





<p align="center"> <b>Duke Energy Company</b>  <b>CATAWBA NUCLEAR STATION</b>  <b>Cold Weather Protection</b>      <u>OCTOBER</u>    13.1    <b>Continuous Use</b> </p>	<p> Procedure No.  <b>PT/0/B/4700/038</b> </p> <hr/> <p> Revision No.  050 </p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

<b>PERFORMANCE</b>	
<p>This Procedure was printed on 10/10/2022 12:57 PM from the electronic library as:</p> <p align="center"><b>(ISSUED) - PDF Format</b></p>	
<p>Date(s) Performed  <u>10-12-22 - 11/22/22</u> </p>	<p>Work Order/Task Number (WO#)  <u>20535014</u> </p>
<b>COMPLETION</b>	
<p> <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> NA   Checklists and/or blanks initialed, signed, dated, or filled in NA, as appropriate?  <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> NA   Required attachments included?  <input type="checkbox"/> Yes   <input checked="" type="checkbox"/> NA   Charts, graphs, data sheets, etc. attached, dated, identified, and marked?  <input type="checkbox"/> Yes   <input checked="" type="checkbox"/> NA   Calibrated Test Equipment, if used, checked out/in and referenced to this procedure?  <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> NA   Procedure requirements met? </p>	
<p>Verified By  * Printed Name and Signature <u>M. W. Bass</u> </p>	<p>Date  <u>11/22/22</u> </p>
<p>Procedure Completion Approved  * Printed Name and Signature <u>Kevin D. Miller</u> </p>	<p>Date  <u>11/22/22</u> </p>
<p>Remarks (attach additional pages, if necessary)</p> <p> <u>W3-M. W. Bass</u>  <u>KR-Kurt Rutherford</u>   <u>10-9-TWTHORP</u>   <u>TO Thomas Denton</u> </p>	

<b>IMPORTANT: Do NOT mark on barcodes.</b>		Printed Date: *10/10/22*
Attachment Number: *FULL*		
	Revision No.: *050*	
		
Procedure No.: *PT/0/B/4700/038*		

<b>Duke Energy</b> <b>Catawba Nuclear Station</b>  <b>Cold Weather Protection</b>     <b>Continuous Use</b>	Procedure No. <b>PT/0/B/4700/038</b>
	Revision No. <b>050</b>
	Electronic Reference No. <b>PT 0 B 4700 038</b>

REVISION REMARKS	
Rev 050	Reference AR(s): 02440156 Revised Step 12.8 to tell OPS what to do with the information sent to them.

## Cold Weather Protection

### 1/ Purpose

Ensure the readiness of cold weather equipment and systems for safe reliable operation of the units during cold weather months.

### 2/ References

AD-FP-ALL-1523 (Temporary Ignition Source Control)

### 3. Time Required

#### 3.1/ Enclosure 13.1 (Aligning Site Systems For Cold Weather - October)

- 3.1.1 Manpower - Two operators
- 3.1.2 Time - 2 weeks
- 3.1.3 Frequency - Annually (October)

#### 3.2/ Enclosure 13.2 (Aligning Site Systems For Cold Weather - November)

- 3.2.1 Manpower - Two operators
- 3.2.2 Time - 8 hours
- 3.2.3 Frequency - Annually (November)

#### 3.3/ Enclosure 13.3 (Verification of Site Systems During Cold Weather)

- 3.3.1 Manpower - Two operators and Cold Weather Protection Engineer (at applicable work order review step)
- 3.3.2 Time - 1 week
- 3.3.3 Frequency - Monthly (November, December, January, February and as desired by OWPM)

#### 3.4/ Enclosure 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions)

- 3.4.1 Manpower - Two operators
- 3.4.2 Time - 8 hours

**NOTE:** The variation in cold weather extremes is to be considered as 10°F will freeze water much faster than 22°F. Long periods of extreme cold have a worse impact than a short overnight temperature dip.

3.4/3 Frequency:

- ✓ Supervisor determined need based on forecast or weather extreme.
- ✓ Upon receipt of OAC Alarm for Lo-Lo Dry Bulb Temperature (OAC Point C1P0118 or C2P0118) at 22°F and Enclosure 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions) has **NOT** been completed within the past 7 days.
- ✓ Temperature is forecast to remain less than or equal to 32°F for at least 24 hours with a low of less than or equal to 22°F and Enclosure 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions) has **NOT** been completed within the past 24 hours.

4. Prerequisite Tests

Note

5. Test Equipment

- 5/1 If performing Enclosure 13.3 (Verification of Site Systems During Cold Weather), obtain the following items:

**CAUTION:** Freeze Spray is used per directions on can when called for. MSDS data is available by its Trade Name (Freeze Spray) or its MSDS # (44734).

