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March 23, 1990

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

Subject: Virgil C. Summer Nuclear Station  
Docket No. 50/395  
Operating License No. NPF-12  
Supplemental Station Blackout  
Submittal

Gentlemen:

On April 17, 1989, Virgil C. Summer Nuclear (VCSNS) submitted a response to the NRC amendment to the regulations in 10CFR, Part 50. Specifically, the submittal was in response to a new section, 50.63, which was added to require that each light-water-cooled nuclear power plant be able to withstand and recover from a station blackout (SBO) of a specified duration. The VCSNS response utilized guidance provided in Nuclear Management and Resources Council (NUMARC) 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing SBO at Light Water Reactors." This NUMARC guideline was determined to be acceptable to the NRC Staff for meeting the requirements of 10CFR50.63.

After review of several licensees' submittals, the NRC expressed concern over inconsistencies in the implementation of the NUMARC SBO Initiatives contained in NUMARC 87-00. NUMARC addressed this concern in a letter to the NUMARC Board of Directors dated January 4, 1990. In this letter, which contains attachments providing clarification of the NUMARC 87-00 guidelines and major assumptions, NUMARC requested that each utility review their response to the Station Blackout Rule with regard to proper documentation and consistent implementation of NUMARC 87-00 guidance.

As requested by NUMARC, VCSNS has reviewed the April 17, 1989, SBO submittal and has determined that the response and the required supporting documentation is consistent with NUMARC 87-00 and the clarifications delineated in the attachments to the NUMARC letter dated January 4, 1990. The only area in which the VCSNS analysis deviates from the guidance in NUMARC 87-00 is in the "Effects of Loss of Ventilation" section, which assesses the effect of lost ventilation within the areas of the plant containing equipment necessary to achieve and maintain safe shutdown during a station blackout. The only deviations from the NUMARC guidance are in the following cases:

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1) Control Room and Relay Room Dominant Area of Concern Temperature (TDAC) Determination

The NUMARC 87-00 procedure for determining TDAC is based on the assumption that wall temperature will remain essentially constant throughout the SBO transient. While this assumption is true for rooms with concrete walls (such as the Steam Turbine Driven EFW Pump Room), it is not applicable for the gypsum board partitions of the Main Control Room or Relay Room No. 36-11 at VCSNS. Because the NUMARC methodology does not apply, the dominant area of concern (DAC) temperatures for these rooms were determined by developing transient thermal models for use on existing computer programs. These models utilize recognized engineering principals to handle the heat transfer across all interfaces (through walls, false ceiling, floors, etc.). The technically supporting documentation for these analyses is available for NRC review.

2) Opening cabinet doors in the Main Control Room

For control room cabinets which contain instrumentation and controls required for achieving and maintaining safe shutdown in a SBO, NUMARC 87-00 guidance calls for opening the cabinet doors within 30 minutes of onset of a station blackout event. This is done to prevent the internal cabinet temperatures from reaching temperatures which prevent the equipment inside the cabinets from performing their required function.

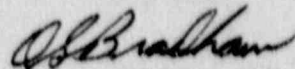
To eliminate the need for operators to open the cabinet doors during the transient, the VCSNS analysis contains time/temperature calculations that show the peak control room temperature during a 4 hour SBO does not exceed the NUMARC 87-00 allowed temperature of 120°F. Furthermore, the analysis evaluates the Control Room equipment/components required for coping during the event and provides a justification of operability at the calculated peak temperature. The technically supporting documentation for the VCSNS SBO response is available for NRC review.

Additionally, the NRC is concerned that utilities have not committed to maintaining the targeted level of Emergency Diesel Generator (EDG) reliability. VCSNS understands that the EDG target reliability of 0.95 must be maintained to preserve the selected four hour coping duration category. VCSNS currently maintains the targeted EDG reliability of 0.95 by ensuring the number of diesel generator failures to start compared to the number of demands to start comply with the values in the VCSNS Technical Specifications. NUMARC is currently working on a revision to Appendix D of NUMARC 87-00, "EDG Reliability Program." This revision will provide specific guidance for maintaining EDG target reliability. When this program is completed and approved, it will be utilized by VCSNS to maintain EDG target reliability.

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As requested in their January 4, 1990, letter, a copy of this letter is being sent to NUMARC for information. Should you have any questions, please call at your convenience.

Very truly yours,



O. S. Bradham

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