

## Job Performance Measure "A"

Facility: **Vogle**

Task No: N/A

Title: Perform Control Rod Operability Test

JPM No: V-LO-JP-14410-HL17

K/A Reference: 001A2.17 RO 3.3 SRO 3.8

Examinee: CARLA SMITH NRC Examiner: M. MEEKS

Facility Evaluator: N/A Date: 04/10/2012

### Method of testing:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

**NOTE:** For time considerations, the students may be allowed to "pre-brief" this JPM and allowed to review 14410-1 prior to starting the JPM.

### ***Read to the examinee:***

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**Initial Conditions:** Unit 1 is at 100% power. 14410-1, "Control Rod Operability Test" is to be performed. All prerequisites and initial conditions have been verified.

**Initiating Cue:** The SS has directed you to perform 14410-1 for CBA, CBB, CBC and CBD. Begin with CBA. Another licensed operator will perform 14410-1 for the Shutdown Banks. Complete Data Sheet 1 of 14410-1 for the Control Banks, and also complete section 7, (Evaluation and Review).

Initial positions for all Control Banks have been recorded on Data Sheet 1 of 14410-1.

**Task Standard:** Candidate completes 14410-1 for CBA and manually trips reactor per AOP 18003-C guidance when two rods are dropped and performs IOAs of 19000-C, "Reactor Trip Or Safety Injection."

**Required Materials:** 14410-1, "Control Rod Operability Test" Ver.19.1. Section 4.0 and Control Rod initial positions recorded on Data Sheet 1.

**General References:** None

**Time Critical Task:** No

**Validation Time:** 10 minutes

**SIMULATOR SETUP:**

**Simulator Setup:**

1. Reset to IC # 211 for HL-17 NRC Exam

**Simulator Setup from Scratch:**

1. Reset to IC # 14 (100%, MOL)
2. Insert malfunction RD13A on Trigger 1
3. Insert malfunction RD13B on Trigger 1 with 10 sec delay

**Setup time:** 5 minutes

## Performance Information

***Critical steps denoted with an asterisk***

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Step 5.0 TEST STARTED

\_\_\_\_\_  
DATE

\_\_\_\_\_  
TIME

\_\_\_\_\_  
MODE

Standard: Candidate records DATE, TIME, and MODE.

Comment:

---

Candidate reviews NOTES prior to step 5.1.1:

### NOTES

- This test is applicable to each control bank not fully inserted.
- A reactor startup or shutdown, moving rods at least 10 steps, will satisfy this surveillance. The following instructions are written for the normal, all-banks-withdrawn condition.

Standard: Candidate reviews NOTES.

Comment:

---

Step 5.1.1 Record the INITIAL Group Step Counter and Individual Rod Position Indicator readings for the control bank being tested on Data Sheet 1.

Standard: All initial Control Bank positions have been previously recorded on Data Sheet 1 from the Initiating Cue.

Comment:

---

start 0756

stop 0818

---

Step 5.1.2 Record the initial IPC Bank Demand readings for the control bank being tested on Data Sheet 1.

Standard: All initial Control Bank IPC Band Demand positions have been previously recorded on Data Sheet 1 from the Initiating Cue.

Comment:

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Step \*5.1.3 Place ROD BANK SELECTOR SW 1-HS-40041 to the individual bank position for the control bank being tested.

Standard: Candidate places 1-HS-40041 in CBA and initials step for CBA.

**CUE: If peer check is requested, "Peer Check request noted."**

Comment:

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**NOTES**

- QMCB Annunciator ALB10-D06 ROD DEV may energize in the next step when rods are inserted 10 steps.
- QMCB Annunciator ALB10-C04 ROD BANK LO LIMIT will energize in the next step if rod insertion to 10 steps above the RIL occurs.

Standard: Candidate reviews NOTES prior to step 5.1.4.

Comment:

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Step \*5.1.4 ✓ Using ROD MOTION SWITCH 1-HS-40040, insert the control bank being tested at least 10 steps as indicated on group step counters.

Standard: Candidate inserts Rods a minimum of 10 steps and initials step for CBA.

**CUE: If peer check is requested, "Peer Check request noted."**

Comment:

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Step 5.1.5 ✓ Check RODS IN light is lit and a change in position occurs for each control rod being tested on the DRPI Display Panel.

