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Calibrated test equipment,if used,checked out/in and references to this procedure?	Yes
Procedure requirement met?	Yes

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Date:2022-10-05			
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1.0 PURPOSE

This procedure establishes guidelines for monitoring, operating, and maintaining equipment and instrumentation during periods of cold and hot weather.

Equipment that is installed to provide seasonal temperature control shall be removed at the end of the season.

2.0 SCOPE

1. This procedure applies to all areas of HNP that may be impacted by seasonal weather.

3.0 DEFINITIONS

- 1. **AP-301 Component:** A designator used on work orders in the Nature of Trouble Section to allow tracking of these work orders by Work Coordination. Should be annotated as either Cold weather or Hot weather component. The passport database can be electronically searched to identify these work orders.
- 2. **Cold Weather Operation:** Operation when the outside temperature is below 35°F.
- 3. **Hot Weather Operation:** Operation when the outside temperature is above 95 °F.
- 4. **Maximum Safe Generation (Max Safe Gen):** Generally the months of January, February, June, July and August
- 5. **Summer Operation:** Operation when outside temperature is expected to remain above 40°F. This is the period from April 1, to October 31. {7.1.1}
- 6. **Summer Readiness:** The period from June 1, through August 31, and may be extended at the discretion of the individual sites.
- 7. **Winter Readiness:** The period from December 1, through February 28, and may be extended at the discretion of the individual sites.

Robert Stephenson

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<< Cold Weather Preparations >>

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

		NOTE	/			
•	Attachment ste	os may be performed in any order	🗸			
•	allow early com Attachment 1 S	Section I may be performed any time prior to September 30 to pletion and will be scheduled by the On-Line schedule. Both ection 1.0 and Attachment 1 Section 2.0 are required to be eptember 30.	<i>\</i>			
•	AD-MN-ALL-0017 'Housekeeping' Tags (or equivalent 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 Temp Power Log at https://nuc.duke-energy.com/sites/HNPOPS/SiteAssets/TempPower/TempPower.xlsm.					
•	•	temporary heaters, only one 30 kw or two 18 kw heaters, at istalled at any one 480V power outlet	J			
•	Temporary Ignit	mporary heaters shall comply with AD-EG-ALL-1523, tion Source Control (including separation distances) <u>AND</u> 17, Seasonal HVAC Equipment Installations	d			
		ck all insulation is properly installed (no exposed lines or es) for the following:				
	a.	LT-01CT-0990IW, RWST Level Ch I				
	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:				
		 1CT-19, RWST Sample Root Isolation Valve 1CT-20, RWST Sample Isolation Valve 				
	f.	Drain to RHT:	~ /			
		1CT-13, RWST Drain Isolation Valve				

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			LATION, HEAT TRACE, I MAINTENANCE INSPECT	•
	g.	Sens	ing lines for LT-7110:	
		•	1CT-18, LT-7110 Root Is	sol VIv
	h.	Hydro	o test pump suction line:	
		•	1CT-22, SIS Hydro Test	Pump Suction from RWST
			NOTE	
Inspection of	f the ent should b	tire plar be perfo	ormed preferably during da	thin three to six shifts. These aylight
۷.	Fein	orni ure	ciolowing for each area is	sted below.
	a.			mponents that will be exposed
	b.	Ensu	re that heat tracing and in	sulation are intact
	C.	Chec	k for broken, crushed, mis	ssing or wet insulation
			NOTE	
	•		0,	lance to screen the Seasonal
	d.		y discrepancies are found <u>National Partorm</u> the following: .	, <u>Q</u>
		(1)	Ensure a WR/WO has be deficiency.	peen generated for the
		(2)	Ensure 'AP-301 Concerdescription	n' is included in the WR

Ensure 'Seasonal Weather' is added as an attribute to the WR/WO.

(3)

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

e. <u>IF</u> any work orders are initiated, <u>THEN</u> list the work orders in Comments Section.....

