

NIAGARA MOHAWK POWER CORPORATION

07-187-91

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

02-LOT-006-344-2-08

Revision 4 ojk 12/13/90

TITLE: EMERGENCY OPERATING PROCEDURES, SECONDARY CONTAINMENT
CONTROL (SCT)

	<u>SIGNATURE</u>	<u>DATE</u>
PREPARER	<u>[Signature]</u>	<u>12-4-90</u>
TRAINING SUPPORT SUPERVISOR	<u>[Signature]</u>	<u>12-4-90</u>
TRAINING AREA SUPERVISOR	<u>[Signature]</u>	<u>12-5-90</u>
PLANT SUPERVISOR/ USER GROUP SUPERVISOR	<u>[Signature]</u>	<u>12/10/90</u>

Summary of Pages

(Effective Date: 12/10/90)

Number of Pages 13

Date December 1990 Pages 1 - 13

MASTER CONTROLLED DOCUMENT

TRAINING DEPARTMENT, RECORDS ADMINISTRATION ONLY:

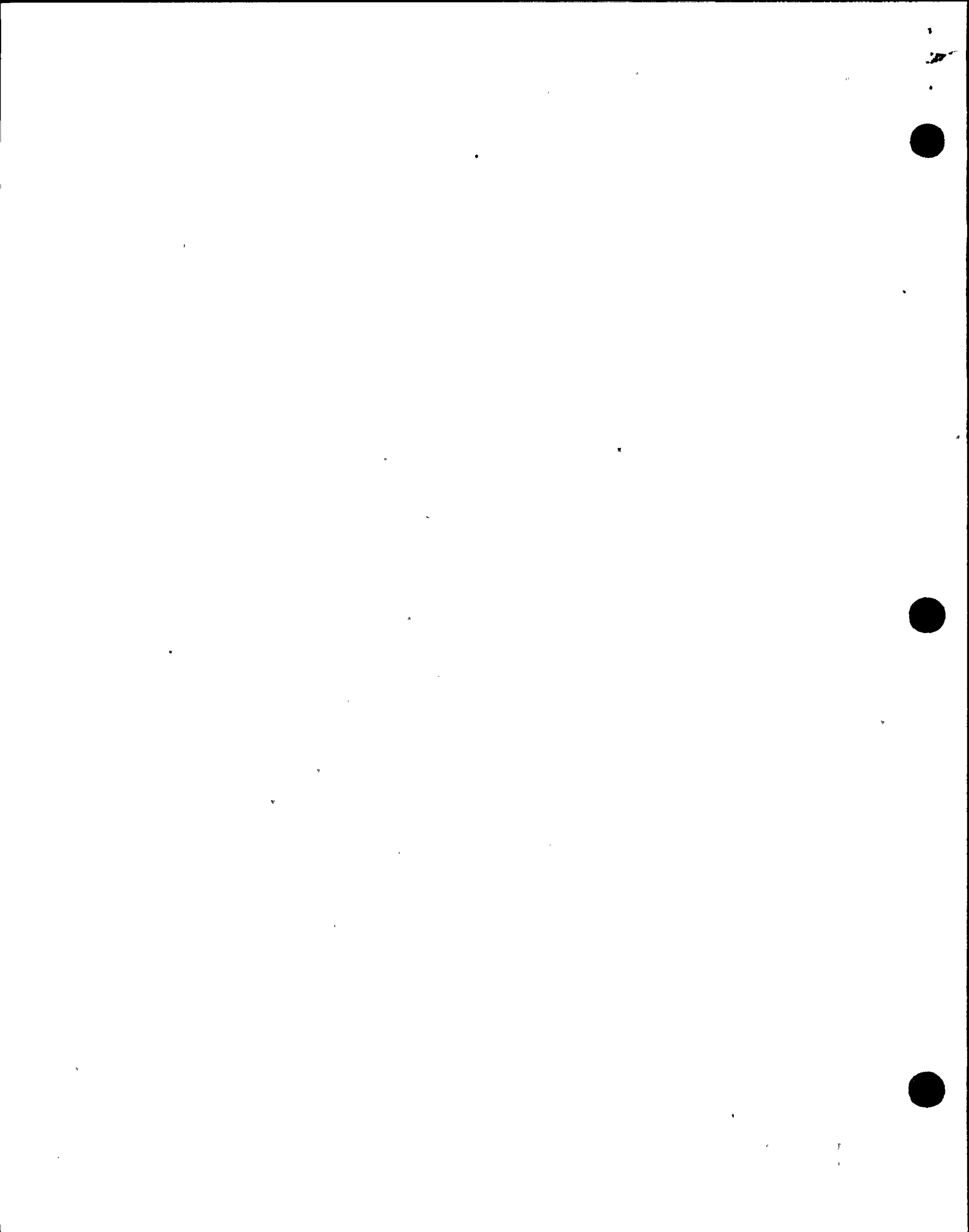
VERIFICATION _____

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ATTACHMENT 6
LESSON PLAN TEMPORARY/PUBLICATION/ADDENDUM CHANGE FORM

The attached change was made to:

Lesson plan title: Emergency Operating Procedures Secondary

Lesson plan number: 12-LOT-006-344-2-08 ^{Containment Control (SCT)}

Name of instructor initiating change: D. Pentfield

Reason for the change: Change Revision # to Rev. 4
due to typographical error

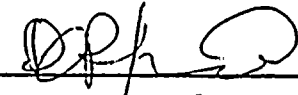
Type of change:

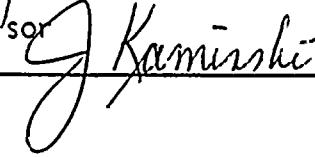
- 1. Temporary change
- 2. Publication change
- 3. Addendum change

