

Approved By T. W. Cook	Vogle Electric Generating Plant 	Procedure Number 24076-C	Rev 10.1
Date Approved 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number	1 of 43

**METEOROLOGICAL STATION
10M BACK-UP AMBIENT TEMPERATURE
CHANNEL CALIBRATION**

PROCEDURE USAGE REQUIREMENTS	SECTIONS
Continuous Use: Procedure must be open and readily available at the work location. Follow procedure step by step unless otherwise directed by the procedure.	All Except As Noted Below
Reference Use: Procedure or applicable section(s) available at the Work location for ready reference by person performing steps.	Attachment 1 Attachment 2 Attachment 3 Attachment 4

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Information Use: Available on plant site for reference as needed.

None

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1.0	<u>PURPOSE</u>	
1.1	The purpose of this procedure is to provide instructions for a Channel Calibration of Meteorological Station 10M Back-Up Ambient Temperature Loop.	
1.2	<u>SCOPE</u>	
1.2.1	When this procedure is performed for scheduled Channel Calibration, the following sections shall be used: 1.0, 2.0, 3.0, 4.0 and 5.0.	
1.2.2	When this procedure is performed for maintenance the following sections shall be used: 1.0, 2.0, 3.0, 5.0 and appropriate subsections of 4.0.	
2.0	<u>PRECAUTIONS AND LIMITATIONS</u>	
2.1	Steps in this procedure may be performed out of sequence only:	
2.1.1	With prior approval of the cognizant supervisor. <input type="checkbox"/>	
2.1.2	If they do not violate the intent of the procedure. <input type="checkbox"/>	
2.1.3	If they are documented in the "Comments" section of the "Completion Sheet". <input type="checkbox"/>	
2.2	Performance of procedure steps, as identified by a double asterisk (**), shall be used when recording data on applicable Data Sheet. <input type="checkbox"/>	
2.3	Any calculations necessary for the performance of this procedure shall be shown on "Calculation Sheet". <input type="checkbox"/>	
2.4	The control of lifting wire(s), opening link(s), fuse(s) or jumper(s) will be performed per this procedure. <input type="checkbox"/>	
2.5	Guidelines of Procedure 20429-C "Plant Equipment Component Configuration Control" will be used for tagging of wire(s), link(s), fuse(s), or jumper(s). <input type="checkbox"/>	Deleted: "Short Term Documentation Of Temporary Jumpers And Lifted Wires"
2.6	If this procedure is completed and temporary jumper(s) must remain installed and/or lifted wire(s) cannot be reconnected, a Temporary Modification Request must be completed per Procedure 00307-C, "Temporary Modifications". <input type="checkbox"/>	

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2.7	If, during performance of this procedure, any of the following occur, immediately notify cognizant supervisor.		
2.7.1	Any personnel error, procedure inadequacy, or malfunction is identified which could prevent fulfillment of "Acceptance Criteria".	<input type="checkbox"/>	
2.7.2	Any test exceeds specified limits.	<input type="checkbox"/>	
2.8	Each Platinum Temperature Translator Card is matched to an individual Platinum Sensor. Do not mix sensors and cards.	<input type="checkbox"/>	
2.9	This procedure may be performed in any plant operational mode.	<input type="checkbox"/>	
2.10	If necessary, when maintenance is being performed on the Met Tower instrumentation located in the battery room at the Met Tower, obtain an insulated blanket from the tool room to cover the battery banks while work activities are being performed. Remove covering when work is complete (Do not leave batteries covered for more than one shift).	<input type="checkbox"/>	
3.0	<u>PREREQUISITES OR INITIAL CONDITIONS</u>		
3.1	TEST EQUIPMENT REQUIRED		
	NOTE		
	Environmental (temperature, humidity, etc.) compensation for M&TE accuracies may need to be considered.		
3.1.1	Fluke Model 45 Digital Multimeter (DMM) or equivalent.	<input type="checkbox"/>	
3.1.2	General Resistance Model RTD-100 Resistance Temperature Detector (RTD) Simulator or equivalent	<input type="checkbox"/>	
3.1.3	Reference Thermometer-Resolution 0.1°C (0.18°F) graduations as a minimum] Accuracy ±0.02°C (0.36°F) or equivalent.	<input type="checkbox"/>	
3.1.4	Transmation Model 1040 Calibrator or equivalent	<input type="checkbox"/>	
3.1.5	Corning Model PC-351 Hot Plate Stirrer or equivalent	<input type="checkbox"/>	
3.1.6	Temperature Bath	<input type="checkbox"/>	

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3.1.7 Jumper.
(Required only if recorder A/D board calibration must be performed.)

3.2 MATERIALS REQUIRED

3.2.1 Tape (electrical or duct) used for marking position of boom on lift cable.

3.3 ~~Shift Supervisor, or designee, notified prior to performing work.~~ Deleted: Unit

TEST STARTED: _____
DATE TIME

Initial

3.4 Notify Reactor Operator (RO) the following may be erratic or inoperable during performance of this procedure:

Initial

3.4.1 ASZR-55001, 10M Back-Up Wind Speed Recorder, ~~Yellow Channel~~ Deleted: Red Pen

3.4.2 ASZR 55001, 10M Back-Up Wind Direction Recorder, ~~Blue Channel~~ Deleted: Pen

3.4.3 ZNLR-55003, 10M Back-Up Sigma Theta Recorder, ~~Blue Channel~~ Deleted: Pen

3.4.4 ~~AZNLR-55003, 10M Back-Up Ambient Temperature Recorder, Yellow Channel~~ Deleted: TD
Deleted: 5
Deleted: Red Pen

