

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

02-REQ-009-TRA-2-22 Revision 1

07-190-91

TITLE: ATWS WITH POWER OSCILLATIONS

PREPARED BY Ant. Sherman SIGNATURE DATE 12-3-90

VALIDATED BY J. Kaminski DATE 12-12-90
UNIT OPERATIONS TRAINING SUPERVISOR

PLANT SUPERVISOR/
USER GROUP SUPERVISOR Donna FOR T. TORLEY DATE 12/12/90

Summary of Pages

(Effective Date: 12-12-90)

Number of Pages: 30

<u>Date</u>	<u>Pages</u>
November 1990	1 - 30

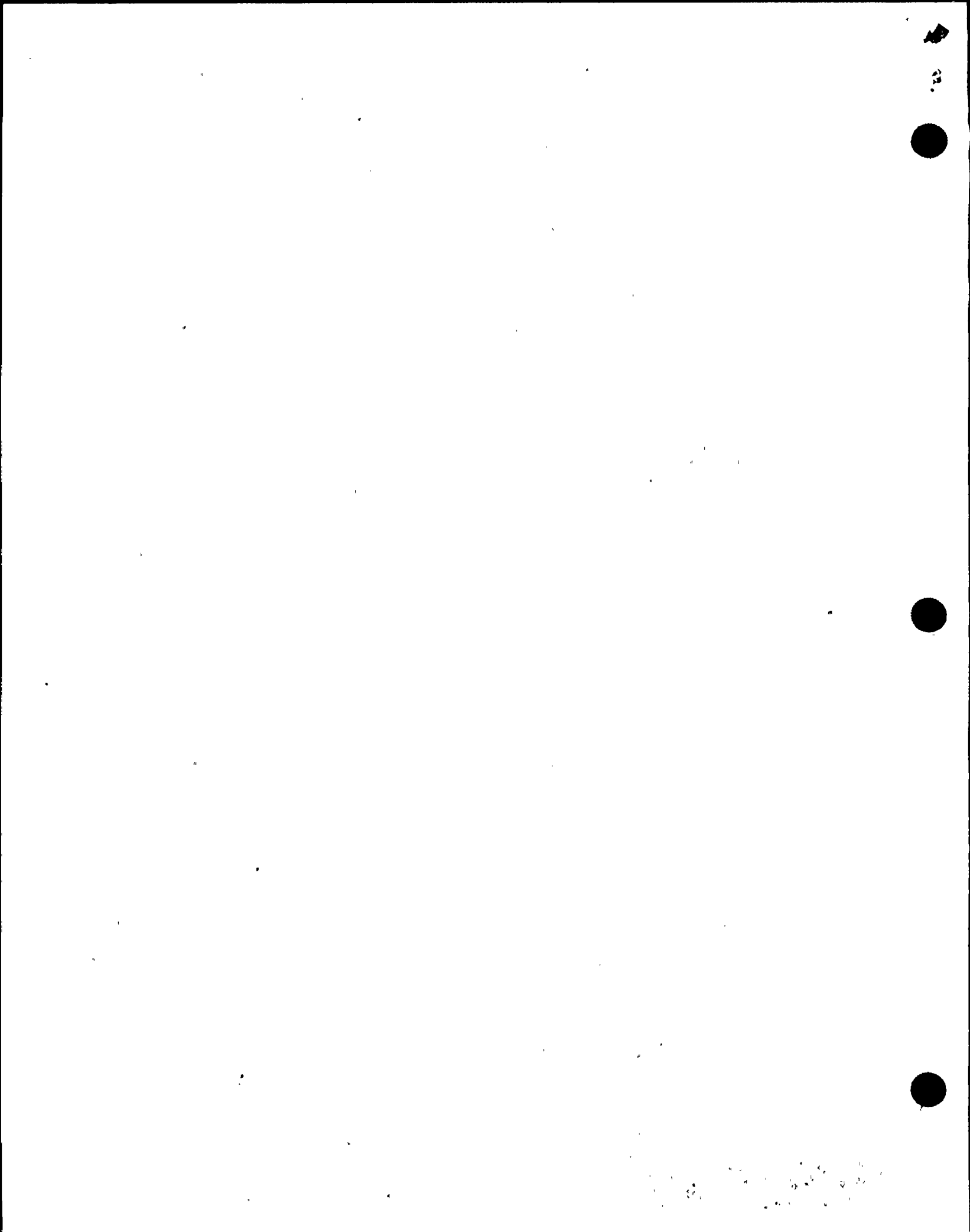
TRAINING DEPARTMENT RECORDS ADMINISTRATION ONLY:

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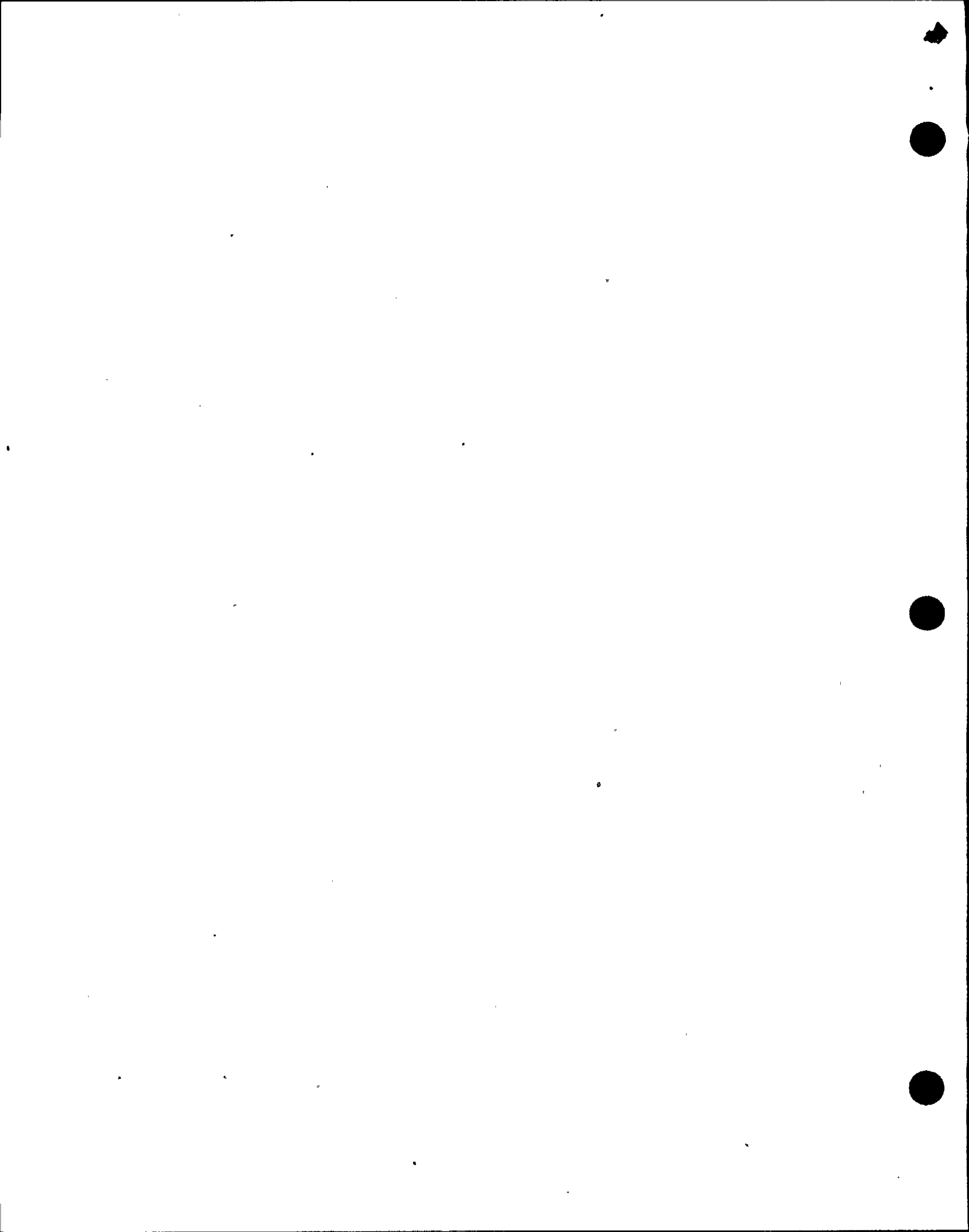


I. TRAINING DESCRIPTION

- A. Title of Lesson: ATWS With Power Oscillations
- B. Lesson Description: Using the Nine Mile Point Unit 2 Simulator the Instructor will facilitate proper operator performance of all NMP-Unit 2 procedures and guidelines for conduct of operations during each scenario. The Instructor may use Freeze, Backtrack and or reset the Simulator from any point in this scenario to aid in the facilitation of this lesson.
- C. Estimate of the Duration of the Lesson: 40 minutes
- D. Method of Instruction: Simulator Performance
- E. Prerequisites:
 - 1. Instructor:
 - a. Qualified as a simulator instructor per NTP-16.1
 - 2. Trainee:
 - a. Meet the eligibility requirements per 10CFR55, or
 - b. Be recommended for this training by the Operations Superintendent, his designee, or the Training Superintendent.
- F. References:
 - 1. N2-EOP's - Emergency Operating Procedures
 - 2. N2-OP-29 - Reactor Recirculation System
 - 3. N2-OP-101D - Power Changes
- G. Annual/Biennial
 - 1. 02-REQ-MAN-A12-2-00, Loss of Core Coolant Flow/Natural Circulation
 - 2. 02-REQ-MAN-B08-2-00, Failure of Reactor to Scram

