[redacted] CCS-039

RATING FACTOR 3.A.: CONTROL BOARD OPERATIONS, LOCATE & MANIPULATE

1. Examiner comment on 303 form p. 18 of 32, related to Scenario 7, Event 1

A. FACTUAL SEQUENCE OF EVENTS

-During the simulator scenario, the initial event (a normal evolution) directed the operators to raise reactor power.
-At time 07:26:?? [redacted] directed Carla to maintain Tave-to-Tref within ±2 degrees F and AFD within ± 3 AFD units.
-At time 07:28:40, Carla, as Reactor Operator (RO), moved control bank 'D' rods out 2.5 steps (ending with 'D' bank at 157 steps on both groups)
-At time 07:32:10, [redacted] as Senior Reactor Operator (SRO) directed a 8-12 MWe turbine load increase.
-At time 07:36:50, Carla, as Reactor Operator (RO), moved control bank 'D' rods out 3 steps (ending with 'D' bank at 160 steps on both groups)
-At time 07:39:48, [redacted] as Senior Reactor Operator (SRO) directed a 8-12 MWe turbine load increase.
-At time 07:43:57, event 2 was initiated, a #4 SG steam flow channel failing high. At this time Tave-to-Tref deviation was -0.566 °F.
-During event 2, there was no additional rod motion, and no examiner has any record of a communication between the RO and SRO regarding temperature control.
-At time 07:54:54, event 3 was initiated, where TE-0130 fails low. At this time, Tave-to-Tref deviation was -1.156 °F.
-During the operator actions for event 3, the entire team of applicants was physically located in front of the control panel with the controller for TE-0130. The NRC exam team noted that Carla was standing in front of the TE-0130 controller throughout event 3. P. Capehart and M. Bates conducted a short discussion questioning the allowable duration of time for the OATC position to be away from monitoring the key reactor plant parameters. P. Capehart also noted that Carla was not monitoring reactor coolant temperature trends via the IPC computer trend screen.
-During event 3, there was no additional rod motion, and no examiner has any record of a communication between the RO and SRO regarding temperature control.
-At time 08:11:20, event 4 was initiated, which was a trip of an NSCW cooling fan, a malfunction which contained no operator actions for the control board personnel. At this time, Tave-to-Tref deviation was -1.481 °F.

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-At approximately time 08:18 Carla began what was intended as a 3-step outward rod pull. Rods were only moved by 1 step due to initiating event 5.
-At time 08:18:02 event 5 was initiated, where pressurizer pressure channel PI-456 failed high.
-At time 08:18:17, Carla released the in-hold-out switch and informed [redacted] of the pressurizer pressure malfunction.
-At time 08:37:??, Carla moved rods out 3 steps. Just before the rod move, Tave-to-Tref deviation was -2.297 °F. Tave-to-Tref was outside the established control band for approximately 4.8 minutes.

During post-scenario follow-up questions, the examiner asked Carla "what was your temperature control band?" Carla answered that it was plus or minus 2 degrees. The examiner asked Carla what the maximum Tave-to-Tref difference had been during the scenario. Carla responded that the maximum difference had been 2.3 degrees F.

B. EXAMINER EVALUATION AND COMMENTS

The examiner determined that the root cause deficiency was a result of poor control board operations. NUREG 1021, Appendix D 2.c. states for the competency *Operate the Control Boards* that "This competency involves the ability to *locate* and *manipulate* controls to attain a desired plant and system response or condition." ES-303 form ES-303-4 further specifies that the 3.a. rating factor determines if "...the applicant LOCATE AND MANIPULATE CONTROLS in an accurate and timely manner." For this event, Carla, as a control board operator, failed to manipulate the controls in a timely fashion to obtain the desired system response of maintaining Tave-to-Tref deviation between the ordered 2 degree band. Based on post-scenario follow-up questions, there was no deficiency in understanding; furthermore, there was no element of taking manual control of automatic functions because rods were in manual from the initiation of the scenario. Vogtle does not operate with automatic rod withdrawal capabilities, only automatic rod insertion.

There is a further element of poor communications during this event. There is no record from any NRC examiner of any communications during an approximate 40 minute period of time where Carla notified the SRO of the Tave-to-Tref value and trend. This is a clear example of a deficiency in rating factor 4.b., "Did the applicant keep crew members ... informed of plant status?"

2. Examiner comment on 303 form p. 19 of 32, related to Scenario 7, Event 5

A. FACTUAL SEQUENCE OF EVENTS

-At approximately time 08:18 Carla, as Reactor Operator (RO) began what was intended as a 3-step outward rod pull. Rods were only moved by 1 step due to initiating event 5.
-At time 08:18:02 event 5 was initiated, where pressurizer pressure channel PI-456 failed high.
-PI-456 failing high caused pressurizer PORV 456 to OPEN. As part of the scenario design, the PORV block valve, HV-8000B, automatic closure feature on low pressurizer pressure was disabled.
-At time 08:18:17, Carla released the in-hold-out switch and informed [redacted] of the pressurizer pressure malfunction.
-As part of immediate operator actions, Carla verified the pressurizer spray valves were closed, and then mis-operated the pressurizer PORV 456 handswitch by taking it to the OPEN position.
-Carla then turned to look at [redacted] without taking further actions.
-[redacted] pointed at the PORV handswitch, and loudly stated: "Carla, shut that valve!"
-Carla then correctly closed the PORV using the handswitch on the control board.

During post-scenario follow-up questions, the examiner asked Carla "what were your immediate operator actions?" Carla correctly stated the immediate operator actions for a pressurizer channel failure. During her statement, Carla indicated that she had initially turned the PORV handswitch in the wrong direction.

B. EXAMINER EVALUATION AND COMMENTS

During the review of Carla Smith's 303 documentation following the issuance of the exam report, the exam team identified that this event had been mis-graded, because it was a failed critical task.

In accordance with NUREG 1021, Appendix D, D.1.a states that a critical task in a simulator scenario must have safety significance:

> In reviewing each proposed CT, assess the task to ensure that it is essential to safety. A task is essential to safety if its improper

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performance or omission by an operator will result in direct adverse consequences or significant degradation in the mitigative capability of the plant.