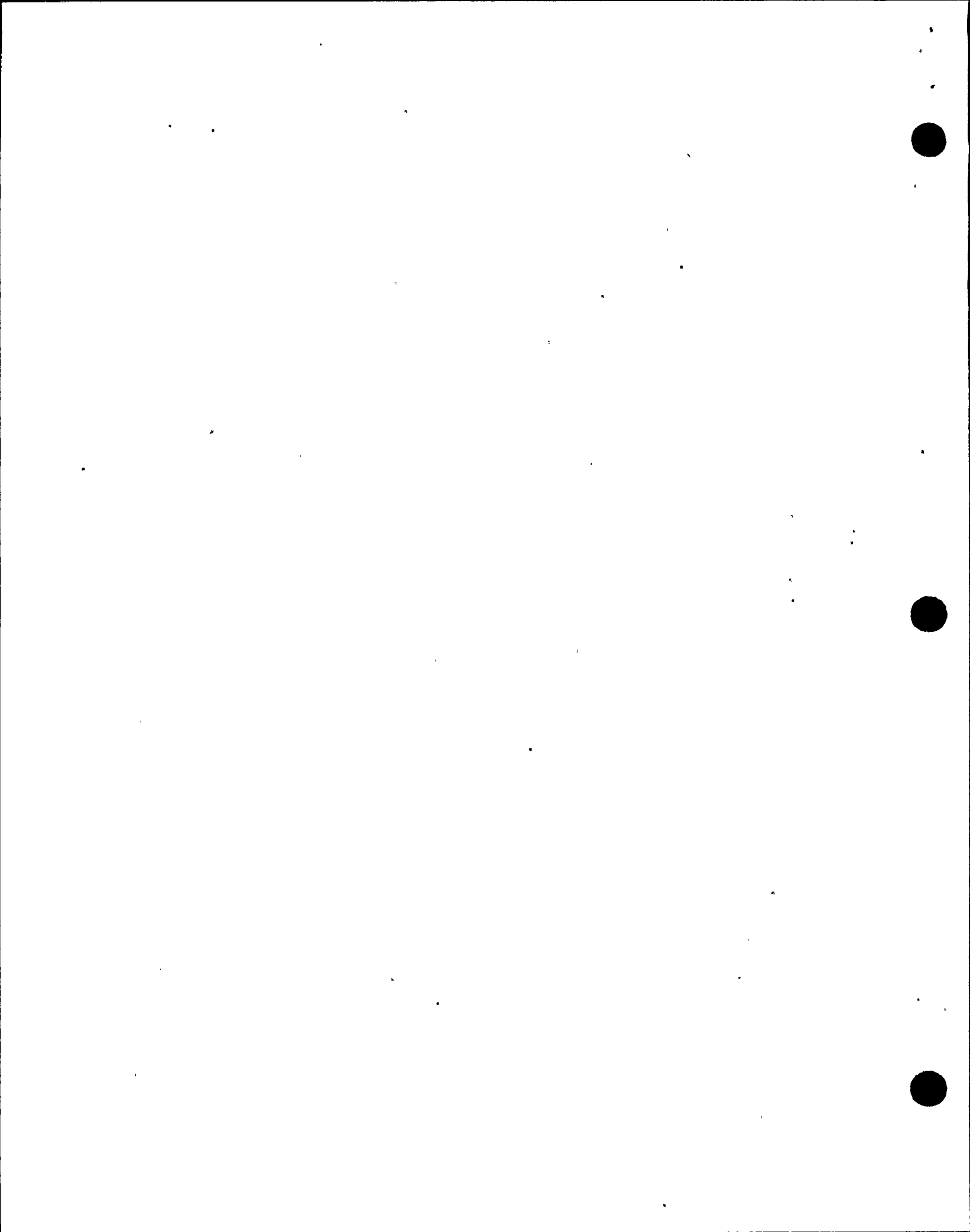
Disposition:

- 1. Incorporate this change during the next scheduled revision.
- 2. Begin revising the lesson plan immediately. Supervisor initiate the process.
- 3. To be used one time only.

Approvals:

Instructor:  /Date 12-12-90

Training Area Supervisor (or designee):  /Date 12-13-90



I. TRAINING DESCRIPTION

- A. Title of Lesson: Emergency Operating Procedures, Secondary Containment Control - Section SCT
- B. Lesson Description: This lesson plan discusses actions taken to control Secondary Containment temperature.
- C. Estimate of the Duration of the Lesson: 1 hour
- D. Method of Evaluation, Grade Format, and Standard of Evaluation: Written examination with 80% minimum passing grade.
- E. Method and Setting of Instruction: Classroom Lecture
- F. Prerequisites:
 - 1. Instructor:
 - a. Certified in accordance with NTP-16.
 - 2. Trainee:
 - a. Certified in accordance with NTP-10.
- G. References:
 - 1. BWROG Emergency Procedure Guidelines, Rev. 4
 - 2. Plant Procedure N2-EOP-CT, Rev. 4

II. REQUIREMENTS

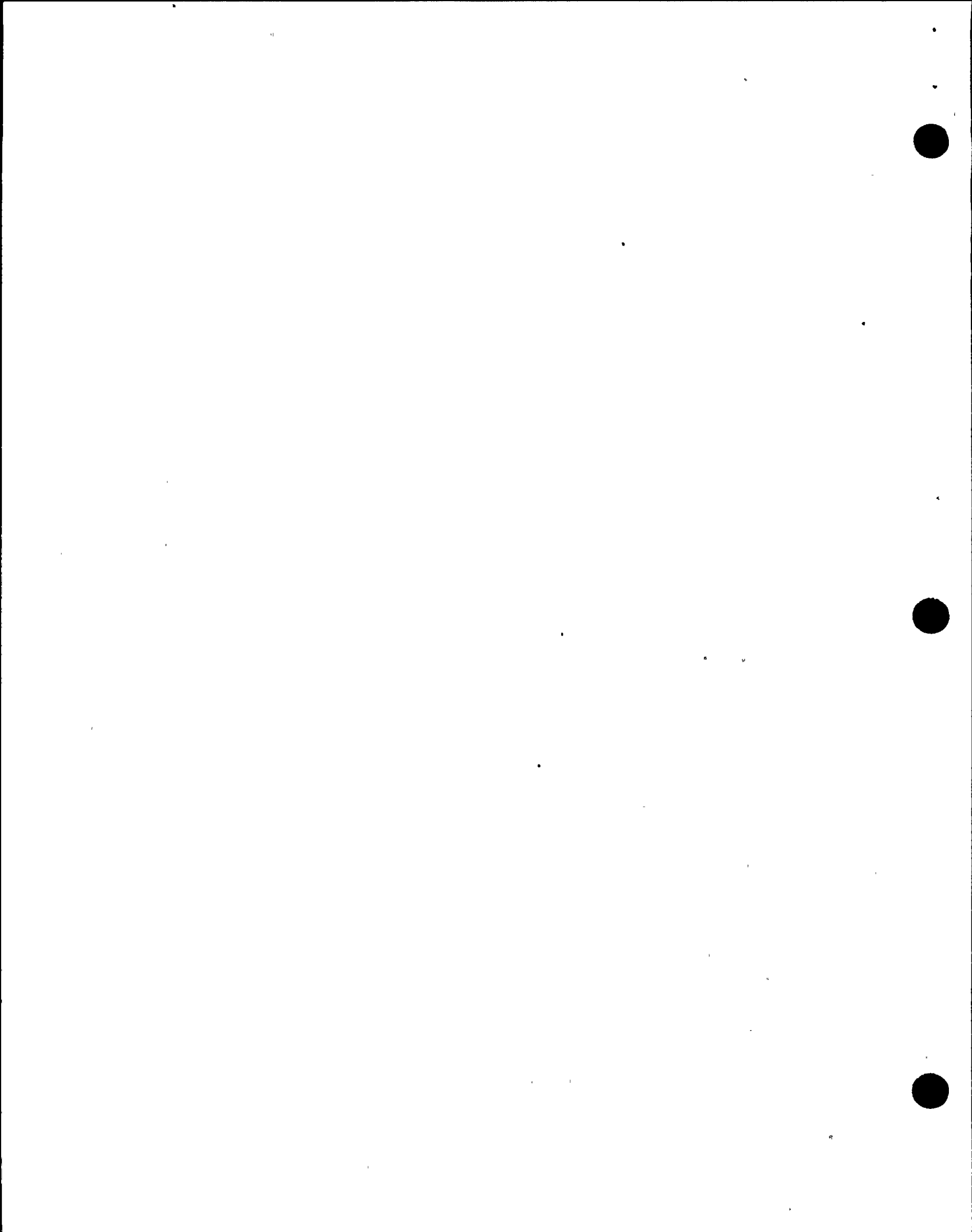
- A. AP-9, Administration of Training
- B. NTP-10, Training of Licensed Operator Candidates