II. REQUIREMENTS

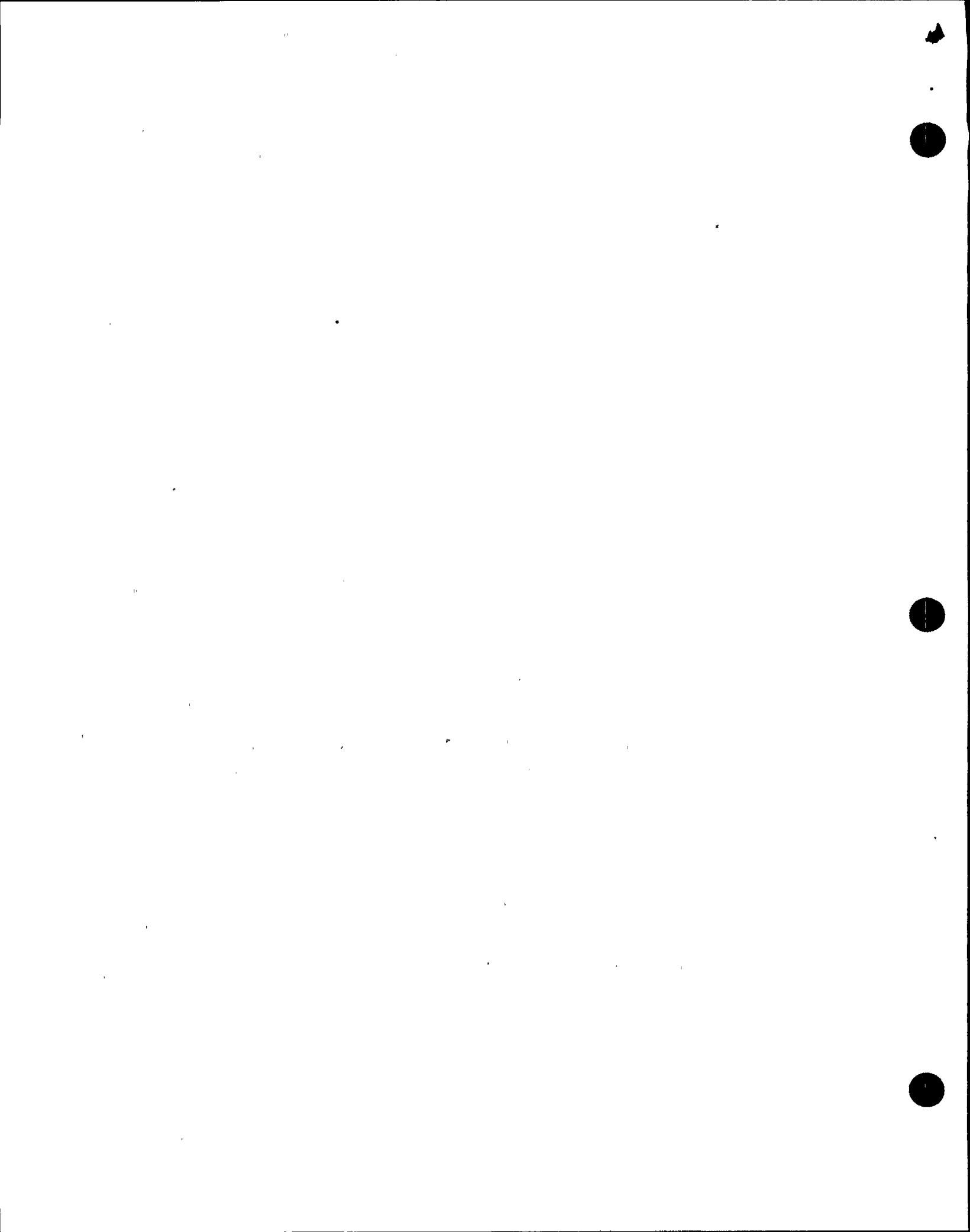
- A. AP-9, Administration of Training
- B. NTP-10, Training of Licensed Operator Candidates
- C. NTP-11, Licensed Operator Requalification Training



III. LEARNING OBJECTIVES

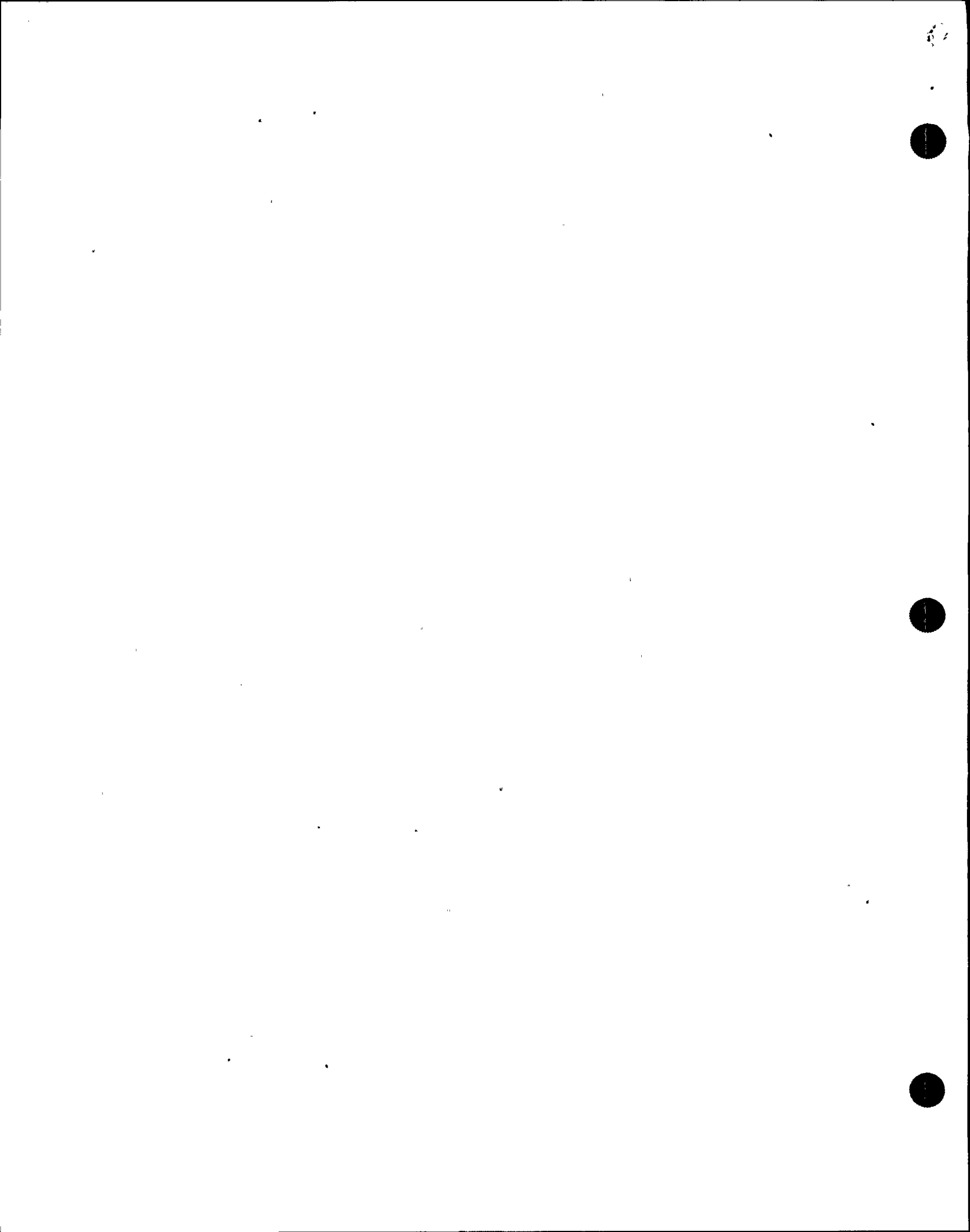
A. SSS/ASSS Objectives

- TO-1.0 3440190303 Direct shift personnel actions to ensure plant safety during emergency conditions.
 - EO-1.1 Given the Simulator in the conditions established direct shift personnel actions to ensure plant safety during emergency conditions.
- TO-2.0 3449390603 Direct the actions required per EOP-RPV Section RQ.
 - EO-2.1 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to monitor and control Reactor power.
 - EO-2.2 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if the Reactor is shutdown.
 - EO-2.3 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to terminate Boron injection.
 - EO-2.4 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to exit Section RQ and enter N2-OP-101C, Section H.1.
 - EO-2.5 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to confirm or place the mode switch in shutdown.
 - EO-2.6 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if ARI has initiated.
 - EO-2.7 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to initiate RRCS.
 - EO-2.8 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if the Turbine Generator is on the line.
 - EO-2.9 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if the MSIVs are open.
 - EO-2.10 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to verify recirculation flow control runback to minimum.

