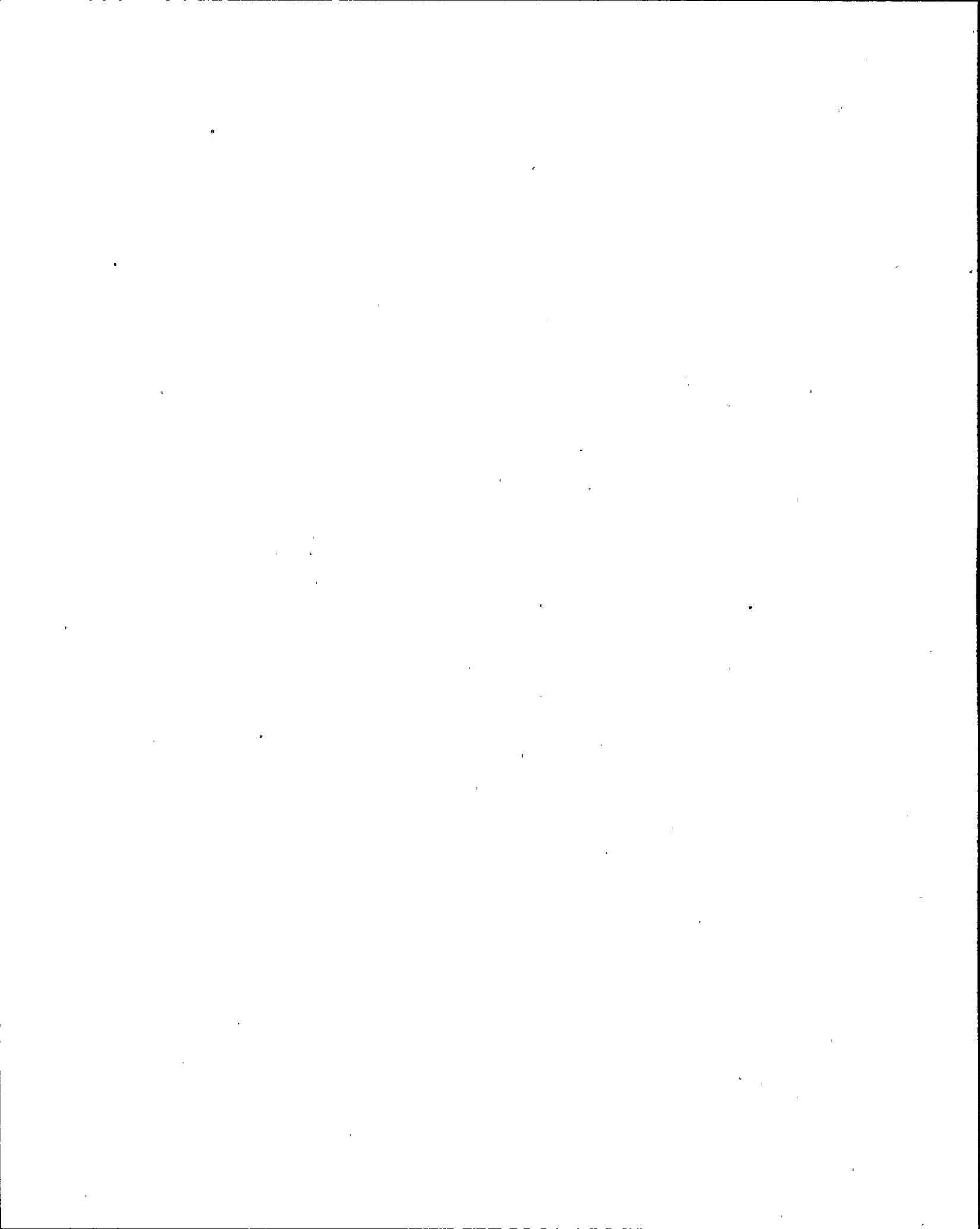
b. (1.00)

REFERENCE:

Ginna: ER-ELEC.2  
Ginna: LP-RAP53T EO 7.0

KA:063000K302 3.5/3.7

063000K302 ..(KA's)



ANSWER: 037 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R0801C Pp. 15, 16  
Ginna: LP-R0801C EO 7.3(C)

KA:064000K402 3.9/4.2

064000K402 ..(KA's)

ANSWER: 038 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-R0801C P. 7  
Ginna: LP-R0801C EO 3.2(C)

KA:064050A403 3.3/3.4

064050A403 ..(KA's)

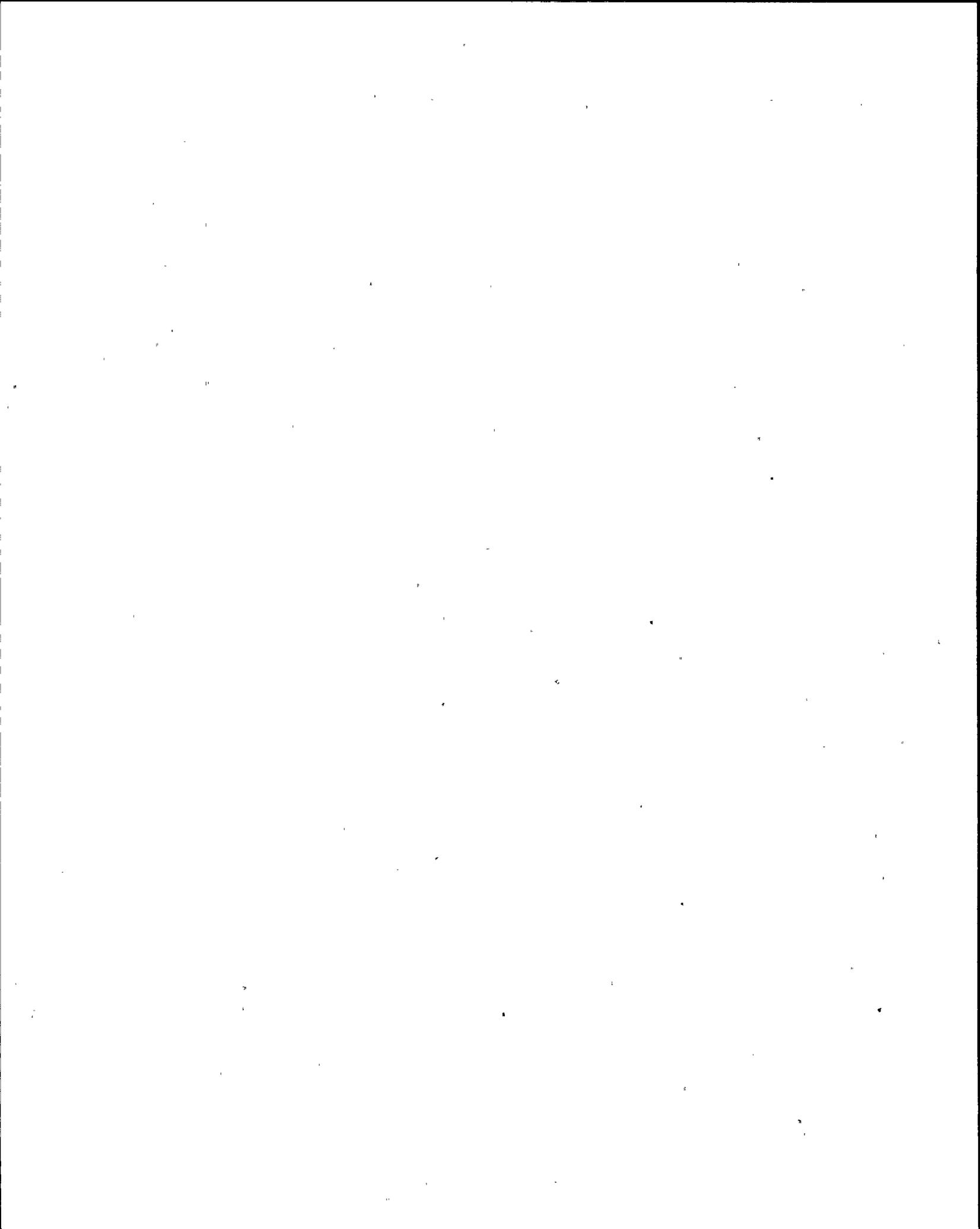
ANSWER: 039 (3.00)

- a) 5. (0.50)
- b) 7. (0.50)
- c) 9. (0.50)
- d) 1. (0.50)
- e) 9. (0.50)
- f) 6. (0.50)

REFERENCE:

Ginna: AR-RMS Procedures  
Ginna: AP Lesson Plans EO 1.2  
KA:073000G015 3.5/3.8

073000G015 ..(KA's)



ANSWER: 040 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R0501C P. 15  
Ginna: LP-R0501C EO 1.13

KA:045010K423 3.4/3.6

045010K423 ..(KA's)

ANSWER: 041 (1.00)

a. (1.00)

REFERENCE:

Ginna: O-2.3.1  
Ginna: LP-ROP06C EO 1.1

KA:005000A102 3.3/3.4

005000A102 ..(KA's)

ANSWER: 042 (1.00)

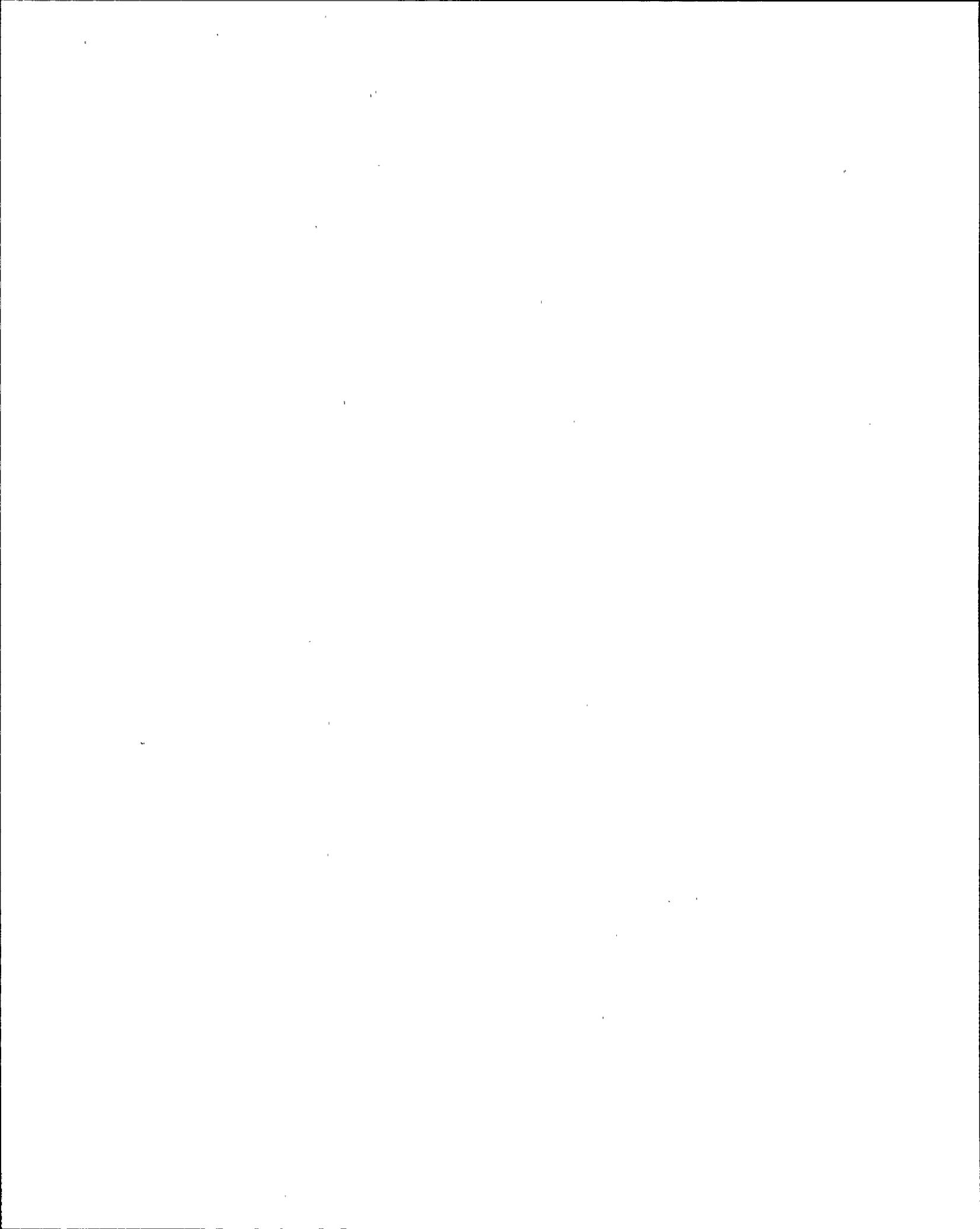
a. (1.00)

REFERENCE:

Ginna: LP-R3701C P. 6  
Ginna: LP-R3701C EO 2.2

KA:034000K403 2.6/3.3

034000K403 ..(KA's)



ANSWER: 043 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R4501C

Ginna: LP-R4501C EO 2.1

KA:041020K105 3.5/3.6

041020K105 ..(KA's)

ANSWER: 044 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-R2101C P. 9

Ginna: LP-R2101C EO 3.2

KA:103000A301 3.9/4.2

103000A301 ..(KA's)

ANSWER: 045 (1.00)

b. (1.00)

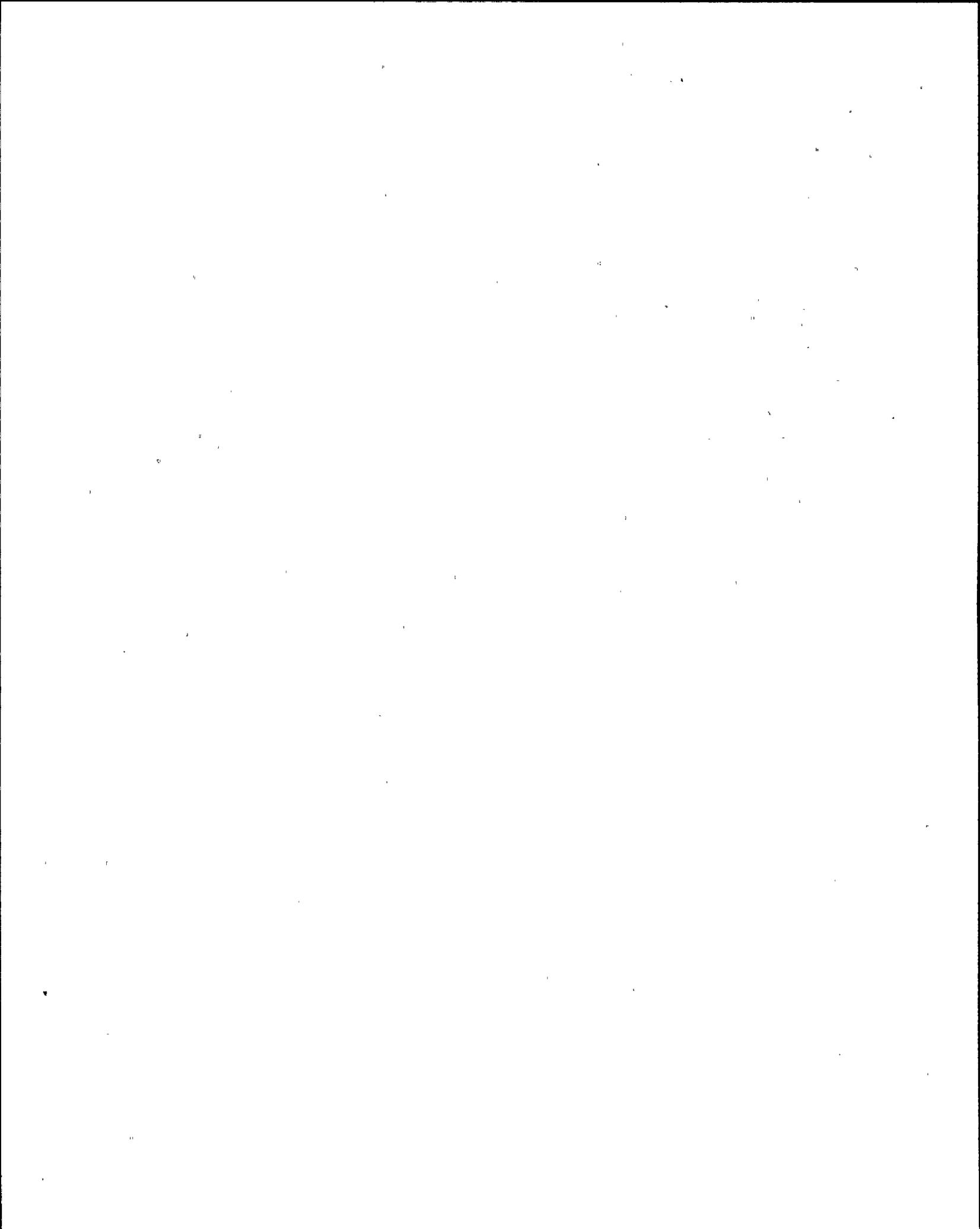
REFERENCE:

Ginna: LP-R1401C EO 5.1

Ginna:

KA:007000A301 2.7/2.9

007000A301 ..(KA's)



ANSWER: 046 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-R5101C P. 5  
Ginna: LP-R5101C EO 1.3

KA:076000A302 3.7/3.7

076000A302 ..(KA's)

ANSWER: 047 (1.00)

a. (1.00)

REFERENCE:

Ginna: AP-RCP.1 Step 1.  
Ginna: LP-RAP14C EO 1.3(C)

KA:000015A122 4.0/4.2

000015A122 ..(KA's)

ANSWER: 048 (1.00)

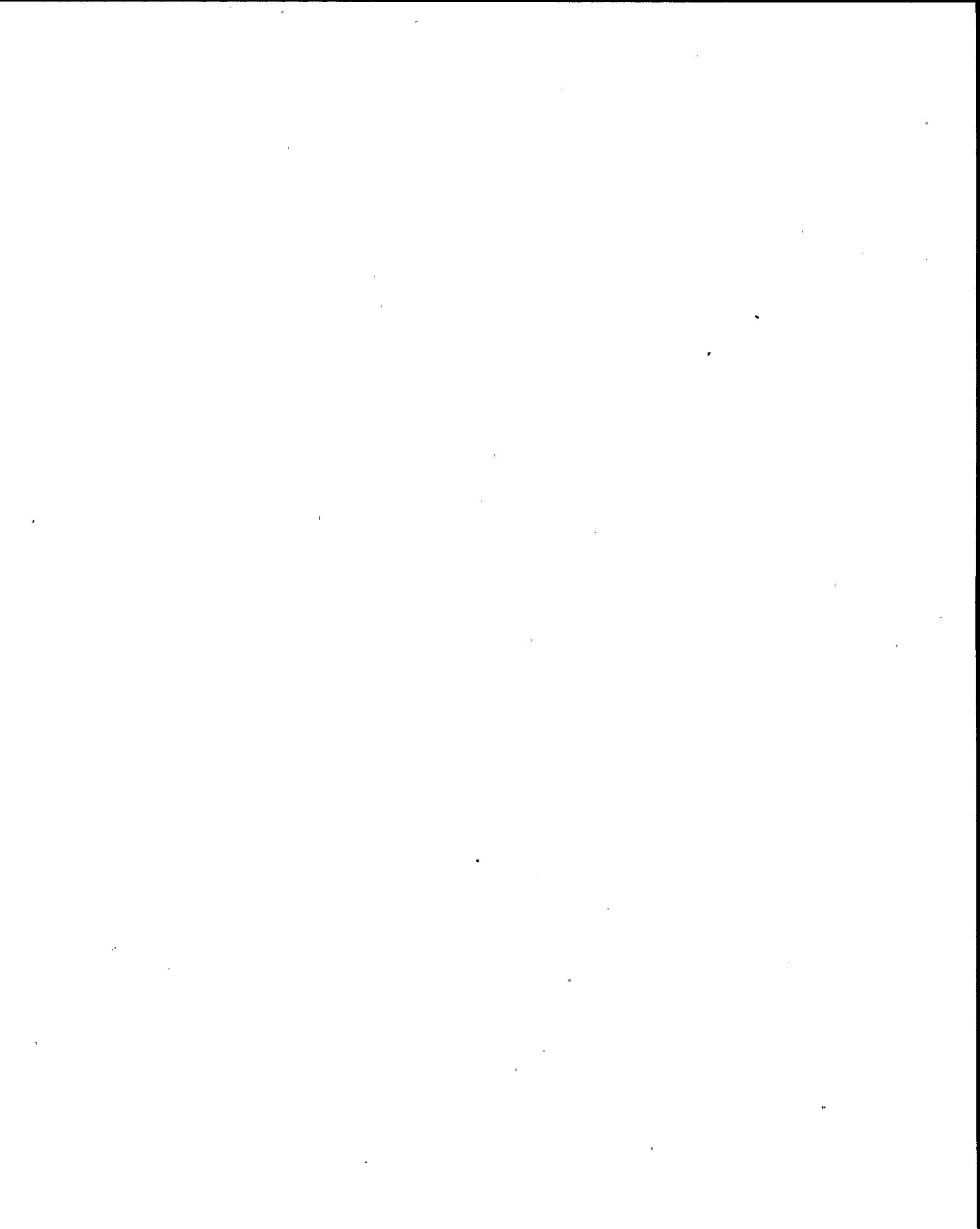
b. (1.00)