III. TRAINING MATERIALS

- A. Instructor Materials:
 - 1. Transparencies Package
 - 2. Overhead Projector
 - 3. Whiteboard and Felt Tip Markers
 - 4. EOP Flowchart for SCT
 - 5. Training Record
- B. Trainee Materials:
 - 1. EOP Flowchart for SCT
 - 2. Course Evaluation Form

IV. EXAM AND MASTER ANSWER KEYS

Will be generated and administered as necessary. They will be on permanent file in the Records Room.



V. LEARNING OBJECTIVES

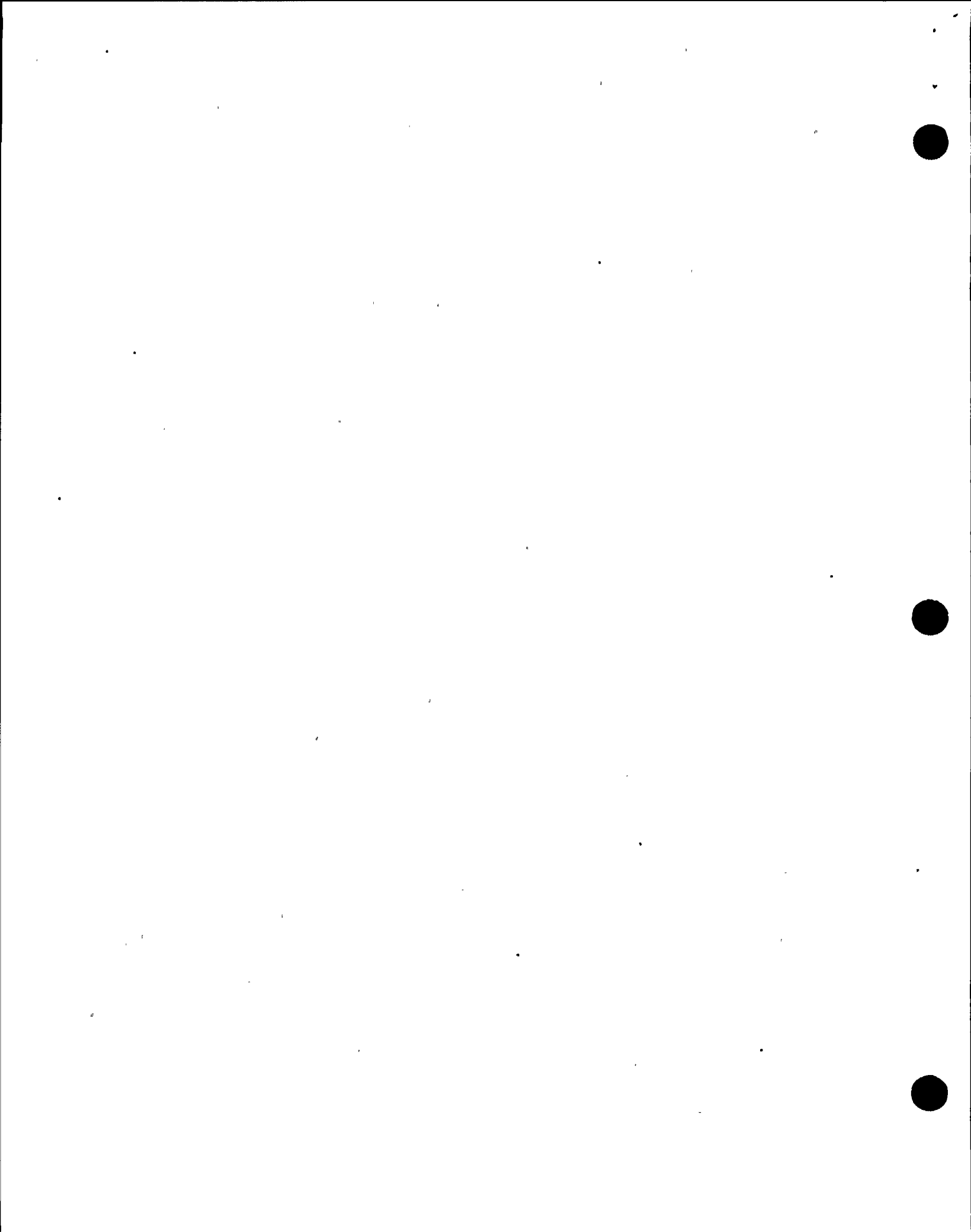
Upon completion of this training, the trainee will have gained the knowledge to perform the following:

A. Terminal Objectives:

- TO-1.0 Given conditions requiring the use of the Emergency Operating Procedure, use the procedure to place the plant in a stable condition as prescribed in the procedure.
- TO-2.0 (SRO ONLY) Direct the actions required per N2-EOP-SC Section SCT. (3449460603)
- TO-3.0 (SRO ONLY) Respond to a RCIC room high temperature. (3449760403)
- TO-4.0 Perform the actions required for a steam line rupture. (2000400501)
- TO-5.0 Perform the actions required for a large break LOCA, outside the Primary Containment. (2009120501)
- TO-6.0 Scram the reactor manually and take immediate actions. (2010130101)
- TO-7.0 Perform post-scrum recovery actions in accordance with N2-OP-1091C.
- TO-8.0 Restore Reactor Building ventilation following an isolation. (2889040101)

B. Enabling Objectives:

- EO-1.0 State the purpose of the Reactor Building Temperature Control Section of the Secondary Containment Control Procedures.
- EO-2.0 State the entry conditions for the Reactor Building Temperature Control section of the Secondary Containment Control Procedures.
- EO-3.0 Given the procedural step, discuss the technical basis for that step.



I. INTRODUCTION

A. Student Learning Objectives

B. Purpose

1. To provide the actions necessary to control Reactor Building temperature to:
 - Protect equipment in the Reactor Building.
 - Limit radioactivity release to the Reactor Building, and either
 - Maintain Reactor Building integrity, or
 - Limit radioactivity release from the Reactor Building.