Standard: Candidate observes RODS IN light and DRPI change for all rods and initials step for CBA.

Comment:

---

Step 5.1.6 ✓ Record the TEST Group Step Counter and Individual Rod Position Indicator readings of control bank being tested on Data Sheet 1.

Standard: Candidate records readings for group 1 and 2 step counters on Data Sheet 1 and individual DRPI readings Data Sheet 1 and initials step for CBA.

Comment:

used indiv.  
216 / 218 steps  
"SHOW 30" IPC

---

✓  
Step 5.1.7 Record the test IPC Bank Demand reading for the control bank being tested on Data Sheet 1.

Standard: Candidate records IPC Bank Demand readings on Data Sheet 1 and initials step for CBA.

Comment:

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✓  
Step \*5.1.8 Using ROD MOTION SWITCH 1-HS-40040, withdraw the control bank being tested to the INITIAL position recorded on Group Step Counter(s) in Step 5.1.1 or as required by plant conditions.

Standard: Candidate withdraws CBA to 228 steps on group step counters and initials step for CBA.

**CUE: If peer check is requested, "Peer Check request noted."**

**CUE: If rods are withdrawn >228 steps and SS approval requested, "Return CBA to 228 steps."**

Comment:

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✓  
Step 5.1.9 Check RODS OUT light is lit and individual control rod movement occurs on the DRPI Display Panel.

Standard: Candidate observes RODS OUT light and DRPI indication changes and initials step for CBA.

Comment:

---

### **CAUTIONS**

- If energized, ALB10-C04 should reset when rods are withdrawn at, or just prior to, 228 steps. In the following step, rods should NOT be withdrawn greater than 228 steps.
- SS approval shall be obtained prior to exceeding 228 steps.

Standard: Candidate reviews cautions prior to step 5.1.10.

Comments:

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Step 5.1.10 IF ALB10-C04 ROD BANK LO LIMIT energized when rods were inserted AND did NOT reset, when rods were withdrawn to the ARO position, perform the following:

- a. WITHDRAW rods until the alarm resets (228 steps shall NOT be exceeded without SS approval).

Standard: Candidate determines step is N/A and N/A placed in CBA initial block.

Comment:

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Step 5.1.10 b. WHEN ALB10-C04 has reset, INSERT rods back to the ARO position.

Standard: Candidate determines step is N/A and N/A placed in CBA initial block.

Comment:

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**Step 5.1.11** Record the AS LEFT Group Step Counter and Individual Rod Position Indicator readings of the control bank being tested on Data Sheet 1.

**Standard:** Candidate records readings on Data Sheet 1. See page 15 for example.

**Comment:**

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**Step 5.1.12** Record final IPC Bank Demand reading for the control bank being tested on Data Sheet 1.

**Standard:** Candidate records readings on Data Sheet 1. See page 15 for example.

**Comment:**

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**Step 5.1.13** Based on a change (SAT) or no change (UNSAT) of position on DRPI for each rod in the bank for a change of at least 10 steps on group step counters, record Satisfactory (SAT) or Unsatisfactory (UNSAT) by initialing appropriate space on Data Sheet 1.

**Standard:** Candidate initials SAT space on Data Sheet 1. See page 15 for example.

**Comment:**

---

**Step 5.1.14** Repeat Section 5.1 until all required Control Banks have been tested.

**Standard:** Candidate initials step and returns to Step 5.1.1.

**Comment:**

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For Control Bank B

Sep 5.1.1 Record the INITIAL Group Step Counter and Individual Rod Position Indicator readings for the control bank being tested on Data Sheet 1.

Standard: All initial Control Bank positions have been previously recorded on Data Sheet 1 from the Initiating Cue.

Comment:

---

Step 5.1.2 Record the initial IPC Bank Demand readings for the control bank being tested on Data Sheet 1.

Standard: All initial Control Bank IPC Band Demand positions have been previously recorded on Data Sheet 1 from the Initiating Cue.

Comment:

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✓  
Step \*5.1.3 Place ROD BANK SELECTOR SW 1-HS-40041 to the individual bank position for the control bank being tested.

Standard: Candidate places 1-HS-40041 in CBB and initials step for CBB.

