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Serial: NPD-NRC-2015-024
July 17, 2015

10 CFR 52.79

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

LEVY NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 52-029 AND 52-030
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 126 RELATED TO SRP SECTIONS 6.4, CONTROL ROOM HABITABILITY SYSTEM, AND 16, TECHNICAL SPECIFICATIONS, FOR THE LEVY NUCLEAR PLANT, UNITS 1 AND 2, COMBINED LICENSE APPLICATION

Reference:

1) Letter from Donald Habib (NRC) to Christopher M. Fallon (DEF), dated May 13, 2015, "Request for Additional Information Letter No. 126 Related to Standard Review Plan Section 6.4, Control Room Habitability, and Section 16, Technical Specifications, for the Levy Nuclear Plant, Units 1 and 2, Combined License Application" (ML15133A302).

2) Letter from Christopher M. Fallon (DEF) to U.S. Nuclear Regulatory Commission (NRC), dated March 26, 2015, "Response to Request for Additional Information Letter No. 122 Related to SRP Section 6.4, Control Room Habitability," Serial: NPD-NRC-2015-003 (ML15089A193)

Ladies and Gentlemen:

Duke Energy Florida, Inc. (DEF) hereby submits our response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in Reference 1. Question 06.04-5 is addressed in Enclosure 1 to this letter. Attachment A to Enclosure 1 contains the non-proprietary version of the response and Attachment B to Enclosure 1 contains the proprietary version of the response. DEF's response to question 16-3 is addressed in Enclosure 2 to this letter. Attachment A to Enclosure 2 contains the non-proprietary version of the response and Attachment B to Enclosure 2 contains the proprietary version of the response.

This response modifies previously proposed Technical Specification and Final Safety Analysis Report changes that were provided in Reference 2. The modified changes are shown in Enclosure 1 and Attachment C to Enclosure 2. These changes will be included in a future update of the LNP COLA.

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-15-4242, accompanying Affidavit, Proprietary Information Notice, and Copyright Notice. (Enclosures 3 and 4)

As Attachment B to Enclosures 1 and 2 contain information proprietary to Westinghouse Electric Company LLC, they are supported by an Affidavit signed by Westinghouse, the owner of the

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information. The Affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.390 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse Affidavit should reference CAW-15-4242 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

If you have any further questions, or need additional information, please contact Bob Kitchen at (704) 382-4046, or me at (704) 382-9248.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 17, 2015.

Sincerely,

Christopher M. Fallon

Christopher M. Fallon
Vice President
Nuclear Development

Enclosures/Attachments:
1. LNP Response to NRC RAI Letter No. 126, Question 06.04-5
   A. Response to NRC RAI Question 06.04-5 (Non-Proprietary)
   B. Response to NRC Question 06.04-5 (Proprietary)
2. LNP Response to NRC RAI Letter No. 126, Question 16-3
   A. Response to NRC RAI Question 16-3 (Non-Proprietary)
   B. Response to NRC RAI Question 16-3 (Proprietary)
   C. Associated LNP COLA Revisions
3. Westinghouse Application Letter CAW-15-4242 and Affidavit
4. Proprietary Information Notice and Copyright Notice

cc (w/o enclosures): U.S. NRC Region II, Regional Administrator
cc (w/ enclosures): Mr. Donald Habib, U.S. NRC Project Manager

Levy Nuclear Plant Units 1 and 2 (LNP)
Response to NRC Request for Additional Information Letter No. 126 Related to Standard Review Plan Sections 6.4, Control Room Habitability System, and 16, Technical Specifications, dated May 13, 2015

NRC RAI #	Duke Energy RAI #	Duke Energy Response
06.04-5	L-1130	Response enclosed – see following pages

NRC Letter No.: LNP-RAI-LTR-126

NRC Letter Date: May 13, 2015

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 06.04-5

Text of NRC RAI:

Table 16.3.2 of the FSAR specifies Short Term Availability Controls (AC) 2.6 for long term cooling of the main control room (MRC). AC 2.6 specifies availability controls and surveillance requirements for the non-safety related MCR ancillary fans. As discussed in the Bases for the AC, the MCR ancillary fans are used to circulate ambient air through the MCR to provide cooling after 3 days following an accident. On page 8 of Enclosure 4 with your letter dated March 26, 2015 (Serial No. NPD-NRC-2015-003) you propose adding a new section (9.4.1.2.3.1) to the FSAR which states that the limits on temperature and humidity for which MCR ancillary fans must operate are shown in Figure 3D.5-1. Currently, Figure 3D.5-1 is incorporated into the FSAR by reference to the certified AP1000 design with no departures or supplements. However, it is stated on page 3 of Enclosure 4 with your letter dated March 26, 2015 (Serial No. NPD-NRC-2015-003) that FSAR Appendix 3D will be revised to add a departure from the certified design in which Figure 3D.5-1 is replaced by Figure 3D-201 (provided in Enclosure 4 to the above referenced letter) that contains revised limits on temperature and humidity for which MCR ancillary fans must operate. These two proposed changes to the FSAR are not consistent. Please clarify the temperature and humidity limits you are proposing for the MCR ancillary fans (those in Figure 3D.5-1 or those in Figure 3D-201).

The limits shown in Figure 3D-201 suggest that MCR conditions in the Post-72 period following an accident could reach 115°F dry bulb temperature with 35% relative humidity (RH). In this regard, please provide the following and include a reference to this information:

1. The analysis which shows maximum expected temperature and RH conditions in the MCR in the Post-72 period following an accident, including the assumed heat load and a description of the calculational model (including methods and assumptions)

2. The estimated stay time in the control room for operators to perform light work for the bounding temperature and humidity conditions and the technical bases for the estimate.

DEF RAI ID#: L-1130

DEF Response to NRC RAI:

See Attachment A for the non-proprietary, redacted version of the response to NRC RAI 06.04-5.

See Attachment B for the proprietary version of the response to NRC RAI 06.04-5.

Associated LNP COL Application Revision:

1. COLA Part 2, FSAR Chapter 9, will be revised to add new Subsection 9.4.1.1.2, with a LMA of LNP DEP 6.4-2, to read:

   9.4.1.1.2 Power Generation Design Basis

   Post-72-Hour Design Basis

   Main Control Room

   Revise the first paragraph of DCD Subsection 9.4.1.1.2, Post-72-Hour Design Basis Main Control Room section, to read as follows:

   The specific function of the nuclear island nonradioactive ventilation system is to maintain the main control room below the limits shown in Figure 3D-201 based on operation at the maximum normal site ambient temperature.

2. COLA Part 2, FSAR Chapter 9, will be revised to add new Subsection 9.4.1.2.3.1, Abnormal Plant Operation section, with a LMA of LNP DEP 6.4-2, to read:

   9.4.1.2.3.1 Main Control Room/Control Support Area HVAC Subsystem

   Abnormal Plant Operation

   Revise the eighth paragraph of DCD Subsection 9.4.1.2.3.1, Abnormal Plant Operation to read as follows:

   When complete ac power is lost and the outside air is acceptable radiologically and chemically, MCR habitability is maintained by operating one of the two MCR ancillary fans to supply outside air to the MCR. It is expected that outside air will be acceptable within 72 hours following a radiological release. See subsection 6.4.2.2 for details. The outside air pathway to the ancillary fans is provided through the nonradioactive ventilation system air intake opening located on the roof, the mechanical room at floor elevation 135′-3″, and nonradioactive ventilation system supply duct. Warm air from the MCR is vented to the annex building through stairway S05, into the remote shutdown room and the clean access corridor at elevation 100′-0″. The ancillary fan capacity and air flow rate maintain the MCR environment below the limits shown in Figure 3D-201 based on operation at the maximum normal site ambient temperature. The ancillary fans and flow path are located within the auxiliary building which is a Seismic Category I structure.

Attachments to Response to NRC:

A. Non-proprietary version of the response to NRC RAI 06.04-5.

B. Proprietary version of the response to NRC RAI 06.04-5.

Attachment A
Response to NRC RAI Question 06.04-5 (Non-Proprietary)

Response Information:

Please clarify the temperature and humidity limits you are proposing for the MCR ancillary fans (those in Figure 3D.5-1 or those in Figure 3D-201.

Figure 3D.5-1, shown in Enclosure 3 of the letter dated March 26, 2015 (Serial No. NPD-NRC-2015-003) is the proposed change to the current Figure 3D.5-1 in Design Control Document, Revision 19. Figure 3D-201, shown in Enclosure 4 of the letter dated March 26, 2015 (Serial No. NPD-NRC-2015-003) is the proposed change to Figure 3D.201 in the Levy COL Application.

The maximum temperature and relative humidity limits anticipated during ancillary fan operation are shown on FSAR Figure 3D-201 or DCD Figure 3D.5.1.

Section 9.4.1.2.3.1 of the FSAR will be updated to state:
"The ancillary fan capacity and air flow rate maintain the MCR environment below the limits shown in Figure 3D-201 based on operation at the maximum normal site ambient temperature."

Response to Question 1

The AP1000 plant main control room (MCR) heat up was modeled with the GOTHIC code using 3-dimensional subnodalized modeling of the MCR control area and break area. [

]$^{(a,c)}$ The VES system was actuated and heat loads in the MCR were shed according to the load shedding strategy described in the response to NRC RAI Number 06.04-4.

It is expected that the onsite nonsafety-related normal HVAC system (VBS) will be operational before the installed compressed air supply is exhausted. If VBS is unavailable after the compressed air supply is exhausted, one of the VBS ancillary fans can be moved into the Main Control Room (MCR) and energized to maintain habitability. Each of these fans is sized to keep the MCR near the ambient external temperature. Though the passive heat sinks continue to provide some cooling the MCR could exceed 95°F based on outdoor conditions.

The MCR GOTHIC analysis extends the 72-hr model to analyze the MCR for Post-72 hour conditions. All heat loads present at 72 hours are continued for the Post-72 hour analysis. [

] $^{(a,c)}$ This assumes sensible heating of the maximum normal site temperature air (maximum normal ambient is 101°Fdry bulb/80.1°Fwet bulb, per FSAR Table 2-1 (Sheet 1 of 4)). [

] $^{(a,c)}$

[a,c

]

While the analysis supports the proposed changes to the licensing basis, conservative assumptions are used to facilitate the analysis. Therefore, best estimate MCR temperatures are expected to be lower. [

.] (a,c)

Further, the analysis assumes only the VBS ancillary fans are available to cool the MCR. As stated in Tier II, Section 1.9.3, (2)(xxviii) and Section 9.4.1 of the FSAR, it is expected that VBS and supporting systems would be available and powered by the standby diesel system before the compressed air is exhausted.

Beyond 7 days, it is assumed that, if the VBS is still not operable, offsite support is available to extend habitability system operations.

