



Bentley K. Jones
Director, Organizational Effectiveness
Harris Nuclear Plant
5413 Shearon Harris Rd
New Hill, NC 27562-9300

919.362.2305

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10 CFR 50.54(q)(5)

Serial: HNP-17-001

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 Jeff Robertson, Manager – Regulatory Affairs, at (919) 362-3137.

Sincerely,

A handwritten signature in black ink, appearing to read "Bentley K. Jones", with a stylized flourish extending to the right.

Bentley K. Jones

Enclosure 1: Summary of 10 CFR 50.54(q) Evaluation

Enclosure 2: Copy of Revised Emergency Plan Implementing Procedure

cc: R. Patterson, NRC Sr. Resident Inspector, HNP
M. Barillas, NRC Project Manager, HNP
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,
Revision 6**

Emergency Plan Implementing Procedure PEP-241 was revised to incorporate changes that were evaluated by the 10 CFR 50.54(q) process. A list of the changes made that required evaluation is provided below.

Section (s)	Change Description
Throughout	Engineering Change (EC) 401286 changed FI-01TS-4000 description from "(Outside Air Intake Fan OA-2 Flow Ind)" to "(Outside Air Intake Fans OA-2 and OA-3 Flow Ind)"
Section 2.0	Added EC 401284 (Child 2)/EC 401286 (Child 3)/EC 297736 (Master), TSC HVAC [heating, ventilation, and air conditioning] Upgrade Project
Step 4.0.1.b	Changed "Ensures actions required..." to "Ensures or initiates actions required..."
Step 4.0.2.b	Deleted step "Takes appropriate actions to resolve TSC Ventilation System problems. (contact OSC [Operations Support Center] for maintenance support, as needed)" This is acceptable since TSC Health Physics personnel have the responsibility to notify the RCD [Radiation Control Director] and the RCD has responsibility to ensure/initiate corrective actions.
Step 6.0.4	Added list of TSC boundary doors that are to be monitored
Section 9.3.1 & Section 9.4.5	EC 401284 added the following: <u>K-11 Alternate Operations Support Center</u> TIC-1TSC-AH10 (TSC AH-10 Thermostat) <u>K-04 Accident Assessment Room</u> TIC-1TSC-AH11 (TSC AH-11 Thermostat) Updated the following description for TIC-1TSC-AH17: <u>K-06 Command Room</u> TIC-1TSC-AH17 (AH-17 Thermostat) indication

Section (s)	Change Description
Attachment 1	<p>EC 401286 revised normal alignment from:</p> <p>“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.”</p> <p>to:</p> <p>“2. IF 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch)⁽²⁾ is in OA-2 position, THEN verify the following lineup: a. DS-1TSC-E003 (Disconnect Switch for OA-2)⁽²⁾ is ON. b. 1TSC-E003 (Outside Air Intake Fan OA-2)⁽³⁾ is RUNNING. c. 1TSC-E067 (Outside Air Intake Fan OA-3)⁽³⁾ is OFF. 3. IF 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch)⁽²⁾ is in OA-3 position, THEN verify the following lineup: a. DS-1TSC-E067 (Disconnect Switch for OA-3)⁽²⁾ is ON. b. 1TSC-E067 (Outside Air Intake Fan OA-3)⁽³⁾ is RUNNING. c. 1TSC-E003 (Outside Air Intake Fan OA-2)⁽³⁾ is OFF.”</p>
Attachment 3	<p>EC 401284 added the following:</p> <p>(K-11) TIC-1TSC-AH10 (°F) [Desired: 60.8°F to 82.4°F]</p> <p>(K-04) TIC-1TSC-AH11 (°F) [Desired: 60.8°F to 82.4°F]</p>

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 3; Section 3.3, Technical Support Center (TSC), Subsection 3.3.1, Characteristics
- PLP-201, Emergency Plan, Revision 65; Section 3.3, Technical Support Center (TSC), Subsection 3.3.1, Characteristics

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

The changes made to PEP-241 describe the operation of new ventilation equipment installed in the TSC. The new ventilation equipment within the TSC complies 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.