Area	Initial	Area	Initial
TB-261 & COND PMP PIT	D	ESW & CTMU STRUCTURE	Q
TB-286	D	ESWSS & FIRE PUMPS	Q
TB-314	D	WTB/WNB & OILY WST SE	A
STEAM TUNNEL & RAB ROOF	Þ	AUX BOILER AREA	80
TANK BLDG	4	CW & NSW PUMPS	, C
DIESEL BLDG	À	DEH SKID	D
MANHOLE M70 SUMP PUMP SKID 1EE-E562	0	MANHOLE M71 SUMP PUMP SKID 1EE-E563	G
MANHOLE M72 SUMP PUMP SKID 1EE-E564	Q	MANHOLE M73 SUMP PUMP SKID 1EE-E565	0
MANHOLE M84 SUMP PUMP SKID 1EE-E566	Ø	MANHOLE M86 SUMP PUMP SKID 1EE-E567	6
MANHOLE M87 SUMP PUMP SKID 1EE-E568	Q	MANHOLE M505 SUMP PUMP SKID 1EE-E569	6
MANHOLE M511 SUMP PUMP SKID 1EE-E570	Q	MANHOLE M512 SUMP PUMP SKID 1EE-E571	9
MANHOLE M516 SUMP PUMP SKID 1EE-E572	G	MANHOLE M523 SUMP PUMP SKID 1EE-E573	G
PIPE CROSSOVER AT 230KV TRENCH	Q		

3.		orm the following for all Freeze Protection and Temperature stenance Systems:	<u>6M</u>
	a.	Check that all Freeze Protection and Temperature Maintenance Systems are operable per OP-161 and OP-161.01	<u> </u>
	b.	<u>IF</u> any component is found INOPERABLE, <u>THEN</u> perform the following:	<u>MA</u> 6n
		(1) Ensure a WR/WO has been generated for the deficiency.	
		(2) Ensure 'AP-301 Concern' is included in the WR description.	
		(3) Ensure 'Seasonal Weather' is added as an attribute to) . <i>l</i> i

the WR/WO.

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- 1.0 SECTION I INSULATION, HEAT TRACE, FREEZE PROTECTION, TEMPERATURE MAINTENANCE INSPECTION (continued)
 - c. <u>IF</u> any work orders are initiated, <u>THEN list</u> work orders in the Comments Section.....



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

Cabinets are located as follows:

b.

NOTE Attachment steps may be performed in any order...... 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. AD-MN-ALL-0017 'Housekeeping' Tags (or equivalent 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 Temp Power Log at https://nuc.duke-energy.com/sites/HNPOPS/ SiteAssets/TempPower/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. **Perform** the applicable steps below for the following outside instrument cabinets: Shut any ventilation louvers..... a.

Check the internal heaters/lights operating. {7.1.5}

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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	γ	T1-C1	T-286-AV27	Y
T1-C23	T-261-AV14	1	T1-C4	T-286-AP27	γ
T1-C22	T-261-AP19	7	T1-C6	T-286-AP35	Y
T1-C24	T-261-AV27	1	T1-C17	T-286-AV40	γ
T1-C10	T-261-AP27	\ \gamma \gamma \	T1-C2	T-286-AM36	1
T1-C12	T-261-AV30	Y	T1-C8	T-286-AK42	7
T1-C26 [Note 2]	T-261-AV40	\ \sqrt{\gamma}	T1-C7-RPS-IV	T-286-AH36Z	γ
T1-C19	T-261-AV35	· /	T1-C21-RPS-III	T-291-AH36Z	2
T1-C20	T-261-AV40	1	T1-C18	T-286-AA40	γ
T1-C13	T-261-AV40	1 1	T1-C5	T-286-AF27	γ
T1-C14	T-261-AP42	1	Y1-C9	NSW PMP A	GM
T1-C3	T-261-AK40	1	Y1-C10	CWP A	Q
T1-C16	T-261-AK40	1	Y21-C6	СТМИ	GM
T1-C11	T-242-AF27	0	. Y21-C7-ESF-A	ESW PUMP A	GM
T1-C25	T-261-AF19	V	Y21-C8-ESF-B	ESW PUMP B	GM
T1-C9	T-261-AF19	Y	Y21-C1	ESWSS	GM
T1-C28 [Note 1]	T-265-AP9	1	Y1-C3	MD FIRE PMP	GM
Diesel Driven Fire Pump 1&4 NNS Inst Cab	ESWSS	<u> </u>			

Note 1: TI-C28 light fixture is not wired

Note 2: Heater not installed.

