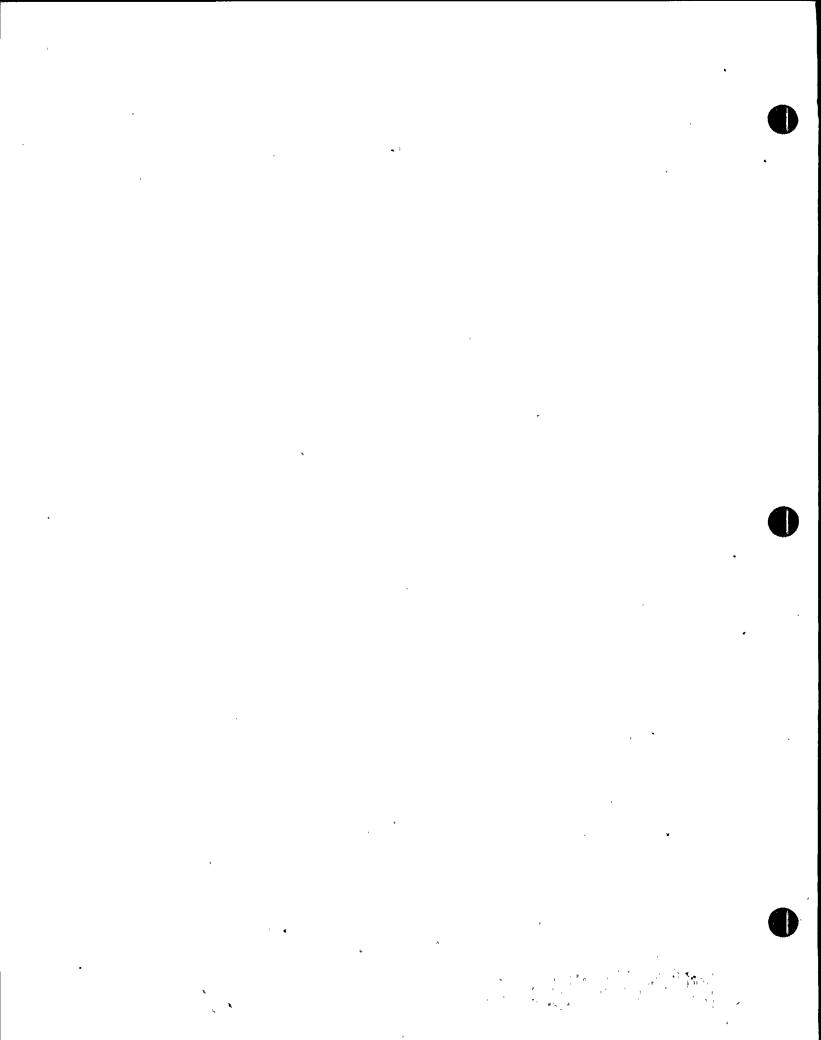
NIAGARA MOHAWK POWER CORPORATION NINE MILE POINT NUCLEAR STATION

	02-REQ-009-1DY-2-06	Revision	2			
TITLE:	STEAM LEAK IN T	HE DRYWELL				
PREPARED BY VALIDATED BY UNIT OPERATION TRAINING SUP PLANT SUPERV USER GROUP SO	ONS, ERVISOR ASL	ATURE St (Rev 1) For Machine of Pages 1/120/00	DATE 11/19/90 11/19/90 11/19/90			
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	<u>Date</u>		<u>Pages</u>			
	November 199	90 -	1 - 18			
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<u>I</u>	RAINING DEPARTMENT REC	ORDS ADMINISTRA	ATION ONLY:			
	VERIFICATION:					
	DATA ENTRY:					
	RECORDS:					

4/29/164



I. TRAINING DESCRIPTION

- A. Title of Lesson: Steam Leak in the Drywell
- B. Lesson Description: The scenario begins at 100% power, a reactor level instrument (Narrow Range C) fails down scale without alarms or automatic actions. The operator should recognize this failure, while monitoring his panel, and the SSS/ASSS should review Tech. Specs. for the impact of this failure. The loss of the instrument will not affect the scenario outcome.

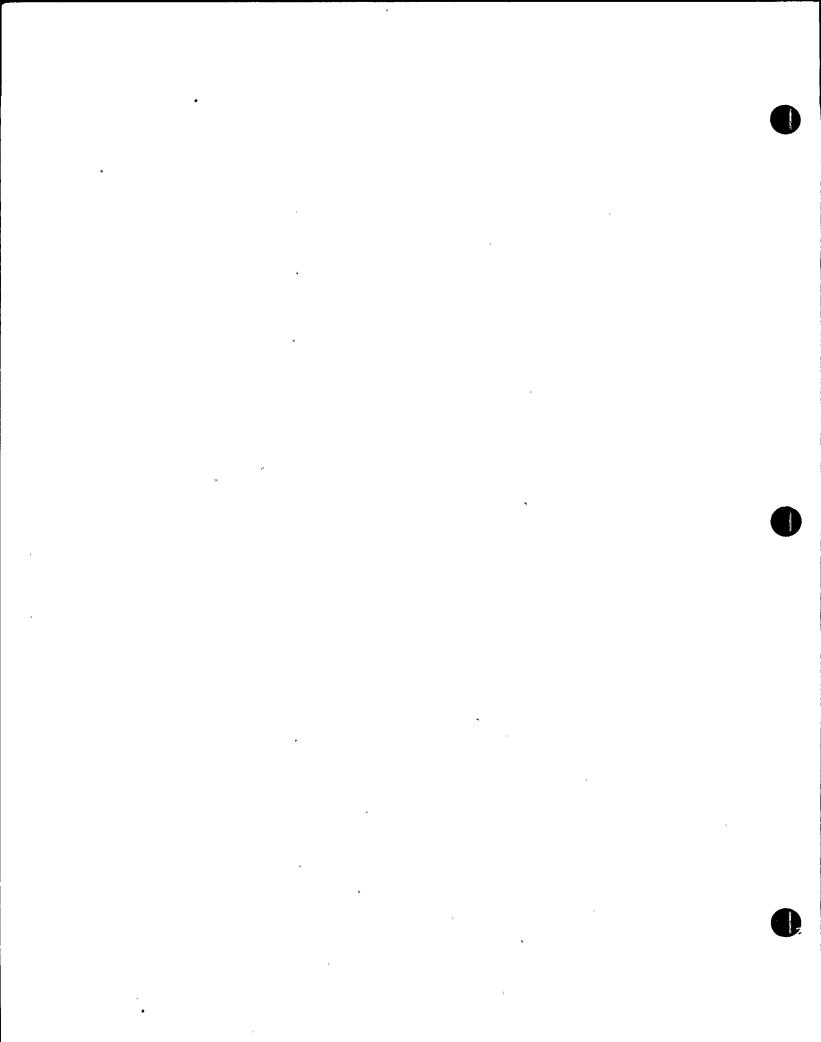
Next, an isolable leak develops at the C circulating inlet water box. This provides an opportunity to evaluate team communication and procedure usage. The pump should be secured and isolated.

The major failure is a steam leak in the drywell with HPCS inoperable. This puts the operators in the EOPs and appropriate off normal procedures.

- C. Estimate of the Duration of the Lesson: 50 minutes
- D. Method of Evaluation, Grade Format, and Standard of Evaluation: Satisfactory completion of Simulator Evaluation performed in accordance with Nuclear Training Instruction 4.3.6.
- E. Prerequisites:
 - Instructor:
 Qualified as a Simulator instructor per NTP-16.1
 - 2. Trainee:
 - a. Meet eligibility requirements per-10CFR55, or
 - Be recommended for this training by the Operations
 Superintendent, his designee, or the Training
 Superintendent.

