

# 1. b Interpret/Diagnose

## Scenario 3/Event 5

---

Expected - As SRO Recognize Stby  
EHCP Did Not Start  
+ Direct Manual Start

Actual Actions -

- NRC
- Applicant Started Stby EHCP
  - NRC believes Applicant Thought  
CP Did Not Auto Start
  - Applicant Did Not Know Why?

Applicant

- Recognize EHCP Trip
- Directed ARPP Review Prior To  
Alarm Coming In
- Directed EHCP Start



# 1b Scenario 3, Event 5

## Questions

- Why did she actually start the second pump & do we know why? Was it specifically stated?

pretty sure started because 1 running pump would BE needed not because of failure to Auto Start

- Was she asked the setpt? <sup>not directly</sup>

- Did EHC L. Press Alarm Annunciate? NO

think about

- Did examiners consider that diagnosis of pump trip & actions lead to a +?

- Is there sim data captured? NO



1.6 Interpret / Diagnosis - Ensure Accuracy  
Scenario 3 / Event >

Expected Response - SRO directs

low stm line pressure SI Block when  
 $RCS < 2000^{\#}$

Applicant Response -

Requested it at 2007<sup>#</sup>, early.

SI was successfully Blocked.  
on 2nd attempt

## Questions

- Was simulator verified <sup>think so</sup> operating correctly, >
- Where was requirement to verify  
P11? <sup>Skill of craft...</sup>
- How is transitioning from SOA/A to  
SI/SLI Block Significant? <sup>but no error occurred</sup>  
<sup>Fates: Creates  
error likely situation</sup>



- Check If other crews  
verified P-11 before Bypassing

SI/SLI ~~NO Haven't done~~

no other  
crews got  
a "hit"  
so they did  
check  
pull or  
waited or  
got luck

How does Vogtle train on this,  
what is Ops Expectation? (check  
indicator then act? or check P-11  
+ other channels?)

Don't know

would have to call Vogtle

Maybe we don't care



# I. C Interpret / Diagnose - Understanding Scenario 3 / Event 4 - PT-455 ↑

Expected Action - Recognize PT-455  
failure → Gain control in manual  
pressurizer press control, swap  
channels ⇒ Auto

Applicant - Stayed in Manual →  
Never went to auto

## Questions?

- Was there a "real" issue w/  
the loss of L/D + going to Auto? → sure LPT was  
75% NRC event  
timing OK
- Sufficient time between events? → 30 min **OK**
- Gave order... Not followed + no follow  
up... correct competency?



Was PT-455 event initiated

Somewhat  
Lpr was  
still hi

while recovering from previous

- Procedure Error... Directs Htrs To On ?  
I think we have it may not need it  
Need Sim Data
- When did level deviation situation

clear ?  
May not be relevant  
Sim data should be / is available

- Was pressure and level stable at any point in time prior to Event 5? Pz & Level Dev Clear?

- Is there a "better" error — MPC to Auto not per procedure... directed w/o verifying previous steps complete? (Comp 5b?)

yes

Surrogate

- Did BOP Per Check Anything?

- Did Wa(tower) Get Error For B/O to On  
vice Auto

YES



# I. C Interpret/Diagnose

Scenario 6, Event 4

Expected Response - SRO understood

LT-459 Failure  $\Rightarrow$  FIC 0121 to Manual.

Applicant - Changing to manual  $\rightarrow$  Select Unaffected Channel  $\rightarrow$  Selected Auto... Control Not Sufficient  $\rightarrow$  Back To Manual

Questions -

• What Indications are on CONTROLLER That it may Saturated?

No saturated indications on controller

What did other crews do? Validation Issues?

Other Crews Yes

Another crew hit by gains to AUTO early



Yes  
caused  
another  
incident  
with alarms  
too

- Was it unreasonable for her to place FIC-121 back in auto when she did?

- She did follow procedure?  
Yes ... as did RD ...

- What exactly did applicant say to show misunderstanding?

We have this on 303 ...



# 3a Control Board Manips

Locate + Manipulate

Scenario 7, Event 1

Expected Action - Maintain  $T_{AVE}/T_{REF} \leq 2^{\circ}F$

Applicant Action - 40min  $\rightarrow$  Trended to  $2.3^{\circ}F$

## Questions

$\nearrow$  pulled 1 step asked twice  $\rightarrow$  "Think" so

• Did applicant request to pull rods  
+ told by CRS - No wait? ~~Comp~~  
~~4/6?~~

NO

• Is  $2.3^{\circ}F$  Low an alarm condition  
or of safety significance?

Don't

know

• Is SRO Signed Stmt Accurate? ~~Comp~~  
~~4/6?~~

• What procedure directs  $\pm 2^{\circ}F$  Dev?

• How was SRO Graded? ~~Yes~~  
~~error~~



# 3a. CONTROL Board Operations Locate + Manipulate

Scenario 3, Event 6

Expeded Response - RO to know where to  
isolate RWST leak.

Applicant Response - She Did Not

Questions -

- Was RO directed to monitor ~~for~~ or  
focus on reactivity?

- Who else had errors on what

many others  
did NOT  
know where  
HIs were  
+ got  
RF hits

Competencies Others

- What were follow up questions? **No**



3c. Control Board Ops - Manual  
Scenario 7 Event 3 - Loss of Cooling  
To Letdown Hx

Expected Response - Diagnose TV-0130  
Failure + Control in Manual

Applicant - Misdiagnosed - Wrong Actions  
Eventually Controlled In Wrong  
Direction

No Questions

Check SRC + RO  
No errors  
for either  
writeup



# Comms

Q-

• For ~~4b~~ FIL-0121 -

Scenario 6 Event 4, Did

she say manual, manual, auto,  
manual... was  
enough time given to self  
correct.