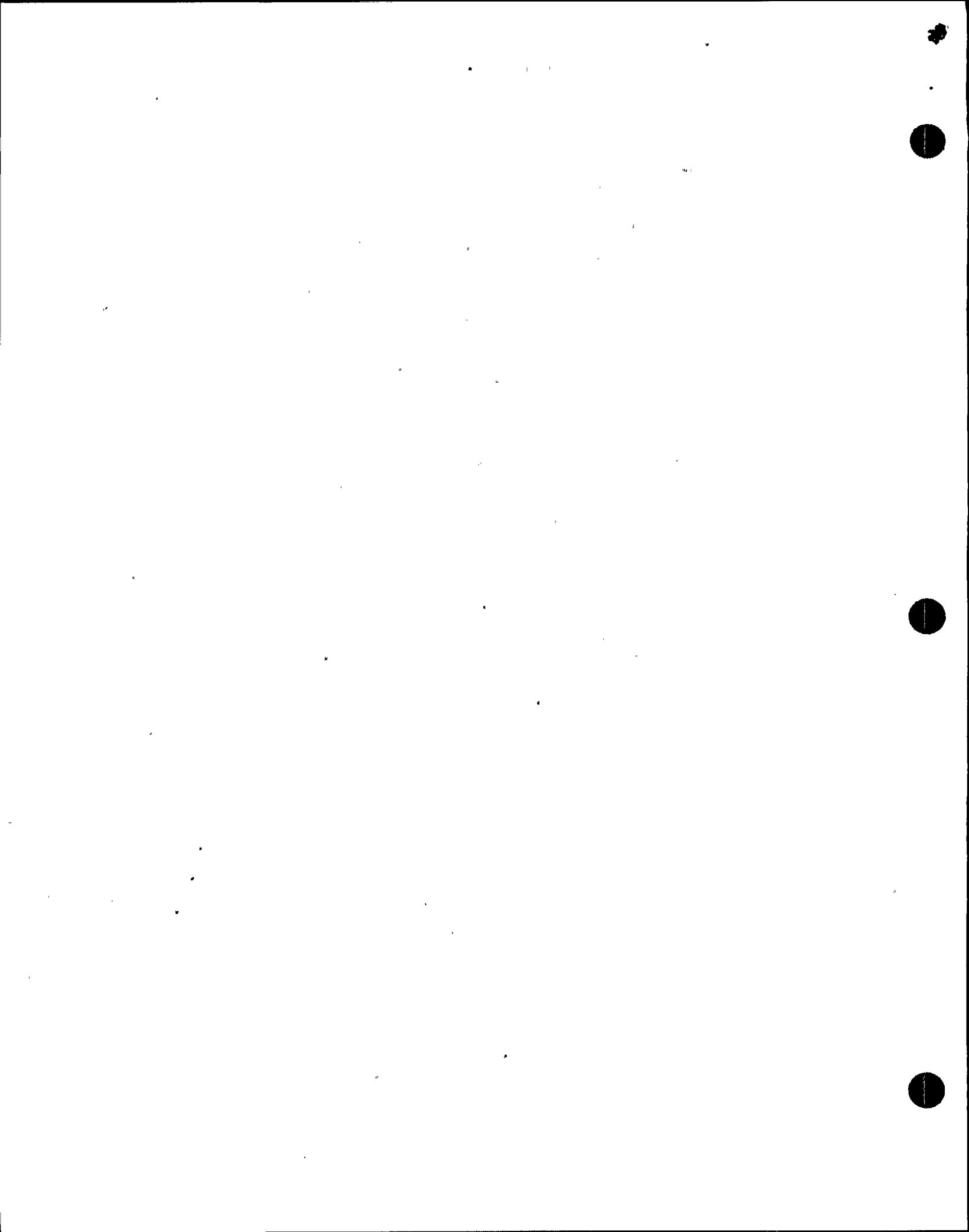


- EO-2.11 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if Reactor power can be determined.
- EO-2.12 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if Reactor power is above 4%.
- EO-2.13 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to trip the Recirculation pumps.
- EO-2.14 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to insert control rods in accordance with N2-EOP-6.
- EO-2.15 Given N2-EOP-RPV Control and the Simulator in the conditions established determine the Boron injection initiation temperature.
- EO-2.16 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to inject Boron into the RPV with SLC and place the ADS logic inhibit switches in on.
- EO-2.17 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if Boron can be injected with SLC.
- EO-2.18 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if RWCU is isolated.
- TO-3.0 3449400603 Direct the actions required per EOP-RPV Section RL.
- EO-3.1 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to monitor and control Reactor water level.
- EO-3.2 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if an RPV water level instrument may be used to determine RPV water level.
- EO-3.3 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to initiate any isolations of ECCS actuations that should have initiated but did not. (EOP-6)

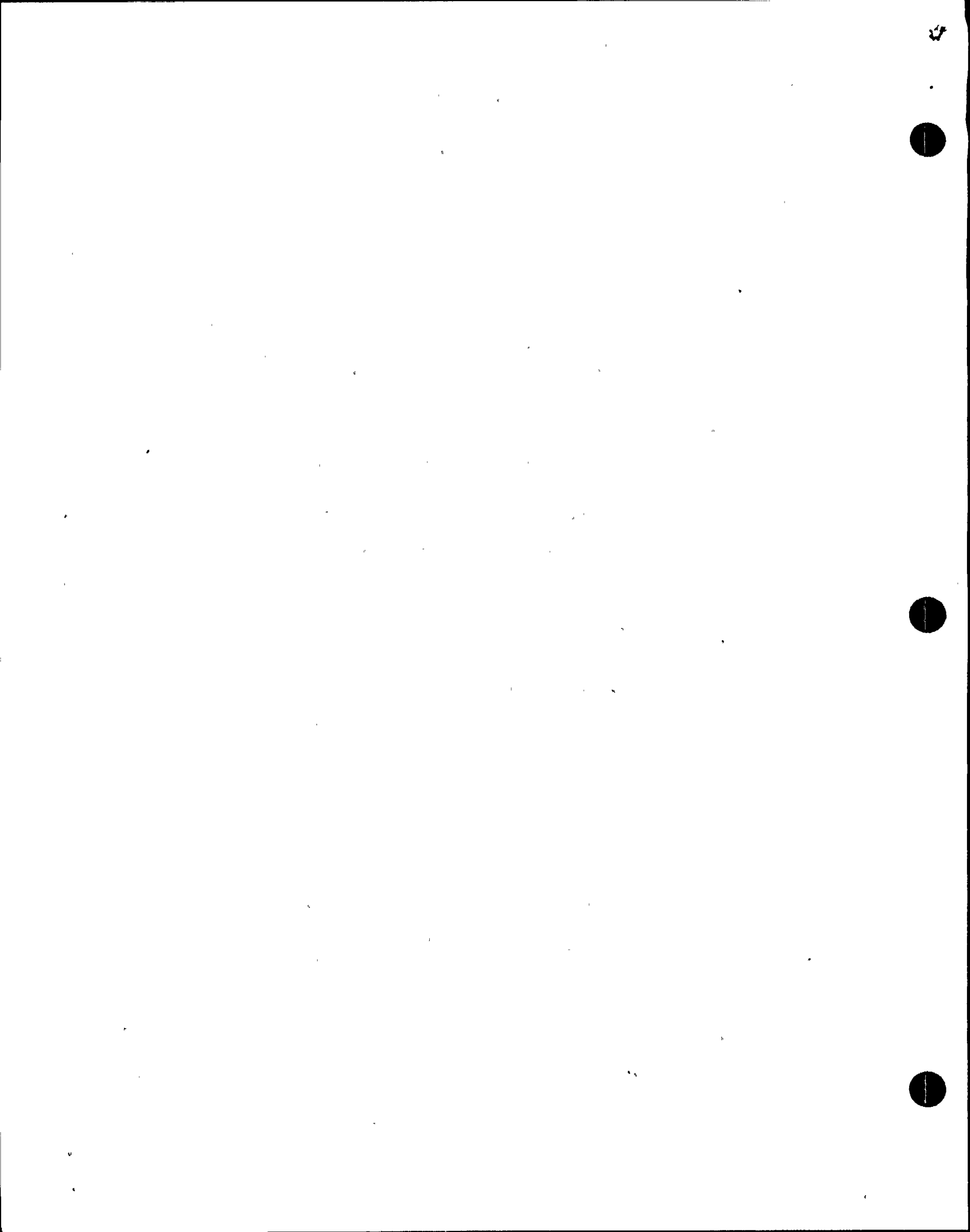
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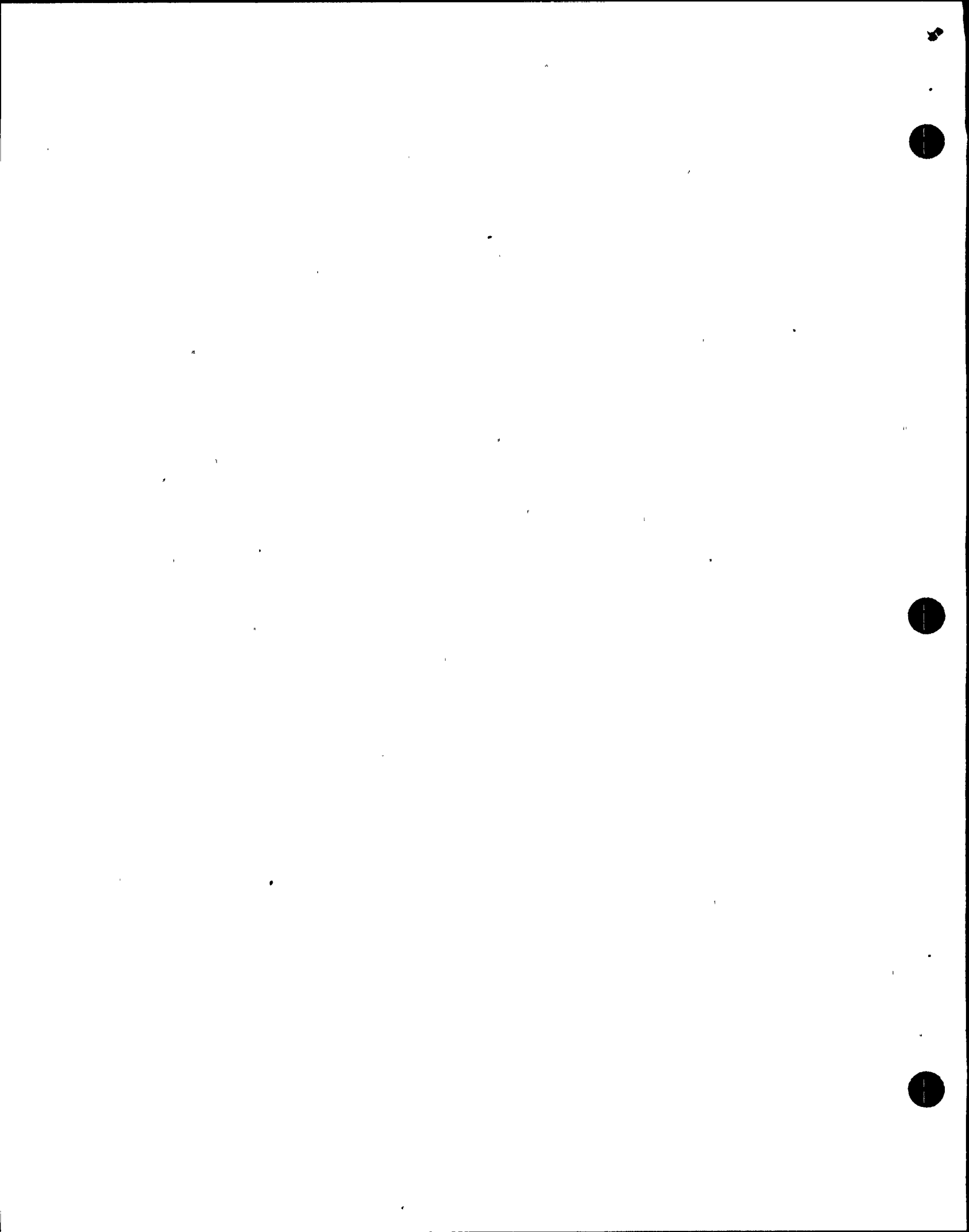
- EO-3.4 Given N2-EOP-RPV Control and the Simulator in the conditions established determine if the Reactor is shutdown.
- EO-3.5 Given N2-EOP-RPV Control and the Simulator in the conditions stated, exit Section RL of RPV Control and enter C5 (Level/Power Control).
- EO-3.6 Given N2-EOP-RPV Control and the Simulator in the conditions established direct operators to restore and maintain water level between 159.3 in. and 202.3 in. using the systems listed in Section RL of RPV Control.
- TO-4.0 3449410603 Direct the actions required per EOP-RPV Section RP.
- EO-4.1 Given N2-EOP-RPV Control and the Simulator in the conditions stated, direct operators to monitor and control Reactor pressure.
- EO-4.2 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if a high drywell pressure ECCS initiation signal exists.
- EO-4.3 Given N2-EOP-RPV Control and the Simulator in the conditions stated, direct operators to prevent injection from LPCS and LPCI pumps not needed for adequate core cooling.
- EO-4.4 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if the Reactor is shutdown.
- EO-4.5 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if Emergency RPV Depressurization is required.
- EO-4.6 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if any SRV is cycling.
- EO-4.7 Given N2-EOP-RPV Control and the Simulator in the conditions stated, direct operators to manually open SRVs until RPV pressure drops to 960 psig.
- EO-4.8 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine the Suppression Pool heat capacity temperature limit, Figure RPV-8.



