

Scenario Title: LOSS OF HIGH PRESSURE INJECTION SYSTEMS WITH STUCK CONTROL ROD GROUPS

Scenario Duration: 1 hour

Scenario Number: 02-REQ-009-1DY-2-04

Revision Number: 4

Course: Licensed Operator Requal

Reviewed By: *[Signature]* / 8/14/90
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Superintendent of Operations Date

MASTER

CONTROLLED

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Rev. 4

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SCENARIO SUMMARY

LOSS OF HIGH PRESSURE INJECTION SYSTEMS WITH STUCK CONTROL ROD GROUPS

The scenario begins at power with the High Pressure Core Spray System INOP due to maintenance. RCIC turbine trip occurs due to an inadvertent local trip of the overspeed trip. RCIC System can be restored to operable by resetting local trip and trip throttle valve. If RCIC is not restored an orderly shutdown of the Reactor will be required. Subsequently the "B" and "C" narrow range level instruments fail upscale.

The instrument failure causes a level 8 trip of the feed pumps and main turbine. The turbine trip results in a reactor scram. Two groups of control rods (34) fail to insert on the scram.

The operators should enter the scram procedure and RPV control EOPs. Following the scram, a small leak in the drywell provides the impetus to depressurize and restore inventory to the vessel with the lower pressure condensate system.



SCENARIO OBJECTIVES

The Licensed Control Room Reactor Operators (CSO and NAOE):

Perform Actions Required for a Loss of Coolant Accident (Small Leak) inside the Primary Containment

Task Number 2000090504 K/A Rating 3.90
Requal TIF 4.31 Class, Simulator

Perform the Actions Required for a Stuck/Inoperable Control Rod

Task Number 2000360401 K/A Rating 3.40
Requal TIF 3.33 Class, Simulator

Perform Mode Switch Transfer in Accordance with Requirements of OP-101A, B, C

Task Number 2019230101 K/A Rating 4.00
Requal TIF 3.18 Simulator

The Licensed Senior Reactor Operators (SSS and ASSS):

Classify Emergency Events Requiring Emergency Plan Implementation

Task Number 3440190303 K/A Rating 4.70
Requal TIF 4.28 Simulator

Direct the Actions Required per EOP-RPV Section RQ

Task Number 3449390603 K/A Rating 4.70
Requal TIF 4.40 Class, Simulator

Direct the Actions Required per EOP-RPV Section RL

Task Number 3449400603 K/A Rating 4.70
Requal TIF 4.33 Class, Simulator

Direct the Actions Required per EOP-RPV Section RP

Task Number 3449410603 K/A Rating 4.70
Requal TIF 4.33 Class, Simulator

(*) Individual Simulator Critical Task

(**) Crew Simulator Critical Task



NMP 2 CONTROL ROOM REFERENCES

PROCEDURES:

OP-101C, Scram and Scram Recovery

EOP-RQ, RPV Reactor Power Control

EOP-RL, RPV Water Level Control

EOP-RP, RPV Pressure Control

EAP-2, Classification of Emergency Conditions

EPP-20, Emergency Notifications

EPP-25, Emergency Reclassification and Recovery

TECHNICAL SPECIFICATIONS:

3.1.1 and Table 3.3.1-1

3.5.1

3.7.4

3.0.3



TIME

EVENT

INSTRUCTOR ACTIVITY

PLANT RESPONSE

OPERATOR ACTIONS

EVALUATOR COMMENTS

Special Instructions:

Markup as out-of-service:

CSH-P1 (Pump control in
PTL)

Simulator Operation:

Initialize: IC-20

100%, BOL above the 100% rod
line

Preset Malfunctions:

1, RD17B, 0

Control Rods Stuck

2, RD17E, 0

Control Rods Stuck

Preset Remote Functions:

None

Preset instructor overrides:

None

Distribute and discuss:

Turnover sheets

Initial Conditions:

100%, BOL, maintaining

power in OP-101A

RHM GR-147 above the 100%

rod line

Out-of-service equipment:

CSH



TIME	EVENT	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR COMMENTS
		Allow not more than five minutes for panel walkdown.		Walkdown the panels.	
T = 0		Begin the scenario.		Assume the shift; maintain power	
T = +2	1	Set: page RC, RF; 1		CSO/E Recognize/report that RCIC turbine has tripped.	2a,6a
		Role Play: If sent to investigate RCIC wait a few minutes and report maintenance techs in area inadvertently bumped trip.		SSS/ASSS Determine technical specification status of RCIC TS 3.7.4	3d
		Role Play: If requested to reset the overspeed trip Set: page RC, RF; 1			





