


A-154

BRINEY EXHIBIT B  
GPC EXH. II-II-154

Approval <i>William A. Luff</i>	Vogtle Electric Generating Plant NUCLEAR OPERATIONS DOCKETED USNRC		Procedure No. 22332-C
Date 5-30-89	Unit COMMON	Georgia Power	Revision No. 2
			Page No. 1 of 10

95 SEP -8 P4:03

OFFICE OF SECRETARY  
DOCKETING SERVICE

VOID

## TEMPERATURE SWITCH CALIBRATION

NUCLEAR REGULATORY COMMISSION *DA*  
Docket No. *50-426 & 425-010-3* EXHIBIT NO. *II-154*  
In the matter of *Da Anna/Vogtle*  
☐ Staff ☒ Applicant ☐ Intervenor ☐ Other  
☐ Identified ☒ Received ☐ Rejected Reporter *WLV*  
Date *8-22-95* Witness *BRINEY*

9509120291 950822  
PDR ADOCK 05000424  
G PDR

PROCEDURE NO VEGP	REVISION 2	PAGE NO 2 of 10
1.0	<u>PURPOSE</u>	
	The purpose of this procedure is to provide instructions for Calibration of a Temperature Switch.	
2.0	<u>PRECAUTIONS AND LIMITATIONS</u>	
2.1	All steps in this procedure are to be performed in sequence except as noted.	[]
2.2	Performance of procedure step, as identified by a double asterisk (*/*), shall be initialed on "Checklist" except when recording data on Data Sheet.[]	
2.3	The instrument may be located in a radiation area, service a contaminated process fluid, or be contaminated. If so, follow instructions on "Radiation Work Permit".	[]
2.4	For Safety-Related Systems, an Independent Restoration Verification shall be performed after completion of Test/Calibration and initialed in "Restoration Verification" section of "Checklist".	[]
2.5	Any calculations necessary for the performance of this procedure shall be shown on "Calculation Sheet".	[]
2.6	Ensure that each lead (wire) to be lifted is marked with a completed and installed jumper and lifted wire tag. Instead of "Control No.", the "Procedure No." should be identified on the tag.	[]
2.7	If this procedure is completed and temporary jumper(s) must remain installed and/or lifted wire(s) cannot be reconnected, a Jumper and Lifted Wire Clearance must be obtained per Procedure 00306-C, "Temporary Jumper And Lifted Wire Control".	[]
2.8	Minimize entry of foreign materials or dirt into the working parts of the instrument.	[]
2.9	If, during performance of this procedure, any of the following occur, immediately notify I&C Foreman.	
2.9.1	Any personnel error, procedure inadequacy, or malfunction is identified which could prevent fulfillment of "Acceptance Criteria".	[]
2.9.2	Any test exceeds specified limits.	[]

PROCEDURE NO. VEGP	REVISION 2	PAGE NO. 3 of 10
2.10	This procedure may be performed in any plant operational mode.	[]
3.0	<u>PREREQUISITES OR INITIAL CONDITIONS</u>	
3.1 <u>*/*</u>	Notify Shift Supervisor, or designee, of work to be performed and obtain signature authorization.	[]
3.2 <u>*/*</u>	Notify Reactor Operator (RO) that instruments associated with switch may be erratic or inoperable during performance of this procedure and obtain RO signature.	[]
3.3	TEST EQUIPMENT REQUIRED	
3.3.1	Temperature Bath	[]
3.3.2	Fluke 2175A Digital Thermometer or equivalent	[]
3.3.3	Triplett Model 630 VOM or equivalent	[]
3.4 <u>*/*</u>	Verify all Prerequisites or Initial Conditions are met.	[]
4.0	<u>MAIN BODY</u>	
4.1	CALCULATIONS	
4.1.1 <u>*/*</u>	Obtain instrument setpoint Data from appropriate controlled document(s) and record document number(s) in "Comments" section of "Data Sheet".	[]
4.1.2 <u>*/*</u>	Calculate and record input and expected values in "Input" and "Expected" sections of "Data Sheet".	[]
4.1.3 <u>*/*</u>	Calculate Hi and Lo Limits and record in "Hi Limit" and "Lo Limit" sections of "Data Sheet".	[]
4.2	REMOVAL FROM SERVICE	
<p style="text-align: center;">NOTE</p> <p style="text-align: center;">The length of capillary immersed in temperature bath must be the same as length of capillary immersed in process.</p>		
4.2.1	Close isolation valve (if applicable).	[]