3.4.5 Computer Point S6436, 10M Back-Up Wind Speed

3.4.6 Computer Point T6438, 10M Back-Up Ambient Temperature

3.4.7 Computer Point Y6435, 10M Back-Up Wind Direction

3.4.8 Computer Point Y9882, Met. Tower Aspirator

3.5 Verify all Prerequisites or Initial Conditions are met.

Initial

4.0 MAIN BODY

4.1 CHANNEL CALIBRATION
(Commitment 000185)

4.1.1 Test Set-Up

4.1.1.1 Disconnect field leads from Transient Protection Panel module 7, terminals 1, 2, 3 and 4.

terminal 1		Initial
terminal 2		Initial
terminal 3		Initial
terminal 4		Initial

4.1.1.2 Connect RTD simulator to Transient Protection Panel module 7, terminals 1, 2, 3 & 4 for 10M ambient temperature input. □

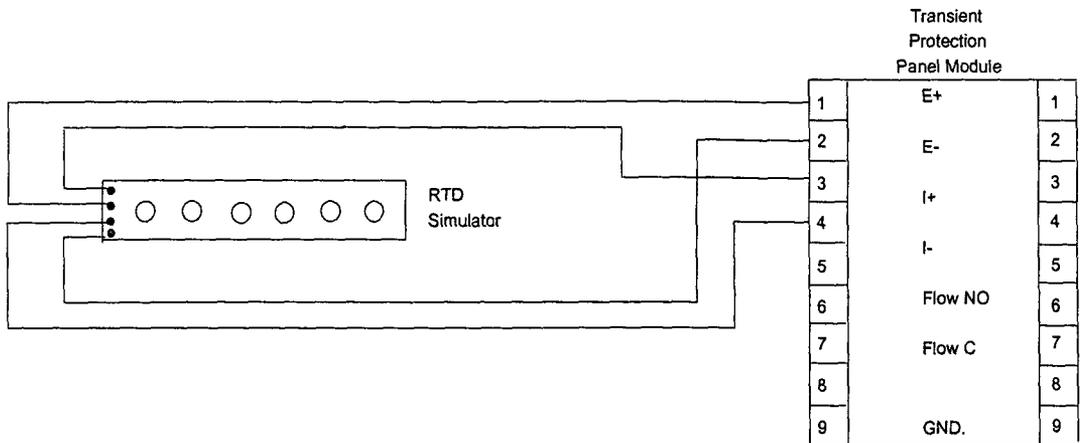
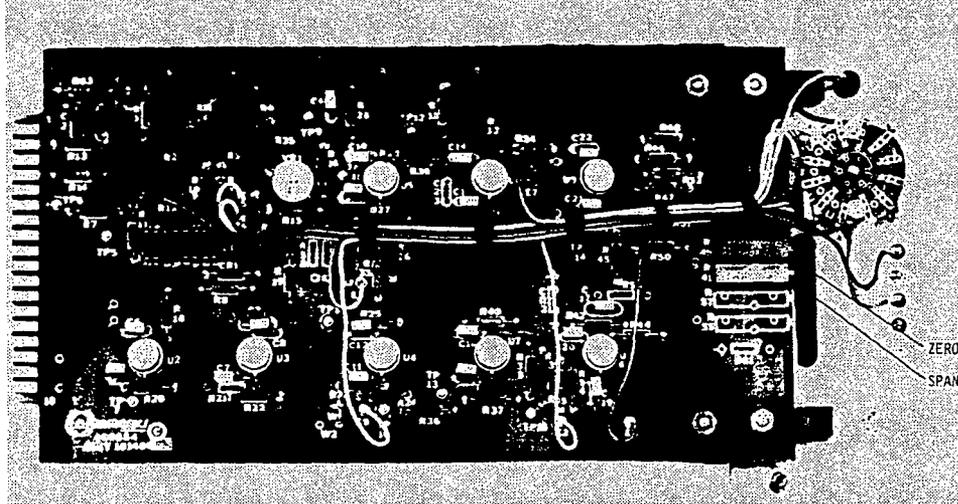


