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ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400/Renewed License No. NPF-63

Subject: Summary of 10 CFR 50.54(q) Evaluation

Ladies and Gentlemen:

As required by 10 CFR 50.54(q)(5), Duke Energy Progress, LLC, is providing a summary of a 10 CFR 50.54(q) evaluation. Enclosure 1 provides the summary of the associated 10 CFR 50.54(q) evaluation. Enclosure 2 contains a copy of the revised Emergency Plan implementing procedure.

This submittal contains no regulatory commitments. Please refer any questions regarding this submittal to Jeffrey Robertson, Manager, Regulatory Affairs, at (919) 362-3137.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean O'Connor", written in a cursive style.

Sean T. O'Connor

Enclosures: 1 - Summary of 10 CFR 50.54(q) Evaluation
2 - Copy of Revised Emergency Plan Implementing Procedure

cc: M. Riches, NRC Resident Inspector, HNP
M. Barillas, NRC Project Manager, HNP
C. Haney, NRC Regional Administrator, Region II



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Harris Nuclear Plant
 Summary of 10 CFR 50.54(q) Evaluation

PEP-241, Technical Support Center (TSC) Emergency Ventilation System Operation, was revised to incorporate changes that required evaluation by the 10 CFR 50.54(q) process. A list of the evaluated changes made by this revision is provided below.

Section(s)	Change Description
Step 2.0.7	Added reference to EC [Engineering Change] 401283 (Child)/EC 297736 (Master), TSC HVAC [Heating, Ventilation, & Air Conditioning] Upgrade Project.
Section 3.0	Added definition of Variable Refrigerant Flow (VRF) Heat Pump to read as follows: "This is the back-up source of heating and cooling for the TSC. The primary source of heating and cooling for the TSC is the three Air Handlers."
Step 6.0.5, NOTE	Corrected units of measurement to read "INWC" [Inches Water of Column] vs. "INWG" [Inches Water Gauge] or inches.
Step 6.0.5.b	Updated step 6.0.5.b to read as follows: "A CR [Condition Report] is required if differential pressure is < 0.125 INWC on PDI-01TS-4011 (TSC to Outside Diff Press Ind) ⁽¹⁶⁾ . This includes a differential pressure that is < 0.125 INWC but ≥ 0.100 INWC."
Step 8.0.2.b	Changed unit of measurement to read INWC vs. Inches
Attachment 3	Changed "(K-06) PDI-01TS-4011 (inches WC) [Desired: ≥ 0.125 INWC, Note 1]" to read as follows: "(K-06) PDI-01TS-4011 (INWC) [Desired: ≥ 0.125 INWC, Note 1]"
Step 9.1.4	Added new steps to read as follows: 9.1.4: " <u>IF AT ANY TIME</u> the VRF is to be made the primary source of heating and cooling due to loss of an Air Handler, <u>THEN</u> perform Section 9.5."
Step 9.1.5	9.1.5: " <u>IF AT ANY TIME</u> the VRF is to be returned to the backup source of heating and cooling following recovery of an Air Handler, <u>THEN</u> perform Section 9.6."
Section 9.5	Added new section, "(Reference Use) – Establishing VRF as Primary Source of Cooling and Heating"
Section 9.6	Added new section, "(Reference Use) – Establishing VRF as Backup Source of Cooling and Heating"

Description of Licensing Basis affected by the changes:

NUREG-1038, Safety Evaluation Report Related to the Operation of Shearon Harris Nuclear Power Plant, Units 1 and 2;

- Section 13.3.2.8, Emergency Facility and Equipment (applicable sections)

PLP-201, Emergency Plan, Revision 65

- Section 3.3, Technical Support Center (TSC)

Description of how the change to the Emergency Plan still complies with regulation:

The changes made in this revision continue to comply with the regulations described by:

10 CFR 50.47(b)(8): "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."

10 CFR 50, Appendix E, Section IV. E, Emergency Facilities and Equipment (applicable excerpts only):

Adequate provisions shall be made and described for emergency facilities and equipment, including:

8.a.(i) "A licensee onsite technical support center and an emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency;"

8.b. states in part, "For a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, either a facility located between 10 miles and 25 miles of the nuclear power reactor site(s), or a primary facility located less than 10 miles from the nuclear power reactor site(s) and a backup facility located between 10 miles and 25 miles of the nuclear power reactor site(s) . . ."