[

.] (a,c)

Response to Question 2

[

.] (a,c)

(a,c)

[

]

Levy Nuclear Plant Units 1 and 2 (LNP)
Response to NRC Request for Additional Information Letter No. 126 Related to Standard Review Plan Sections 6.4, Control Room Habitability System, and 16, Technical Specifications, dated May 13, 2015

NRC RAI #	Duke Energy RAI #	Duke Energy Response
16-3	L-1132	Response enclosed – see following pages

NRC Letter No.: LNP-RAI-LTR-126

NRC Letter Date: May 13, 2015

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 16-3

Text of NRC RAI:

10 CFR 50.36, "Technical Specifications;" and 10 CFR 52.97, "Issuance of Combined Licenses;" and Section VIII.B.5.a of Appendix D, "Design Certification of AP1000 Design," provide the regulatory basis for the following questions. 10 CFR 50.36 sets forth requirements for technical specifications to be included as part of the operating license for a nuclear power facility. Subsection 52.97(a)(1) applies because the Commission must have sufficient information to find that applicable NRC regulations have been met. Section VIII.B.5.a of Appendix D to 10 CFR Part 52 applies as it relates to controls of changes to the generic technical specifications.

NUREG-1431, "Standard Technical Specifications Westinghouse Plants," provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements.

In the response to RAI 122, Question 06.04-4, in its letter dated March 26, 2015, Duke Energy Florida proposed a change to the design of the main control room emergency habitability system (VES) to address the main control room (MCR) heat-up issue that was identified by Westinghouse and communicated to the staff at a public meeting held on July 23, 2014 (see ML14192A803 and ML14220A113). The proposed VES design change includes adding two new load-shed panels which will automatically de-energize selected non-Class 1E loads in the main control room envelope in conjunction with the actuation of the VES safety function.

As part of this design change, the applicant proposed to revise TS 3.7.6, "Main Control Room Emergency Habitability System," and its associated Bases. The staff requests clarification of the following proposed changes or an explanation as to why the changes are not necessary, as appropriate:

1. The applicant proposed new Condition B, which states "One or more MCR load-shed panel(s) inoperable with load-shed function maintained," with Required Action B.1, which states "Restore MCR load-shed panel(s) to OPERABLE status" with a Completion Time of 7 days.

Staff found that proposed Condition B and the proposed Bases discussion of Required Action B.1 are not consistent with guidance of NUREG-1431. Specifically, the level of degradation of redundant equipment within a load-shed panel or among load-shed panels should be clearly and fully described in the Bases for Required Action B.1. The applicant is requested to explain how the proposed design allows one or more MCR load-shed panel(s) to be inoperable while still maintaining the automatic load-shed function, including the various specific component failures which can make a load-shed panel inoperable. The applicant is requested to revise the Bases to describe how the automatic load-shed function can be maintained with two load-shed panels inoperable, and make appropriate changes to Condition B to exclude this case if the function cannot be maintained. In that case, the condition should be addressed by Condition G or H (as renumbered) depending on the operational Mode of the unit at the time. It should be noted that failure of related VES actuation instrumentation is addressed in TS 3.3.2, "ESFAS Instrumentation," Table 3.3.2-1, Function 20, "Main Control Room Isolation and Air Supply Initiation," Function 25, "ESF Logic," and Function 26, "ESF Actuation."

2. The applicant proposed new Condition D, which states "One or more required air temperature limits not maintained," with Required Action D.1, which states "Restore required air temperature to within limits" with a Completion Time of 24 hours.

The applicant is requested to rephrase proposed Condition D for clarity, and also for consistency with Condition C (as renumbered), which states, "MCRE air temperature not within limit," as follows: "One or more specified rooms with air temperature not within limit." The applicant is also requested to rephrase proposed Required Action D.1 for clarity, and also for consistency with Required Action C.1 (as renumbered), which states, "Restore MCRE air temperature to within limit," as follows: "Restore air temperature of affected specified rooms to within limit." For consistency with proposed new SR 3.7.6.3 and SR 3.7.6.4, which specify "average air temperature," the applicant is also requested to replace "air temperature" with "average air temperature" in Conditions C and D, and Required Actions C.1 and D.1.

3. The applicant proposed new SR 3.7.6.3, which states "Verify the average air temperature of rooms 12201, 12202, 12203, 12204, 12205, 12207, 12300, 12301, 12302, 12303, 12304, 12305, 12313, and 12412 is ≤ 85°F" with a Frequency of 24 hours.

The staff noted that rooms 12201, 12202, 12203, 12204, 12205, and 12207 are on a floor which is not adjacent to the MCRE (Room 12401). The applicant is requested to explain why these rooms are included in SR 3.7.6.3.

4. The applicant proposed adding a sixth paragraph to the "Background" section in the Bases for TS 3.7.6, which states "The initial air average temperature in rooms 12201, 12202, 12203, 12204, 12205, 12207, 12300, 12301, 12302, 12303, 12304, 12305, 12313, and 123412 which surround the MCRE is assumed to be ≤ 85°F. The initial air average temperature in room 12501 is also assumed to be ≤ 85°F. Temperature control of the other rooms adjacent to the MCRE is not required."

The applicant is requested to identify those other rooms adjacent to the MCRE where it asserts that no control of average air temperature is needed to support VES operability, and provide the technical basis for this assertion that justifies not including them in proposed SR 3.7.6.3.

The applicant is also requested to replace the phrase "air average temperature" with "average air temperature" throughout the Bases, for consistency with phrasing used elsewhere in the proposed plant-specific TS and Bases.

The applicant is also requested to further revise the above quoted proposed new sixth paragraph as shown by the following markup; where "{...}" indicates that the applicant should provide additional information:

> The initial average **air** temperature in rooms which surround the MCRE is assumed to be ≤ 85°F. **The numerical designators of these rooms are 12201, 12202, 12203, 12204, 12205, 12207, 12300, 12301, 12302, 12303, 12304, 12305, 12313, and 12412**. The initial average **air** temperature in room 12501 is also assumed to be ≤ 85°F. Temperature control of the other rooms adjacent to the MCRE is not required **because {...}. The numerical designators of these rooms are {...}.**

5. The applicant proposed revising the Bases for SR 3.7.6.1 to suggest the use of continuously-monitored temperature in the return-air duct during the conduct of SR activities.

The staff noted that the term "average" is not used in SR 3.7.6.1 for the MCRE air temperature, and the MCRE (Room 12401) consists of four different individual rooms with doors. The applicant is requested to revise the Bases to explain how the average air temperature is determined for the MCRE.

The Bases for SR 3.7.6.1 state: "The surveillance limit of 75°F is the [VBS] return air temperature assumed in the VES thermal analysis." The applicant is requested to explain why the MCRE average temperature limit, which is an indication of the heat content of the MCRE, which provides the MCR heat sink, is not used.

6. A new discussion is added to the Bases for new SR 3.7.6.3 mentioned in Item 3 above.

The applicant is requested to provide further clarification on how the average air temperature will be determined, and how the acceptance criterion of ≤ 85°F will be applied for each of the listed rooms.

7. The applicant proposed changes to the "Background" section of the Bases for TS 3.7.6 with the addition of proposed new seventh, eighth, ninth, and tenth paragraphs.

For clarity and improved operator usability, the applicant is requested to revise the seventh paragraph, as shown in the following markup, and explain in an appropriate location in the FSAR the technical basis for only requiring that the "occupied portion of the [main control] room remains within habitable limits for 72 hours" and why MCRE habitability should not require that all accessible areas in the MCRE satisfy the MCR average air temperature limits, and not just a 7-foot thick layer above the raised floor adjacent to the various operator soft control panel stations.

> Non-essential, non-safety MCR heat loads are de-energized by the PMS VES actuation signal, **which is generated by the** "Main Control Room Isolation, Air Supply Initiation, and Electrical Load De-energization,"**ESFAS function,** to ensure that the occupied portion of the **MCR** remains within habitable limits for 72 hours.

For clarity and improved operator usability, the applicant is requested to revise the proposed new eighth and ninth paragraphs, as shown in the following markup, and make technical corrections to any of these staff proposed changes that are not accurate.

> Component interface modules (CIMs) in PMS Divisions A and C are provided to **energize redundant relays in each of the** two **safety-related** electrical panels (APP-VES-EP-01 and APP-VES-EP-02)**; energizing one relay in each panel will disconnect non-safety related electrical power to all non-safety electrical loads in the MCRE. Upon VES actuation in one PMS division, the CIM energizes the associated relay in each of** the two **safety related** electrical panels. **Energizing just one relay in one** panel deenergizes non-safety loads **associated only with that panel**. De-energized **non-safety** loads are separated into stage 1 and stage 2 to maximize the availability of the non-safety related wall panel information system which is de-energized with stage 2 loads. Timers **and associated relays, which cause** stage 1and stage 2 **non-safety** load deenergization, are internal to each **safety-related load shed** panel. Stage 1 loads are de-energized by both panels immediately after the timers in each panel receive the PMS VES actuation signal. Stage 2 loads are de-energized by both panels within 180 minutes after the timers in each panel receive the PMS VES actuation signal.

To ensure that the logical design of the load shed function is adequately described by the proposed new tenth paragraph, the applicant is requested to submit a logic diagram that depicts how de-energization of all MCR non-safety related loads would be accomplished, with the Class 1E Instrument and Control distribution panel for PMS Division A inoperable (i.e., de-energized), upon one channel of the Main Control Room Air Supply Iodine or Particulate Radiation – High 2 ESFAS Function exceeding its trip setpoint. The logic diagram should also be able to explain how de-energization of all MCR non-safety related loads would be accomplished with PMS I&C Division B or C inoperable

DEF RAI ID#: L-1132

DEF Response to NRC RAI:

See Attachment A for the non-proprietary, redacted version of the response to NRC RAI 16-3.

See Attachment B for the proprietary version of the response to NRC RAI 16-3.

Associated LNP COL Application Revision:

See Attachment C.

Attachments to Response to NRC:

A. Non-proprietary version of the response to NRC RAI 16-3.

B. Proprietary version of the response to NRC RAI 16-3.

C. Associated LNP COLA Revision.

Attachment A
Response to NRC RAI Question 16-3 (Non-Proprietary)

Response Information:

1) The Bases for Required Action B.1 is modified to clearly and fully describe the level of degradation of redundant equipment within a load shed panel or among load shed panels, and how the load shed function can be maintained with a PMS division inoperable, Proposed changes to the Bases are shown on Mark-ups provided at the end of the responses in Appendix A.

A logical schematic showing both how the "Main Control Room Isolation, Air Supply Initiation, and Electrical Load De-energization" ESFAS signal can be generated, and how the full load shed function is accomplished with all PMS divisions operable is shown below in Figure 1. Figures 2 through 4 provide the schematic with one PMS division inoperable. Proposed changes to UFSAR Section 6.4.2.3 by NRC RAI Number 06.04-4 (DEF Letter NPD-NRC-2015-003) provide more information.

Note that for simplicity the load sheds in the Figures are not separated into Stage 1 and Stage 2.