FIGURE 1
RTD Simulator Connections

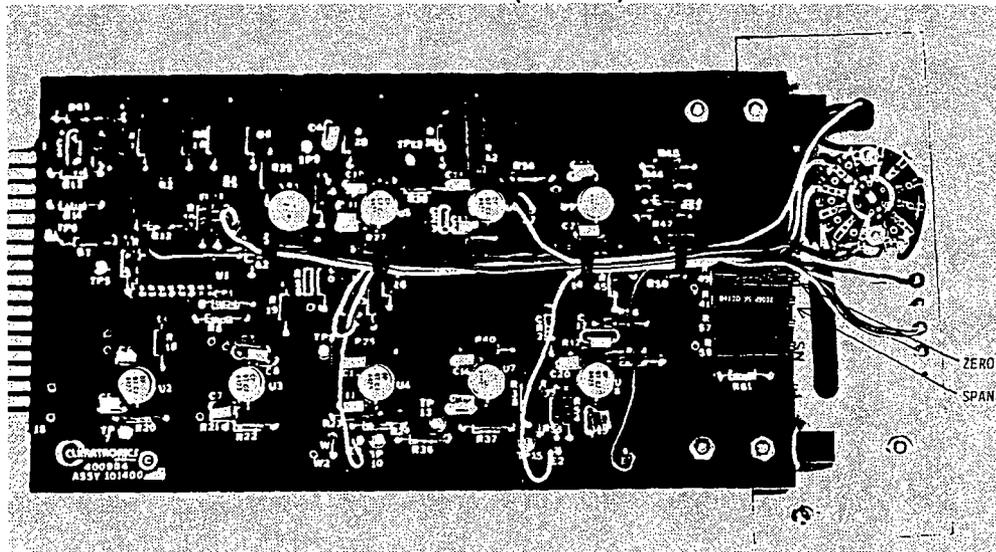
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<p>4.1.2 Channel Status Check</p> <p>4.1.2.1 <u>*/*</u> Adjust RTD simulator to inputs/indications listed and record indications/inputs in "As Found" section of "Data Sheet 1". <input type="checkbox"/></p> <p>4.1.3 Translator Card Calibration (ATDY-55005A) Location: Met Tower</p> <p>4.1.3.1 Connect a DMM to states block TB2, terminals 10(+) and 11(-). <input type="checkbox"/></p> <p>4.1.3.2 <u>*/*</u> Adjust RTD simulator to apply inputs listed and record output readings in "As Found" section of "Data Sheet 2". <input type="checkbox"/></p> <p>4.1.3.3 <u>*/*</u> If As Found readings are within limits specified on "Data Sheet 2", and more accurate readings are not desired, record readings in "As Left" section of "Data Sheet 2" and proceed to appropriate subsection. <input type="checkbox"/></p> <p>4.1.3.4 If As Found readings are not within limits specified on "Data Sheet 2", or more accurate readings are desired, proceed as follows:</p> <p>a. Position ambient temperature card "Mode" switch to "Zero" position. <input type="checkbox"/></p> <p>b. Adjust "Zero" potentiometer to obtain a output reading of 0.000 VDC (-0.015 to 0.015 VDC allowable). <input type="checkbox"/></p> <p>c. Position ambient temperature card "Mode" switch to "Span" position. <input type="checkbox"/></p> <p>d. Adjust "Span" potentiometer to obtain a output reading of 5.000 VDC (4.985 to 5.015 VDC allowable). <input type="checkbox"/></p> <p>e. Repeat steps 4.1.3.4a through 4.1.3.4d until no further adjustments are necessary. <input type="checkbox"/></p>			

f. Position ambient temperature card "Mode" switch to "Operate".



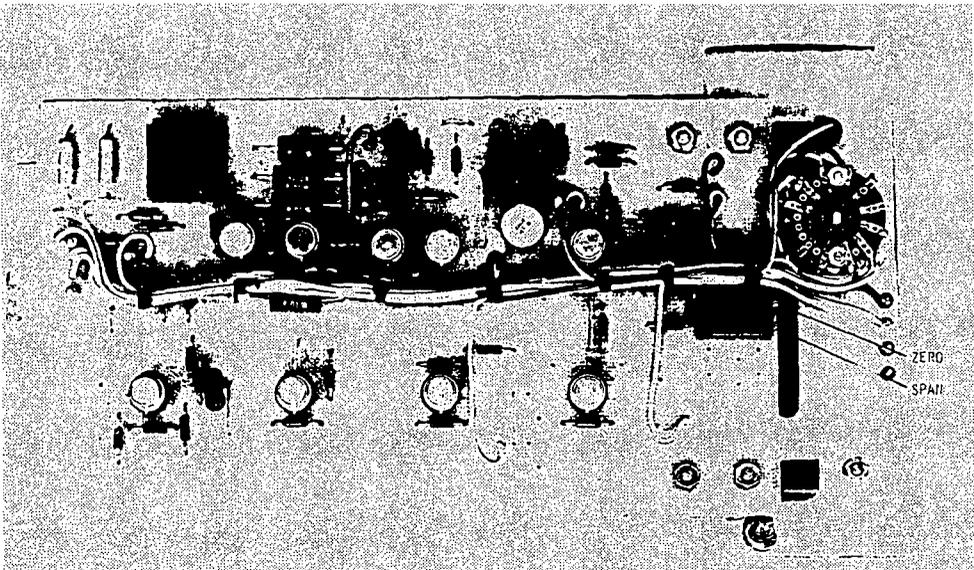
Translator Card P/N 101400

FIGURE 2 (CONT'D)



Translator Card P/N 101400

FIGURE 2



Translator Card P/N 100950

FIGURE 2

4.1.3.5 Adjust RTD simulator to apply inputs listed and record output readings in
** "As left" section of "Data Sheet 2". □

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4.1.4 Recorder Calibration (ATDR-55003), Yellow Channel
Location: Met Tower

4.1.4.1 If "As Found" values on "Data Sheet 1" were within tolerance and no adjustments were made per subsection 4.1.3 and more accurate readings are not desired, proceed as follows:

a. Discard "Data Sheet 3".

_____ Initial

b. Proceed to appropriate subsection.

4.1.4.2 */* Adjust RTD simulator to indications listed and record RTD simulator values in "As Found" section of "Data Sheet 3".

4.1.4.3 */* If As Found values are within limits specified on "Data Sheet 3", and more accurate values are not desired, record values in "As Left" section of "Data Sheet 3" and proceed to appropriate subsection.

4.1.4.4 If As Found values are not within limits specified on "Data Sheet 3", or more accurate values are desired, proceed as follows:

a. Verify settings of recorder channel 4 per "Attachment 3" and correct as necessary.

b. If calibration of recorder A/D board is not required, proceed to step 4.1.4.5.

CAUTION

CH1 and CH2 share one A/D board.
CH 3 and CH4 share another A/D board.
A/D adjustments made for CH1 will affect both CH1 and CH2.
A/D adjustments made for CH2 will affect both CH1 and CH2.
A/D adjustments made for CH3 will affect both CH3 and CH4.
A/D adjustments made for CH4 will affect both CH3 and CH4.

c. If calibration of recorder A/D board is required for CH4, notify cognizant supervisor calibration of shared channel CH3 "Meteorological Station Precipitation" per procedure 24687-C will also be affected.