F. References:

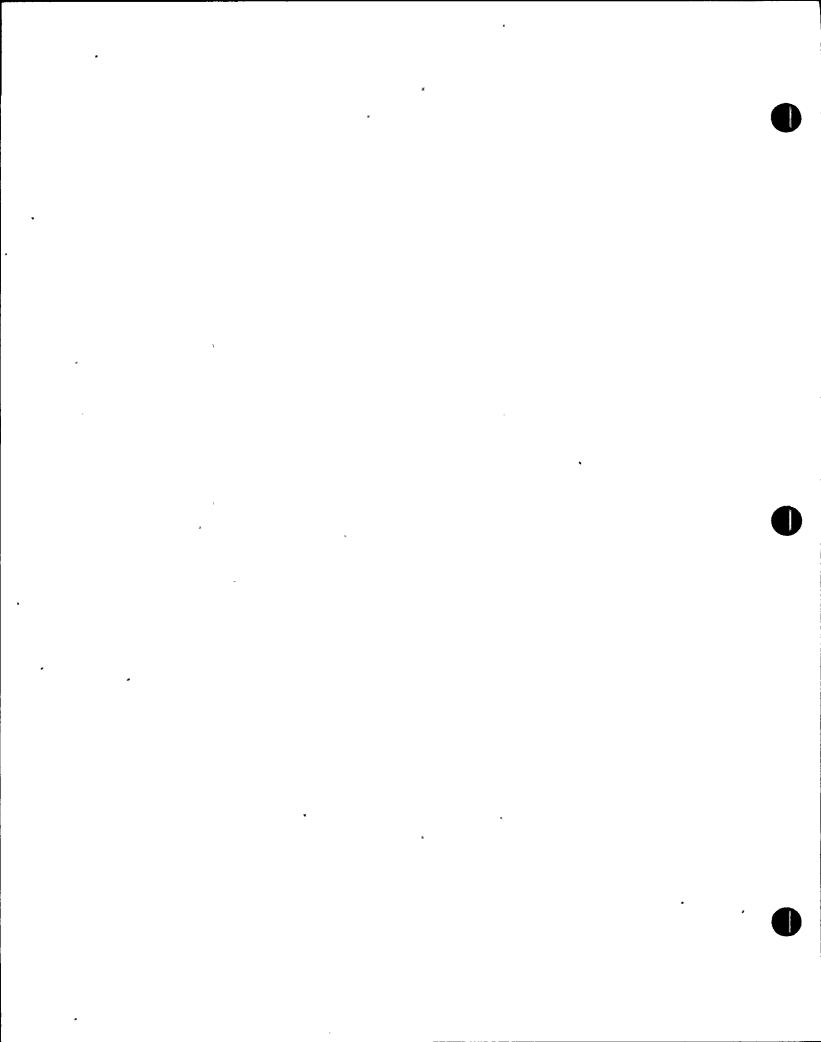
- N2-OP-10A Circulating Water
- 2. N2-OP-31 RHR System
- 3. N2-OP-61A Primary Containment Vent, Purge and Nitrogen System



- 4. N2-OP-64 Turbine Building Drains
- 5. N2-OP-101C Shutdown
- 6. N2-OP-101D Power Changes
- 7. N2-EOP's Frengency Operating Procedures
- 8. N2-EOP-6 EOP Support Procedures
- 9. NMP2 Technical Specifications
- 10. EAP-2 Classification of Emergency Conditions
- 11. EPP-20 Emergency Notifications

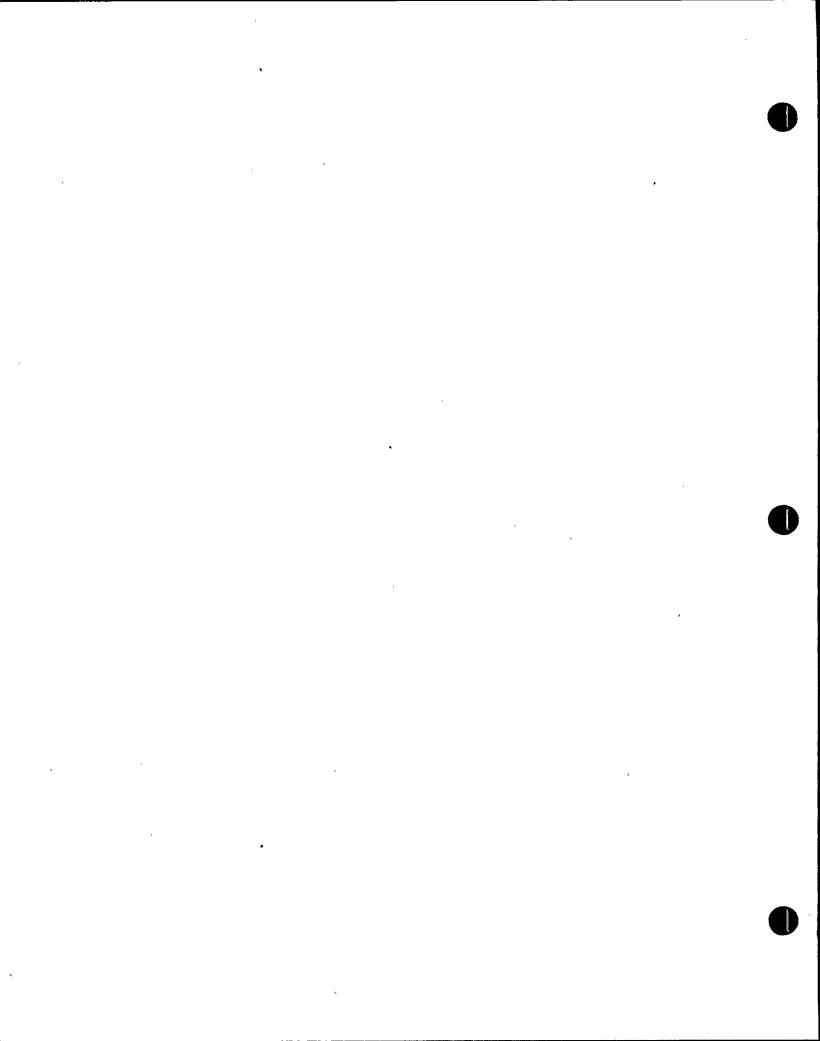
II. REQUIREMENTS

- A. 10CFR 55.45 and 55.49
- B. NUREG 1021



II. SCENARIO OBJECTIVES/ISCT Summary

ISCT #1. (CSO/E)	Critical Task Perform Actions for a high drywell pressure (2000700501). K/A 295024 EA1.20-3.5
ISCT #2. '(SSS)	Direct the actions required per EOP-RPV Section RL (3449400603). K/A 295024 SG12-4.5 Direct the actions required per EOP-RPV Section RP (3449410603). K/A 295024 SG12-4.5
ISCT #3. (SSS)	Direct the actions required per EOP-PC Section DWT (3449420603). K/A 295024 SG12-4.5 Direct the actions required per EOP-PC Section PCP (3449430603). K/A 295024 SG12-4.5
ISCT #4. (CSO/E)	Operate the Containment Spray System (2050150101). K/A 295024 EA1.12-3.8
ISCT #5. (SSS)	Direct the actions required per EOP-PC Section PCP (3449430603). K/A 295024 SG12-4.5
ISCT #6. (CSO/E)	Operate the Containment Spray System (2050150101) K/A 295024 EA1.11-4.2
ISCT #7. (CSO/E)	Operate the Containment Spray System (2050150101). K/A 226001 Gen 13-3.5
ISCT #8. (CSO/E) -	Operate the Containment Spray System (2050150101). K/A 230000 Gen 13-4.1
ISCT #9. (SSS/ASSS)	Classify emergency events requiring emergency plan implementation (3440190303). K/A 294001 Al.16-4.7
ISCT #10 (SSS/ASSS)	Ensure required notification on on-site and off-site personnel during off normal events (3440390303). K/A 294001 Al.16-4.7



