





Duke Energy Company HARRIS NUCLEAR PLANT SEASONAL WEATHER PREPARATIONS AND MONITORING		Procedure No. AP-301
		Revision No. 086
Reference Use		
PERFORMANCE		
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Date(s) Performed <i>9-30-2020</i>	Work Order/Task Number (WO#) <i>20357563-01</i>	
COMPLETION		
<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?		
Verified By <i>Justin Kelly</i> <i>[Signature]</i> * Printed Name and Signature		Date <i>9-30-2020</i>
Procedure Completion Approved * Printed Name and Signature <i>Andrew Lipetzky</i> <i>[Signature]</i>		Date <i>10/1/20</i>
Remarks (attach additional pages, if necessary)		

IMPORTANT: Do <u>NOT</u> mark on barcodes.		Printed Date: *10/1/20*
Attachment Number: *FULL*		
Procedure No.: *AP-301*		Revision No.: *086*
		

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<< Cold Weather Preparations >>

1.0 SECTION I - INSULATION, HEAT TRACE, FREEZE PROTECTION,
TEMPERATURE MAINTENANCE INSPECTION

N/A P O A

NOTE

- Attachment steps may be performed in any order. ☐
- These items in Section I may be performed any time prior to September 30 to allow early completion and will be scheduled by the On-Line schedule. Both Attachment 1 Section 1.0 and Attachment 1 Section 2.0 are required to be completed by September 30. ☐
- PLP-401 'Equipment in Use' Tags are to be installed on temporary heaters and temporary heat trace to preclude inadvertent removal. Each tag should state 'AP-301 Compensatory Measure for Cold Weather. Do Not Remove Without SM Approval' and be added to the PLP-401 Log at Y:\Operations\OldShared\TEMP_PWR_AP-401_EM-005_LOG\TempPower.xlsm. ☐
- When installing temporary heaters, only one 30 kw or two 18 kw heaters, at most, may be installed at any one 480V power outlet. ☐
- Placement of temporary heaters shall comply with AD-EG-ALL-1523, Temporary Ignition Source Control (including separation distances) AND drawing 7-S-9517, Seasonal HVAC Equipment Installations. ☐

1. Check all insulation is properly installed (no exposed lines or valves) for the following:
 - a. LT-01CT-0990IW, RWST Level Ch I
 - 1CT-19, RWST Sample Root Isolation Valve
 - 1CT-20, RWST Sample Isolation Valve.....
 - b. LT-01CT-0991IIW, RWST Level Ch II
 - c. LT-01CT-0992IIIW, RWST Level Ch III
 - d. LT-01CT-0993IV, RWST Level Ch IV
 - e. RWST sample line:

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1.0 SECTION I - INSULATION, HEAT TRACE, FREEZE PROTECTION,
TEMPERATURE MAINTENANCE INSPECTION (continued)

- f. Drain to RHT:
- 1CT-13, RWST Drain Isolation Valve.....
- g. Sensing lines for LT-7110:
- 1CT-18, LT-7110 Root Isol Vlv.....
- h. Hydro test pump suction line:
- 1CT-22, SIS Hydro Test Pump Suction from RWST

N/A P ① A

NOTE

It is expected that adequate inspections per the following step can be performed by the Auxiliary Operators (AO) during normal rounds. Inspection of each area listed below should be adequately accomplished in one shift by a qualified AO. Inspection of the entire plant should be completed within three to six shifts. These inspections should be performed preferably during daylight. ☐

2. **Perform** the following for each area listed below:
- a. **Visually inspect** piping and components that will be exposed to freezing temperatures.
- b. **Ensure** that heat tracing and insulation are intact.....
- c. **Check** for broken, crushed, missing or wet insulation.....
- d. **IF** any discrepancies are found,
THEN perform the following:
- (1) **Initiate** work orders
- (2) **State** 'AP-301 Component' designator.
- (3) **Add** SEC WR (Winter Readiness) and Priority Level 2.
.....

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1.0 SECTION I - INSULATION, HEAT TRACE, FREEZE PROTECTION,
TEMPERATURE MAINTENANCE INSPECTION (continued)

- e. IF any work orders are initiated,
THEN list the work orders in Comments Section.....