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

The TSC HVAC system was modified to improve equipment reliability and to provide equipment redundancy to facilitate planned maintenance within the TSC facility. The changes described in Revision 6 of PEP-241 continue to meet the requirements described in 10 CFR 50.47(b) and 10 CFR 50, Appendix E, and do not reduce the effectiveness of the HNP Emergency Plan.

Document Control Desk
Serial: HNP-17-001
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 6 (21 pages total)	Technical Support Center (TSC) Emergency Ventilation System Operation	12/16/2016



**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
8. EC 401284 (Child2)/EC 401286 (Child 3)/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 or initiates 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. Communicates any problems to the RCD.
- c. 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 following ventilation system door seals should be performed, as part of the TSC habitability surveys.
 - Elevator vestibule Double Doors
 - South Stairwell Interior and Exterior Air Lock Doors
 - Center Stairwell Interior and Exterior Air Lock Doors
 - North Stairwell Interior and Exterior Air Lock Doors
 - 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 Fans OA-2 and OA-3 Flow Ind)⁽¹⁶⁾ should indicate between 700 and 1200 CFM.
2. During Emergency mode:
 - a. FI-01TS-4000 (Outside Air Intake Fans OA-2 and OA-3 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 Fans OA-2 and OA-3 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-11 Alternate Operations Support Center

- TIC-1TSC-AH10 (AH-10 Thermostat)

K-06 Command Room

- TIC-1TSC-AH17 (AH-17 Thermostat) indication
- PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ indication
- FI-01TS-4000 (Outside Air Intake Fans OA-2 and OA-3 Flow Ind)⁽¹⁶⁾ indication

K-04 Accident Assessment Room

- TIC-1TSC-AH11 (AH-11 Thermostat)

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

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

K-11 Alternate Operations Support Center

- TIC-1TSC-AH10 (AH-10 Thermostat)

K-06 Command Room

- TIC-1TSC-AH17 (AH-17 Thermostat) indication
- PDI-01TS-4011 (TSC to Outside Diff Press Ind)⁽¹⁶⁾ indication
- FI-01TS-4000 (Outside Air Intake Fans OA-2 and OA-3 Flow Ind)⁽¹⁶⁾ indication

K-04 Accident Assessment Room

- TIC-1TSC-AH11 (AH-11 Thermostat)

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 3

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

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. **IF** 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch)⁽²⁾ is in OA-2 position,
THEN verify the following lineup: _____
 - a. DS-1TSC-E003 (Disconnect Switch for OA-2)⁽²⁾ is ON. _____
 - b. 1TSC-E003 (Outside Air Intake Fan OA-2)⁽³⁾ is RUNNING. _____
 - c. 1TSC-E067 (Outside Air Intake Fan OA-3)⁽³⁾ is OFF. _____
3. **IF** 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch)⁽²⁾ is in OA-3 position,
THEN verify the following lineup: _____
 - a. DS-1TSC-E067 (Disconnect Switch for OA-3)⁽²⁾ is ON. _____
 - b. 1TSC-E067 (Outside Air Intake Fan OA-3)⁽³⁾ is RUNNING. _____
 - c. 1TSC-E003 (Outside Air Intake Fan OA-2)⁽³⁾ is OFF. _____
4. **Verify** DS-1TSC-E001 (Disconnect Switch for MUF-1)⁽⁴⁾ is ON. _____
5. **Check** 1TSC-E001 (TSC HVAC Emergency Filtration Fan MUF-1)⁽⁵⁾ is **NOT** operating. _____
6. **Verify** 1TSC-E006 (Outside Air Intake Duct Heater DH-1)⁽⁶⁾ is ON. _____
7. **Verify** DS-1TSC-E006 (Disconnect switch for DH-1)⁽⁷⁾ is ON. _____
8. **Check** 1TSC-E009 (FH-1 Bypass Damper D-6)⁽⁸⁾ is THROTTLED OPEN. _____
9. **Check** RM-*1TS-3653A (TSC Hallway Area Radiation Monitor)⁽¹⁷⁾ Operate light (multi LED) is LIT. _____
10. **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**

