Ronald A. Jones
Vice President
New Nuclear Operations

SCE&G®
A SCANA COMPANY

July 30, 2013
NND-13-0417
10 CFR 50.90

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

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3
Combined License Nos. NPF-93 and NPF-94
Docket Nos. 52-027 & 52-028

Subject: LAR 13-13 Request for License Amendment:
Changes to the Structure and Layout of the Turbine Building

Reference: 1. Southern Nuclear Operation Company, Vogtle Electric Generating Plant Units 3 and 4 Request for License Amendment: Changes to the Structure and Layout of the Turbine Building (LAR-12-006) (Adams Accession Number ML12296A836)

2. Acceptance Review of Southern Nuclear Operating Company's Request for License Amendment (LAR 12-006) and Exemption for the Vogtle Electric Generating Plant Units 3 and 4: Changes to the Structures and Layout of the Turbine Building (RP9409 and RP9410) (Adams Accession Number ML12318A303)

In accordance with the provisions of 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G) requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 combined licenses (COLs) numbered NPF-93 and NPF-94, respectively.

The proposed amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 1 and Tier 2 material contained within the Updated Final Safety Analysis Report (UFSAR) to accurately represent the current layout of the Turbine Building. The departures from information provided in the Tier 1 and associated Tier 2 material are addressed in the enclosed License Amendment Request (LAR).

The Description, Technical Evaluation, Regulatory Evaluation (including Significant Hazards Consideration), and Environmental Considerations for the proposed changes in the License Amendment Request (LAR) are contained in Enclosure 1 to this letter. Further justification for the associated exemption request is provided in Enclosure 2 to this letter. The proposed markups depicting the requested changes to publicly available information in Tier 1, COL Appendix C, and the UFSAR are contained in Enclosure 3 to this letter. The proposed markups depicting the requested changes to information to Tier

D083
NRO

1, COL Appendix C, and the UFSAR material to be protected under the provisions of 10 CFR 2.390(d) are contained in Enclosure 4 to this letter. Figures comparing the floor response spectra at the three locations of interest to the generic AP1000 envelope are provided in Enclosure 5.

The changes proposed in this License Amendment Request are consistent in technical content with License Amendment Request LAR-12-006, submitted by Southern Nuclear Operating Company, identified as Reference 1 of this letter and accepted by the NRC for review as stated in Reference 2 of this letter.

In order to support the VCSNS Unit 2 construction schedule, SCE&G requests NRC staff review and approval of the license amendment by February 1, 2014. Approval by this date will allow sufficient time to implement the licensing basis changes prior to placement of concrete for equipment pads at Elevation 100' of the First Bay of the Turbine Building. SCE&G expects to implement the proposed amendment within 30 days of approval.

The material located in Enclosure 4 contains Security-Related Information, and accordingly, SCE&G requests that this enclosure be withheld from public disclosure under 10 CFR 2.390(d).

This letter contains no regulatory commitments.

In accordance with 10 CFR 50.91, SCE&G is notifying the State of South Carolina of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mr. Alfred M. Paglia by telephone at (803) 941-9876, or by email at apaglia@scana.com.

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

Executed on this 30th day of July, 2013.

Sincerely,

Ronald A. Jones
Vice President
New Nuclear Operations

JRB/RAJ/jrb

Enclosure 1: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Request for License Amendment Regarding Changes to the Structures and Layout of the Turbine Building (LAR 13-13)

Enclosure 2: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Exemption Request Regarding Changes to the Structures and Layout of the Turbine Building (LAR 13-13)

Enclosure 3: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Licensing Basis Documents – Proposed Changes (Publicly Available Information) (LAR 13-13)

Enclosure 4: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Licensing Basis Documents – Proposed Changes Containing Information to be Withheld from the Public under 10 CFR 2.390(d) (LAR 13-13)

Enclosure 5: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 - Floor Response Spectra Associated with Request for License Amendment Regarding Changes to the Structures and Layout of the Turbine Building (LAR-13-13)

c (with enclosures):
Denise McGovern
DCRM-EDMS@scana.com

c (without enclosures):
Ravindra Joshi
Brian Anderson
Rahsean Jackson
Victor McCree
Jim Reece
Stephen A. Byrne
Jeffrey B. Archie
Ronald A. Jones
Alvis J. Bynum
Kathryn M. Sutton
Julie Ezell
Dean Kersey
Justin Bouknight
Amy G. Aughtman
Dan Churchman
Joel Hjelseth
Brian McIntyre
Zach Harper
William E. Hutchins
Curt Castell
William A. Fox, III
Susan E. Jenkins
William M. Cherry
Rhonda O'Banion
VCSummer2&3ProjectMail@Shawgrp.com
vcsummer2&3project@westinghouse.com

South Carolina Electric & Gas Company

NND-13-0417

Enclosure 1

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

Request for License Amendment:
Changes to the Structure and Layout of the Turbine Building
(LAR 13-13)

Pursuant to 10 CFR 50.90, South Carolina Electric & Gas (SCE&G) hereby requests an amendment to Combined License (COL) Nos. NPF-93 and NPF-94 for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, respectively.

SCE&G requests staff approval of the license amendment by February 1, 2014, to support placement of concrete for equipment pads at elevation 100' in the First Bay of the Turbine Building. Delayed approval of this license amendment would result in a delay of this construction activity and subsequent dependent construction activities.

1. SUMMARY DESCRIPTION

The proposed changes would revise the COLs in regard to the AP1000 Turbine Building structures and layout by: (1) changing the door location on the motor-driven fire pump room in the Turbine Building, (2) clarifying the column line designations for the southwest and southeast walls of the Turbine Building first bay, (3) changing the floor to ceiling heights at three different elevations in the Turbine Building main area, and (4) increasing elevations and wall thickness in certain walls of the Turbine Building first Bay. This activity involves departures from Tier 2 and Tier 2* information presented in VCSNS Units 2 and 3 Updated Final Safety Analysis Report (UFSAR) text, tables, and figures. Associated departures from plant-specific Design Control Document (DCD) Tier 1 Table 3.3-1 and Figure 3.3-11B are requested by this License Amendment Request. The departure from the plant-specific Tier 1 information also involves similar changes to the VCSNS Units 2 and 3 COLs, Appendix C, Table 3.3-1 and Figure 3.3-11B.

2. DETAILED DESCRIPTION

Turbine Building layout changes

An intermediate column currently located at the intersection of P.2 and 19.1 on the Turbine Building plan view figure interferes with the layout and maintenance space of Switchgear Room #2 (room 20501 at El. 141'-3"). To resolve this interference, the column is relocated to column lines P.1 and 19.1. This change requires the doorway in the southeast corner of the Motor-Driven Fire Pump room (room 20303) at El. 100'-0" to be relocated from the south wall to the east wall to clear the revised footprint of the intermediate column.

Additionally, column lines 11.05 and 11.1, as currently depicted in the UFSAR figures, do not clearly reflect the dimensions of the first bay south walls. The southeast wall (between column lines I.1 and K.4) and the southwest wall (between column lines Q and R) are not collinear, so they need to be assigned different column line designations to clearly indicate their relative locations. Unless the walls are identified with different column line designations, it will not be possible to accurately dimension the centerline of both the southwest and southeast walls in the Turbine Building. Therefore, a new column line 11.02 is added to indicate the centerline of the first bay southwest wall. The existing column line 11.05 is used to indicate the centerline of the first bay southeast wall. This activity clarifies the column designation of the first bay southeast and southwest walls only, and

does not make any physical design changes or modify any structures, systems, or components (SSCs).

The plant-specific DCD departures are described below. Figures that contain SUNSI are identified as such.

Tier 2 Departure:

- UFSAR Figure 1.2-23 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of the room 20303 is relocated from the south wall to the east wall.
- UFSAR Figure 1.2-24 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall.
- UFSAR Figure 1.2-25 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall.
- UFSAR Figure 1.2-26 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added and two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure.
- UFSAR Figure 1.2-27 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added and two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure.
- UFSAR Figure 1.2-28 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added and two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure.
- UFSAR Figure 1.2-30 (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall.
- UFSAR Table 3.2-2 – The seismic category II description is changed to account for the new column line 11.02.
- UFSAR Figure 9A-2 (Sheet 1) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of room 20303 is relocated from the south wall to the east wall.

(This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1 and Figure 3.3-11B. Tier 2* information is not affected.)

- UFSAR Figure 9A-2 (Sheet 2) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1 and Figure 3.3-11B. Tier 2* information is not affected.)
- UFSAR Figure 9A-2 (Sheet 3) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1 and Figure 3.3-11B. Tier 2* information is not affected.)
- UFSAR Figure 9A-2 (Sheet 4) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added and two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure. (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1 and Figure 3.3-11B. Tier 2* information is not affected.)
- UFSAR Figure 9A-2 (Sheet 5) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added and two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure. (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1 and Figure 3.3-11B. Tier 2* information is not affected.)
- UFSAR Figure 12.3-1 (Sheet 15) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of room 20303 is relocated from the south wall to the east wall.
- UFSAR Figure 12.3-1 (Sheet 16) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall.
- UFSAR Figure 12.3-2 (Sheet 15) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of room 20303 is relocated from the south wall to the east wall.

- UFSAR Figure 12.3-3 (Sheet 15) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of room 20303 is relocated from the south wall to the east wall.
- UFSAR Figure 12.3-3 (Sheet 16) (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall.

Associated Tier 1 Departure:

- Table 3.3-1 – A new column line 11.02 is added to indicate the centerline of the first bay southwest wall. The existing column line 11.05 is used to indicate the centerline of the first bay southeast wall. (This Tier 1 departure also involves a proposed amendment to COL Appendix C, Table 3.3-1.)
- Figure 3.3-11B (SUNSI) – A new column line 11.02 (indicating the centerline of the first bay southwest wall) is added, two column line identifications (11 and 11.05) are moved from the top to the bottom of that figure, and 11.05 is changed to indicate the centerline of the first bay southeast wall. The doorway in the southeast corner of the room 20303 is relocated from the south wall to the east wall. (This Tier 1 departure also involves a proposed amendment to COL Appendix C, Figure 3.3-11B.)

Main area elevation changes and first bay wall height and thickness changes

The current Turbine Building plan and elevation views shown in the figures in Sections 1.2, 9A, and 12.3 of the VCSNS Units 2 and 3 UFSAR identify floor locations at Elevations 117'-6", 135'-3", and 161'-0" for the Turbine Building main area. Additional height is proposed at these three levels to facilitate installation of piping, pipe supports, supplemental steel, and other commodities and equipment. This additional height will also provide access space for construction, operation, and maintenance activities.

The proposed change would add 3 feet of floor-to-ceiling height at each of these three elevations, which would increase the floor elevations from 117'-6" to 120'-6", from 135'-3" to 141'-3", and from 161'-0" to 170'-0". The proposed changes in the heights at these three elevations would only apply to the Turbine Building main area. The Turbine Building first bay, which abuts the main area, would maintain the existing heights at those three elevations because of access constraints between the Turbine Building first bay and the Auxiliary and Annex Buildings. Because of the mismatch in heights at the three elevations between the Turbine Building first bay and Main Area as a result of this change, an interference is created to existing vents in the first bay Line 11.2 wall at Elevations 117'-6" and 135'-3" due to relocated floor beams in the main area. To compensate for this blocked vent area, additional vent area in the first bay is needed. In response to this need, the height of the first bay walls would be increased by 8 feet by changing the elevation of the top of the first bay walls from 161'-0" to 169'-0". This additional height allows space for installation of

blowout panels to compensate for the blocked vents by providing the necessary additional venting of the first bay in the event of a double-ended guillotine break in a main steam pipe. The additional vent area provided by these blowout panels would be at least 10 percent greater than the vent area that would be blocked by the relocated main area floor beams. As a result of the increased height of the first bay walls, the width of the first bay east and west walls must be increased to meet existing structural codes and standards and maintain the seismic Category II rating for the first bay. The width of the first bay east and west walls would therefore be increased from 2 feet to 3 feet.