Description of why the proposed change was not a reduction in the effectiveness of the Emergency Plan:

The changes in this procedure revision were made to describe the operation and evaluation of new ventilation equipment installed in the TSC. Specifically, the installation of the VRF and its thirteen room units, as well as one mini outdoor and indoor ductless split unit. The new equipment does not replace any equipment currently installed in the TSC and continues to comply with the regulations as described by 10 CFR 50.47(b)(8) and 10 CFR 50, Appendix E, Section IV. E., Emergency Facilities and Equipment.

Document Control Desk
Serial: HNP-16-103
Enclosure 2

Harris Nuclear Plant
Copy of Revised Emergency Plan Implementing Procedure

<u>Procedure Number</u>	<u>Title</u>	<u>Effective Date</u>
PEP-241, Revision 5 (20 pages total)	Technical Support Center (TSC) Emergency Ventilation System Operation	10/04/2016



**MULTIPLE
USE**

HARRIS NUCLEAR PLANT
PLANT OPERATING MANUAL

VOLUME 2

PART 10

PEP-241

**Technical Support Center (TSC)
Emergency Ventilation System Operation**

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1.0 PURPOSE

This procedure specifies the actions taken by Emergency Response Organization (ERO) personnel, who report to the Technical Support Center (TSC), to operate the TSC Emergency Ventilation System.

2.0 REFERENCES

1. 10 CFR 50, Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities
2. NUREG-0737, Supplement I, Requirements for Emergency Response Capability
3. PLP-201, HNP Emergency Plan
4. PEP-240, Activation and Operation of the Technical Support Center
5. EC 88870, ERF (TSC and EOF) Design Basis Reconstitution
6. EC 400995, Establish a Functional Positive Pressure Limit for the TSC
7. EC 401283 (Child)/EC 297736 (Master), TSC HVAC Upgrade Project

3.0 DEFINITIONS

1. **Variable Refrigerant Flow (VRF) Heat Pump:** This is the back-up source of heating and cooling for the TSC. The primary source of heating and cooling for the TSC is the three Air Handlers.

4.0 RESPONSIBILITIES

1. TSC Radiation Control Director (RCD)
 - a. Ensures that the TSC Ventilation System is properly aligned, based on the current radiological conditions in the TSC.
 - b. Ensures actions required to correct conditions or discrepancies involving the operation of the TSC Ventilation System are performed
 - c. Ensures that the completed procedure is forwarded to the Emergency Preparedness Unit for retention/disposition.

4.0 RESPONSIBILITIES (continued)

2. TSC HP
 - a. Adheres to the requirements of this procedure.
 - b. Takes appropriate actions to resolve TSC Ventilation System problems. (contact OSC for maintenance support, as needed)
 - c. Communicates any problems to the RCD.
 - d. Monitors TSC Ventilation System parameters as appropriate.

5.0 PREREQUISITES

None

6.0 PRECAUTIONS AND LIMITATIONS

1. If the TSC ventilation system is operating and air is flowing through the filter bank, then it is providing some filtration and should be left running while any problems are analyzed.
2. If it appears that 1TSC-E026:002 (TSC DP Modulating Damper D-5 Motor) has malfunctioned, then flow can be corrected by de-energizing the controller and the damper and manually adjusting the linkage between the damper motor and the damper to set the flow as necessary.
3. During operation of the TSC ventilation, the possibility for the disturbance of TSC environmental parameters (e.g., temperature, humidity and TSC room delta pressure) exists. Periodic observations of these parameters should be performed and corrective action should be taken as necessary to maintain parameters.

6.0 PRECAUTIONS AND LIMITATIONS (continued)

4. During operation of the TSC ventilation, periodic monitoring for leakage past the ventilation system door seals should be performed, as part of the TSC habitability surveys.
 - a. If leakage is detected, then check that the ventilation system door latches are secure in the shut direction.
 - b. If leakage still exists, then notify the TSC Radiation Control Director (RCD) to evaluate for continued TSC inhabitation.
 - c. Initiate a Work Request.