**CUE: If peer check is requested, "Peer Check request noted."**

Comment:

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**NOTES**

- QMCB Annunciator ALB10-D06 ROD DEV may energize in the next step when rods are inserted 10 steps.
- QMCB Annunciator ALB10-C04 ROD BANK LO LIMIT will energize in the next step if rod insertion to 10 steps above the RIL occurs.

Standard: Candidate reviews NOTES prior to step 5.1.4.

Comment:

---

✓  
Step 5.1.4 Using ROD MOTION SWITCH 1-HS-40040, insert the control bank being tested at least 10 steps as indicated on group step counters.

Standard: Candidate inserts Rods.

**CUE: If peer check is requested, "Peer Check request noted."**

**NOTE to Simulator operator: Insert Trigger 1 after rod motion is initiated.**

Comment:

---

Candidate observes two rods dropped.

Standard: Candidate observes DRPI indication for rods H6 and H10 rod bottom light lit and the following alarms:

ALB10-C02 POWER RANGE CHANNEL DEVIATION  
(Will alarm and subsequently clear if acknowledged)  
ALB10-D06 ROD DEV  
ALB10-E05 ROD AT BOTTOM  
ALB10-F05 TWO OR MORE RODS AT BOTTOM

Comment:

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Annunciator response procedure 17010-1 performed for window F05, TWO OR MORE RODS AT BOTTOM

1.0      **PROBABLE CAUSE**

1.      Two or more dropped rods.
2.      Loss of 120V AC power to Data A and Data B cabinets.

2.0      **AUTOMATIC ACTIONS**

NONE

**NOTE**

The alarm is enabled when the shutdown banks are fully withdrawn and control bank A is more than 12 steps off the bottom.

3.0      **INITIAL OPERATOR ACTIONS**

Go to 18003-C, "Rod Control System Malfunction".

4.0      **SUBSEQUENT OPERATOR ACTIONS**

NONE

5.0      **COMPENSATORY OPERATOR ACTIONS**

NONE

**NOTE to examiner:** The candidate may also enter 18003-C directly as symptoms are met.

**Standard:**      Candidate going to 18003-C, "Rod Control System Malfunction" OR immediately tripping the reactor is acceptable.

**Comment:**

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18003-C, "Rod Control System Malfunction" entered. ✓

Standard: Candidate enters procedure and selects Section A.

Comment:

---

Step A1 ✓ Stop any load changes in progress.

Standard: Candidate checks Main Turbine at Set Load light lit and MWs steady.

Comment:

---

Step A2 Check the following:

a. ✓ DRPI - AVAILABLE.

Standard: DRPI LED display lit.

Comment:

---

Step A2 b. Only one Rod dropped by observing DRPI.

Standard: Candidate determines two rods dropped and goes to the RNO column.

Comment:

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**\*Step A2 RNO      Trip the Reactor and Go to 19000 C, E 0 REACTOR TRIP OR SAFETY INJECTION.**

**Standard:**      Candidate trips reactor using either the A panel or C panel Reactor Trip handswitch and performs Immediate Operator Actions (IOAs) of 19000-C. Critical time of twice validation time (10 minutes) equal to 20 minutes.

**Step 1              Checks Reactor trip:**  
                         Rod Bottom Lights - **LIT**  
                         Reactor Trip and Bypass Breakers - **OPEN**  
                         Neutron Flux – **LOWERING**

**Step 2              Check Turbine trip:**  
                         All Turbine Stop Valves - **CLOSED.**

**Step 3              Check power to AC Emergency Busses:**  
                         **Both busses –energized**

**Step 4              Check if SI is actuated:**  
                         Any SI annunciator – **LIT. NO**  
                         SI ACTUATED BPLB window – **LIT. NO**

**Step 4 RNO      Check if SI is required:**  
                         If one or more of the following conditions has occurred:

                         PRZR pressure  $\leq$  1870 psig. **NO**  
                         Steam line pressure  $\leq$  585 psig. **NO**  
                         Containment pressure  $\geq$  3.8 psig. **NO**  
                         Automatic alignment of ECCS equipment. **NO**

**CUE: When IOAs complete, “Another operator will perform 19000-C,”Reactor Trip or Safety Injection”.**

**Comment:**

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**Terminating cue:**    Student returns initiating cue sheet.