The plant-specific DCD departures are described below. Figures that contain SUNSI are identified as such. NRC approval of changes to Tier 2* Figure 9A-2 (Sheets 2 through 5) is requested due to changes to Tier 2 information in these figures that involves a departure from Tier 1 information.

Tier 2 Departure:

- UFSAR Figure 1.2-24 (SUNSI) – This figure is changed to identify the first bay elevation as 117'-6" and revise the elevation of the main area from 117'-6" to 120'-6". The title of this figure is changed to identify it as the Plan at 120'-6".
- UFSAR Figure 1.2-25 (SUNSI) – This figure is changed to identify the first bay elevation as 135'-3" and revise the partial plan floor elevation from 149'-0" to 158'-7". The title of this figure is changed to identify it as the Plan at 141'-3".
- UFSAR Figure 1.2-26 (SUNSI) – This figure is changed to identify the first bay elevation as 169'-0". The title of this figure is changed to identify it as the Plan at 170'-0".
- UFSAR Figure 1.2-27 (SUNSI) – This figure is changed to identify the first bay elevation as 169'-0". The title of this figure is changed to identify it as the Plan at 170'-0" with Equipment.
- UFSAR Figure 1.2-28 (SUNSI) – This figure is changed to identify the first bay elevation as 169'-0". The title of this figure is changed to identify it as the Roof Plan at 255'-3" & 226'-0".
- UFSAR Figure 1.2-29 (SUNSI) – This figure is changed to revise elevation 117'-6" to 120'-6", 135'-3" to 141'-3", 161'-0" to 170'-0", and 187'-3" to 196'-3".
- UFSAR Figure 1.2-30 (SUNSI) – This figure is changed to add elevation 168'-3"/169'-0" to depict height of first bay roof, to revise the Turbine Building roof elevation from 246'-3"/245'-0" to 255'-3"/254'-0", and to add floor elevation designations at 120'-6", 141'-3", and 170'-0" for the Operating Deck.
- UFSAR Section 3.7.2.8.3 – Changed height of reinforced concrete wall between Turbine Building and first bay from 161'-0" to 169'-0".
- UFSAR Section 9.4.9.2.1.1 – Changed elevation that identifies the location of wall louvers from 117'-6" to 120'-6" and 135'-3" to 141'-3".

- UFSAR Section 9.4.9.2.1.2 – Changed elevation that identifies the location of air handling units from 149'-0" to 158'-7". Changed elevation that identifies the location of the secondary sampling laboratory and office space from 149' to 158'-7" and 174' to 183'.

- UFSAR Section 9A.3.2.1 –
- Changed fire zone 2040 AF 20400 elevation from 117'-6" to 120'-6".
- Changed fire zone 2050 AF 20500 elevation from 135'-3" to 141'-3".
- Changed fire zone 2053 AF 20506 elevation from 149'-0" to 158'-7".
- Changed fire zone 2060 AF 20600 elevation from 161'-0" to 170'-0".
- Changed fire zone 2063 AF 20602 elevation from 175'-1 1/2" to 183'-1 1/2".
- Changed elevation that identifies the location of start-up feedwater pumps and motor control centers (MCCs) and control equipment from 135'-3" to 141'-3".

- UFSAR Section 9A.3.2.4 – Changed the elevation description for the elevator service from 161'-0" to 170'-0". Change the elevation description of the elevator machine room from 171'-0" to 196'- 3".

- UFSAR Section 9A.3.2.7 – Change the lower elevation description for the S03 stairwell from 149'-0" to 158'-7". Change the upper elevation description for the S03 stairwell from 187'-3" to 196'-3".

- UFSAR Table 9A-3 –
- Changed fire zone 2040 AF 20400 elevation from 117'-6" to 120'-6".
- Changed fire zone 2050 AF 20500 elevation from 135'-3" to 141'-3".
- Changed fire zone 2053 AF 20506 elevation from 149'-0" to 158'-7".
- Changed fire zone 2060 AF 20600 elevation from 161'-0" to 170'-0".

- UFSAR Figure 9A-2 (sheet 2) (SUNSI) – Changed to identify elevation 117'-6" for the first bay and change the elevation of the main area from 117'-6" to 120'-6". The title of this figure is changed to identify it as the Plan at 120'-6". (This change affects Tier 2* information and Tier 2 information that involves a departure from Tier 1 Table 3.3-1.)

- UFSAR Figure 9A-2 (sheet 3) (SUNSI) – Changed to identify elevation 135'-3" for the first bay and change the elevation of the main area from 135'-3" to 141'-3". Changed partial plan elevation in NW corner from 149'-0" to 158'-7". The title of this figure is changed to identify it as the Plan at 141'-3". (This change affects Tier 2* information and Tier 2 information that involves a departure from Tier 1 Table 3.3-1.)

- UFSAR Figure 9A-2 (sheet 4) (SUNSI) – Changed to identify elevation 169'-0" for the first bay. Changed elevations from 161'-0" to 170'-0" and from 187'-3" to 196'-3". The title of this figure is changed to identify it as the Plan at 170'-0". (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1. Tier 2* information is not affected.)

- UFSAR Figure 9A-2 (sheet 5) (SUNSI) – Changed to identify elevation 169'-0" for the first bay. Changed elevation from 245'-0"& 226'-0" to 255'-3" & 226'-0". The title of this figure is changed to identify it as the Plan at 255'-3" & 226'-10". (This change affects Tier 2 information that involves a departure from Tier 1 Table 3.3-1. Tier 2* information is not affected.)
- UFSAR Figure 12.3-1 (sheet 16) (SUNSI) – Changed elevation from 117'-6" to 120'-6". Changed to identify elevation 117'-6" for the first bay. Changed Zone 1 elevations in General Drawing Note 2 from 135'-3" to 141'-3" and 161'-0" to 170'-0".
- UFSAR Figure 12.3-3 (sheet 16) (SUNSI) – Changed elevation from 117'-6" to 120'-6". Changed to identify elevation 117'-6" for the first bay. Changed Zone 1 elevations in General Drawing Note 2 from 135'-3" to 141'-3" and 161'-0" to 170'-0".

Associated Tier 1 Departure:

- Table 3.3-1 - The concrete thickness of Turbine Building "Wall adjacent to Column Line I.2" and "Wall adjacent to Column Line R" is increased from 2 feet to 3 feet. The maximum elevation of the top of the first bay walls is increased from 161'-0" to 169'-0". (This Tier 1 departure also involves a proposed amendment to COL Appendix C, Table 3.3-1.)

3. TECHNICAL EVALUATION

Turbine Building layout changes

The doorway in the southeast corner of the FPS Motor Driven Fire Pump room (room 20303) on El. 100'-0" will be relocated from the south wall to the east wall to clear the footprint of the intermediate column being relocated to the intersection of column lines P.1 and 19.1. "(It should be noted that relocation of the motor-driven fire pump room door does not change the location or rating of the 3-hour fire barrier between the fire area associated with room 20303 and the Turbine Building El. 100'-0"; therefore, this change is not considered a departure from Tier 2* information.) The design function of room 20303 is to provide a separate fire area for the motor-driven fire pump, FPS-MP-01A. The double doorway in the southeast corner of room 20303 allows for the movement of equipment and material between the Turbine Building El. 100'-0" and room 20303, and provides one of two egress pathways out of room 20303. The design function of the doors is to form part of the 3-hour fire barrier between fire areas associated with the Turbine Building El. 100'-0" and room 20303. The change in location of the doorway does not adversely affect the room's fire protection adequacy evaluation, the ability to provide the necessary ingress and egress from room 20303, the structural design criteria or analyses for the room walls, or any of the fire pump's functions. The change in location of the doorway does not adversely affect the room's fire protection adequacy because the 3-hour fire rating of the relocated door is not changed, so the walls that separate these two fire areas continue to provide the same 3-hour fire barrier. The pump and fire protection system continue to perform their design functions described above, because the change in location of the doorway does not affect

any structures, systems, or components (SSCs) contained inside the room, including the fire pump and the Turbine Building Ventilation System (VTS). The VTS continues to provide local heating and ventilation for the room. Ingress and egress to the room is unaffected, because the number of separate clear (unobstructed) doorways for room access is unchanged. The structural design of the room 20303 walls is unchanged by this doorway relocation, because they are being designed to the same codes and standards, both before and after this activity.

The Turbine Building column line changes do not represent a physical design change but are instead being made to clarify the locations of the Turbine Building southeast and southwest walls on plan view figures. Column Line 11.02 is added to more clearly depict that the southwest and southeast walls of the first bay are not collinear, but rather, the southwest wall is located less than 3 feet to the south of the southeast wall. While this departure does not change the actual locations of the walls, as depicted in the UFSAR, it does clarify the relative location of both of these walls in relation to Nuclear Island Reference Column Line 11. The column line change does not affect any SSCs.

These changes do not adversely affect any design function described in the UFSAR. The departure does not involve an adverse change to any method of evaluation for establishing design bases or safety analyses. It does not represent a change to a design feature credited in the ex-vessel severe accident assessment. While the fire protection system provides a nonsafety-related containment spray function for severe accident management, the change in location of the doorway does not adversely affect the room's fire protection adequacy evaluation or any of the fire pump's functions (including ex-vessel severe accident functions). Accordingly, this departure does not represent a change to a design feature credited in the ex-vessel severe accident assessment. Tests, experiments, and procedures described in the licensing basis are unchanged by this activity. The change does not affect the aircraft impact assessment, because the column line change does not represent a physical design change, and the change to the door location in room 20303 does not affect any key design features credited in the aircraft impact assessment, as described in UFSAR Subsection 19F.4.2.

The proposed changes to the UFSAR Chapter 12 radiation zone and radiological access control figures indicate that this activity has no impact on any plant radiation zone classifications or radiological access pathways. Therefore, this activity does not impact the radiation protection features or dose assessment presented in UFSAR Chapter 12.

The activity has no impact on the VCSNS Units 2 and 3 Emergency Plan.

Main area elevation changes and first bay wall height and thickness changes

The Turbine Building floors at elevations 117'-6", 135'-3", and 161'-0" will be increased in elevation by 3 feet, to 120'-6", 141'-3", and 170'-0", respectively, to provide additional space to facilitate installation of piping, pipe supports, supplemental steel, and other commodities

and equipment. The additional height will also provide access space for construction, operation, and maintenance activities.

As a consequence of this change, the height of the first bay walls will be increased from 161'-0" to 169'-0" to allow for installation of blowout panels to compensate for interferences with the current first bay vents as a result of the main area floor elevation change. By raising the height of these walls, the space beneath the south end of the roof can be used for placement of the blowout panels. There will be a 58'-0" wide area between the southwest and southeast first bay walls that would provide approximately 11'-6" of vertical area from the top of the Auxiliary Building parapet (El. 156'-0") to the bottom of the first bay roof once the roof is raised. This would allow for the installation of blowout panels to provide additional venting area that is at least 10 percent greater than the area of the existing vents that would be blocked as a result of the elevation change in the Turbine Building main area. Consequently, this activity will not adversely affect the first bay's ability to relieve pressure in the event of the limiting breaks.