C. Procedure Overview

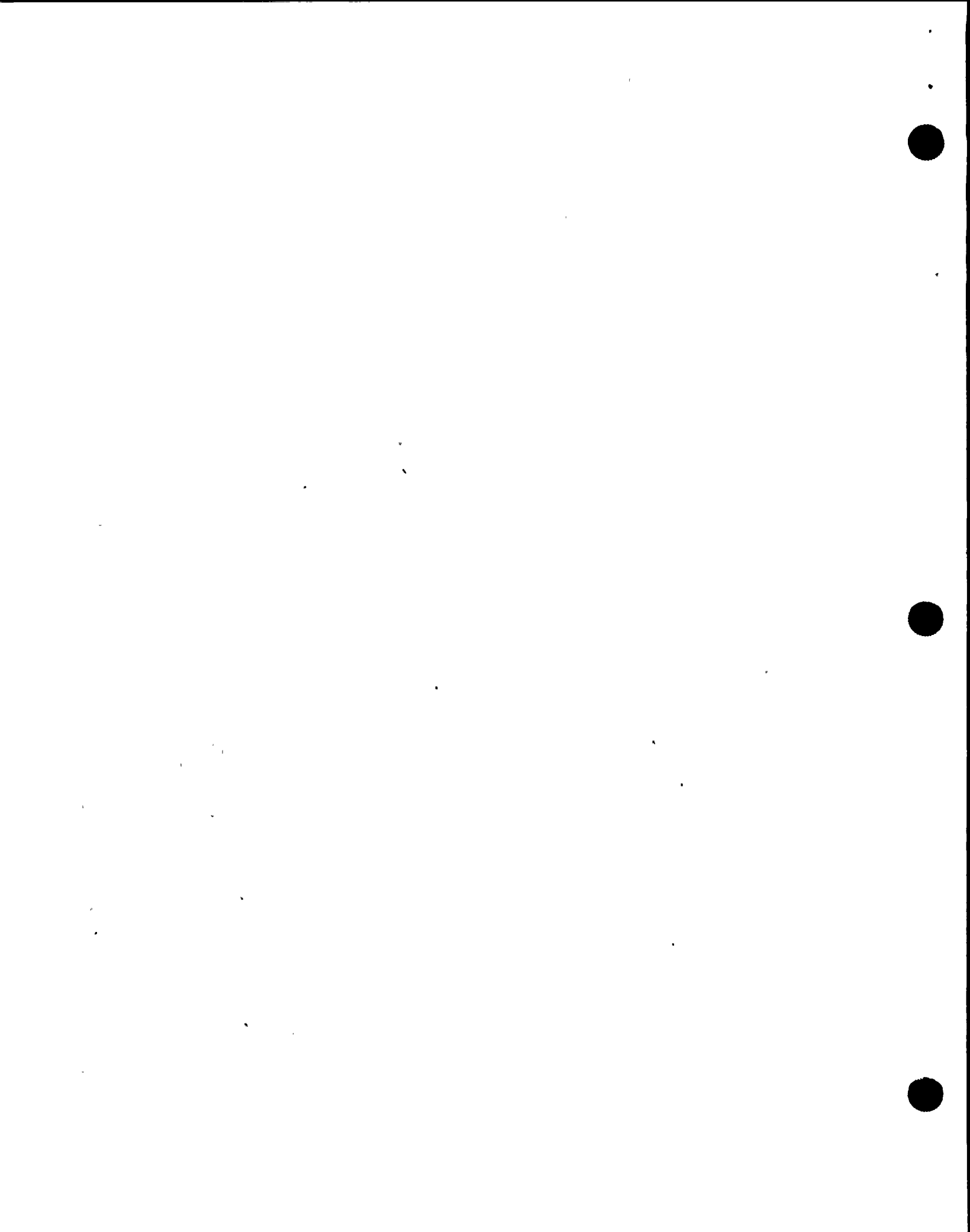
1. The Reactor Building Temperature Control section of the Secondary Containment Control Procedure is executed concurrently with the following sections:
 - a. Reactor Building Radiation Control
 - b. Reactor Building Level Control
2. The symptomatic approach to emergency response, where the initiating event of the transient is not known in advance demands concurrent execution of these sections.

Preliminary Activities:

1. Introduce self to class (if unfamiliar).
2. Distribute TR for completion.
3. Distribute Course Evaluation Forms and describe their use.
4. Discuss Method of Evaluation.

Review Learning Objectives with the class.

EO-1.0



3. The values and trends of parameter, and the status of plant equipment during the event will dictate the order of execution of each flowpath.