REFERENCE:

Ginna: FR-S.1 Step 4  
Ginna: LP-RFRS1C EO 1.3

KA:000024K302 4.2/4.4

000024K302 ..(KA's)



ANSWER: 049 (1.00)

d. (1.00)

REFERENCE:

Ginna: AP-CCW.2 P. 3  
Ginna: LP-RAP02C EO 1.3

KA:000026G011 3.4/3.7

000026G011 ..(KA's)

ANSWER: 050 (1.00)

b. (1.00)

REFERENCE:

Ginna: Question Bank # Q0 RAP11C.02.01  
Ginna: LP-RAP11C EO 2.1(C)

KA:000027A215 3.7/4.0

000027A215 ..(KA's)

ANSWER: 051 (1.00)

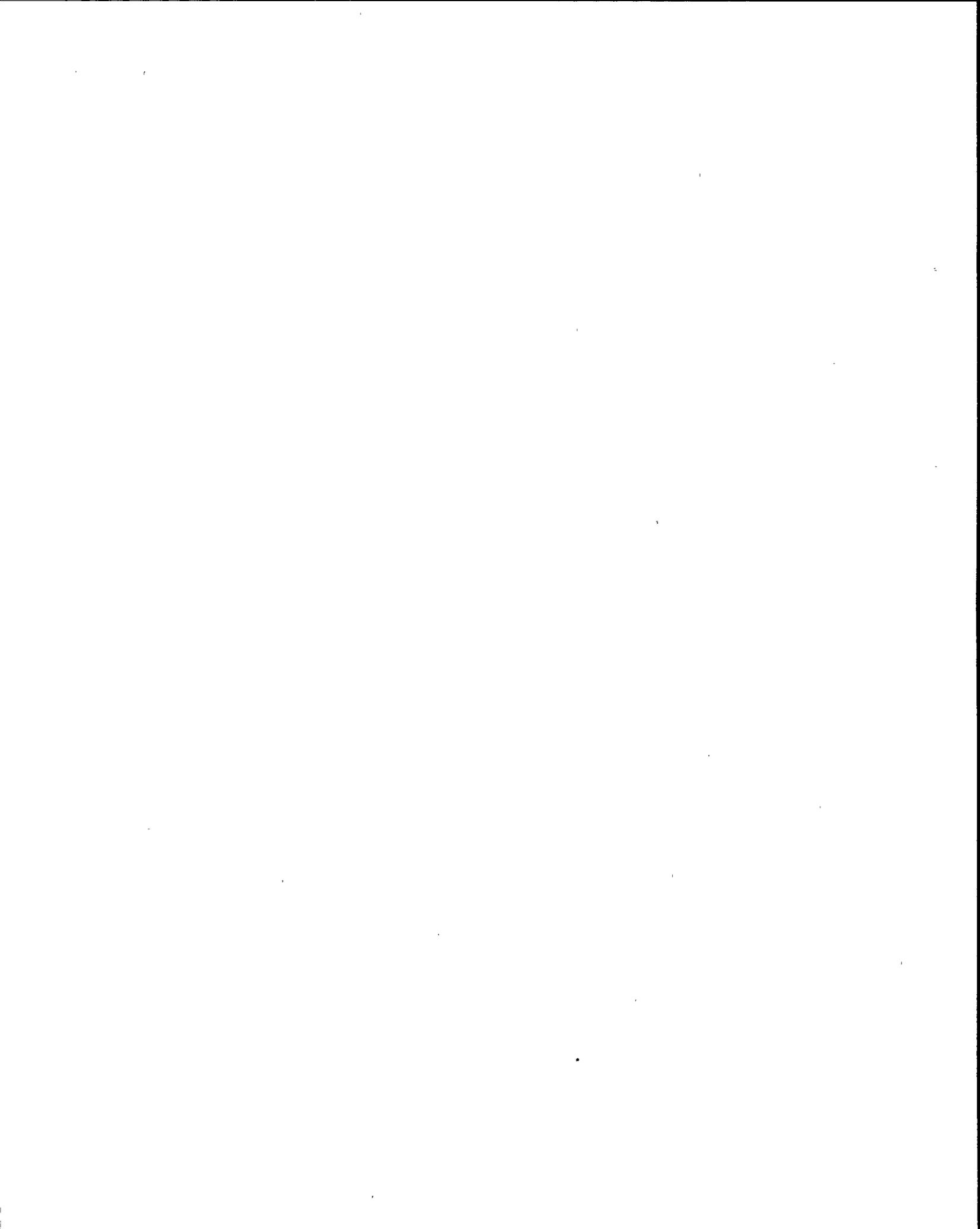
c. (1.00)

REFERENCE:

Ginna: WOG/ERG  
Ginna:

KA:000040K101 4.1/4.4

000040K101 ..(KA's)



ANSWER: 052 (1.00)

d. (1.00)

REFERENCE:

Ginna: ECA 0.0 Step 5.c  
Ginna:

KA:000055A106 4.1/4.5

000055A106 ..(KA's)

ANSWER: 053 (1.00)

c. (1.00)

REFERENCE:

Ginna: RGE-9, Drawing GT-6  
Ginna: LP-R0901C EO2.1

KA:000057G011 3.8/3.8

000057G011 ..(KA's)

ANSWER: 054 (1.00)

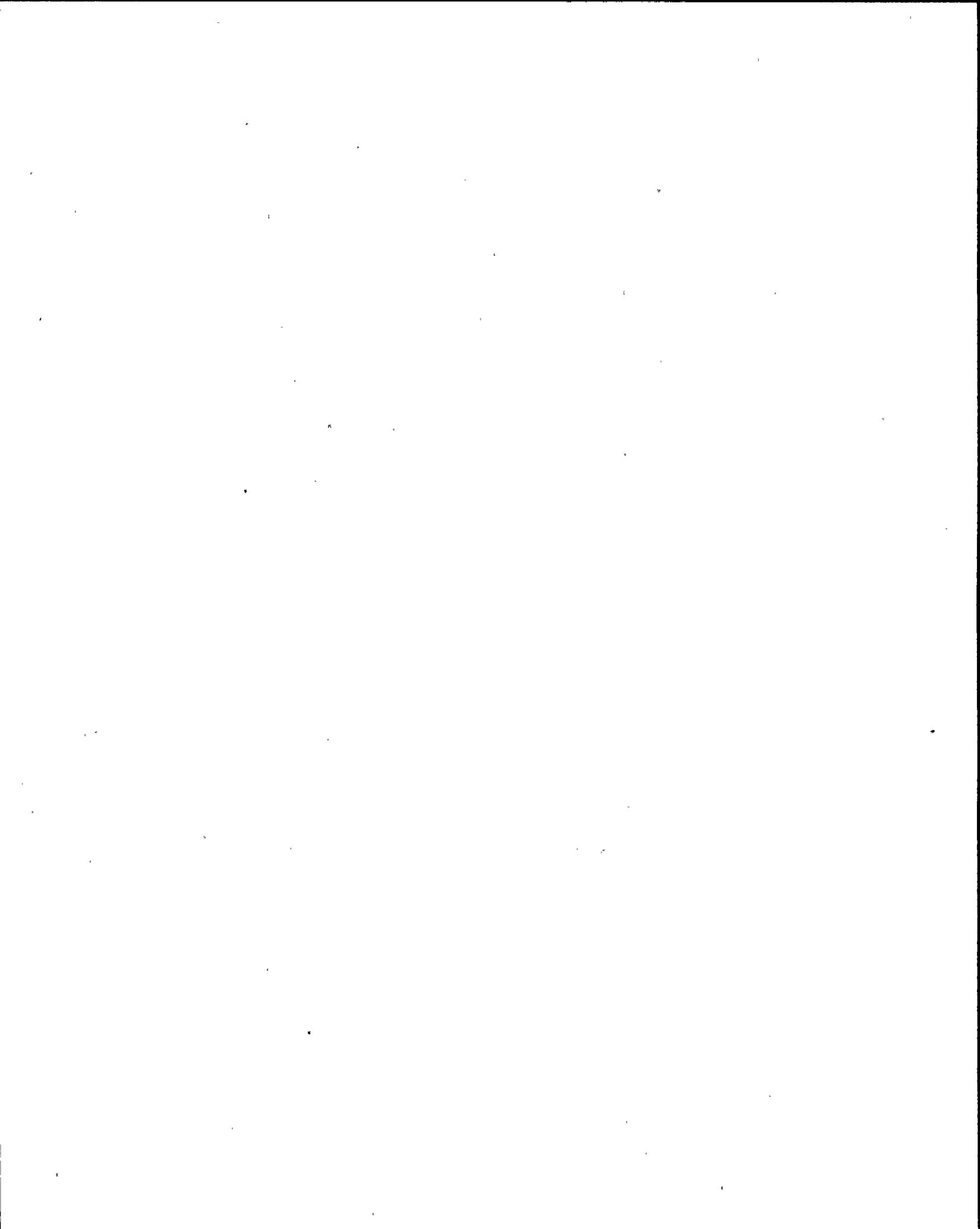
d. (1.00)

REFERENCE:

Ginna: LP-RSC62D  
Ginna: LP-RSC62D Obj. 6

KA:000067K102 3.1/3.9

000067K102 ..(KA's)



ANSWER: 055 (1.00)

~~a~~ d. (1.00) see facility comments

REFERENCE:

Ginna: LP-R5401C P. 7  
Ginna: LP-R5401C EO 4.4(C)

KA:000068K201 3.9/4.0

000068K201 ..(KA's)

ANSWER: 056 (1.00)

d. (1.00)

REFERENCE:

Ginna: WOG/ERG  
Ginna: LP-REC12C EO 1.1

KA:000069K301 3.8/4.2

000069K301 ..(KA's)

ANSWER: 057 (1.00)

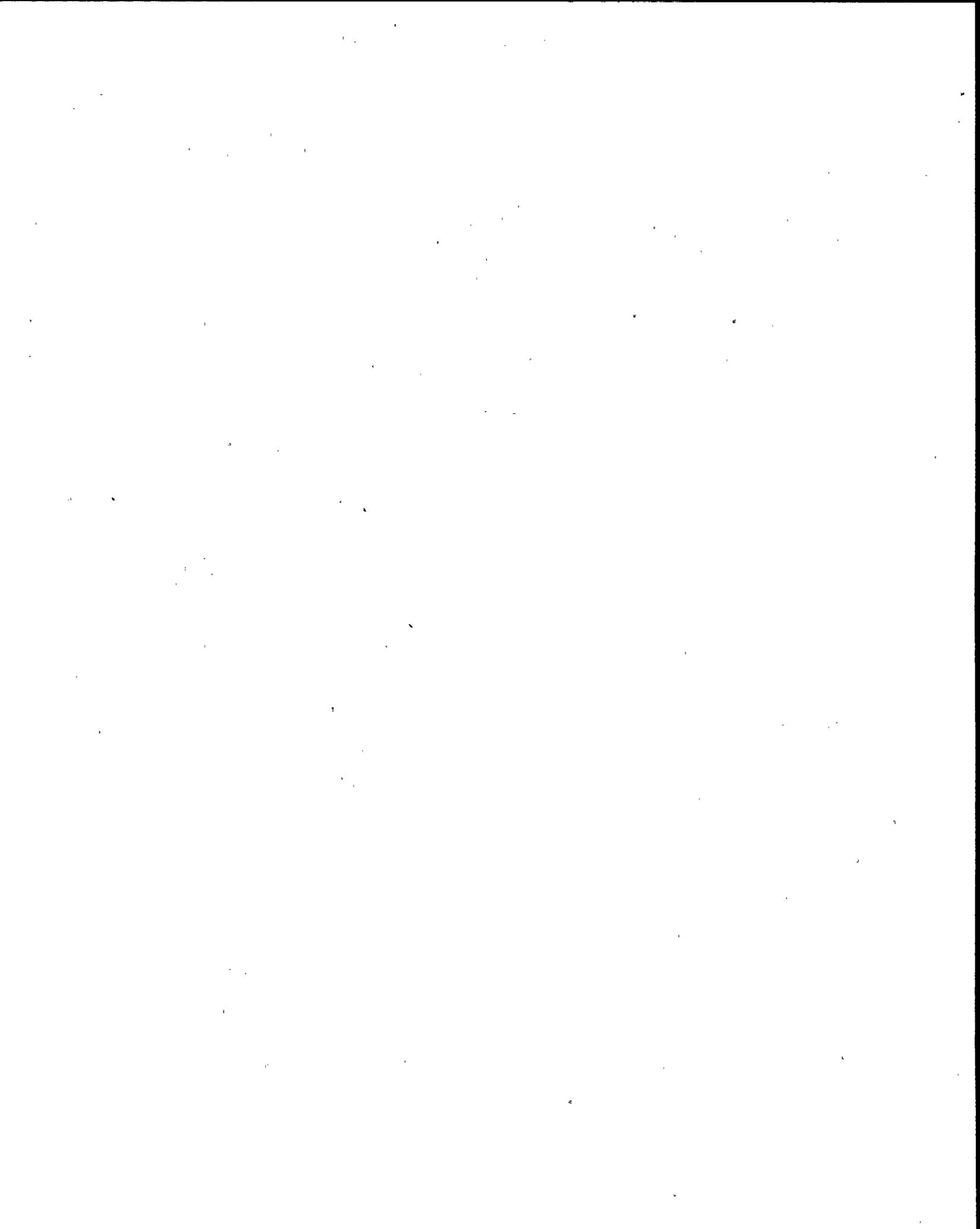
a. (1.00)

REFERENCE:

Ginna: LP-RFRC1C P.6  
Ginna: LP-RFRC1C EO 1.2

KA:000074K205 3.9/4.1

000074K205 ..(KA's)



ANSWER: 058 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R1601C P. 11  
Ginna: LP-RAP17C EO 1.3(C)

KA:000076K306 3.2/3.8

000076K306 ..(KA's)

ANSWER: 059 (1.00)

b. (1.00)

REFERENCE:

Ginna: Q 0 RIC12C.01.01  
Ginna: LP-RIC12C EO 1.1

KA:000057A219 4.0/4.3

000057A219 ..(KA's)

ANSWER: 060 (1.00)

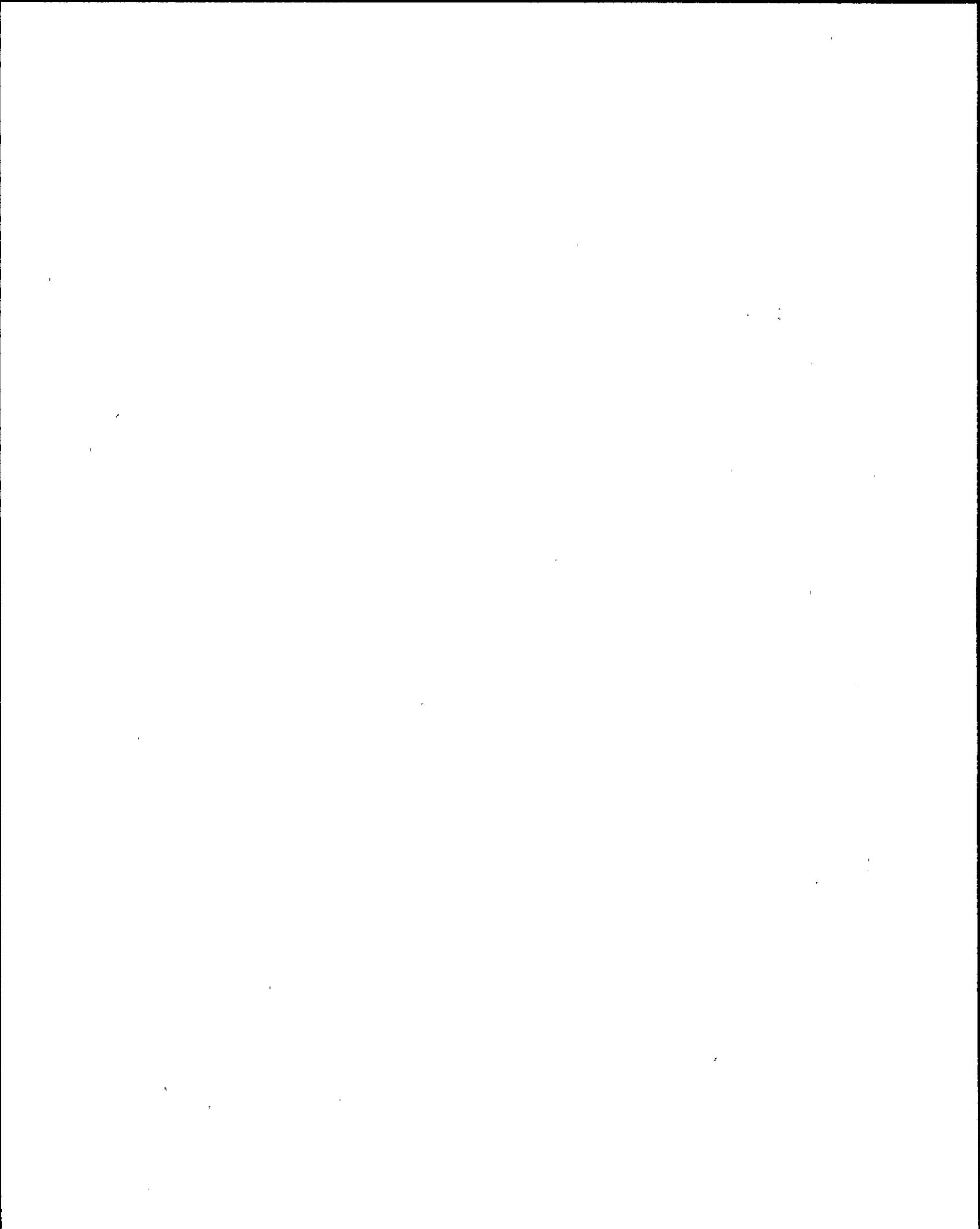
d. (1.00)

REFERENCE:

Ginna: Q 2 RMC09C.99.01  
Ginna: LP-RMC 09C EO 1.3

KA:000074K102 4.6/4.8

000074K102 ..(KA's)



ANSWER: 061 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-RAP57T Question 5.1  
Ginna: LP-RAP57T EO 5.0

KA:000001K206 3.0/3.1

000001K206 ..(KA's)

ANSWER: 062 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-RAP21C P. 3  
Ginna: LP-RAP21C EO 1.3(C)

KA:000003K102 3.1/3.4

000003K102 ..(KA's)

ANSWER: 063 (1.00)