Blowout panels in the south wall of the Turbine Building first bay, as well as panels in the first bay west wall and wall 11.2, activate to relieve pressure in the first bay to mitigate sub-compartment pressurization. The south wall panels are hinged at the bottom and open downward, away from the side of the Turbine Building, without coming into contact with the roof of the Auxiliary Building. Pressure relief pins, designed to yield at the appropriate pressure, normally keep the panel in the closed position. Retaining cables are included in the design to prevent the panel from blowing away or hitting the roof of the Auxiliary Building. The hinge is designed to withstand the panel deployment forces during the sub-compartment pressurization that would be expected during a high energy line break (HELB). The blowout panels are designed to withstand tornado and seismic loading conditions. These design features prevent the south wall blowout panels from becoming a missile following a HELB, tornado, or earthquake.

This first bay wall elevation change further requires increasing the thickness of the first bay walls adjacent to Column Line I.2 and adjacent to Column Line R. Analysis has shown that increasing the width of these two walls from 2 feet to 3 feet will structurally accommodate the increased height.

Changes to rooms in the Turbine Building at elevations 120'-6" and 141'-3" (previously 117'-6" and 135'-3", respectively) are determined to be departures from Tier 2* information, due to changes to the fire area boundary fire barriers as depicted in Tier 2* Figure 9A-2 (Sheets 2 and 3 of 5). The fire barriers that are changed are shown in these figures as 2-hour or 3-hour fire barriers, consequently increasing the space between floors in the Turbine Building changes the vertical location of these barriers. Because the fire barrier changes are only a result of changing the floor-to-ceiling dimensions of these rooms, these changes will not affect the design or rating of the fire barriers, the square footage of the rooms, the types or heat values of combustible materials in each room, or the combustible loading (Btu/ft2) of the fire areas. Therefore, the Tier 2* changes that modify the heights of rooms with fire-rated ceilings or floors will not impact the UFSAR Appendix 9A Fire Protection Analysis.

Soil-structure interaction analyses were performed to assess the change in the height and thickness of the first bay walls. The analyses were performed using the SASSI 2000 computer code which has been validated for AP1000 calculations. The two-dimensional (2D) analyses were performed using the V. C. Summer best estimate soil profile and seismic input. Updated building properties were used. The resulting seismic floor response spectra (FRS), soil pressures and basemat stresses for the appropriate nodes and elements of the Turbine Building model were obtained. Figures showing the floor response spectra (FRS) at the three locations of interest and a comparison to the generic AP1000 envelope are provided in Enclosure 5. Note that direction "X "as depicted in these figures corresponds to the North-South line. The results show that the V.C. Summer FRS are enveloped by the generic AP1000 FRS. As seen from these spectra, there is an exceedance in the range of 11.5 Hz and 13 Hz. As a result of this exceedance, a stress comparison was made with the AP1000 2D generic stresses, and it was shown that the V. C. Summer site specific stresses are enveloped by the AP1000 generic stresses. Consequently, this exceedance has no design consequence for the Turbine Building first bay. Relative displacements at the base and top of the adjacent structures indicate that there is no contact between the structures at the foundation and the superstructure. This analysis, with the proposed Turbine Building changes incorporated, also confirmed the previous assumption for the three-dimensional (3D) SASSI analysis of the Nuclear Island structures, that the effect of adjacent structures on the Nuclear Island is small and can be neglected.

This activity will not adversely affect the Turbine Building's seismic response, because the calculated FRS, as shown in the attached figures, are, with the exception of the exceedance discussed above, enveloped by the generic AP1000 spectra. The first bay will continue to maintain a seismic Category II rating and compliance with the seismic design criteria of GDC 2 for the seismic Category II first bay is not affected.

Relative to internal flooding, UFSAR subsection 3.4.1.2.2.3 provides an evaluation of the Turbine Building design based on identification of a limiting break in the circulating water piping. Flow from this break flows from the building to the yard through a relief panel in the Turbine Building west wall, thereby limiting the maximum flood level in the adjacent auxiliary building valve/piping penetration room to a level that would be less than postulated for a break in the valve/piping penetration room itself. Component cooling and service water system components in the Turbine Building are all located above the calculated maximum flood level and are therefore expected to be functional following a flooding event in this building. This departure does not affect the flood analysis or any of the design features credited in that analysis, such as the relief panel in the Turbine Building west wall. Therefore, the Turbine Building flooding evaluation is not impacted.

There is no impact from this change on core damage frequency due to postulated turbine missiles. As stated in Updated Final Safety Analysis Report (UFSAR) Subsection 3.5.1.3, due to the orientation of the turbines and the robust design of the turbine rotors for the AP1000, the potential for unacceptable damage resulting from a turbine missile is less than 10^{-7}; consequently, the potential damage from a high-trajectory missile is not evaluated. This

change has no impact on turbine orientation or rotor design, and therefore there is no impact on this probability.

The Turbine Building, including the redesigned first bay wall heights and thicknesses, continues to be designed in accordance with ACI-349 and AISC-N690 for the first bay and ACI-318 and AISC-S335 for the main area, as stated in UFSAR Subsection 3.7.2.8.3. The Turbine Building column line 11.2 wall, which would be increased in height by 8 feet as a result of this change, is identified as a key design feature in the Aircraft Impact Assessment described in UFSAR Subsection 19F.4.2. However, because the number of barriers and the thickness of those barriers, as prescribed by NEI 07-13, Revision 7 (Reference 2), do not change as a result of this departure, there is no impact to the Aircraft Impact Assessment. In addition, because the column line 11.2 wall, which is increased in height by 8 feet, is still designed to the same structural codes and standards, it will continue to perform its Aircraft Impact Assessment design function by protecting the Auxiliary Building from the impact of large commercial aircraft.

This activity does not involve a change to procedures or a method of control and does not change any method of evaluation or use an alternate method of evaluation from those described in the UFSAR which are used in establishing design bases or in the safety analysis. The activity does not involve a test or experiment not described in the UFSAR which exceeds the reference bounds of the design basis. The activity does not adversely impact any design feature credited in the severe accident analysis.

The proposed changes to the UFSAR Chapter 12 radiation zone and radiological access control figures indicate that this activity has no impact on any plant radiation zone classifications or radiological access pathways. Therefore, this activity does not impact the radiation protection features or dose assessment presented in UFSAR Chapter 12.

The activity has no impact on the VCSNS Units 2 and 3 emergency plan.

Security Considerations

Reviews of APP-GW-GLR-066, "AP1000 Safeguards Threat Assessment," (TR-94), Reference 3, and the VCSNS Units 2 and 3 Physical Security Plan (PSP) were completed regarding the Turbine Building configuration changes identified in this LAR. (Note that TR-94 and the VCSNS Units 2 and 3 PSP are classified as Safeguards Information (SGI) and are not available to the public.)

The reviews confirmed that the proposed changes do not impact the conclusions of any of the scenarios in TR-94 or the VCSNS Units 2 and 3 PSP, because:

- The proposed change has no impact on any pathways or barriers credited by the TR-94 assessment for any scenario, and as such, there is no impact related to or associated with the Sandia Laboratories Barrier Technology Handbook (SAND77-0777), Reference 4, which is referenced in TR-94. (Note that SAND77-0777 contains security-related information and is not available to the public.)

- No additions or deletions of security positions are proposed with this change; therefore, there is no impact on staffing of security response personnel as a result of this change.
- No lighting is credited in TR-94 as originating from the Turbine Building; therefore the proposed changes have no impact on lighting.
- There is no impact on vital equipment as a result of these changes. Vital area access is unaffected.
- Response timelines to the external fighting positions located on the turbine building exterior are unchanged as staging areas remain consistent with fighting position locations. Similarly, postulated adversary timelines as developed with respect to target set locations are not impacted due to the location and nature of the changes.
- The increase in overall height of the external fighting positions located on the turbine building exterior has no adverse impact on lines of sight or field of fire from these positions.
- The relocation of the door to Room 20303 has no impact on either response or adversary timelines.
- The overall height of the fighting position increases by only 9 feet and as such there is no adverse impact on any lines of sight from these positions. Because the change does increase the height, the lines of sight from the affected fighting positions are actually improved.

Furthermore, the review confirmed that this change does not impact any of the existing ITAAC related to physical security.

Summary

The proposed changes would revise the VCSNS Units 2 and 3 COLs in regard to the AP1000 structures and layout by: (1) changing the door location on the motor-driven fire pump room in the Turbine Building main area, (2) clarifying the column line designations for the southwest and southeast walls of the Turbine Building first bay, (3) raising the floor to ceiling heights at three different elevations in the Turbine Building main area, and (4) increasing elevations and wall thickness in certain walls of the Turbine Building first bay.

These changes do not adversely affect any design function. The departure does not involve an adverse change to any method of evaluation for establishing design bases or safety analyses. It does not represent a change to a design feature credited in the ex-vessel severe accident assessment. Tests, experiments, and procedures described in the licensing basis are unchanged by this activity.

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, Section VIII.B.5.a requires that an applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the technical specifications (TS), or requires a license amendment under paragraphs B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD. This license amendment request proposes departures from Tier 2* and Tier 2 information which also involve departures from plant-specific Tier 1 information. Because this license amendment involves departures from Tier 2* information and Tier 2 changes that involve departures from Tier 1 Section 3.3, Table 3.3-1 and Figure 3.3-11B, the proposed changes require NRC approval. In evaluating these departures concerning changes to the Turbine Building configuration in the main area and the first bay, the impact on the design descriptions in the UFSAR has been considered as described below.

The Turbine Building is classified as non-seismic, except for the first bay which is classified as seismic Category II. It is designed to seismic Category I structure tornado loading, as discussed in UFSAR Section 3.3.2.3. It is further designed in accordance with ACI-349 (first bay) and ACI-318 (main area) for concrete structures and with AISC-N690 (first bay) and AISC-S335 (main area) for steel structures. None of these design requirements is impacted by these changes. The Turbine Building evaluations provided in FSER subsections 3.4.1.2 (internal flooding), 3.7.2.8.3 (interaction of seismic Category II and non-seismic structures with seismic Category I structures) and 3.8.5.1 (related to the gap between the foundations for the Turbine Building and the Nuclear Island structures) are not impacted as a result of these changes.

10 CFR 50, Appendix A, General Design Criterion (GDC) 2, Design bases for protection against natural phenomena, requires that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these structures, systems, and components shall reflect: (1) appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and (3) the importance of the safety functions to be performed.

Because there is no safety-related equipment, which would require protection from natural phenomena, in the Turbine Building, the 10 CFR 50 General Design Criteria, including GDC 2, are generally not applicable to the Turbine Building design. The Turbine Building is classified as non-seismic, except for the first bay which is classified

as seismic Category II. The first bay is designed to seismic Category I structure tornado loading, as discussed in UFSAR Section 3.3.2.3. The seismic Category II first bay is designed and physically arranged such that the safe shutdown earthquake could not cause unacceptable structural interaction with or failure of the adjacent seismic Category I Nuclear Island structures. Soil-structure interaction analyses confirmed that the proposed change in the height and thickness of the first bay walls will neither adversely affect the Turbine Building's seismic response nor significantly impact the adjacent structures on the Nuclear Island. Accordingly, based on the analyzed seismic design criteria of the first bay, compliance with GDC 2 is not impacted by these changes.

4.2 Precedent

Other than the This proposed change is consistent in technical content with License Amendment Request LAR-12-006 (Adams Accession Number ML12296A836) dated October 17, 2013, submitted by Southern Nuclear Operating Company and its supplements dated January 4, 2013 and February 7, 2013 (Adams Accession Numbers ML13008A234 and ML13039A329). The NRC accepted LAR-12-006 for review on November 15, 2013 (Adams Accession Number ML12318A303). (The seismic and Soil-Structure Interaction (SSI) analyses described in this submittal are specific to Virgil C. Summer Nuclear Station.)