[a,c]

Generated through any of the means shown above, the "MCR Isolation, Air Supply Initiation, and Electrical Load De-energization" ESFAS signal energizes redundant relays controlled by PMS Divisions A & C in each panel, executing the load shed as shown above in Figure 1.

[a,c]

If PMS Division A were inoperable, the ESFAS signal would still be generated by available means, energizing relays controlled by PMS Division C in each panel, and executing the load shed as shown above in Figure 2.

[a,c]

If PMS Division B were inoperable, the ESFAS signal would still be generated by available means, energizing redundant relays controlled by PMS Divisions A & C in each panel, and executing the load shed as shown above in Figure 3.

[a,c]

If PMS Division C were inoperable, the ESFAS signal would still be generated by available means, energizing relays controlled by PMS Division A in each panel, and executing the load shed as shown above in Figure 4.

2) SR 3.7.6.3 is revised to remove references to average temperatures. The purpose of the Surveillance Requirements is to ensure conservative assumptions made for initial room temperatures in the analysis of the VES passive heat sink are not exceeded. Therefore, the discrete measurements and limits specified in the Surveillance Requirements are adequate. Averaging temperatures is not required. As a result, Technical Specification 3.7.6 Condition D and Required Action D.1 are revised for clarity and consistency between Condition C, Required Action C.1, SR 3.7.6.1, and SR 3.7.6.3. The proposed changes are shown on mark-ups provided in Appendix A.

   Furthermore, MCRE air temperatures monitored for entry to Condition C are not average values. See the response to Question 5 for explanation.

   Note that while the overall list of rooms requiring temperature monitoring has not changed from the previous submittal, all rooms requiring temperature monitoring have been consolidated under SR 3.7.6.3, and SR 3.7.6.4 has been removed. See the response to Question 6 for further explanation of room temperature monitoring.

3) In addition to the MCRE, the VES passive heat sinks are responsible for limiting temperature increase in instrumentation and control rooms and dc equipment rooms. Therefore temperature monitoring is required for all of these rooms. In addition, temperature monitoring is conservatively established for some rooms adjacent.

   Numerical designators for all rooms in the VES passive heat sinks model that require temperature monitoring, the rooms that do not require temperature monitoring, and justification for why some rooms do not require monitoring, is proposed to be added to the Bases Background. Additional detail is provided below in Question 4. A mark-up is provided in Appendix A.

4) Listed below are the volumes surrounding the MCRE, whose air temperatures are not included in the surveillance requirements. The temperature ranges expected in these rooms during normal operation are bounded by conservative assumptions made for initial room temperatures. The basis for initial temperature assumptions made for these volumes are discussed below. [a,c]

   [

   ]

   The numerical designators of additional unmonitored corridors without significant heat loads are 12211, 12311, and Stairwells.

The numerical designators of unmonitored rooms that are conservatively selected to match the outdoor ambient or do not have an appreciable impact on the analyses are 12212, 12213, 12306, 12312, 12406, 12504, 12505, 12506, and Level 1 rooms.

As proposed in mark-ups provided in Appendix A, the TS Bases Background section is modified to provide numerical designation and logic behind rooms not under surveillance.

5) SR 3.7.6.1 serves to verify that the actual MCRE temperature is below the initial temperature assumed for VES thermal analyses. [

]$^{(a,c)}$

6) While the overall list of rooms requiring temperature monitoring has not changed from the previous submittal, rooms monitored by exclusive temperature elements and those monitored by temperature elements in return air ducting are consolidated under SR 3.7.6.3. SR 3.7.6.4 has been removed.

The SR air temperature acceptance criterion of ≤ 85°F is imposed on all required rooms individually. The temperature elements in return air ducting shared by two rooms do not average or otherwise adjust the value reported. [

.]$^{(a,c)}$ See UFSAR Section 9.4.1.2 for further explanation of VBS design.

7) As proposed in mark-ups provided in Appendix A, the TS background discussion is modified to address NRC comments. The requirement that the occupied portion of the MCR remains within habitable limits has been modified to state the MCRE will remain within habitable limits. The VBS return air temperature monitored for SR 3.7.6.1 is assumed to be representative of the maximum temperature throughout the MCRE, not just the occupied portion, so the change in wording is accurate.

Logic diagrams are provided with response to Question 1.

Note that, for consistency with other Technical Specifications, 24 month Frequency SRs were compiled last in the order for TS 3.7.6. No changes to the wording of these SRs or bases is proposed other than associated numbering changes.

Appendix A

Proposed Changes to TS 3.7.6

3.7 PLANT SYSTEMS

3.7.6 Main Control Room Emergency Habitability System (VES)

LCO 3.7.6 The VES shall be OPERABLE.

- NOTE -

The main control room envelope (MCRE) boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4,
During movement of irradiated fuel assemblies.

ACTIONS

- NOTE -

LCO 3.0.8 is not applicable.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One valve or damper inoperable.	A.1	Restore valve or damper to OPERABLE status.	7 days
B.	One or more divisions of one or more MCR Load Shed Panel(s) inoperable with load shed function maintained.	B.1	Restore all divisions of MCR Load-shed panels to OPERABLE status.	7 days
C.	MCRE air temperature not within limit.	C.1	Restore MCRE air temperature to within limit.	24 hours
D.	Air temperature in one or more required rooms not within limit.	D.1	Restore air temperature of required room(s) to within limit.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. VES inoperable due to inoperable MCRE boundary in MODE 1, 2, 3, or 4.	E.1	Initiate action to implement mitigating actions.	Immediately
	AND		
	E.2	Verify mitigating actions ensure MCRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND		
	E.3	Restore MCRE boundary to OPERABLE status.	90 days
F. One bank of VES air tanks (8 tanks) inoperable.	F.1	Verify that the OPERABLE tanks contain greater than 245,680 scf of compressed air.	2 hours AND Once per 12 hours thereafter
	AND		
	F.2	Verify VBS MCRE ancillary fans and supporting equipment are available.	24 hours
	AND		
	F.3	Restore VES to OPERABLE status.	7 days
G. Required Action and associated Completion Time of Conditions A, B, C, D, E, or F not met in MODE 1, 2, 3, or 4. OR VES inoperable for reasons other than	G.1	Be in MODE 3.	6 hours
	AND		
	G.2	Be in MODE 5.	36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Conditions A, B, C, D, E, or F in MODE 1, 2, 3, or 4.		
H. Required Action and associated Completion Time of Conditions A, B, C, D, E, or F not met during movement of irradiated fuel. OR VES inoperable for reasons other than Conditions A, B, C, D, E, or F during movement of irradiated fuel. OR VES inoperable due to inoperable MCRE boundary during movement of irradiated fuel.	H.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.6.1	Verify MCRE air temperature is ≤ 75°F.	24 hours
SR 3.7.6.2	Verify that the compressed air storage tanks contain greater than 327,574 scf of compressed air.	24 hours
SR 3.7.6.3	Verify the air temperatures of required rooms are ≤ 85°F.	24 hours
SR 3.7.6.4	Operate VES for ≥ 15 minutes.	31 days
SR 3.7.6.5	Verify that each VES air header manual isolation valve is in an open position.	31 days
SR 3.7.6.6	Verify that the air quality of the air storage tanks meets the requirements of Appendix C, Table C-1 of ASHRAE Standard 62.	92 days
SR 3.7.6.7	Verify that each VES air delivery isolation valve is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.8	Verify that each VES pressure relief isolation valve within the MCRE pressure boundary is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.9	Verify that the self-contained pressure regulating valve in each VES air delivery flow path is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.10	Perform required MCRE unfiltered air inleakage testing in accordance with the Main Control Room Envelope Habitability Program.	In accordance with the Main Control Room Envelope Habitability Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.6.11	Perform required VES Passive Filtration system filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.6.12	Verify the MCR load shed function actuates upon receipt of an actual or simulated actuation signal.	24 months
SR 3.7.6.13	Verify that all MCRE isolation valves are OPERABLE and will close upon receipt of an actual or simulated actuation signal.	24 months
SR 3.7.6.14	Verify that each VES pressure relief damper is OPERABLE.	24 months

B 3.7 PLANT SYSTEMS

B 3.7.6 Main Control Room Emergency Habitability System (VES)

BASES

BACKGROUND The Main Control Room Emergency Habitability System (VES) provides a protected environment from which operators can control the plant following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The system is designed to operate following a Design Basis Accident (DBA) which requires protection from the release of radioactivity. In these events, the Nuclear Island Non-Radioactive Ventilation System (VBS) would continue to function if AC power is available. If AC power is lost or a High iodine or particulate Main Control Room Envelope (MCRE) radiation signal is received, the VES is actuated. The major functions of the VES are: 1) to provide forced ventilation to deliver an adequate supply of breathable air (Ref. 4) for the MCRE occupants; 2) to provide forced ventilation to maintain the MCRE at a 1/8 inch water gauge positive pressure with respect to the surrounding areas; 3) provide passive filtration to filter contaminated air in the MCRE; and 4) to limit the temperature increase of the equipment and facilities that must remain functional during an accident, via de-energizing (load shedding) non-essential, non-safety main control room (MCR) electrical equipment (e.g., wall panel information system displays, office equipment, water heater, kitchen appliances, and non-emergency lighting) and the heat absorption of passive heat sinks. The VES limits the maximum temperature in DC Equipment Rooms (12201, 12203, 12205, and 12207), I&C rooms (12301, 12302, 12304, and 12305), as well as the MCRE.

The VES consists of compressed air storage tanks, two air delivery flow paths, an eductor, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), associated valves or dampers, piping, and instrumentation. The tanks contain enough breathable air to supply the required air flow to the MCRE for at least 72 hours. The VES system is designed to maintain CO_2 concentration less than 0.5% for up to 11 MCRE occupants.

The MCRE is the area within the confines of the MCRE boundary that contains the spaces that control room operators inhabit to control the unit during normal and accident conditions. This area encompasses the main control area, operations work area, operational break room, shift supervisor's office, kitchen, and toilet facilities (Ref. 1). The MCRE is protected during normal operation, natural events, and accident conditions. The MCRE boundary is the combination of walls, floor, roof, electrical and mechanical penetrations, and access doors. The OPERABILITY of the MCRE boundary must be maintained to ensure that the inleakage of unfiltered air into the MCRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to MCRE occupants. The MCRE and its boundary are defined in the Main Control Room Envelope Habitability Program.

BASES

BACKGROUND (continued)

The VES also provides emergency passive heat sinks for the main control room (Room 12401), instrumentation and control rooms (Rooms 12301, 12302, 12304, and 12305), and dc equipment rooms (Rooms 12201, 12202, 12203, 12204, 12205, and 12207). Provided air temperatures in the rooms requiring monitoring are within their Surveillance Requirement limits, the VES passive heat sinks limit the temperature rise inside each room during the 72-hour period following VES actuation. Heat sources inside the MCRE include operator workstations, emergency lighting and occupants.