- EO-4.9 Given N2-EOP-RPV Control and the Simulator in the conditions stated, direct operators to maintain Supp. Pool Temp./RPV Pressure below the HCTL.
- EO-4.10 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if steam cooling is required.
- EO-4.11 Given N2-EOP-RPV Control and the Simulator in the conditions stated, determine if Boron injection is required.
- EO-4.12 Given N2-EOP-RPV Control and the Simulator in the conditions stated, direct operators to stabilize RPV pressure below 1037 psig. Using the Main Turbine bypass valves. If necessary to include augmentation with systems listed in RPV Control Section RP.
- TO-5.0 3449420603 Direct the actions required per EOP-PC Section DWT.
- EO-5.1 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to monitor and control drywell temperature below 150 degrees using available drywell cooling.
- EO-5.2 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine if an RPV water level instrument may be used to determine RPV water level.
- EO-5.3 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine if drywell temperature can be maintained below 150 degrees.
- EO-5.4 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to operate all available drywell cooling to include defeating isolation interlocks if necessary.
- TO-6.0 3449430603 Direct the actions required per EOP-PC Section PCP.
- EO-6.1 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to monitor and control Primary Containment Pressure below 1.68 psig using SBT. (N2-OP-61A)

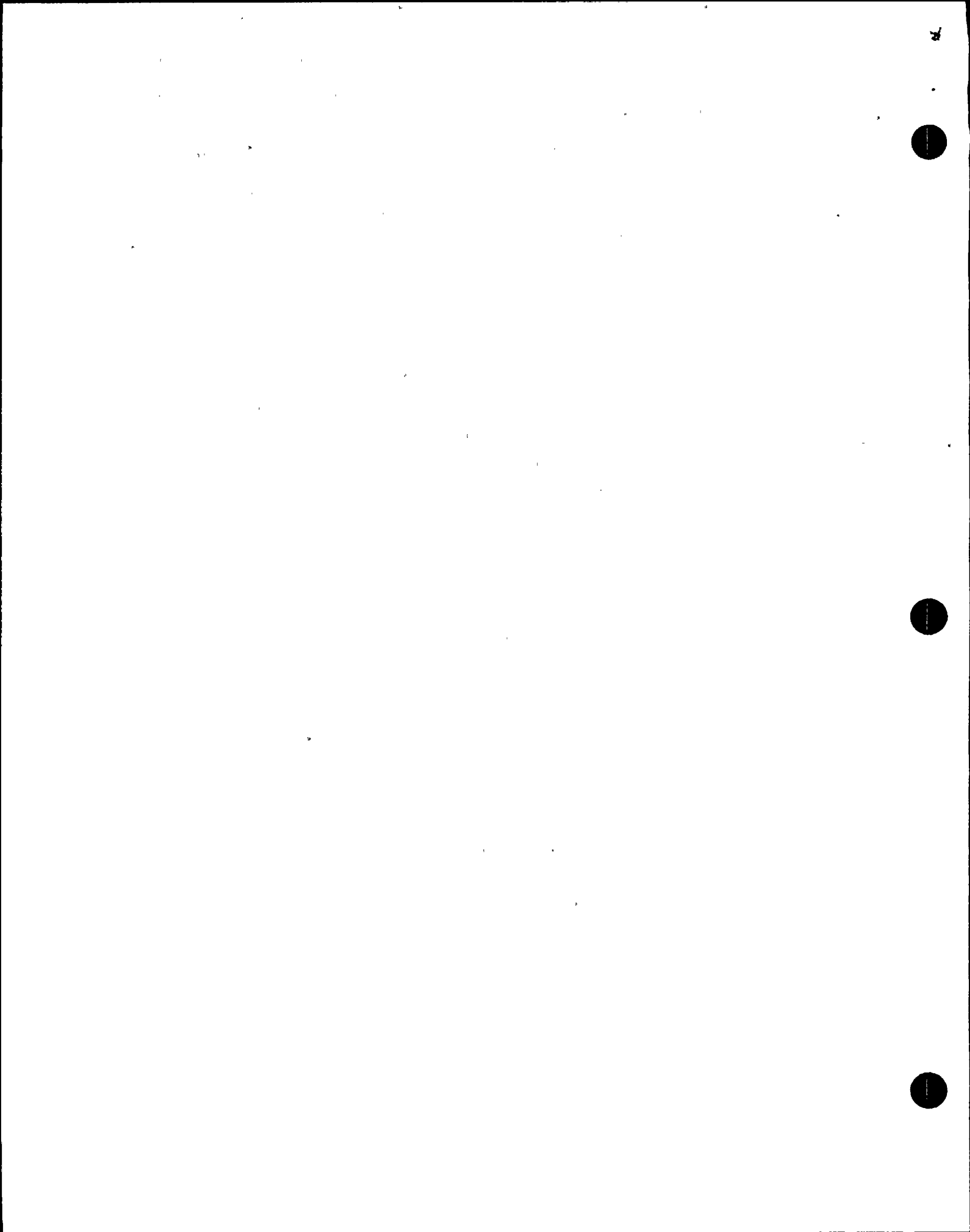


- EO-6.2 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine if Primary Containment pressure can be maintained below 1.68 psig.
- EO-6.3 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to terminate suppression chamber sprays.
- EO-6.4 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine suppression chamber pressure.
- EO-6.5 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine suppression pool water level.
- EO-6.6 Given N2-EOP-Primary Containment control and the Simulator in the conditions established direct operators to initiate suppression chamber sprays using only RHR pumps not needed to run continuously in the LPCI mode to assure adequate core cooling.
- EO-6.7 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to terminate drywell sprays.
- EO-6.8 Given N2-EOP-Primary Containment cooling and the Simulator in the conditions established determine the drywell spray initiation pressure limit.
- EO-6.9 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to trip recirculation pumps.
- EO-6.10 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to trip drywell cooling fans.
- EO-6.11 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to initiate drywell sprays using only RHR pumps not needed to run continuously in the LPCI mode to assure adequate core cooling.