4.3 Significant Hazards Consideration

The proposed changes would revise the Combined Licenses (COLs) for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 in regard to the AP1000 Turbine Building configuration by: (1) changing the door location on the motor-driven fire pump room in the Turbine Building main area, (2) clarifying the column line designations for the southwest and southeast walls of the Turbine Building first bay, (3) raising the floor to ceiling heights at three different elevations in the Turbine Building main area, and (4) increasing elevations and wall thickness in certain walls of the Turbine Building first bay. This activity changes Tier 2* information and Tier 2 text, tables, and figures involving a departure from plant-specific Tier 1 information. The Tier 1 departure also involves a proposed amendment to corresponding information in Appendix C of the VCSNS Units 2 and 3 COLs.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed changes to the Turbine Building configuration do not alter the assumed initiators to any analyzed event. Changing the door location does not

affect the operation of any systems or equipment inside or outside the Turbine Building that could initiate an analyzed accident. Clarifying the column line designations does not affect the operation of any systems or equipment inside or outside the Turbine Building that could initiate an analyzed accident. The changes in elevation and wall thickness do not affect the operation of any systems or equipment inside or outside the Turbine Building that could initiate an analyzed accident. In preparing this license amendment, it was considered if the changes to the Turbine Building door location, column line designations, wall thickness, and floor elevations would have an adverse impact on the ability of the Turbine Building structure to perform its design function to protect the systems, equipment, and components within this building. It was concluded that there was no adverse impact, because design of this structure, including the redesigned first bay wall heights and thicknesses, will continue to be in accordance with the same codes and standards as stated in the VCSNS Units 2 and 3 Updated Final Safety Analysis Report (UFSAR). The Turbine Building first bay continues to maintain its seismic Category II rating. Based on the above, the probability of an accident previously evaluated will not be increased by these proposed changes.

The proposed Turbine Building configuration changes will not affect radiological dose consequence analysis. The affected portions of the Turbine Building are unrelated to radiological analyses. Therefore, no accident source term parameter or fission product barrier is impacted by these changes. Structures, systems, and components (SSCs) required for mitigation of analyzed accidents are not affected by these changes, and the function of the Turbine Building to provide weather protection for SSCs inside the building is not adversely affected by these changes. Mitigation of a high energy line break (HELB) in the Turbine Building first bay is not adversely affected by this change, because additional vent area will be added to the south wall of the first bay above the Auxiliary Building roof. This additional vent area will exceed the vent area that is blocked by the change to the Turbine Building main area elevations. Consequently, this activity will not increase the consequences of any analyzed accident, including the main steam line limiting break.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed Turbine Building configuration changes to the location of a door leading to the Motor-Driven Fire Pump room, column line designations, floor elevations in the main area, and wall heights and thicknesses in the first bay do not change the design function of the Turbine Building or any of the systems or

equipment in the Turbine Building or in any other Nuclear Island structures. In assessing the proposed changes, it was considered if they would lead to a different type of possible accident than those previously evaluated. The proposed changes do not adversely affect any system design functions or methods of operation. The proposed changes do not introduce any new equipment or components or change the operation of any existing systems or equipment in a manner that would result in a new failure mode, malfunction, or sequence of events that could affect safety-related or nonsafety-related equipment. This activity will not create a new sequence of events that would result in significant fuel cladding failures. With the implementation of these changes to the design of this structure, including the redesigned first bay wall heights and thicknesses, the structure will continue to be in accordance with the same codes and standards as stated in the VCSNS Units 2 and 3 UFSAR. The Turbine Building First Bay continues to maintain its seismic Category II rating. Based on the above, it was concluded that the proposed changes would not lead to a different type of possible accident than those previously considered.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The margin of safety for the design of the Turbine Building, including the seismic Category II Turbine Building first bay, is determined by the use of the current codes and standards and adherence to the assumptions used in the analyses of this structure and the events associated with this structure. The relocated door to the motor-driven fire pump room will continue to meet the current 3-hour fire rating requirements. The revised column line designations do not represent a physical plant modification, and have no adverse impact on plant construction or operation. The design of the Turbine Building, including the increased elevations in the main area and the increased height and thickness of the redesigned first bay walls, will continue to be in accordance with the same codes and standards as stated in the UFSAR. The increased elevation of the first bay roof to allow the installation of blow-out panels will provide additional gross vent area for the first bay, which more than compensates for the current vent area that will be blocked by the change in the Turbine Building main area elevations. Consequently, this activity will not adversely affect the first bay's ability to relieve pressure in the event of the limiting main steam line break, and consequently this activity will not reduce the current margin of safety associated with this event to the design pressure limits for Wall 11 of the Nuclear Island and the walls of the first bay. The first bay will continue to maintain a seismic Category II rating. Adhering to the same codes and standards for the Turbine Building structural design and

maintaining a seismic Category II rating for the Turbine Building first bay preserves the current structural safety margins.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The above evaluations demonstrate that the requested changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determines that the requested change does not involve a Significant Hazards Consideration.

5. ENVIRONMENTAL CONSIDERATIONS

SCE&G requests an amendment to the Combined License (COL) Nos. NPF-93 and NPF-94, for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, respectively, to allow departures from various plant-specific Tier 2* and Tier 2 information, which also involve departures from plant-specific Tier 1 information; thereby necessitating an amendment to the corresponding elements in Appendix C of the COLs. The plant-specific Tier 2 elements for which a departure is requested include Turbine Building configuration changes that involve relocation of a doorway into the motor-driven fire pump room of the Turbine Building, clarification of column line designations for the Turbine Building southeast and southwest walls on the Turbine Building plan view figure, and changes to the Turbine Building first bay wall heights and thicknesses. In addition, the requested amendment includes plant-specific Tier 2 and Tier 2* changes to the floor-to-ceiling height at three different elevations in the Turbine Building main area. The proposed departure from plant-specific Tier 2 material involves corresponding departures from plant-specific Tier 1 material related to the Turbine Building configuration. The plant-specific Tier 1 departure changes information related to Turbine Building configuration that supports existing Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

SCE&G has determined that the proposed departure would require an amendment from the VCSNS Units 2 and 3 COLs; however, a review of the anticipated construction and

operational effects of the proposed amendment has determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

(i) There is no significant hazards consideration.

As documented in Section 4.3, Significant Hazards Consideration, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed amendment changes aspects of the Turbine Building configuration related to the building height, certain wall thicknesses, floor elevations, a door location, and column line designations. The proposed changes in the Turbine Building do not change or alter any systems with substances associated with effluents, whether radiological or non-radiological (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), nor do they change or alter any effluent release quantities. Furthermore, these changes do not diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed amendment changes aspects of the Turbine Building configuration related to the building height, certain wall thicknesses, floor elevations, a door location, and column line designations. Because the proposed amendment does not introduce any new radiological sources to the Turbine Building and does not impact any plant radiation zone classifications or radiological access pathways in the Turbine Building, there is no change to the occupational radiation exposure dose assessment provided in UFSAR Section 12.4. Therefore, it is concluded that the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure."

Based on the above review of the proposed amendment, the proposed changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure during construction or operation. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

6. REFERENCES

1.) Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 Updated Final Safety Analysis Report (UFSAR), Revision 1, June 2013.

2.) NEI 07-13, Revision 7, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs", April 2011.

3.) APP-GW-GLR-066, Revision 1, "AP1000 Safeguards Assessment," March 2009.

4.) Technical Report SAND-77-0777, April 1, 1978, "Barrier Technology Handbook," Sandia Labs, Albuquerque, New Mexico.

South Carolina Electric & Gas Company

NND-13-0417

Enclosure 2

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

Exemption Request
Regarding Changes to the Structures and Layout of the Turbine Building
(LAR 13-13)

South Carolina Electric and Gas Company (SCE&G) requests an exemption from elements of the AP1000 certified (Tier 1) design information to allow changes to the Turbine Building structures and layout, as supported by corresponding changes to the following non-system based design descriptions and Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) figures and tables:

- Table 3.3-1, Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building
- Figure 3.3-11B, Turbine Building General Arrangement Plan at Elevation 100'-0"

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met.

SCE&G requests staff approval of the exemption by February 1, 2013 to support placement of concrete for equipment pads at Elevation 100' in the First Bay of the Turbine Building. Delayed approval of this exemption could result in a delay of this construction activity and subsequent dependent construction activities.

1.0 Purpose

SCE&G requests a permanent exemption from the provisions of 10 CFR 52, Appendix D, Section III.B, "Design Certification Rule for the AP1000 Design, Scope and Contents," to allow a departure from elements of the certification information in Tier 1 of the generic AP1000 Design Control Document (DCD). The regulation, 10 CFR 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in DCD Tier 1. Tier 1 includes ITAAC that must be satisfactorily performed prior to fuel load. The design details to be verified by these ITAAC are specified in the text, tables, and figures that are referenced in each individual ITAAC. The Tier 1 information for which a plant-specific departure and exemption is being requested includes non-system based design descriptions and other detailed information related to these design descriptions and the associated ITAAC, such as changes to wall heights and concrete wall thicknesses, column line designations, and the location of an interior door between fire areas in the Turbine Building.

This request for exemption will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow changes to Tier 1 information due to the following proposed changes to the non-system based design descriptions and ITAAC figures and tables:

- Table 3.3-1, Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building
    - Add a new column line 11.02 to indicate the centerline of the first bay southwest wall. The existing column line 11.05 is used to indicate the centerline of the first bay southeast wall.

  - Increase the concrete thickness of Turbine Building "Wall adjacent to Column Line I.2" and "Wall adjacent to Column Line R" from 2 feet to 3 feet.
  - Increase the maximum elevation of the top of the first bay walls from 161'-0" to 169'-0".

- Figure 3.3-11B, Turbine Building General Arrangement Plan at Elevation 100'-0"
  - Add a new column line 11.02 to indicate the centerline of the first bay southwest wall. The existing column line 11.05 is used to indicate the centerline of the first bay southeast wall.
  - Relocate the doorway in the southeast corner of the room 20303 from the south wall to the east wall.

This request will apply the requirements for granting exemptions from design certification information, as specified in 10 CFR Part 52, Appendix D, Section VIII.A.4, 10 CFR 52.63, §52.7, and §50.12.

2.0 Background

South Carolina Electric and Gas Company (SCE&G) is the holder of Combined License Nos. NPF-93 and NPF-94, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, respectively. During the detailed design finalization of the Turbine Building, departures from plant-specific Tier 2 information were determined necessary to finalize the layout of space envelopes, orientations, locations and/or piping runs that comprise this structure or the systems within this structure. This activity requests exemption from the generic DCD Tier 1 table and figure that are involved with the plant-specific Tier 2 departures, and which support the associated COL Appendix C ITAAC.

Turbine Building Layout Changes

An intermediate column currently located at the intersection of column lines P.2 and 19.1 on Elevation (El.) 141'-3" of the Turbine Building interferes with the layout and maintenance space of Switchgear Room #2 (room 20501). To resolve this interference, the column is relocated to column lines P.1 and 19.1. This change requires the doorway in the southeast corner of the Motor-Driven Fire Pump Room (room 20303) at El. 100'-0" to be relocated from the south wall to the east wall to clear the revised footprint of the intermediate column. This departure requires an exemption from AP1000 DCD Tier 1 Figure 3.3-11B, to depict the revised door location.