## Verification of Completion

Job Performance Measure No. V-NRC-JP-14410-HL17

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: \_\_\_\_\_

**DATA SHEET 1 - CONTROL ROD OPERABILITY TEST**

Sheet 1 of 3

CONTROL BANK	POSITION (STEPS)			MOVEMENT	
	INITIAL	TEST	AS LEFT	SAT	UNSAT
<b><u>CBA</u></b>					
Group 1 Step Counter	<u>228</u>	<u>218</u>	<u>228</u>		
DRPI H6	<u>228</u>	<u>216</u>	<u>228</u>	<b><u>INITIALS</u></b>	_____
DRPI H10	<u>228</u>	<u>216</u>	<u>228</u>	<b><u>INITIALS</u></b>	_____
Group 2 Step Counter	<u>228</u>	<u>218</u>	<u>228</u>		
DRPI F8	<u>228</u>	<u>216</u>	<u>228</u>	<b><u>INITIALS</u></b>	_____
DRPI K8	<u>228</u>	<u>216</u>	<u>228</u>	<b><u>INITIALS</u></b>	_____
IPC Bank Demand	<u>228</u>	<u>218</u>	<u>228</u>	<b><u>INITIALS</u></b>	_____
<b><u>CBB</u></b>					
Group 1 Step Counter	<u>228</u>	_____	_____		
DRPI F2	<u>228</u>	_____	_____	_____	_____
DRPI B10	<u>228</u>	_____	_____	_____	_____
DRPI K14	<u>228</u>	_____	_____	_____	_____
DRPI P6	<u>228</u>	_____	_____	_____	_____
Group 2 Step Counter	<u>228</u>	_____	_____		
DRPI B6	<u>228</u>	_____	_____	_____	_____
DRPI F14	<u>228</u>	_____	_____	_____	_____
DRPI P10	<u>228</u>	_____	_____	_____	_____
DRPI K2	<u>228</u>	_____	_____	_____	_____
IPC Bank Demand	<u>228</u>	_____	_____	_____	_____
<b><u>CBC</u></b>					
Group 1 Step Counter	_____	_____	_____		
DRPI H2	_____	_____	_____	_____	_____
DRPI B8	_____	_____	_____	_____	_____
DRPI H14	_____	_____	_____	_____	_____
DRPI P8	_____	_____	_____	_____	_____
Group 2 Step Counter	_____	_____	_____		
DRPI F6	_____	_____	_____	_____	_____
DRPI F10	_____	_____	_____	_____	_____
DRPI K10	_____	_____	_____	_____	_____
DRPI K6	_____	_____	_____	_____	_____
IPC Bank Demand	_____	_____	_____	_____	_____

**Initial Conditions:** Unit 1 is at 100% power. 14410-1, "Control Rod Operability Test" is to be performed. All prerequisites and initial conditions have been verified.

**Initiating Cue:** The SS has directed you to perform 14410-1 for CBA, CBB, CBC and CBD. Begin with CBA. Another licensed operator will perform 14410-1 for the Shutdown Banks. Complete Data Sheet 1 of 14410-1 for the Control Banks, and also complete section 7, (Evaluation and Review).


Initial positions for all Control Banks have been recorded on Data Sheet 1 of 14410-1.

$\pm 3^{\circ}\text{F}$  Taug/Tref.

Make sure @ Same Step before reposition  
(Both groups)


CB  $\rightarrow$  48 spin



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## CONTROL ROD OPERABILITY TEST

PROCEDURE USAGE REQUIREMENTS		SECTIONS
<b>Continuous Use:</b>	Procedure must be open and readily available at the work location. Follow procedure step by step unless otherwise directed.	<b>ALL</b>
<b>Reference Use:</b>	Procedure or applicable section(s) available at the work location for ready reference by person performing steps.	<b>NONE</b>
<b>Information Use:</b>	Available on plant site for reference as needed.	<b>NONE</b>

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## 1.0

### PURPOSE

#### 1.1

The purpose of this procedure is to demonstrate the operability of the Shutdown and Control Rods.

#### 1.2

This test satisfies surveillance requirements of Technical Specification SR 3.1.4.2.