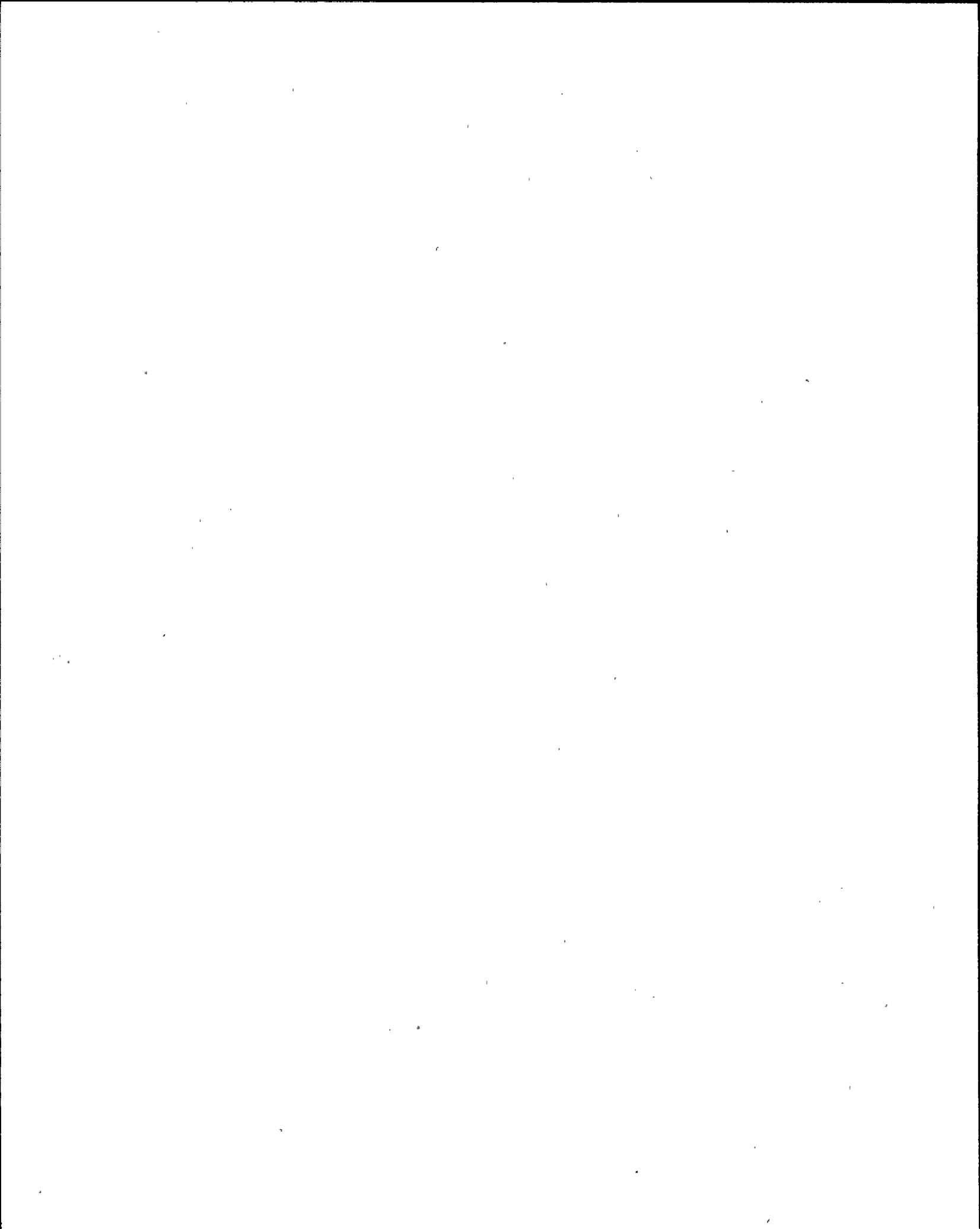
d. (1.00)

REFERENCE:

Ginna: E-0 Step 1  
Ginna: LP-REP00C EO 1.4

KA:000007A202 4.1/4.3

000007A202 ..(KA's)



ANSWER: 064 (1.00)

a. (1.00)

REFERENCE:

Ginna: Attachment NC  
Ginna: LP-RHT11C EO 1.6(C)

KA:000009K101  
000009K101 ..(KA's)

ANSWER: 065 (1.00)

d. (1.00)

REFERENCE:

Ginna: E-1 Step 1  
Ginna: LP-REP03C EO 1.2, 1.3

KA:000011A103 4.0/4.0  
000011A103 ..(KA's)

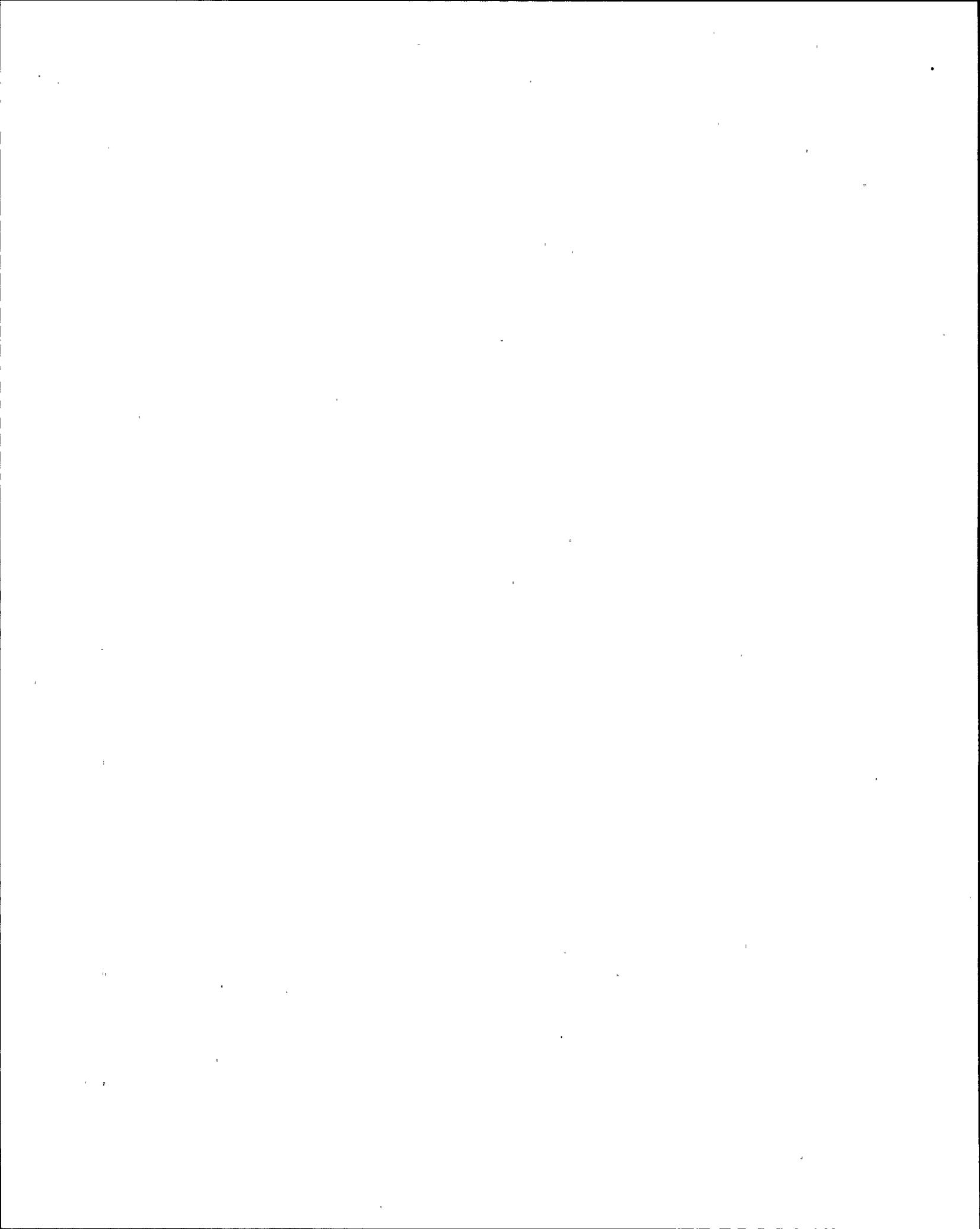
ANSWER: 066 (1.00)

c. (1.00)

REFERENCE:

Ginna: ER-CVCS.1 Par.2.0  
Ginna:

KA:000022G011 3.3/3.6  
000022G011 ..(KA's)



ANSWER: 067 (1.00)

b. (1.00)

REFERENCE:

Ginna: P+ID 33013 - 1247  
Ginna: LP-R3801C EO 2.1

KA:000025K301 3.1/3.4

000025K301 ..(KA's)

ANSWER: 068 (1.00)

a. (1.00)

REFERENCE:

Ginna: FR-S.1  
Ginna: LP-RFRS1C EO 1.3

KA:000029G010 4.5/4.5

000029G010 ..(KA's)

ANSWER: 069 (1.00)

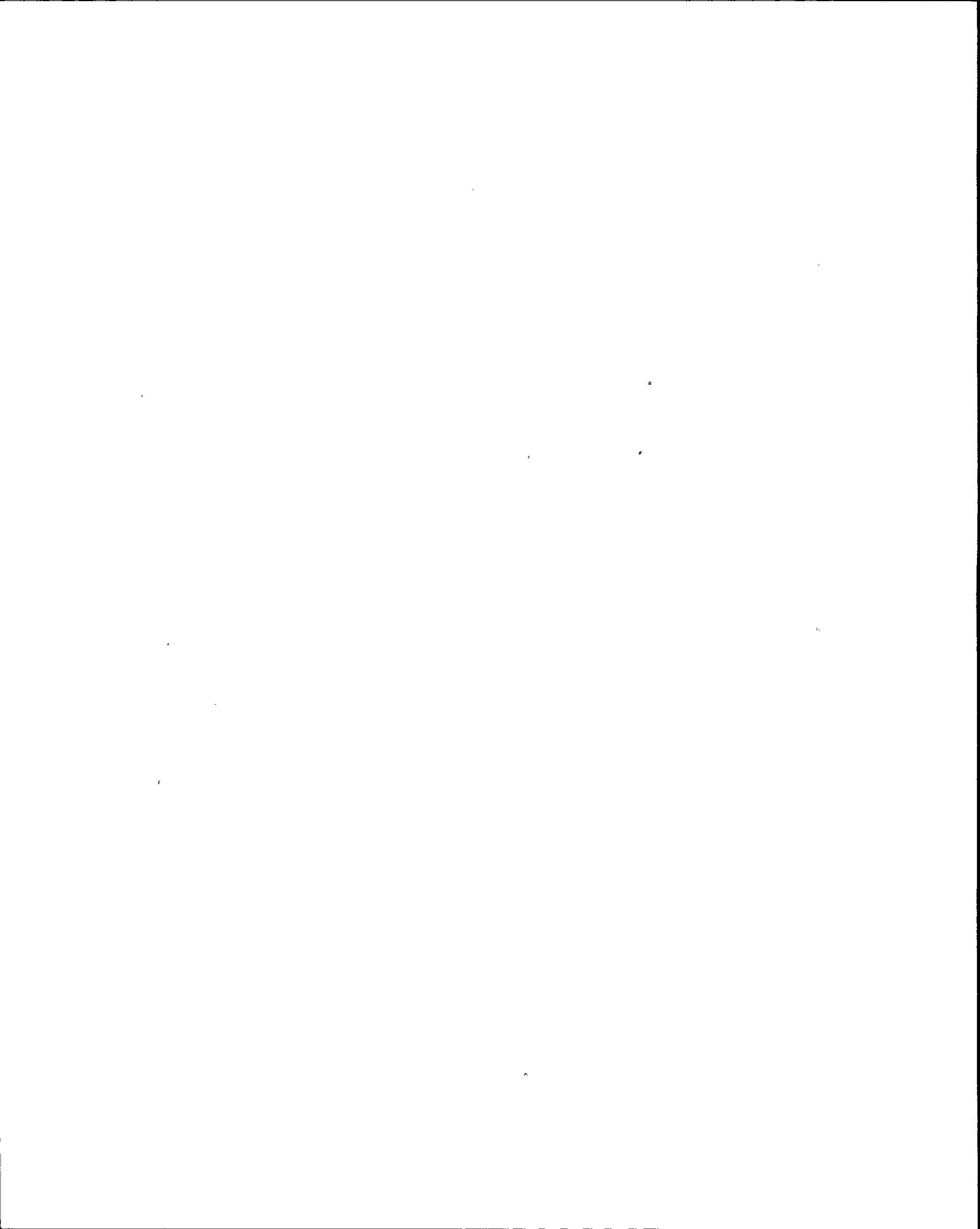
d. (1.00)

REFERENCE:

Ginna: LER 90-003  
Ginna: LP-R3301C EO 3.6.a

KA:000032K101 2.5/3.1

000032K101 ..(KA's)



ANSWER: 070 (1.00)

b. (1.00)

REFERENCE:

Ginna: O-6.10 and T/S

Ginna: LP-ROP60T EO 4.0 C

KA:000037A210 3.2/4.1

000037A210 ..(KA's)

ANSWER: 071 (1.00)

c.; b (1.00) see facility comments

REFERENCE:

Ginna: E-3 Step 3.e

Ginna: LP-REC31C EO 1.1

KA:000038G011 4.2/4.3

000038G011 ..(KA's)

ANSWER: 072 (1.00)

a. (1.00)

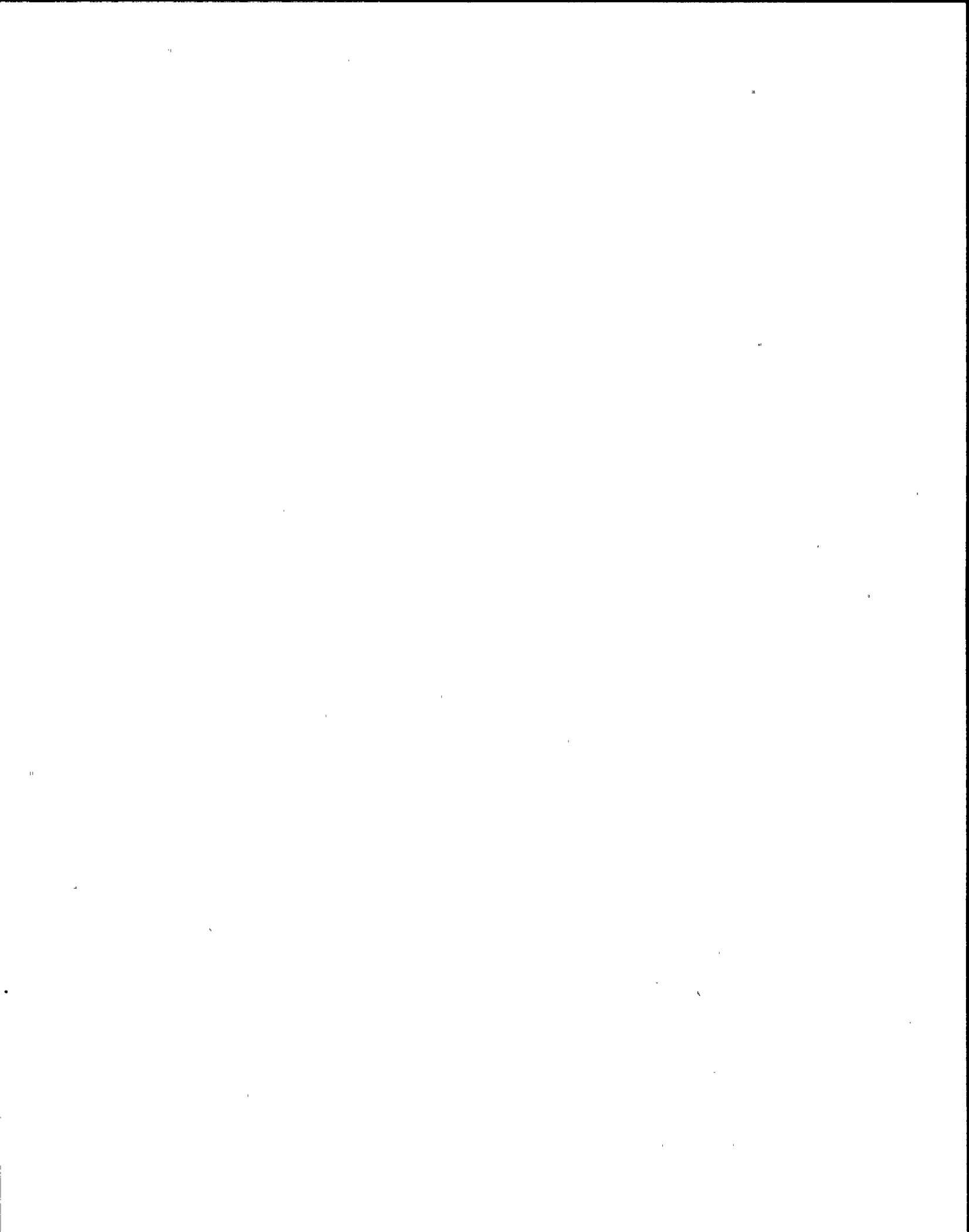
REFERENCE:

Ginna: AP-FW.1 Step 4

Ginna: LP-RAP09C EO 2.1 (C)

KA:000054K304 4.4/4.6

000054K304 ... (KA's)



ANSWER: 070 (1.00)

b. (1.00)

REFERENCE:

Ginna: O-6.10 and T/S  
Ginna: LP-ROP60T EO 4.0 C

KA:000037A210 3.2/4.1

000037A210 ..(KA's)

ANSWER: 071 (1.00)

c. (1.00)

REFERENCE:

Ginna: E-3 Step 3.e  
Ginna: LP-REC31C EO 1.1

KA:000038G011 4.2/4.3

000038G011 ..(KA's)

ANSWER: 072 (1.00)

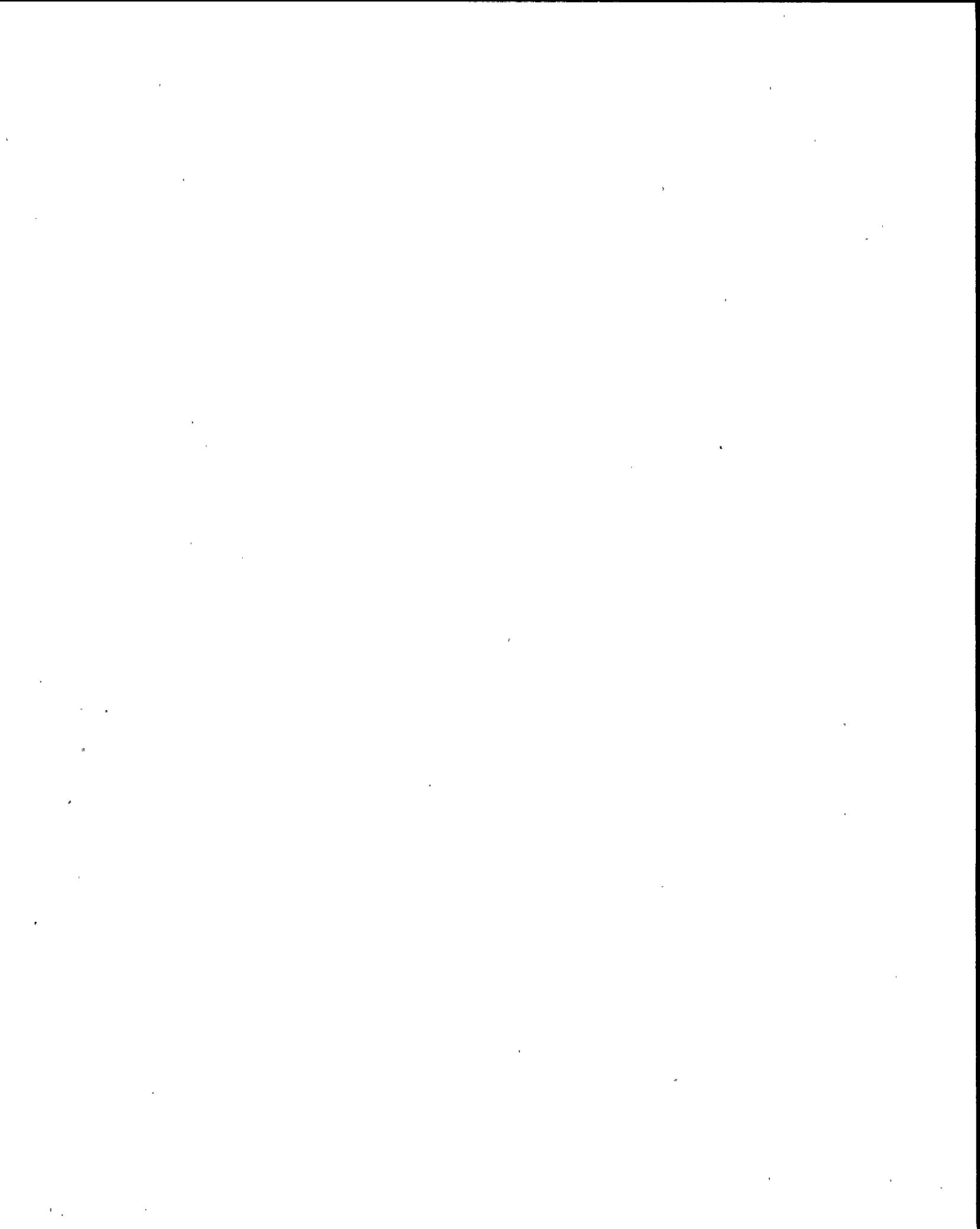
a. (1.00)

REFERENCE:

Ginna: AP-FW.1 Step 4  
Ginna: LP-RAP09C EO 2.1 (C)

KA:000054K304 4.4/4.6

000054K304 ..(KA's)



ANSWER: 073 (1.00)

b. (1.00)

REFERENCE:

Ginna: LP-R3901C P. 5  
Ginna: LP-R3901C EO 4.1

KA:000059A201 3.2/3.5

000059A201 ..(KA's)

ANSWER: 074 (1.00)

d. (1.00)

REFERENCE:

Ginna: E-0 Step 2  
Ginna: LP-REP00C EO 1.4

KA:000007A107 4.3/4.3

000007A107 ..(KA's)

ANSWER: 075 (1.00)

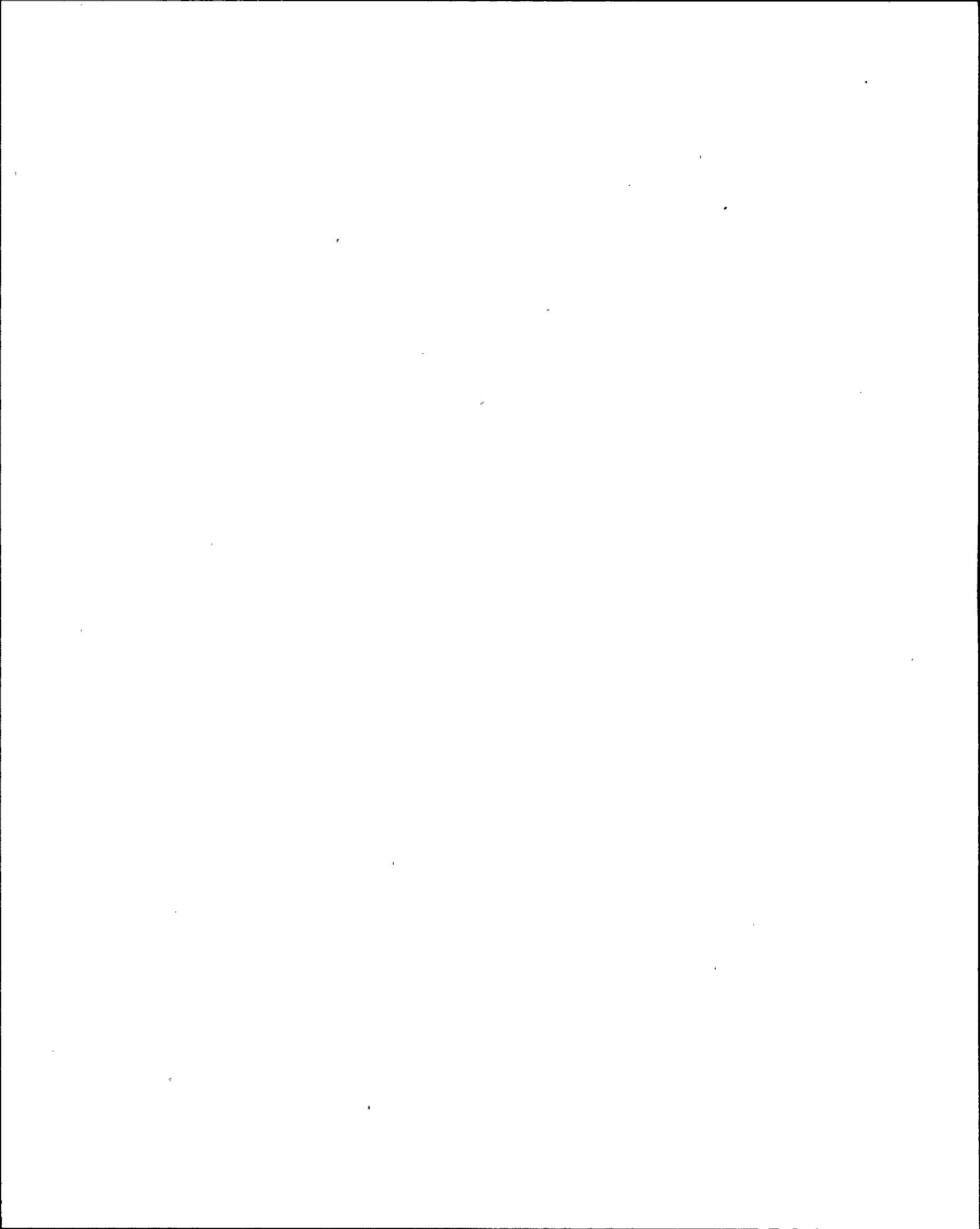
b. (1.00)

REFERENCE:

Ginna: AP-IA.1 Step 1  
Ginna: LP-RAP10C EO 2.1

KA:000065A206

000065A206 ..(KA's)



ANSWER: 076 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-ELEC.1 Step 19  
Ginna:

KA:000056K101 3.7/4.2

000056K101 ..(KA's)

ANSWER: 077 (1.00)

c. (1.00)

REFERENCE:

Ginna: A-1:13 Par. III. D.  
Ginna: LP-RAD62T EO 5.0, 6.0

KA:194001K103 2.8/3.4

194001K103 ..(KA's)

ANSWER: 078 (1.00)

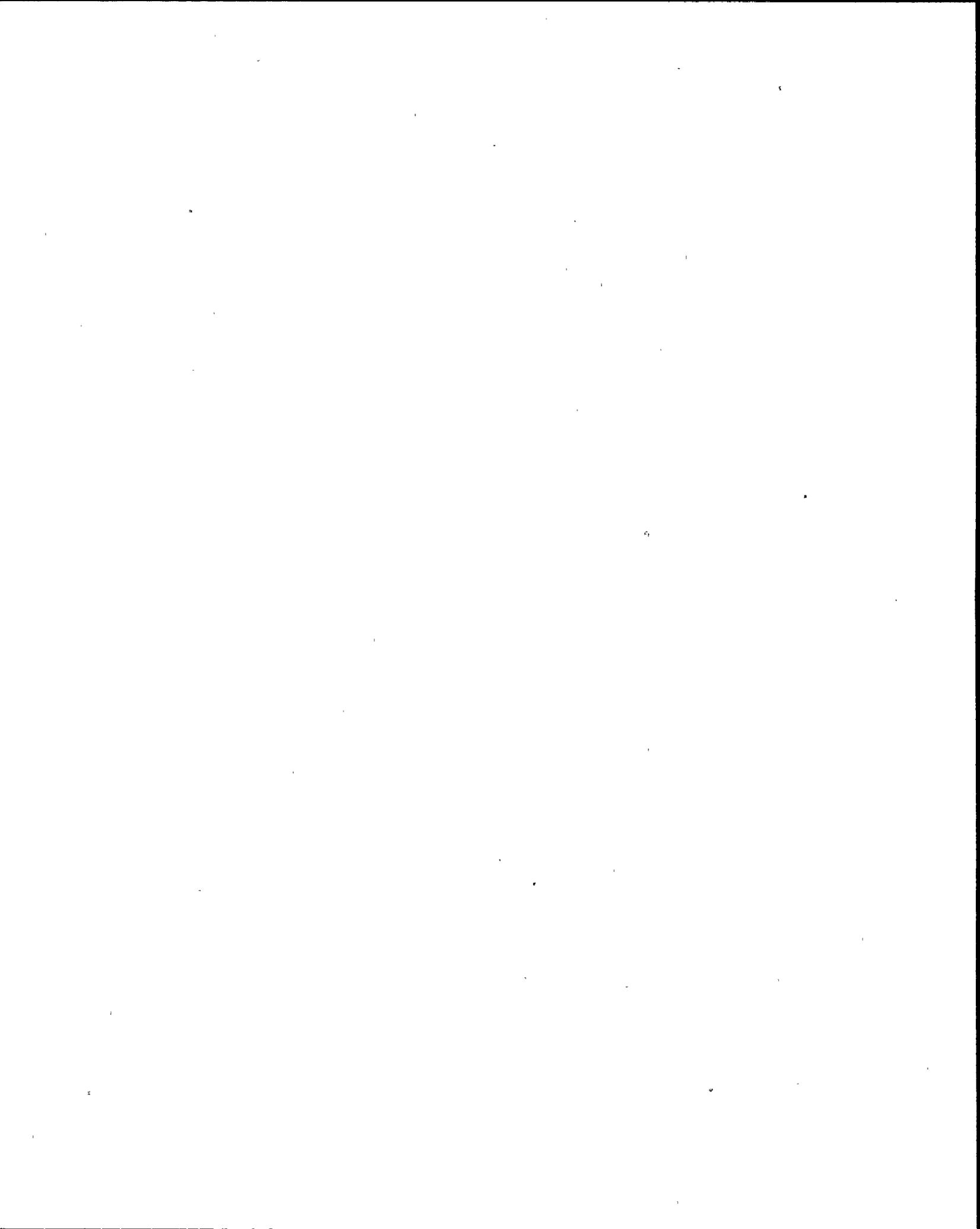
d. (1.00)

REFERENCE:

Ginna: A-1401:11 Par. 3.4.2.1.A  
Ginna: LP-RAD08C EO 3.4

KA:194001K102 3.7/4.1

194001K102 ..(KA's)



ANSWER: 079 (1.00)

d. (1.00)

REFERENCE:

Ginna: LP-R3501C P. 15  
Ginna: LP-R3501C EO 3.2

KA:000029K206 2.9/3.1

000029K206 ..(KA's)

ANSWER: 080 (1.00)

d. (1.00)

REFERENCE:

Ginna: A-601:3 Pars. 3.2.3, 3.2.4  
Ginna: LP-RAD07C EO 3.4

KA:194001A101 3.3/3.4

194001A101 ..(KA's)

ANSWER: 081 (1.00)

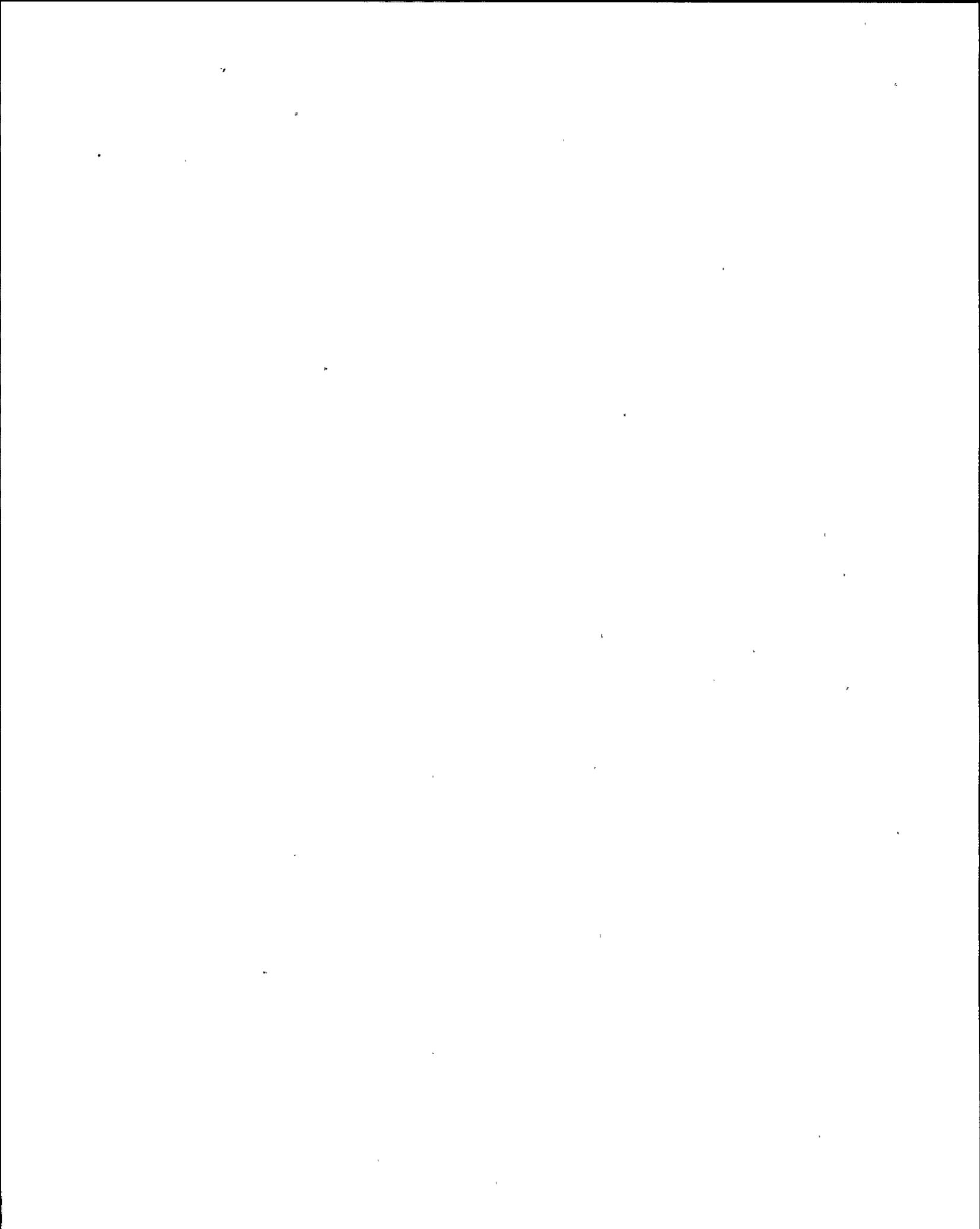
c. (1.00)

REFERENCE:

Ginna: A-52.1:5 Par. 3.4.2.5  
Ginna: LP-RAD03C EO 2.1

KA:194001A111 2.8/4.1

194001A111 ..(KA's)



ANSWER: 082 (1.00)

c. (1.00)

REFERENCE:

Ginna: T/S 3.1.4 Basis  
Ginna: LP-RTS01C EO 1.4

KA:000076G004 2.1/3.7

000076G004 ..(KA's)

ANSWER: 083 (1.00)

b. (1.00)

REFERENCE:

Ginna: T/S 6.7.1.b.  
Ginna: LP-RTS21C EO 1.3(C)

KA:000027G002 2.6/3.3

000027G002 ..(KA's)

ANSWER: 084 (1.00)

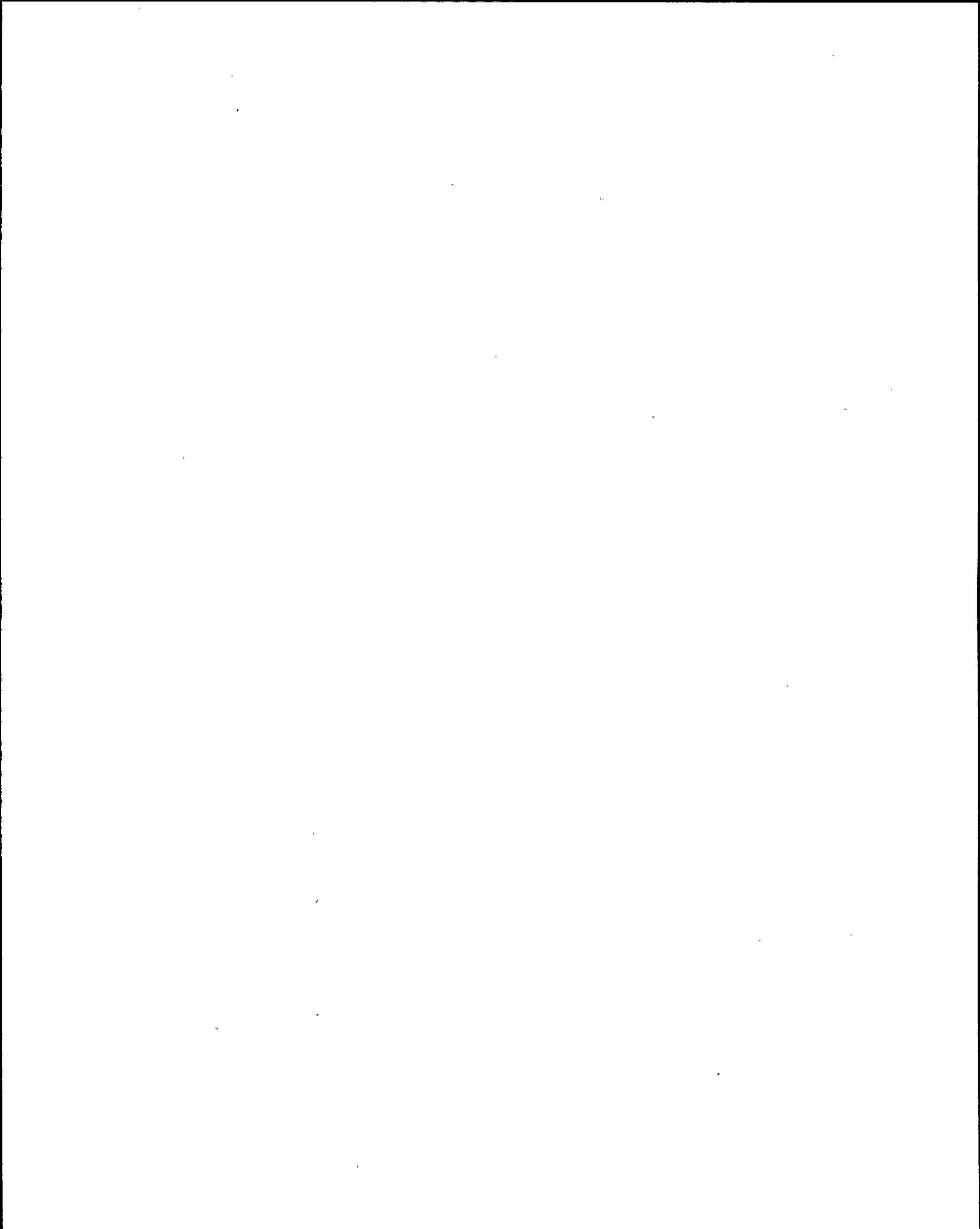
a. (1.00)

REFERENCE:

Ginna: LP-RTS09C P. 13  
Ginna: LP-RTS09C EO 1.4(C)

KA:000060G004 2.4/3.9

000060G004 ..(KA's)



ANSWER: 085 (1.00)

a. (1.00)

REFERENCE:

Ginna: LP-RFRH5C P.4  
Ginna: LP-RFRH5C EO 1.2

KA:000054K102 3.6/4.2

000054K102 ..(KA's)

ANSWER: 086 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-R3901C P.10  
Ginna: LP-R3901C EO 1.3

KA:000036K202 3.4/3.9

000036K202 ..(KA's)

ANSWER: 087 (1.00)

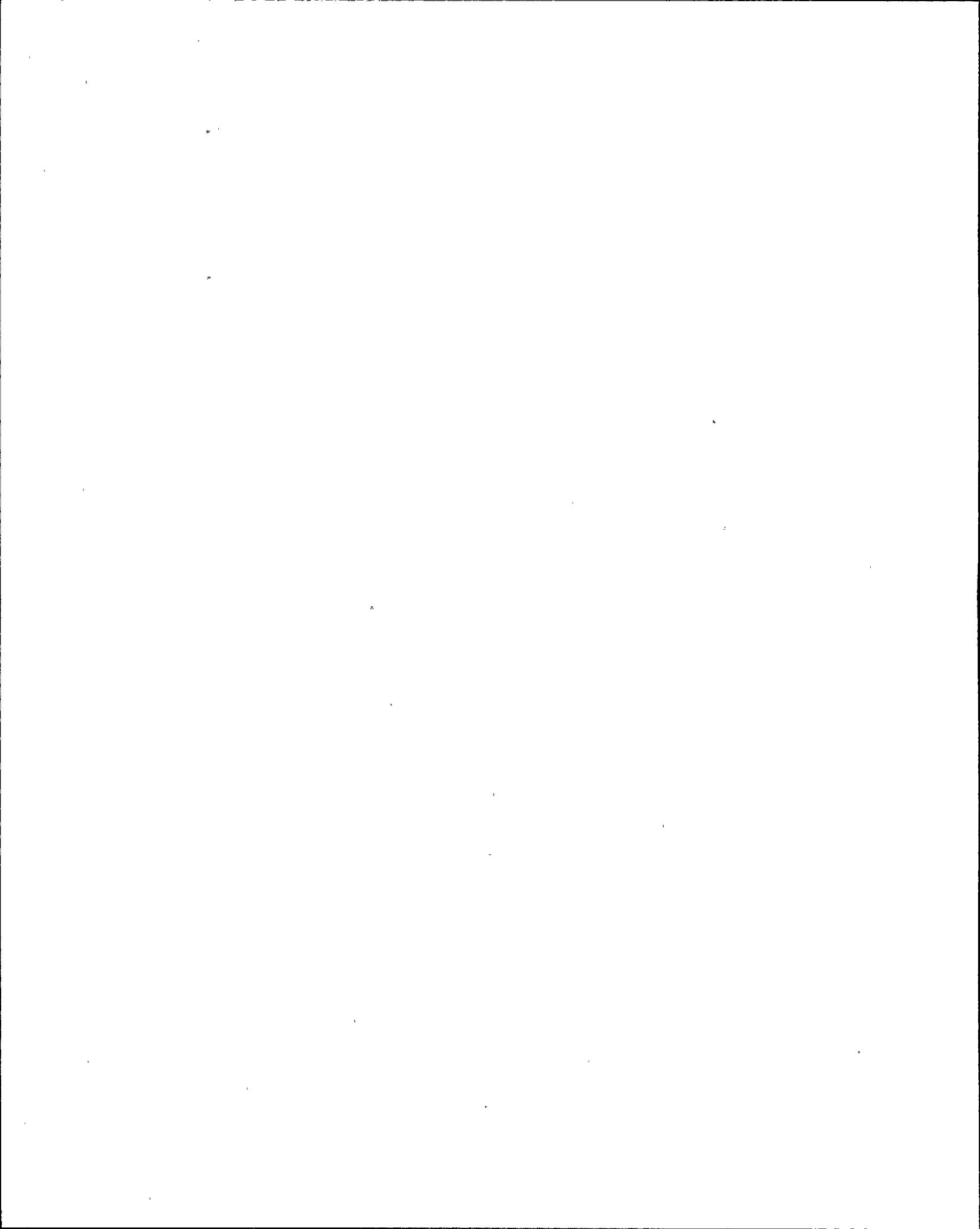
c. (1.00)