During normal operation, temperatures in the main control room, instrumentation and control rooms, dc equipment rooms, Class 1E electrical penetration rooms, and adjacent rooms are maintained within a specified range by the VBS. As described in Section 9.4.1.2, the VBS consists of independent subsystems, including the main control room / control support area HVAC subsystem and the Class 1E Electrical Room HVAC subsystem. The Class 1E Electrical room HVAC subsystem is further divided into two independent subsystems, with one serving the Division A & C Class 1E electrical division rooms and the other serving Division B & D Class 1E electrical division rooms. Each independent subsystem serves its associated rooms with two redundant, 100 percent capacity equipment trains, maintaining temperatures within the specified range.

Surveillance limits are required for rooms which have limits on allowable temperature increase, and conservatively established for some adjacent rooms of the VES passive heat sinks. Monitoring the air temperature is required for the rooms with the following numerical designators: 12201, 12202, 12203, 12204, 12205, 12207, 12300, 12301, 12302, 12303, 12304, 12305, 12313, 12401, 12412, and 12501.

Initial temperatures assumed for remaining rooms in the VES passive heat sinks are selected to maximize operational flexibility in responding to abnormal conditions or equipment failures, while still maintaining sufficient margin below safety analysis limits.

Access corridors, stairwells, rooms separated by an air gap, and other rooms without significant heat loads are not monitored because these areas do not contain significant heat sources and their temperatures are assumed to match the connected spaces. The numerical designators for these unmonitored rooms are 12211, 12311, 12400, 12405, 12411, 21480, 40400, and Stairwells.

Initial temperatures assumed for remaining rooms are conservatively selected to match the outdoor ambient or do not have an appreciable impact on the analyses. The numerical designators of these unmonitored rooms are 12212, 12213, 12306, 12312, 12404, 12406, 12504, 12505, 12506, and Level 1 rooms.

Non-essential, non-safety MCR heat loads are de-energized by the PMS VES actuation signal, which is generated by the "Main Control Room Isolation, Air Supply Initiation and Electrical Load De-energization" ESFAS function, to maintain the MCRE within habitable limits for 72 hours.

BASES

BACKGROUND (continued)

Upon receipt of a "Main Control Room Isolation, Air Supply Initiation and Electrical Load De-energization" ESFAS signal, PMS Divisions A and C energize associated redundant relays in each of the two safety-related electrical panels (VES-EP-01 and VES-EP-02). Energizing one set of relays in each panel disconnects non-safety related electrical power to the non-safety electrical loads in the MCRE. Energizing just one set of relays in one panel de-energizes non-safety loads associated only with that panel

De-energized non-safety loads are separated into stage 1 and stage 2 to maximize the availability of the non-safety related wall panel information system which is de-energized with stage 2 loads. Timers and associated relays, which actuate to de-energize the stage 1 and stage 2 non-safety loads, are internal to each safety-related load shed panel. Stage 1 loads are de-energized by both panels immediately after the timers in each panel receive the PMS VES system actuation signal. Stage 2 loads are de-energized by both panels within 180 minutes after the timers in each panel receive the "Main Control Room Isolation, Air Supply Initiation, and Electrical Load De-energization" ESFAS signal.

OPERABILITY of two redundant divisions of MCR Class 1E load shed relays and timers located in two safety-related panels is required to meet the single failure criteria. Each panel contains redundant load shed relays and timers actuated by the two PMS divisions, such that actuation of either division de-energizes the required loads.

In the unlikely event that power to the VBS is unavailable for more than 72 hours, MCRE habitability is maintained by operating one of the two MCRE ancillary fans to supply outside air to the MCRE.

The compressed air storage tanks are initially filled to contain greater than 327,574 scf of compressed air. The compressed air storage tanks, the tank pressure, and the room temperature are monitored to confirm that the required volume of breathable air is stored. During operation of the VES, a self-contained pressure regulating valve maintains a constant downstream pressure regardless of the upstream pressure. An orifice downstream of the regulating valve is used to control the air flow rate into the MCRE. The MCRE is maintained at a 1/8 inch water gauge positive pressure to minimize the infiltration of airborne contaminants from the surrounding areas. The VES operation in maintaining the MCRE habitable is discussed in Reference 1.

BASES

APPLICABLE SAFETY ANALYSES

The compressed air storage tanks are sized such that the set of tanks has a combined capacity that provides at least 72 hours of VES operation.

Operation of the VES is automatically initiated by the following safety related signal: high particulate or iodine radioactivity.

In the event of a loss of all AC power, the VES functions to provide ventilation, pressurization, and cooling of the MCRE pressure boundary.

In the event of a high level of gaseous radioactivity outside of the MCRE, the VBS continues to operate to provide pressurization and filtration functions. The MCRE air supply downstream of the filtration units is monitored by a safety related radiation detector. Upon high particulate or iodine radioactivity setpoint, a safety related signal is generated to isolate the MCRE and to initiate air flow from the VES storage tanks. Isolation of the MCRE consists of closing safety related valves in the lines that penetrate the MCRE pressure boundary. Valves in the VBS supply and exhaust ducts, and the Sanitary Drainage System (SDS) vent lines are automatically isolated. VES air flow is initiated by a safety related signal which opens the isolation valves in the VES supply lines.

The VES provides protection from smoke and hazardous chemicals to the MCRE occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the MCRE following a hazardous chemical release (Ref. 1). The evaluation of a smoke challenge demonstrates that it will not result in the inability of the MCRE occupants to control the reactor either from the control room or from the remote shutdown room (Ref. 2).

The VES functions to mitigate a DBA or transient that either assumes the failure of or challenges the integrity of the fission product barrier.

The VES satisfies the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

The VES limits the MCRE temperature rise and maintains the MCRE at a positive pressure relative to the surrounding environment.

Two air delivery flow paths are required to be OPERABLE to ensure that at least one is available, assuming a single failure.

The VES is considered OPERABLE when the individual components necessary to deliver a supply of breathable air to the MCRE are OPERABLE. This includes components listed in SR 3.7.6.5 through 3.7.6.14. In addition, the MCRE pressure boundary must be maintained, including the integrity of the walls, floors, ceilings, electrical and mechanical penetrations, and access doors. The MCRE pressure boundary includes the Potable Water System (PWS) and SDS running (piping drain) traps, which retain a fluid level sufficient to maintain a seal preventing gas flow through the piping. The MCRE pressure boundary also includes the Waste Water System (WWS) drain line, which is isolated by a normally closed isolation valve.

In order for the VES to be considered OPERABLE, the MCRE boundary must be maintained such that the MCRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analysis for DBAs, and that MCRE occupants are protected from hazardous chemicals and smoke.

BASES

LCO (continued)

The initial MCRE temperature (75°F), DC Equipment and I&C Rooms, and required room temperatures (≤85°F) are initial conditions required to both meet the maximum MCRE temperature limit 72 hours after VES actuation, and to maintain DC Equipment and I&C rooms below the equipment qualification temperature limit throughout the duration of the postulated accidents.

The LCO is modified by a Note allowing the MCRE boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the MCRE. This individual will have a method to rapidly close the opening and to restore the MCRE boundary to a condition equivalent to the design condition when a need for MCRE isolation is indicated.

All PMS divisions in the two safety-related electrical panels are required to be OPERABLE, so that non-safety stage 1 and stage 2 MCR heat loads can be de-energized by the VES system actuation signal within the required time. This maintains the MCR temperature within habitable limits.

APPLICABILITY

In MODES 1, 2, 3, and 4 and during movement of irradiated fuel assemblies, the VES must be OPERABLE to ensure that the MCRE will remain habitable during and following a DBA.

The VES is not required to be OPERABLE in MODES 5 and 6 when irradiated fuel is not being moved because accidents resulting in fission product release are not postulated.

BASES

ACTIONS

LCO 3.0.8 is applicable while in MODE 5 or 6. Since irradiated fuel assembly movement can occur in MODE 5 or 6, the ACTIONS have been modified by a Note stating that LCO 3.0.8 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, the fuel movement is independent of shutdown reactor operations. Entering LCO 3.0.8 while in MODE 5 or 6 would require the optimization of plant safety, unnecessarily.

A.1

When a VES valve, a VES damper, or a main control room boundary isolation valve is inoperable, action is required to restore the component to OPERABLE status. A Completion Time of 7 days is permitted to restore the valve or damper to OPERABLE status before action must be taken to reduce power. The Completion Time of 7 days is based on engineering judgment, considering the low probability of an accident that would result in a significant radiation release from the fuel, the low probability of not containing the radiation, and that the remaining components can provide the required capability.

B.1

If one or more divisions of MCR load shed panel(s) are inoperable, all divisions of the MCR load shed panels must be restored to OPERABLE status within 7 days. In this condition, the OPERABLE unaffected divisions of the panel(s) are capable of providing 100% of the load shed function.

A Completion Time of 7 days is permitted to restore both divisions of both panels to OPERABLE status before action must be taken to reduce power. The Completion Time of 7 days is based on engineering judgment, considering the low probability of an accident that would require VES actuation, and that the remaining panel divisions can provide the required load shed function.

As described in Subsection 6.4.2.3 of Ref.1, any component failure in a PMS division of the load shed panel(s) renders that division inoperable. If this failure affects only one PMS division, leaving the remaining division of PMS unaffected, including the associated power and control circuit, it renders the panel(s) inoperable, while still maintaining the full load shed function.

Automatic load shed function of the inoperable MCR load shed panel(s) is maintained as long as one complete division of PMS, including the associated power and control circuit, remains in-service in each panel. Note that the automatic load shed function is still maintained with different divisions of PMS in-service in each panel.

BASES

ACTIONS (continued)

B.1 (continued)

An event or action that impacts both PMS divisions in either panel does not maintain the full load shed function, and Condition G or H of LCO 3.7.6 would apply.

C.1

When the MCRE air temperature is outside the acceptable range during VBS operation, action is required to restore it to an acceptable range. A Completion Time of 24 hours is permitted based upon the availability of temperature indication in the MCRE. It is judged to be a sufficient amount of time allotted to correct the deficiency in the nonsafety ventilation system before shutting down.

D.1

When the air temperature in one or more of the rooms requiring temperature monitoring is not within the required limit, action is required to restore it to within the limit. A Completion Time of 24 hours is based on engineering judgment, considering the low probability of an accident that would require VES actuation under the worst case temperature conditions. It is judged to be a sufficient amount of time allotted to correct the deficiency in the non-safety ventilation system before shutting down.

BASES

ACTIONS (continued)

E.1, E.2, and E.3

If the unfiltered inleakage of potentially contaminated air past the MCRE boundary and into the MCRE can result in MCRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), or inadequate protection of MCRE occupants from hazardous chemicals or smoke, the MCRE boundary is inoperable. Actions must be taken to restore an OPERABLE MCRE boundary within 90 days.

During the period that the MCRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on MCRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that MCRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that MCRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable MCRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of MCRE occupants within analyzed limits while limiting the probability that MCRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the MCRE boundary.