II. DETAILED DESCRIPTION

A. Entry Conditions

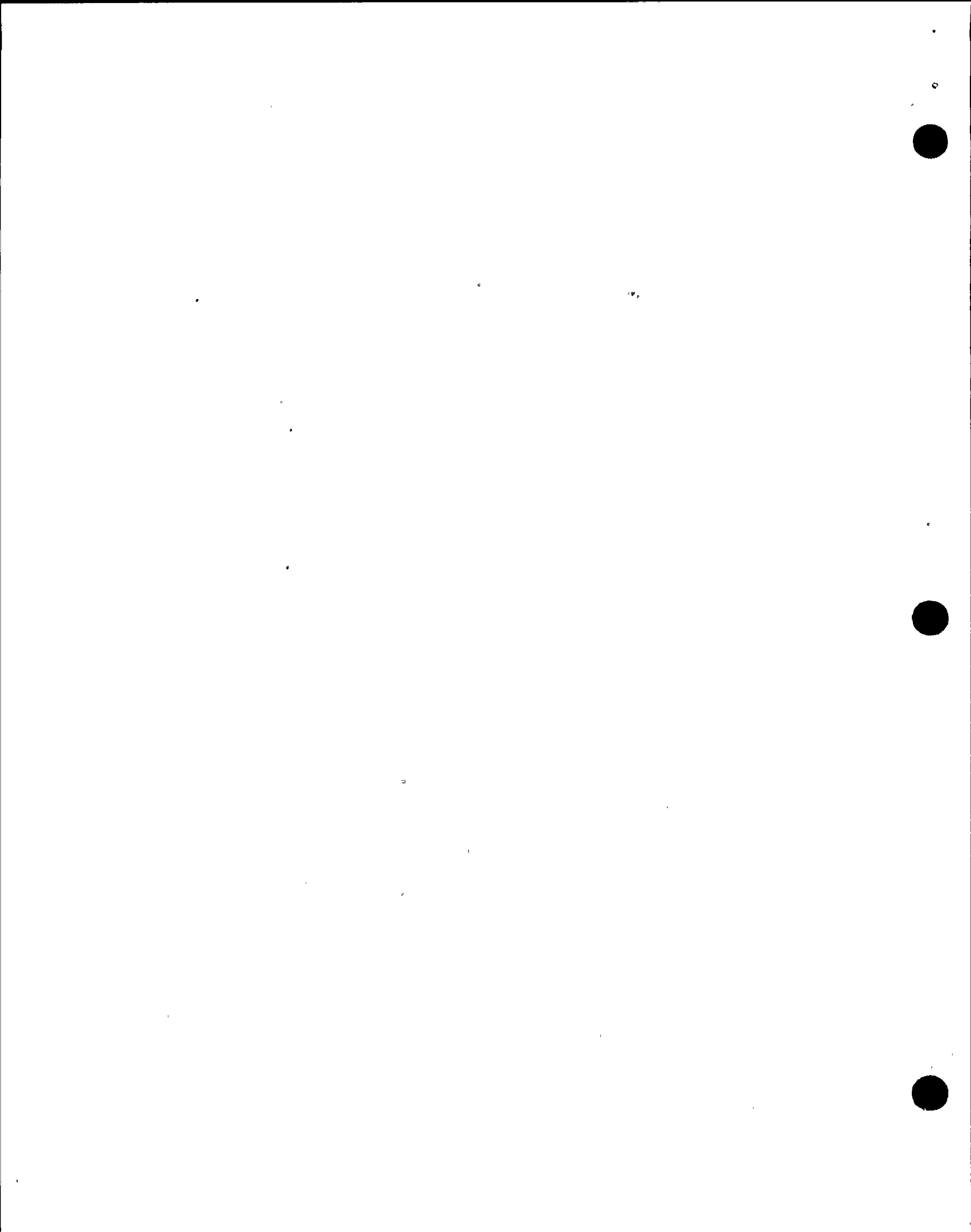
1. Setpoints

- a. The conditions which require entry into this procedure are:

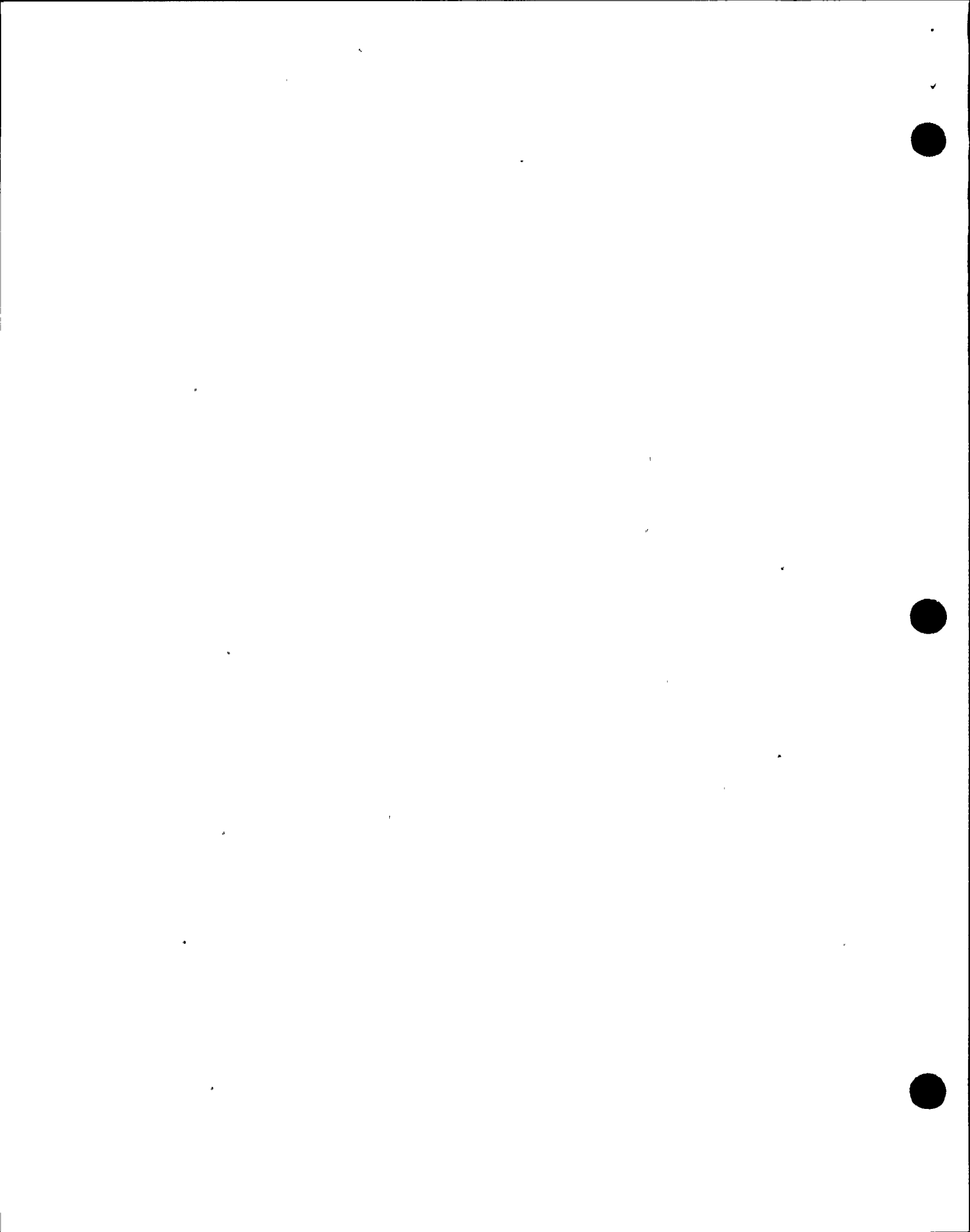
- 1) Differential pressure at or above 0 in. of water.
 - Indicates a potential loss of Secondary Containment structural integrity, which could result in uncontrolled release of radioactivity.
- 2) Area temperature above an isolation setpoint.
 - Indicates steam may be discharging from Primary System. Increasing area temperatures may compromise equipment needed to carry out EOP actions, and may limit access by personnel.

NOTE: TP's may be used to highlight points of interest on flowcharts; use TP's to show procedural steps if flowchart not used.