Area	Initial	Area	Initial
TB-261 & COND PMP PIT		ESW & CTMU STRUCTURE	
TB-286		ESWSS & FIRE PUMPS	
TB-314		WTB/WMB & OILY WST SE	
STEAM TUNNEL & RAB ROOF		AUX BOILER AREA	
TANK BLDG		CW & NSW PUMPS	
DIESEL BLDG		DEH SKID	
MANHOLE M70 SUMP PUMP SKID 1EE-E562		MANHOLE M71 SUMP PUMP SKID 1EE-E563	
MANHOLE M72 SUMP PUMP SKID 1EE-E564		MANHOLE M73 SUMP PUMP SKID 1EE-E565	
MANHOLE M84 SUMP PUMP SKID 1EE-E566		MANHOLE M86 SUMP PUMP SKID 1EE-E567	
MANHOLE M87 SUMP PUMP SKID 1EE-E568		MANHOLE M505 SUMP PUMP SKID 1EE-E569	
MANHOLE M511 SUMP PUMP SKID 1EE-E570		MANHOLE M512 SUMP PUMP SKID 1EE-E571	
MANHOLE M516 SUMP PUMP SKID 1EE-E572		MANHOLE M523 SUMP PUMP SKID 1EE-E573	
PIPE CROSSOVER AT 230KV TRENCH			

3. **Perform** the following for all Freeze Protection and Temperature Maintenance Systems:.....

- a. **Check** that all Freeze Protection and Temperature Maintenance Systems are operable per OP-161 and OP-161.01.....

- b. IF any component is found INOPERABLE,
THEN perform the following:

- (1) **Initiate** a work order.
- (2) **State** 'AP-301 Component' designator.
- (3) **Add** SEC WR and Priority Level 2.

- c. IF any work orders are initiated,
THEN list work orders in the Comments Section.....

N/A PDA

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2.0 SECTION II - EHU AND INSTRUMENT CABINET INSPECTIONS,
TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS

NOTE	
• Attachment steps may be performed in any order.....	<input checked="" type="checkbox"/> ✓
• Items in Attachment 1 Section 2.0 should be performed closer to the September 30 date and will be scheduled by the On-Line Schedule.	<input checked="" type="checkbox"/> ✓
• PLP-401 'Equipment in Use' Tags are to be installed on temporary heaters to preclude inadvertent removal. Each tag should state 'AP-301 Compensatory Measure for Cold Weather. Do Not Remove Without SM Approval' and be added to the PLP-401 Log at Y:\Operations\OldShared\TEMP_PWR_AP-401_EM-005_LOG\TempPower.xlsm.....	<input checked="" type="checkbox"/> ✓
• When installing temporary heaters, only one 30 kw or two 18 kw heaters, at most, may be installed at any one 480V power outlet.	<input checked="" type="checkbox"/> ✓
• Placement of temporary heaters shall comply with AD-EG-ALL-1523, Temporary Ignition Source Control (including separation distances) AND drawing 7-S-9517, Seasonal HVAC Equipment Installations.	<input checked="" type="checkbox"/> ✓

1. **Perform** the applicable steps below for the following outside instrument cabinets:..... h
 - a. **Shut** any ventilation louvers..... h
 - b. **Check** the internal heaters/lights operating. {7.1.5} h
Cabinets are located as follows:

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2.0 SECTION II - EHU AND INSTRUMENT CABINET INSPECTIONS, TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT ACTIONS (continued)

Table 1, Instrument Cabinets

Cabinet	Location	Initial	Cabinet	Location	Initial
T1-C15	T-261-AY7	H	T1-C1	T-286-AV27	H
T1-C23	T-261-AV14	H	T1-C4	T-286-AP27	H
T1-C22	T-261-AP19	H	T1-C6	T-286-AP35	H
T1-C24	T-261-AV27	H	T1-C17	T-286-AV40	H
T1-C10	T-261-AP27	H	T1-C2	T-286-AM36	H
T1-C12	T-261-AV30	H	T1-C8	T-286-AK42	H
T1-C26 [Note 2] ✓	T-261-AV40	H	T1-C7-RPS-IV	T-286-AH36Z	H
T1-C19	T-261-AV35	H	T1-C21-RPS-III	T-291-AH36Z	H
T1-C20	T-261-AV40	H	T1-C18	T-286-AA40	H
T1-C13	T-261-AV40	H	T1-C5	T-286-AF27	H
T1-C14	T-261-AP42	H	Y1-C9	NSW PMP A	RA
T1-C3	T-261-AK40	H	Y1-C10	CWP A	② N/A RA
T1-C16	T-261-AK40	H	Y21-C6	CTMU	RA
T1-C11	T-242-AF27	H	Y21-C7-ESF-A	ESW PUMP A	RA
T1-C25	T-261-AF19	H	Y21-C8-ESF-B	ESW PUMP B	RA
T1-C9	T-261-AF19	H	Y21-C1	ESWSS	RA
T1-C28 [Note 1] ✓	T-265-AP9	H	Y1-C3	MD FIRE PMP	RA
Diesel Driven Fire Pump 1&4 NNS Inst Cab	ESWSS	RA			

✓ Note 1: T1-C28 light fixture is not wired

✓ Note 2: Heater not installed.