BASES

ACTIONS (continued)

F.1, F.2, and F.3

If one bank of VES air tanks (8 tanks out of 32 total) is inoperable, then the VES is able to supply air to the MCRE for 54 hours (75% of the required 72 hours). If the VES is actuated, the operator must take actions to maintain habitability of the MCRE once the air in the tanks has been exhausted. The VBS supplemental filtration mode or MCRE ancillary fans are both capable of maintaining the habitability of the MCRE after 54 hours.

With one bank of VES air tanks inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the stored amount of compressed air in the remaining OPERABLE VES air tanks must be verified within 2 hours and every 12 hours thereafter to be at least 245,680 scf. The 245,680 scf value is 75 percent of the minimum amount of stored compressed air that must be available in the compressed air storage tanks. The standard volume is determined using the compressed air storage tank room temperature (VAS-TE-080A/B), compressed air storage tanks pressure (VES-PT-001A/B), and Figure B 3.7.6-2, Compressed Air Storage Tanks Minimum Volume – One Bank of VES Air Tanks (8 Tanks) Inoperable. Values above the 245,680 scf line in the figure meet the Required Action criteria.

Verification that the minimum volume of compressed air is contained in the OPERABLE compressed air storage tanks ensures a 54 hour air supply will be available if needed. Additionally, within 24 hours, the VBS ancillary fans are verified to be OPERABLE so that, if needed, can be put into use once the OPERABLE compressed air storage tanks have been exhausted. The Completion Times associated with these actions and the 7 day Completion Time to restore VES to OPERABLE are based on engineering judgment, considering the low probability of an accident that would result in a significant radiation release from the reactor core, the low probability of radioactivity release, and that the remaining components and compensatory systems can provide the required capability. The 54 hours of air in the remaining OPERABLE compressed air storage tanks, along with compensatory operator actions, are adequate to protect the main control room envelope habitability. Dose calculations verify that the MCRE dose limits will remain within the requirements of GDC 19 with the compensatory actions taken at 54 hours.

BASES

ACTIONS (continued)

G.1 and G.2

In MODE 1, 2, 3, or 4 if the Required Actions and Completion Times of Conditions A, B, C, D, E, or F are not met, or the VES is inoperable for reasons other than Conditions A, B, C, D, E, or F, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.

H.1

During movement of irradiated fuel assemblies, if the Required Actions and Completion Times of Conditions A, B, C, D, E, or F are not met, or the VES is inoperable for reasons other than Conditions A, B, C, D, E, or F, or the VES is inoperable due to an inoperable MCRE boundary, action must be taken immediately to suspend the movement of fuel. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

The MCRE air temperature is checked at a frequency of 24 hours to verify that the VBS is performing as required to maintain the initial conditions assumed in the safety analysis, and to ensure that the MCRE temperature will not exceed the required conditions after loss of VBS cooling. The surveillance limit of 75°F is the return air temperature assumed in the VES thermal analysis. The 24 hour Frequency is acceptable based on the availability of temperature indication in the MCRE.

SR 3.7.6.2

Verification every 24 hours that compressed air storage tanks contain greater than 327,574 scf of breathable air.

The standard volume is determined using the compressed air storage tank room temperature (VAS-TE-080A/B), compressed air storage tanks pressure (VES-PT-001A/B), and Figure B 3.7.6-1, Compressed Air Storage Tanks Minimum Volume. Values above the 327,574 scf line in the figure meet the surveillance criteria. Verification that the minimum volume of compressed air is contained in the compressed air storage tanks ensures that there will be an adequate supply of breathable air to maintain MCRE habitability for a period of 72 hours. The Frequency of 24 hours is based on the availability of pressure indication in the MCRE.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.6.3

Using indication from temperature elements in each room, the air temperatures in the following rooms are checked at a Frequency of 24 hours: 12202, 12204, 12300, 12303, 12313, 12412, and 12501.

Using indication from temperature elements located in shared return air ducting, the air temperatures in the following rooms are checked at a Frequency of 24 hours: 12201/12301, 12203/12302, 12205/12305, and 12207/12304.

This is done to verify that the VBS is performing as required to maintain the initial conditions assumed in the safety analyses, and to show that the VES heat sinks provide adequate thermal capacity to limit the temperature increase in the MCRE, DC Equipment Rooms, and I&C Rooms from exceeding the allowable limits after VES actuation. The surveillance limit of 85°F is below the initial temperature assumed in the analysis.

The 24 hour Frequency is acceptable based on the availability of automatic VBS temperature controls, alarms and indication in the MCRE. Air temperatures may also be verified using local measurement.

SR 3.7.6.4

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing VES once every month provides an adequate check of the system. The 31 day Frequency is based on the reliability of the equipment and the availability of system redundancy.

SR 3.7.6.5

VES air header isolation valves are required to be verified open at 31 day intervals. This SR is designed to ensure that the pathways for supplying breathable air to the MCRE are available should loss of VBS occur. These valves should be closed only during required testing or maintenance of downstream components, or to preclude complete depressurization of the system should the VES isolation valves in the air delivery line open inadvertently or begin to leak.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.6.6

Verification that the air quality of the air storage tanks meets the requirements of Appendix C, Table C-1 of ASHRAE Standard 62 is required every 92 days. If air has not been added to the air storage tanks since the previous verification, verification may be accomplished by confirmation of the acceptability of the previous surveillance results along with examination of the documented record of air makeup. The purpose of ASHRAE Standard 62 states: "This standard specifies minimum ventilation rates and indoor air quality that will be acceptable to human occupants and are intended to minimize the potential for adverse health effects." Verification of the initial air quality (in combination with the other surveillances) ensures that breathable air is available for 11 MCRE occupants for at least 72 hours.

SR 3.7.6.7

VES air delivery isolation valves are required to be verified as OPERABLE. The Frequency required is in accordance with the Inservice Testing Program.

SR 3.7.6.8

Verification that each VES pressure relief isolation valve within the MCRE pressure boundary is OPERABLE is required in accordance with the Inservice Testing Program. The SR is used in combination with SR 3.7.6.14 to ensure that adequate vent area is available to mitigate MCRE overpressurization.

SR 3.7.6.9

Verification of the OPERABILITY of the self-contained pressure regulating valve in each VES air delivery flow path is required in accordance with the Inservice Testing Program. This is done to ensure that a sufficient supply of air is provided as required, and that uncontrolled air flow into the MCRE will not occur.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.6.10

This SR verifies the OPERABILITY of the MCRE boundary by testing for unfiltered air inleakage past the MCRE boundary and into the MCRE. The details of the testing are specified in the Main Control Room Envelope Habitability Program.

The MCRE is considered habitable when the radiological dose to MCRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the MCRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the MCRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition C must be entered. Required Action C.3 allows time to restore the MCRE boundary to OPERABLE status provided mitigating actions can ensure that the MCRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3 (Ref. 3) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 5). These compensatory measures may also be used as mitigating actions as required by Required Action C.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 6). Options for restoring the MCRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the MCRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the MCRE boundary has been restored to OPERABLE status.

SR 3.7.6.11

This SR verifies that the required VES testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VES filter tests are in accordance with Regulatory Guide 1.52 (Ref. 7). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and physical properties of the activated charcoal. Specific test frequencies and additional information are discussed in detail in the VFTP.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.6.12

Verification that the MCR load shed function actuates on an actual or simulated signal from each PMS Division is required every 24 months to ensure that the non-safety stage 1 and stage 2 MCR heat loads can be de-energized by the VES system actuation signal within the required times. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, to minimize the potential for adversely affecting MCR operations.

SR 3.7.6.13

Verification that the VBS isolation valves and the Sanitary Drainage System (SDS) isolation valves are OPERABLE and will actuate upon demand is required every 24 months to ensure that the MCRE can be isolated upon loss of VBS operation.

SR 3.7.6.14

Verification that the VES pressure relief damper is OPERABLE is required at 24 month intervals. The SR is used in combination with SR 3.7.6.8 to ensure that adequate vent area is available to mitigate MCRE overpressurization.

REFERENCES

1. Section 6.4, "Main Control Room Habitability Systems."
2. Section 9.5.1, "Fire Protection System."
3. Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors."
4. ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality."
5. NEI 99-03, "Control Room Habitability Assessment," June 2001.
6. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694).
7. Regulatory Guide 1.52, "Design, Inspection, and Testing Criteria for Air filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants," Revision 3.