OBJECTIVES/

NOTES

DELIVERY NOTES

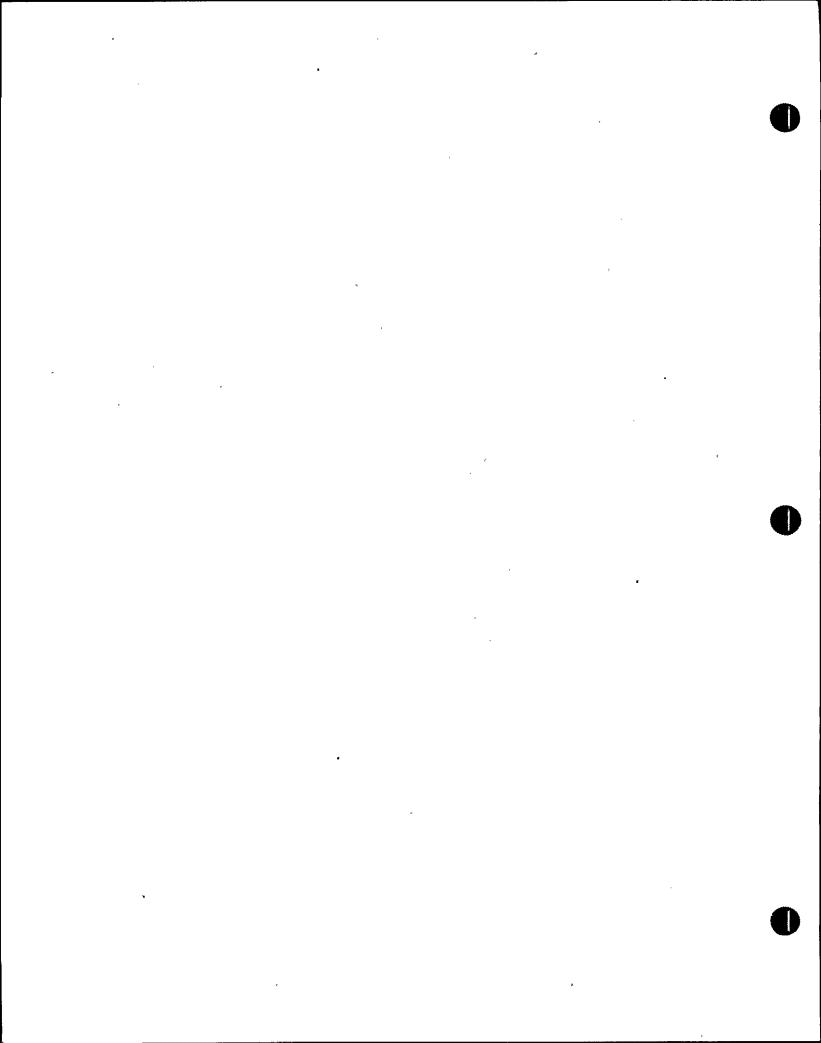
- Establish simulator initial conditions.
- Bring crew into the classroom and brief using 2. Attachment 6, Simulator Briefing Checklist.
- 3. Identify the roles and responsibilities and individuals performing the function for:
 - Crew Evaluator
 - SRO Evaluator b.
 - RO Evaluator(s) c.
 - Console Operator
 - If NRC is present introduce the NRC participants.
- Identify the roles of the participants.
 - SSS a.
 - ASSS b.
 - CS₀ C.
 - **AOEs** d.
 - SEPC (if applicable)
- Ensure video tape is running and participants are aware:

(NCTS-2)

- That video taping is being conducted. a.
- b. The reason for the video tape.

Discuss each item on the checklist. This checklist should be discussed during the first evaluated lesson plan during a training week and prior to subsequent evaluated lesson plans as necessary.

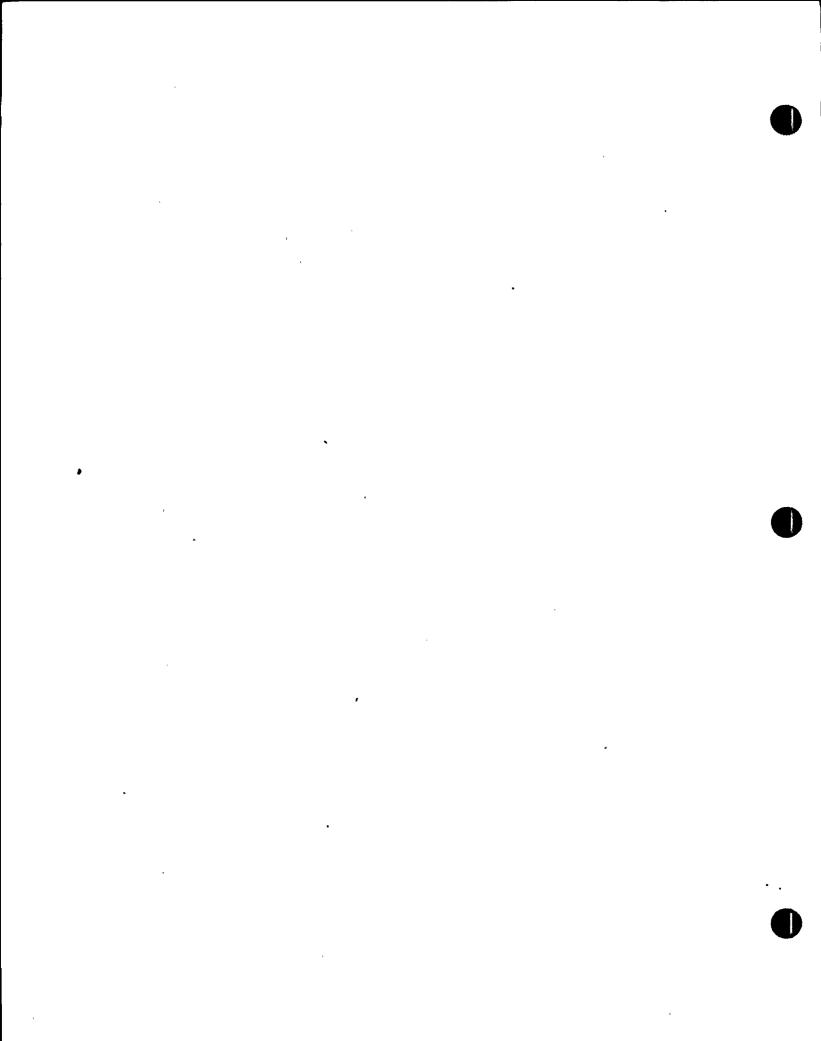
Ensure the participants understand that the evaluators will be taking extensive notes during the session and not to be concerned with the evaluators actions.



LESSON CONTENT DELIVERY NOTES

OBJECTIVES/ NOTES

Refer to Attachment 2, Section C. Turnover information and conduct shift turnover in the simulator.