Additionally, column lines 11.05 and 11.1, as currently depicted in the AP1000 DCD figures, do not clearly reflect the dimensions of the first bay south walls. The southeast wall (between column lines I.1 and K.4) and the southwest wall (between column lines Q and R) are not collinear, so they need to be assigned different column line designations to clearly indicate their relative locations. Unless the walls are identified with different column line designations, it will

not be possible to accurately dimension the centerline of both the southwest and southeast walls in the Turbine Building. Therefore, a new column line 11.02 is added to indicate the centerline of the first bay southwest wall. The existing column line 11.05 is used to indicate the centerline of the first bay southeast wall. This activity clarifies the column designation of the first bay southeast and southwest walls only, and does not make any physical design changes or modify any structures, systems, or components (SSCs). This departure requires an exemption from AP1000 DCD Tier 1 Table 3.3-1 and Figure 3.3-11B to reflect the use of column lines 11.02 and 11.05 for indicating the centerlines of the first bay southwest and southeast walls, respectively.

First Bay Wall Height and Thickness Changes

Floor-to-ceiling heights in the main area of the Turbine Building at the current elevations 117'-6", 135'-3", and 161'-0", are being increased by 3 feet to provide additional space to facilitate installation of piping, pipe supports, supplemental steel, and other commodities and equipment. The additional space will also provide access space for construction, operation, and maintenance activities.

First bay floor elevations do not change with the Turbine Building main area floors due to access constraints with the Annex and Auxiliary Buildings. Therefore, due to the Turbine Building elevation changes, a mismatch will result between the Turbine Building floors and the first bay floors. The floor elevation mismatch limits the steam vent space area in wall 11.2 due to interferences created with the existing vents as a result of the elevation change in the Turbine Building main area. Therefore, in order to provide adequate gross vent area, the first bay roof is raised to 169'-0" and blowout panels are located beneath the south end of the roof, and to maintain seismic Category II structural capability in the first bay, the thickness of the first bay east wall (adjacent to Column Line I.2) and west wall (adjacent to Column Line R) is increased from 2 feet to 3 feet. This departure requires an exemption from AP1000 DCD Tier 1 Table 3.3-1 to reflect the revised first bay wall height and to identify the revised concrete wall thickness for the first bay east and west walls.

As discussed, an exemption from elements of the AP1000 certified (Tier 1) design information is requested to allow plant-specific departures to be taken from non-system based design description and ITAAC Figure 3.3-11B and Table 3.3-1.

3.0 Technical Justification of Acceptability

Detailed technical justification supporting this request for exemption is provided in Section 3 of the associated License Amendment Request in Enclosure 1 of this letter.

4.0 Justification of Exemption

10 CFR 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants.

Since SCE&G has identified changes to the Tier 1 information related to the Turbine Building layout and structures as a result of design finalization activities, an exemption to the certified design information in Tier 1 is needed.

10 CFR 52, Appendix D, and 10 CFR 50.12, §52.7, and §52.63 state that the NRC may grant exemptions from the requirements of the regulations provided six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)(ii)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, App. D, VIII.A.1].

The requested exemption to change the design of the Turbine Building layout and structures satisfies the criteria for granting specific exemptions, as described below.

1. **This exemption is authorized by law**

   The NRC has authority under 10 CFR 52.63, §52.7, and §50.12 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR 50.12 and §52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

   Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

2. **This exemption will not present an undue risk to the health and safety of the public**

   The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD, to depart from the AP1000 certified (Tier 1) design information. The plant-specific Tier 1 DCD will continue to reflect the approved licensing basis for VCSNS Units 2 and 3, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the DCD. Therefore, the affected plant-specific Tier 1 ITAAC will continue to serve its required purpose.

   The changes to increase the Turbine Building first bay roof height and wall thicknesses, relocate a door to the Motor-Driven Fire Pump room and clarify column line designations affect the Turbine Building structure only, and do not add, delete, or modify systems or equipment as described in Tier 1 of the AP1000 DCD. These Turbine Building changes will not impact the ability of the Turbine Building to perform its design function of providing weather protection for the laydown and maintenance of major turbine/ generator components. Because the Turbine Building changes will not adversely affect the operation of any plant equipment or systems, these changes do not present an

undue risk from existing equipment or systems. These changes do not add any new equipment or system interfaces to the current plant design. The Turbine Building structures and layout changes do not introduce any new industrial, chemical, or radiological hazards that would represent a public health or safety risk, nor do they modify or remove any design or operational controls or safeguards intended to mitigate any existing on-site hazards. Furthermore, the proposed changes would not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures. Accordingly, these changes do not present an undue risk from any new equipment or systems.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would change elements of the Turbine Building layout and structures as presented in a non-system based design description and ITAAC figure and table in the plant-specific Tier 1 DCD, thereby departing from the AP1000 certified (Tier 1) design information. The proposed exemption will enable performance of the ITAAC associated with these changed elements, by reflecting the current design information in the text, tables, and figures that are referenced in these ITAAC. The exemption does not does not alter or impede the design, function, or operation of any plant SSCs associated with the facility's physical or cyber security, and therefore does not adversely affect any plant equipment that is necessary to maintain a safe and secure plant status. The proposed exemption has no impact on plant security or safeguards.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR 50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when "[a]pplication of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VCSNS Units 2 and 3 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The

underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed change to increase the Turbine Building first bay height supports a design change that will facilitate plant construction and future safe plant operation and maintenance by increasing the height of three Turbine Building main area floor elevations, while maintaining the ability to safely vent steam from the Main Steam Isolation Valve (MSIV) compartment following a postulated main steam line break. The associated change to increase the thickness of the first bay east and west walls supports this change by maintaining seismic Category II rating for the first bay, thereby maintaining the ability to protect the adjacent Nuclear Island structures from the rest of the Turbine Building during a seismic event. Similarly, the proposed change to relocate the door to the Motor-Driven Fire Pump room supports a change to relocate an intermediate column on another plant elevation, thereby facilitating plant layout and future maintenance in the vicinity of that column. The relocated doorway and the adjoining wall will continue to meet their design function by providing a 3-hour fire barrier between the adjacent fire zones that are separated by these structural elements. The proposed change to designate a new column line for the first bay southwest wall and re-designate the southeast wall with the current column line number will facilitate plant layout and construction by improving the accuracy of the plant layout figures, with no impact on the ability of these structures to perform as designed.

Based on the above, each of the requested changes will facilitate plant construction and maintain or enhance future safe plant operation and maintenance, while supporting the ability of the Turbine Building structure to perform its design functions. Accordingly, this change to the certified information will enable the licensee to safely construct, maintain, and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR Part 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

5. **The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption**

The exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would change elements of the plant-specific Tier 1 DCD by departing from standard AP1000 certified (Tier 1) design information. This exemption would allow a change to a non-system based design description and ITAAC figure and table. Based on the nature of the proposed changes to the generic Tier 1 information and the understanding that these changes were identified during the design finalization process for the AP1000, it is expected that this exemption will be requested by other AP1000 licensees and

applicants. However, a review of the reduction in standardization resulting the departure from the standard DCD determined that even if other AP1000 licensees and applicants do not request this same departure, the special circumstances will continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the Turbine Building structure associated with this request will continue to be maintained. Furthermore, the justification provided in the license amendment request and this exemption request and the associated marked-up table and figure demonstrate that there is a minimal change from the standard information provided in the generic AP1000 DCD, which is offset by the special circumstances identified above.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

6. **The design change will not result in a significant decrease in the level of safety.**

The proposed exemption would allow changes to the Turbine Building structure and layout as presented in a non-system based design description and ITAAC figure and table. The level of safety presented by plant structures is defined by the ability of the structures to protect the SSCs contained within these structures from hazards and to minimize the propagation of damage resulting from postulated events to the degree practical.

The relocated door to the Motor-Driven Fire Pump room will not affect the operation of the fire pumps in this room, or the system's conformance with the National Fire Protection Association (NFPA) Code, NFPA-20. The design of the Turbine Building, including the increased height and thickness of the redesigned first bay walls, will continue to be in accordance with the same codes and standards (ACI-349 and AISC N690 for the first bay and ACI-318 and AISC-S335 for the main area), as stated in the UFSAR. The increased elevation of the first bay roof to allow installation of blow-out panels will provide sufficient gross vent area for the first bay following a postulated main steam line double-ended break, and the increased thickness of the walls will structurally accommodate the increased height of the first bay roof, such that the Turbine Building first bay seismic Category II capabilities will be maintained. Because the proposed changes associated with this exemption request will not modify the design or operation of any systems or equipment, there are no new failure modes introduced by these changes and the level of safety provided by the current Turbine Building and the systems and equipment contained therein will be unchanged.

Because the proposed changes to the Turbine Building structure and layout will not adversely affect the ability of the Turbine Building to perform its design functions and the level of safety provided by the current Turbine Building and the systems and equipment contained therein is unchanged, it is concluded that the design change associated with proposed exemption will not result in a significant decrease in the level of safety.

5.0 Risk Assessment

A risk assessment was not determined to be applicable to address the acceptability of this proposal.

6.0 Precedent Exemptions

This proposed change is consistent in technical content with License Amendment Request LAR-12-006 (Adams Accession Number ML12296A836) dated October 17, 2013, submitted by Southern Nuclear Operating Company, its supplements dated January 4, 2013 and February 7, 2013 (Adams Accession Numbers ML13008A234 and ML13039A329), and the response to Request for Additional Information Letter No. 1 submitted on January 25, 2013. The NRC accepted LAR-12-006 for review on November 15, 2013 (Adams Accession Number ML12318A303). (The seismic and Soil-Structure Interaction (SSI) analyses described in this submittal are specific to Virgil C. Summer Nuclear Station.)

7.0 Conclusion

SCE&G requests a permanent exemption for elements of AP1000 design certification information reflected in Tier 1. The proposed changes to Tier 1 are necessary to revise a non-system based design description and ITAAC figure and table in the plant-specific Tier 1 DCD to reflect proposed plant-specific design. The proposed exemption would allow departure from AP1000 generic Tier 1 DCD information by changing the door location on the Motor-Driven Fire Pump Room, clarifying the column line designations for the southwest and southeast walls of the Turbine Building, and increasing elevations and wall thickness in certain walls of the Turbine Building first bay. The exemption request meets the requirements of 10 CFR 52.63, "Finality of design certifications," 10 CFR 52.7, "Specific exemptions," 10 CFR 50.12, "Specific exemptions," and 10 CFR 52 Appendix D, "Design Certification Rule for the AP1000." Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

8.0 Environmental Consideration

SCE&G requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. SCE&G has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR 52, Appendix D, Section III.B, "Design Certification Rule for the AP1000 Design, Scope and Contents" with respect to installation or use of facility components located within the restricted area, as defined in 10 CFR Part 20, or which changes an inspection or a surveillance requirement; however, SCE&G evaluation of the proposed

exemption has determined that the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.25(c)(9).

Based on the above review of the proposed exemption, SCE&G has determined that the proposed activity does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

Specific details of the environmental considerations supporting this request for exemption are provided in Section 5 of the associated License Amendment Request provided in Enclosure 1 of this letter.

9.0 References

1.) Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 Updated Final Safety Analysis Report (UFSAR), Revision 1, June 2013.