- ✓ Can of Freeze Spray CRC (Commodity ID # 866921)
  - ✓ Handheld remote reading pyrometer (infrared sensing with laser pointer)
  - ✓ Key # 239 (VP Purge Fan Room)
  - ✓ Key # 300 (Thermostat Covers)
  - ✓ Key # 462F (Met Tower Building)
  - ✓ Key # 425 (SSF Duct Heater Thermostats)
- 5.2/ If performing Enclosure 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions) obtain a Handheld remote reading pyrometer (infrared sensing with laser pointer).

## 6. Limits and Precautions

Freeze Spray is used per directions on can when called for. MSDS data is available by its Trade Name (Freeze Spray) or its MSDS # (44734):

- ✓ Applying Freeze Spray to Electric Unit Heaters may result in electrical shock.
- ✓ Do **NOT** shake Freeze Spray can.
- ✓ Always use Freeze Spray can in upright position.
- ✓ While traveling and traversing outside during extreme cold weather conditions RC cooling tower conditions which allow ice formation should be recognized as a unique personal safety concern near the towers or tower stairs.

## 7. Unit Status

None

## 8. Prerequisite System Conditions

None

## 9. Test Method

Systems are aligned for cold weather conditions per expected climatic conditions. Monthly, proper system operation for cold weather conditions is verified and degraded equipment is identified. When extreme cold weather conditions exist, additional equipment checks are performed.

## 10. Data Required

None

## 11. Acceptance Criteria

- ✓ 11.1 All required steps have been completed.
- ✓ 11.2 All equipment problems have been evaluated and corrective action implemented.
- ✓ 11.3 All equipment problems (discrepancies and deficiencies) are documented on an Equipment Problem Evaluation Form with applicable degraded equipment ID and associated W/R's and/or W/O's as corrective actions.

## 12. Procedure

- WB 12.1 IF aligning site systems for cold weather in October, complete 13.1 (Aligning Site Systems For Cold Weather - October).
- WB 12.2 IF aligning site systems for cold weather in November, complete 13.2 (Aligning Site Systems For Cold Weather - November).
- WB 12.3 IF verifying site systems for monthly cold weather surveillance, complete 13.3 (Verification of Site Systems During Cold Weather).
- WB 12.4 IF verifying site systems during extreme cold weather, complete 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions).
- WB 12.5 IF a work request is written during this performance of this PT,  
THEN ensure the work request contains the following statements:
- ☐ This work request is part of seasonal readiness preparations for Cold Weather.
  - ☐ When converting this work request to a work order, ensure the WR (Winter Readiness) SEC code is added to the work order.
- ~~12.6~~ Evaluate the acceptance criteria by performing one of the following:
- WB 12.6.1 Verify the acceptance criteria specified in Section 11 is met.
- OR
- \_\_\_\_\_ 12.6.2 IF the acceptance criteria is NOT met, perform the following:
- ☐ Notify the Unit/WCC SRO that the acceptance criteria is NOT met.
- \_\_\_\_\_ / \_\_\_\_\_  
Unit/WCC SRO Contacted      Date      Time
- ☐ Initiate a CR to document the test failure.
  - ☐ Document all issues on an Equipment Problem Evaluation Form.
- WB 12.7 IF any discrepancy is noted during the performance of this test that does NOT keep the test from meeting the acceptance criteria, it shall be given to the Unit/WCC SRO for evaluation via an Equipment Problem Evaluation Form.
- WB 12.8 IF Enclosure 13.3 (Verification of Site Systems During Cold Weather) OR Enclosure 13.4 (Verification of Site Systems During Extreme Cold Weather Conditions) was performed, send copies of the completed Equipment Problem Evaluation Form to the Operations On-line group so an aggregate risk assessment for seasonal readiness can be performed and work priority can be placed on addressing the most significant equipment or where a higher percentage of redundant equipment is out of service.

### 13. Enclosures

- ~~13.1~~ Aligning Site Systems For Cold Weather - October
- 13.2 Aligning Site Systems For Cold Weather - November
- 13.3 Verification of Site Systems During Cold Weather
- 13.4 Verification of Site Systems During Extreme Cold Weather Conditions



Enclosure 13.1  
Aligning Site Systems For Cold Weather -  
October

PT/0/B/4700/038  
Page 1 of 3

1. Procedure

1.1 IF AT ANY TIME a work request is written during this performance of this enclosure, THEN ensure the work request contains the following statements:

- ☒ This work request is part of seasonal readiness preparations for Cold Weather.
- ☒ When converting this work request to a work order, ensure the WR (Winter Readiness) SEC code is added to the work order.