PLANT RESPONSE

OPERATOR ACTIONS

EVALUATOR COMMENTS

Special Instructions:

Markup as out-of-service:

HPCS (Place pump control

switch in PTL)

Simulator Operation:

Initialize: IC-20

100%, BOL

Preset Malfunctions:

None

Preset Remote Functions:

None

Distribute and discuss:

Turnover sheets

Initial Conditions:

100%, BOL, maintaining

power in accordance with

0P-101D

RWM GR-147 above the

100% rod line

Out-of-service equipment:

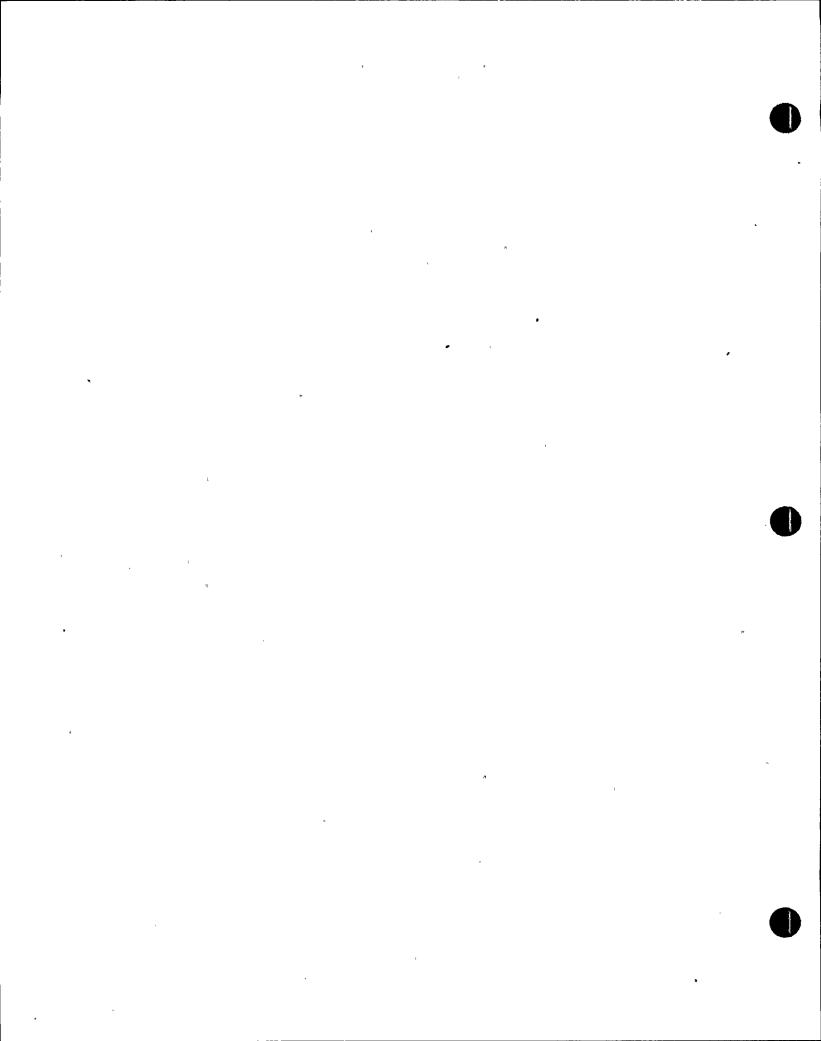
HPCS-Work in progress on

the HPCS pump motor breaker.

Breaker is currently racked

out. Pump has been marked

up for 3 days.



TIME	EVENT	INSTRUCTOR ACTIVITY	ATTACHMENT 2 (CO) PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR*COMMENTS
		Surveillances scheduled:			•
		None		-	
		Allow not more than five		Walk down panels.	
	a a	minutes to walk down the panels.			
T = 0	ē	Begin scenario .		Assume the shift; continue	
				power operation.	
T=3		Enter Malfunction:	Circ water exp joint leakage.	SSS/ASSS	
		1,CW05		May review technical	. Sat/Unsat/NA
				specifications for HPCS	
	v			inoperability.	

NR Level transmitter fails

down scale.

TEAM

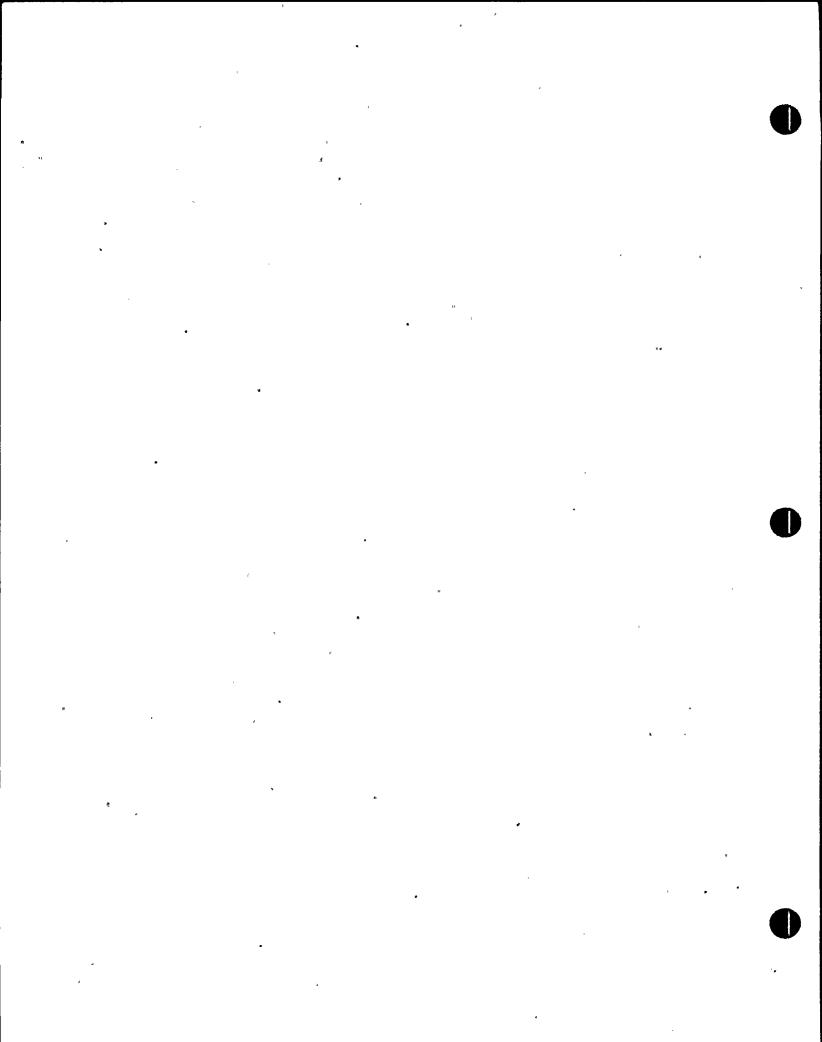
Should recognize/report

failure of instrument

2a,6a Sat/Unsat/NA

Enter Malfunction:

2,FW29C



OPERATOR ACTIONS

EVALUATOR*COMMENTS

SSS/ASSS

Should review technical 6b Sat/Unsat/NA specifications for the inop. level transmitter.

(T/S 3.3.9 Table 3.3.9-1 action 140, restore to operable within 7 days)

CSO/E

1. Report/respond to alarm la,b;6a Sat/Unsat/NA

Refers to annunciator Sat/Unsat/NA response.

CSO/E

Contacts RW Operator to Sat/Unsat/NA identify cause of alarm.

 Dispatch plant operator Sat/Unsat/NA to investigate cause of high sump level.

: 10 2

TIME

Malfunction 2 effective

ROLE PLAY: As I&C technician, report that you will assemble

a work package to troubleshoot

C narrow range.