EO-2.0

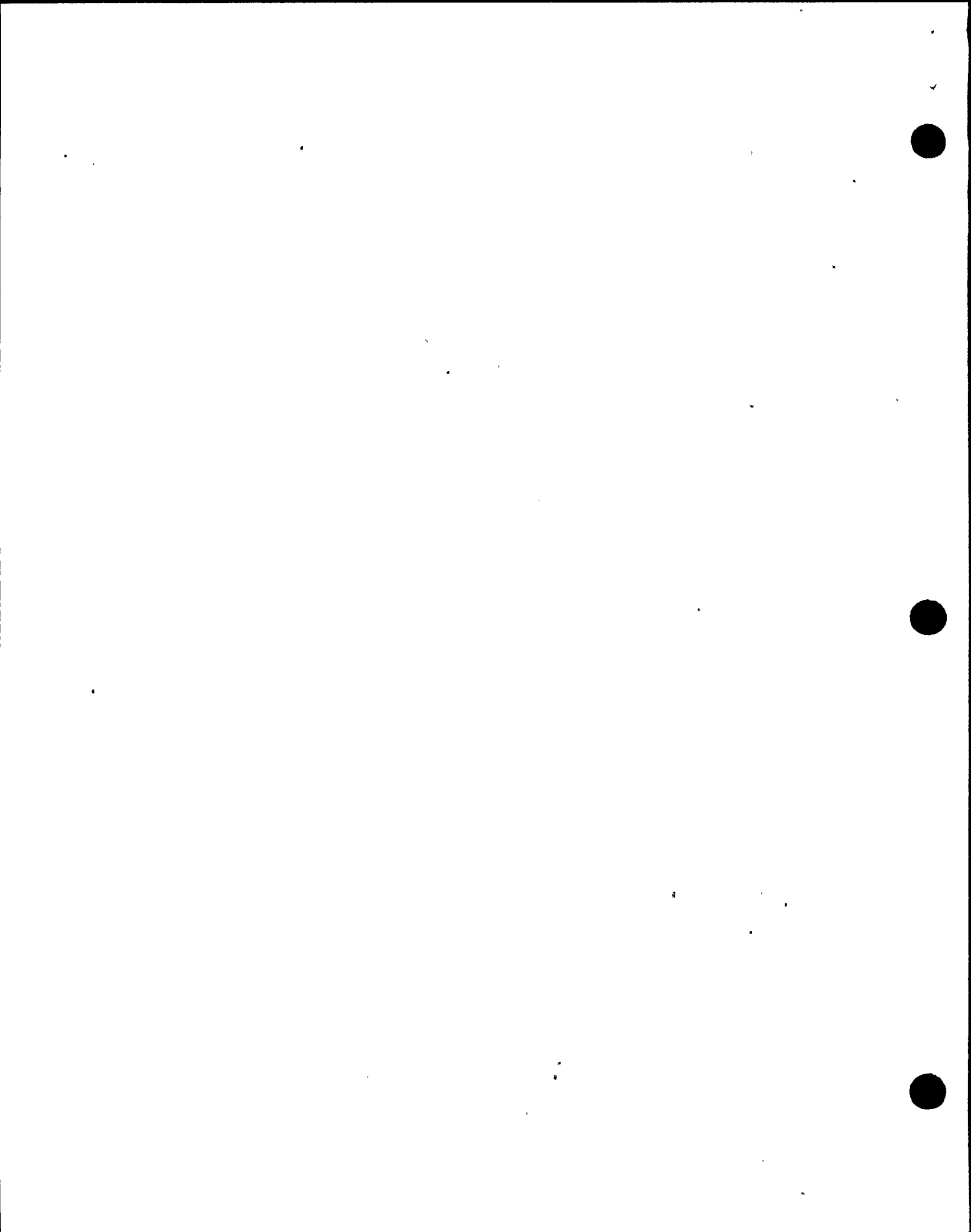


- 3) Area radiation level alarm unexpectedly high.
 - Indicates water may be leaking from a Primary System.
 - 4) HVR exhaust radiation level above an isolation setpoint.
 - Indicates radioactivity may be discharging to the environment when HVR should have automatically isolated.
 - 5) Floor drain sump water level high-high.
 - Indicates steam water, or both may be discharging to the Secondary Containment.
- b. The occurrence of any one of these conditions requires entry into this procedure.
 - c. If an entry condition clears prior to exiting this procedure, and then reoccurs, re-entry at the beginning of the procedure is required.
 - d. If a second entry condition occurs while performing the procedure, re-entry at the beginning is again required.



- e. If all entry conditions clear while executing this procedure, this procedure may be exited.
- f. Termination of the emergency rather than termination of an event is the basis for exiting conditions for EOP's. Consequently, these procedures may be exited at any point during their execution if the operator determines that an emergency no longer exists. The EOP's have been written so that if an operator remains in a procedure when an emergency no longer exists, they still provide proper guidance. Alternately, if the operator exits a procedure prematurely, reoccurrence of an entry condition will follow and the appropriate EOP procedure will be re-entered. (TMR #02-88.232)

2. Setpoint bases



- a. The values selected were chosen on the basis of being simple, readily identifiable and operationally significant. They also provide advance warning of potential emergency conditions, allowing action to be taken which may prevent more severe circumstances.

B. Procedural Steps

1. Activate the Site Emergency Plan, if required, in accordance with EAP-1.

- It is appropriate to activate the E-Plan, should plant conditions be at the action levels specified in EAP-1.

2. While executing the following steps

- a. IF
HVR exhaust radiation level exceeds an isolation setpoint
THEN
Confirm or manually initiate isolation of HVR.
Confirm initiation or manually initiate SBT.