REFERENCE:

Ginna: LP-RFRI2C P. 2  
Ginna: LP-RFRI2C EO 1.1

KA:000028K305 3.7/4.1

000028K305 ..(KA's)



ANSWER: 088 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-CW.1 Step 1  
Ginna: LP-RAP24C EO 1.2(C)

KA:000051A202 3.9/4.1

000051A202 ..(KA's)

ANSWER: 089 (1.00)

c. (1.00)

REFERENCE:

Ginna: LP-RMC01C P. 14  
Ginna: LP-RMC01C EO 2.1(C)

KA:000011K313 3.8/4.2

000011K313 ..(KA's)

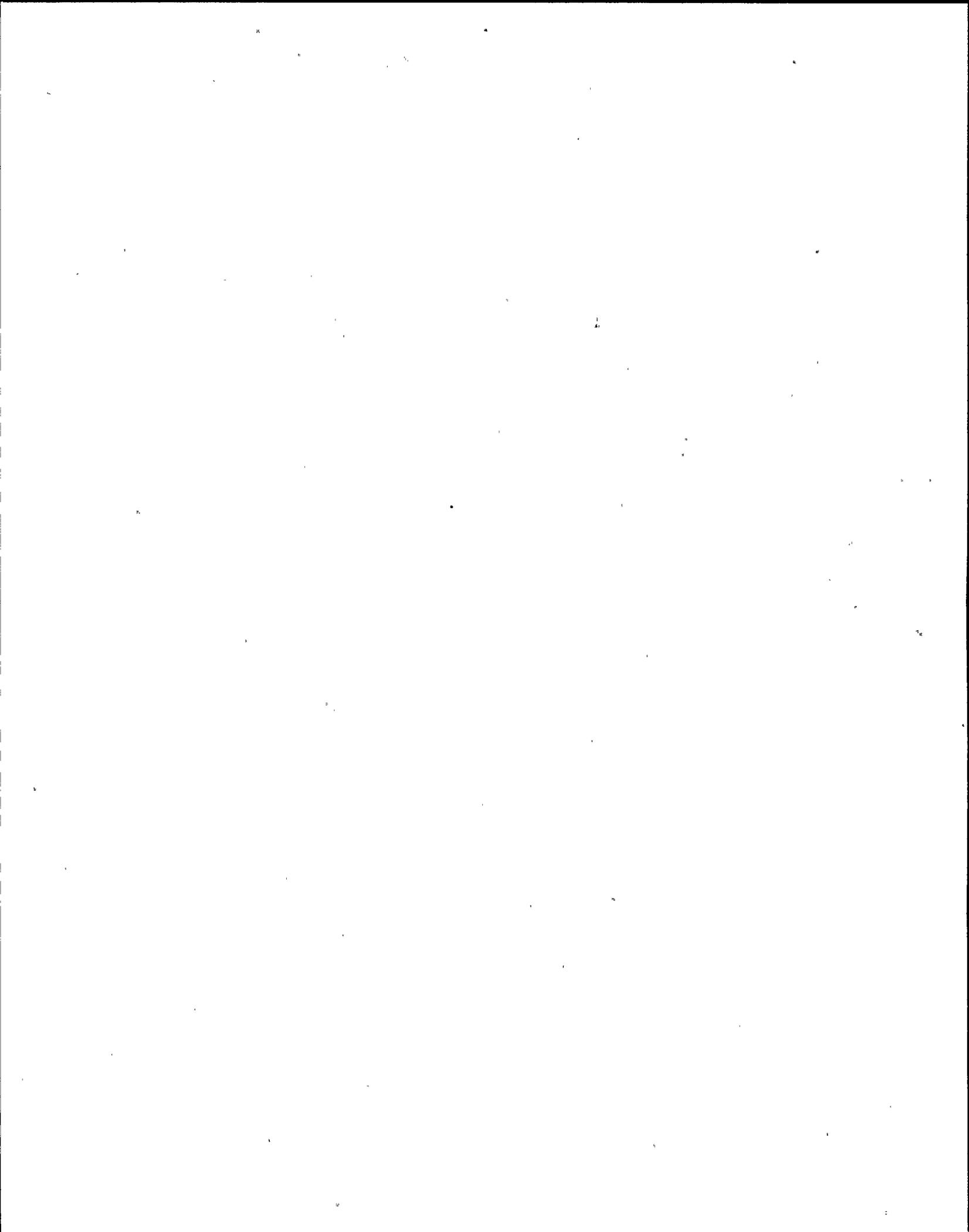
ANSWER: 090 (1.00)

c. (1.00)

REFERENCE:

Ginna: AP-CR.1 Step 7  
Ginna: LP-R5401C EO 3.1(C)

KA:000068A111 3.9/4.1



ANSWER: 091 (1.00)

d. (1.00)

REFERENCE:

Ginna: T/S 3.10.4.4  
Ginna:

KA:000005A203 3.5/4.4

000005A203 ..(KA's)

ANSWER: 092 (1.00)

c. (1.00)

REFERENCE:

Ginna: T/S Tbl. 3.5-1  
Ginna: LP-RTS05C EO 1.2(C)

KA:000033K301 3.2/3.6

000033K301 ..(KA's)

ANSWER: 093 (1.00)

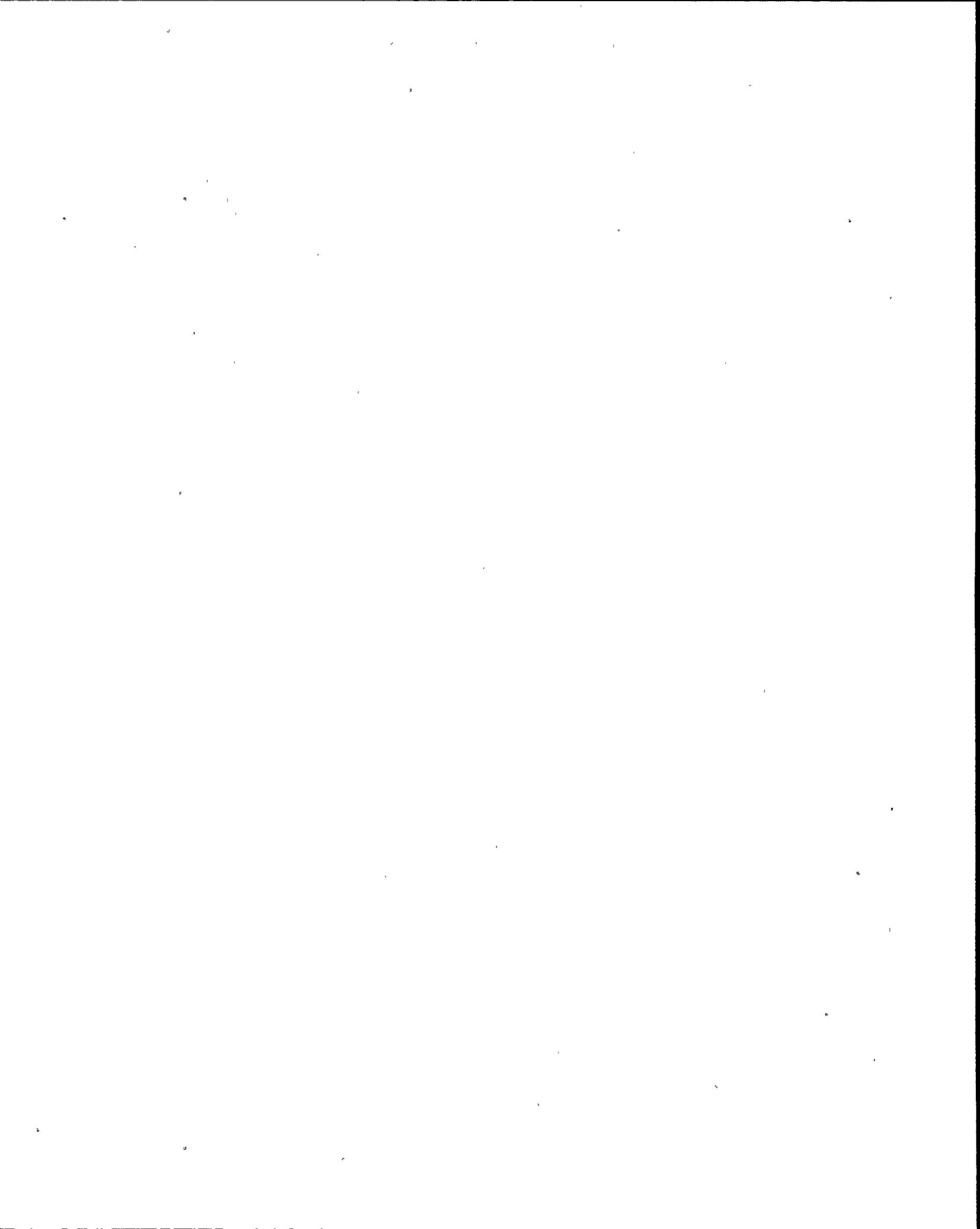
a. (1.00)

REFERENCE:

Ginna: LP-RES31C P. 6  
Ginna: LP-RES31C EO 1.2

KA:000038A139 3.6/3.7

000038A139 ..(KA's)



ANSWER: 094 (1.00)

b. (1.00)

REFERENCE:

Ginna: EPIP1-4:3 Par. 6.2.3  
Ginna: LP-RSC02C EO8

KA:194001A116 3.1/4.4

194001A116 ..(KA's)

ANSWER: 095 (1.00)

c. (1.00)

REFERENCE:

Ginna: EPIP 3-1 Par. 5.1  
Ginna: LP-RSC01C EO 5

KA:194001A116 3.1/4.4

194001A116 ..(KA's)

ANSWER: 096 (1.00)

c. (1.00)

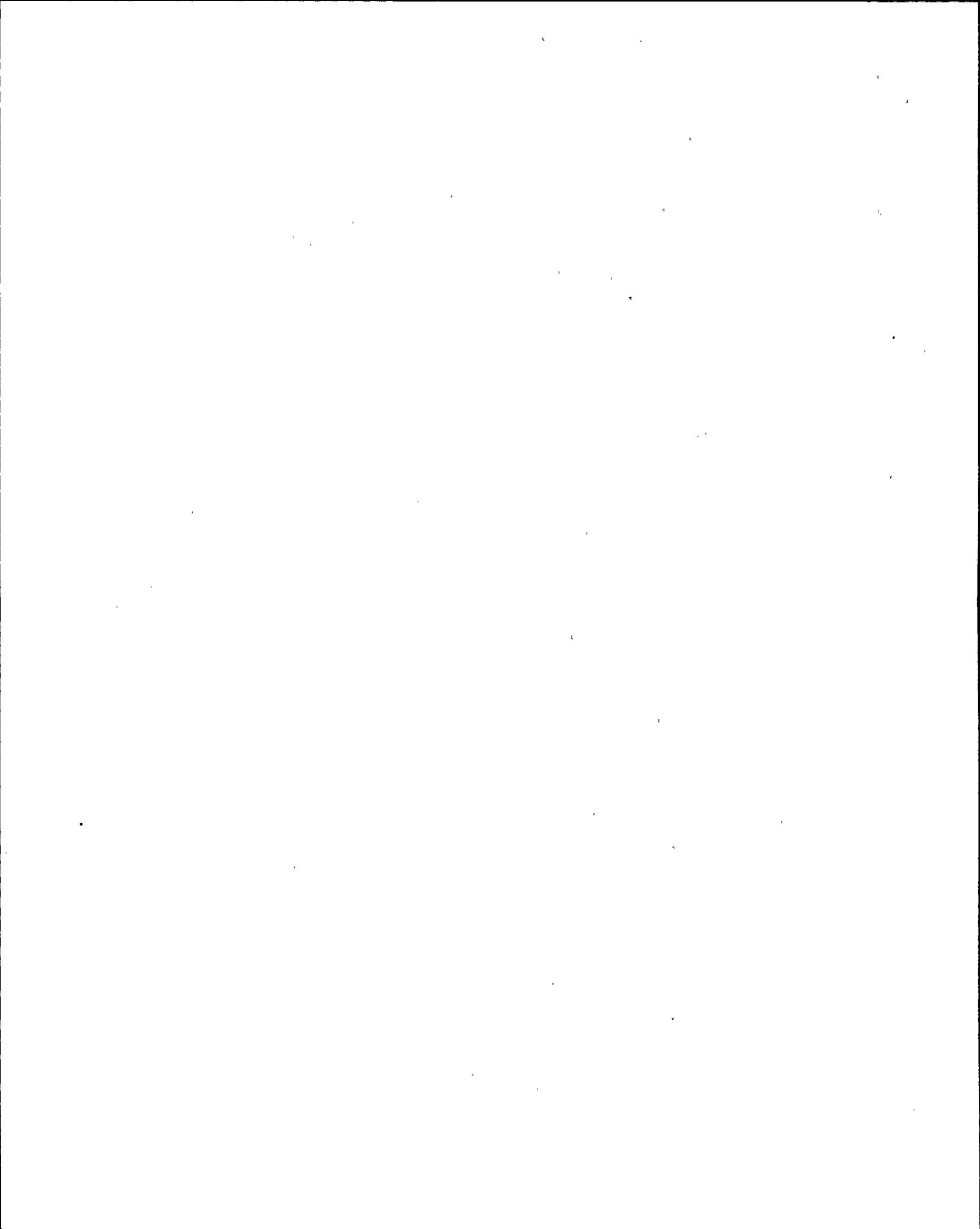
REFERENCE:

Ginna: A-905:4 Par. 3.11  
Ginna: LP-RAD08C EO 2.4

KA:194001K116 3.5/4.2

194001K116 ..(KA's)

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



A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice)

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

001        a        b        c        d        \_\_\_\_\_

002        a        b        c        d        \_\_\_\_\_

003        a        b        c        d        \_\_\_\_\_

004        a        b        c        d        \_\_\_\_\_

005        a        b        c        d        \_\_\_\_\_

006        a        b        c        d        \_\_\_\_\_

007        a        b        c        d        \_\_\_\_\_

008        a        b        c        d        \_\_\_\_\_

009        a        b        c        d        \_\_\_\_\_

010        a        b        c        d        \_\_\_\_\_

011        a        b        c        d        \_\_\_\_\_

012        a        b        c        d        \_\_\_\_\_

013        a        b        c        d        \_\_\_\_\_

014 match with selected number in the blank

a        \_\_\_\_\_

b        \_\_\_\_\_

c        \_\_\_\_\_

d        \_\_\_\_\_

e        \_\_\_\_\_

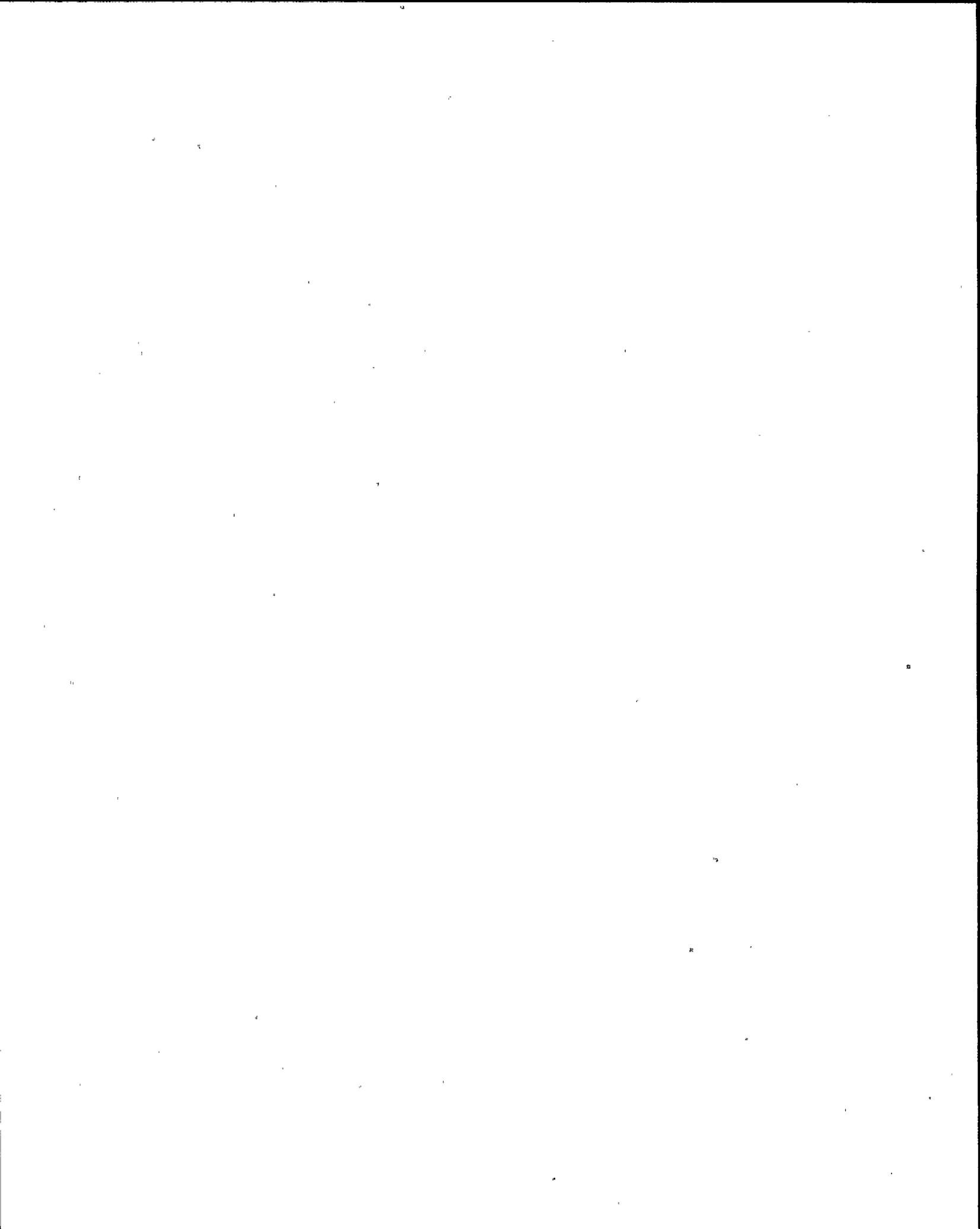
f        \_\_\_\_\_

015        a        b        c        d        \_\_\_\_\_

016        a        b        c        d        \_\_\_\_\_

017        a        b        c        d        \_\_\_\_\_

018        a        b        c        d        \_\_\_\_\_

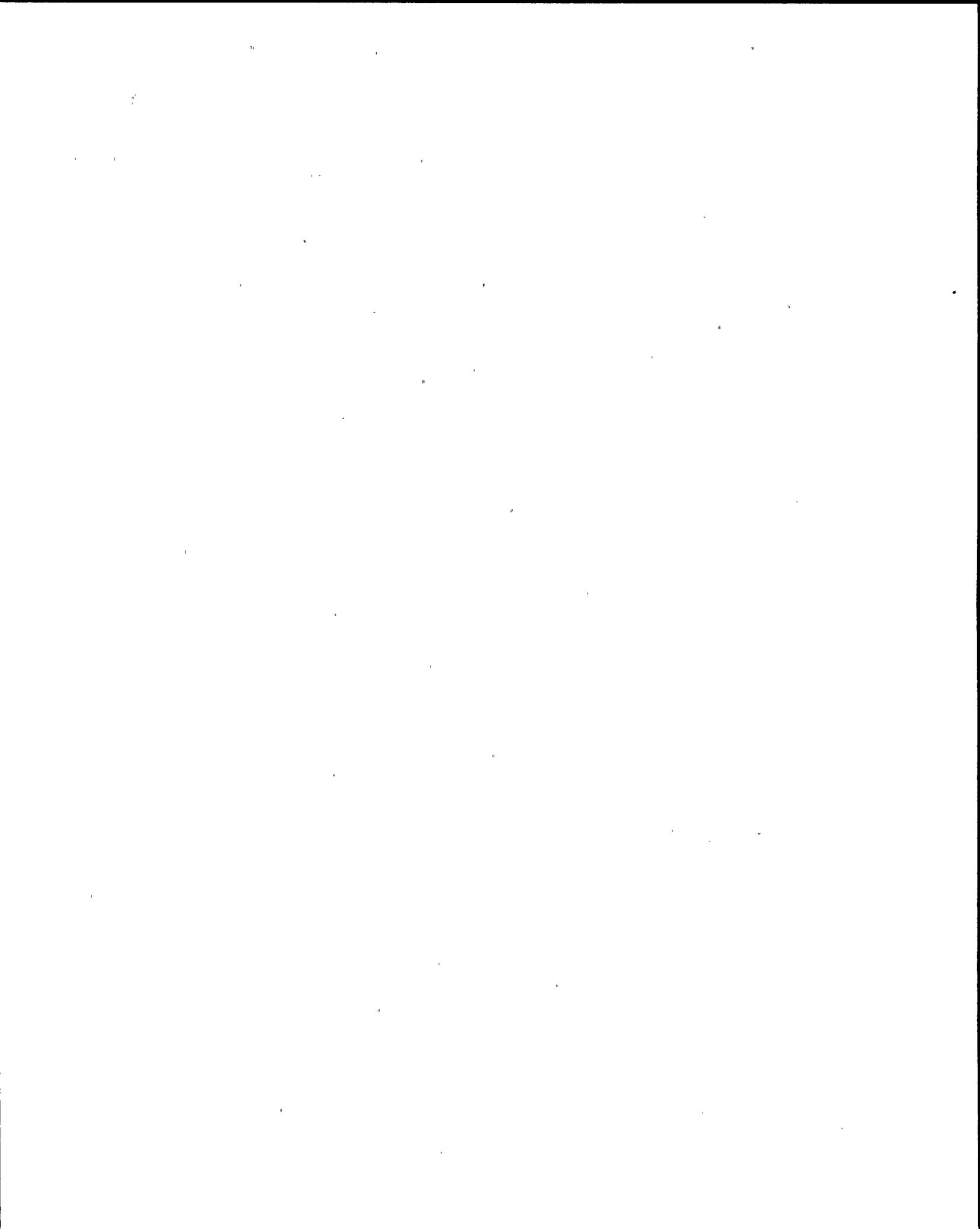


A N S W E R S H E E T

Multiple Choice (Circle or X your choice) :