South Carolina Electric & Gas Company

NND-13-0417

Enclosure 3

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

Licensing Basis Documents – Proposed Changes

(Publicly Available Information)

(LAR 13-13)

Tier 1, Table 3.3-1

"Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building"

(This change is also incorporated into VCSNS Units 2 and 3 COLs, Appendix C)

[DCD Tier 1, pg. 3.3-12]

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness	Applicable Radiation Shielding Wall (Yes/No)
Wall adjacent to Column Line I.2	From Col. Line 11.05 to 11.2	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.2	From near I.2 to near Col. Line R	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall adjacent to Column Line R	From Col. Line 11.2 to Col. Line 11.02 ~~11.05~~	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.02~~11.05~~	From near Col. Line R to Col. Line Q	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall along Column Line 11.05	From Col. Line K.4 to near Col. Line I.2	From 100'-0" to 169~~1~~'-0"	2'-0"	No

[VCSNS Unit 2 COL, Appendix C, pg. C-419]

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness	Applicable Radiation Shielding Wall (Yes/No)
Wall adjacent to Column Line I.2	From Col. Line 11.05 to 11.2	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.2	From near I.2 to near Col. Line R	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall adjacent to Column Line R	From Col. Line 11.2 to Col. Line 11.02 ~~11.05~~	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.02~~11.05~~	From near Col. Line R to Col. Line Q	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall along Column Line 11.05	From Col. Line K.4 to near Col. Line I.2	From 100'-0" to 169~~1~~'-0"	2'-0"	No

[VCSNS Unit 3 COL, Appendix C, pg. C-419]

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness	Applicable Radiation Shielding Wall (Yes/No)
Wall adjacent to Column Line I.2	From Col. Line 11.05 to 11.2	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.2	From near I.2 to near Col. Line R	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall adjacent to Column Line R	From Col. Line 11.2 to Col. Line 11.02 ~~11.05~~	From 100'-0" to 169~~1~~'-0"	3~~2~~'-0"	No
Wall along Column Line 11.02~~11.05~~	From near Col. Line R to Col. Line Q	From 100'-0" to 169~~1~~'-0"	2'-0"	No
Wall along Column Line 11.05	From Col. Line K.4 to near Col. Line I.2	From 100'-0" to 169~~1~~'-0"	2'-0"	No

Updated Final Safety Analysis Report (UFSAR) Table 3.2-2

Revise selected table entries, as follows:

Table 3.2-2
Seismic Classification of Building Structures

Structure	Category (1)
Turbine Building – First bay adjacent to Nuclear Island outlined by Columns I.1 to R, ~~and~~ 11.05 to 11.2, and 11.02 to 11.2	C-II

UFSAR Section 3.7.2.8.3

"Turbine Building"

Revise the first paragraph, as follows:

The south end of the turbine building is separated from the rest of the turbine building by a 2'-0" thick reinforced concrete wall that provides a robust structure around the first bay. This wall isolates the first bay of the turbine building from the general area of the turbine building and from the adjacent yard area. The main segment of this wall is located on column line 11.2. This wall extends from El.100'-0" basemat to El. 169'-0".~~the El. 161'-0" operating floor.~~ The first bay of the turbine building is classified as seismic Category II. The other bays are classified as non-seismic. The structure configuration is shown in Figure 3.7.2-20.

UFSAR Section 9.4.9.2.1.1

"General Area Heating and Ventilation"

Revise the first paragraph, as follows:

Most of the turbine building is supplied by the general area ventilation and heating subsystem. Air is exhausted from the turbine building to the atmosphere by roof exhaust ventilators. The roof exhaust ventilators pull in outside air through wall louvers located at elevations 100′-0″, 120′-6″, and 141′-3″ ~~117′-6″, and 135′-3″~~. Wall louvers are located at the operating deck to provide additional air during plant outage operations. The general area heating subsystem uses hot water unit heaters to provide local heating throughout the turbine building. During heating operation, the general area ventilation system is not operated.

UFSAR Section 9.4.9.2.1.2

"Electrical Equipment and Personnel Work Area HVAC"

Revise the first and second paragraphs, as follows:

The electrical equipment, south bay equipment, and personnel work area air conditioning subsystem serves electrical equipment areas (switchgear rooms and the electrical equipment room), the south bay equipment (CCS pumps, BDS pumps, and reactor coolant pumps variable frequency drive power converter areas), and personnel work areas (secondary sampling laboratory, office space at elevation 158'-7" and 183' ~~149' and 174'~~). This subsystem is subdivided into three independent HVAC systems, one serving the electrical equipment areas, one serving the south bay equipment, and one serving the personnel work areas.

The electrical equipment HVAC system consists of two 50 percent capacity air handling units with a supply fan and a return air fan of about 16,500 scfm each, a ducted supply and return air system, automatic controls, and accessories. The air handling units are located on elevation 158'-7" ~~149'-0"~~ of the turbine building. The temperature of the rooms is maintained by thermostats which control the chilled water control valves for cooling and the integral face/bypass dampers for heating. Outside air is mixed with recirculated air to maintain a positive pressure.

UFSAR Section 9A.3.2.1

"Fire Area 2000 AF 01"

Revise selected text, as follows:

9A.3.2.1 Fire Area 2000 AF 01

* * *

Fire Zone	Room No.	
* * *		
• 2040 AF 20400	20400	Elevation 120'-6" ~~117'-6"~~ general floor area
* * *		
• 2050 AF 20500	20500	Elevation 141'-3" ~~135'-3"~~ general floor area
* * *		
• 2053 AF 20506	20505	Office area at 158' - 7" ~~149' - 0"~~
* * *		
• 2060 AF 20600	20600	Elevation 170'-0" ~~161' - 0"~~ general floor area
* * *		
• 2063 AF 20602	20602	Office area/engineering workstation at elevation 183'-1 1/2" ~~175'-1 1/2"~~ * * *

Fire Detection and Suppression Features

* * *

Automatic suppression for the following equipment: the service water pumps, the start-up feedwater pumps and MCCs and control equipment at elevation 141'-3" ~~135'-3"~~ (in the area defined by column 13.1 to 14 and P.1 to O).

UFSAR Section 9A.3.2.4

"Fire Area 2009 AF 02"

Revise the first paragraph, as follows:

This elevator serving the turbine building from elevation 100'-0" to elevation 170'-0" ~~161'-0"~~ and its machine room are enclosed by fire barrier walls having a minimum rating of 2 hours. These nonstructural walls are metal lined gypsum board. The elevator machine room is above the elevator tower at elevation 196'-3" ~~171'-0"~~. There are no radioactive systems in this fire area.

UFSAR Section 9A.3.2.7

"Fire Area 2009 AF 03"

Revise the first paragraph, as follows:

This stairwell serves the northwest portion of the turbine building from 158'-7" ~~149'-0"~~ to 196'-3" ~~187'-3"~~. The walls of this enclosure that are exposed to the turbine building interior are constructed with a concrete/steel composite material having a minimum fire rating of 2 hours. The walls of the enclosures that face the yard area would not be exposed to the turbine building interior; therefore, these outside walls are constructed with an exterior siding common to the overall siding used for the turbine building. There are no safety-related components or systems in this fire area that contain radioactive material. There are no systems in this fire area that contain radioactive material. The quantity of combustible materials in the stairwell is negligible, and no fire is postulated in this fire area. A fire protection hose riser is located in the stairwell with NFPA Class I hose connections at intermediate stair landings.

UFSAR Table 9A-3

Revise selected table entries, as follows:

Table 9A-3 (Sheet 12 of 24)
Fire Protection Summary

Fire Area/ Zone[1]	Safety Area?[2]	Floor Area Sq Ft	Combust. Material[3]	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. [4] (Hours)	Detect. Cap.	Fixed Suppression Capability [5]
2000 AF 01	NO										
2040 AF 20400			CABLE INS	C	87,800	9.0E+08				HEAT	WET PIPE
ELEVATION 120'-6" ~~117'-6"~~			LUBE OIL	E	1450	2.2E+08					SPRINKLERS
GENERAL FLOOR AREA			PLASTIC	D	6500	8.6E+07					HOSE STATION
			VOLATILES	E	180	2.4E+07					
			TRASH	B	1500	1.2E+07					
		42,606	NET CAT.	E	TOTAL	1.2E+09	28,170	21			
* * *											
2050 AF 20500			CABLE INS	C	87000	8.9E+08				HEAT	WET PIPE
ELEVATION 141'-3" ~~135'-3"~~			LUBE OIL	E	5400	8.2E+08					SPRINKLERS
GENERAL FLOOR AREA			PLASTIC	D	6000	7.9E+07					HOSE STATION
			VOLATILES	E	100	1.4E+07					
			HYDROGEN	E	50	7.6E+06					
			TRASH	B	50	3.9E+06					
		378900	NET CAT.	E	TOTAL	1.8E+09	47510	36			

UFSAR Table 9A-3

Revise selected table entries, as follows:

Table 9A-3 (Sheet 13 of 24)
Fire Protection Summary

Fire Area/ Zone[1]	Safety Area?[2]	Floor Area Sq Ft	Combust. Material[3]	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. [4] (Hours)	Detect. Cap.	Fixed Suppression Capability [5]
2053 AF 20506			CABLE INS	C	720	7.2E+06				SMOKE	HOSE STATION
OFFICES AT 158'-7" ~~149'-0"~~			PLASTIC	D	900	1.2E+07					
			TRASH	B	50	4.0E+05					
			CLOTH	B	720	5.7E+06					
			PAPER	C	14000	1.1E+08					
			WOOD	C	1800	1.5E+07					
		3634	NET CAT.	D	TOTAL	1.5E+08	41400	39			
* * *											
2060 AF 20600			CABLE INS	C	1000	1.0E+07				HEAT	WET PIPE[7]
ELEVATION 170'-0" ~~161'-0"~~			LUBE OIL	E	250	3.8E+07					SPRINKLERS
GENERAL FLOOR AREA			PLASTIC	D	2500	3.3E+07					HOSE STATION
			VOLATILES	E	55	7.5E+06					
			TRASH	B	1000	7.7E+06					
		44042	NET CAT.	E	TOTAL	9.6E+07	2200	2			
* * *											

South Carolina Electric & Gas Company

NND-13-0417

Enclosure 5

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

Floor Response Spectra Associated with Request for License Amendment Regarding Changes to the Structure and Layout of the Turbine Building

(LAR 13-13)