851-551 and 851-552

Annunciators

actuate

ROLE PLAY: As RH Operator, if asked about local alarms state that 513226 just came in. (TB Cond Pit Sump 1 Level High; tell them the name only if they ask)

T = 13

ROLE PLAY: As plant operator report a leak in the C circ water box inlet; it's coming out at about 25 gpm and increasing slowly.

	,		•	•
		b		
		•		
	•			
	•			•
	•			
·				
				v

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ATTACHMENT 2 (Con-

ROLE PLAY: Support with completed, timely, local operation, as requested. Note: When Control Room Operator reports he is taking MOV-5 to close, report 100 secs later that the valve is 85% shut.

T = 14

TIHE

T = 18 Set Malfunction Steam Leakage
Inside the Primary Containment

HF; 14,HS03,,20

OPERATOR ACTIONS

EVALUATOR - COMMENTS

SSS/ASSS/CSO

1. Decide to isolate leak 6c Sat/Unsat/NA
a. Direct power Sat/Unsat/NA
reduction per OP-10A

Direct actions to 6b Sat/Unsat/NA secure the C CH pump

CSO/E

Reduce power in Sat/Unsat/NA accordance with OP-101D.

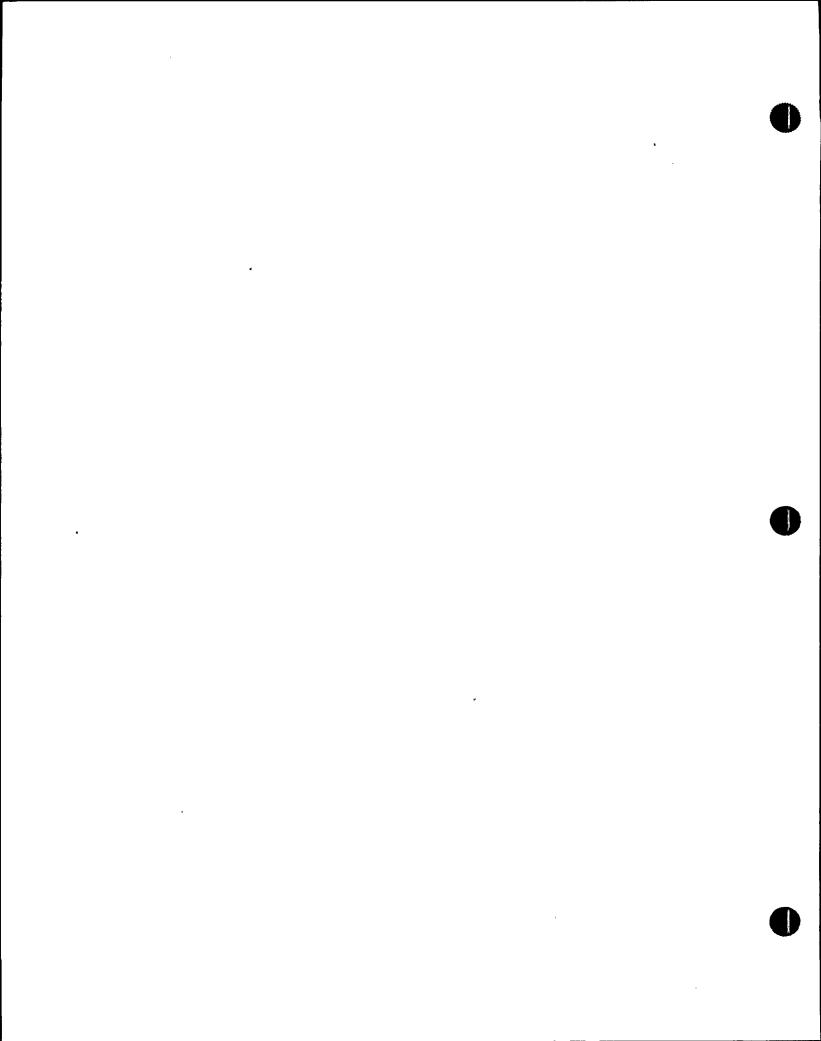
2. Isolates the C CW pump. 4a,5a,b Sat/Unsat/NA

TEAM

Monitor affected processes 4c for change.

1. Condenser vacuum Sat/Unsat/NA

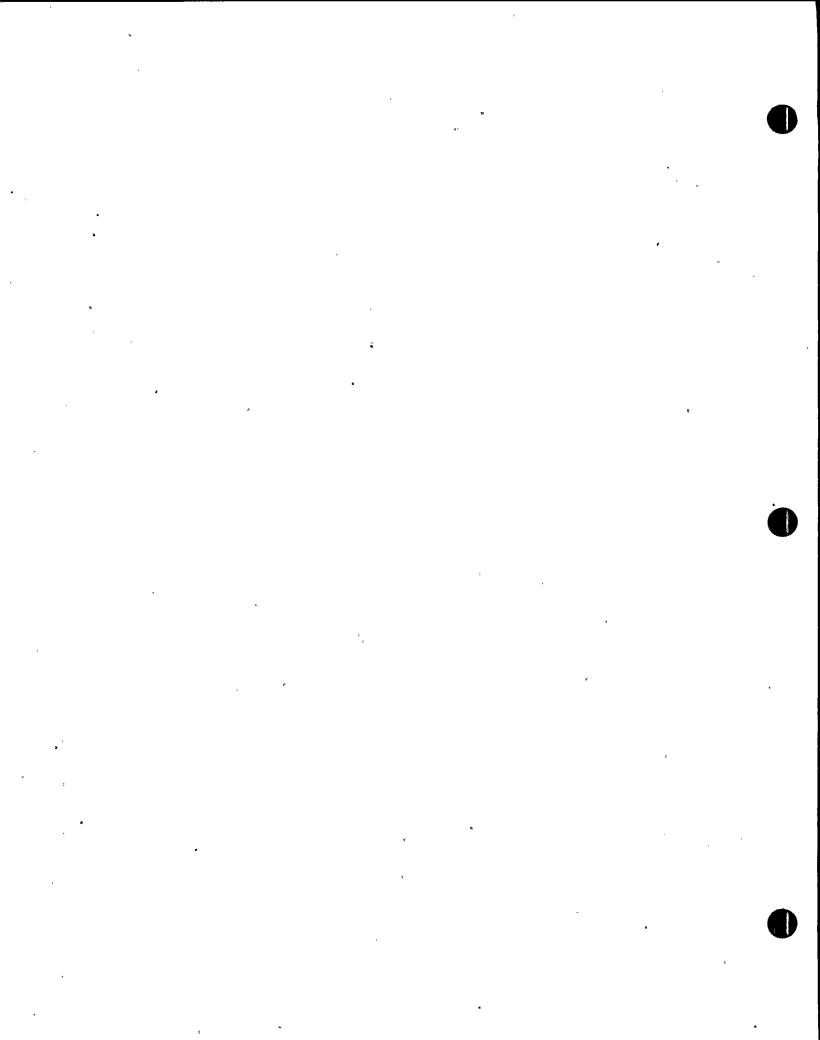
2. Reactor power Sat/Unsat/NA



TIHE	EVENT	INSTRUCTOR ACTIVITY	ATTACHMENT 2 (100 d) PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR COMMENTS
T = 20	3	Raise Malfunction 14 on	851254 "Process Airborne Rad	,	
		Simulator Control console until	Mon Activated"		₹ ₹ .
		Drywell Pressure starts to	CMS 10A/B in alarm	-	
		increase (3%).		¥	
	•		-	TEAM "	
1 = 21		Note: Leave leak rate at 3% until		Interprets alarms; takes	16
		GTS is placed in service.	Drywell pressure/temp rising.	actions	
		•	Drywell floor drains leak rate	 Checks drywell leak rate 	4a Sat/Unsat/NA
		*	rising.	recorders .	
				2. Monitor containment	Sat/Unsat/NA
		Note: Will need to continue to		parameters.	
		monitor Drywell pressure and		•	
		adjust Malfunction MS03		SSS/ASSS	•
	•	to increase DW pressure as		1. Check TS for	Sat/Unsat/NA
		Operators take action to decrease		containment leakage	
		Drywell pressure. After the scram	•	3.4.3.2 (>5 gpm	
		raise leak rate to 100%.	4	unidentified, reduce to	
		• •		within limits within 4	
		•		hours or hot shutdown	
•				within 12 hours)	
				2. Check TS for containment	Sat/Unsat/NA
		•		pressure 3.6.1.5	
			•	(relurn pressure to	
				within the limits in l	
			х.	hour or be in at least	
		•		hot shutdown within	
				next 12 hours).	