11. **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). _____
12. **Check** 1TSC-E007 (Toilet Exhaust Damper D-3)⁽⁹⁾ is OPEN. _____
13. **Check** 1TSC-E008 (Decon Exhaust Damper D-4)⁽¹⁰⁾ is CLOSED. _____
14. **Check** 1TSC-E004 (Toilet Exhaust Fan EF-2)⁽¹¹⁾ is operating. _____
15. **Check** 1TSC-E005 (Decon Exhaust Fan EF-3)⁽¹²⁾ is **NOT** operating. _____
16. **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.
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17. **Verify** CS-1TSC-E001 (TSC Emergency Ventilation Manual Override Switch)⁽¹⁴⁾ is in the NORMAL position. _____
18. **Verify** CS-1TSC-4001 (TSC HVAC Control Panel Alarm Reset Switch)⁽¹⁵⁾ is in the **RESET** position. _____

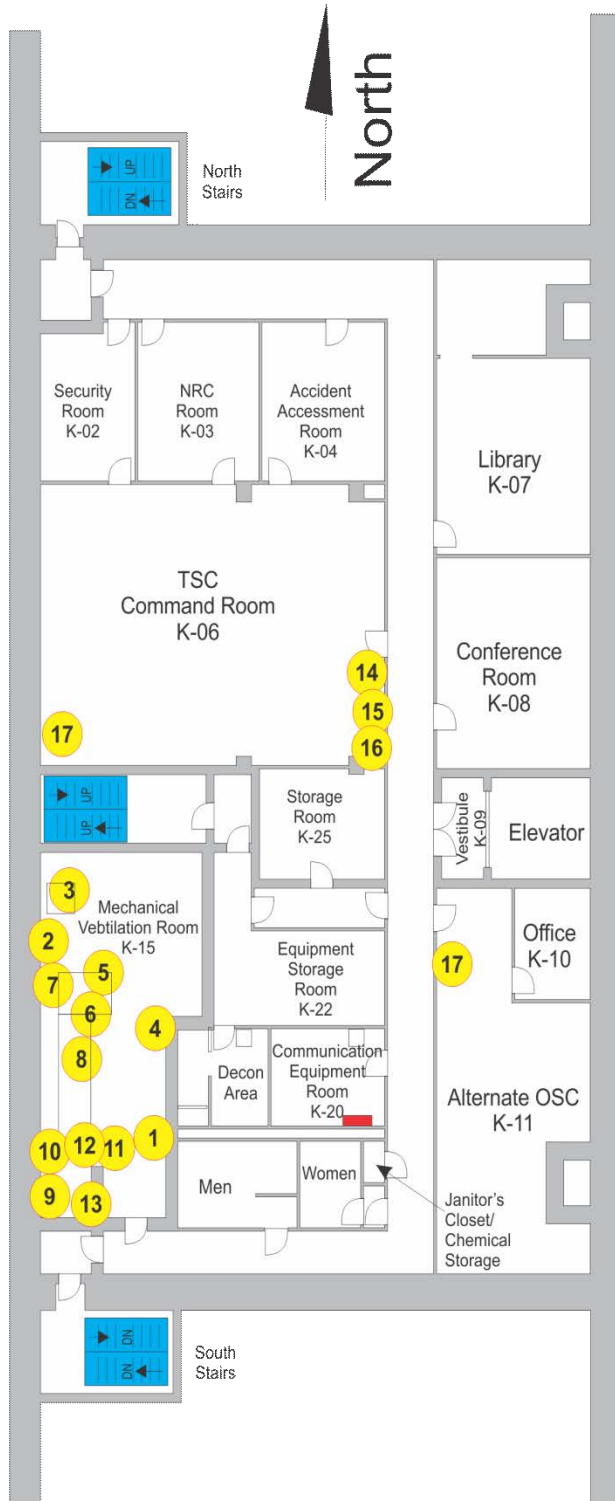
**Attachment 1 – (Reference Use) TSC Ventilation System Normal Mode Lineup
Sheet 3 of 3**

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

21. **Check** FI-01TS-4000 (Outside Air Intake Fans OA-2 and OA-3 Flow Ind)⁽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