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TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

2. Perform ORT-1415. {7.1.6}..... JS
- a. Check work orders have been initiated for any inoperable heaters and that these work orders have 'AP-301 Component' stated in the designator, SEC WR added, and are Priority Level 2. JS
- b. IF any EUH is anticipated to be inoperable after October 30, THEN perform the following: N/A or
- (1) Identify contingencies for maintaining room temperatures above freezing. Such contingencies may include temporary heaters to be installed or permanent H&V systems to be operated to maintain temperature. JS
- (2) List any such EUHs, the contingency plans and any associated work orders in the Comments section. N/A or
- c. IF any permanent plant H&V unit is operated for freeze protection OR temperature maintenance, THEN ensure that a Caution Tag is placed on the control switch JS
- d. IF a temporary heater is installed, THEN place a PLP-401 'Equipment in Use' Tag on the power cable per the Note on Page 4..... JS
- e. IF a temporary heater is installed, THEN ensure placement of the heater complies with AD-EG-ALL-1523 (including separation distances) AND drawing 7-S-9517, Seasonal HVAC Equipment Installations. JS

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2.0 SECTION II - EHU AND INSTRUMENT CABINET INSPECTIONS,
TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

NOTE	
• In the past there has been a need to install a temporary heater(s) in the ASI pump room. This has been evaluated under EC 94965.	<input checked="" type="checkbox"/>
• Historical Meteorological Data for the area shows winter temperatures will be below 32°F AND remain there for greater than 12 hours, therefore the heaters required to be installed for this condition will be installed as part of the cold weather preparations.....	<input checked="" type="checkbox"/>
• Additional temporary heaters may be installed as conditions warrant per Attachment 2 Step 6.....	<input checked="" type="checkbox"/>
• Placement of temporary heaters shall comply with AD-EG-ALL-1523, Temporary Ignition Source Control (including separation distances) AND drawing 7-S-9517, Seasonal HVAC Equipment Installations.	<input checked="" type="checkbox"/>

3. Install the following Temporary Heaters since outside temperature is expected to go below 32°F **AND** remain there for greater than 12 hours:..... m

Turbine Building

- Install temporary heater in the Turbine Bldg 255' elev. North near 1CE-1057 (Feed Pump Seal Drain To Condenser Control Valve). See EC 401531. (Affects Generation) m
- Install temporary heater in the Turbine Bldg 261' elev. North near 1CO-E031 (Portable Breathing Air Compressor). Concern is condensate may freeze and hamper the ability of the compressor to function properly.(BOP) See EC 401531 and EC 411055. m
- Install temporary heaters in the Turbine Bldg 261' Elev. West near FI-01CE-1920A (Condenser Vacuum Pump A Effluent Flow Ind) **AND** FI-01CE-1920B (Condenser Vacuum Pump B Effluent Flow Ind.). Concern is glass tube for flow Indicator may crack from internal water freezing. See EC 401531. (BOP)..... m

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2.0 SECTION II - EHU AND INSTRUMENT CABINET INSPECTIONS,
TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

Turbine Building (continued)

- **Ensure** a Work Order (PMID/RQ 20733-02) is scheduled to **install** a temporary heater in the Turbine Bldg 261' elev. Southeast near 1SFD-E030 (TB, EL 261 (LFDCP-9-1) to prevent spurious alarms by November 20. Installed internal heaters cannot cope with extreme temperatures. (Safety Related) See EC 401531 and AR 148743..... RS
- **Install** temporary heater in the Turbine Bldg 261' elev. Southeast near 1SFD-E037 (TB, EL 261 (LFDCP-9-2). Installed internal heaters cannot cope with extreme temperatures. (Safety Related) See EC 411055 RS
- **Install** temporary heater in the Turbine Bldg 261' elev. Southeast near 1SFD-E017 (TB-Transformer Yard) LFDCP-11. Installed internal heaters cannot cope with extreme temperatures. (Safety Related) See EC 411055 RS
- **Install** temporary heater in the Turbine Bldg 261' elev. Northwest near 1CAB-T1-C12 (Instrument Cabinet). Cabinet contains various pressure switches, indicators, and transmitters for Condensate and Feedwater systems. (Safety Related) See EC 411055 RS
- **Install** temporary heater in the Turbine Bldg 261' elev. Northwest near 1CAB-T1-C26 (Instrument Cabinet). Cabinet contains multiple pressure and flow transmitters for the Feedwater system. (Safety Related) See EC 411055..... RS
- **Install** temporary heater outside the Turbine Bldg 261' elev. Southeast near LG-01HY-4198 (TB Hydrogen Oily Water Drain Tank Level Indicator). (BOP) See EC 401531 RS