If an automatically actuated plant system would have been required to mitigate the consequences of an individual's incorrect performance, or the performance necessitates the crew taking compensatory action that would complicate the event mitigation strategy, the task is safety significant.

Examples of CTs involving essential safety actions include those for which operation or correct performance prevents the following:

• degradation of any barrier to fission product release

Because the automatic closure of the PORV block valve had been defeated, manual action was required to prevent breaching a fission product barrier (*i.e.*, the Reactor Coolant System via the PORV, essentially creating a small-break LOCA).

NUREG 1021 Appendix E, Part E 4. gives clear guidance as to how the examiners are required to grade the applicant if an error that the applicant makes is corrected by a team member:

4. If you recognize, but fail to correct, an erroneous decision, response, answer, analysis, action, or interpretation made by the operating team or crew, the examiner may conclude that you agree with the incorrect item.

Members of the operating team or crew (whether applicants or surrogates) should perform peer checks in accordance with the facility licensee's procedures and practices; non-crew members and NRC examiners will not perform this function. However, if you begin to make an error that is corrected by a peer checker, you will be held accountable for the consequences of the potential error without regard to mitigation by the crew.

Therefore, because Carla had to be corrected by a crew member to close the PORV, she should have been held accountable for the consequences of the potential error, which entails failure of a critical task. During the analysis of her grading, this should be considered an error related to a critical task, further reinforcing the rating factor of "1" assigned for 3.a. Furthermore, in her cover letter to the appeal, Carla contended that none of her errors were related to a critical task or critical step. In light of this additional consideration, the NRC examiners believe that the applicant's contention is not correct.

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Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 1

Event Description: Reactor Power Ascension from 29% RTP and higher, UOP 12004-C, step 4.1.41 is the next plateau.

Time	Position	Applicant's Action or Behavior
	OATC	Uses 13009-1, "CVCS Reactor Makeup Control System" Section 4.7 "Frequent Dilutions While Controlling Reactor Power", as necessary to maintain Tavg matched with Tref during power ascension.
	UO	Increases turbine load in increments of 15 Mwe to 30 Mwe using load increase pushbutton at direction of OATC. Monitors Generator Output.
	OATC	**13009-1, Section 4.7:** **NOTES** • This section can be used during power changes when necessary to frequently dilute the RCS for temperature control. The use of this section shall be authorized by the SS. • Frequent dilutions can raise VCT level to the point where VCT pressure reaches 40 psig. 1-LIC-0185 may be adjusted to allow divert to the RHT at a lower level to limit VCT pressure increase. **4.7 FREQUENT DILUTIONS WHILE CONTROLLING REACTOR POWER** 4.7.1 Determine the amount of Reactor Makeup Water necessary to accomplish the power change or accommodate the expected impact of Xenon. (Uses Reactivity Briefing Sheet to Determine # gallons - Dilution) _____ Gals H_2O **NOTE: EACH OATC WILL USE NUMBER HE/SHE IS COMFORTABLE WITH. (100 –1000 Gallons)**
	OATC	4.7.2 Verify the Reactor Makeup System is aligned for automatic operation.
	OATC	4.7.3 Start one Reactor Makeup Water Pump: RX MU WTR PMP-1 1-HS-7762 RX MU WTR PMP-2 1-HS-7763

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0724(28) team has the shift

27(19) AVE/REF 563.63 / 563.27

28(40) rods ↗ 2.5 steps ('Δ' 157)

raise turbine load 8-12 MWe

36(50) rods ↗ 3 steps ('Δ' 160) (AVE REF 563.88/563.4

39(48) raise turbine load 8-12 MWe

(AVE/ REF 564.765 / 563.43

Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 1

Event Description: Reactor Power Ascension from 29% RTP and higher, UOP 12004-C, step 4.1.41 is the next plateau.

Time	Position	Applicant's Action or Behavior
	OATC	4.7.4 Place VCT MAKEUP CONTROL 1-HS-40001B in STOP.
	OATC	4.7.5 As directed by the SS, place VCT MAKEUP MODE SELECT 1-HS-40001A in either the ALT DIL or DIL position.
	OATC	4.7.6 As directed by the SS, lower pot setting on 1-LIC-0185, to limit VCT pressure increase. Initial Pot Setting:_____ New Pot Setting:_____
	OATC	4.7.7 Set TOTAL MAKEUP Integrator 1-FQI-0111 for the desired amount of Reactor M/U Water. _____ Gals H_2O
	OATC	NOTE If VCT MAKEUP MODE SELECT 1-HS-40001A was placed in the DIL position in Step 4.7.5, Step 4.7.8 may be marked N/A. 4.7.8 If required, close 1-FV-0110B as necessary to raise or maintain RCS hydrogen concentration. ***(N/A)*** **Note to examiner:** If ALT DIL selected, FV-110B will be closed.
	SS / OATC	4.7.9 At SS direction, dilution flow may be adjusted to desired flow using 1-FIC-0111. (record in AUTO LOG). Initial Pot Setting: _____ New Pot Setting: _____ ***NOTE: EXPECTED NOT TO CHANGE DESIRED FLOW:***
	OATC	4.7.10 Place VCT MAKEUP CONTROL 1-HS-40001B in START and verify flow is indicated on 1-FI-0110B.

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Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 1

Event Description: Reactor Power Ascension from 29% RTP and higher, UOP 12004-C, step 4.1.41 is the next plateau.

Time	Position	Applicant's Action or Behavior
	OATC	4.7.11 WHEN TOTAL MAKEUP Integrator 1-FQI-0111 reaches its setpoint, verify dilution stops and the following valves close: • 1-FV-0111A RX MU WTR TO BA BLENDER • 1-FV-0111B BLENDER OUTLET TO VCT • 1-FV-0110B BLENDER OUTLET TO CHARGING PUMPS SUCT
	OATC	4.7.12 Operate the Pressurizer Back-up Heaters as necessary to equalize C_b between the RCS and the Pressurizer.
	OATC	4.7.13 Monitor RCS temperature, Control Bank position, or power levels as applicable.
		CAUTION If frequent dilutions are to be continued past the end of the shift, step 4.7.14 should be marked N/A and this section completed to include realignment to the normal configuration. The new on coming shift can then initiate the section from the beginning to continue frequent dilution.
	OATC	4.7.14 **Repeat** Steps 4.7.10 through 4.7.13 as necessary to continue power ramp and/or compensate for Xenon. ***NOTE: OATC WILL LEAVE CVCS MAKEUP SYSTEM ALIGNED PER 4.7 FOR FREQUENT DILUTIONS WHILE CONTROLLING REACTOR POWER DURING POWER ASCENSION.***

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Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 1

Event Description: Reactor Power Ascension from 29% RTP and higher, UOP 12004-C, step 4.1.41 is the next plateau.

