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SCE&G®
A SCANA COMPANY

October 11, 2010
NND-10-0378

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

ATTN: Document Control Desk

Subject: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 Combined License Application (COLA) - Docket Numbers 52-027 and 52-028 Additional Response to NRC Request for Additional Information (RAI) Letter No. 054

References: 1.Letter from Chandu P. Patel (NRC) to Alfred M. Paglia (SCE&G), Request for Additional Information Letter No. 054 Related to SRP Section 3.5.1.4 for the Virgil C. Summer Nuclear Station Units 2 and 3 Combined License Application, dated July 7, 2009 (eRAI 2989).

2. Letter from Ronald B. Clary (SCE&G) to the Document Control Desk (NRC) dated September 10, 2009 (NND-09-0190).

3. Letter from (Westinghouse Electric Company) to the Document Control Desk (NRC) RAI-COL03.05.01.04-1 R2 (DCP/NRC002894).

In referenced letter 2 above, South Carolina Electric & Gas Company (SCE&G) provided a response to an NRC request for additional information pertaining to tornado generated missiles at the VCSNS Units 2 and 3 site. Based on additional discussions between the NRC, SCE&G and WEC, WEC provided additional information to the NRC in referenced letter 3 above. Based on the information contained in that WEC response, and the proposed changes to the AP1000 DCD amendment contained in that letter, the attached enclosure contains associated changes that will be incorporated in a future revision of the VCSNS Units 2 and 3 COLA.

Should you have any questions, please contact Mr. Al Paglia by telephone at (803) 345-4191, or by email at apaglia@scana.com.

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

Executed on this 11th day of October, 2010.

Sincerely,

Ronald B. Clary
Vice President
New Nuclear Deployment

AMM/RBC/am

Enclosure

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NRC RAI Letter No. 054 Dated July 7, 2009

SRP Section: Missiles Generated by Tornadoes and Extreme Winds

QUESTIONS for Balance of Plant Branch 2 (ESBWR/ABWR) (SBPB)

NRC RAI Number: 03.05.01.04-2

(A) In Section 3.5.1.4 of the AP1000 DCD, Revision 17, a tornado generated 4000-pound automobile missile is considered at all plant elevations up to 30 feet above grade levels within 1/2 mile of the **plant structures**. In the response to NRC RAI 03.05.01.04-1, South Carolina Electric & Gas Company (SCE&G) stated that:

> "VCSNS site specific topography within a 1/2 mile radius of the proposed Units 2 and 3 **reactor buildings** reaches an elevation of 458 ft compared to a proposed plant grade level of 400 ft. Therefore, the automobile missile height consideration increases to Elevation 488 ft (i.e., El 458' + 30' = 488'). For the AP1000 standard plant this relates to an approximate elevation of 188 ft compared to the DCD referenced grade elevation of 100 ft. Westinghouse extended the missile evaluation to elevations higher than 30 feet above plant grade and has evaluated the impact of the automobile missile for elevations in excess of 188 ft."

However, VCSNS has not provided the above cited Westinghouse's evaluation of impact of the automobile missile for elevations in excess of 188 ft (higher than 30 feet above plant grade) for the staff to review. **Provide/submit** the report of Westinghouse's extended the automobile missile evaluation for the staff to review.

In addition, in AP1000 DCD, Revision 17, a tornado generated 4000-pound automobile missile is considered (following the guidance of RG 1.76, Rev. 1) at all plant elevations up to 30 feet above grade levels within 1/2 mile of the **plant structures**. For VCSNS, a tornado generated 4000-pound automobile missile is considered at all plant elevations up to and above 30 feet above grade levels within 1/2 mile of the **reactor buildings**. It is not clear to the staff whether this deviation is an intended "departure" of VCSNS from the AP1000 DCD. **Provide** discussion/justification to clarify the above cited discrepancy.

(B) In the response to NRC RAI 03.05.01.04-1, SCE&G also stated that:

> "VCSNS Units 2 and 3 do not require any plant specific design modifications to the AP1000 standard plant for tornado missile protection. The evaluation of the response of the AP1000 structures to tornado missiles is part of the standard design of the AP1000 and is included in the review of the design certification. Additional plant specific evaluations of tornado missiles are not required to support VCSNS Units 2 and 3 COLA

The staff believes that information in addition to the above response is needed because in the AP1000 DCD, missile protection provided for structures and SSCs against tornado missiles were only evaluated up to 30 feet above grade levels for automobile missiles. AP1000 DCD general arrangement Figures 1.2-11 through 1.2-14 show SSCs (some labeled, some not) on the roof of the North Auxiliary Building Roof. **Identify** these SSCs and their functions. In addition, **provide** information as to whether or not these SSCs are required to shut down the reactor, address transient conditions, and/or mitigate postulated accidents.

VCSNS ADDITIONAL RESPONSE:

Based on the additional information and proposed AP1000 DCD changes provided to the NRC by WEC in RAI-COL03.05.01.04-1 R2, SCE&G will make the changes shown below in the next revision to the VCSNS Units 2 and 3 COLA.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

The following deletions will be incorporated in the next revision to the VCSNS Units 2 and 3 COLA.

~~3.5.1.4 Missiles Generated by Natural Phenomena~~

/CS SUP 3.5-2 ~~Add the following text to the end of DCD Subsection 3.5.1.4.~~

~~A postulated automobile tornado missile impact above the height of 30 feet above grade on the nuclear island was evaluated. It was determined that the nuclear island structural integrity is maintained. The structural shear stress caused by this postulated automobile impact with a horizontal velocity of 105 mph or vertical velocity of 74 mph is within the allowable stress of 112.8 psi. All ductility factors are below 10, which is the acceptable limit, with the largest being approximately 2.6.~~

~~Based on this evaluation, the massive high-kinetic energy missile (4000 pound automobile) identified in DCD Subsection 3.5.1.4 is not limited to 30 feet above site grade elevation. This evaluation conforms to the guidance of Regulatory Guide 1.76, Revision 1, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants."~~

ASSOCIATED ATTACHMENTS:

None