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

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 019 | a | b | c | d | _____ |
| 020 | a | b | c | d | _____ |
| 021 | a | b | c | d | _____ |
| 022 | a | b | c | d | _____ |
| 023 | a | b | c | d | _____ |
| 024 | a | b | c | d | _____ |
| 025 | a | b | c | d | _____ |
| 026 | a | b | c | d | _____ |
| 027 | a | b | c | d | _____ |
| 028 | a | b | c | d | _____ |
| 029 | a | b | c | d | _____ |
| 030 | a | b | c | d | _____ |
| 031 | a | b | c | d | _____ |
| 032 | a | b | c | d | _____ |
| 033 | a | b | c | d | _____ |
| 034 | a | b | c | d | _____ |
| 035 | a | b | c | d | _____ |
| 036 | a | b | c | d | _____ |
| 037 | a | b | c | d | _____ |
| 038 | a | b | c | d | _____ |



A N S W E R   S H E E T

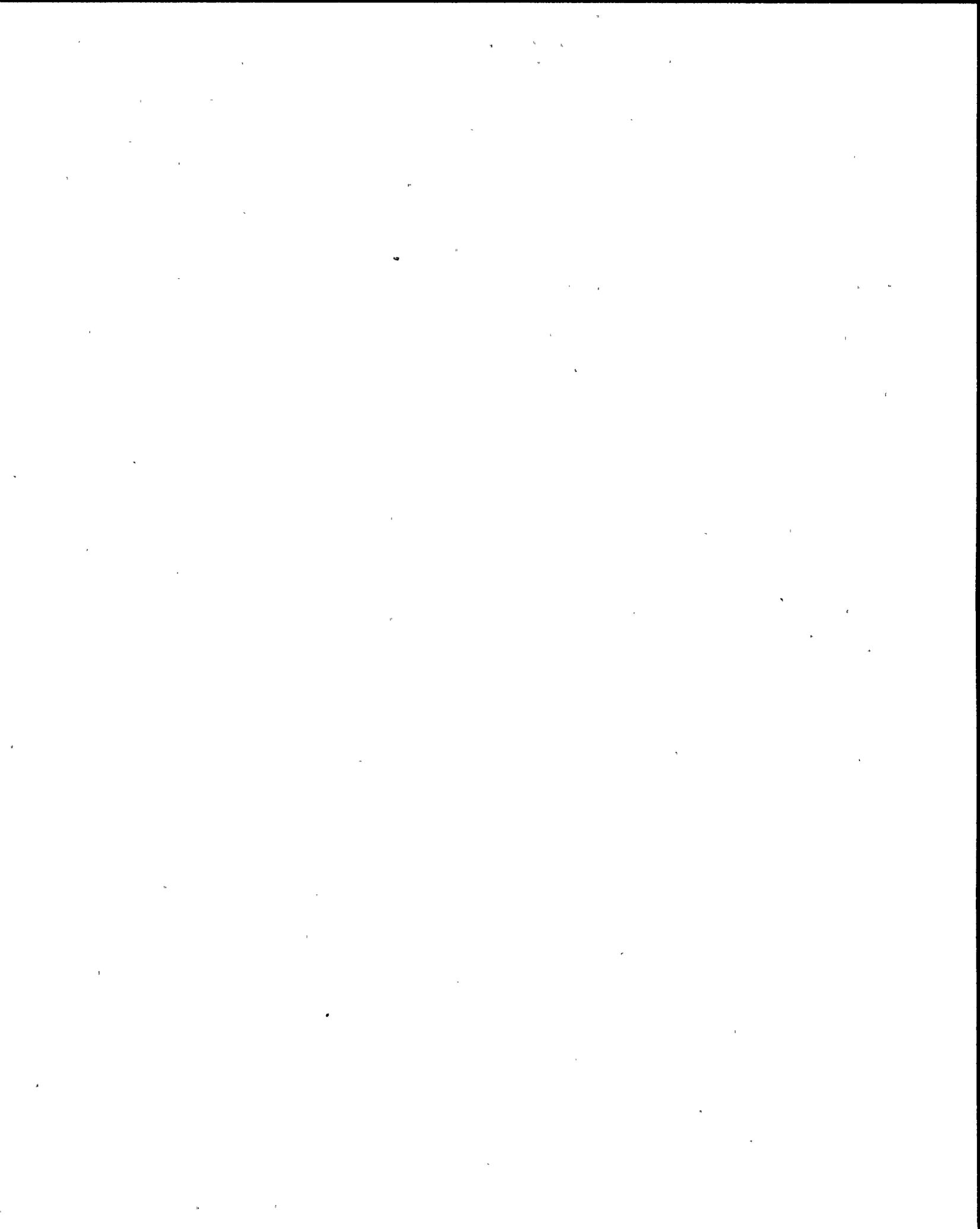
Multiple Choice    (Circle or X your choice)

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

039    match with selected number in the blank

- a    \_\_\_\_\_
- b    \_\_\_\_\_
- c    \_\_\_\_\_
- d    \_\_\_\_\_
- e    \_\_\_\_\_
- f    \_\_\_\_\_

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 040 | a | b | c | d | _____ |
| 041 | a | b | c | d | _____ |
| 042 | a | b | c | d | _____ |
| 043 | a | b | c | d | _____ |
| 044 | a | b | c | d | _____ |
| 045 | a | b | c | d | _____ |
| 046 | a | b | c | d | _____ |
| 047 | a | b | c | d | _____ |
| 048 | a | b | c | d | _____ |
| 049 | a | b | c | d | _____ |
| 050 | a | b | c | d | _____ |
| 051 | a | b | c | d | _____ |
| 052 | a | b | c | d | _____ |
| 053 | a | b | c | d | _____ |
| 054 | a | b | c | d | _____ |
| 055 | a | b | c | d | _____ |

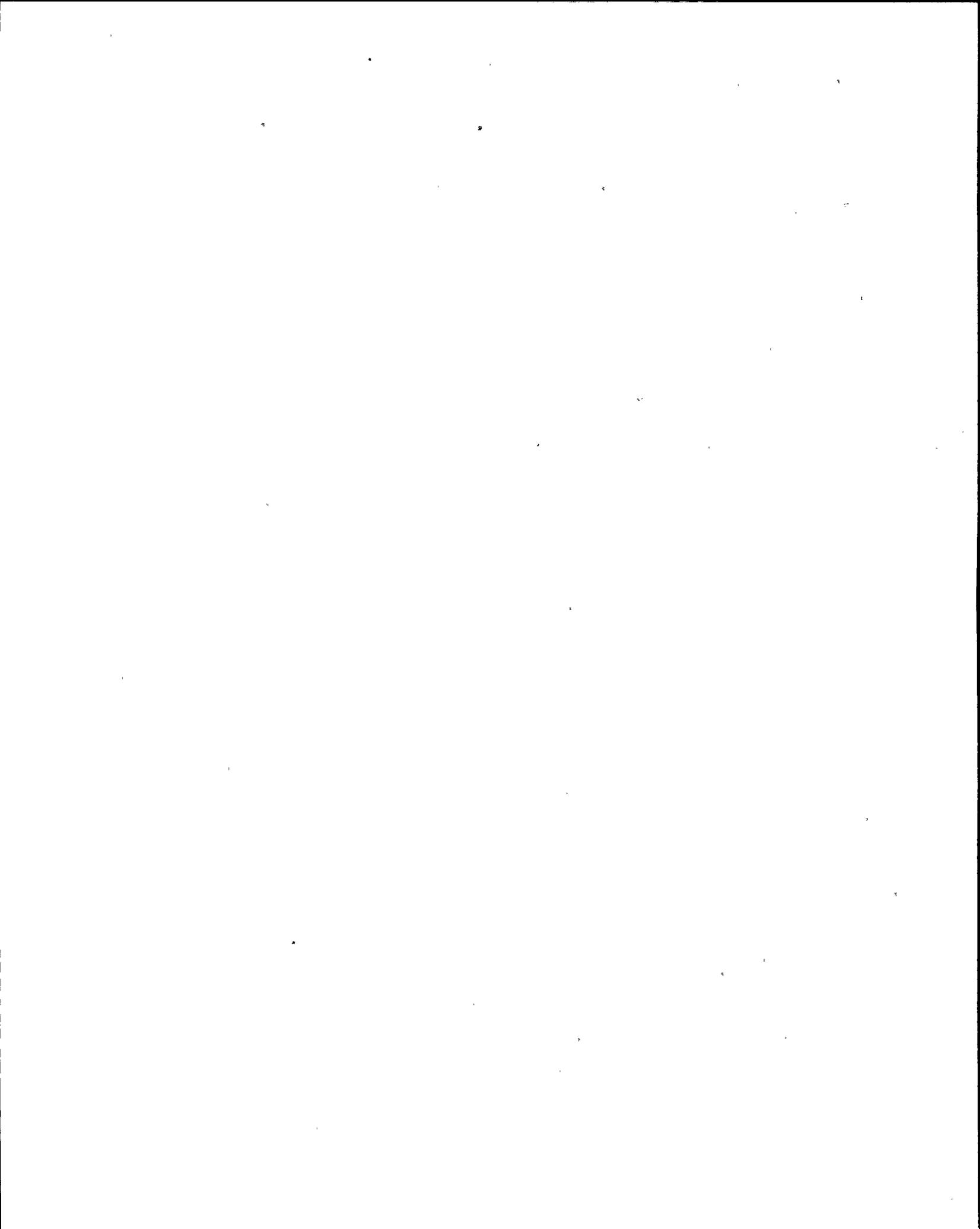


A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice) :

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

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 056 | a | b | c | d | _____ |
| 057 | a | b | c | d | _____ |
| 058 | a | b | c | d | _____ |
| 059 | a | b | c | d | _____ |
| 060 | a | b | c | d | _____ |
| 061 | a | b | c | d | _____ |
| 062 | a | b | c | d | _____ |
| 063 | a | b | c | d | _____ |
| 064 | a | b | c | d | _____ |
| 065 | a | b | c | d | _____ |
| 066 | a | b | c | d | _____ |
| 067 | a | b | c | d | _____ |
| 068 | a | b | c | d | _____ |
| 069 | a | b | c | d | _____ |
| 070 | a | b | c | d | _____ |
| 071 | a | b | c | d | _____ |
| 072 | a | b | c | d | _____ |
| 073 | a | b | c | d | _____ |
| 074 | a | b | c | d | _____ |
| 075 | a | b | c | d | _____ |
| 076 | a | b | c | d | _____ |
| 077 | a | b | c | d | _____ |
| 078 | a | b | c | d | _____ |
| 079 | a | b | c | d | _____ |

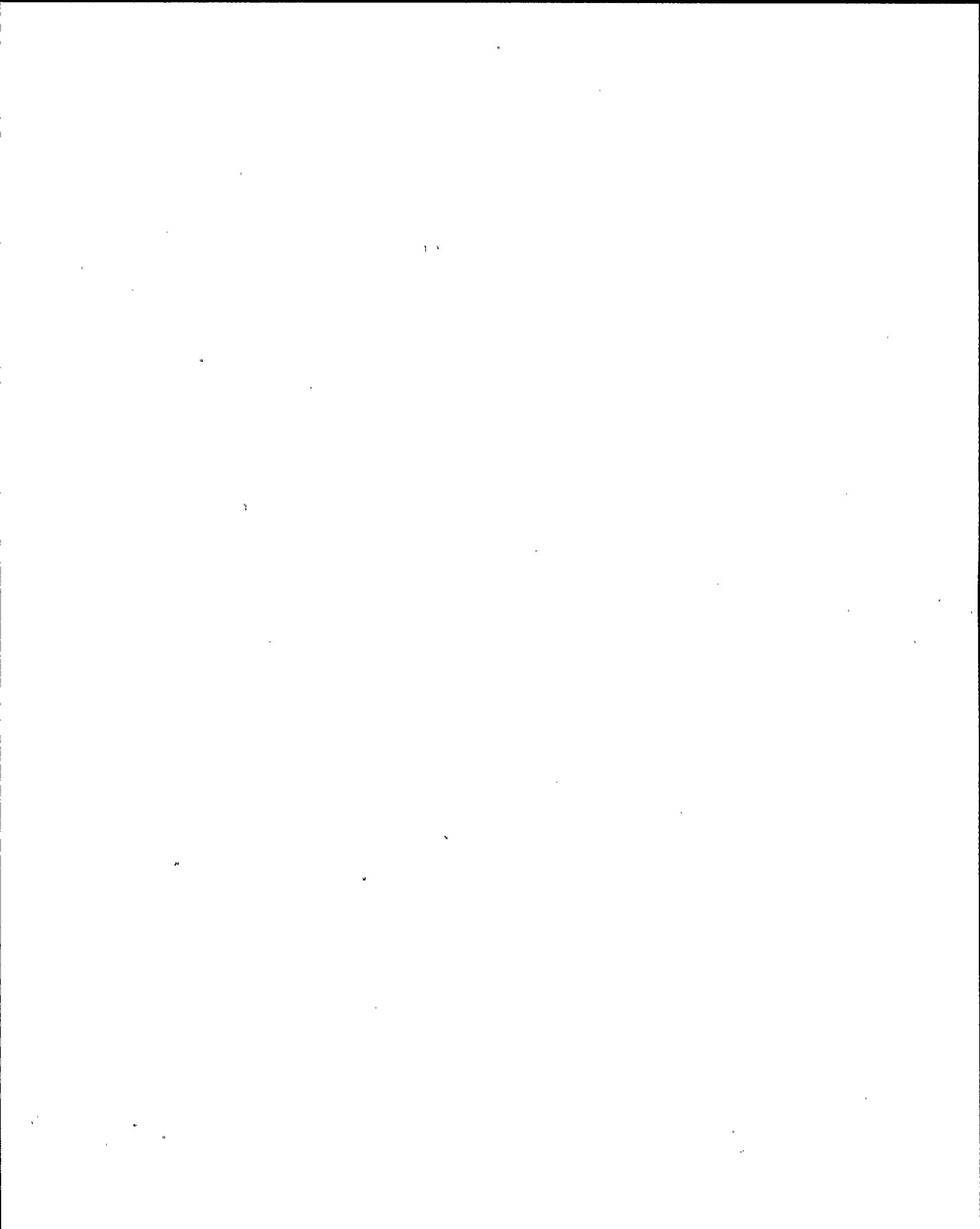


A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice) .

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

- |     |   |   |   |   |       |
|-----|---|---|---|---|-------|
| 080 | a | b | c | d | _____ |
| 081 | a | b | c | d | _____ |
| 082 | a | b | c | d | _____ |
| 083 | a | b | c | d | _____ |
| 084 | a | b | c | d | _____ |
| 085 | a | b | c | d | _____ |
| 086 | a | b | c | d | _____ |
| 087 | a | b | c | d | _____ |
| 088 | a | b | c | d | _____ |
| 089 | a | b | c | d | _____ |
| 090 | a | b | c | d | _____ |
| 091 | a | b | c | d | _____ |
| 092 | a | b | c | d | _____ |
| 093 | a | b | c | d | _____ |
| 094 | a | b | c | d | _____ |
| 095 | a | b | c | d | _____ |
| 096 | a | b | c | d | _____ |