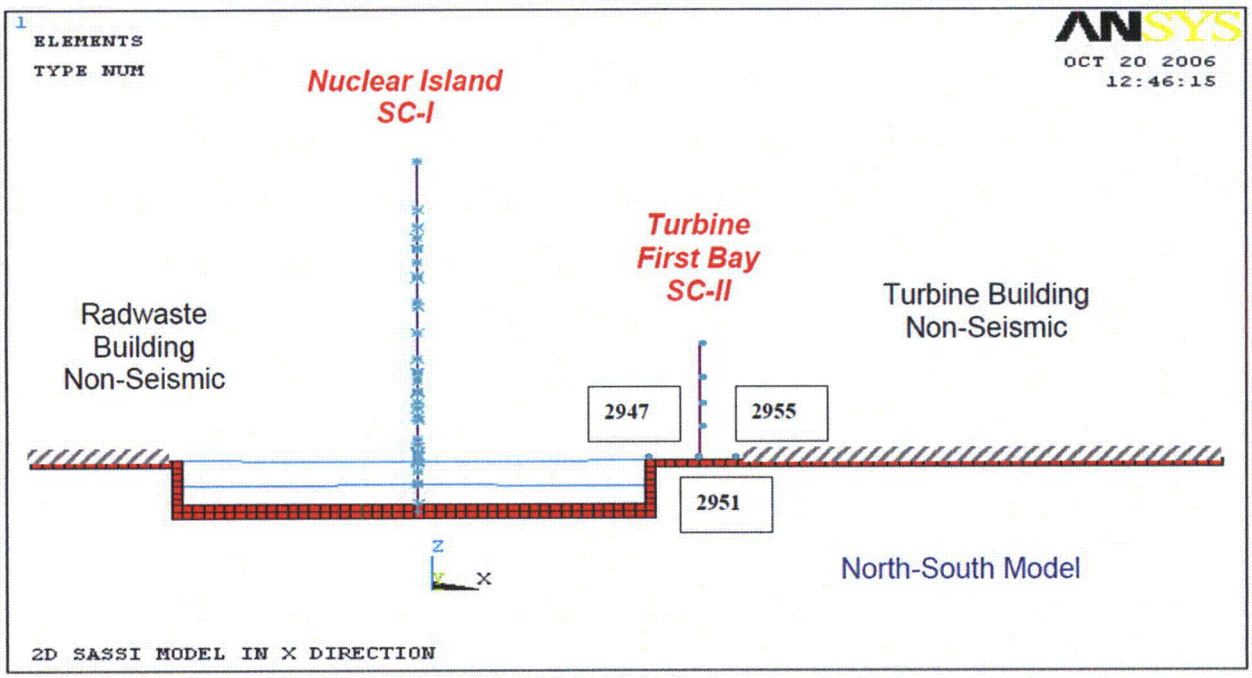
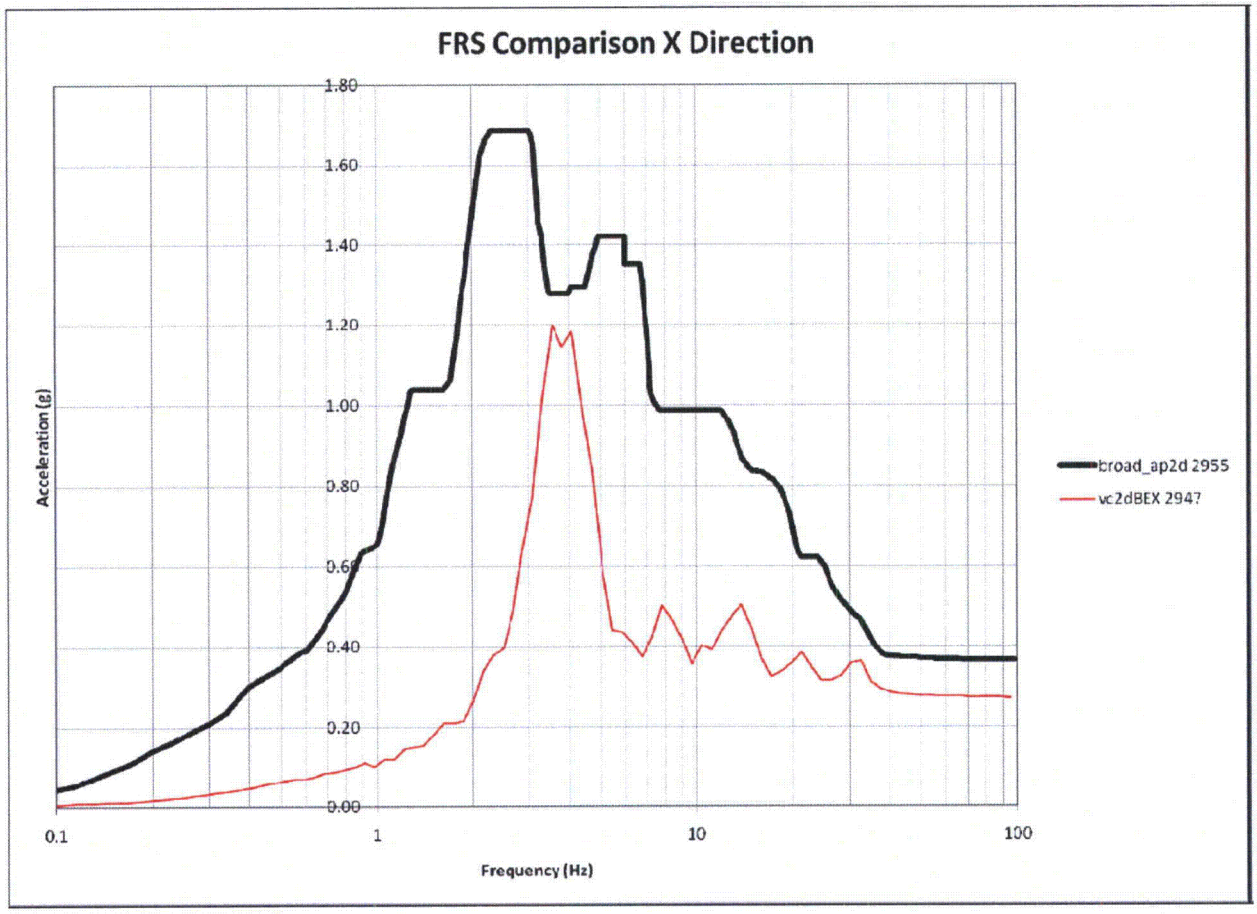
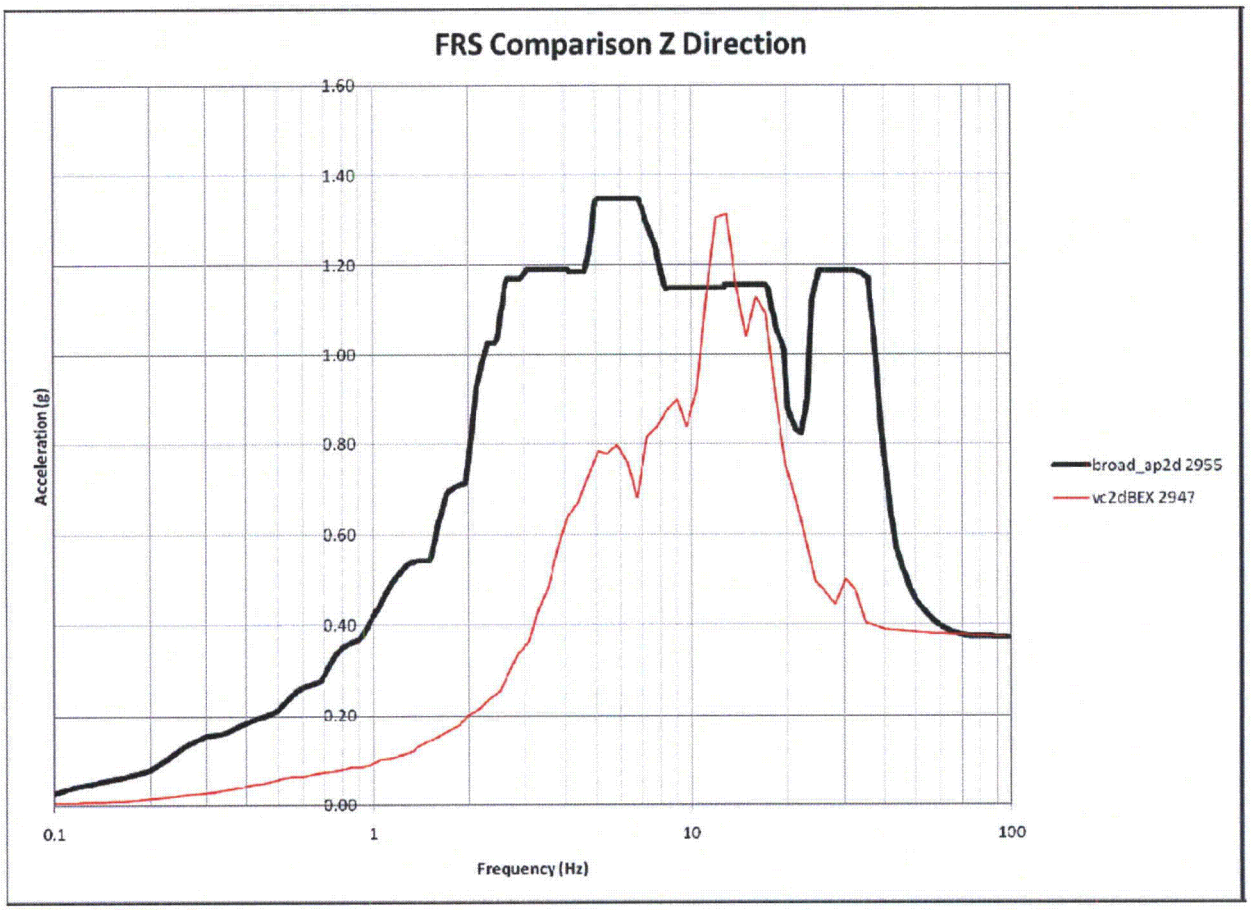


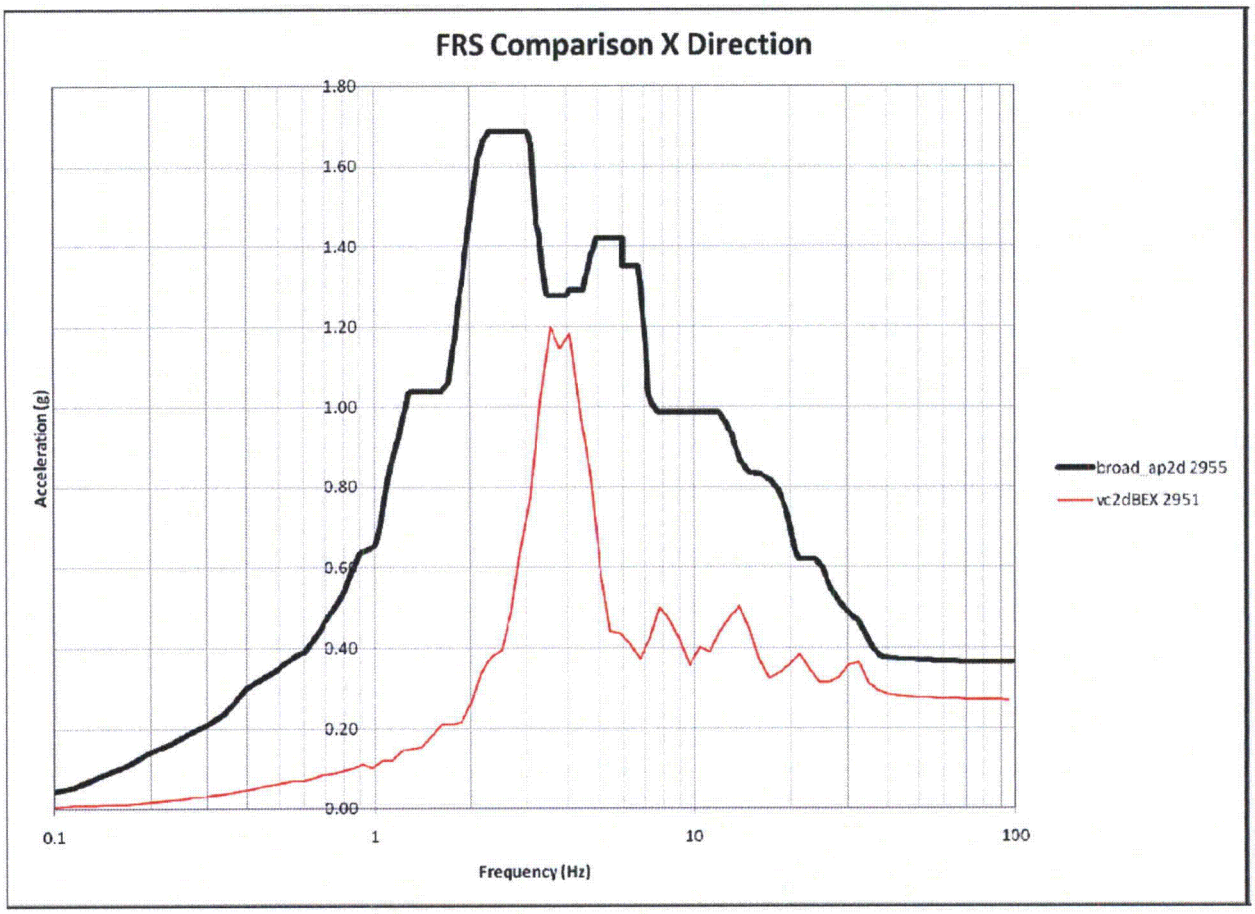
Figure 5-1: 2D SASSI North-South Model in X Direction