_____ Initial

Deleted: _____

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<p>4.1.5 Computer Point Calibration Check (T6438)</p> <p>4.1.5.1 If "As Found" values on "Data Sheet 1" were within tolerance and no adjustments were made per subsection 4.1.3 and more accurate readings are not desired, proceed as follows:</p> <p style="margin-left: 20px;">a. Discard "Data Sheet 4".</p> <div style="text-align: right; margin-right: 100px;"> <hr style="width: 100px; border: 0.5px solid black;"/> <p style="margin: 0;">Initial</p> </div> <p style="margin-left: 20px;">b. Proceed to appropriate subsection.</p> <p>4.1.5.2 <u>**</u> Adjust RTD simulator to indications listed and record RTD simulator values in "As Found" section of "Data Sheet 4". <input type="checkbox"/></p> <p>4.1.5.3 <u>**</u> If As Found values are within limits specified on "Data Sheet 4", and more accurate values are not desired, record values in "As Left" section of "Data Sheet 4" and proceed to appropriate subsection. <input type="checkbox"/></p> <p>4.1.5.4 If As Found values are not within limits specified on "Data Sheet 4", or more accurate values are desired, proceed to 23503-C "Plant Computer Point Calibration". <input type="checkbox"/></p> <p>4.1.5.5 <u>**</u> After computer adjustments or rework, adjust RTD simulator to indications listed and record RTD simulator values in "As Left" section of "Data Sheet 4". <input type="checkbox"/></p>		

4.2 SENSOR VERIFICATION (ATE-55005A)

Location: Met Tower

4.2.1 Lower instrument boom assembly and connect test cable per "Attachment 1".

4.2.2 Document description of ambient temperature sensor leads to be disconnected, then lift field leads from 10M back-up aspirator assembly terminal strip.

Description

	Initial

4.2.3 Remove sensor from aspirator assembly.

Initial

4.2.4 Disconnect RTD simulator connected to Transient Protection Panel module 7.

4.2.5 Connect ambient temperature sensor leads to Transient Protection Panel module 7, input terminals 1(E+), 2(E-), 3(I+) and 4(I-). (Refer to Figure 3)

Temperature Recorder Adjustments

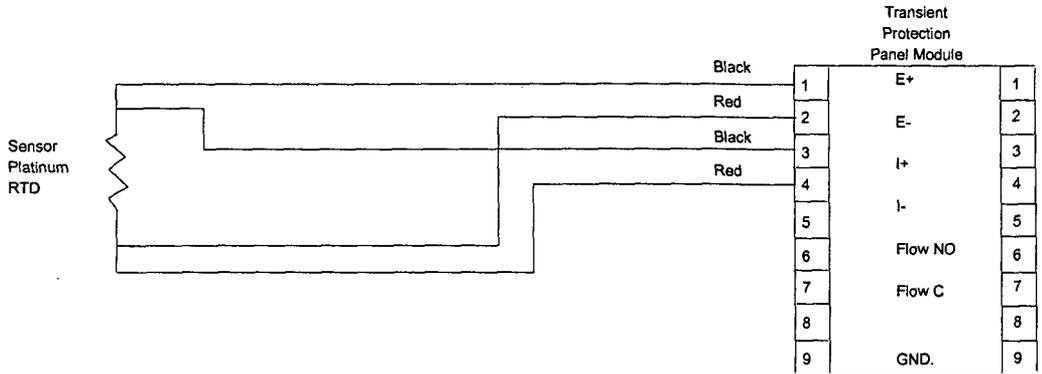


FIGURE 3

RTD Connections

- 4.2.7 Construct temperature baths at 32°F (0°C) and 104°F (40°C). Monitor these baths with reference thermometers or equivalent.
- 4.2.8 */* Insert ambient temperature sensor in 32°F bath and record ambient temperature recorder indication in "Actual" section of "Data Sheet 5".
- 4.2.9 */* Insert ambient temperature sensor in 104°F bath and record ambient temperature recorder indication in "Actual" section of "Data Sheet 5".
- 4.2.10 If Actual readings are not within limits specified on "Data Sheet 5", notify cognizant supervisor.

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<p>4.3 ASPIRATOR FLOW CIRCUIT VERIFICATION Location: Met Tower</p> <p>4.3.1 Connect DMM set to monitor VDC to TB-6, terminals 4(+) and 5(-). <input type="checkbox"/></p> <p>4.3.2 Manually position and hold aspirator flow paddle away from flow microswitch and verify "Failed" condition as follow:</p> <p style="margin-left: 40px;">a. DMM reads approximately 5.000 VDC.</p> <p style="text-align: right; margin-right: 100px;">_____ Initial</p> <p style="margin-left: 40px;">b. Computer Point (Y9882) indicates approximately 5.000 VDC.</p> <p style="text-align: right; margin-right: 100px;">_____ Initial</p> <p>4.3.3 Manually position and hold aspirator flow paddle to actuate flow microswitch and verify "Not Failed" condition as follow:</p> <p style="margin-left: 40px;">a. DMM reads approximately 0.000 VDC.</p> <p style="text-align: right; margin-right: 100px;">_____ Initial</p> <p style="margin-left: 40px;">b. Computer Point (Y9882) indicates approximately 0.000 VDC.</p> <p style="text-align: right; margin-right: 100px;">_____ Initial</p> <p>4.3.4 If operation of flow microswitch does not produce required indications, proceed to vender literature and/or 23503-C "Plant Computer Point Calibration" for adjustments, then repeat subsection 4.3. <input type="checkbox"/></p>			