A N S W E R   K E Y

001      c

002      a

003      b

004      c

005      d

006      d

007      b

008      d

009      a

010      b

011      c

012      c

013      b

014 match with selected number in the blank

a    4

b    8

c    ~~11~~

d    9

e    5

f    2

015      c

016      a

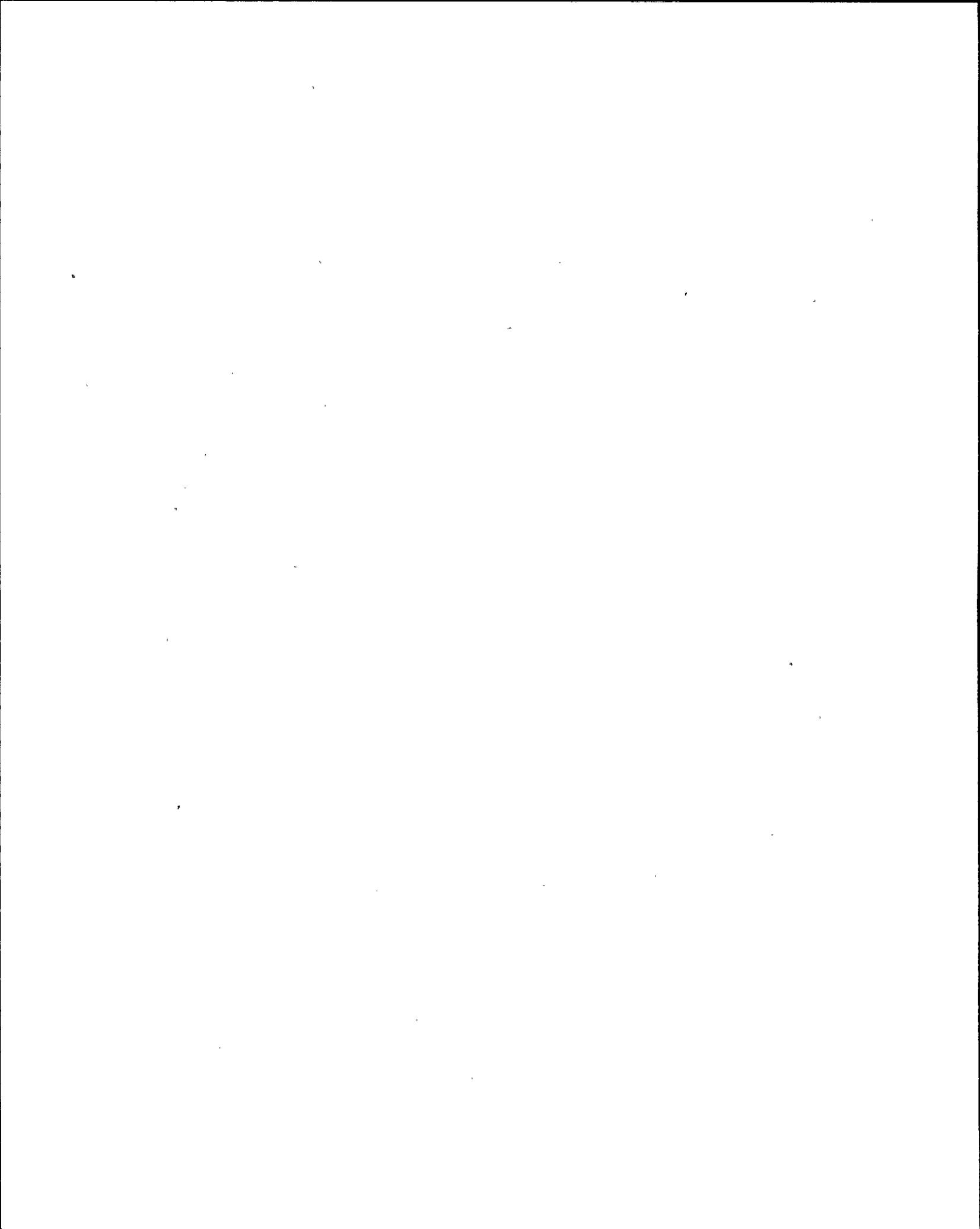
017      d

018      b

019      c

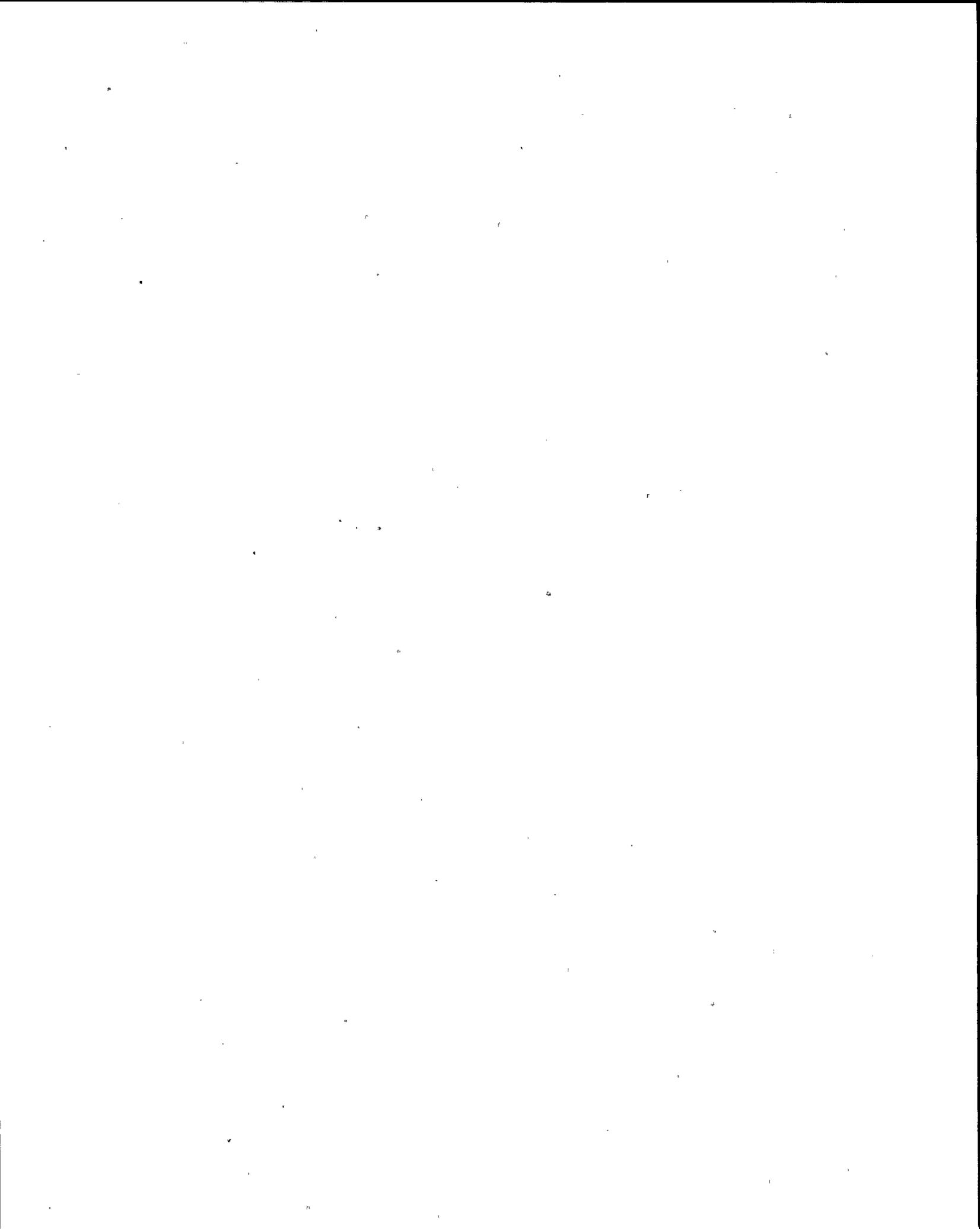
020      a

021      b



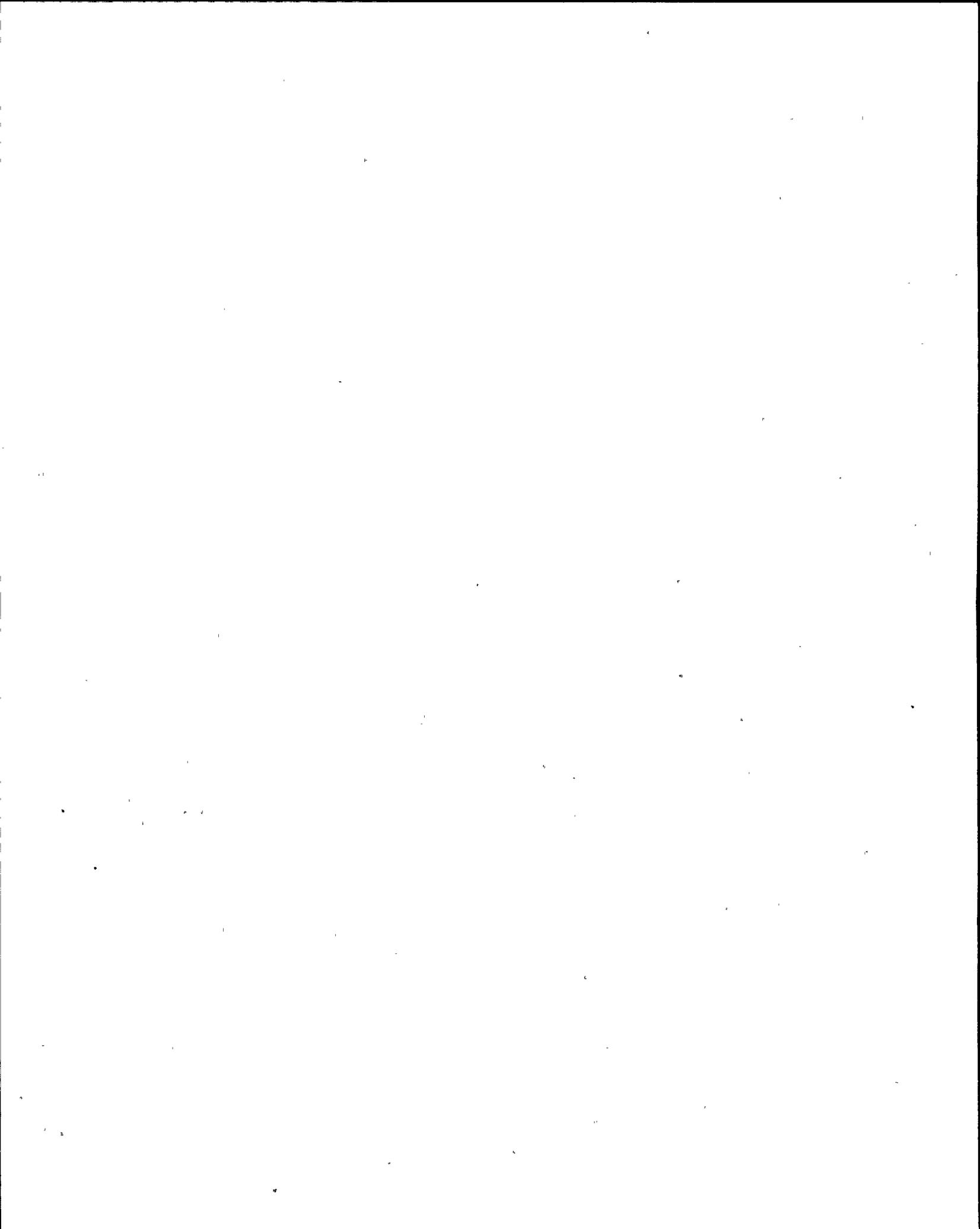
A N S W E R   K E Y

- 022      c
- 023      b
- 024      b
- 025      a
- 026      c
- 027      d
- 028      c
- 029      b
- 030      b
- 031      b
- 032      a
- 033      d
- 034      c
- 035      d
- 036      b
- 037      c
- 038      a
- 039    match with selected number in the blank
  - a    5
  - b    7
  - c    9
  - d    1
  - e    9
  - f    6
- 040      b
- 041      a
- 042      a



A N S W E R   K E Y

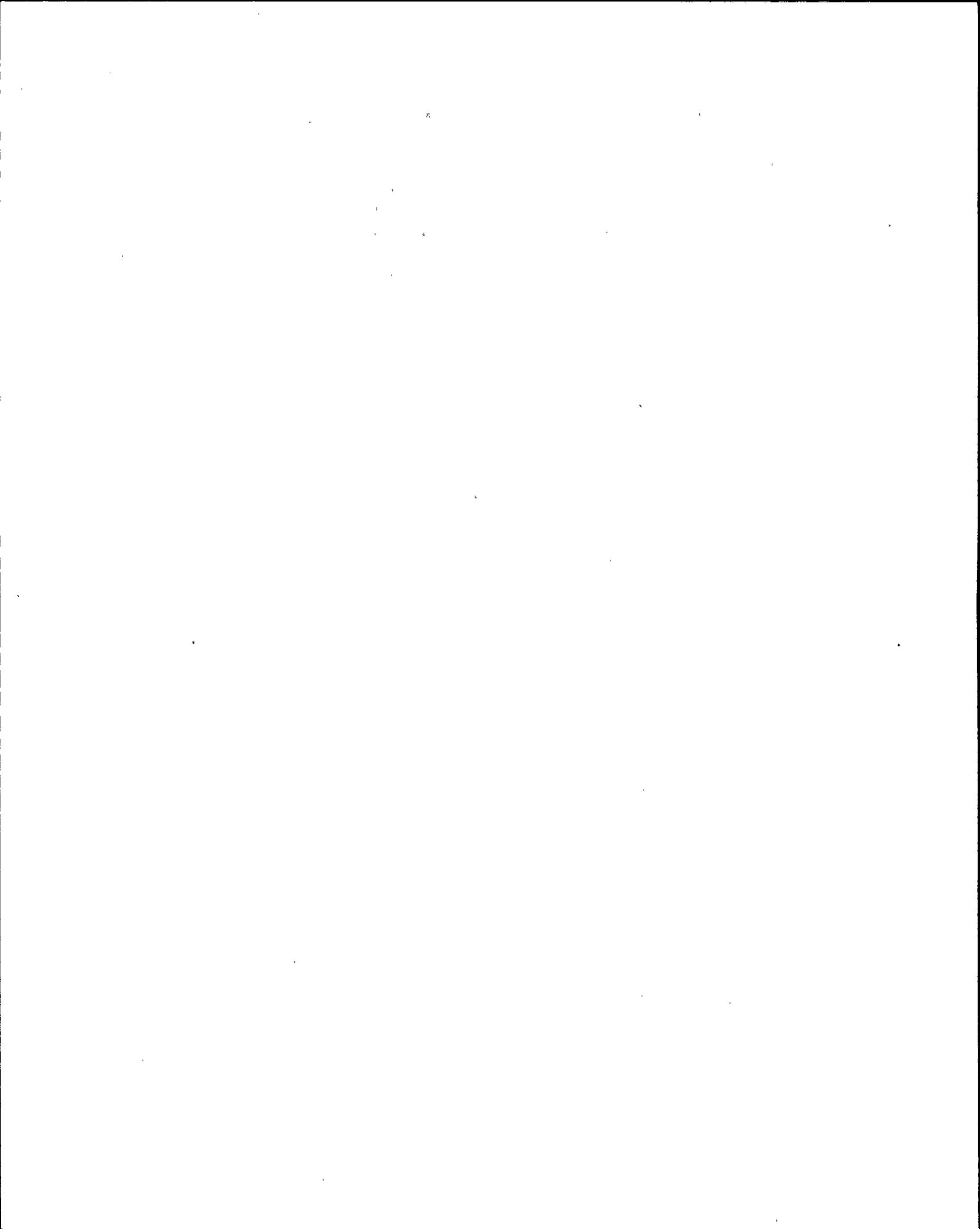
- 043     c
- 044     a
- 045     b
- 046     d
- 047     a
- 048     b
- 049     d
- 050     b
- 051     c
- 052     d
- 053     c
- 054     d
- 055     ~~a~~ d. see facility comments
- 056     d
- 057     a
- 058     b
- 059     b
- 060     d
- 061     b
- 062     a
- 063     d
- 064     a
- 065     d
- 066     c
- 067     b
- 068     a
- 069     d



A N S W E R   K E Y

- 070     b
- 071     c, b     *see facility comments*
- 072     a
- 073     b
- 074     d
- 075     b
- 076     c
- 077     c
- 078     d
- 079     d
- 080     d
- 081     c
- 082     c
- 083     b
- 084     a
- 085     a
- 086     c
- 087     c
- 088     c
- 089     c
- 090     c
- 091     d
- 092     c
- 093     a
- 094     b
- 095     c
- 096     c

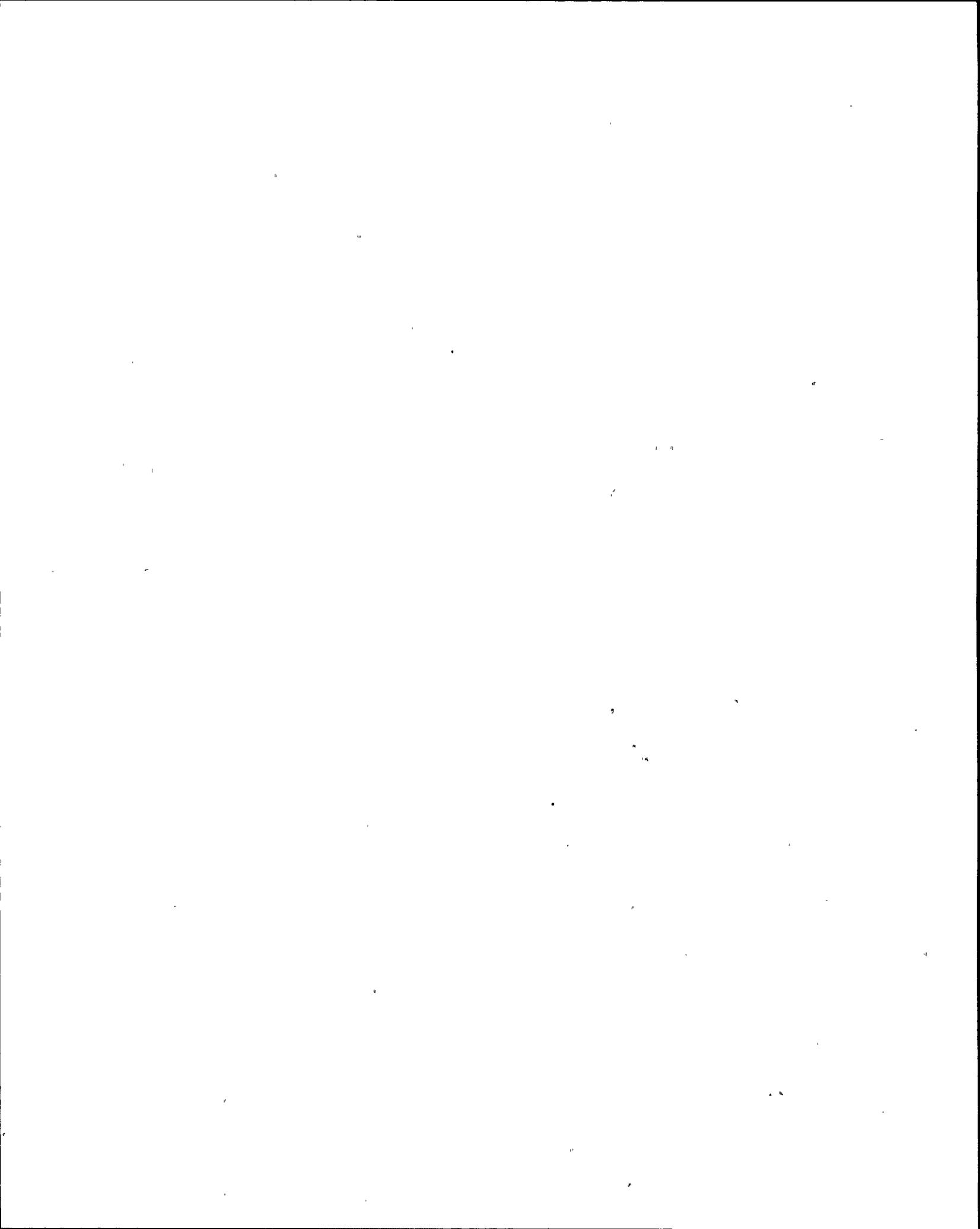
(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)



## TEST CROSS REFERENCE

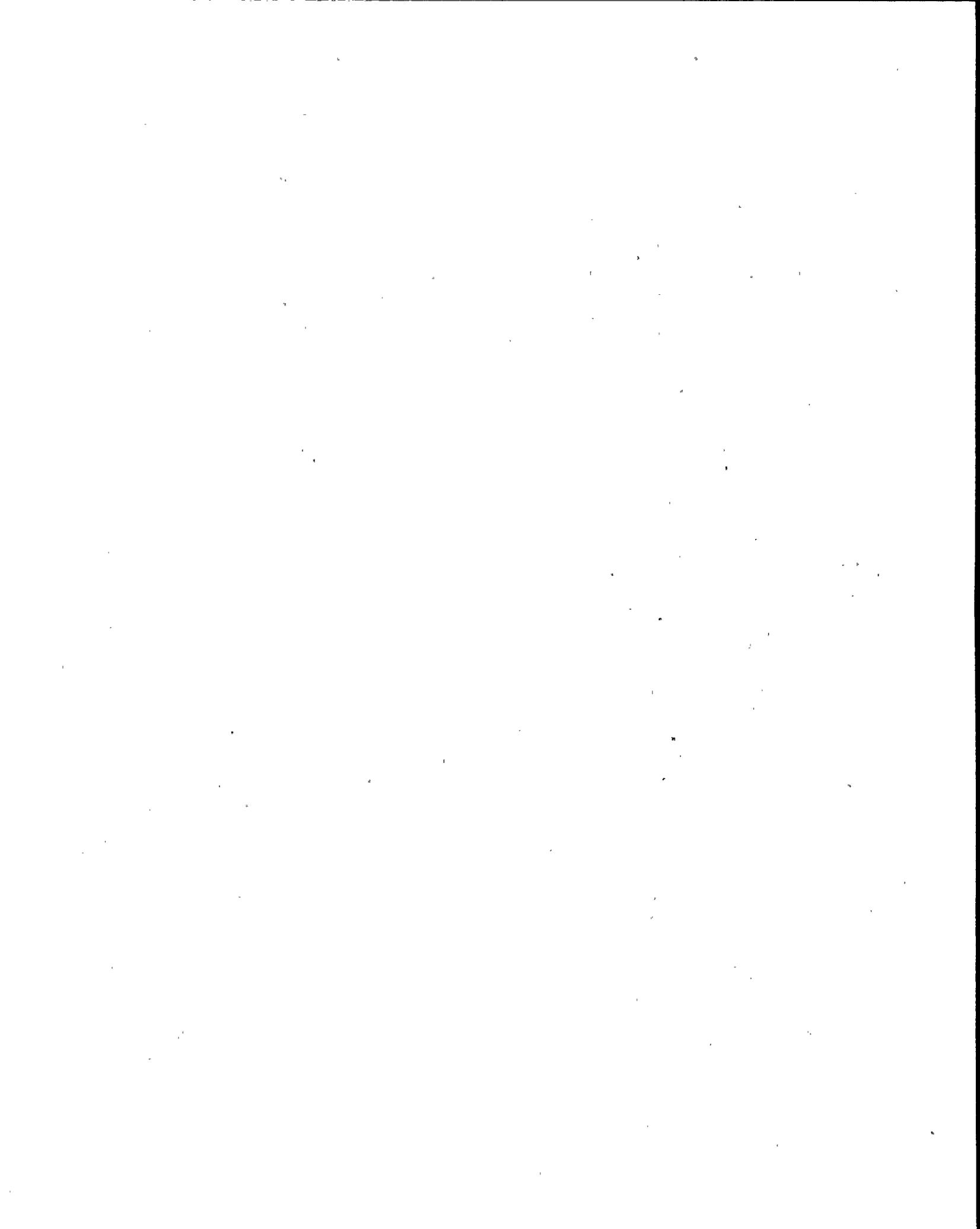
Page 1

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006	1.00	9000008
007	1.00	9000009
008	1.00	9000010
009	1.00	9000011
010	1.00	9000012
011	1.00	9000014
012	1.00	9000015
013	1.00	9000017
014	3.00	9000018
015	1.00	9000019
016	1.00	9000020
017	1.00	9000021
018	1.00	9000025
019	1.00	9000027
020	1.00	9000028
021	1.00	9000029
022	1.00	9000031
023	1.00	9000032
024	1.00	9000034
025	1.00	9000035
026	1.00	9000036
027	1.00	9000037
028	1.00	9000038
029	1.00	9000040
030	1.00	9000042
031	1.00	9000043
032	1.00	9000044
033	1.00	9000045
034	1.00	9000046
035	1.00	9000047
036	1.00	9000048
037	1.00	9000049
038	1.00	9000050
039	3.00	9000051
040	1.00	9000052
041	1.00	9000053
042	1.00	9000055
043	1.00	9000056
044	1.00	9000057
045	1.00	9000058
046	1.00	9000059
047	1.00	9000061
048	1.00	9000062
049	1.00	9000063
050	1.00	9000064
051	1.00	9000065
052	1.00	9000067
053	1.00	9000068



