SOUTH CAROLINA ELECTRIC & GAS COMPANY
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O. W. DIXON, JR.
VICE PRESIDENT
NUCLEAR OPERATIONS

June 26, 1985

Dr. J. Nelson Grace
Regional Administrator
U.S. Nuclear Regulatory Commission
Region II, Suite 2900
101 Marietta Street, N.W.
Atlanta, Georgia 30323

SUBJECT: Virgil C. Summer Nuclear Station
Docket No. 50/395
Operating License No. NPF-12
Response to Notice of Violation
NRC Inspection Report 85-27

Dear Dr. Grace:

Attached is South Carolina Electric and Gas Company's response for the Violation as addressed in Enclosure 1 of NRC Inspection Report 85-27.

If there are any questions, please call us at your convenience.

Very truly yours,

O. W. Dixon, Jr.

RMF:OWD/lcd
Attachment

cc: V. C. Summer
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IE01

ENCLOSURE 1
RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT 85-27

I. ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

South Carolina Electric and Gas Company (SCE&G) is in agreement with the alleged violation.

II. REASON FOR THE VIOLATION

On May 11, 1985 at 1700 hours during a reactor startup, criticality was achieved below the Lo-Lo Rod Insertion Limit. For zero power, the limit is Bank C at 118 steps; the observed critical rod position was Bank C at 69 steps. Immediate action was taken by the operator to emergency borate and fully insert all control rods per the procedural requirements. The major contributor to the discrepancy between the predicted and actual critical rod position was determined to be with power defect data provided by Westinghouse for Cycle 2. Due to flux redistribution effects, which were not previously accounted for and a refinement in spectrum factor, a 530 percent millirho (pcm) discrepancy was identified. This, along with differences between measured and predicted critical boron concentrations and differential boron worths used at the plant, accounts for approximately 870 pcm of the difference between the estimated and actual critical positions.

A violation was cited for failure to follow procedures. These failures were identified by the NRC inspector during his review of the event. There were four examples of failure to follow procedures cited in the Audit Report. Two failures involved the incorrect versions of procedures used during the calculation of the estimated critical condition (ECC) and a previous shutdown margin calculation. The other two failures involved the incorrect performance of the inverse multiplication (1/M) calculation procedure. On one occasion, the improper use of the 1/M plot resulted in an unconservative prediction of core criticality. Proper performance of the 1/M procedure would have closely predicted the actual critical condition of the core, thus avoiding this event. On the second occasion during the subsequent startup, verbatim compliance with the 1/M procedure was not accomplished. All four examples of failure to follow procedures are attributed to personnel error.

There were no adverse consequences for this specific event.

III. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Immediate corrective action was taken in response to the event to emergency borate and fully insert all control rod assemblies per procedural requirements. Shutdown margin was verified to be adequate at all times during the event. Westinghouse was notified for further instructions prior to the subsequent restart. The subsequent startup was conducted using the guidance provided by Westinghouse, and criticality was achieved with the expected critical rod position within one step of the actual critical rod position.

IV. CORRECTIVE ACTION TAKEN TO AVOID FURTHER VIOLATION

The following corrective actions were taken to avoid further violation.

1) Procedural compliance has been reemphasized in a series of seven meetings held by the Deputy Director of Nuclear Plant Operations. These meetings stressed management concern over violations received and addressed the potential for individual disciplinary action should the present trend persist. Essentially all plant personnel attended one of these meetings.

2) Additional administrative control has been established for satellite files containing blank forms, e.g., forms for shutdown margin and ECC calculations.

   a) A Procedure Cross-Reference Log has been provided to control room clerks so that procedure changes and/or revisions will result in out-of-date forms being purged from the satellite files.

   b) Procedure Working Copies will be obtained by control room clerks from the Master Control Copy no more than two days prior to their scheduled use. This should both reduce the chance of using out-of-date procedures and reduce the administrative burden on the plant operators.

3) Training on the use of the new ECC calculation has been accomplished as part of the licensed operator requalification training program.

IV. CORRECTIVE ACTION TAKEN TO AVOID FURTHER VIOLATION Continued

4) Additional simulator training will be provided for licensed operators to include startups using 1/M calculations and plots.

5) Additional on-shift training will be provided to increase licensed operators' familiarity with the new ECC calculation procedure.

V. DATE OF FULL COMPLIANCE

SCE&G expects to be in full compliance with respect to the stated corrective action by August 15, 1985. An exception to this date is made for Item 5 above, due to the on-going nature of this training.