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4.4 RESTORE TO SERVICE														
4.4.1	Remove all test equipment connected during course of this procedure.	_____ Initial												
4.4.2	Connect ambient temperature sensor leads that were removed at step 4.2.2 to 10M Back-Up aspirator assembly terminals strip and install sensor in aspirator assembly.	_____ Initial												
4.4.3	Raise instrument boom assembly per "Attachment 2".	_____ Initial												
4.4.4	Connect field leads to Transient Protection Panel Module 7, terminals 1, 2, 3 and 4.	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: right;">terminal 1</td> <td style="width: 20%;"></td> <td style="width: 50%; text-align: right;">_____ Initial</td> </tr> <tr> <td style="text-align: right;">terminal 2</td> <td></td> <td style="text-align: right;">_____ Initial</td> </tr> <tr> <td style="text-align: right;">terminal 3</td> <td></td> <td style="text-align: right;">_____ Initial</td> </tr> <tr> <td style="text-align: right;">terminal 4</td> <td></td> <td style="text-align: right;">_____ Initial</td> </tr> </table>	terminal 1		_____ Initial	terminal 2		_____ Initial	terminal 3		_____ Initial	terminal 4		_____ Initial
terminal 1		_____ Initial												
terminal 2		_____ Initial												
terminal 3		_____ Initial												
terminal 4		_____ Initial												
4.4.5	If not already performed, disconnect jumper from states block TB5, (upper terminals) 4 and 5.	_____ Initial												

6.0 REFERENCES

- 6.1 Met Tower - System Manual, Meteorological Data Collection Center, 1X5AG20-00001
- 6.2 Met Tower - Climatronics Instrumentation Manual Book 1, 1X5AG20-00002
- 6.3 Met Tower - Climatronics Instrumentation Manual Book 2, 1X5AG20-00003
- 6.4 Wiring Diagram Misc. Aux System Met Tower, AX3D-CH-M50A
- 6.5 Multiplexer – Field Input Wiring Table, 1X5AB04-186
- 6.6 Met Tower – Transient Protection Panel Instrument Wiring, 1X5AG20C-00016
- 6.6 Met Tower – Panel Rack Instrument Wiring Schematic, 1X5AG20C-00018
- 6.7 Met Tower – Back-Up Tower Instrument Wiring Schematic, 1X5AG20C-00019

6.8 PROCEDURES

- 6.8.1 00307-C, "Temporary Modifications"
- 6.8.2 20429-C, "~~Plant Equipment Component Configuration Control~~"
- 6.8.3 23503-C, "Plant Computer Point Calibration"

Deleted: Short

Deleted: Term Documentation Of Temporary Jumpers And Lifted ff Wires

END OF PROCEDURE TEXT

ATTACHMENT 1

REFERENCE USE

- 1.0 INSTRUCTIONS FOR LOWERING INSTRUMENT BOOM ASSEMBLY**
- 1.1 Inside elevator control box, verify power circuit breaker is pushed in and power indicator lamp is ILLUMINATED.
 - 1.2 Place "Heater" switch to the "OFF" position.
 - 1.3 Place "Up/Down" switch to the "Down" position.
 - 1.4 Place winch control "On/Off" switch to the "ON" position.
 - 1.5 If boom does not begin to lower, toggle "Limit-Override" switch to "Override" position for approximately three seconds.

CAUTION

Bottom limit switch is designed to stop instrument boom at end of travel. If bottom limit switch fails, Instrument Boom will be lowered off tower unless power is not turned off at appropriate time.

- 1.6 When boom reaches desired position, position winch control "On/Off" switch to "OFF" position.
- 1.7 Mark position of instrument boom carriage cable clamps on cable using tape (electrical/duct) to enable proper replacement during restoration.
- 1.8 Remove two cable clamps that attach instrument boom carriage to cable.

CAUTION

Ensure Dew Point sensor is properly protected during Instrument Boom Carriage removal.

- 1.9 Push bottom limit switch on left rail track out of the way, then remove instrument boom carriage from rails.
- 1.10 Repeat step 1.1 through 1.9 for removal of next instrument boom(s), as appropriate.

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1.11	Connect one end of test cable to connector on top side of junction box on instrument boom carriage.		<input type="checkbox"/>
1.12	Connect other end of test cable to connector on left side of junction box mounted on tower base opposite instrument boom carriage.		<input type="checkbox"/>

ATTACHMENT 2

REFERENCE USE

1.0 INSTRUCTIONS FOR RAISING INSTRUMENT BOOM ASSEMBLY

- 1.1 Verify winch control "On/Off" switch is in "OFF" position.
- 1.2 Disconnect test cable from connector on top side of junction box on instrument boom carriage.
- 1.3 Disconnect test cable from connector on left side of junction box mounted on tower base.
- 1.4 Place instrument boom carriage on rails and line up carriage with tape (electrical/duct) applied to cable during removal of cable clamps.
- 1.5 Install and tighten cable clamps.
- 1.6 Remove tape (electrical/duct) used to mark cable clamp positions.
- 1.7 Inside elevator control box, verify power circuit breaker is pushed in and power indicator lamp is ILLUMINATED.
- 1.8 Place "Up/Down" switch to the "UP" position.
- 1.9 Place winch control "On/Off" switch to the "ON" position.
- 1.10 If boom does not begin to rise, toggle "Limit-Override" switch to "Override" position for approximately three seconds.
- 1.11 Allow drive unit to run until electrical tape marking cable instrument boom carriage position is found, then position winch control "On/Off" switch to "OFF" position.
- 1.12 Repeat steps 1.4 through 1.11 for installation of next instrument boom(s), as appropriate.
- 1.13 When all instrument boom carriages have been reattached to cable, place winch control "On/Off" switch to the "ON" position.