#### 1.3

The frequency of this surveillance is at least once every 92 days.

## 2.0

### APPLICABILITY

This surveillance is required for Modes 1 and 2.



**3.0**

**PRECAUTIONS AND LIMITATIONS**

**3.1**

Changes in turbine load and boron concentration should be avoided during this test.

**3.2**

The reactor shall be monitored during all rod manipulations for any abnormal conditions.

**3.3**

Plant conditions shall be stable after a bank has been tested before testing the next bank.

**3.4**

Before transferring to AUTOMATIC reactor control,  $T_{avg}$  shall be within  $\pm 1^\circ\text{F}$  of  $T_{ref}$ .

**3.5**

Both groups for each rod bank shall be at the same step counter position prior to repositioning bank.

**3.6**

Overlap rod bank motion is preserved only if the Rod Bank Selector Switch is in MANUAL or AUTO.

**3.7**

$T_{avg}/T_{ref}$  deviation shall be maintained less than or equal to  $3^\circ\text{F}$ .

**3.8**

The Shift Supervisor (SS) shall be notified immediately if unsatisfactory rod movement occurs.

**3.9**

When the ARO position is less than 228 steps, it may be necessary to withdraw rods to 228 steps, to reset ALB10-C04, then insert rods back to the ARO position. *N/A*


**3.10**

An attempt to withdraw a group or bank past 231 steps will result in an error between indicated demand position and actual position. Control or Shutdown banks CANNOT be physically withdrawn greater than 231 steps.

**3.11**

If demand for any Rods in the Control Banks A, B, C, or D or Shutdown Banks A or B exceeds 231 steps it will be necessary to reset demand position on Step Counters, Bank Overlap Unit, Master Cycler, and the IPC.

$$\begin{array}{r} 228 \\ - 12 \\ \hline 216 \end{array}$$

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INITIALS

**4.0 PREREQUISITES OR INITIAL CONDITIONS**

- 4.1 The SS shall verify this surveillance test does not affect other tests presently in progress or jeopardize plant operation prior to granting approval to perform this surveillance test.

GCW  
SS APPROVAL

- 4.2 **Notify** Chemistry that Control Rod Operability will be performed and **record** name of individual notified in the Unit control log.

TNT

- 4.3 **Verify** the Digital Rod Position Indication System is operable.

TNT

- 4.4 **Verify** Tavg is within  $\pm 1^{\circ}\text{F}$  of Tref.

TNT

- 4.5 **Verify** that 1 of the 3 group select lights (Group A, B, or C) are illuminated on each of the 5 Rod Control Power Supply Cabinets prior to any rod movement. This will verify that fuses FU61 or FU62 are not blown.

TNT

INITIALS

**5.0 INSTRUCTIONS**

TEST STARTED      4/10/12      0700      1  
                                     DATE              TIME              MODE

**5.1 CONTROL BANK OPERABILITY TEST**

CBA/CBB/CBC/CBD

**NOTES**

- This test is applicable to each control bank not fully inserted.
- A reactor startup or shutdown, moving rods at least 10 steps, will satisfy this surveillance. The following instructions are written for the normal, all-banks-withdrawn condition.

5.1.1 **Record** the INITIAL Group Step Counter and Individual Rod Position Indicator readings for the control bank being tested on Data Sheet 1.

TNT / TNT / TNT / TNT

5.1.2 **Record** the initial IPC Bank Demand reading for the control bank being tested on Data Sheet 1.

TNT / TNT / TNT / TNT

5.1.3 **Place** ROD BANK SELECTOR SW 1-HS-40041 to the individual bank position for the control bank being tested.

C8 / C8 /   /   /

**NOTES**

- QMCB Annunciator ALB10-D06 ROD DEV may energize in the next step when rods are inserted 10 steps.
- QMCB Annunciator ALB10-C04 ROD BANK LO LIMIT will energize in the next step if rod insertion to 10 steps above the RIL occurs.

5.1.4 Using ROD MOTION SWITCH 1-HS-40040, **insert** the control bank being tested at least 10 steps as indicated on group step counters.

C8 /   /   /

12 step

228  
- 12  
-----  
216.

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INITIALS

5.1.5 **Check** RODS IN light is lit and a change in position occurs for each control rod being tested on the DRPI Display Panel.