Time	Position	Applicant's Action or Behavior
	**	NOTE: EVENT 2 IS INITIATED WHILE OATC AND UO ARE PERFORMING ACTIONS IN EVENT 2 FOR POWER ASCENSION AT EXAMINERS DISCRETION.

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Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 2

Event Description: SG # 4 Steam Flow channel FI-542 fails high.

Time	Position	Applicant's Action or Behavior
	UO	Diagnose SG Loop # 4 Flow FI-542 has failed high. Symptoms / alarms: ALB13-D01 STM GEN 4 FLOW MISMATCH Indications: • FI-542 reading off scale high. • Steam flow indication on FI-542 reading higher than feed flow.
07 45(16)	UO	**IMMEDIATE OPERATOR ACTIONS** G1. Check steam and feed flows – MATCHED ON ALL SGs. **(NO)** RNO G1. Take manual control of the following as necessary to restore NR level between 60% and 70%. • Affected SG feed flow valves. (UO throttles closed loop 4 MFRV) • MFP(s) speed. (reduces MFPT speed using the Master Controller) **Note to examiners:** It is expected the operator will take manual control of MFRV # 4 and the MFPT Master Controller. Steam flow failing high will result in the MFRV # 4 opening and the MFPT Master Controller speeding up the feed pumps. The operator will control SG # 4 levels and MFP speed with these controllers.
	SS	Enters AOP 18001-C, SYSTEMS INSTRUMENTATION MALFUNCTION, section G for FAILURE OF STEAM GENERATOR FLOW INSTRUMENTATION.

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Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 5

Event Description: PRZR pressure channel PI-456 will fail high with the PORB Block Valve HV-8000B failing to close in automatic on low RCS pressure of 2185 psig. The OATC will be required to manually close PORV 456 or HV-8000B to prevent a Reactor trip.

Time	Position	Applicant's Action or Behavior
	SS	C15. Trip the affected channel bistables and place the associated MASTER TEST switches in TEST position per TABLE C1 within 72 hours.. (TS 3.3.1 & 3.3.2) **NOTE: SS expected to leave bistables untripped during allowed out of service time to facilitate troubleshooting by I&C.**
	SS	C16. Initiate the applicable actions of: • TS 3.3.1 Reactor Trip Function — Condition 6 OTΔT — E 8a Low PRZR pressure — M 8b High PRZR pressure — E • TS 3.3.2 ESFAS Function — Condition 1d SI low PRZR pressure — D 8b P-11 Interlock — L **(one hour action)** TS 3.4.1.a DNB RCS pressure < 2199 psig B (Momentary) **Note to examiner:** The SS may look at Tech Specs for the Block Valve HV-8000B which did not close in automatic. There is no Tech Spec requirement for the Block Valve to work in automatic. Manual operation only is required per Tech Spec Bases of 3.4.11.

0837 ↗ rods ↗ 3 steps

0839 ↗ SS directed SPRAYS → auto

0844 "call that block valve in' oped"

during brief

(3.4.11 what condition)

47(20) end of brief

48(20) rods ↗ 3 steps (562.517 / 563.667)

('D' 167)

52(30) rods ↗ 3 steps ('D' 170)

AVE/REF (563.6 / 563.7

AFD: ±0.7/0.8

target: -0.5

Op-Test No.: 2012-301 **Scenario No.: 7**

Event No.: 5

Event Description: PRZR pressure channel PI-456 will fail high with the PORB Block Valve HV-8000B failing to close in automatic on low RCS pressure of 2185 psig. The OATC will be required to manually close PORV 456 or HV-8000B to prevent a Reactor trip.

Time	Position	Applicant's Action or Behavior
	SS	C17. Check repairs and surveillances - COMPLETE. RNO: C17. Perform the following: a. WHEN repairs and surveillances are complete, THEN perform step C18. b. Return to procedure and step in effect. **END OF EVENT 5, proceed to EVENT 6.**

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Michael SRO: [redacted] Mark RO: Carla Smith Phil BOP: [redacted]

07:24 :14 Crew takes shift They correctly discussed ΔΦ management

27:48 J-C: ↑ 2½ Steps

31:33 C-J: we have temp ↔, we can lower turbine load (mispoke?) *

32:10 J-R: ↑ 8-12 MWe

36:22 J-C: ↑ 3 Steps

43:47 Alarms

56 R-J: Failed Stm Flow Instr Takes manual control of MFRV & Pump

44:24 R-J: [redacted]A's done

52:14 J-R: MFP Speed Control returned to auto

52:36 R-J-R: Place MFRV #4 to Auto.

54:52 C-J: L/D Demin Diint & High L/D Temp

55:46 C-T: TE-130 "Certainly appears that Carla made correct diagnosis" [redacted] 3 running the AFP. Carla did not open any ARPs.

08:00:30 R: Pulls P&IDs J-C/T: CR, WCC, etc.

01:54 C-S: The only thing we can do is contact C/T to get TE fixed.

02:45 J-C: Take manual control of TIC and monitor VCT Outlet Temp? T/Q E/J

J-C: That raises & lowers temp it does not open & close valve. (The controller is reverse acting & she did not know how to operate it.) Carla actually set it at 51%. F/H

05:00 L/D High Temp Demin Diint closed.

11 37 R-J: NSCW Cooling Fan 1 Tripped

R-C/T: AO to Bkr J-R-C/T: Get W/B Temps while out there.

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08 17 42 J-C: ↑ 3 Steps

18 17 C-T: PRZ P Failure J-C: "Shut That Valve" "Carla!"
She closes PZR spray valves but did not close PORV. verbally urgently directed by Tamie. Jaime's need to give her very specific instruction to close PORV valves.

C-R: BV 456 did not close

[May need to look at plots to get timing of PORV closure]

22 05 J-C: 2220-2250 P Control Band DNB TS was entered.