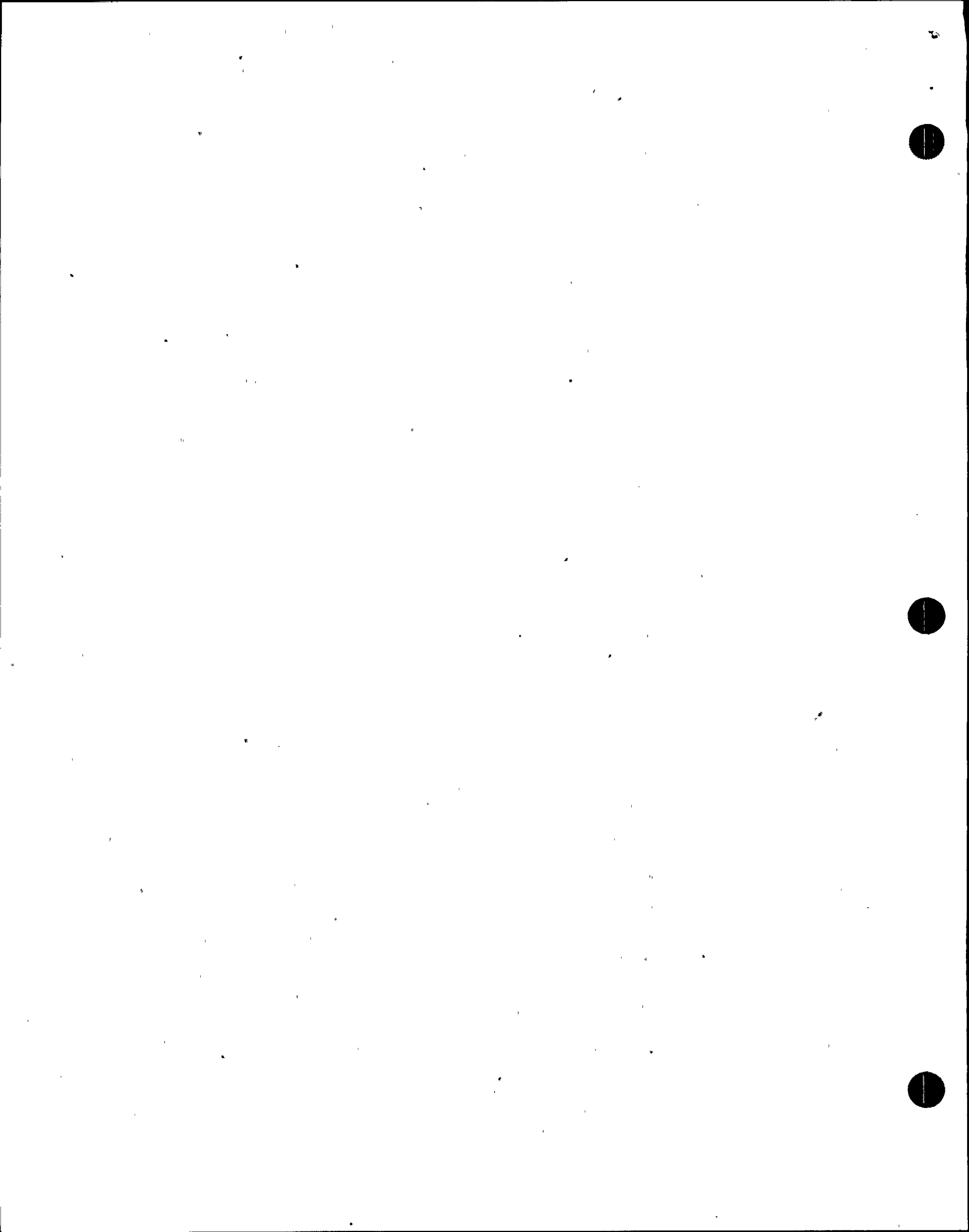


- EO-6.12 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine the pressure suppression pressure.
- EO-6.13 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine if emergency RPV depressurization is required.
- TO-7.0 3449450603 Direct the actions required per EOP-PC Section SPT.
- EO-7.1 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to monitor and control suppression pool temperature below 90 degrees using available suppression pool cooling.
- EO-7.2 Given N2-EOP-Primary Containment and the Simulator in the conditions established determine if suppression pool temperature can be maintained below 90 degrees.
- EO-7.3 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established direct operators to operate all available supp. pool cooling using only RHR pumps not required to run continuously in the LPCI mode to assure adequate core cooling.
- EO-7.4 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine the Boron injection initiation temperature Figure PC-1.
- EO-7.5 Given N2-EOP-Primary Containment Control and the Simulator in the conditions established determine the suppression pool heat capacity temperature limit Figure PC-2.
- TO-8.0 Direct the actions required per EOP-C5, Level/Power Control.
- EO-8.1 Given N2-EOP-C5 and the Simulator in the conditions established determine if RPV water level can be determined.
- EO-8.2 Given N2-EOP-C5 and the Simulator in the conditions established determine if the Reactor is shutdown.
- EO-8.3 Given N2-EOP-C5 and the Simulator in the conditions established exit C5 and enter N2-EOP-RPC Control Section RL.
- EO-8.4 Given N2-EOP-C5 and the Simulator in the conditions established direct operators to place ADS logic inhibit switches in on.

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- EO-8.5 Given N2-EOP-C5 and the Simulator in the conditions established determine if Reactor power can be determined.
- EO-8.6 Given N2-EOP-C5 and the Simulator in the conditions established determine Reactor power level.
- EO-8.7 Given N2-EOP-C5 and the Simulator in the conditions established determine the Boron injection initiation temperature.
- EO-8.8 Given N2-EOP-C5 and the Simulator in the conditions established determine drywell pressure.
- EO-8.9 Given N2-EOP-C5 and the Simulator in the conditions established determine if an SRV is open or opens.
- EO-8.10 Given N2-EOP-C5 and the Simulator in the conditions established determine if any MSL is open.
- EO-8.11 Given N2-EOP-C5 and the Simulator in the conditions established direct operators to lower RPV water level by terminating and preventing all injection into the RPV except from Boron and CRD irrespective of power or RPV water level oscillations.
- EO-8.12 Given N2-EOP-C5 and the Simulator in the conditions established determine RPV water level.
- EO-8.13 Given N2-EOP-C5 and the Simulator in the conditions established determine if all SRVs remain closed and drywell pressure remains below 1.68 psig.
- EO-8.14 Given N2-EOP-C5 and the Simulator in the conditions established determine if emergency RPV depressurization is required.
- EO-8.15 Given N2-EOP-C5 and the Simulator in the conditions established determine if RPV water level was deliberately lowered.
- EO-8.16 Given N2-EOP-C5 and the Simulator in the conditions established direct operators to maintain RPV water level between -14 in. and 202.3 in. using those systems listed in N2-EOP-C5 to include defeating isolation interlocks if necessary.
- TO-9.0 3440220303 Evaluate the adequacy of abnormal/emergency procedures for mitigation capabilities during events.
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- EO-9.1 Given the Simulator in the conditions established evaluate the adequacy of abnormal/emergency procedures for mitigation capabilities during events.
- TO-10.0 3440240303 Direct corrective actions to mitigate the consequences of the emergency event.
- EO-10.1 Given the Simulator in the conditions established direct corrective actions to mitigate the consequences of the emergency event.
- TO-11.0 3440270303 Determine if indications of fuel element damage are present.
- EO-11.1 Given the Simulator in the conditions established determine if indications of fuel element damage are present.

B. RO/CSO Objectives:

- TO-12.0 2000070501 Perform actions for a high drywell pressure.
- EO-12.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform actions for a high drywell pressure as directed by the SSS.
- TO-13.0 2000090504 Perform actions required for a loss of coolant accident (small leak) inside the Primary Containment.
- EO-13.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform actions required for a loss of coolant accident (small leak) inside the Primary Containment as directed by the SSS.
- TO-14.0 2000200501 Perform the actions required for an anticipated transient without Scram (ATWS).
- EO-14.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform the actions required for an anticipated transient without Scram (ATWS) as directed by the SSS.
- TO-15.0 2089130401 Restore RBCLC to DRS unit coolers following automatic isolation, from the Control Room.
- EO-15.1 Given NMP-2 operating procedures and the Simulator in the conditions established restore RBCLC to DRS unit coolers following automatic isolation, from the Control Room as directed by the SSS.



- TO-16.0 2229020401 Operate the Drywell Cooling System with a LOCA signal present.
- EO-16.1 Given NMP-2 operating procedures and the Simulator in the conditions established operate the Drywell Cooling System with a LOCA signal present as directed by the SSS.
- TO-17.0 2050150101 Operate the Containment Spray System.
- EO-17.1 Given NMP-2 operating procedures and the Simulator in the conditions established operate the Containment Spray System as directed by the SSS.
- TO-18.0 2000030501 Perform actions for a main steam isolation valve closure.
- EO-18.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform actions for a main steam isolation valve closure as directed by the SSS.
- TO-19.0 2000260501 Perform the actions required for a safety/relief valve opening.
- EO-19.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform the actions required for a safety/relief valve opening as directed by the SSS.
- TO-20.0 2230220101 Perform manual ADS relief valve operation.
- EO-20.1 Given NMP-2 operating procedures and the Simulator in the conditions established perform manual ADS relief valve operation as directed by the SSS.
- TO-21.0 2000250501 Manually inject poison solution into the Reactor from the Control Room.
- EO-21.1 Given NMP-2 operating procedures and the Simulator in the conditions established manually inject poison solution into the Reactor from the Control Room as directed by the SSS.