NOTE: The purpose of the functional limit is to allow the TSC to remain functional until system performance can be restored to the design value of ≥ 0.125 INWC.
--

5. The TSC may remain functional in Emergency Mode at a positive differential pressure of ≥ 0.100 INWC as read on PDI-01TS-4011 while within the outside air flow range between 700 and 1200 CFM (Ref. EC 400995).
 - a. In Normal Mode, functional pressure limits do not apply and are not required.
 - b. A CR is required if differential pressure is < 0.125 INWC on PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾. This includes a differential pressure that is < 0.125 INWC but ≥ 0.100 INWC.

7.0 SPECIAL TOOLS AND EQUIPMENT

1. Key for Radiation Monitors

8.0 ACCEPTANCE CRITERIA

1. During Normal mode, FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)⁽¹⁶⁾ should indicate between 700 and 1200 CFM.
2. During Emergency mode:
 - a. FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)⁽¹⁶⁾ should indicate between 700 and 1200 CFM.
 - b. PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ should indicate ≥ 0.125 INWC.

9.0 INSTRUCTIONS

NOTE: The number shown in superscript, corresponds to the location on Attachment 2, Technical Support Center Floor Plan.

9.1. (Information Use) - TSC Ventilation System Lineup

1. **IF AT ANY TIME** TSC Ventilation is to be placed in Emergency Mode,
THEN perform Section 9.2.
2. **IF** TSC Ventilation is to remain in Normal Mode,
THEN go to Section 9.3.
3. **IF AT ANY TIME** TSC Ventilation is to be placed in Normal Mode,
THEN perform Section 9.4.
4. **IF AT ANY TIME** the VRF is to be made the primary source of heating and cooling due to loss of an Air Handler,
THEN perform Section 9.5.
5. **IF AT ANY TIME** the VRF is to be returned to the backup source of heating and cooling following recovery of an Air Handler,
THEN perform Section 9.6.

9.2. (Reference Use) - Placing the TSC Ventilation System in the Emergency Mode Alignment

NOTE: The following are located in Room K-06, Command Room.

NOTE: The number shown in superscript, corresponds to the location on Attachment 2, Technical Support Center Floor Plan.

1. **Place** CS-1TSC-4001 (TSC HVAC Control Panel Alarm Reset Switch)⁽¹⁵⁾ to the **OFF** position. _____
2. **Place** CS-1TSC-E001 (TSC Emergency Ventilation Manual Override Switch)⁽¹⁴⁾ to the **OVERRIDE** position. _____
3. **Check** the following indications: _____
 - IL-1TSC-4001 (TSC HVAC Emergency Mode Operation Alarm)⁽¹⁶⁾ red light is flashing _____
 - PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ indication is ≥ 0.125 INWC (Step 6.0.5 provides functionality information). _____
 - FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)⁽¹⁶⁾ indication is between 700 - 1200 CFM _____

NOTE: The following are located in Room K-15, Mechanical Ventilation Room.

4. **Check** the status of the following: _____
 - 1TSC-E001 (TSC HVAC Emergency Filtration Fan MUF-1)⁽⁵⁾ is running. _____
 - 1TSC-E009 (FH-1 Bypass Damper D-6)⁽⁸⁾ is CLOSED. _____
 - 1TSC-E007 (Toilet Exhaust Damper D-3)⁽⁹⁾ is CLOSED. _____
 - 1TSC-E008 (Decon Exhaust Damper D-4)⁽¹⁰⁾ is OPEN. _____
5. **Notify** the TSC Radiation Control Director (RCD) of the TSC ventilation system status **AND proceed** to step 9.3, as applicable. _____
 - Operational
 - Non-Operational
 Exceptions: _____

NOTE: Section 9.3 monitoring actions should be performed periodically (e.g., hourly) per the direction of the TSC Radiation Control Director (RCD)

9.3. (Information Use) - Monitoring TSC Ventilation System Parameters

NOTE: The number shown in superscript, corresponds to the location on Attachment 2, Technical Support Center Floor Plan.