26 05 PZR P rose to 2260 # prior to making corrections to reduce P. (she actually started to correctly control P after the band was provided)

34 30 C-J: VCT Temp Alm clear. Recommends repositioning Valve 129
C: Adjusting PZR Spray in Manual. Loop 1 & 4 Spray Valves are in Manual.

37 24 J-C: ↑ 3 Steps [She was outside Tave Band look at data]

(Sprays to auto) → 40 37: PZR P = 2270 #

45 23 Tave ~1.5 cold (During Bing) [T-Ave on Tave]

[Tave Band given for lineup ± 2°F while rods in Manual]

48 00 C-T-C: ↑ 3 Steps

51 30 C-J-C: ↑ 3 Steps

16/ 53 19 C-J: RWST low level Alarm

55 00 C-J: 93.8% RWST level

56 24 J: Mentions 1 hour T.S

Capehart

Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 5

Event Description: PRZR pressure channel PI-456 will fail high with the PORB Block Valve HV-8000B failing to close in automatic on low RCS pressure of 2185 psig. The OATC will be required to manually close PORV 456 or HV-8000B to prevent a Reactor trip.

Time	Position	Applicant's Action or Behavior
	OATC 0824	C7. Select unaffected channels on PS-455F: Failed Channel / Select P455 — CH457 / 456 - ***P456*** — ***CH455 / 458*** P457 — CH455 / 456 P458 — CH455 / 456
	OATC	C8. Perform the following: a. Check PRZR pressure – STABLE AT APPROXIMATELY 2235 PSIG. 2264# b. Place PRZR heaters in AUTO. → Heaters for pwr ↑, they are ON 0839 c. Place PRZR spray valve controllers in AUTO. → ... After Master placed in Auto! RNO: a. Adjust PRZR pressure to approximately 2235 psig using PRZR heaters and sprays.
	OATC	C9. Place PORVs in AUTO and verify proper operation.
0831	OATC	C10. Return PRZR pressure Master Controller to AUTO.

Left Spray in Manual?

1hr T.S. If the Block valve inoperable. DNB. Explain why used Block Valve operability? Stated it was not seated on ... Ask for ...

0834 VCT Hi Temp Alarm

A→S We can change 129 back to VCT 0835

0837 (U→A O/S ±2° Tave dev @ -2.4) 0842 Briefed (130 sets 51°? for 120°) 51.9

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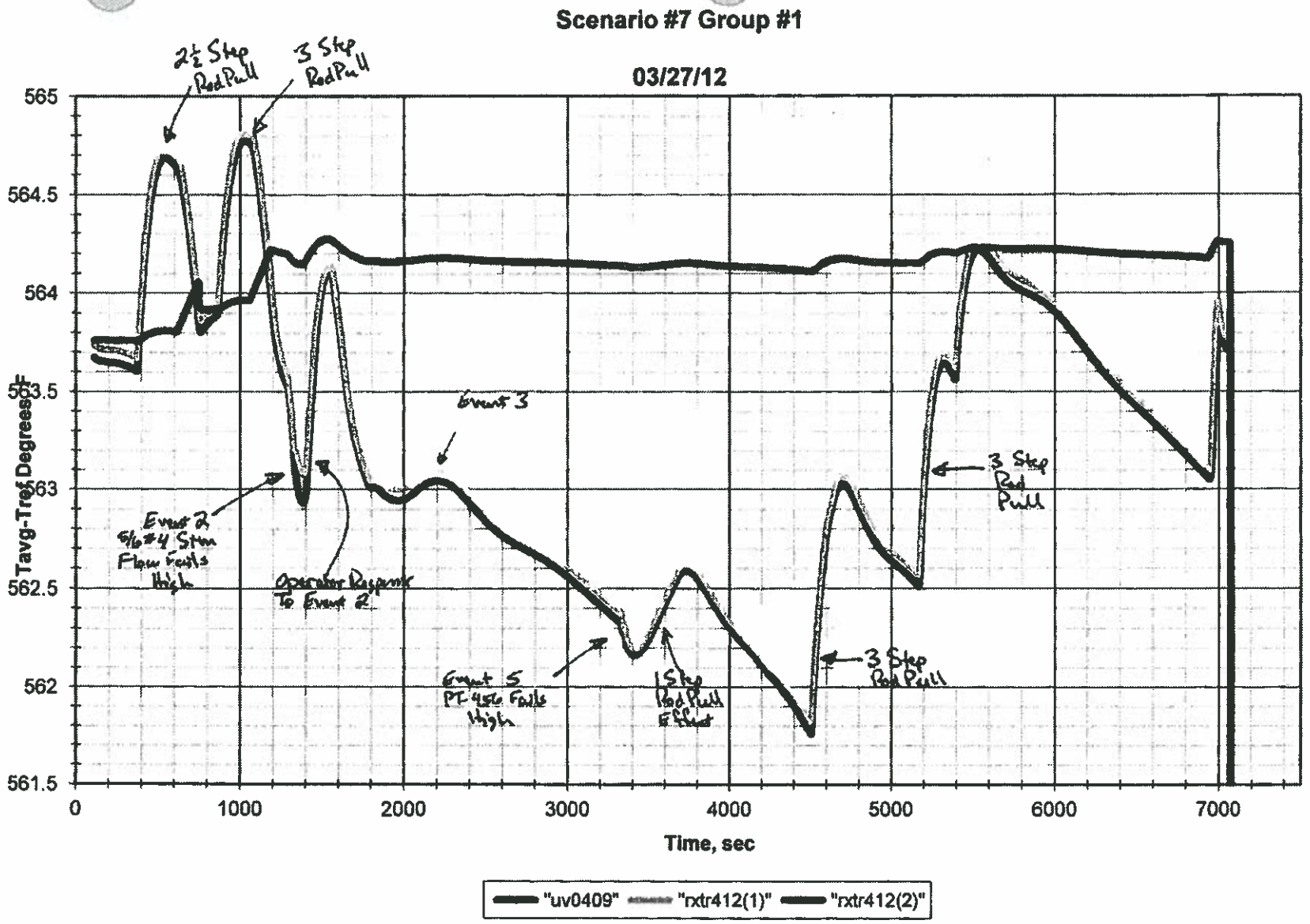
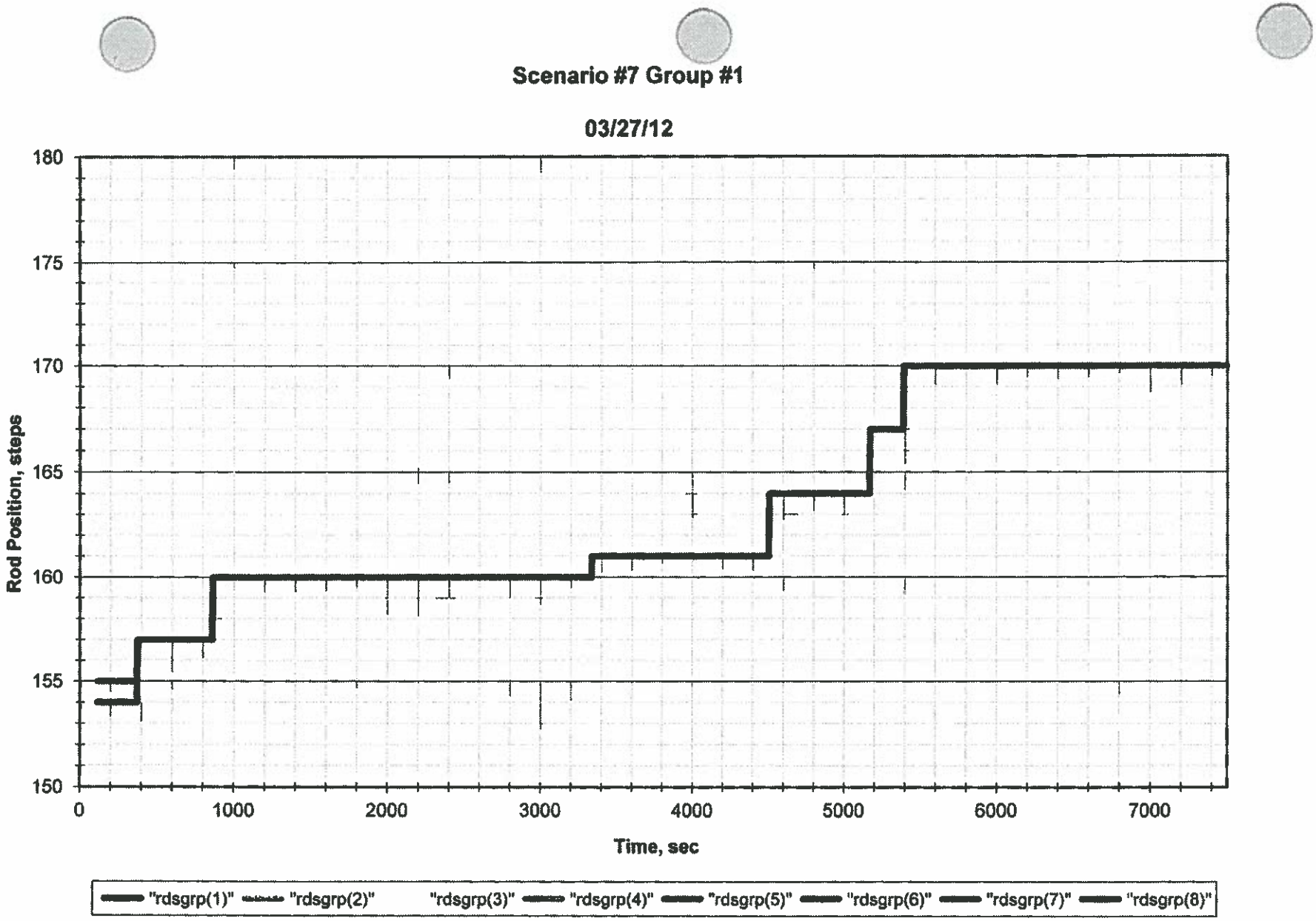