BASES

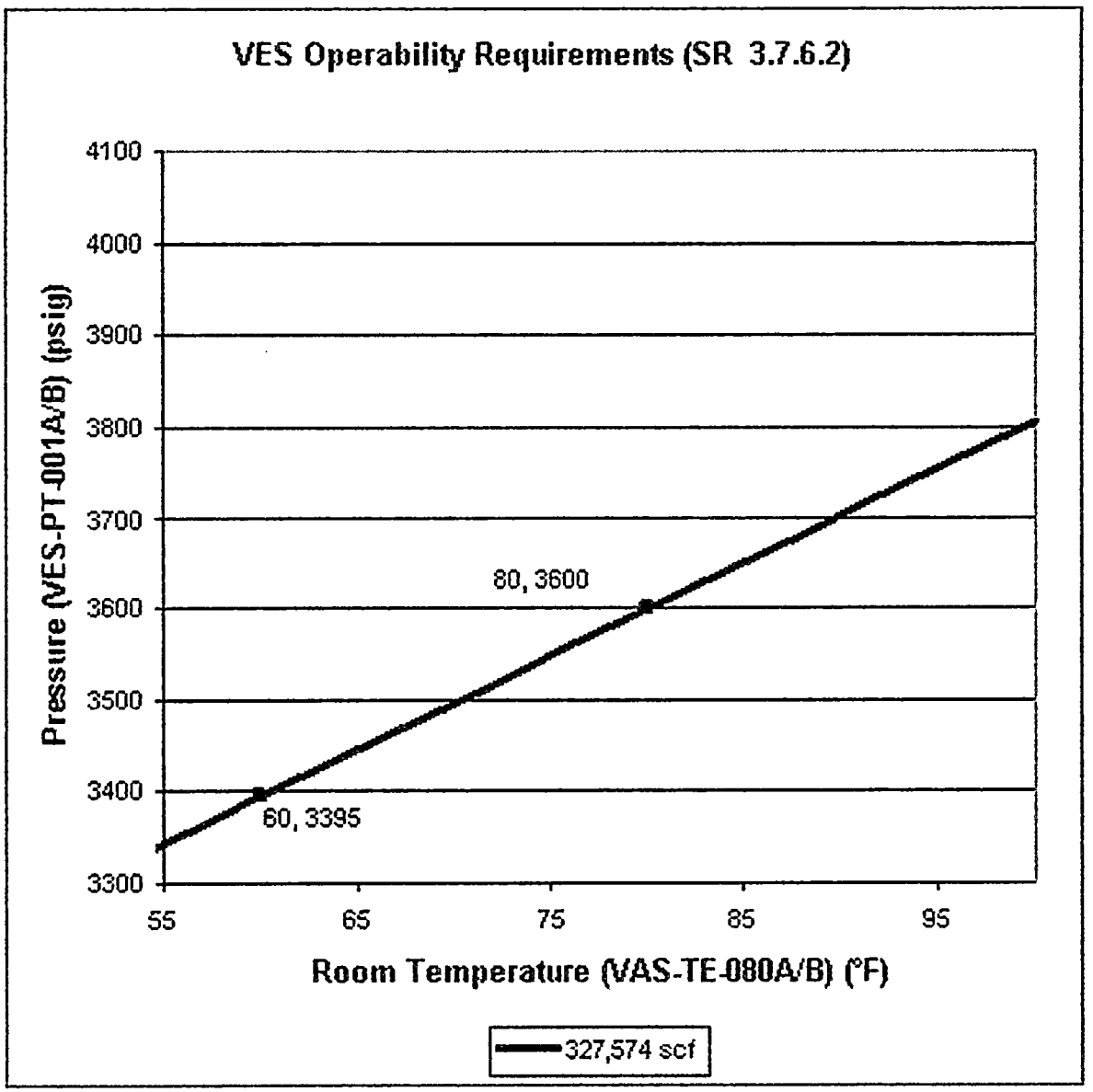
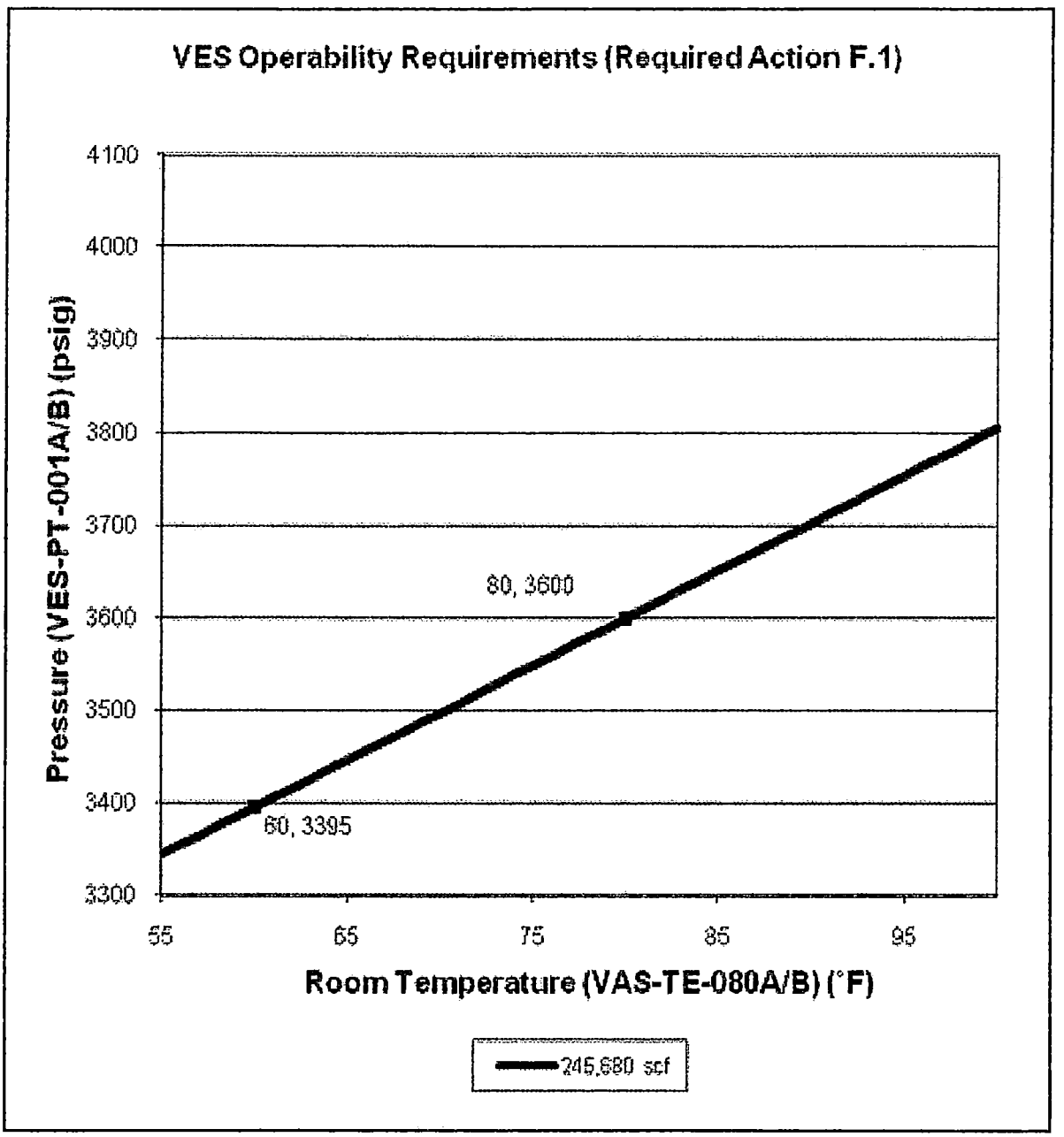


Figure B 3.7.6-1
Compressed Air Storage Tanks Minimum Volume



Compressed Air Storage Tanks Minimum Volume – One Bank of VES Air Tanks (8 Tanks) Inoperable

Associated Levy Nuclear Plant Units 1 and 2
COLA Revisions

1. Revise COLA Part 4, TS 3.7.6, ACTIONS, to read as follows:

ACTIONS

- NOTE -
LCO 3.0.8 is not applicable.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One valve or damper inoperable.	A.1	Restore valve or damper to OPERABLE status.	7 days
B.	One or more divisions of one or more MCR Load-Shed Panel(s) inoperable with load shed function maintained	B.1	Restore all divisions of MCR Load-shed panel(s) to OPERABLE status.	7 days
C.	MCRE air temperature not within limit.	C.1	Restore MCRE air temperature to within limit.	24 hours
D.	Air temperature in one or more required rooms not within limit.	D.1	Restore air temperature of required room(s) to within limit.	24 hours
E.	VES inoperable due to inoperable MCRE boundary in MODE 1, 2, 3, or 4.	E.1 AND	Initiate action to implement mitigating actions.	Immediately
		E .2	Verify mitigating actions ensure MCRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
		AND		
		E .3	Restore MCRE boundary to OPERABLE status.	90 days

ACTIONS (continued)

	CONDITION		REQUIRED ACTION	COMPLETION TIME
F.	One bank of VES air tanks (8 tanks) inoperable.	F.1	Verify that the OPERABLE tanks contain greater than 245,680 scf of compressed air.	2 hours AND Once per 12 hours thereafter
		AND		
		F .2	Verify VBS MCRE ancillary fans and supporting equipment are available.	24 hours
		AND		
		F.3	Restore VES to OPERABLE status.	7 days
G .	Required Action and associated Completion Time of Conditions A, B, C, D, E or F not met in MODE 1, 2, 3, or 4. OR VES inoperable for reasons other than Conditions A, B, C, D, E, or F in MODE 1, 2, 3, or 4.	G.1	Be in MODE 3.	6 hours
		AND		
		G.2	Be in MODE 5.	36 hours

ACTIONS (Continued)

CONDITION		REQUIRED ACTION		COMPLETION TIME
H.	Required Action and associated Completion Time of Conditions A, B, C, D, E or F not met during movement of irradiated fuel. OR VES inoperable for reasons other than Conditions A, B, C, D, E, or F during movement of irradiated fuel. OR VES inoperable due to inoperable MCRE boundary during movement of irradiated fuel.	H.1	Suspend movement of irradiated fuel assemblies.	Immediately

2. Revise COLA Part 4, TS 3.7.6, SURVEILLANCE REQUIREMENTS, to read as follows:

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify MCRE air temperature is ≤ 75°F.	24 hours
SR 3.7.6.2	Verify that the compressed air storage tanks contain greater than 327,574 scf of compressed air.	24 hours
SR 3.7.6.3	Verify the air temperatures of required rooms are ≤ 85°F.	24 hours
SR 3.7.6.4	Operate VES for ≥ 15 minutes.	31 days
SR 3.7.6.5	Verify that each VES air header manual isolation valve is in an open position.	31 days
SR 3.7.6.6	Verify that the air quality of the air storage tanks meets the requirements of Appendix C, Table C-1 of ASHRAE Standard 62.	92 days
SR 3.7.6.7	Verify that each VES air delivery isolation valve is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.8	Verify that each VES pressure relief isolation valve within the MCRE pressure boundary is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.9	Verify that the self-contained pressure regulating valve in each VES air delivery flow path is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.10	Perform required MCRE unfiltered air inleakage testing in accordance with the Main Control Room Envelope Habitability Program.	In accordance with the Main Control Room Envelope Habitability Program
SR 3.7.6.11	Perform required VES Passive Filtration system filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.6.12	Verify the MCR load shed function actuates upon receipt of an actual or simulated actuation signal.	24 months
SR 3.7.6.13	Verify that all MCRE isolation valves are OPERABLE and will close upon receipt of an actual or simulated actuation signal.	24 months
SR 3.7.6.14	Verify that each VES pressure relief damper is OPERABLE.	24 months

3. Revise Part 4, TS Bases B 3.7.6, BACKGROUND, to read as follows:

first paragraph:

The Main Control Room Emergency Habitability System (VES) provides a protected environment from which operators can control the plant following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The system is designed to operate following a Design Basis Accident (DBA) which requires protection from the release of radioactivity. In these events, the Nuclear Island Non-Radioactive Ventilation System (VBS) would continue to function if ac power is available. If ac power is lost or a High-2 Main Control Room Envelope (MCRE) radiation signal is received, the VES is actuated. The major functions of the VES are: 1) to provide forced ventilation to deliver an adequate supply of breathable air (Ref. 4) for the MCRE occupants; 2) to provide forced ventilation to maintain the MCRE at a 1/8 inch water gauge positive pressure with respect to the surrounding areas; 3) provide passive filtration to filter contaminated air in the MCRE; and 4) to limit the temperature increase of the MCRE equipment and facilities that must remain functional during an accident, via de-energizing (load shedding) non-essential, non-safety main control room (MCR) electrical equipment (e.g., wall panel information system displays, office equipment, water heater, kitchen appliances, and non- emergency lighting) and the heat absorption of passive heat sinks. The VES limits the maximum temperature in DC Equipment Rooms (12201, 12203, 12205, and 12207), I&C rooms (12301, 12302, 12304, and 12305), as well as the MCRE.

fourth paragraph and new fifth through thirteenths paragraphs:

The VES also provides emergency passive heat sinks for the main control room (Room 12401), instrumentation and control rooms (Rooms 12301, 12302, 12304, and 12305), and dc equipment rooms (Rooms 12201, 12202, 12203, 12204, 12205, and 12207). Provided air temperatures in the rooms requiring monitoring are within their Surveillance Requirement limits, the VES passive heat sinks limit the temperature rise inside each room during the 72-hour period following VES actuation. Heat sources inside the MCRE include operator workstations, emergency lighting and occupants.