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ATTACHMENT 2

- 1.14 If boom does not begin to rise, toggle "Limit-Override" switch to "Override" position for approximately three seconds.
- 1.15 When instrument boom stops, momentarily toggle "Override" switch to obtain approximately one additional inch of travel to assure instrument boom connector is made up with tower spring loaded connector.
- 1.16 When boom has been raised to desired position, position winch control "On/Off" switch to "OFF" position.
- 1.17 Place "Heater" switch to the ON position.
- 1.18 Verify all contact indicators are ILLUMINATED.

ATTACHMENT 3

REFERENCE USE

- 1.0 INSTRUCTIONS FOR CHANGING RECORDER SETTINGS**
- 1.1 Open recorder front cover to access softkeys.
 - 1.2 Press "Stop" key to stop data storage.
 - 1.3 At "Do you want to stop data storage?" prompt, use "◀" "▶" arrow keys to highlight "Yes", then press "DISP/ENTER" key.
 - 1.4 Verify "STOP" is displayed in red square at top center of display.
 - 1.5 Press "Menu" key.

NOTE

The first four top row soft keys correspond to the Menu choices displayed across bottom of screen. The fifth soft key (far right) will display next page of Menu choices, if available.

- 1.6 At "Set mode" screen, press "#1" softkey (far left) to select "Range, Alarm".

ATTACHMENT 3

Group		STOP		DISP		8day 6/16	
May 19, 2004 10:20:30		04		Last-CH:		04	
First-CH:	04		Last-CH:		04		
Range	Type	Range	Span_L	Span_U			
Mode							
Scale	Volt	6V	0.000	5.000			
			Span_L	Span_U	Unit		
			-10.00	120.00	°F		
Alarm							
1	Off						
2	Off						
3	Off						
4	Off						
01		02		03		04	

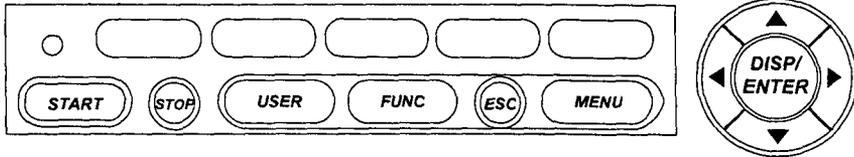


FIGURE 4

- 1.7 At "Range - Alarm" screen, use "▲", "▼", "◀", "▶" arrow keys to highlight "First-CH:" field.
- 1.8 Select desired channel "04" by pressing corresponding softkey.
- 1.9 Verify channel number selected is displayed in "First-CH:" field.
- 1.10 If the "Mode" or "Type" field settings are correct, proceed to step 1.12
- 1.11 If the "Mode" or "Type" field settings are not correct proceed to as follows:
- 1.11.1 Use "▲", "▼", "◀", "▶" arrow keys to highlight "Mode" or "Type" field setting to be changed.

ATTACHMENT 3

- 1.11.2 Observe available settings for the highlighted field as displayed in blue across bottom of screen.
- 1.11.3 If desired setting is not displayed in first four settings listed, press the fifth (far right) softkey "1/3" to display next four settings available.
- 1.11.4 Press softkey corresponding to desired setting and verify new setting is displayed in field and is highlighted in yellow.
- 1.11.5 Press "DISP/ENTER" key to save changes, then verify new setting is displayed and field is no longer highlighted.
- 1.11.6 Repeat step 1.11.1 through 1.11.5 until "Mode" and "Type" fields display correct settings.
- 1.12 If the "Range" field setting is correct, proceed to step 1.14
- 1.13 If the "Range" field setting is not correct proceed to as follows:
 - 1.13.1 Use "▲", "▼", "◀", "▶" arrow keys to highlight "Range" field setting.
 - 1.13.2 Observe available "Range" settings displayed in blue across bottom of screen.
 - 1.13.3 If desired setting is not available in first four settings displayed, press the fifth (far right) "Next 1/2" softkey to display next three settings available.
 - 1.13.4 Select correct "Range" value from settings displayed in blue at bottom of screen by pressing corresponding softkey.
 - 1.13.5 Verify new setting is displayed in "Range" field and is highlighted in yellow.
 - 1.13.6 Press "DISP/ENTER" key to save changes and verify new setting is displayed in "Range" field and is no longer highlighted.
- 1.14 If the "Span_L", "Span_U", "Scale_L", or "Scale U" field settings are correct, proceed to step 1.16.

ATTACHMENT 3

1.15 If the "Span_L", "Span_U", "Scale_L", or "Scale_U" field settings are not correct proceed to as follows:

1.15.1 Use "▲" "▼" "◀" "▶" arrow keys to highlight "Span_L", "Span_U", "Scale_L", or "Scale_U" field setting.

1.15.2 Press the first (far left) softkey to select "Input" as displayed in blue at bottom of screen.

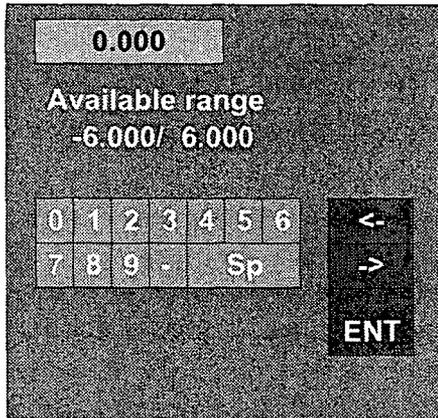


FIGURE 5

1.15.3 At "Available range" screen, use "▲" "▼" "◀" "▶" arrow keys to highlight "→".

1.15.4 Press "DISP/ENTER" key to move cursor right and highlight (-) minus sign.

1.15.5 To retain (-) minus sign, while (-) minus sign is highlighted, use "▲" "▼" "◀" "▶" arrow keys to highlight (-), then press "DISP/ENTER" to move cursor right.