Scenario #7 Group #1
03/27/12
2½ Step Rod Pull
3 Step Rod Pull
Event 2
5/6 #4 Stm Flow Fails High
Operator Response To Event 2
Event 3
Event 5
PT-456 Fails High
1 Step Rod Pull Effect
3 Step Rod Pull
3 Step Rod Pull
Tavg-Tref Degrees F
565
564.5
564
563.5
563
562.5
562
561.5
0
1000
2000
3000
4000
5000
6000
7000
Time, sec
"uv0409"
"rxtr412(1)"
"rxtr412(2)"

11


Scenario #7 Group #1
03/27/12
Rod Position, steps
180
175
170
165
160
155
150
0
1000
2000
3000
4000
5000
6000
7000
Time, sec
"rdsgrp(1)"
"rdsgrp(2)"
"rdsgrp(3)"
"rdsgrp(4)"
"rdsgrp(5)"
"rdsgrp(6)"
"rdsgrp(7)"
"rdsgrp(8)"

Bates 03/29/2012

pg. 1

Michael SRO: [redacted] Mark RO: Carla Smith Phil BOP: [redacted]

07:24 :14 Crew takes shift They correctly discussed ΔΦ management

27:48 J-C: ↑ 2½ Steps

21:33 C-J: We have temp ↔, we can lower turbine load (misspoke.) *

32:10 J-R: ↑ 8-12 MWe

36:22 J-C: ↑ 3 Steps

43:07 Alarms

56 R-J: Failed Stm Flow Ind Takes manual control of MFRV & Pump

44:24 R-J: [redacted]A's done

52:4 J-R: MFP Speed Control returned to auto

52:36 R-J-R: Place MFRV #4 to Auto.

59:52 C-J: L/D Demin Divert & Hdsh L/D Temp

55:16 C-T: TE-130 "Certainly appeared that Carla made correct diagnosis" Rodney is running the ARP. Carla did not open any ARPs.

08:00:30 A: Pulls P&IDs J-C/T: CR, WC, etc.

01:54 C-S: The only thing we can do is contact C/T to get TE fixed. *

02:45 J-C: Take manual control of TIC and monitor VCT Outlet Temp? *

J-C: That raises & lowers temp it does not open & close valve. (The controller is reverse acting & she did not know how to operate it.) Carla actually set it at 51%. *

08 05:00 L/D Hdsh Temp Demin Divert closed.