1. **Record** the following on Attachment 3:

- Date
- Time
- TSC HVAC Operating Mode (Emergency or Normal)

K-15 Mechanical Ventilation Room

- RM-*1TS-3653A (TSC Hallway Area Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653B (TSC Command Room Area Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Channel Status light status (Channel 1 and 2 single LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Channel 1 and 2 LED value
- Leakage past ventilation system door seals

K-06 Command Room

- TIC-1TSC-AH17 (AH-17 Thermostat) indication (located in hallway across from Command Room door)
- PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ indication
- FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)⁽¹⁶⁾ indication

2. **Check** data recorded meets desired values specified on Attachment 3.

3. **Notify** the TSC Radiation Control Director (RCD) of any data that is not within desired.

9.4. (Reference Use) - Placing the TSC Ventilation System in the Normal Mode Alignment

NOTE: The following equipment is located in Room K-06, Command Room.

NOTE: The number shown in superscript, corresponds to the location on Attachment 2, Technical Support Center Floor Plan

1. **Place** CS-1TSC-E001 (TSC Emergency Ventilation Manual Override Switch)⁽¹⁴⁾ in the NORMAL position. _____
2. **Place** CS-1TSC-4001 (TSC HVAC Control Panel Alarm Reset Switch)⁽¹⁵⁾ in the RESET position. _____
3. **Check** IL-1TSC-4001 (TSC HVAC Emergency Mode Operation Alarm) red light is OFF. _____
4. **Complete** Attachment 1, TSC Ventilation System Normal Mode Lineup. _____
5. **Record** the following on Attachment 3: _____
 - Date
 - Time
 - TSC HVAC Operating Mode (Emergency or Normal)

K-15 Mechanical Ventilation Room

- RM-*1TS-3653A (TSC Hallway Area Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653B (TSC Command Room Area Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Operate light status (multi LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Channel Status light status (Channel 1 and 2 single LED)
- RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Channels 1 and 2 LED value

K-06 Command Room

- TIC-1TSC-AH17 (AH-17 Thermostat) indication (located in hallway across from Command Room door)
- PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ indication
- FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)⁽¹⁶⁾ indication

9.4 (Reference Use) - Placing the TSC Ventilation System in the Normal Mode Alignment (continued)

6. **Check** data recorded meets desired values specified on Attachment 3. _____
7. **Notify** the TSC Radiation Control Director (RCD) of the TSC ventilation system status **AND proceed** to Section 9.3, as applicable. _____
- Operational
 Non-Operational
 Exceptions: _____

9.5. (Reference Use) - Establishing VRF as Primary Source of Cooling and Heating

NOTE: The RCD can be contacted for any assistance or additional resources needed to perform Section 9.5.

NOTE: If spaces served by 1TSC-AH10 (TSC Air Handling Unit AH-10) (Alternate OSC Room K-11, Communication Equipment Room K-20) are unusually warm in the summer months or unusually cold in winter months, then 1TSC-AH10 may be out of service.

1. **IF** 1TSC-AH10 (TSC Air Handling Unit AH-10) is out of service, **THEN** ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4021/ TSC RM K-20	VRF Indoor Unit 4 (IDU-4) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4022/ TSC RM K-11	VRF Indoor Unit 5 (IDU-5) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4023/ TSC RM K-10	VRF Indoor Unit 6 (IDU-6) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4029/ TSC RM K-21/22	VRF Indoor Unit 12 (IDU-12) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4030 TSC RM K-15	VRF Mini Indoor Unit (MIU) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4031/ TSC RM K-12	VRF Indoor Unit 13 (IDU-13) Thermostat	75	72	<input type="checkbox"/>

9.5 (Reference Use) - Establishing VRF as Primary Source of Cooling and Heating (continued)

NOTE: If spaces served by 1TSC-AH11 (TSC Air Handling Unit AH-11) (Security Room K-02, Accident Assessment Room K-04, Library K-07) are unusually warm in the summer months or unusually cold in winter months, then 1TSC-AH11 may be out of service.