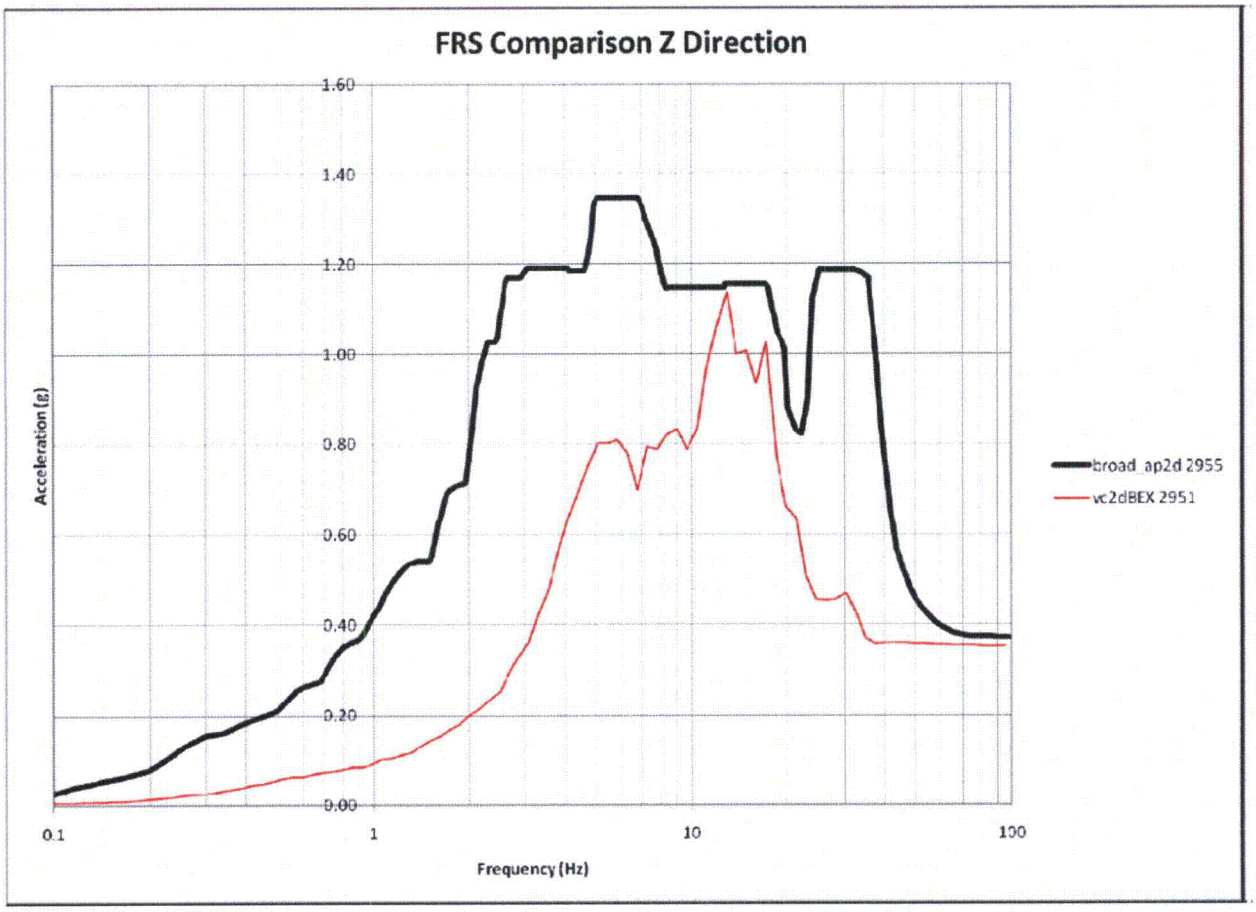
South end of the Turbine Building 1st Bay adjacent to the NI (El. 100 ft.)



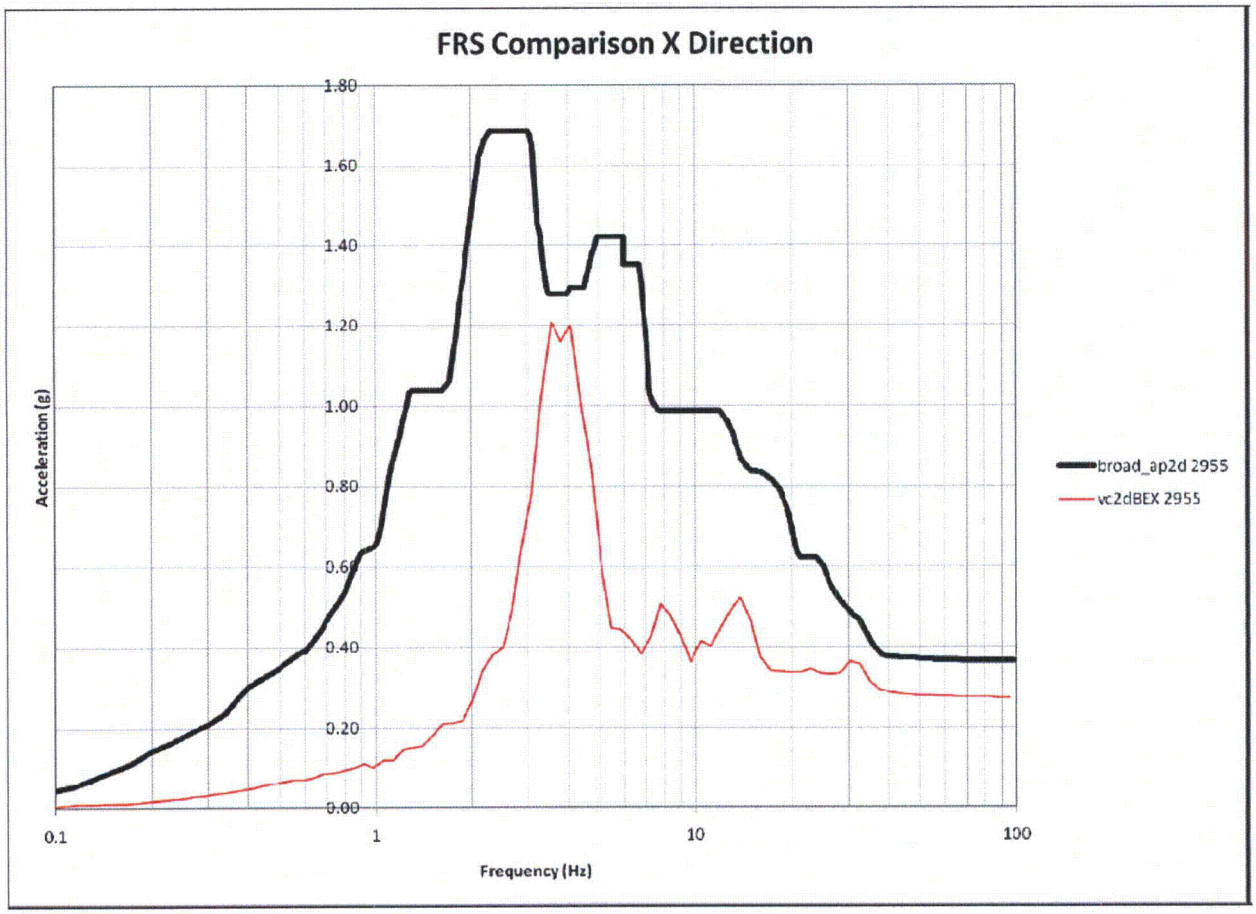
South end of the Turbine building 1st Bay adjacent to the NI (El. 100 ft)



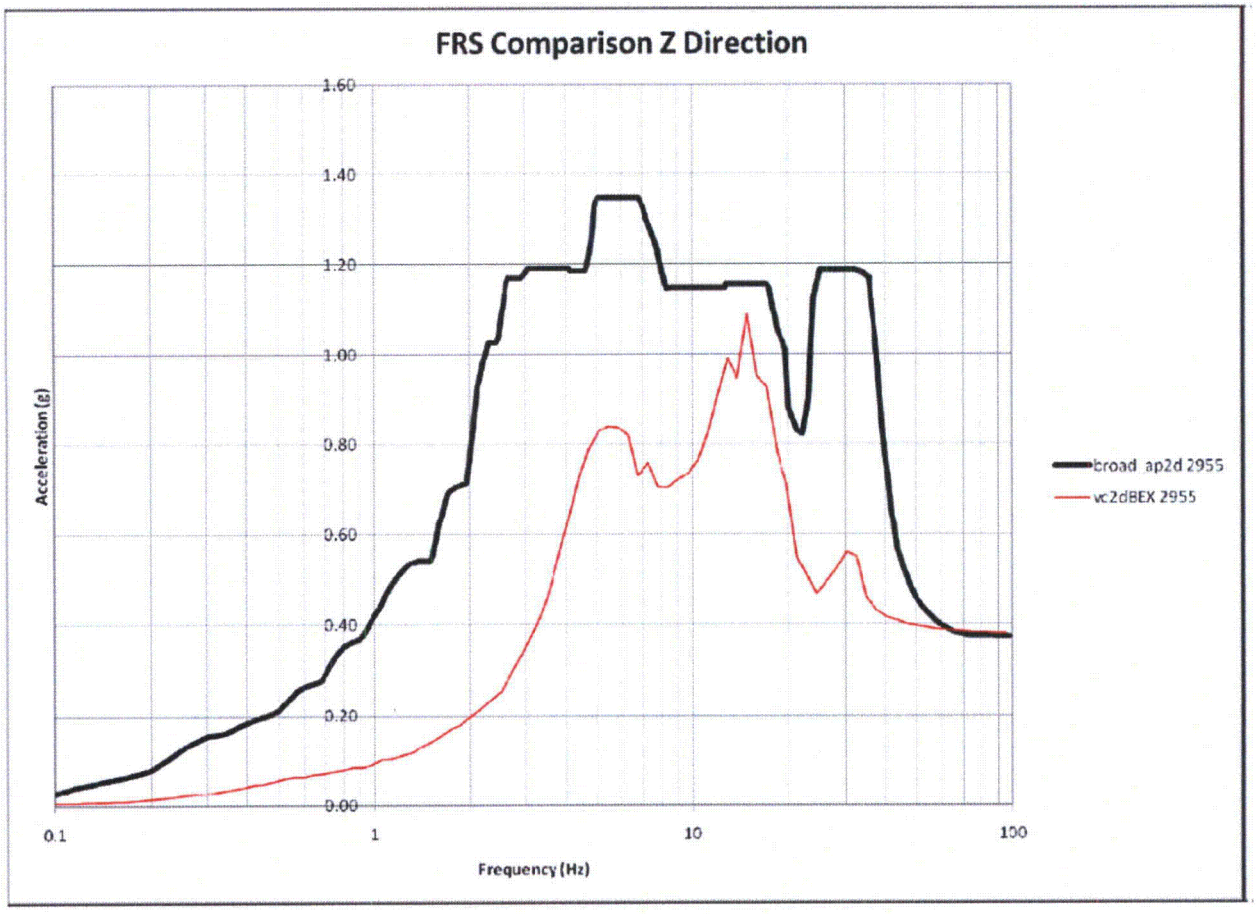
Base of the Turbine Building 1st Bay (El. 100 ft.)



Base of the Turbine Building 1st Bay (El. 100 ft.)



North end of the Turbine Building 1st Bay (El. 100 ft.)



North end of the Turbine Building 1st Bay (El. 100 ft.)