11 37 R-J: NSCW Cooling Fan 1 Tripped

R-C/T: AO to Rm J-R-C/T: Get W/B Temps while out there.

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Bates

03/20/2012

Pg. 2

08 17 42 J-C: ↑ 3 Steps

18 17 C-T: PZR P Failure J-C: "Shut That Valve." "Carla!"

She closes PZR spray valves but did not close PORV until urgently directed by

C-R: BV 466 did not close Jamie. Jamie need to give her very specific instruction to close PORV valves.

[May need to look at plots to get timing of PORV closure]

22 05 J-C: 2220-2250 P Center Band DNB TS was entered.

26 05 PZR P rose to 2260 # prior to making corrections to reduce P (she actually started to correctly center P after the band was provided)

34 30 C-J: VCT Temp Alm clear. Recommends repositioning valve 129

C: Adjusting PZR Spray in Manual. Loop 1 & 4 Spray Valves are in Manual.

37 24 J-C: ↑ 3 Steps

[She was outside Tave Band look at data]

(Sprays to Auto) →

40 37 PZR P = 2270 #

45 23 Tave ~1.5 cold (Deviation Band)

[Tave Band given for limits ± 2°F while rods in Manual]

T-ll-U at Tave

48 00 C-T-C: ↑ 3 Steps

51 30 C-T-C: ↑ 3 Steps

53 14 C-J: RWST Low Level Alarm

55 00 C-C: 93.8% RWST level

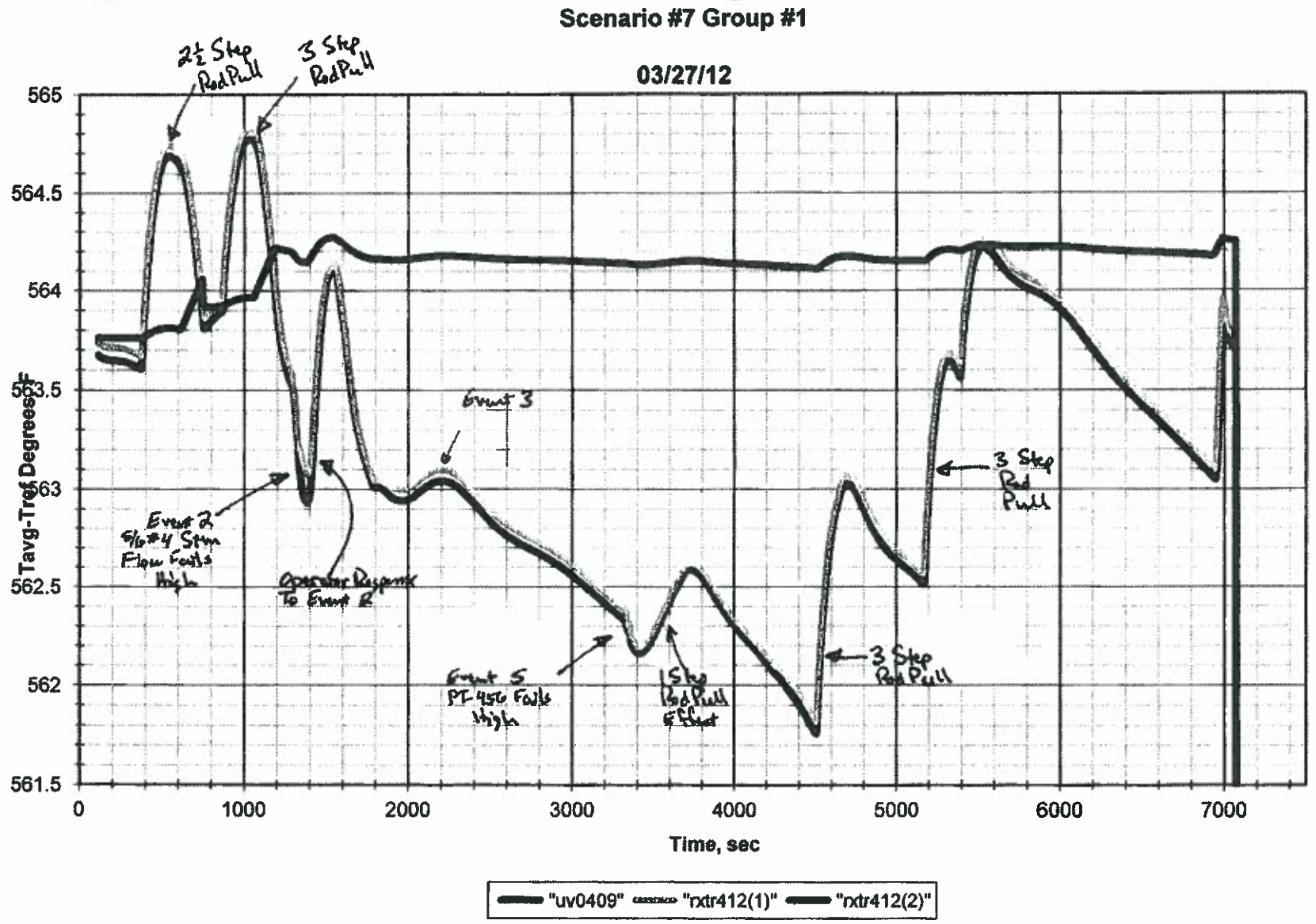
56 24 J: Mentions 1 hour T.S

Op-Test No.: 2012-301 **Scenario No.:** 7

Event No.: 5

Event Description: PRZR pressure channel PI-456 will fail high with the PORB Block Valve HV-8000B failing to close in automatic on low RCS pressure of 2185 psig. The OATC will be required to manually close PORV 456 or HV-8000B to prevent a Reactor trip.

Time	Position	Applicant's Action or Behavior
	OATC	C7. Select unaffected channels on PS-455F: Failed Channel — Select P455 — CH457 / 456 *P456* — *CH455 / 458* P457 — CH455 / 456 P458 — CH455 / 456
	OATC	C8. Perform the following: a. Check PRZR pressure – STABLE AT APPROXIMATELY 2235 PSIG. b. Place PRZR heaters in AUTO. c. Place PRZR spray valve controllers in AUTO. RNO: a. Adjust PRZR pressure to approximately 2235 psig using PRZR heaters and sprays.
	OATC	C9. Place PORVs in AUTO and verify proper operation.
0831	OATC	C10. Return PRZR pressure Master Controller to AUTO.