C8 / / / /

5.1.6 **Record** the TEST Group Step Counter and Individual Rod Position Indicator readings of control bank being tested on Data Sheet 1.

C8 / / / /

5.1.7 **Record** the test IPC Bank Demand reading for the control bank being tested on Data Sheet 1.

C8 / / / /

5.1.8 Using ROD MOTION SWITCH 1-HS-40040, **withdraw** the control bank being tested to the INITIAL position recorded on Group Step Counter(s) in Step 5.1.1 or as required by plant conditions.

C8 / / / /

5.1.9 **Check** RODS OUT light is lit and individual control rod movement occurs on the DRPI Display Panel.

C8 / / / /

### CAUTIONS

• If energized, ALB10-C04 should reset when rods are withdrawn at, or just prior to, 228 steps. In the following step, rods should NOT be withdrawn greater than 228 steps.

• SS approval shall be obtained prior to exceeding 228 steps.


5.1.10 IF ALB10-C04 ROD BANK LO LIMIT energized when rods were inserted AND did NOT reset, when rods were withdrawn to the ARO position, perform the following:

a. **Withdraw** rods until the alarm resets (228 steps shall NOT be exceeded without SS approval).

N/A / / / /

b. WHEN ALB10-C04 has reset, **insert** rods back to the ARO position.

C8 / / / /

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INITIALS

5.1.11 **Record** the AS LEFT Group Step Counter and Individual Rod Position Indicator readings of the control bank being tested on Data Sheet 1.

CX, / / /

5.1.12 **Record** final IPC Bank Demand reading for the control bank being tested on Data Sheet 1.

CX, / / /


5.1.13 Based on a change (SAT) or no change (UNSAT) of position on DRPI for each rod in the bank for a change of at least 10 steps on group step counters, **record** Satisfactory (SAT) or Unsatisfactory (UNSAT) by initialing appropriate space on Data Sheet 1.

CX, / / /

5.1.14 **Repeat** Section 5.1 until all required Control Banks have been tested.

CX, / / /



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INITIALS

## 5.2 SHUTDOWN BANK OPERABILITY TEST

SBA/SBB/SBC/SBD/SBE

### NOTES

- This test is applicable to each shutdown bank not fully inserted.
- A reactor startup or shutdown, moving rods at least 10 steps, will satisfy this surveillance. The following instructions are written for the normal, all-banks-withdrawn condition.

5.2.1 **Record** the INITIAL Group Step Counter and Individual Rod Position Indicator readings for the shutdown bank being tested on Data Sheet 1.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_

5.2.2 **Place** ROD BANK SELECTOR SW 1-HS-40041 to the individual bank position for the shutdown bank being tested.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_

### NOTE

QMCB Annunciator ALB10-D06 ROD DEV may energize in the next step when rods are inserted 10 steps.

5.2.3 Using ROD MOTION SWITCH 1-HS-40040, **insert** the shutdown bank being tested at least 10 steps as indicated on group step counters.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_

5.2.4 **Check** RODS IN light is lit and a change in position occurs for each shutdown rod on the DRPI Display Panel.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_


5.2.5 **Record** the TEST Group Step Counter and Individual Rod Position Indicator readings of shutdown bank being tested on Data Sheet 1.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_

5.2.6 Using ROD MOTION SWITCH 1-HS-40040, **withdraw** the shutdown bank being tested to the INITIAL position recorded on Group Step Counter(s) in Step 5.2.1 or as required by plant conditions.

\_\_\_/\_\_\_/\_\_\_/\_\_\_/\_\_\_



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6.0

**ACCEPTANCE CRITERIA**

Each Shutdown and Control Rod NOT fully inserted moves freely as indicated by change of position on DRPI for a change of at least 10 steps on Group Step Counters.

7.0

**EVALUATION AND REVIEW**

7.1

**TEST PURPOSE**

☐ Surveillance

☐ Maintenance Retest

☐ Other (explain) \_\_\_\_\_

7.2

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0.