**NOTE:** Steps 1.2 through 1.8 may be performed in any order.

1.2 Ensure YH (Heating Water System) in service as follows:

**NOTE:** Valve 1AS-81 (Aux Steam To Plant Heat Isol) is subject to thermal binding and may be difficult to operate.

1.2.1 Ensure 1AS-81 (Aux Steam To Plant Heat Isol) is open for Seasonal Control of Auxiliary Steam to YH Converters per OP/0/B/6250/007 A (Auxiliary Steam System Alignment).

1.2.2 Ensure YH System in service by performing the Operational Verification Enclosures of the following:

- CAB • OP/1/B/6400/011 C (Turbine Building Heating Water System)
- CAB • OP/2/B/6400/011 C (Turbine Building Heating Water System)
- CAB • OP/0/B/6400/011 A (Service Building Heating Water System) ★
- me • OP/0/B/6400/011 B (Auxiliary and Reactor Building Heating Water System)

1.3 Ensure the Unit 1 Fuel Pool Supply Unit (FPSU-1) Cooling Coils are isolated and drained per OP/1/A/6450/004 (Fuel Pool Ventilation System).

1.4 Ensure the Unit 2 Fuel Pool Supply Unit (FPSU-2) Cooling Coils are isolated and drained per OP/2/A/6450/004 (Fuel Pool Ventilation System).

1.5 Ensure Unit 1 ABSU Cooling Coils are isolated and drained per OP/0/A/6450/003 (Auxiliary Building Ventilation System).

C • ABSU-1A (1A Aux Bldg Supply Unit (ABSU-1A))

C • ABSU-1B (1B Aux Bldg Supply Unit (ABSU-1B))

EM - Zach Murray - Pen  
R. Rios Sweet-Dawson

C - Chris Brown

OFFICIAL COPY

Jan 27 2023

Enclosure 13.1  
Aligning Site Systems For Cold Weather -  
October

PT/0/B/4700/038  
Page 2 of 3

- 1.6 ✓ Ensure Unit 2 ABSU Cooling Coils are isolated and drained per OP/0/A/6450/003 (Auxiliary Building Ventilation System).

KR • ABSU-2A (2A Aux Bldg Supply Unit (ABSU-2A))

KR • ABSU-2B (2B Aux Bldg Supply Unit (ABSU-2B))

**NOTE:** 4 portable high temperature electric heaters are located in Turbine building basements. 2 typically located on the Unit 1 Side (TB1-568, 1B-17) and 2 typically located on the Unit 2 side (TB2-568, 2B-17). These locations may vary depending on use. Installation of portable electric heaters shall comply with AD-FP-ALL-1523 (Temporary Ignition Source Control).

- 1.7 MS **IF** any portable High Temperature Electric Heaters are **NOT** in service, notify WCC SRO of the following:

- ☒ The High Temperature Electric Heaters will each be run for at least two (2) minutes
- ☒ Tests of High Temperature Electric Heaters are continuously monitored thus a Fire Impairment per AD-FP-ALL-1551 (Fire Protection Impairments) is **NOT** required.

- 1.8 ✓ Perform the following for each of the four (4) portable High Temperature Electric Heaters (**NOT** labeled as they are facility equipment):

- MS • High Temperature Electric Heater #1
- MS • High Temperature Electric Heater #2
- MS • High Temperature Electric Heater #3
- MS • High Temperature Electric Heater #4

- 1.8.1 ✓ Verify the heater is in good physical condition including the cable and plug.

- 1.8.2 ✓ **IF** heater is **NOT** in use per OP/1(2)/B/6450/016 (Turbine Building Ventilation), verify the heater is functional as follows: (run ≥ 2 minutes)

- 1.8.2.1 ✓ Operate the High Temperature Electric Heater per OP/1(2)/B/6450/016 (Turbine Building Ventilation).

- 1.8.2.2 ✓ Verify heater operates properly without abnormal noise, smoke, arcing, etc.

- 1.8.2.3 ✓ After at least two (2) minutes, shutdown heater per OP/1(2)/B/6450/016 (Turbine Building Ventilation).

- 1.8.2.4 ✓ Verify the heater is located near applicable turbine building equipment storage room **OR** at an easily visible location on applicable TB-568 elevation.

*MS M. ARUB*

OFFICIAL COPY

Jan 27 2023

**Enclosure 13.1**

**Aligning Site Systems For Cold Weather -  
October**

PT/0/B/4700/038

Page 3 of 3

*N/A* 8.3

IF heater is in use per OP/1(2)/B/6450/016 (Turbine Building Ventilation),  
verify heater operates properly without abnormal noise, smoke, arcing, etc.

*N/A* 1.9

IF any problems regarding portable High Temperature Electric Heaters were found in  
Step 1.8 contact Site Services for resolution or repair.

OFFICIAL COPY

Jan 27 2023