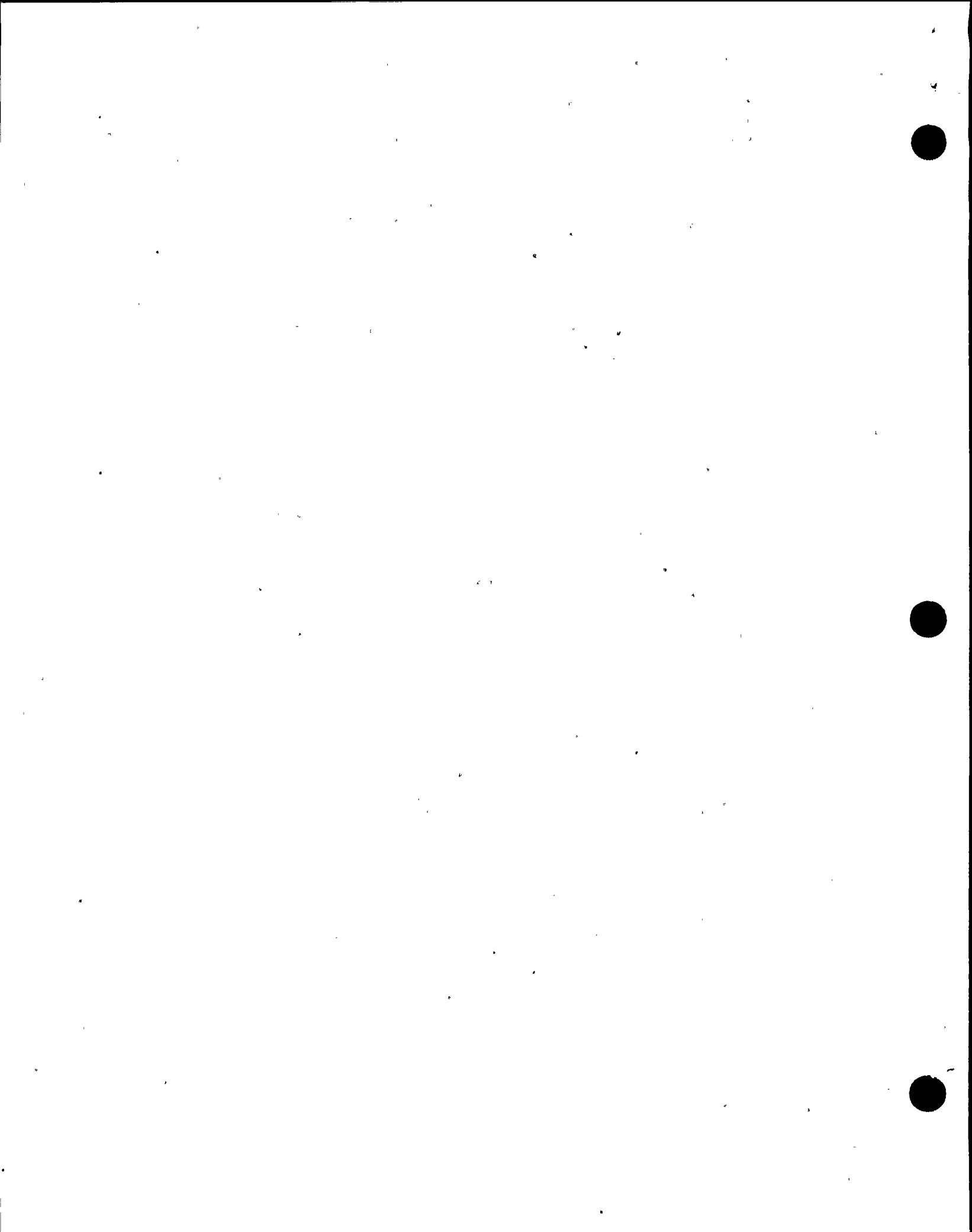
EO-3.0



- Confirming isolation of Rx Building HVAC will ensure termination of any release of radioactivity to the environment from this system.
 - SBTG is the normal means employed under post-transient conditions for maintaining a negative Secondary Containment pressure. Exhaust from SBTG is processed prior to discharge through an elevated release point.
- b. IF
HVR isolates
AND
HVR exhaust radiation level is below the isolation setpoint,
THEN
Restart HVR (OP-52)
- Defeat the high drywell pressure and low RPV water level isolation interlock, if necessary.
 - However bypassing high exhaust radiation interlocks is not authorized.

EO-3.0

EO-3.0



- If Rx Building HVAC is isolated, it is appropriate to restart this system and use it to regain control of Rx Building temperature and pressure once it has been confirmed that restart will not result in excessive radioactivity release.
3. Monitor and control Reactor Building Temperature
- Provides a smooth transition from general plant procedures to EOPs. EO-3.0
 - Assures normal methods have been employed prior to more complex actions.
4. Operate unit coolers in affected areas. Note: Normally, these cycle automatically on temperature. EO-3.0
- Assures normal method of area temperature control is being utilized.
5. WAIT until a RB area temperature exceeds its isolation setpoint. EO-3.0
- Delaying the performance of the subsequent actions in this procedural leg confirms that area temperature is increasing and further action is required.



6. Isolate all systems that are discharging into the area except systems required to shutdown the reactor OR assure adequate core cooling, OR protect Primary Containment integrity OR suppress a fire.

- There are only two possible sources of sufficient heat to cause an isolation.

- 1) A fire
- 2) Steam or liquid from a high energy source.

- This step terminates the heat addition from the high energy source.
- A fire is adequately addressed by not isolating systems used to suppress it.

7. Perform Steps #7 and #9 concurrently.

8. WAIT until more than one RB area temperature exceeds 135°F.

- 135°F is the maximum safety operating temperature.
- More than one area indicates a wide spread problem.

9. Shutdown the reactor (OP-1014D)

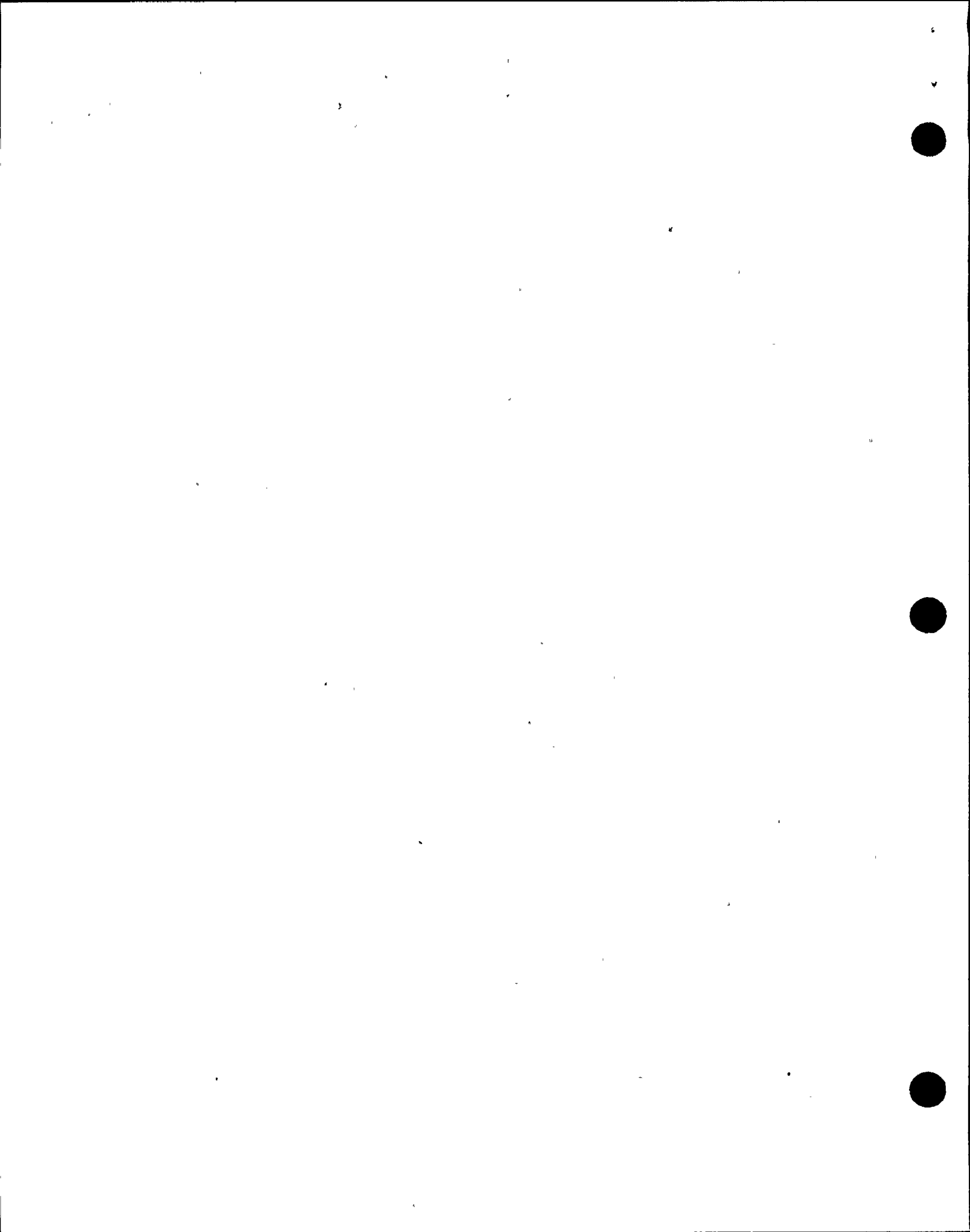
- Places the reactor in the lowest energy state by normal means.