☐ YES

☐ NO

7.3

IF NO was checked, **notify** the SS and **refer** to Technical Specification LCO 3.1.4

7.4

Comments (include any abnormal conditions and corrective actions taken):

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Test Completed and SS Notified:


\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date/Time

Supervisory Review:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date/Time

Approved By S. E. Prewitt	<b>Vogtle Electric Generating Plant</b> 	Procedure Number Rev 14410-1 19.1
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8.0

**REFERENCES**

- Technical Specifications

**COMMITMENTS**

1984300229 1985303147 1986307730 1995329967 1984300229  
1985303147 1986307730

**END OF PROCEDURE TEXT**

Approved By  
S. E. Prewitt

# Vogtle Electric Generating Plant



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## CONTROL ROD OPERABILITY TEST

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### DATA SHEET 1 - CONTROL ROD OPERABILITY TEST

Sheet 1 of 3

CONTROL BANK	POSITION (STEPS)			MOVEMENT	
	INITIAL	TEST	AS LEFT	SAT	UNSAT
<b>CBA</b>					
Group 1 Step Counter	228	216	228		
DRPI H6	228	216	228	C8	
DRPI H10	228	216	228	C8	
Group 2 Step Counter	228	216	228		
DRPI F8	228	216	228	C8	
DRPI K8	228	216	228	C8	
IPC Bank Demand	228	216	228	C8	
<b>CBB</b>					
Group 1 Step Counter	228				
DRPI F2	228				
DRPI B10	228				
DRPI K14	228				
DRPI P6	228				
Group 2 Step Counter	228				
DRPI B6	228				
DRPI F14	228				
DRPI P10	228				
DRPI K2	228				
IPC Bank Demand	228				
<b>CBC</b>					
Group 1 Step Counter	228				
DRPI H2	228				
DRPI B8	228				
DRPI H14	228				
DRPI P8	228				
Group 2 Step Counter	228				
DRPI F6	228				
DRPI F10	228				
DRPI K10	228				
DRPI K6	228				
IPC Bank Demand	228				

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S. E. Prewitt

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## CONTROL ROD OPERABILITY TEST


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### DATA SHEET 1 - CONTROL ROD OPERABILITY TEST

Sheet 2 of 3

CONTROL BANK	POSITION (STEPS)			MOVEMENT	
	INITIAL	TEST	AS LEFT	SAT	UNSAT
<b>CBD</b>					
Group 1 Step Counter	228	_____	_____		
DRPI D4	228	_____	_____	_____	_____
DRPI M12	228	_____	_____	_____	_____
Group 2 Step Counter	228	_____	_____		
DRPI D12	228	_____	_____	_____	_____
DRPI M4	228	_____	_____	_____	_____
DRPI H8	228	_____	_____	_____	_____
IPC Bank Demand	228	_____	_____	_____	_____

SHUTDOWN BANK	POSITION (STEPS)			MOVEMENT	
	INITIAL	TEST	AS LEFT	SAT	UNSAT
<b>SBA</b>					
Group 1 Step Counter	_____	_____	_____		
DRPI D2	_____	_____	_____	_____	_____
DRPI B12	_____	_____	_____	_____	_____
DRPI M14	_____	_____	_____	_____	_____
DRPI P4	_____	_____	_____	_____	_____
Group 2 Step Counter	_____	_____	_____		
DRPI B4	_____	_____	_____	_____	_____
DRPI D14	_____	_____	_____	_____	_____
DRPI P12	_____	_____	_____	_____	_____
DRPI M2	_____	_____	_____	_____	_____
<b>SBB</b>					
Group 1 Step Counter	_____	_____	_____		
DRPI G3	_____	_____	_____	_____	_____
DRPI C9	_____	_____	_____	_____	_____
DRPI J13	_____	_____	_____	_____	_____
DRPI N7	_____	_____	_____	_____	_____
Group 2 Step Counter	_____	_____	_____		
DRPI C7	_____	_____	_____	_____	_____
DRPI G13	_____	_____	_____	_____	_____
DRPI N9	_____	_____	_____	_____	_____
DRPI J3	_____	_____	_____	_____	_____

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**DATA SHEET 1 - CONTROL ROD OPERABILITY TEST**