2. **IF** 1TSC-AH11 (TSC Air Handling Unit AH-11) is out of service, **THEN** ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4018/ TSC RM K-02	VRF Indoor Unit 1 (IDU-1) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4019/ TSC RM K-03	VRF Indoor Unit 2 (IDU-2) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4020/ TSC RM K-07A	VRF Indoor Unit 3 (IDU-3) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4024/ TSC RM K-04	VRF Indoor Unit 7 (IDU-7) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4026/ TSC RM K-07	VRF Indoor Unit 9 (IDU-9) Thermostat	75	72	<input type="checkbox"/>

NOTE: If spaces served by 1TSC-AH17 (TSC Air Handling Unit AH-17) (Command Room K-06, Conference Room K-08) are unusually warm in the summer months or unusually cold in winter months, then 1TSC-AH17 may be out of service.

3. **IF** 1TSC-AH17 (TSC Air Handling Unit AH-17) is out of service, **THEN** ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4025/ TSC RM K-08	VRF Indoor Unit 8 (IDU-8) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4027/ TSC RM K-06	VRF Indoor Unit 10 (IDU-10) Thermostat	75	72	<input type="checkbox"/>
TC-01TC-4028/ TSC RM K-06	VRF Indoor Unit 11 (IDU-11) Thermostat	75	72	<input type="checkbox"/>

9.6. (Reference Use) - Establishing VRF as Backup Source of Cooling and Heating

NOTE: The RCD can be contacted for any assistance or additional resources needed to perform this section.

1. **WHEN** 1TSC-AH10 (TSC Air Handling Unit AH-10) is returned to service,
THEN ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4021/ TSC RM K-20	VRF Indoor Unit 4 (IDU-4) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4022/ TSC RM K-11	VRF Indoor Unit 5 (IDU-5) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4023/ TSC RM K-10	VRF Indoor Unit 6 (IDU-6) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4029/ TSC RM K-21/22	VRF Indoor Unit 12 (IDU-12) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4030 TSC RM K-15	VRF Mini Indoor Unit (MIU) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4031/ TSC RM K-12	VRF Indoor Unit 13 (IDU-13) Thermostat	80	67	<input type="checkbox"/>

2. **WHEN** 1TSC-AH11(TSC Air Handling Unit AH-11) is returned to service,
THEN ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4018/ TSC RM K-02	VRF Indoor Unit 1 (IDU-1) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4019/ TSC RM K-03	VRF Indoor Unit 2 (IDU-2) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4020/ TSC RM K-07A	VRF Indoor Unit 3 (IDU-3) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4024/ TSC RM K-04	VRF Indoor Unit 7 (IDU-7) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4026/ TSC RM K-07	VRF Indoor Unit 9 (IDU-9) Thermostat	80	67	<input type="checkbox"/>

9.6 (Reference Use) - Establishing VRF as Backup Source of Cooling and Heating (continued)

3. **WHEN** 1TSC-AH17(TSC Air Handling Unit AH-17) is returned to service,
THEN ensure the following thermostats are set: _____

Tag Number/ Location	Description	Cooling (°F)	Heating (°F)	
TC-01TC-4025/ TSC RM K-08	VRF Indoor Unit 8 (IDU-8) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4027/ TSC RM K-06	VRF Indoor Unit 10 (IDU-10) Thermostat	80	67	<input type="checkbox"/>
TC-01TC-4028/ TSC RM K-06	VRF Indoor Unit 11 (IDU-11) Thermostat	80	67	<input type="checkbox"/>

9.7. Close Out

1. **Record** procedure performer information on Attachment 1 and 3.
2. **Forward** completed procedure to EP.

10.0 RECORDS

Records of the TSC ventilation system operation are maintained by the Emergency Preparedness (EP) Unit in accordance with EPM-100

11.0 ATTACHMENTS

Attachment 1 – Technical Support Center (TSC) Ventilation System Normal Mode Lineup

Attachment 2 – Technical Support Center (TSC) Floor Plan

Attachment 3 – Technical Support Center (TSC) Monitoring Log

**Attachment 1 - (Reference Use) TSC Ventilation System Normal Mode Lineup
Sheet 1 of 5**

<p>NOTE: The following equipment/indications are located in Room K-15, Mechanical Ventilation Room.</p>
--

1.0 **Check** the Technical Support Center (TSC) Ventilation System is in Normal Mode alignment:

1. **Verify** CS-1TSC-4021 (TSC Emergency Ventilation Bypass Switch)⁽¹⁾ for MUF-1 is in the NORMAL position. _____
2. **Verify** 1TSC-E003:003 (OA-2 Motor Starter Hand Switch)⁽²⁾ is ON. _____
3. **Verify** DS-1TSC-E003 (Disconnect Switch for OA-2)⁽²⁾ is ON. _____
4. **Check** 1TSC-E003 (Outside Air Intake Fan OA-2)⁽³⁾ is operating. _____
5. **Verify** DS-1TSC-E001 (Disconnect Switch for MUF-1)⁽⁴⁾ is ON. _____
6. **Check** 1TSC-E001 (TSC HVAC Emergency Filtration Fan MUF-1)⁽⁵⁾ is **NOT** operating. _____
7. **Verify** 1TSC-E006 (Outside Air Intake Duct Heater DH-1)⁽⁶⁾ is ON. _____
8. **Verify** DS-1TSC-E006 (Disconnect switch for DH-1)⁽⁷⁾ is ON. _____
9. **Check** 1TSC-E009 (FH-1 Bypass Damper D-6)⁽⁸⁾ is THROTTLED OPEN. _____
10. **Check** RM-*1TS-3653A (TSC Hallway Area Radiation Monitor)⁽¹⁷⁾ Operate light (multi LED) is LIT. _____
11. **Check** RM-*1TS-3653B (TSC Command Room Area Radiation Monitor)⁽¹⁷⁾ Operate light (multi LED) is LIT. _____

**Attachment 1 – (Reference Use) TSC Ventilation System Normal Mode Lineup
Sheet 2 of 3**

- 12. **Check** RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ Operate light (multi LED) is LIT. _____

 - a. **Check** any value displayed on Channel 1 and 2 of RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ LED readout. _____
 - b. **Check** RM-*1TS-3653C (TSC Outside Air Intake Radiation Monitor)⁽¹⁷⁾ OPER light (single LED) is LIT (below Channel 1 and 2). _____

- 13. **Check** 1TSC-E007 (Toilet Exhaust Damper D-3)⁽⁹⁾ is OPEN. _____
- 14. **Check** 1TSC-E008 (Decon Exhaust Damper D-4)⁽¹⁰⁾ is CLOSED. _____
- 15. **Check** 1TSC-E004 (Toilet Exhaust Fan EF-2)⁽¹¹⁾ is operating. _____
- 16. **Check** 1TSC-E005 (Decon Exhaust Fan EF-3)⁽¹²⁾ is **NOT** operating. _____
- 17. **Verify** DS-1TSC-E005 (Disconnect switch for EF-3)⁽¹³⁾ is ON. _____

NOTE: The following equipment/indications are located in Room K-06, Command Room.

- 18. **Verify** CS-1TSC-E001 (TSC Emergency Ventilation Manual Override Switch)⁽¹⁴⁾ is in the NORMAL position. _____
- 19. **Verify** CS-1TSC-4001 (TSC HVAC Control Panel Alarm Reset Switch)⁽¹⁵⁾ is in the **RESET** position. _____