EO-3.0

EO-3.0

Note: - A scram is not precluded in this step.

EO-3.0



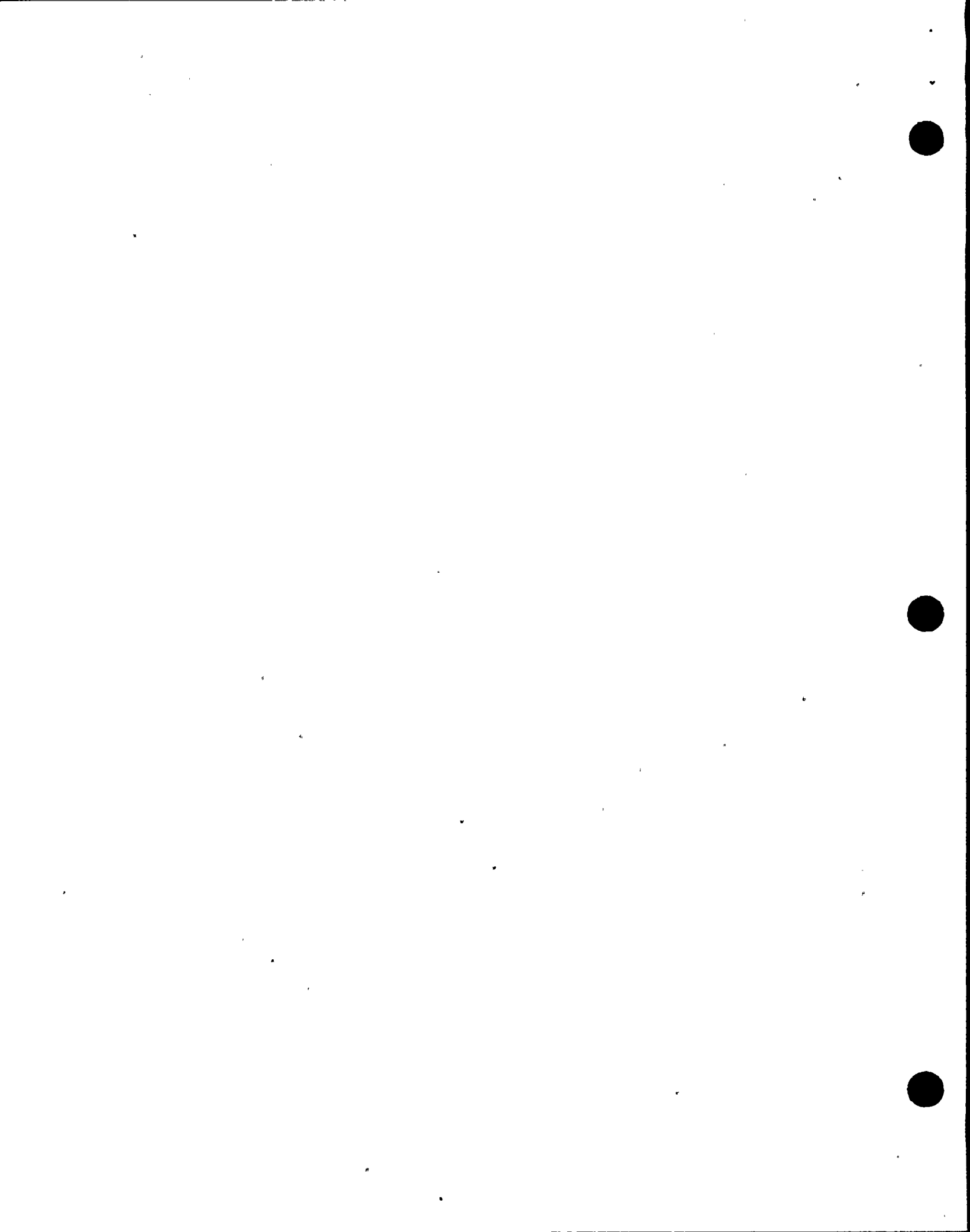
10. WAIT until a Primary System is discharging into the Reactor Building.
- By the time this step is reached, at least one of the following conditions exist:
 - System has not been isolated due to adequate core cooling, shutdown of the reactor, or protecting Primary Containment integrity.
 - Isolation is not possible, i.e. no isolation valve or valve inop.
 - Source of discharge not known.
11. BEFORE any area temperature reaches 135°F.
12. Enter RPV control and execute it concurrently with this procedure.
- Entry into RPV control will result in a Rx scram and will reduce the amount of heat the RPV is discharging to decay heat levels.
 - Unless there is a fire, this action should be sufficient to terminate the Reactor Building temperature rise.
 - The "offending" system may no longer be required for adequate core cooling, shutdown, or Primary Containment integrity.

Q: What is the definition of a "Primary System"?

A: The pipes, valves and other equipment which connect directly to the RPV such that a reduction in RPV pressure will decrease the steam or water being discharged through an unisolated break in the system.

EO-3.0

EO-3.0



13. WAIT until more than one RB area temperature exceeds 135°F.
- More than one area indicates a widespread problem. EO-3.0
14. Emergency RPV depressurization is required.
- Rapidly places a reactor in a depressurized state to minimize flow out the break. EO-3.0
 - Beyond the maximum safe operating temperature, Secondary Containment integrity and continued operation of safety related systems is no longer assured.
 - Flags direct operators that overrides in EOP-RP, C3, and C5, contain pertinent guidance information. EO-3.0

Q: What is the purpose of EOP-SCT?

A: To provide the actions necessary to control Reactor Building temperature.

Q: What are the entry conditions of EOP-SCT?

- A:
- Differential pressure at or above 0 in. of water
 - Area temperature above an isolation setpoint
 - Area radiation level alarm unexpectedly high



III. WRAP-UP

A. Summary

Action in the Reactor Building temperature control procedure monitors and controls Reactor Building temperatures using systems normally employed for this purpose. If conditions exist such that any area temperature exceeds the maximum normal operating temperature, all systems that are discharging into the area are isolated except those systems required to shut down the reactor, assure adequate core cooling, or suppress a working fire.

If Reactor Building temperature continues to increase, with a Primary System discharging into an area and the maximum safe operating temperature for more than one area is approached, emergency RPV depressurization is required. If the temperature problem is not due to a Primary System discharge, a normal reactor shutdown is directed.

- HVR exhaust radiation level above an isolation setpoint
- Floor drain sump water level high-high