C. Team Objectives:

- TO-22.0 Demonstrate effective communication in accordance with the Operating Department instruction on verbal communication. (NMP2 Requal Action Plan, Rev. 2, 4.B.1).



- TO-23.0 Demonstrate the use of the Emergency Plan, an understanding of the roles and responsibilities of an SSS, ASSS/STA, CSO/NAOE in accordance with the Operating Department instruction on Roles and Responsibilities. (NMP2 Requal Action Plan, Rev. 2, 5.B.1, 6.B.6).
- TO-24.0 Demonstrate an understanding of command and control, EOP place keeping techniques and effective use of Control Room Operators during emergency conditions. (NMP2 Requal Action Plan Rev. 2, 6.B.6, SRO only).
- TO-25.0 Demonstrate "self-verification" work practices techniques in accordance with the Operating Department instruction for all control actions. (LER 50-410/88-50) (NRC IR 50-410/88-01).



ATTACHMENT 1
PRE-EXERCISE BRIEFING

IV. LESSON CONTENT
LESSON CONTENT

DELIVERY NOTES

OBJECTIVES/
NOTES

A. EXERCISE OVERVIEW

Present the following:

During this scenario plant conditions begin at 100% power operation. A small steam leak develops inside the Primary Containment and as operators take actions to correct the rising drywell temperature/pressure situation, a high drywell pressure signal is received, resulting in all expected actions except that no rod motion occurs. EOPs PC and RPV Control are entered and C5 is entered from RL. Actions taken to insert rods and reduce power include tripping the recirc. pumps. When this is done, power oscillations occur with no means of controlling them. Rod drive capability is lost by CRD FCV closure. After a few minutes, indications of fuel damage are received and the MSIVs close on high MSL radiation. Operators attempt to control Reactor pressure with SRVs and Reactor power by lowering RPV water level and injecting SBLC, which failed to initiate automatically. All rods will insert fully when the Scram air header is subsequently vented.

Discuss plant conditions.

Discuss how SBLC injection for this is warranted (under the conditions).



ATTACHMENT 1
PRE-EXERCISE BRIEFING

OBJECTIVES/
NOTES

LESSON CONTENT

DELIVERY NOTES

B. PREREQUISITE KNOWLEDGE REVIEW

The Rev. 4 RPV Control, Primary Containment Control and Power/Level Control EOPs have been presented in classroom training and should be reviewed prior to the Simulator exercise.

Discuss prior classroom coverage.

Review the Performance and Knowledge Objectives with participants as the scenario is discussed.

Discuss Performance and Knowledge Objectives while describing scenarios.

C. SCENARIO PREVIEW

1. The following is an overview of the conditions and actions that will occur during the scenario:
 - a. Recognize/respond to rising drywell pressure.
 - b. Recognize/respond to small LOCA (steam leak) in the P.C.
 - c. Restore DRS with LOCA signal present.
 - d. Operate containment sprays and cooling.
 - e. Recognize/respond to failure to Scram.
 - f. Recognize/respond to power oscillations.
 - g. Inject SBLC.
 - h. Lower RPV water level to control Reactor power.
 - i. Recognize/respond to fuel cladding failure.
 - j. Recognize/respond to MSIV closure.

EOPs exercised:

RL
RP
RQ
DWT
PCP
SPT
CS

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ATTACHMENT 1
PRE-EXERCISE BRIEFING

OBJECTIVES/
NOTES

LESSON CONTENT

DELIVERY NOTES

2. Initial Conditions

Plant status is given in shift turnover information, listed below.

3. Expected Actions

The participants, acting as a team will:

- respond to appropriate annunciators
- use the appropriate annunciator response procedure
- make appropriate reports to the SSS
- perform indicated operations
- use the Instructor as all plant personnel to perform Local Operator Actions (LOAs)
- observe system indications
- use appropriate emergency operating procedures
- place the plant in a stable shutdown depressurized condition

The instructors perform all LOAs when requested by the participants.

D. OPERATING CONCERNS

1. Reviews with the participants any NRC/INPO operating concerns that relate to the training session as directed by the Training Program Coordinator.



ATTACHMENT 1
PRE-EXERCISE BRIEFING

LESSON CONTENT

DELIVERY NOTES

OBJECTIVES/
NOTES

E. PERFORMANCE REVIEW

1. Obtain and discuss with the participants those areas documented on the Post Training Summary from previous Simulator training. Reinforce good performances and areas for improvement.

F. GROUND RULES

1. Discuss performance expectations relative to:
 - a. Professionalism
 - b. Realism
 - c. Log keeping
 - d. Team work
 - e. Communication
 - f. Procedure use
 - g. Notifications
 - h. Self verification techniques

G. SHIFT TURNOVER INFORMATION

1. Plant Status
The plant is operating at 100% Reactor power.



ATTACHMENT 1
PRE-EXERCISE BRIEFING

LESSON CONTENT

DELIVERY NOTES

OBJECTIVES/
NOTES

H. SEQUENCE OF EVENTS

1. Conduct Simulator activities as prescribed by the attached floor instructor and console operators guide, Attachment 2.

Ensure video taping is conducted for all sessions to allow for its use in the post exercise assessment, if necessary.



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
		Special Instructions: None			
		Simulator Operation: Initialize to: IC-20	100%, BOL		Make <u>sure</u> the ">100% rod line" sign is hanging at P601.
		Preset malfunctions:			
		1, RP03	RPS failure		
		2, RP14	ARI failure		
		3, RP08	• Rods stick at 0% density		1
		4, RD17, 0	(stay where they are) Prevents auto SLC		
		Preset remote functions: None			



ATTACHMENT 2

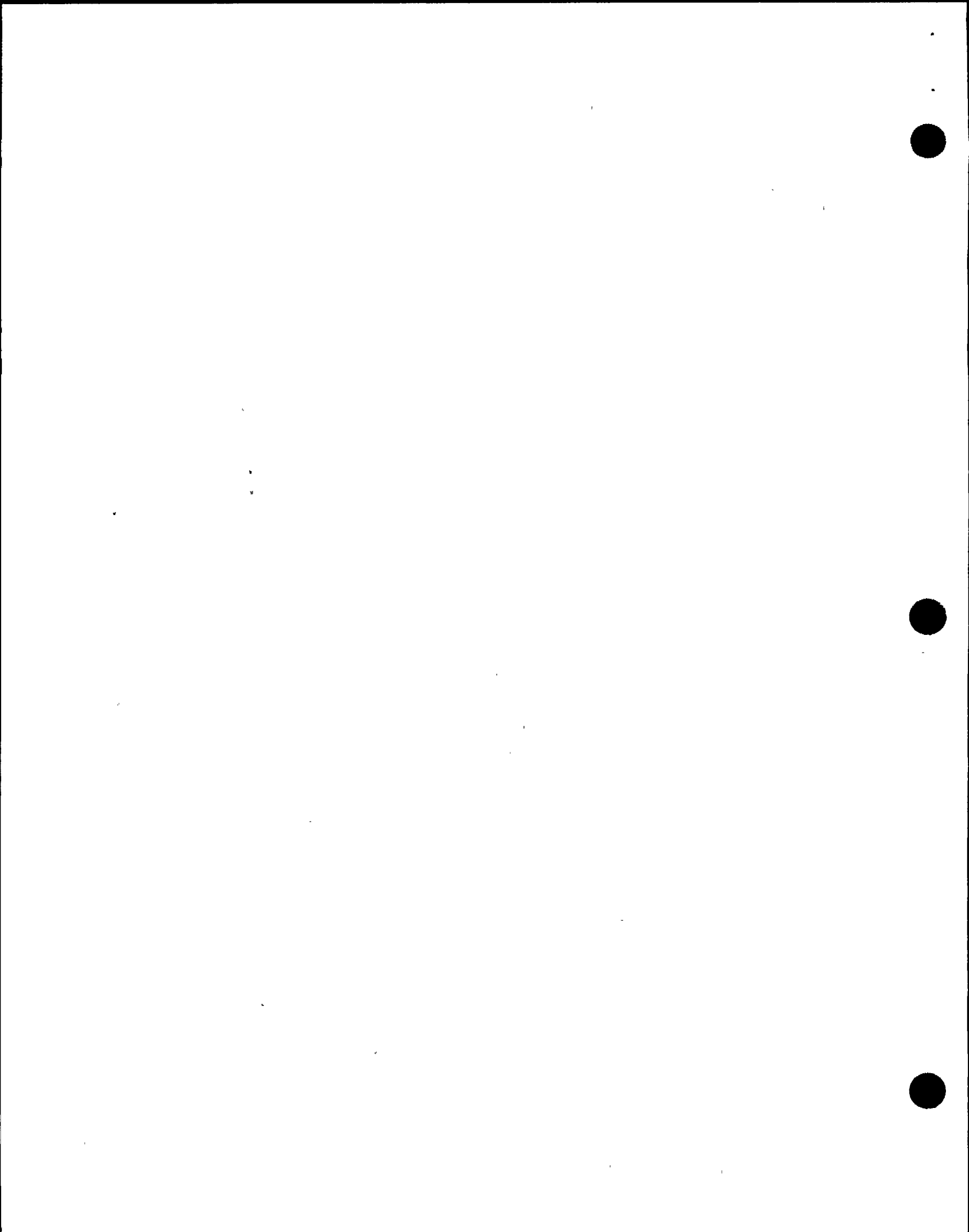
FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
		Preset I/O overrides:			1
		1, C72B-S01-A,,,OFF	Power source selector Switch fails in "NORM" (Can't de-energize RPS with PSSS).		
		2, C22A-DS3A,,,OFF	ARI Div. I/Div. II initiated		
		3, C22A-DS3B,,,OFF	lights off.		
		Distribute and discuss watch turnover sheets.		Review watch turnover sheets.	
		Initial conditions: 100% BOL RHM group 147 (>100% rod line)			
		Out of service equipment: None			