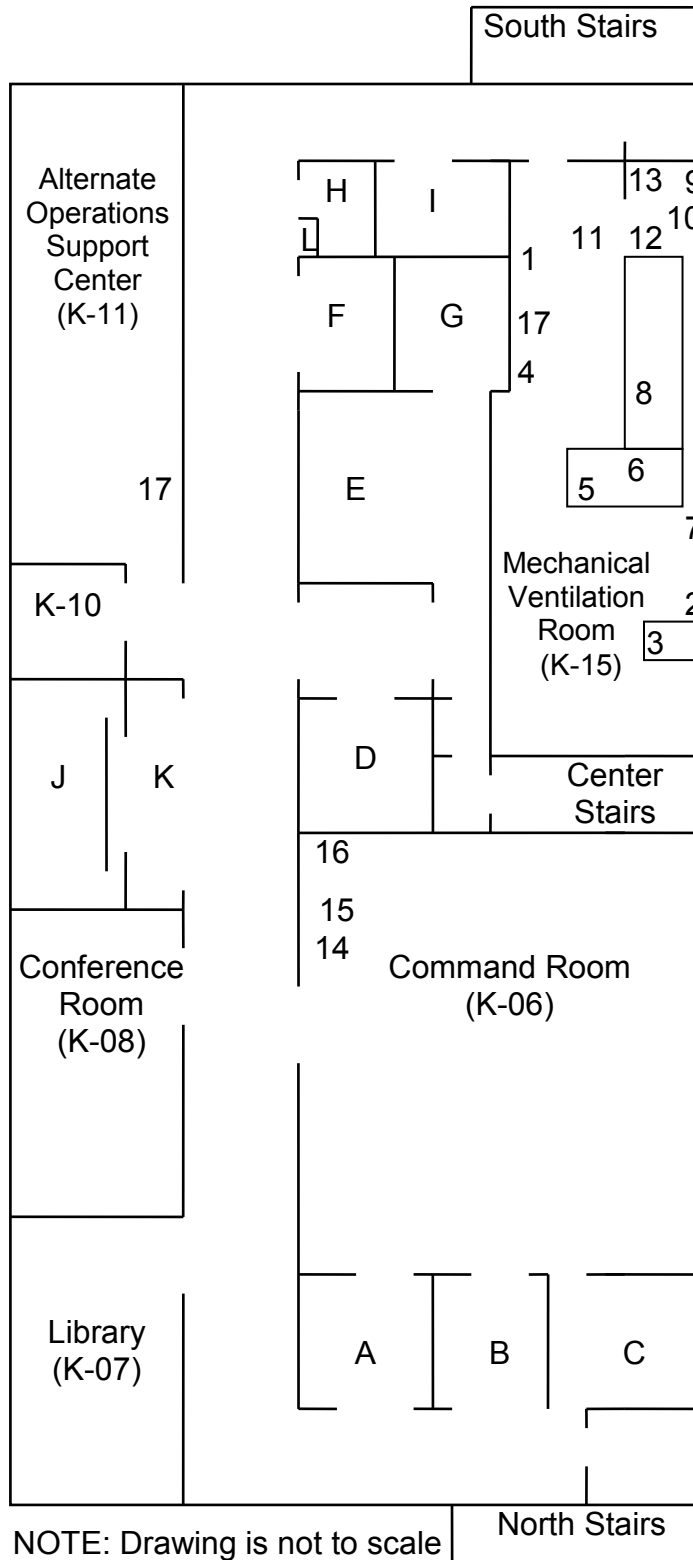
**Attachment 1 – (Reference Use) TSC Ventilation System Normal Mode Lineup
Sheet 3 of 3**

20. **Check** IL-1TSC-4001 (TSC HVAC Emergency Mode Operation Alarm) red light is OFF. _____

21. **Check** FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Indicator)⁽¹⁶⁾ is between 700 and 1200 CFM. _____

Name (Print)	Initials	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Attachment 2 - (Information Use) Technical Support Center Floor Plan
Sheet 1 of 1**



- Mechanical Ventilation Room Equipment**
1. CS-1TSC-4021 (TSC Emergency Ventilation Bypass Switch) for MUF-1
 2. 1TSC-E003:003 (OA-2 Motor Starter Hand Switch) & DS-1TSC-E003 (Disconnect Switch for OA-2)
 3. 1TSC-E003 (Outside Air Intake Fan OA-2)
 4. DS-1TSC-E001 (Disconnect Switch for MUF-1)
 5. 1TSC-E001 (TSC HVAC Emergency Filtration Fan MUF-1)
 6. 1TSC-E006 (Outside Air Intake Duct Heater DH-1)
 7. DS-1TSC-E006 (Disconnect switch for DH-1)
 8. 1TSC-E009 (FH-1 Bypass Damper D-6)
 9. 1TSC-E007 (Toilet Exhaust Damper D-3)
 10. 1TSC-E008 (Decon Exhaust Damper D-4)
 11. 1TSC-E004 (Toilet Exhaust Fan EF-2) (overhead)
 12. 1TSC-E005 (Decon Exhaust Fan EF-3) (overhead)
 13. DS-1TSC-E005 (Disconnect switch for EF-3)
 17. RM-*1TS-3653A, B, C (Radiation Monitor Panels)