3 % (

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TIHE	EVENT	INSTRUCTOR ACTIVITY	ATTACHMENT 2 (dddd) PLANT RESPONSE	OPERATOR ACTIONS	EVALUA	TOR COMMENTS
T = 22		*	603140 alarm at .8 psig	SSS/ASSS		
			(DW pressure)	1. Determines validity of	la,b	Ŝat∕Unsat/NA
			•	alarm and that drywell		•
				pressure is increasing		
				2. Directs SPGT placed	4b	Sat/Unsat/NA
				on the drywell.		
				3. Orders power reduction.	6b	Sat/Unsat/NA
•				CSO/E		
		•	,	1. Reduce power per OP-101D.		
			e	2. Place SBGT on the drywell		ISCT#1
				per OP-61A.		Sat/Unsat/NA
			•	a. Start SGTS train		Sat/Unsat/NA
				b. Open 2GTS~SOV102		Sat/Unsat/NA
				c. Open 2IAS*\$0V168/180		Sat/Unsat/NA
		,		d. Open 2CPS*AOV108/110		'Sat/Unsat/NA
				SSS/ASSS		
				1. Directs imminent scram	•	
				actions. Carries out-		
				actions of OP-101C,		
T=23		•	Scram and isolate Gps. 3, 4, 8	CSO/E		
			and 9 from high Drywell	Performs actions of	3ь	
			pressure.	0P-101C	н.1.0	
		,	•	1. Mode switch to S/D	5a,b	Sat/Unsat/NA

* 2* * .

• · . • • D • • v



TIME

T INSTRUCTOR ACTIVITY

ATTACHMENT 2 (d

OPERATOR ACTIONS

EVALUATOR-COMMENTS

2. Ensure scram

la Sat/Unsat/NA

a. Full core display

b. RSCS

c. RWM

d. OD-7

3. Report all rods in

4a Sat/Unsat/NA

and power is

decreasing by APRMs

4. Insert SRM/IRM

5a,b Sat/Unsat/NA

5. Verify/transfer house

4a,5a,b Sat/Unsat/NA

loads

SSS

1. Enter EOP-RPV control:

ISCT#2

execute Sections RL, RP

Sat/Unsat/NA

and RQ concurrently.

a. Directs level

Sat/Unsat/NA

maintained 159.3"

maintained less than

and 202.3".

b. Direct pressure

Sat/Unsat/NA

1037.

EVENT

TIME

INSTRUCTOR ACTIVITY

ATTACHMENT 2 (CO...)

OPERATOR ACTIONS

EVALUATOR*COMMENTS

CSO/E

Takes appropriate action to Sat/Unsat/NA maintain pressure/level within the prescribed band.

SSS ISCT#3

concurrently.

1. Enters EOP-PC: Sat/Unsat/NA
Execute DHT, SPL, PCP,
PCH and SPT

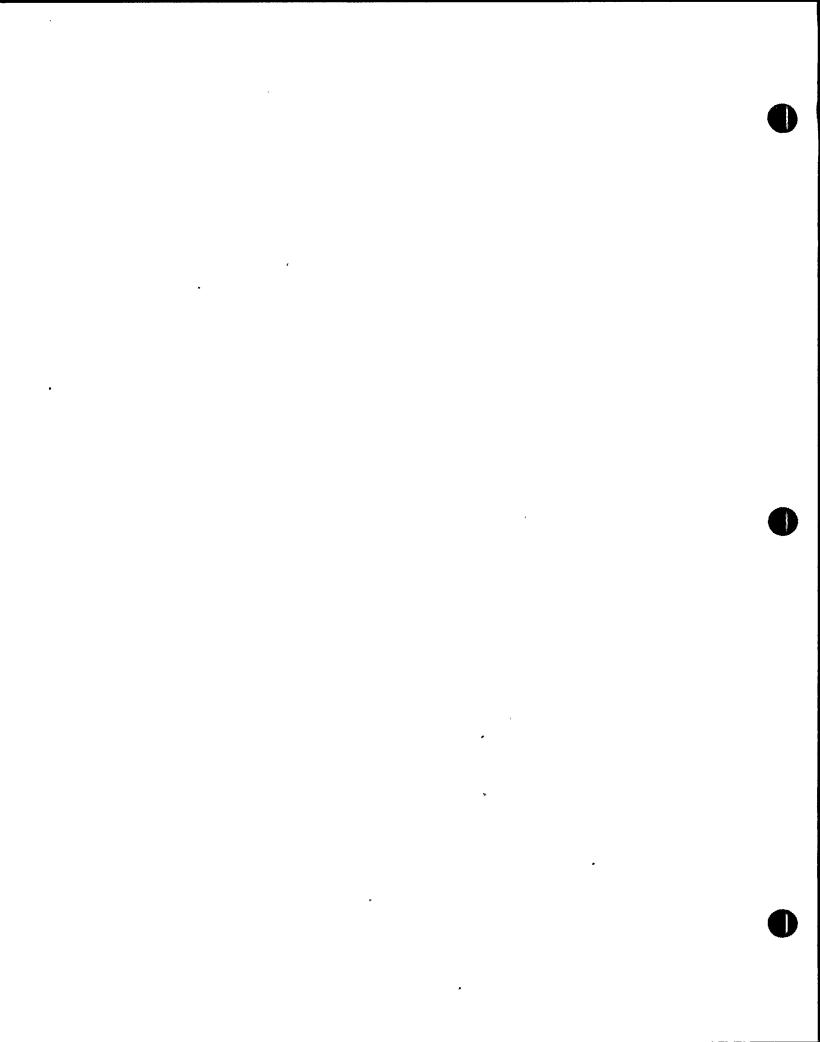
a. Directs drywell Sat/Unsat/NA cooling restored.

b. Directs suppression . Sat/Unsat/NA chamber sprays be placed in service.

c. Directs H_2/O_2 Sat/Unsat/NA analyzers restored to service.

CSO/E

Restores drywell Sat/Unsat/NA cooling.





1

TIME

INSTRUCTOR ACTIVITY

ATTACHMENT 2 (Cambd)
PLANT RESPONSE

OPERATOR ACTIONS

EVALUATOR COMMENTS

2. Places RHR. in suppression chamber sprays per OP-31.

ISCT#4

Sat/Unsat/NA

· .

a. Start/verify RHR

Sat/Unsat/NA

pumps.

b. Open FV 38 to establish min of

Sat/Unsat/NA

7450 gpm.

c. Open MOV 33 to

Sat/Unsat/NA

establish SP spray

flow.

3. Restores H_2/O_2

Sat/Unsat/NA

analyzers to service.