• Scenario 7, Event 7 -

Was SRO a surrogate?

Is there second error?

• For 4b - Did she ever keep  
someone outside CR informed?

→ 2?



- Scenario 6 Event 1 -

Was this "information" required to be repeated back?

- Was the SENDER ALSO Hit for not ensuring Comm received?



# Errors + RF summary (except commons)

- #1 EHC pump trip 1.b
- #2 SI Block with P-11 lit No error
- #3 PT fails LPZR failure; Heaters end up 2.4 5.6 didn't direct 2235 AND continued on understanding still?  
in Manual (BLU A) ~~maybe more than one procedure hit??~~  
ONE procedure hit 1.C 5.b
- #4 LPZR failure + returning FLC 121 to AUTO
- #5 Power ↑ Tave goes 2.3°F low No error
- #6 RWSI leak 25 minutes to close valves No error
- #7 PORV ops, takes H/S wrong direction 3.9  
(not contested)
- #8 Letdown HX TE failure, Doesn't promptly take manual control + presses wrong button 3.C  
1.C

Make sure to integrate with original ES-303  
[i.e. "non contested" errors must be included!]



Error #1 as SRO

ETC Pump trip

Applicant believes stby pump  
should have auto-started

Correct RF? Y (Assigned l.b)

Error Y or N?

| Don | Dave | Chris |
|-----|------|-------|
| Y   | X    | Y     |

Follow up? Did diagnose initial trip correct consider "point back"

Error #2 as SRO

Directs blocking SI with

P-11 lit < 2000#

Correct RF? (Ass. lb)

| Error Y / N? |      |       |
|--------------|------|-------|
| Don          | Dave | Chris |
| N            | N    | N     |

Follow up? Directing ops could have used other  
operator to block SI while 1st  
Operator was hold steam dump switches



## Error #3 as SRO

Error Y or N?

Understanding PZR controls Auto/Manual

- PZR htrs left in Manual by RO

| Don | Dave | Chris |
|-----|------|-------|
| ✓   | ✓    | ✓     |
| ✓   | ✓    | ✓     |
|     | ?    |       |

2 errors?

~NO?

(2C) ✓  
(Sb) ✓

still a ??  
lack of understanding

Correct RF? (Assigned 1c)

① Didn't follow procedure why not adj to 2735 in manual before sohs + auto why didn't she direct this? (2C)

Follow-up?

② Even when RO told take htrs → Auto RO takes B/V A → ON (Sb)

## Error #4 as SRO LT Failure

Error Y or N?

Understanding Charging Flow control /FK-0121

Saturated controller FCV 121 goes full closed

When taken back to AUTO w/LPZR on program

| Don    | Dave | Chris |
|--------|------|-------|
| (1c) ✓ | ✓    | ✓     |
| (Sb) ✓ | ✓    | ✓     |

Correct RF? (Ass. 1c) Based on F/VG thinks FK-121 failed

Follow-up

(Sb) also she initiates another transient by going to auto on FK-0121 w/ PT-508 failure cues in

No caution at actual procedure step going back to auto maybe up-front

Check sim data inchs LPZR actual

Check other crews problem w/saturated controller

Check full procedure for caution on "saturation"



## Error #5 as OATC

During power  $\uparrow$  Tave goes low out of band ( $\pm 2^\circ\text{F}$ ) to  $\approx 2.3^\circ\text{F}$  below Tref

Corr. RF? (ass. 3a) ~~Not~~ 3a 1a perhaps or 4b

Follow-up? Check other crews did Tave go out of band? we have lost SRO saying >1 tiles asked to pull rods

Error Y or N

| <del>Don</del> | Dave | Chris                |
|----------------|------|----------------------|
| NO             | NO   | <del>YES</del><br>NO |

MC 500  
\* Examiners  
can't recall  
Tave comments

## Error #6 as OATC

During RWST leak doesn't recommend taking sludge valve(s) handswitches to closed. H/s in sim/control room back panel

Corr. RF? (ass. 3a)

Follow-up?

Error Y or N?

| Don | Dave | Chris |
|-----|------|-------|
| N   | N    | N     |



## Error #7 as OATC

NOT CONTESTED BY APPLICANT

During Ppr failure operators PORV in wrong direction, corrected by SRO (hits operators switch in wrong direction)

Error Y or N?

| Don | Dave | Chris |
|-----|------|-------|
| Y   | Y    | Y     |

Corr RF? (assigned 3a) 3a correct

Follow up? Make sure closing PORV not critical But not stopping a LOCA perhaps a critical by Westinghouse guidance

A-2 says NO

## Error #8 as OATC

During Letdown HX TE-0130 failure  
does NOT ID Manual control available AND  
then hits wrong button (wrong one was Up arrow)  
on controller

Error Y or N?

| Don  | Dave | Chris |
|------|------|-------|
| 3c Y | 3c Y | 3c Y  |
| 1c Y | 1c Y | 1c Y  |

Correct RF? (assigned 3c) Two hits?? 1c maybe

Follow up? Where is TEC (TIC) 130 controller in relation to being able to monitor Sk, Tave ...

Check SRO / VO write-ups too