TIME	EVENT	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR COMMENTS
				2. Ensure scram Full core display RSCS RHM OD-7	4a
2		Malfunctions 1 and 2 effective	2 rod groups stuck out	(*).3. Reports failure of many rods to insert Task # <u>2000360401</u> K/A Rating <u>3.40</u>	2a,6a Sat/Unsat
				4. Verify/report APRMs decreasing	4a,6a
				5. Monitor/maintain: Level 178" to 187" Press 920 or with SRVs	4b,5b
				6. Insert SRM/IRM	5a,b
				7. Verify turbine tripped	4a
				8. Verify/transfer house loads	4a,5a,b
				9. Verify/report SDV vents/drains shut	4a,6a
				10. Verify/report recirc at low speed	4a,6a



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SSS/ASSS

(*)1. Enters RPV Control EOPs; 3a,b Sat/Unsat

RQ, RL, RP

Task # 3449390603K/A Rating 4.70Task # 3449400603K/A Rating 4.70Task # 3449410603K/A Rating 4.70

2. Directs control of 3c,6a

pressure, power and
level

CSO/E

Reports continuous, slow 6a
decrease in reactor level

TEAM

(**) 1. Diagnose small break as most 2c Sat/Unsat

probable cause.

Task # 2000090504K/A Rating 3.90(Small break determination
based on increasing drywell
pressure/temperature
Decreasing reactor level
Increase in drywell leakage)

Initiate remote function RCIC

Turbine Trip when BOP attempts to
start RCIC or Level 2 is reached
(Best cue is 603-125 and 603-425).



TIME	EVENT	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR COMMENTS
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Set: Page RC: RF; 1

RCIC trips

CSO/E

Role Play: If requested to locally
reset overspeed trip wait a few
minutes and report "RCIC overspeed
trip will not reset."

1. Reports RCIC trip
2. Attempts RCIC reset

SSS/SEPC

- | | | | |
|-----|--|------|-----------|
| (*) | 1. Classifies event as Unusual
Event or higher. | 2b,c | Sat/Unsat |
|-----|--|------|-----------|

Task # 3440190303

K/A Rating 4.70

- | | |
|------------------------|-------|
| 2. Makes notifications | 4b,6b |
|------------------------|-------|

TEAM

Determines need to cool down

CSO/E

- | | |
|--|------|
| 1. Commence cool down with
turbine bypass valves on .
SSS orders | 5a,b |
|--|------|



TIME	EVENT	INSTRUCTOR ACTIVITY	PLANT RESPONSE	OPERATOR ACTIONS	EVALUATOR COMMENTS
			Reactor pressure equals 500-700 psig	CSO/E	
		H.2.2.1 If directed to INITIATE ARI FROM RELAY ROOM USING KEYLOCK SWITCHES <u>P001</u> and <u>P002</u>		2. Feed vessel with condensate system	5a,b
		- Set: MF; RP13		a. Isolates FW pumps	
		- Inform Operators "ARI initiated from relay room"		b. Takes manual control of S/U bypass valve feed with booster pumps	
		H.2.2.2 If directed to <u>SHUT 2RDS-V595</u> and <u>OPEN 2RDS-V43</u>		c. Restore and maintain level 159.3" to 202.3".	
		- Set: MF; RD-15		3. Performs actions of RQ as directed by SSS	5a,b
		- Inform Operators "2RDS-V595 Shut and 2RDS-V43 Open"		4. Utilize H2-OP-97 Section H to insert control rods	3a
		H.2.3.1 If directed to <u>PULL ARI VALVE FUSES (P001 & P002)</u>		5. Recognize/reports rods inserted	2a,6a
		- Set: MF; RP-14			
		- Inform Operators "ARI valve fuses removed"		SSS/ASSS	
				Recognizes that rods have inserted	2a



TIME

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EVALUATOR COMMENTS

H.2.3.2 If directed to RESET EPAs

- Set: RF; RP, 1 & 2

- Inform Operators "EPAs reset"

H.2.3.3 When informed RPS JUMPERS

P609 AND P611 INSTALLED

- Set: MF; RP02

H.2.4.5 When informed RSCS JUMPERS

P613 INSTALLED

- Set: MF; RW02

Action: Once scram is reset to

drain the SDV

Clear: MF's; 1 and 2

TERMINATION CUES:

Level > 159.3" but < 202.3"

and

Rods inserted with

Cooldown pressure controlled.