TSC Mechanical Ventilation Room Equipment

1. CS-1TSC-4021 for MUF-1
(TSC Emergency Ventilation Bypass Switch)
2. 1TSC-E003:003
(OA-2 / OA-3 Motor Starter Hand Switch)
- DS-1TSC-E003
(Disconnect Switch for OA-2)
- DS-1TSC-E067
(Disconnect Switch for OA-3)
- 1TSC-E065
(OA-2 Backdraft Damper)
- 1TSC-E066
(OA-3 Backdraft Damper)
3. 1TSC-E003
(Outside Air Intake Fan OA-2)
- 1TSC-E067
(Outside Air Intake Fan OA-3)
- 1TSC-E010
(Outside Air Intake Damper D-7)
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. TSC-E005
(Decon Exhaust Fan EF-3) (overhead)
13. DS-1TSC-E005
(Disconnect switch for EF-3)

Command Room Equipment

14. CS-1TSC-E001
(TSC Emergency Ventilation Manual Override Switch)
15. CS-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 and OA-3 Flow Ind)
17. Sound powered phone jack

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
(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
(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
(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
(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
(K-11) TIC-1TSC-AH10 (°F) [Desired: 60.8°F to 82.4°F]									
(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]									
(K-04) TIC-1TSC-AH11 (°F) [Desired: 60.8°F to 82.4°F]									
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 6 Summary	
Rev. 6 processed with PRR: 2026932 PRRs Incorporated: 1956275 CRs Incorporated: None EC 297736 (Master); 401284 (Child 2), 401286 (Child 3)	
Throughout	[EC 401286] Changed FI-01TS-4000 description from "(Outside Air Intake Fan OA-2 Flow Ind)" to "(Outside Air Intake Fans OA-2 and OA-3 Flow Ind)"
Section 2.0	added EC 401284 (Child2)/EC 401286 (Child 3)/EC 297736 (Master), TSC HVAC Upgrade Project
Step 4.0.1.b	Changed "Ensures actions required..." to "Ensures or initiates actions required..."
Step 4.0.2.b	Deleted step "Takes appropriate actions to resolve TSC Ventilation System problems. (contact OSC for maintenance support, as needed)". This is acceptable since tech has responsibility to notify RCD and RCD has responsibility to ensure/initiate corrective actions.
Step 6.0.4	Added list of TSC boundary doors that are to be monitored.
Section 9.3.1	[EC 401284] Added the following: <u>K-11 Alternate Operations Support Center</u> TIC-1TSC-AH10 (TSC AH-10 Thermostat) <u>K-04 Accident Assessment Room</u> TIC-1TSC-AH11 (TSC AH-11 Thermostat) Updated the following description for TIC-1TSC-AH17: <u>K-06 Command Room</u> TIC-1TSC-AH17 (AH-17 Thermostat) indication
Section 9.4.5	[EC 401284] Added the following: <u>K-11 Alternate Operations Support Center</u> TIC-1TSC-AH10 (TSC AH-10 Thermostat) <u>K-04 Accident Assessment Room</u> TIC-1TSC-AH11 (TSC AH-11 Thermostat) Updated the following description for TIC-1TSC-AH17: <u>K-06 Command Room</u> TIC-1TSC-AH17 (AH-17 Thermostat) indication
Attachment 1	[EC 401286] Revised Normal alignment From: 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. To: 2. IF 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch) ⁽²⁾ is in OA-2 position, THEN verify the following lineup: a. DS-1TSC-E003 (Disconnect Switch for OA-2) ⁽²⁾ is ON. b. 1TSC-E003 (Outside Air Intake Fan OA-2) ⁽³⁾ is RUNNING. c. 1TSC-E067 (Outside Air Intake Fan OA-3) ⁽³⁾ is OFF. 3. IF 1TSC-E003:003 (OA-2/OA-3 Motor Starter Hand Switch) ⁽²⁾ is in OA-3 position, THEN verify the following lineup: a. DS-1TSC-E067 (Disconnect Switch for OA-3) ⁽²⁾ is ON. b. 1TSC-E067 (Outside Air Intake Fan OA-3) ⁽³⁾ is RUNNING. c. 1TSC-E003 (Outside Air Intake Fan OA-2) ⁽³⁾ is OFF.
Attachment 3	[EC 401284] Added the following: (K-11) TIC-1TSC-AH10 (°F) [Desired: 60.8°F to 82.4°F] (K-04) TIC-1TSC-AH11 (°F) [Desired: 60.8°F to 82.4°F]