Sheet 3 of 3

SHUTDOWN BANK	POSITION (STEPS)			MOVEMENT	
	INITIAL	TEST	AS LEFT	SAT	UNSAT
<b><u>SBC</u></b>					
Group 1 Step Counter	_____	_____	_____		
DRPI E3	_____	_____	_____	_____	_____
DRPI C11	_____	_____	_____	_____	_____
DRPI L13	_____	_____	_____	_____	_____
DRPI N5	_____	_____	_____	_____	_____
<b><u>SBD</u></b>					
Group 1 Step Counter	_____	_____	_____		
DRPI C5	_____	_____	_____	_____	_____
DRPI E13	_____	_____	_____	_____	_____
DRPI N11	_____	_____	_____	_____	_____
DRPI L3	_____	_____	_____	_____	_____
<b><u>SBE</u></b>					
Group 1 Step Counter	_____	_____	_____		
DRPI H4	_____	_____	_____	_____	_____
DRPI D8	_____	_____	_____	_____	_____
DRPI H12	_____	_____	_____	_____	_____
DRPI M8	_____	_____	_____	_____	_____

Data Sheet Completed By:

Signature

Date/Time



**ATTACHMENT 1 - RESETTING ALL RODS OUT (ARO) POSITION**

Sheet 1 of 3  
INITIALS

1.0 To reset All Rods Out (ARO) Position, perform the following:

**NOTE**

Resetting All Rods Out position should be performed when there will be minimum impact on AFD oscillations.


- a. **Obtain** Shift Supervisor approval to reset ARO position. \_\_\_\_\_
- b. **Notify** Reactor Engineering (RE) that Control Rod ARO Position is being reset and **request** RE to adjust Plant Computer software in accordance with 87046-C, "All Rods Out Repositioning." \_\_\_\_\_
- c. **Determine** desired new ARO position from Reactor Engineering. \_\_\_\_\_

**NOTES**

- A rod bank should not be positioned to the ARO position unless already at a stable power level that will sustain the ARO position.
- After repositioning, all rod banks must have the same relative position as before. Rod tip-to-tip distance must not change.

- d. **Verify** both groups for each rod bank are at the same step-counter position prior to bank repositioning. \_\_\_\_\_
- e. **Maintain** Tavg at program by adjusting turbine load or RCS boron concentration. \_\_\_\_\_
- f. **Record** the initial IPC Bank Demand Position for all Control Banks in the Unit Control Log. \_\_\_\_\_
- g. **Verify** Tavg-Tref are matched. \_\_\_\_\_
- h. **Review** Precautions 3.10 and 3.11. \_\_\_\_\_



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# ATTACHMENT 1 - RESETTNG ALL RODS OUT (ARO) POSITION

Sheet 2 of 3  
INITIALS

- i. **Position** the ROD BANK SELECTOR SWITCH to the bank to be positioned:

SBE ☐    SBD ☐    SBC ☐    SBB ☐    SBA ☐  
CBD ☐    CBC ☐    CBB ☐    CBA ☐

## CAUTIONS

- Do NOT insert rods below the insertion limits as required by Technical Specifications LCO 3.1.5 or LCO 3.1.6.
- Partially inserted control banks must be moved the same number of steps as fully withdrawn banks to maintain proper bank overlap.

- j. **Withdraw** or **insert** the selected bank the required number of steps:

SBE ☐    SBD ☐    SBC ☐    SBB ☐    SBA ☐  
CBD ☐    CBC ☐    CBB ☐    CBA ☐

- k. **Repeat** Steps 1.0.i and 1.0.j until all rods have been positioned.

- l. At the completion of all bank testing, **place** ROD BANK SELECTOR SW 1-HS-40041 in auto or manual as directed by the SS.


AUTO

IV

MANUAL

IV

- m. **Record** the new ARO Position in Unit Control Log.

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# ATTACHMENT 1 - RESETTNG ALL RODS OUT (ARO) POSITION

Sheet 3 of 3  
INITIALS

- n. **Check** IPC Bank Demand Position Display is accurate: \_\_\_\_\_
- o. IF required, **Reset** IPC bank demand (steps) to agree with Rod Bank Step counters per 13505-1 Section 4.3.1. \_\_\_\_\_
- p. **Record** final displays in the Unit Control Log. \_\_\_\_\_
- q. **Notify** Reactor Engineering (RE) that ARO Repositioning is complete, and **request** RE to verify Plant Computer software has been adjusted. \_\_\_\_\_