ATTACHMENT 2
FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
		Surveillance scheduled: None		<u>CREW</u> Walkdown panels.	
		Allow not more than 5 minutes to walkdown panels.		<u>CREW</u> Assume the shift.	
T=0		Begin scenario.		<u>RO/BOP</u> Recognize/report rising dw press.	T0-12.0 T0-13.0 1
T=3 min.		Insert malfunction 5, MS03, 15	Slow rise in drywell pressure due to steam leak inside P.C.	<u>SSS</u> Order drywell cooling maxed. Order DW purged via SBT.	Increase MS03 as necessary to bring DW press <u>slowly</u> up to 1.68.
				<u>BOP</u> Maximum DRS. Purge DW with SBT.	



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
				<u>SSS</u>	
T=when				Order Reactor Scram. Enter	T0-1.0
DW press				EOP-PC and - RPV Control.	T0-2.0
reaches				Order Supp. Pool Cooling and	T0-3.0
1.68#.				spray.	T0-4.0
					T0-5.0
					T0-6.0
					T0-7.0
				<u>RQ</u>	
				Report failure to Scram. No	T0-14.0
				rod motion. Carry out steps	
T=when		Just prior to the Recirc Pump	Core power instability.	per RQ and trip recirc. pumps.	
the		being tripped,	Power/flow oscillations occur.	Control water level 159.3" to	
recirc.		Insert Malfunction:		202.3".	
pumps		6, RX04, 100			
are				<u>BOP</u>	
tripped.				Restore RBCLCW to DRS and	T0-15.0
(<u>exactly</u>)				maximize DRS.	T0-16.0



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
T=1 min. after RX04 entered.		Insert malfunction: 7, RD14B	CRD flow control valve closure. Can't drive rods.	<u>RO</u> Report inability to drive rods. Order Aux. Operator shift FCVs.	1
				<u>BOP</u> Supp. Pool Cooling and sprays. Control RPV stable below 1037# using MTBVs and SRVs.	T0-17.0
				<u>SSS</u> Exit RL, enter C5.	T0-8.0
				<u>RO</u> Report power oscillations on APRMs/LPRMs occurring.	



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

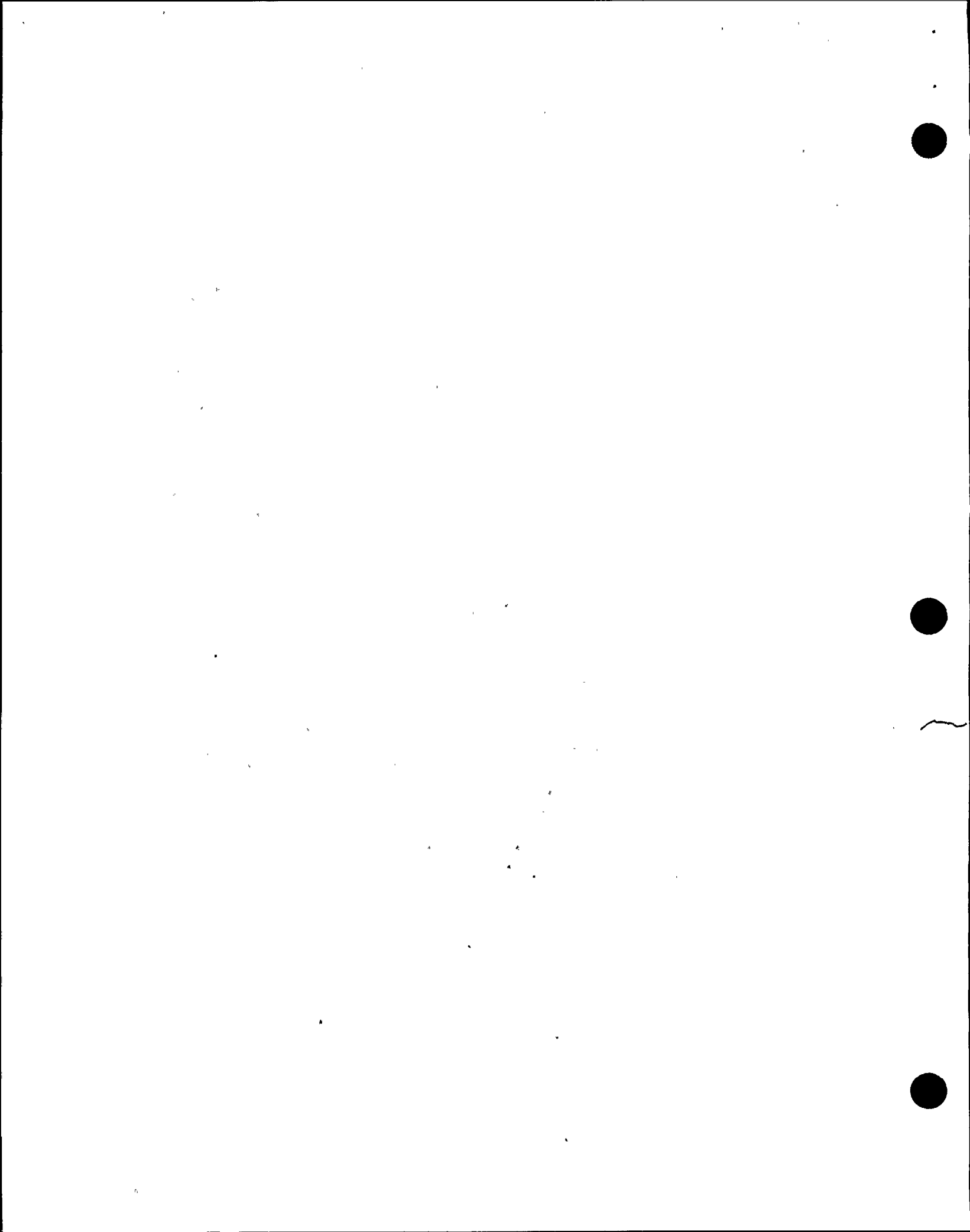
TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
				<u>SSS</u>	
				Order rods inserted per EOP-6. (May order SBLC injection now upon recognizing auto-SLC fail to initiate).	NOTE: Must vent Scram air header to insert rods. T0-9.0 T0-10.0
				<u>RO</u>	
T=approx. 5 minutes after the power oscil- lations have begun.	Insert malfunction: 8, RX01; 4, 25		Fuel clad failure. MSL rad'n increases. Off gas radiation increases. (25% per minute ramp up)	Recognize/respond to increased MSL radiation. (Inject SLC manually, if ordered).	1 T0-21.0
				<u>BOP</u>	
			After a short time, MSIVs close on PCIS Group 1 isolation.	Report MSIV. Closure & SRVs opening. Control RX pressure with SRVs. Maximum Supp. Pool Cooling. Recognize failure of auto-SLC.	T0-18.0 T0-19.0 T0-20.0 1