During normal operation, temperatures in the main control room, instrumentation and control rooms, dc equipment rooms, Class 1E electrical penetration rooms, and adjacent rooms are maintained within a specified range by the VBS. As described in Section 9.4.1.2, the VBS consists of independent subsystems, including the main control room / control support area HVAC subsystem and the Class 1E Electrical Room HVAC subsystem. The Class 1E Electrical room HVAC subsystem is further divided into two independent subsystems, with one serving the Division A & C Class 1E electrical division rooms and the other serving Division B & D Class 1E electrical division rooms. Each independent subsystem serves its associated rooms with two redundant, 100 percent capacity equipment trains, maintaining temperatures within the specified range.

Surveillance limits are required for rooms which have limits on allowable temperature increase, and conservatively established for some adjacent rooms of the VES passive heat sinks. Monitoring the air temperature is required for the rooms with the following numerical designators: 12201, 12202, 12203, 12204, 12205, 12207, 12300, 12301,12302, 12303, 12304, 12305, 12313, 12401, 12412, and 12501.

Initial temperatures assumed for remaining rooms in the VES passive heat sinks are selected to maximize operational flexibility in responding to abnormal conditions or equipment failures, while still maintaining sufficient margin below safety analysis limits.

Access corridors, stairwells, rooms separated by an air gap, and other rooms without significant heat loads are not monitored because these areas do not contain significant heat sources and their temperatures are assumed to match the connected spaces. The numerical designators for these unmonitored rooms are 12211, 12311, 12400, 12405, 12411, 21480, 40400, and Stairwells.

Initial temperatures assumed for remaining rooms are conservatively selected to match the outdoor ambient or do not have an appreciable impact on the analyses. The numerical designators of these unmonitored rooms are 12212, 12213, 12306, 12312, 12404, 12406, 12504, 12505, 12506, and Level 1 rooms.

Non-essential, non-safety MCR heat loads are de-energized by the PMS VES actuation signal, which is generated by the "Main Control Room Isolation, Air Supply Initiation and Electrical Load De-energization" ESFAS function, to maintain the MCRE within habitable limits for 72 hours.

Upon receipt of a "Main Control Room Isolation, Air Supply Initiation and Electrical Load De-energization" ESFAS signal, PMS Divisions A and C energize associated redundant relays in each of the two safety-related electrical panels (VES-EP-01 and VES-EP-02). Energizing one set of relays in each panel disconnects non-safety related electrical power to the non-safety electrical loads in the MCRE. Energizing just one set of relays in one panel de-energizes non-safety loads associated only with that panel.

De-energized non-safety loads are separated into stage 1 and stage 2 to maximize the availability of the non-safety related wall panel information system which is deenergized with stage 2 loads. Timers and associated relays, which actuate to deenergize the stage 1 and stage 2 non-safety loads, are internal to each safety-related load shed panel. Stage 1 loads are de-energized by both panels immediately after the timers in each panel receive the PMS VES system actuation signal. Stage 2 loads are de-energized by both panels within 180 minutes after the timers in each panel receive the "Main Control Room Isolation, Air Supply Initiation, and Electrical Load Deenergization" ESFAS signal.

OPERABILITY of two redundant divisions of MCR Class 1E load shed relays and timers located in two safety-related panels is required to meet the single failure criteria. Each panel

contains redundant load shed relays and timers actuated by the two PMS divisions, such that actuation of either division de-energizes the required loads.

sixth paragraph (new fifteenth paragraph):

The compressed air storage tanks are initially filled to contain greater than 327,574 scf of compressed air. The compressed air storage tanks, the tank pressure, and the room temperature are monitored to confirm that the required volume of breathable air is stored. During operation of the VES, a self-contained pressure regulating valve maintains a constant downstream pressure regardless of the upstream pressure. An orifice downstream of the regulating valve is used to control the air flow rate into the MCRE. The MCRE is maintained at a 1/8 inch water gauge positive pressure to minimize the infiltration of airborne contaminants from the surrounding areas. The VES operation in maintaining the MCRE habitable is discussed in Reference 1.

4. Revise Part 4, TS Bases B 3.7.6, LCO, to read as follows:

   Replace the existing third through fifth paragraphs with the following five paragraphs:

   The VES is considered OPERABLE when the individual components necessary to deliver a supply of breathable air to the MCRE are OPERABLE. This includes components listed in SR 3.7.6.5 through 3.7.6.14. In addition, the MCRE pressure boundary must be maintained, including the integrity of the walls, floors, ceilings, electrical and mechanical penetrations, and access doors. The MCRE pressure boundary includes the Potable Water System (PWS) and SDS running (piping drain) traps, which retain a fluid level sufficient to maintain a seal preventing gas flow through the piping. The MCRE pressure boundary also includes the Waste Water System (WWS) drain line, which is isolated by a normally closed isolation valve.

   In order for the VES to be considered OPERABLE, the MCRE boundary must be maintained such that the MCRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analysis for DBAs, and that MCRE occupants are protected from hazardous chemicals and smoke.

   The initial MCRE temperature (75°F), DC Equipment and I&C Rooms, and required room temperatures (≤85°F) are initial conditions required to both meet the maximum MCRE temperature limit 72 hours after VES actuation, and to maintain DC Equipment and I&C rooms below the equipment qualification temperature limit throughout the duration of the postulated accidents.

   The LCO is modified by a Note allowing the MCRE boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the MCRE. This individual will have a method to rapidly close the opening and to restore the MCRE boundary to a condition equivalent to the design condition when a need for MCRE isolation is indicated.

   All PMS divisions in the two safety-related electrical panels are required to be OPERABLE, so that non-safety stage 1 and stage 2 MCR heat loads can be de-energized by the VES system actuation signal within the required time. This maintains the MCR temperature within habitable limits.

5. Revise Part 4, TS Bases B 3.7.6, ACTIONS, to read as follows:

ACTIONS B.1 through H.1:

B.1

If one or more divisions of MCR load shed panel(s) are inoperable, all divisions of the MCR load shed panels must be restored to OPERABLE status within 7 days. In this condition, the OPERABLE unaffected divisions of the panel(s) are capable of providing 100% of the load shed function.

A Completion Time of 7 days is permitted to restore both divisions of both panels to OPERABLE status before action must be taken to reduce power. The Completion Time of 7 days is based on engineering judgment, considering the low probability of an accident that would require VES actuation, and that the remaining panel divisions can provide the required load shed function.

As described in Subsection 6.4.2.3 of Ref.1, any component failure in a PMS division of the load shed panel(s) renders that division inoperable. If this failure affects only one PMS division, leaving the remaining division of PMS unaffected, including the associated power and control circuit, it renders the panel(s) inoperable, while still maintaining the full load shed function.

Automatic load shed function of the inoperable MCR load shed panel(s) is maintained as long as one complete division of PMS, including the associated power and control circuit, remains in-service in each panel. Note that the automatic load shed function is still maintained with different divisions of PMS in-service in each panel.

An event or action that impacts both PMS divisions in either panel does not maintain the full load shed function, and Condition G or H of LCO 3.7.6 would apply.

C.1

When the MCRE air temperature is outside the acceptable range during VBS operation, action is required to restore it to an acceptable range. A Completion Time of 24 hours is permitted based upon the availability of temperature indication in the MCRE. It is judged to be a sufficient amount of time allotted to correct the deficiency in the nonsafety ventilation system before shutting down.

D.1

When the air temperature in one or more of the rooms requiring temperature monitoring is not within the required limit, action is required to restore it to within the limit. A Completion Time of 24 hours is based on engineering judgment, considering the low probability of an accident that would require VES actuation under the worst case temperature conditions. It is judged to be a sufficient amount of time allotted to correct the deficiency in the non-safety ventilation system before shutting down.

E.1, E.2, and E.3

If the unfiltered inleakage of potentially contaminated air past the MCRE boundary and into the MCRE can result in MCRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), or inadequate protection of MCRE occupants from hazardous chemicals or smoke, the MCRE boundary is inoperable. Actions must be taken to restore an OPERABLE MCRE boundary within 90 days.

During the period that the MCRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on MCRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that MCRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that MCRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable MCRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of MCRE occupants within analyzed limits while limiting the probability that MCRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the MCRE boundary.

F.1, F.2, and F.3

If one bank of VES air tanks (8 tanks out of 32 total) is inoperable, then the VES is able to supply air to the MCRE for 54 hours (75% of the required 72 hours). If the VES is actuated, the operator must take actions to maintain habitability of the MCRE once the air in the tanks has been exhausted. The VBS supplemental filtration mode or MCRE ancillary fans are both capable of maintaining the habitability of the MCRE after 54 hours.

With one bank of VES air tanks inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the stored amount of compressed air in the remaining OPERABLE VES air tanks must be verified within 2 hours and every 12 hours thereafter to be at least 245,680 scf. The 245,680 scf value is 75 percent of the minimum amount of stored compressed air that must be available in the compressed air storage tanks. The standard volume is determined using the compressed air storage tank room temperature (VAS-TE-080A/B), compressed air storage tanks pressure (VES-PT-001A/B), and Figure B 3.7.6-2, Compressed Air Storage Tanks Minimum Volume – One Bank of VES Air Tanks (8 Tanks) Inoperable. Values above the 245,680 scf line in the figure meet the Required Action criteria.

Verification that the minimum volume of compressed air is contained in the OPERABLE compressed air storage tanks ensures a 54 hour air supply will be available if needed. Additionally, within 24 hours, the VBS ancillary fans are verified to be OPERABLE so that, if needed, can be put into use once the OPERABLE compressed air storage tanks have been exhausted. The Completion Times associated with these actions and the 7 day Completion Time to restore VES to OPERABLE are based on engineering judgment, considering the low probability of an accident that would result in a significant radiation release from the reactor core, the low probability of radioactivity release, and that the remaining components and compensatory systems can provide the required capability. The 54 hours of air in the remaining OPERABLE compressed air storage tanks, along with compensatory operator actions, are adequate to protect the main control room envelope habitability. Dose calculations verify that the MCRE dose limits will remain within the requirements of GDC 19 with the compensatory actions taken at 54 hours.

G.1 and G.2

In MODE 1, 2, 3, or 4 if the Required Actions and Completion Times of Conditions A, B, C, D, E, or F are not met, or the VES is inoperable for reasons other than Conditions A, B, C, D, E, or F, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.

H.1

During movement of irradiated fuel assemblies, if the Required Actions and Completion Times of Conditions A, B, C, D, E, or F are not met, or the VES is inoperable for reasons other than Conditions A, B, C, D, E, or F, or the VES is inoperable due to an inoperable MCRE boundary, action must be taken immediately to suspend the movement of fuel. This does not preclude the movement of fuel to a safe position.

