SOUTH CAROLINA ELECTRIC & GAS COMPANY
POST OFFICE BOX 764
COLUMBIA, SOUTH CAROLINA 29218

T. C. NICHOLS, JR.
VICE PRESIDENT AND GROUP EXECUTIVE
NUCLEAR OPERATIONS

June 3, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Virgil C. Summer Nuclear Station
Docket No. 50/395
NRC Generic Letter 81-04

Dear Mr. Denton:

In regards to the NRC requirement for Station Blackout events to be addressed in plant emergency procedures and training programs, as delineated in NRC Generic Letter 81-04, dated February 25, 1981 from Darrell G. Eisenhut of the NRC to all Licensees of Operating Nuclear Power Reactors and Applicants for Operating Licenses (except for St. Lucie Unit Nos. 1 and 2), South Carolina Electric and Gas Company (SCE&G), acting for itself and agent for South Carolina Public Service Authority, provides the following response.

Items a, b, e, and g are being addressed by the Westinghouse Owners Group (WOG) as delineated in WOG letter OG-56, dated April 9, 1981, from Robert W. Jurgensen, Chairman, Westinghouse Owners Group to Mr. Darrell G. Eisenhut. As a participating member of the WOG, SCE&G will develop plant specific procedures and training based on the WOG Loss Of All AC Power Guideline as reviewed by the NRC. Schedule of implementation should be within 60 days of receipt of the approved guidelines.

Item c: Actions for restoring offsite AC power in the event of a loss of the grid. The Virgil C. Summer Nuclear Station receives off-site AC power from two independent sources. One source is a direct 115KV line from the company's Parr Plant located approximately 2 miles southwest of the Nuclear Station. This 115KV line ties directly into the Nuclear Station's ESF buses via a 115KV/7.2KV stepdown transformer. The Parr Plant has a 14MW hydro unit, a 60MW gas turbine, and a 28MW steam plant. The Parr Plant can be isolated from the grid by its local switchyard and still provide AC power to the Nuclear Station. This action can be accomplished rapidly and easily without resorting to any transmission line modifications. The other source partially independent of the transmission grid is the Fairfield Pump Storage Plant located one mile west of the Nuclear Station. This plant has 8 hydro units with a combined output of 512MW which is routed through two transmission lines to the 230KV switchyard adjacent to the Nuclear Station for connection to the transmission grid. Switching in the 230KV switchyard is via hydraulic closed/spring opened oil circuit breakers (OCB) which can be operated from the Nuclear Station's main control room, from a substation house in the switchyard, or locally at the breaker. The breakers have a hydraulic reservoir capacity of 5 closures after loss of hydraulic pump power and can be manually

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recharged. The 230KV system supplies the Nuclear Station ESF and non safety-related distribution systems through two OCB's. In the event of the loss of the grid, the plant can be isolated from the grid by opening the switchyard OCB's, a Fairfield Pump Storage Plant hydro started, and the OCB's from the Fairfield Plant and to the Nuclear Station closed. This action can be accomplished rapidly and easily without resorting to any transmission line modifications.

Item d: Actions for restoring offsite AC power when its loss is due to postulated onsite equipment failures. The Virgil C. Summer Nuclear Station receives offsite AC power from two independent sources as described in the response to item c of this letter. A loss of all offsite AC due to onsite equipment failures would require simultaneous failures of five (5) transformers (1 main transformer, 2 emergency auxiliary transformers, 2 ESF transformers) or similar multiple equipment failures. In our judgement, the possibility of this happening is quite remote. The actions necessary to restore offsite AC power in this event would be to restore any single transformer to an operable status.

Item f: Consideration of the availability of emergency lighting, and any actions required to provide such lighting, in equipment areas where operator or maintenance actions may be necessary. The V.C. Summer Nuclear Station essential lighting operates in conjunction with normal lighting where a more reliable source of illumination is required. Essential lighting power is supplied from the ESF buses and divided into Train A and Train B in accordance with the designation of the respective ESF source bus. Train A and Train B are separated from each other. The ESF buses are supplied by their respective diesel generators in the event of a loss of all offsite AC power. Fused circuit breakers at the ESF source bus provide isolation, thereby eliminating separation criteria problems. Essential lighting is provided in the following areas:

1) Turbine Bldg.
2) Auxiliary Bldg.
3) Diesel Generator Bldg.
4) Water Treatment Bldg.
5) Intermediate Bldg.
6) Control Complex:
   a. Control Room
   b. Controlled Access Area
   c. Safe Shutdown Areas
7) Critical Electrical Distribution Areas:
   a. DC Distribution Panels
   b. Inverter
   c. Charger
   d. ESF Switchgear
   e. ESF Motor Control Centers

As a backup to essential lighting, emergency lighting supplied from the station 125 Volt DC power system is provided in the Diesel Generator Bldg., Reactor Bldg.,

Control Room Operating floor, and Relay Room. The illumination level is adequate for the performance of critical tasks and access to these areas. Upon loss of AC voltage to these lighting panel boards, the hold-out relay in the 125 Volt DC emergency panel closes, thereby energizing the emergency lighting system. Restoration of AC voltage to the lighting panelboard automatically de-energizes the DC contactor, re-establishing the normal mode of operation.

In addition to the 125 Volt DC system, fixed emergency lighting consisting of sealed beam units with individual 8-hour minimum battery power supplies is provided in the following areas:

1) Control Room
2) Control Room Evacuation Panel Rooms
3) ESF Switchgear Rooms (Intermediate Building)
4) Diesel Generator Building
5) ESF Switchgear and Motor Control Center Rooms (Auxiliary Building)
6) and along access and egress routes to the areas listed above.

The Cold License Operator Training Program includes training on all Emergency Operating Procedures (EOP's). EOP-4, "Station Blackout Operation", will be revised based on the WOG Loss Of All AC Power Guidelines. Once this revision has been completed, training will be held to ensure that all cold license trainees are familiarized with the procedural revisions. In addition, annual requalification training will include instruction in the use of all EOP's.

Should you require further information in this regard concerning the schedule or scope of our planned actions on this topic, please let me know.

Very truly yours,

T.C. Nichols, Jr.

KWW/RMF/TCN/bsg

cc: V.C. Summer
G.H. Fischer
T.C. Nichols, Jr.
H.N. Cyrus
D.A. Nauman
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M.N. Broome
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Dr. J. Ruoff
J.L. Skolds
J.B. Knotts, Jr.
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File

[illegible] than an assessment of procedures and training programs as requested in the NRC letter.

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