-Team

1. Continue to monitor and

Sat/Unsat/NA

report plant parameters.

Drywell pressure continues increasing.

ASSS/CSO/E

1. Verify isolation groups

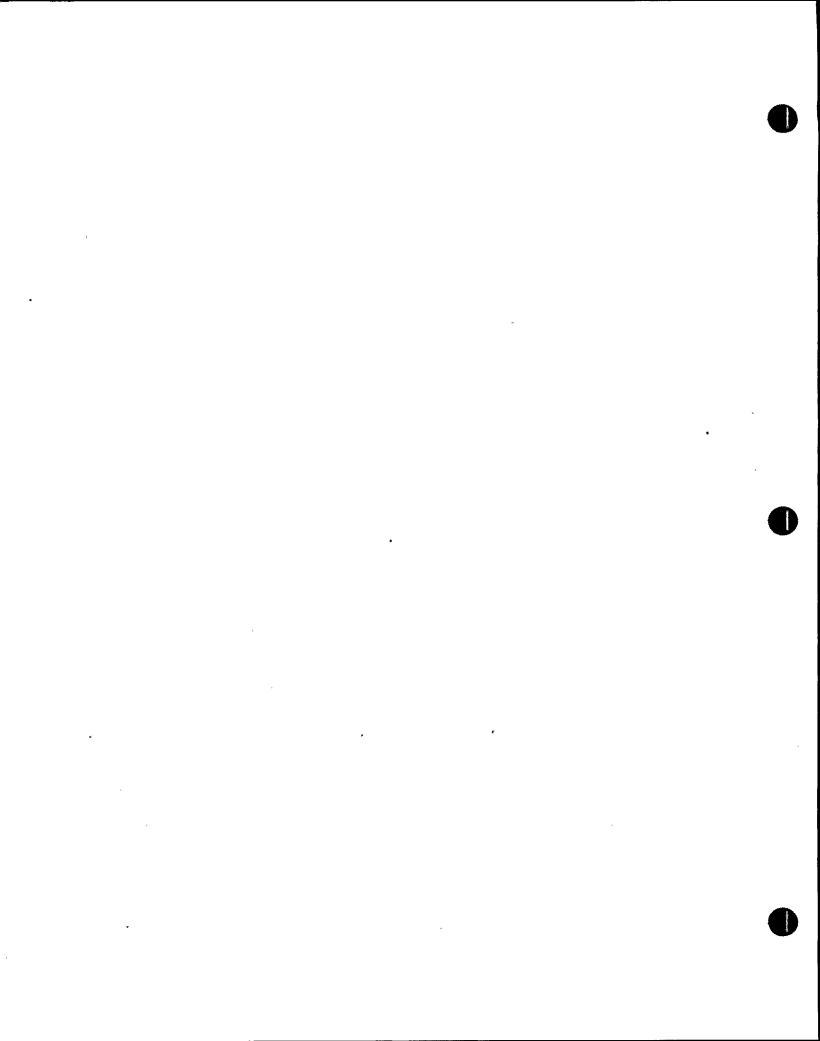
Sat/Unsat/NA

3,4,8 and 9 have

isolated.

Note: SSS may decide to commence

. a cooldown to lower RPV pressure. .





EVENT

TIME

INSTRUCTOR ACTIVITY

ATTACHMENT 2 PLANT RESPONSE

When suppression chamber exceeds 10 psig or before drywell temperature is above 340°F.

OPERATOR ACTIONS

EVALUATOR COMMENTS

SSS

1. Direct actions for drywell spray.

ISCT#5

Sat/Unsat/NA

a. Orders recirc pumps and drywell unit

Sat/Unsat/NA

coolers tripped.

b. Directs a loop of

Sat/Unsat/NA ·

RHR to be placed in

drywell sprays.

CSO/E

ISCT#6

1. Initiate DW sprays

Sat/Unsat/NA

a. Close FV 38 (if open)

b. Open MOV 15

c. Open MOV 25

2. When DW pressure drops

ISCT#7

below 1.68 psig,

Sat/Unsat/NA

terminate DW sprays.

3. When suppression chamber

ISCT#8

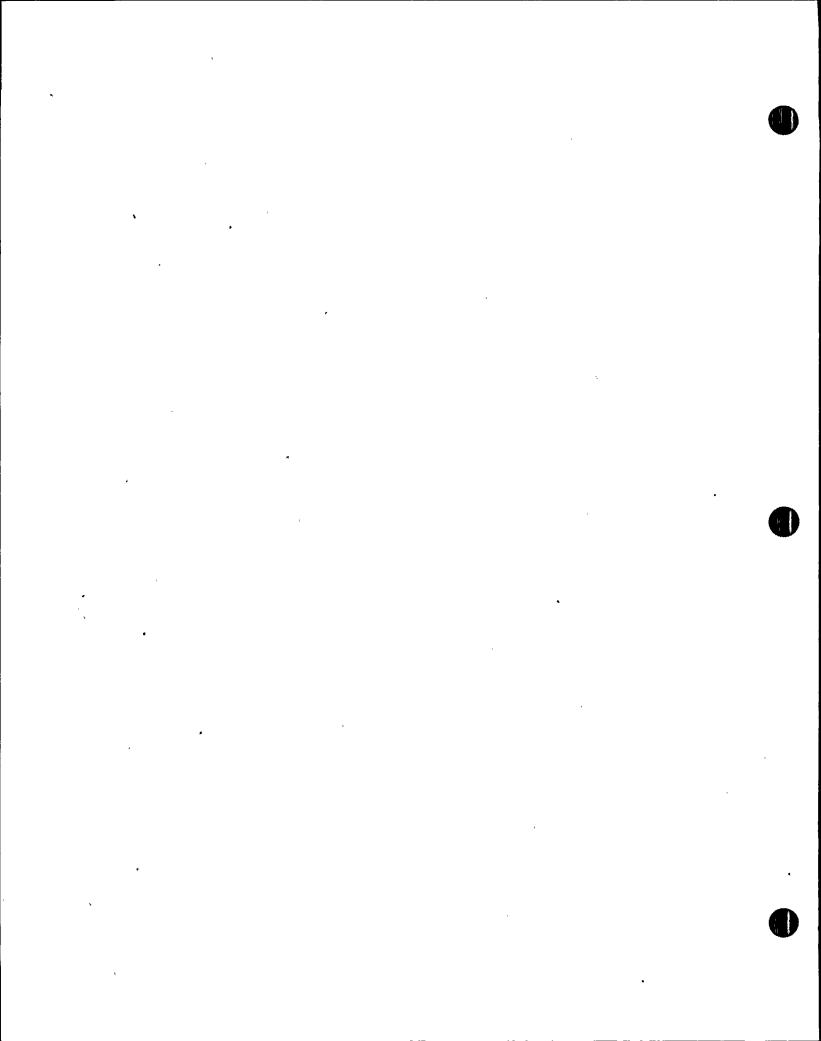
pressure drops below

Sat/Unsat/NA

1.68, terminate

suppression chamber

sprays.





TIME

INSTRUCTOR ACTIVITY

ATTACHMENT 2 PLANT RESPONSE

OPERATOR ACTIONS

EVALUATOR COMMENTS

SSS/ASSS

1. Classify event as an

Sat/Unsat/NA

ISCT#9

alert condition. 2. Initiate actions per

Sat/Unsat/NA

.

the emergency plan.