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2.0	TEMF		N/ 11E A		ID OUTOIDE EQUIDAENT	5	
				NOTE			
				NOTE			
		`		Ο,	ance to screen the Seasonal		
		a.		inoperable heaters are for ensure the following:	ound,	5	
			(1)	Ensure a WR/WO has be deficiency.	een generated for the		
			(2)	Ensure 'AP-301 Concer description	n' is included in the WR	8	
			(3)		her' is added as an attribute to	5	
		b.			inoperable after October 30,	N/A <	
			(1)	may include temporary h permanent H&V systems	zing. Such contingencies		
			(2)	•	contingency plans and any n the Comments section	_MA <	
		C.	protec THEN	permanent plant H&V ur tion <u>OR</u> temperature mai ensure that a Caution Ta I switch	ntenance,	<u>NA</u>	
		d.	THEN	J -	ed, I7 'Housekeeping' Tag (or able per the Note on Page 4	. <u>2P</u>	

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- 2.0 SECTION II EHU AND INSTRUMENT CABINET INSPECTIONS, TEMPORARY HEATER INSTALLATION AND OUTSIDE EQUIPMENT ACTIONS (continued)
 - e. <u>IF</u> a temporary heater is installed, <u>THEN</u> ensure placement of the heater complies with AD-EG-ALL-1523 (including separation distances) <u>AND</u> drawing 7-S-9517, Seasonal HVAC Equipment Installations.

	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.	- //
•	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.	□ //
•	Additional temporary heaters may be installed as conditions warrant per Attachment 2 Step 6.	
•	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.	- - //,

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

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)
- 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.

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

Install temporary heaters in the Turbine Bldg 261'
Elev. West near FI-01CE-1920A (Condenser Vacuum
Pump A Effluent Flow Ind) <u>AND</u>
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)......

mon

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.....



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



 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



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_



 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......



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

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......



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.....



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





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





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





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2.0	SECT TEMF ACTION			
	5.	Direc	t Chemistry to perform the following:	<u> </u>
		a.	Ensure adequacy of enclosures AND heaters for outside chemical addition systems.	<u>k</u>
		b.	Ensure adequacy of enclosure AND heater for surface water composite sampler at the main dam spillway	
		C.	Install AD-MN-ALL-0017 'Housekeeping' Tags (or equivalentag) on heater power supplies per the Note on Page 4	
	6.	Buildi weath	re a Work Order is scheduled to check that the Turbine ing Pre-action Sprinkler System has been drained prior to coloer (PMID/RQ 40422-01), AND drain if required	
	7.	Ensu	re ONE of the following for Warehouse 6 Dry-pipe Sprinkler	<u>Q</u>
		•	System is aligned for normal operation and pressurized per OP-149, Section 8.3, Resetting Dry Pipe Sprinkler System i Warehouse #6	
			OR	
		•	System is drained and isolated with equipment protection clearance in place	NIAQ
	8.	The e	re the Diesel Fire Pump keep warm system is FUNCTIONAL engine coolant heater maintains the coolant temperature st 120°F. The engine should be warm to the touch in the jacket areas	0
	9.	Drain	Fuel Oil Storage Tank diked areas to prevent ice buildup	
	10.		the Aux Boiler Fuel Oil Tanks in-tank foam injection lines pe D/RQ 40422-02 (Model WO 1128166)	
	11.	tempo	reviewing the Temporary Modification Log, check that any orary plant support equipment or instrumentation is protected freezing temperatures.	

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

Comments: (Lis	st any discrepancies noted and wo	ork orders initiate	ed)
WO 20489655-	01 for Section 1. WO 20495569-1	DI for Section Z.	
1) WR 2023	33228 written for degraded usul	ation on MDPP	values 2 piping in pit north of pump
(2) WR 2018-	3512 written for mussing heater is	n asipet Y1-C10	
)		
Sections of Atta	achment performed:	Section I Sec	
1		(circle Section pe	
Lewis			anes Pecler
Attachment Per	Tormed by:	g . Jr	ISON WEARING
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After receiving the final review signature, this Attachment becomes a QA Record.