Scenario #7 Group #1
03/27/12
2½ Step Rod Pull
3 Step Rod Pull
Event 2
% #4 Stm Flow Fails High
Operator Response to Event 2
Event 3
Event 5
PT-456 Fails High
1 Step Rod Pull Effect
3 Step Rod Pull
3 Step Rod Pull
Tavg-Tref Degrees F
565
564.5
564
563.5
563
562.5
562
561.5
0
1000
2000
3000
4000
5000
6000
7000
Time, sec
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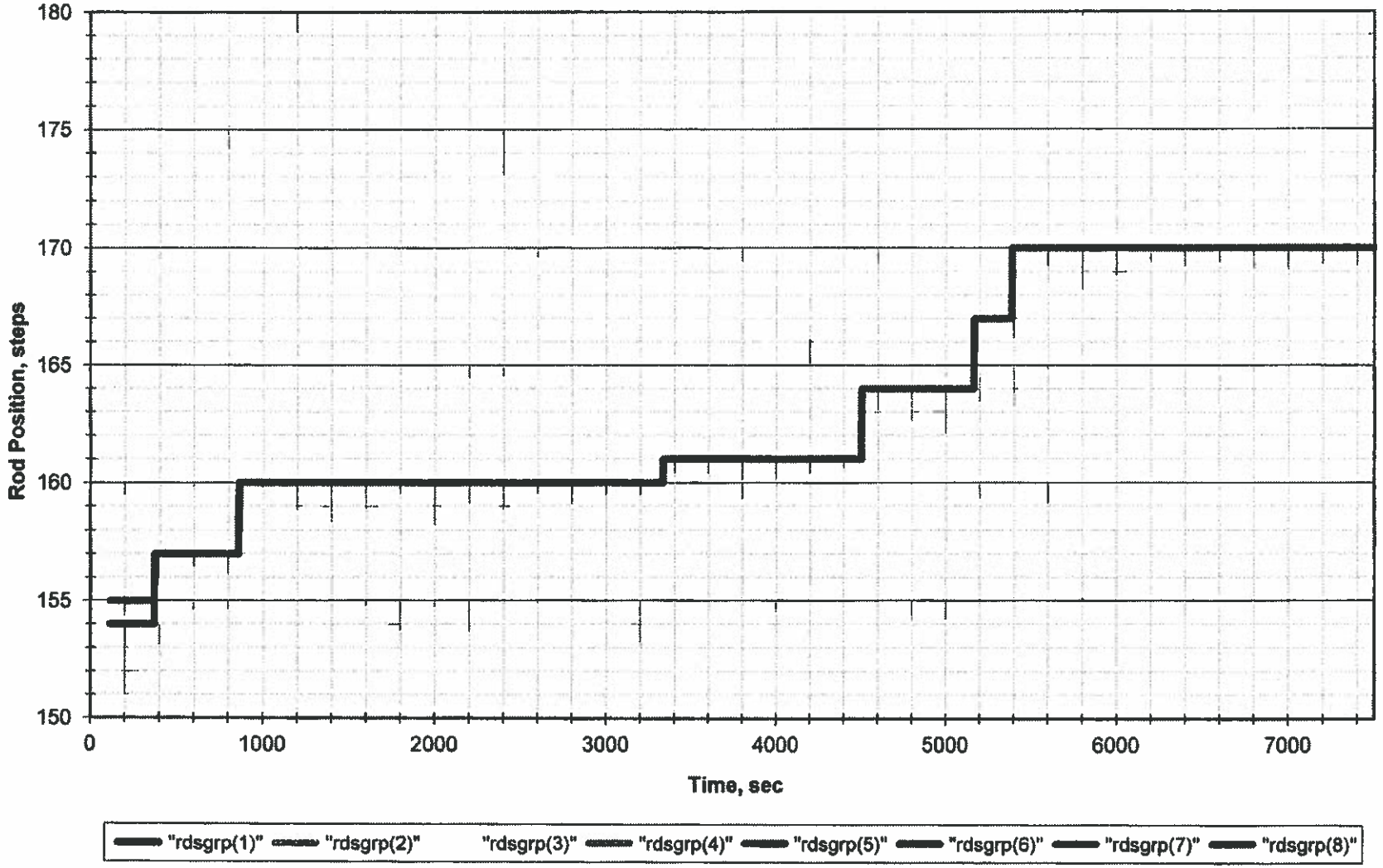
"rxtr412(2)"