TEST CROSS REFERENCE

QUESTION	VALUE	REFERENCE
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055	1.00	9000070
056	1.00	9000071
057	1.00	9000072
058	1.00	9000073
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061	1.00	9000076
062	1.00	9000077
063	1.00	9000078
064	1.00	9000079
065	1.00	9000080
066	1.00	9000081
067	1.00	9000082
068	1.00	9000083
069	1.00	9000084
070	1.00	9000086
071	1.00	9000087
072	1.00	9000088
073	1.00	9000089
074	1.00	9000091
075	1.00	9000094
076	1.00	9000095
077	1.00	9000096
078	1.00	9000100
079	1.00	9000103
080	1.00	9000101
081	1.00	9000102
082	1.00	9000104
083	1.00	9000105
084	1.00	9000106
085	1.00	9000107
086	1.00	9000108
087	1.00	9000109
088	1.00	9000110
089	1.00	9000111
090	1.00	9000112
091	1.00	9000060
092	1.00	9000085
093	1.00	9000092
094	1.00	9000097
095	1.00	9000098
096	1.00	9000099
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	100.00	
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	100.00	

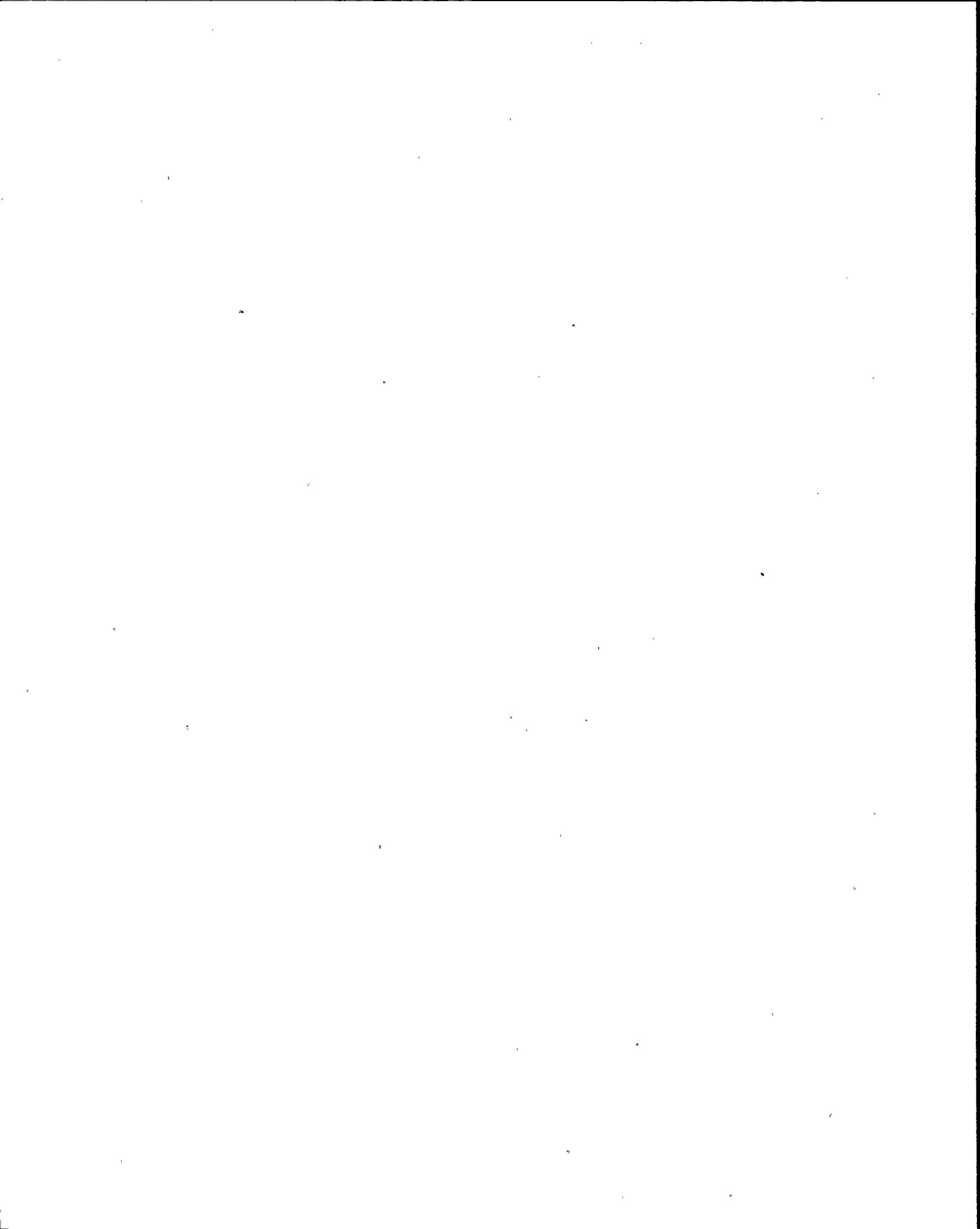


Attachment 3

Facility Comments On Initial Written Examination

and

NRC Response to Facility Comments



Facility Comments on Initial Written Examination

and

NRC Response to Facility Comments

Facility Comment: RO Question: 71 / SRO Question: 55

(IBELIP indications)

The correct answer is D, vice A. RCS pressure is not provided on this panel. The Training System Description contained an error on page 3 of SYS54 (attached) that showed the instrument range for the hot and cold leg temperatures as 0 - 700 psig. This could erroneously suggest that RCS pressure indication is provided. Training Change Request 90-5243 was submitted on 7/13/90 to correct this error.

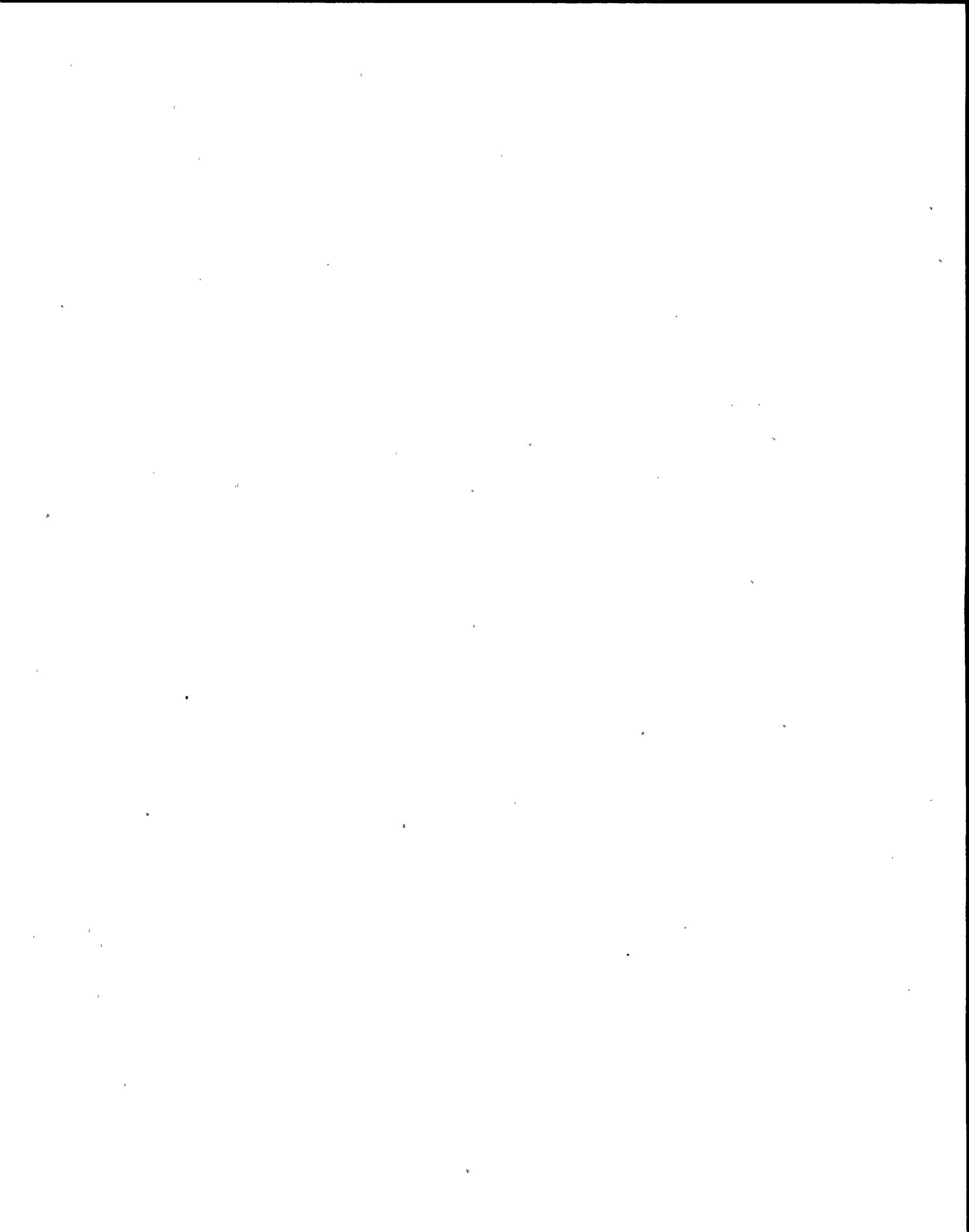
NRC Response: Comment accepted. Answer key will be changed accordingly.

Facility Comment: RO Question: 87 / SRO Question: 71

(Transition from E-3)

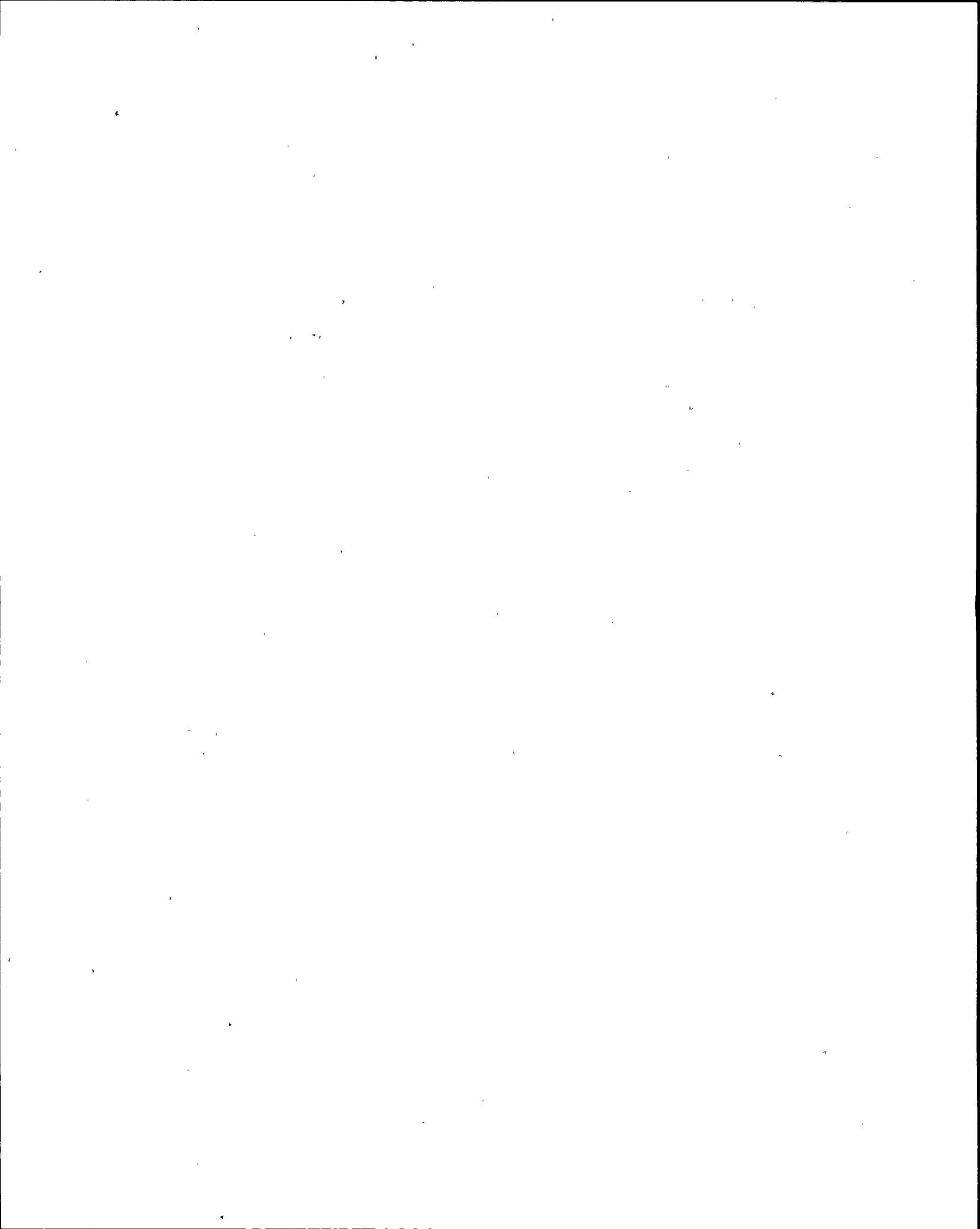
Answer B is an additional correct answer. A transition to E-2 is provided on the foldout page of E-3. Depending on the circumstances encountered, a transition to either ECA-3.1 or to E-2 would be appropriate.

NRC Response: Comment Accepted. Answer key will be changed accordingly.



Attachment 4.

Simulator Fidelity Report



## Simulator Fidelity Report

Facility Licensee: R.E. Ginna Nuclear Power Plant:

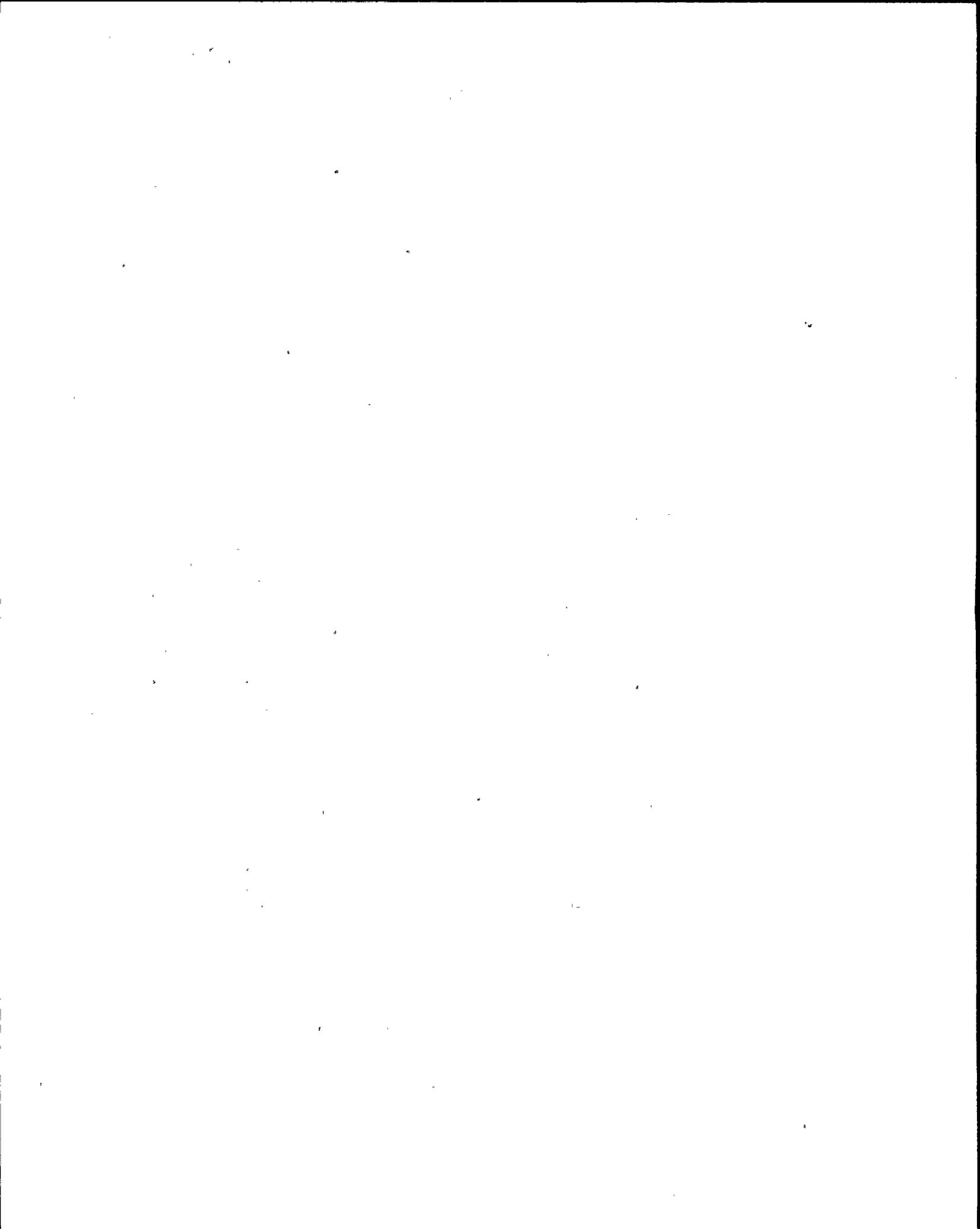
Facility Docket No.: 50-244

Operating Tests Administered on: September 11 - 12, 1990

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of 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 items were observed:

1. A seal failure on the B Reactor Coolant Pump caused a high standpipe level alarm on the A Reactor Coolant Pump in one scenario (Scenario 2-2) that was administered to two crews. The training staff is aware of this problem and will review the fidelity of this transient with lower initial RCP standpipe levels. A Simulator Deficiency Report (SDR) has been initiated for this item.
2. Failed fuel detector R-9 alarmed sooner than expected during scenario 2-2. The training staff was made aware of the problem but was unable to duplicate it after completion of the scenario. The malfunction was successfully repeated the second time the scenario was run.
3. The loss of offsite power malfunction was activated prematurely in scenario 2-2 when the simulator operator attempted to delay its activation. The training staff is aware of the problem and has initiated a SDR for this item.
4. A control rod (Rod # G-3) was intended to be immovable and subsequently drop into the core. The rod did not drop when the malfunction to drop it was activated during scenario 3-1. The training staff is aware of this problem and has initiated a SDR for this item.
5. The pressure meter for the B Service Water header (PI-2161) indicated a pressure of 40 psig while the header was simulated to be isolated with the pumps supplying it deenergized. This condition was identified while validating a scenario that was not used for the exam. The indicator had to be overridden to simulate a realistic value for the existing plant conditions.



12. The simulator would not simulate conditions of Inadequate Core Cooling for a LOCA with no SI or steam dumps.
13. The simulator gives improper indication of RCP seal temperatures and differential pressures when isolating CCW to the thermal barrier heat exchangers.