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

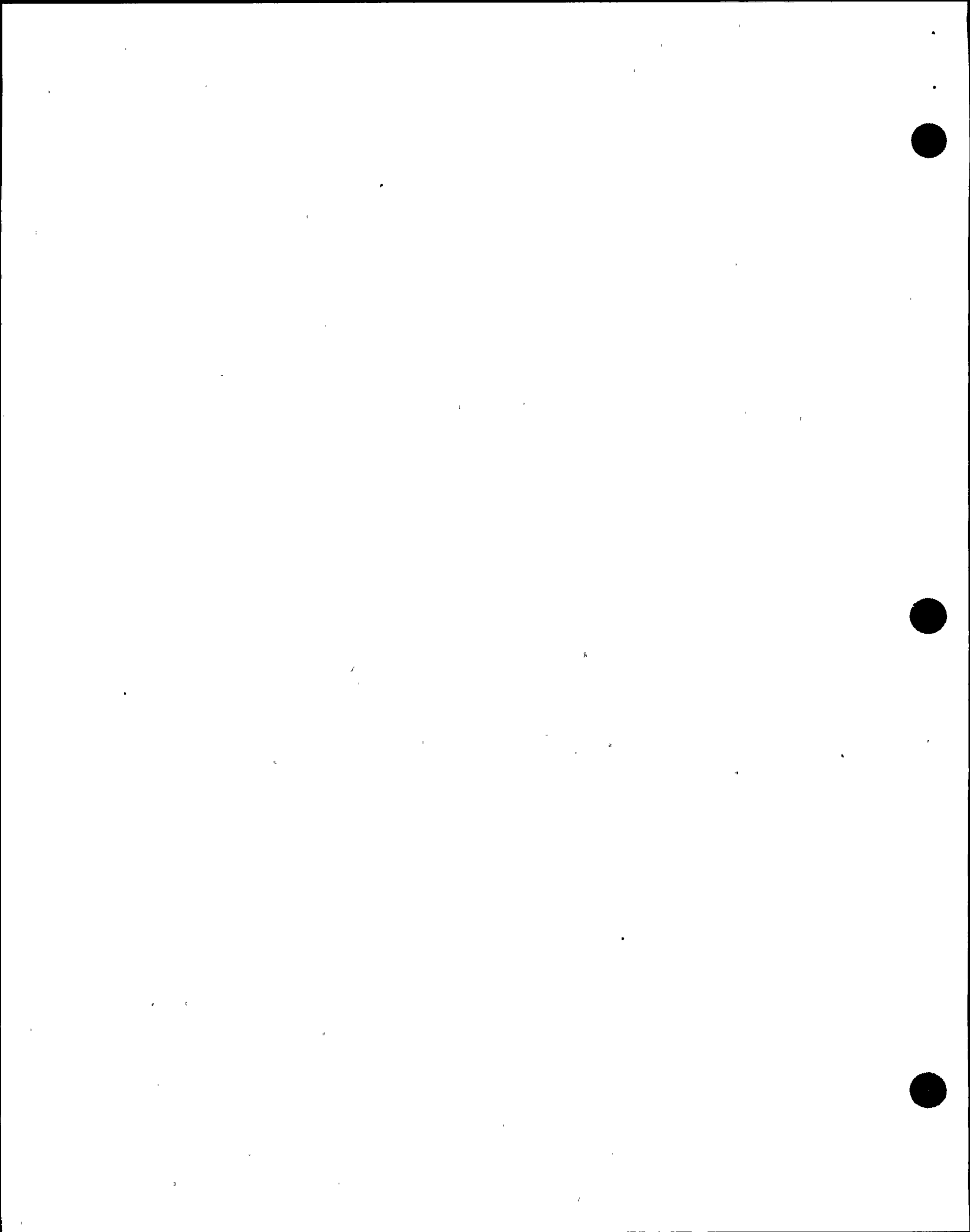
TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
I=when ordered to defeat RSCS (if)		Insert malfunction: MF, RW02	RSCS will be defeated.	<u>SSS</u> Order SBLC injection. Order RPV level lowered per EOP-C5.	1 (Water level <u>may</u> have to be lowered in C5)
I=when ordered to defeat RPS and ARI (if)		Wait a while, then report that RPS and ARI are bypassed. (They already are bypassed on the simulator)		<u>BOP</u> Inject both SBLC Systems. <u>RO/BOP</u> Terminate and prevent injection. Lower RPV level until APRM down scales are in (or RPV level reaches -14").	1



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
T=when				<u>SSS</u>	
[if]				Order DW sprays.	
Supp.				(Establish conditions)	
Chmbr.					
press					
reaches					
10#.				<u>ROP</u>	
				Secure DRS and spray DW.	



ATTACHMENT 2

FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
		<u>Role Play:</u> As Aux. Operator			
		on way to vent Scram air			
		header per EOP-6.			
		Wait five minutes,			
		Then:			
		Remove malfunctions:			
		1 <CR>	RD 17 (stuck rods)		
		2 <CR>	clear		
			RP 14 (ARI failure)		
		If rods have not inserted yet,	clear		
		Insert malfunction 9, RP13			
			ARI initiates. Rods insert	<u>RO</u>	This will appear as
			fully.	Report all rods in.	a depressurization
					of the SAH. No
					indications of RPS/
					ARI initiations will
					be seen.



ATTACHMENT 2

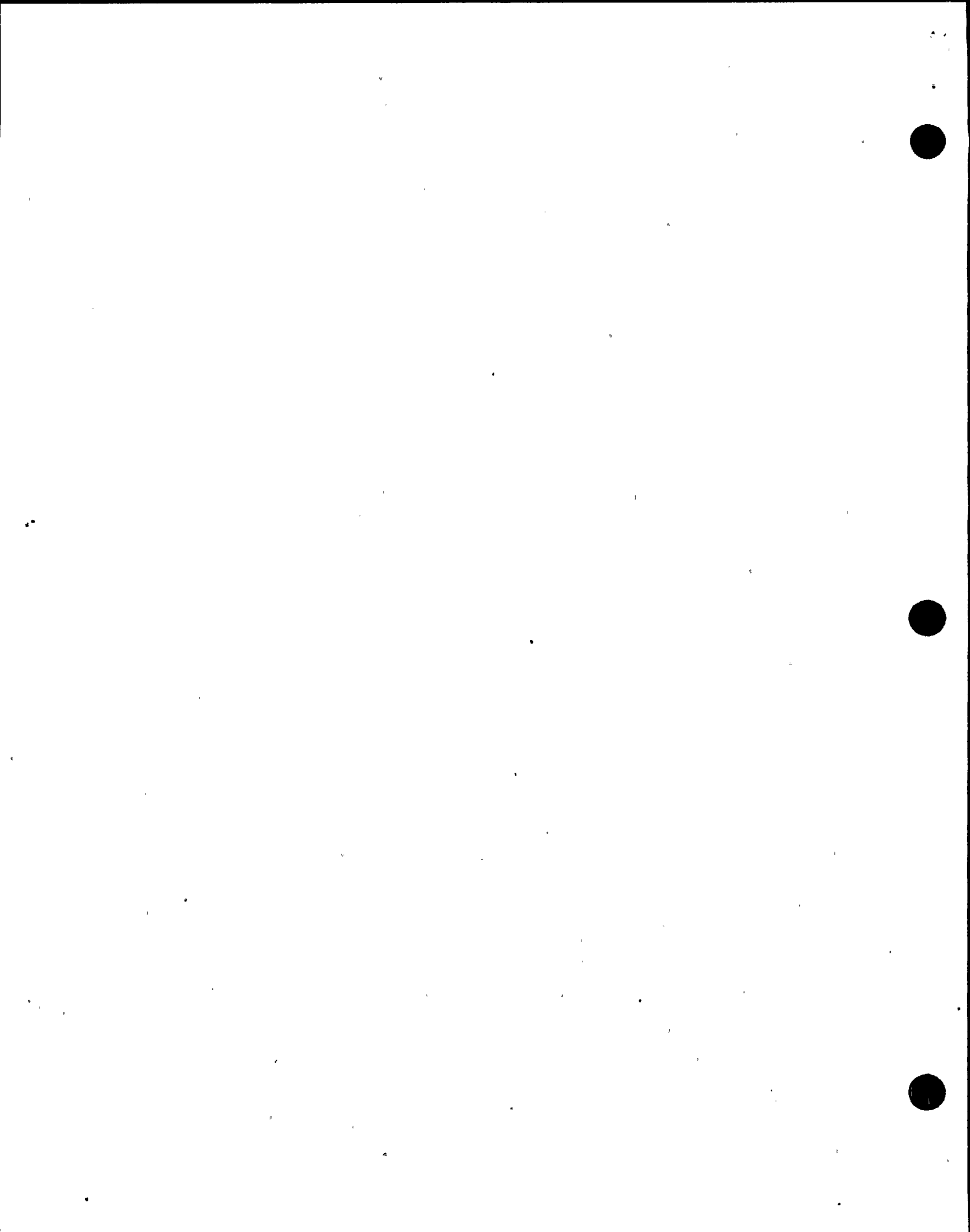
FLOOR INSTRUCTOR AND CONSOLE OPERATORS GUIDE

TIME	SCENARIO	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	INSTRUCTOR COMMENTS
		End scenario. Freeze Simulator.		<u>SSS</u> Exit C5, enter RL. Exit RQ, enter OP-101C. Do not allow MSIVs reopened nor bypassed.	T0-11.0



ATTACHMENT 3
POST EXERCISE ASSESSMENT

LESSON CONTENT	DELIVERY NOTES	OBJECTIVES/ NOTES
<p>I. Post Exercise Assessment (Classroom)</p> <ol style="list-style-type: none">1. Review the Learning Objectives<ol style="list-style-type: none">a. The crew/individuals should state how each was met during the session.2. Participant's Self-Evaluation<ol style="list-style-type: none">a. Discussion should focus on measurable behaviors and how these contributed to or detract from meeting the objectives3. Instructors assessment and performance recommendations. (NCTS)4. Session and program feedback.5. Document Session	<p>Allow participants to evaluate themselves against learning objectives and tasks for the session.</p> <p>Discussion should center on performance and not personal feelings or interpretation of actions.</p> <ol style="list-style-type: none">1. Assess participants performance for those objectives and tasks not included in the crew self-assessment. Use the video tape in the assess to more effectively assess communications, teamwork, and prioritization, if necessary.2. Provide feedback on ways to improve performance.1. Distribute Simulator Training Evaluation Feedback Form.2. Provide students with time to complete form.1. Complete Post Training Summary, Attachment 4.	



ATTACHMENT 3
POST EXERCISE ASSESSMENT

LESSON CONTENT

DELIVERY NOTES

OBJECTIVES/
NOTES

2. Place in file for next training session.
3. Document any NRC/INPO operating concerns as an items list attached to the training record. (TR)



ATTACHMENT 4

POST TRAINING SUMMARY

The area below is reserved for instructor's notes regarding the implementation of this session.

1. Training Program: _____
2. Lesson Plan Number: _____
3. Date: _____
4. Instructor(s): (floor) _____
(Console) _____
5. Participants: (SSS) _____
(ASSS) _____
(CSO) _____
(NAOE) _____
(NAOE) _____
(SPEC) _____
(OTHER) _____
(OTHER) _____