- Command Room Equipment**
14. CS-1TSC-E001 (TSC Emergency Ventilation Manual Override Switch)
 15. CS-1TSC-4001 / IL-1TSC-4001 (TSC HVAC Control Panel Alarm Reset Switch)
 16. PDI-01TS-4011 (TSC to Outside Diff Press Ind)
FI-01TS-4000 (Outside Air Intake Fan OA-2 Flow Ind)

- Room Designations**
- A Accident Assessment Room (K-04)
 - B NRC Room (K-03)
 - C Security Room (K-02)
 - D Storage Room (K-25)
 - E Equipment Storage (K-22)
 - F Communication Equipment Room (K-20)
 - G Decon. Sink/Shower Room
 - H Women's Room
 - I Men's Room
 - J Elevator
 - K Elevator Vestibule (K-09)
 - L Storage Room (chemical storage location)

Attachment 3 - (Reference Use) Technical Support Center (TSC) Monitoring Log

Sheet 1 of 2

Page ____ of ____

Date									
Time									
TSC HVAC Operating Mode	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg	<input type="checkbox"/> Norm <input type="checkbox"/> Emerg
(K-15) RM-*1TS-3653A Oper. Light [Desired: ON]	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF
(K-15) RM-*1TS-3653B Oper. Light [Desired: ON]	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF
(K-15) RM-*1TS-3653C Oper. Light [Desired: ON]	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> ON <input type="checkbox"/> OFF
(K-15) RM-*1TS-3653C (μ Ci/cc)	Ch. 1								
	Ch. 2								
(K-15) RM-*1TS-3653C Light Status (G, Y, R)	Ch. 1								
	Ch. 2								
(K-15) Leakage past ventilation door seals	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
(K-06) TIC-1TSC-AH17 (°F) [Desired: 60.8°F to 82.4°F]									
(K-06) PDI-01TS-4011 (INWC) [Desired: \geq 0.125 INWC, Note 1]									
(K-06) FI-01TS-4000 (CFM) [Desired: 700 to 1200 CFM]									
Initials									

Note 1: (See 6.0.5 for functionality information)

Channel Status Lights:

Green (G): Normal operation	Yellow (Y): Alert alarm (horn will sound) <ul style="list-style-type: none"> ACKNOWLEDGE the alarm. NOTIFY the TSC RCD. 	Red (R): High alarm (horn will sound) <ul style="list-style-type: none"> ACKNOWLEDGE the alarm. NOTIFY the TSC RCD.
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Attachment 3 - (Reference Use) Technical Support Center (TSC) Monitoring Log

Sheet 2 of 2

Remarks:

Name (Print)	Initials	Signature	Date

Revision 5 Summary

Rev. 5 processed with PRR: 2025683
 PRRs Incorporated: 2000086
 CRs Incorporated: None
 EC 297736 (Master); 401283 (Child 1)

6.0 step 5 NOTE, 6.0 step 5.b; 8.0.2 step b Attachment 3 PRR 2000086	Corrected units of measurement to read INWC (vs. INWG or inches). Updated step 6.0.5.b to read as follows: 5.b. A CR is required if differential pressure is < 0.125 INWC on PDI-01TS-4011 (TSC to Outside Diff Press Ind) ⁽¹⁶⁾ . This includes a differential pressure that is < 0.125 INWC but \geq 0.100 INWC.
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The following changes were made to implement EC 297736 (Master), 401283 (Child)

Section 2.0.7	Added reference to EC 401283 (Child)/EC 297736 (Master)
Section 3.0	Added definition of VRF to read as follows: Variable Refrigerant Flow (VRF) Heat Pump: This is the back-up source of heating and cooling for the TSC. The primary source of heating and cooling for the TSC is the three Air Handlers. .
Step 9.1.4	Added new steps to read as follows:
Step 9.1.5	9.1.4: <u>IF AT ANY TIME</u> the VRF is to be made the primary source of heating and cooling due to loss of an Air Handler, <u>THEN perform</u> Section 9.5. 9.1.5: <u>IF AT ANY TIME</u> the VRF is to be returned to the backup source of heating and cooling following recovery of an Air Handler, <u>THEN perform</u> Section 9.6.
Section 9.5 and Section 9.6	Added complete new sections.