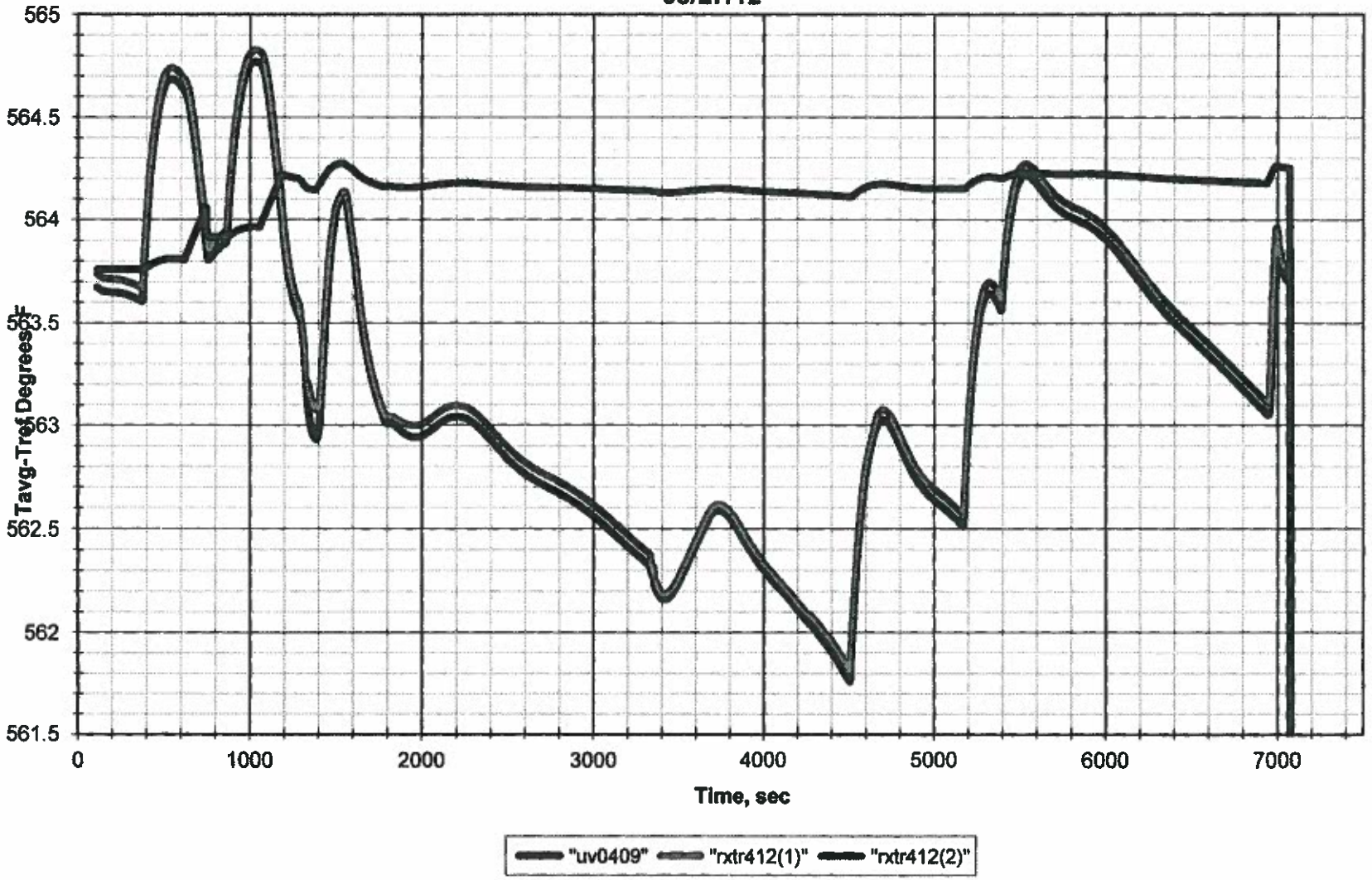
Scenario #7 Group #1

03/27/12



Scenario #7 Group #1

03/27/12



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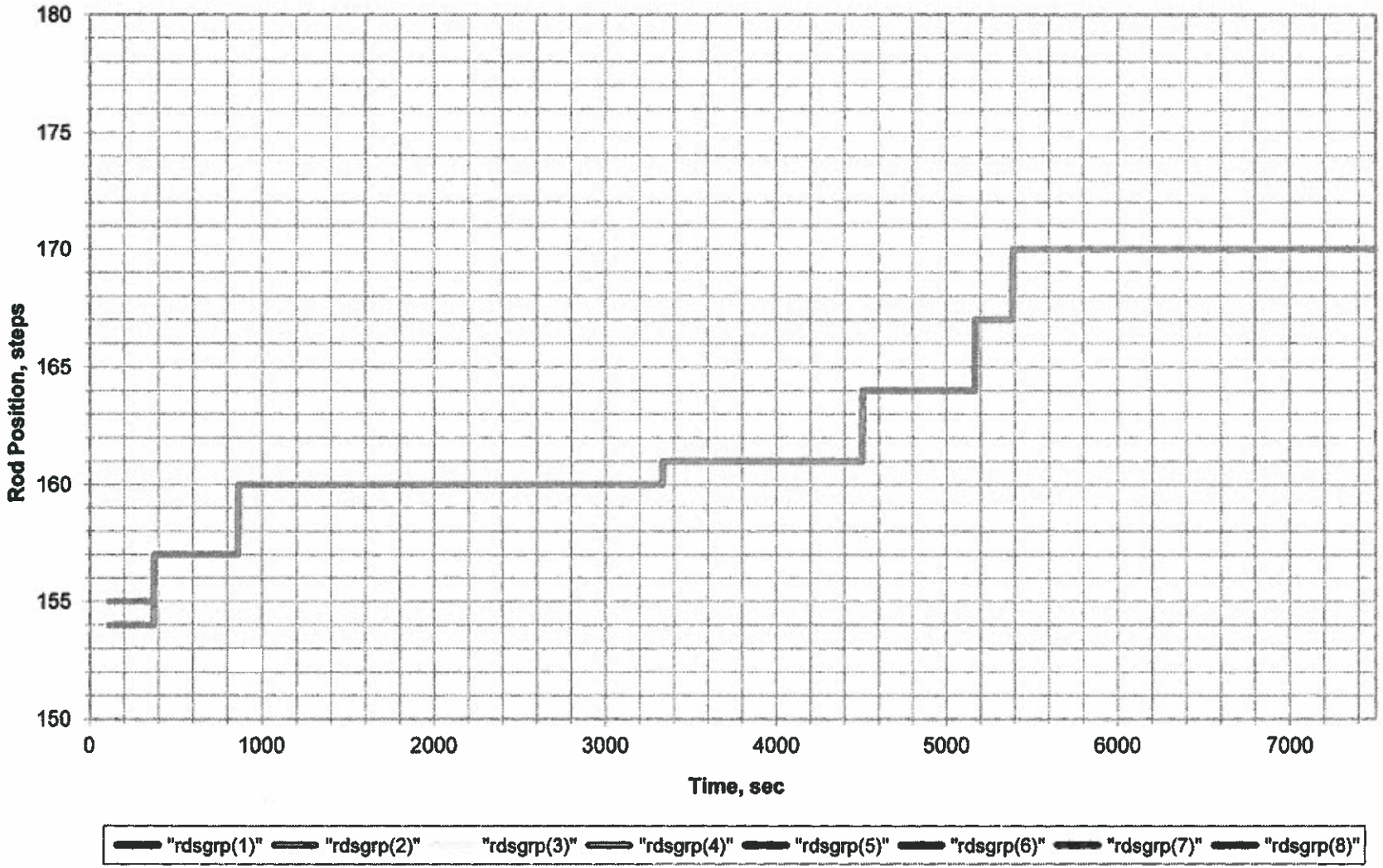
Scenario #7 Group #1

03/27/12



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