1.15.6 To delete (-) minus sign, while (-) minus sign is highlighted, use "▲" "▼" "◀" "▶" arrow keys to highlight "Sp", then press "DISP/ENTER" key to move cursor right.

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ATTACHMENT 3

- 1.15.7 Use "▲" "▼" "◀" "▶" arrow keys to select new value for highlighted digit, then press "DISP/ENTER" key accept highlighted digit and move cursor right.
- 1.15.8 Repeat steps 1.15.7 to change remaining digits within field.
- 1.15.9 When all digits and (-) minus sign in field have been changed, use "▲" "▼" "◀" "▶" arrow keys to highlight "ENT", then press "DISP/ENTER" key to enter changes in "Range – Alarm" screen.
- 1.15.10 At "Range – Alarm" screen, verify new numeric value is displayed in field and highlighted in yellow.
- 1.15.11 Press "DISP/ENTER" key to save changes and verify correct numeric value is displayed in field and is no longer highlighted.
- 1.16 Repeat steps 1.15 through 1.15.11 until "Span_L", "Span_U", "Scale_L", or "Scale U" field settings are correct.
- 1.17 If the "Unit" field setting is correct, proceed to step 1.19.
- 1.18 If the "Unit" field setting is not correct, navigate through "Unit" Menu similar as steps 1.15 through 1.15.10 except change unit settings instead of numeric values.
- 1.19 When all channels have been verified, press "START" softkey and verify red "STOP" square at top center of display changes to green with flashing "↑" and chart grid is displayed on screen.

ATTACHMENT 4

REFERENCE USE

1.0 CALIBRATION OF YOKOGAWA RECORDER A/D BOARD

1.1 If performing calibration of CH3 or CH4, proceed as follows:

1.1.1 Connect test jumper across TB-5 (upper terminals) 4 (+) and 5 (-) to provide zero input to CH3 and CH4 A/D board. □

1.1.2 Connect voltage source and DMM across TB-2 (upper terminals) 10(+) and 11(-) to provide full scale input to CH3 and CH4 A/D board per Figure 6. □

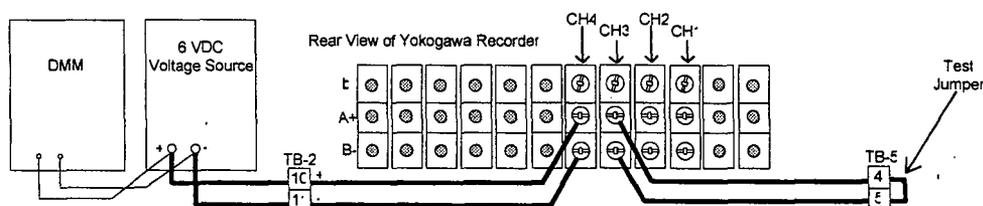


FIGURE 6

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1.2 Assure recorder environment is maintained at 73.4 °F +/- 9 °F during calibration. □

ATTACHMENT 4

- 1.3 Press door latch and open recorder door to access recorder ON/OFF switch per Figure 7.
- 1.4 If not already performed, turn ON recorder and allow warm-up period of at least 30 minutes.

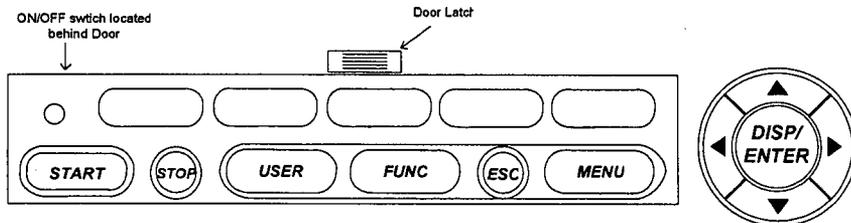


FIGURE 7

- 1.5 Enter "Calibration Mode" as follows
 - 1.5.1 Turn OFF recorder.
 - 1.5.2 Press and hold the "▲" arrow key and the "DISP/ENTER" key.
 - 1.5.3 Press and release recorder power ON switch to turn recorder ON.
 - 1.5.4 Continue to hold "▲" arrow key and "DISP/ENTER" key until "Calibration Mode" screen is displayed.
- 1.6 For calibration of CH3 and CH4, select "03-04" by pressing corresponding softkey, then press "DISP/ENTER" button.
- 1.7 At next screen, select "#2 Cal/Exec" by pressing "#2" softkey. ("#2" softkey is top row, second from left.)
- 1.8 At "A/D adjust range" screen, select "Next 1/2" by pressing far right softkey.
- 1.9 For 0 to 5 V DC range, select "6V" by pressing corresponding softkey and observe "6V" is highlighted next to "A/D adjust range".