6. Revise Part 4, TS Bases B 3.7.6, SURVEILLANCE REQUIREMENTS, to read as follows:

SR 3.7.6.1

The MCRE air temperature is checked at a frequency of 24 hours to verify that the VBS is performing as required to maintain the initial conditions assumed in the safety analysis, and to ensure that the MCRE temperature will not exceed the required conditions after loss of VBS cooling. The surveillance limit of 75°F is the return air temperature assumed in the VES thermal analysis. The 24 hour Frequency is acceptable based on the availability of temperature indication in the MCRE.

SR 3.7.6.2

Verification every 24 hours that compressed air storage tanks contain greater than 327,574 scf of breathable air.

The standard volume is determined using the compressed air storage tank room temperature (VAS-TE-080A/B), compressed air storage tanks pressure (VES-PT-001A/B), and Figure B 3.7.6-1, Compressed Air Storage Tanks Minimum Volume. Values above the 327,574 scf line in the figure meet the surveillance criteria. Verification that the minimum volume of compressed air is contained in the compressed air storage tanks ensures that there will be an adequate supply of breathable air to maintain MCRE habitability for a period of 72 hours. The Frequency of 24 hours is based on the availability of pressure indication in the MCRE.

SR 3.7.6.3

Using indication from temperature elements in each room, the air temperatures in the following rooms are checked at a Frequency of 24 hours: 12202, 12204, 12300, 12303, 12313, 12412, and 12501.

Using indication from temperature elements located in shared return air ducting, the air temperatures in the following rooms are checked at a Frequency of 24 hours: 12201/12301, 12203/12302, 12205/12305, and 12207/12304.

This is done to verify that the VBS is performing as required to maintain the initial conditions assumed in the safety analyses, and to show that the VES heat sinks provide adequate thermal capacity to limit the temperature increase in the MCRE, DC Equipment Rooms, and I&C Rooms from exceeding the allowable limits after VES actuation. The surveillance limit of 85°F is below the initial temperature assumed in the analysis.

The 24 hour Frequency is acceptable based on the availability of automatic VBS temperature controls, alarms and indication in the MCRE. Air temperatures may also be verified using local measurement.

SR 3.7.6.4

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing VES once every month provides an adequate check of the system. The 31 day Frequency is based on the reliability of the equipment and the availability of system redundancy.

SR 3.7.6.5

VES air header isolation valves are required to be verified open at 31 day intervals. This SR is designed to ensure that the pathways for supplying breathable air to the MCRE are available should loss of VBS occur. These valves should be closed only during required testing or maintenance of downstream components, or to preclude complete depressurization of the system should the VES isolation valves in the air delivery line open inadvertently or begin to leak.

SR 3.7.6.6

Verification that the air quality of the air storage tanks meets the requirements of Appendix C, Table C-1 of ASHRAE Standard 62 is required every 92 days. If air has not been added to the air storage tanks since the previous verification, verification may be accomplished by confirmation of the acceptability of the previous surveillance results along with examination of the documented record of air makeup. The purpose of ASHRAE Standard 62 states: "This standard specifies minimum ventilation rates and indoor air quality that will be acceptable to human occupants and are intended to minimize the potential for adverse health effects." Verification of the initial air quality (in combination with the other surveillances) ensures that breathable air is available for 11 MCRE occupants for at least 72 hours.

SR 3.7.6.7

VES air delivery isolation valves are required to be verified as OPERABLE. The Frequency required is in accordance with the Inservice Testing Program.

SR 3.7.6.8

Verification that each VES pressure relief isolation valve within the MCRE pressure boundary is OPERABLE is required in accordance with the Inservice Testing Program. The SR is used in combination with SR 3.7.6.14 to ensure that adequate vent area is available to mitigate MCRE overpressurization.

SR 3.7.6.9

Verification of the OPERABILITY of the self-contained pressure regulating valve in each VES air delivery flow path is required in accordance with the Inservice Testing Program. This is done to ensure that a sufficient supply of air is provided as required, and that uncontrolled air flow into the MCRE will not occur.

SR 3.7.6.10

This SR verifies the OPERABILITY of the MCRE boundary by testing for unfiltered air inleakage past the MCRE boundary and into the MCRE. The details of the testing are specified in the Main Control Room Envelope Habitability Program.

The MCRE is considered habitable when the radiological dose to MCRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the MCRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the MCRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition C must be entered. Required Action C.3 allows time to restore the MCRE boundary to OPERABLE status provided mitigating actions can ensure that the MCRE remains within the licensing basis habitability

limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3 (Ref. 3) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 5). These compensatory measures may also be used as mitigating actions as required by Required Action C.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 6). Options for restoring the MCRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the MCRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the MCRE boundary has been restored to OPERABLE status.

SR 3.7.6.11

This SR verifies that the required VES testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VES filter tests are in accordance with Regulatory Guide 1.52 (Ref. 7). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and physical properties of the activated charcoal. Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.6.12

Verification that the MCR load shed function actuates on an actual or simulated signal from each PMS Division is required every 24 months to ensure that the non-safety stage 1 and stage 2 MCR heat loads can be de-energized by the VES system actuation signal within the required times. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, to minimize the potential for adversely affecting MCR operations.

SR 3.7.6.13

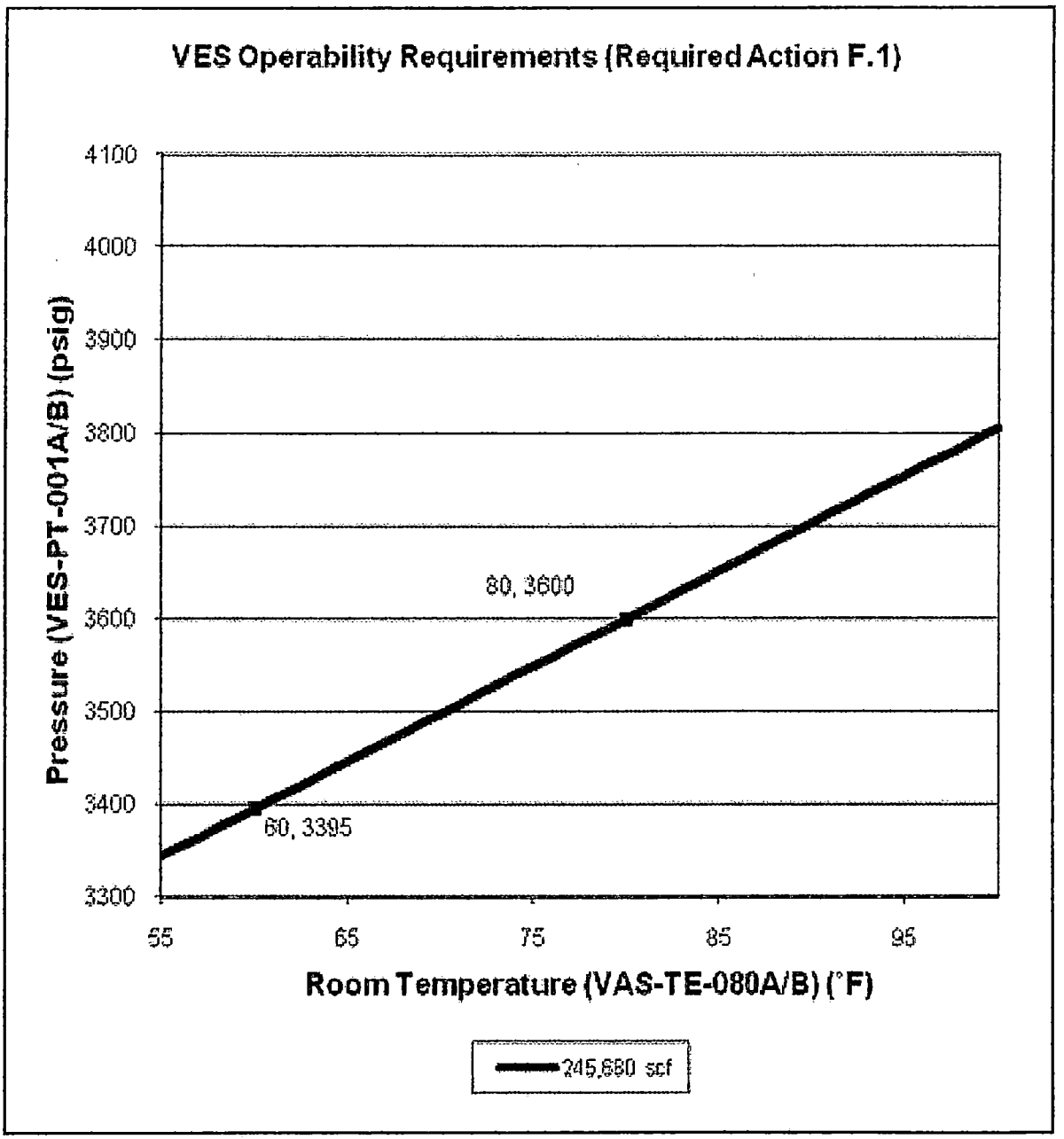
Verification that the VBS isolation valves and the Sanitary Drainage System (SDS) isolation valves are OPERABLE and will actuate upon demand is required every 24 months to ensure that the MCRE can be isolated upon loss of VBS operation.

SR 3.7.6.14

Verification that the VES pressure relief damper is OPERABLE is required at 24 month intervals. The SR is used in combination with SR 3.7.6.8 to ensure that adequate vent area is available to mitigate MCRE overpressurization.

7. Revise Part 4, TS Bases B 3.7.6, Figure B 3.7.6-2, Compressed Air Storage Tanks Minimum Volume - One Bank of VES Air Tanks (8 Tanks) Inoperable, as shown in the Figure B 3.7.6-2 provided below.

Figure B3.7.6-2



Compressed Air Storage Tanks Minimum Volume – One Bank of VES Air Tanks (8 Tanks) Inoperable

Westinghouse Application Letter CAW-15-4242 and Affidavit
(7 pages including cover page)

Westinghouse

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CAW-15-4242

10 July 2015

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: **Responses to NRC RAIs 126 and 127; APP-VES-GF-001, APP-VES-GF-002, APP-VES-GF-003**

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-15-4242 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by APOG.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-15-4242, and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

Very truly yours,

Richard A. DeLong, Director
International Licensing & Regulatory Support

CAW-15-4242
10 July 2015

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, Richard A. DeLong, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Richard A. DeLong, Director
International Licensing & Regulatory Support

(1) I am Director, International Licensing and Regulatory Support, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(iii) There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.

(v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in APP-VES-GF-001, APP-VES-GF-002, and APP-VES-GF-003 for submittal to the Commission, being transmitted by APOG letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with the topic of Condensate Return and may be used only for that purpose.

(a) This information is part of that which will enable Westinghouse to:

(i) Provide the NRC and customers with technical information on the additional information on the MCR Habitability Changes.

(b) Further this information has substantial commercial value as follows:

(i) Westinghouse plans to sell the use of similar information to its customers for the purpose of providing more products and services.

(ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

(iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar systems in commercial power reactors and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

Proprietary Information Notice and Copyright Notice
(2 pages including cover page)

PROPRIETARY INFORMATION NOTICE

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In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

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