ISCT #10

3. Make notifications.

Sat/Unsat/NA

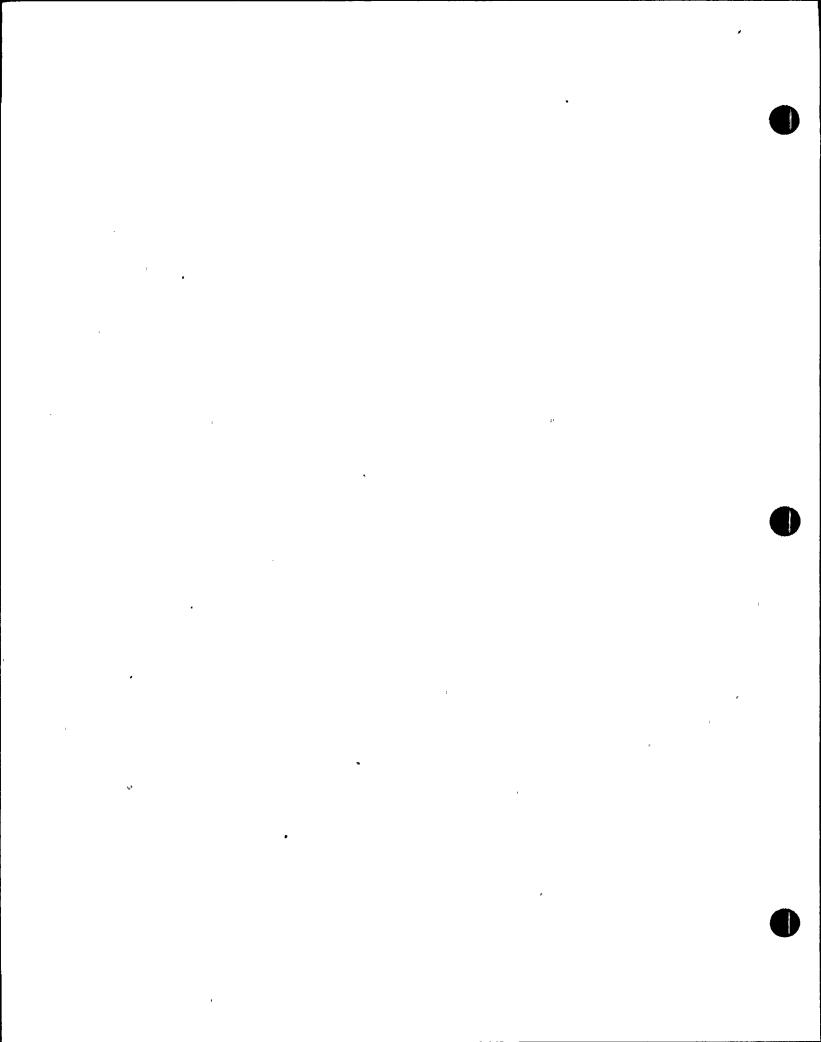
Termination Cue: Drywell pressure below 1.68 psig. RPV pressure and level being controlled in ordered bands.

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November 1990

Rev. 2

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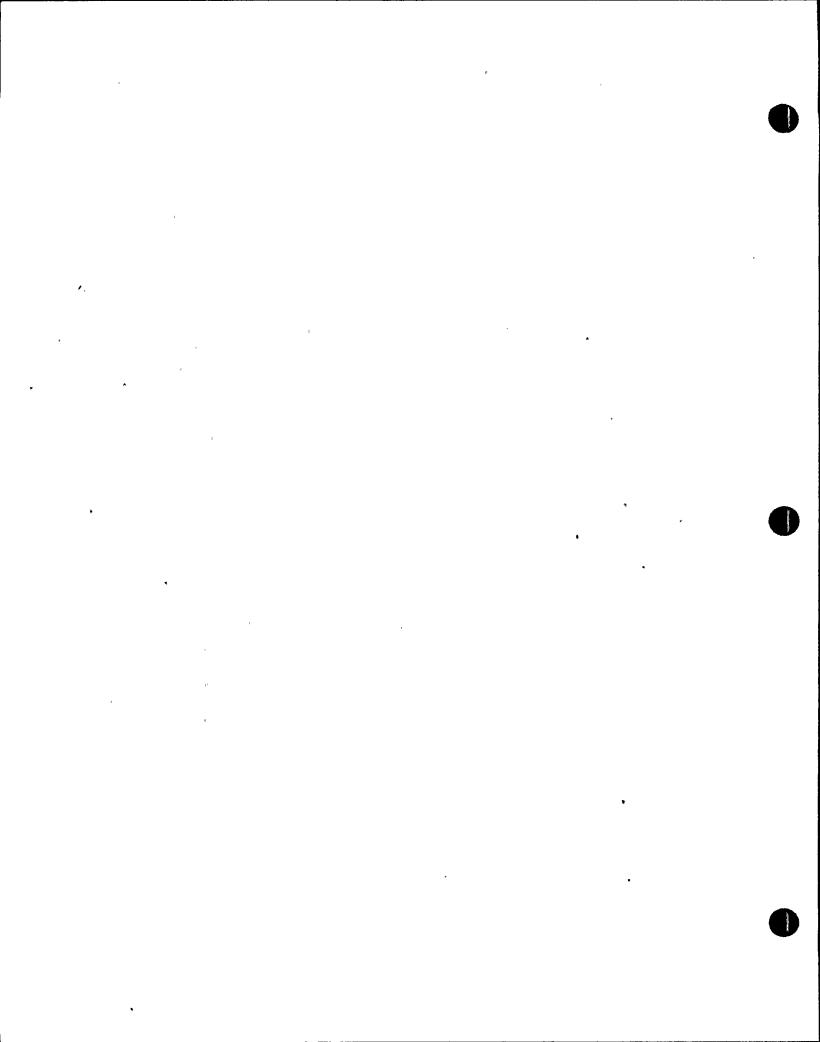
LESSON CONTENT

DELIVERY NOTES

OBJECTIVES/ NOTES

- 1. Ensure operators stand fast and do not communicate immediately after simulator is placed in freeze.
- 2. Evaluators should caucus to determine if any follow-up questions are necessary.
- Ask follow-up questions before the SSS and crew is released.
- 4. Instruct the SSS to assess the session with the crew to determine crew strengths and areas for improvement. This should be documented in Attachment 4 for later evaluations.
- 5. Evaluation Team Shall:
 - a. Determine crew strengths and areas for improvement.
 - b. Conduct a crew evaluation in Attachment 13.
 - c. Determine SAT/UNSAT/NA for all critical tasks and who performed each task.
 - d. Conduct individual evaluations on Attachment 10 and 11.
- 6. Following the evaluation (if NRC) is present) the results of evaluation should be given to the NRC examiners.
- 7. Conduct a post exercise assessment as follows:
 - a. Review the learning objectives.
 Have the crew state how each was met during the session.

-17



b. Participant Self-Evaluation

Discuss should focus on measurable behaviors and how these contributed to or detract from meeting the objectives.

c. Instructor assessment and performance(NCTS-2) recommendations.

- 8. Session and program feedback.
- 9. Document session.

Allow participants to evaluate themselves against the learning objectives and tasks for the session. Discussion should center on performances and not personal feelings or interpretations of actions.

- Assess the participants performance for those objectives and tasks not included in the crew self-assessment. Use the video tape in the assessment to more effectively assess communications, teamwork, and prioritization, if necessary.
- Provide feedback on ways to improve performance as appropriate.
- Distribute Simulator Training Evaluation Feedback For, NTI-4.4 Attachment 13.
- Provide students with time to complete form.
- Complete Post Evaluation Summary, Attachment 4.
- 2. Place a copy in file for next training session.
- Document any NRC/INPO operating concerns as an items list attached to the training record. (TR)