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ATTACHMENT 4

- 1.10. Adjust voltage source connected to CH4 input to 6.000 V DC. Deleted: 0
- 1.11. Allow calibration value to stabilize, then press "DISP/ENTER" key. Deleted: 1
- 1.12. Press "ESC" softkey to return to previous screen.
- 1.13. Select "#3 End" by pressing corresponding softkey.
- 1.14. To save changes, at the "Do you really want to save A/D adjust value?" prompt, press "◀" or "▶" arrow key to highlight "YES", then press "DISP/ENTER" key. Deleted: 4
- 1.15. Turn recorder OFF to exit Calibration Mode. Deleted: 5
Deleted: to
- 1.16. Turn recorder ON to return recorder display to normal screen.
- 1.17. Return to recorder calibration step 4.1.4.4.h. Deleted: 7

DATA SHEET 1

Meteorological Station

Title Meteorological Station 10M Back-Up Ambient Temperature

NOTES: Previously ATDR-55005 Red Pen

DEVICE	INST. NO.	AZNLR-55003 CH 4 (Yellow Channel)			COMMENTS:
INDICATION	UNITS	OHMS			
°F	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	
-10.0	90.844	90.619	91.069		
22.0	97.826	97.601	98.051		
54.0	104.770	104.545	104.995		
88.0	112.105	111.880	112.330		
120.0	118.971	118.746	119.196		
88.0	112.105	111.880	112.330		
54.0	104.770	104.545	104.995		
22.0	97.826	97.601	98.051		
-10.0	90.844	90.619	91.069		

Deleted: N/A

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Deleted: 5

Deleted: Red Pen

DATA SHEET 1

Meteorological Station

Title: Meteorological Station 10M Back-Up Ambient Temperature

NOTES:

	INST. NO.	T6438 Computer Point			COMMENTS:
INPUTS	UNITS	°F			
OHMS	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	
91.060	-9.0	-9.715	-8.285		
97.768	22.0	21.285	22.715		
104.691	54.0	53.285	54.715		
112.047	88.0	87.285	88.715		
118.755	119.0	118.285	119.715		
112.047	88.0	87.285	88.715		
104.691	54.0	53.285	54.715		
97.768	2.0	21.285	22.715		
91.060	-9.0	-9.715	-8.285		

PERFORMED BY: _____ DATE: _____

DATA SHEET 2

Instr. No. ATDY-55005A Location Met Tower Serial No. _____
 Description Translator Card Manufacturer Climatronics Model No. _____

NOTES: N/A

INPUT		EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT	COMMENTS:
%	OHMS	V DC	V DC	V DC	V DC	V DC	
0	90.844	0.000	0.050	-0.015			
25	97.935	1.250	1.235	1.265			
50	104.986	2.500	2.485	2.515			
75	111.998	3.750	3.735	3.765			
100	118.971	5.000	4.985	5.015			
75	111.998	3.750	3.735	3.765			
50	104.986	2.500	2.485	2.515			
25	97.935	1.250	1.235	1.265			
0	90.844	0.000	0.015	-0.015			

PERFORMED BY: _____ DATE: _____

Approved By T. W. Cook	Vogtle Electric Generating Plant 	Procedure Number Rev 24076-C 10.1
Date Approved 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number 37 of 43

SHEET 1 OF 1

DATA SHEET 3

Instr. No. AZNLR-55003 CH 4 (Yellow Channel) Location Met Tower Serial No. _____
 Description Videographic Recorder Manufacturer Yokogawa Model No. DX104-3-2/S120

- Deleted: TD
- Deleted: R
- Deleted: 5
- Deleted: Red Pen

NOTES: Previously ATDR-55005, Red Pen

INDICATIONS	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT	COMMENTS:
°F	OHMS	OHMS	OHMS	OHMS	OHMS	
-10.0	90.844	90.619	91.069			
22.0	97.826	97.601	98.051			
54.0	104.770	104.545	104.995			
88.0	112.105	111.880	112.330			
120.0	118.971	118.746	119.196			
88.0	112.105	111.880	112.330			
54.0	104.770	104.545	104.995			
22.0	97.826	97.601	98.051			
-10.0	90.844	90.619	91.069			

PERFORMED BY: _____ DATE: _____

Approved By T. W. Cook	Vogle Electric Generating Plant 	Procedure Number Rev 24076-C 10.1
Date Approved 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number 38 of 43

SHEET 1 OF 1

DATA SHEET 4

Instr. No. T6438 Location N/A Serial No. N/A
Description Computer Point Manufacturer N/A Model No. N/A

NOTES: N/A

INPUT	EXPECTED	LO LIMIT	HI LIMIT	AS FOUND	AS LEFT	COMMENTS:
OHM	°F	°F	°F	°F	°F	
91.060	-9.0	-9.715	-8.285			
97.768	22.0	21.285	22.715			
104.691	54.0	53.285	54.715			
112.047	88.0	87.285	88.715			
118.755	119.0	118.285	119.715			
112.047	88.0	87.285	88.715			
104.691	54.0	53.285	54.715			
97.768	2.0	21.285	22.715			
91.060	-9.0	-9.715	-8.285			

PERFORMED BY: _____ DATE: _____

Approved By T. W. Cook	Vogle Electric Generating Plant 	Procedure Number Rev 24076-C 10.1
Date Approved 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number 39 of 43

SHEET 1 OF 1

DATA SHEET 5

Instr. No. ATE-55005A Location Met Tower Serial No. _____
 Description Platinum RTD Manufacturer Rosemount Model No. 100826

NOTES: N/A

INPUT	EXPECTED	LO LIMIT	HI LIMIT	ACTUAL
°F	°F	°F	°F	°F
32.0	32.0	31.1	32.9	
104.0	104.0	103.1	104.9	

COMMENTS:

PERFORMED BY: _____ DATE: _____

Approved By T. W. Cook	Vogtle Electric Generating Plant 	Procedure Number 24076-C	Rev 10.1
Effective Date 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number 41 of 43	

Sheet 1 of 1

CALCULATION SHEET

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

Completed By: _____ Date: _____

Approved By T. W. Cook	Vogtle Electric Generating Plant 	Procedure Number Rev 24076-C 10.1
Effective Date 07/26/04	METEOROLOGICAL STATION 10M BACK-UP AMBIENT TEMPERATURE CHANNEL CALIBRATION	Page Number 43 of 43