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TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

NSW Structure

- **Install** temporary heater near 1MP-65 (Cooling Tower Make-Up Flow Line Pressure Test Isol). This is a small pressure test point and vent valve off of the Cooling Tower Make-up level control valve bypass line. (BOP) See EC 411055

PS

ESW Structure

- **Install** temporary heater near 1CAB-Y21-C6 (Instrument Cabinet). Cabinet contains multiple pressure switches and indicators for the CTMU and CMTMU Screen Wash systems. (Safety Related) See EC 411055

PS

- a. **Install** a PLP-401 'Equipment in Use' Tag on the heater power cable per the Note on Page 4.

PS

BY FALL 2023

- b. **Ensure** placement of the heater complies with AD-EG-ALL-1523 (including separation distances) **AND** drawing 7-S-9517, Seasonal HVAC Equipment Installations.

PS

- c. **List** the location for each temporary heater installed as contingency for cold weather in Table 2, Temporary Heater Locations.

PS

4. **Close** the following dampers in the EDG Unit 2 Corridor,;

Z

- DG-D9-1 (Isolation Damper Diesel Generator Bldg Unit 2 Corridor)

Z

- DG-D10-1 (Isolation Damper Diesel Generator Bldg Unit 2 Corridor)

Z

5. **Direct** Chemistry to **perform** the following:

PS

- a. **Ensure** adequacy of enclosures **AND** heaters for outside chemical addition systems.

PS

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TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

- b. Ensure adequacy of enclosure AND heater for surface water composite sampler at the main dam spillway. PS
 - c. Install PLP-401 'Equipment in Use' Tags on heater power supplies per the Note on Page 4. PS
BY FACILITIES
6. Ensure a Work Order is scheduled to check that the Turbine Building Pre-action Sprinkler System has been drained prior to cold weather (PMID/RQ 40422-01), AND drain if required. PS
7. Ensure ONE of the following for Warehouse 6 Dry-pipe Sprinkler System: PS
 - System is aligned for normal operation and pressurized per OP-149, Section 8.3, Resetting Dry Pipe Sprinkler System in Warehouse #6. Z
 - OR
 - System is drained and isolated with equipment protection clearance in place N/A²
8. Ensure the Diesel Fire Pump keep warm system is FUNCTIONAL. The engine coolant heater maintains the coolant temperature at least 120°F. The engine should be warm to the touch in the water jacket areas. Z
9. Drain Fuel Oil Storage Tank diked areas to prevent ice buildup. Z
10. Drain the Aux Boiler Fuel Oil Tanks in-tank foam injection lines per PMID/RQ 40422-02 (Model WO 1128166). PS
20355362
11. After reviewing the Temporary Modification Log, check that any temporary plant support equipment or instrumentation is protected from freezing temperatures. PS

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TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT
ACTIONS (continued)

Comments: (List any discrepancies noted and work orders initiated)

Note ①: Only section 2 to be performed WO: 20357563
② No heater installed, requested one be installed WR 20183512

Sections of Attachment performed:

Section I Section II
(circle Section performed)

Attachment Performed by:

Initial	Name (Print)	Initial	Name (Print)
		RS	RICHARD SYLVESTER
Z	Adam Zimandy	KA	KIAN NOWROOZI
H	R. Honeycutt	J	Justin Kelly
		P	Patrick Bryan

Completed By: Andrew Lipetzky 10/11/20
Control Room Supervisor Print / Sign Date

Reviewed By: Paul Huseworth 10/11/20
Shift Manager Print / Sign Date

Reviewed By: Sybil Simm 10/14/20
Online Manager Print / Sign Date

After receiving the final review signature, this Attachment becomes a QA Record.

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