PROCEDURE NO.	REVISION	PAGE NO.
VEGP 22332-C	2	4 of 10
4.2.2 <u>*/*</u>	Disconnect lead wires from switch as required. (Independent Verification required for safety-related systems)	[]
4.2.3	Remove temperature sensing element from thermowell and/or holding apparatus as necessary.	[]
4.3	CALIBRATION	
4.3.1	Place temperature sensing element and Fluke digital thermometer in temperature bath.	[]
4.3.2	Connect VOM across appropriate terminals to monitor contact action of switch under test.	[]
4.3.3	Adjust temperature bath to a point at which VOM indicates contacts are in reset condition.	[]
<p style="text-align: center;">NOTE</p> <p style="text-align: center;">As setpoint is approached temperature bath should be adjusted in smaller increments, allowing temperature to stabilize after each adjustment of temperature bath and prior to obtaining data and switch conditions.</p>		
4.3.4 <u>*/*</u>	Adjust temperature bath to point at which required trip point is indicated by VOM and record temperature bath value in "As Found" section of "Data Sheet".	[]
4.3.5 <u>*/*</u>	Adjust temperature bath to point at which required reset contact action is indicated by VOM and record temperature bath value in "As Found" section of "Data Sheet".	[]
4.3.6	If required, connect VOM to additional switch contacts and repeat steps 4.3.3 thru 4.3.5.	[]
4.3.7 <u>*/*</u>	If As Found readings are within limits specified on "Data Sheet" and more accurate readings are not desired, record readings in "As Left" section of "Data Sheet" and proceed to appropriate subsection.	[]

PROCEDURE NO.	REVISION	PAGE NO.
VEGP	22332-C	2
		5 of 10

4.3.8 If As Found readings are not within limits specified on "Data Sheet", or more accurate readings are desired, proceed as follows:

- a. Ensure that VOM is connected across correct switch terminal. []
- b. Adjust temperature bath to setpoint value as listed on "Data Sheet". []
- c. Adjust switch as required to obtain correct contact action as indicated by VOM. []
- d. Adjust temperature bath to point at which VOM indicates contact trip action and note temperature value. []
- e. Adjust temperature bath to point at which VOM indicates contact reset action and note temperature value. []
- f. Repeat steps 4.3.8b thru 4.3.8e until no further adjustments are necessary. []
- g. Record final values obtained in "As Left" section  
\*/\* of "Data Sheet". []

4.3.9 If temperature switch has more than one contact, repeat steps 4.3.8a thru 4.3.8g if appropriate until all contacts have been calibrated. []

#### 4.4 RESTORE TO SERVICE

- 4.4.1 Disconnect all test equipment used in performance of  
\*/\* this procedure. []
- 4.4.2 Reinstall temperature sensing element in thermowell  
\*/\* and/or holding apparatus as required. []
- 4.4.3 Reconnect switch leads as required. []  
\*/\*
- 4.4.4 Open isolation valve (if applicable). []  
\*/\*
- 4.4.5 Verify instrument reflects current plant conditions  
\*/\* after it is returned to service. []

PROCEDURE NO.	REVISION	PAGE NO.
VEGP 22332-C	2	6 of 10
4.4.6 <u>*/*</u>	For Safety-Related systems, have an Independent Restoration Verification performed by designated personnel.	[]
4.4.7	Notify RO that instrument has been returned to service.	[]
4.4.8 <u>*/*</u>	Notify Shift Supervisor, or designee, of completion of work including test results and obtain signature on "Completion Sheet".	[]
5.0	<u>ACCEPTANCE CRITERIA</u>	
5.1	The Acceptance Criteria for this procedure is that the temperature switch is within limits specified on "Data Sheet".	
5.2	Satisfactory completion of this procedure has been met when I&C Foreman has evaluated data obtained per Acceptance Criteria of this procedure, reviewed, and signed "Data Sheet" provided.	
6.0	<u>REFERENCES</u>	
6.1	Instruction Manual for switch under test.	
6.2	Procedure 00306-C, "Temporary Jumper And Lifted Wire Control"	
END OF PROCEDURE TEXT		



Procedure No.	Revision	Page No.
VEGP 22332-C	2	7 of 10

Sheet 1 of 1

DATA SHEET

Inst. No.	Location	Serial No.
Description Temperature Switch	Manufacturer	Model No.

NOTES: N/A

Action	UNITS	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT
Switch Tripped						
Switch Reset						
Action	UNITS	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT
Switch Tripped						
Switch Reset						
Action	UNITS	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT
Switch Tripped						
Switch Reset						

COMMENTS:

TEST EQUIPMENT

I.D. NO.	MODEL NO.	CALIBRATION DUE DATE

PERFORMED BY:	DATE:
REVIEWED BY:	DATE:
APPROVED BY:	DATE:

PROCEDURE NO. VEGP	22332-C	REVISION 2	PAGE NO. 8 of 10
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Sheet 1 of 1

### CALCULATION SHEET

Show all calculations performed during course of this procedure in the space below.

Completed by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



PROCEDURE NO. VEGP	22332-C	REVISION 2	PAGE NO. 9 of 10
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Sheet 1 of 1

### CHECKLIST

3.1 Shift Supervisor Authorization	Signature	/	Date
3.2 Reactor Operator (RO) Notified	Signature	/	Date

#### STEP VERIFICATION

Step/Substep	Initial	Step/Substep	Initial
3.4 Prerequisites met		4.4.4 Isolation valve open	
4.2.2 Leads disconnected		4.4.5 Reflects plant conditions	
4.2.2 Independent Verification			
4.4.1 Test equipment removed			
4.4.2 Element installed			
4.4.3 Leads connected			

#### RESTORATION VERIFICATION

	Initial		Initial
1. Element installed		3. Isolation valve open	
2. Leads connected			
Performed by:		Date	
Reviewed by:		Date	

