

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE 764

COLUMBIA, SOUTH CAROLINA 29218

O. W. DIXON, JR.
VICE PRESIDENT
NUCLEAR OPERATIONS

November 27, 1984

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
Operating License No. NPF-12
P-9 Interlock

Dear Mr. Denton:

In a letter dated May 23, 1984, South Carolina Electric and Gas Company made a request to amend the Virgil C. Summer Nuclear Station Technical Specifications to allow for the installation of the P-9 Interlock. This interlock functions to prevent a direct reactor trip as a result of a turbine trip when the plant is below 50% power. During the Nuclear Regulatory Commission Staff review process, additional information on the hardware associated with the P-9 modification was requested. This letter is provided in response to that request.

The primary new hardware additions required to implement the P-9 modification are as follows:

- 1) A "Bistable/Relay Driver Board" and transformer has been added to each of the four (4) Power Range 'A' Drawers.
- 2) Eight (8) input relays (four for "A" Train, four for "B" Train) have been added to the input bay leading to the Logic Cabinet.
- 3) Two (2) Universal Logic Boards (one for "A" Train, one for "B" Train) have been added to the Logic Cabinet.
- 4) Five (5) output relays (to the control board) have been added to the Control Board Demultiplexer Cabinet.

Functionally the modification performs as described below and shown on the attached diagram:

The output from each channel (a total of four (4) channels exists) of the Power Range Detector is fed to a separate Bistable/Relay Driver Board which, coupled through the transformer, drives two (2) input relays, one for "A" train, one

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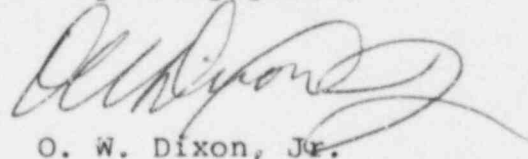
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for "B" train. This arrangement provides four (4) channels of power level setpoint input to the "A" train logic and four (4) channels to the "B" train logic. The eight (8) input relays (4 for train "A", 4 for train "B") provide logic inputs to the two (2) Universal Logic Boards (one board for "A" train inputs, one board for "B" train inputs). Either "A" or "B" train requires 2/4 logic verification to initiate a signal. The Universal Logic Board (either "A" or "B" train) provides both the Interlocked Turbine Trip signal (P-9) and outputs to the Control Board Demultiplexer. The outputs feeding the Demultiplexer drive the five (5) output relays providing control board status light indications.

The configuration of the Bistable/Relay Driver Board and transformer for the P-9 interlock is the same as the P-8 interlock currently installed at the Virgil C. Summer Nuclear Station. Therefore, isolation protection for the P-9 modification is in accordance with existing plant design.

If you have any further questions, please advise.

Very truly yours,



O. W. Dixon, Jr.

AMM/OWD/gj
Attachment:

cc: V. C. Summer	C. A. Price
T. C. Nichols, Jr./O. W. Dixon, Jr.	C. L. Ligon (NSRC)
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Group Managers	NPCF
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1 OF 4 CHANNELS

