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February 27, 1995
Refer to: RC-95-0051

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

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
REPLY TO NOTICE OF VIOLATION
NRC INSPECTION REPORT 94-28

This letter provides the South Carolina Electric & Gas Company (SCE&G) response to a Notice of Violation delineated in NRC Inspection Report No. 50-395/94-28.

South Carolina Electric & Gas Company is in agreement with this violation. Detailed response to this violation is attached.

Should you have any questions pertaining to this response, please call Mr. Philip Rose at (803) 345-4052 at your convenience.

Very truly yours,

Gary J Taylor
Gary J Taylor

PAR/GJT:

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NUCLEAR EXCELLENCE - A SUMMER TRADITION!

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REPLY TO NOTICE OF VIOLATION
VIOLATION NUMBER 50-395/94-28-03

1. RESTATEMENT OF VIOLATION

10 CFR, Part 50, Appendix B, Criteria V states in part, "... Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Paragraph 4.1 of the Operational Quality Assurance Plan which describes requirements for procedural development and usage states in part, "...Activities which affect the ability of safety-related structures, systems or components to perform their intended function must be governed by written procedures."

Section III B of the System Operating Procedure (SOP 101) provided detailed instructions for filling and cooling down the pressurizer. A note contained in the procedure states that a 200°F decrease in pressurizer temperature should not be exceeded in any one hour period.

Contrary to the above, on September 10, 1994, the pressurizer cooldown rate exceeded Technical Specification 3.4.9.2(b) limit of 200°F decrease in any one hour period. The pressurizer cooldown rate was also exceeded on at least one other occasion in 1991. The governing procedure for pressurizer cooldown (SOP-101) did not provide adequate instructions to prevent exceeding the Technical Specification limit.

II. SCE&G POSITION ON THIS VIOLATION

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

III. REASONS FOR THE VIOLATION

This violation occurred during the RCS cooldown at the beginning of Refueling Outage 8 (RF-8) and is considered to be the result of inadequate procedural guidance. The controlling procedure (SOP-101) has a section pertaining to RCS depressurization and filling the pressurizer.

The procedure failed to provide adequate guidance in controlling the cooldown in three areas. The procedure failed to address the rate of pressurizer level change; did not address the utilization of pressurizer heaters to provide heat

input to the RCS inventory that was being added to the pressurizer via the surge line; and did not address the rate of normal pressurizer spray being used to collapse the bubble.

When the charging flow was increased to raise the pressurizer level, in conjunction with minimal pressurizer heater input to allow faster cooldown, a stratified layer of relatively cooler RCS water began moving up inside the pressurizer. This combination resulted in the greater than 200°F apparent cooldown rate indicated on the pressurizer liquid space RTD and was due to the lack of adequate guidance in the procedure for depressurizing the RCS.

IV. IMMEDIATE CORRECTIVE ACTIONS

In response to the discovery of this event, SCE&G initiated a review of previous cooldowns (total of 24) to determine the frequency of this occurrence. The results of the history review indicated that the pressurizer cooldown rate was exceeded one other time in the past.

This event was evaluated in accordance with ASME Boiler and Pressure Vessel Code Section XI, Article E-1200. The evaluation concluded that the event had no effect on the structural integrity of the pressurizer.

Discussions with Westinghouse confirmed the evaluations of the transient and in fact led to a conclusion that at pressures less than 500 psia, no cooldown transient could produce significant stresses to promote through wall crack propagation based on the approach of fracture mechanics. Long term cumulative fatigue usage will also be evaluated under normal cycle monitoring activities.

V. CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATIONS

The controlling procedure was revised to address those variables that directly control the pressurizer cooldown rate. Both groups of pressurizer backup heaters are turned on to provide heat input to the colder insurge inventory and aid in reducing the stratification that occurs.

Limiting the net charging rate is now a procedural requirement to limit the cooldown rate on the pressurizer. In addition, the procedure now requires throttling open pressurizer spray valves to limit the cooldown rate during the collapse of the pressurizer bubble.

These revisions to the procedure were verified to limit cooldown rate during the cooldown of the plant that was performed at the end of the eighth refueling outage (See Attachment III). SCE&G considers these actions adequate to preclude further violations.

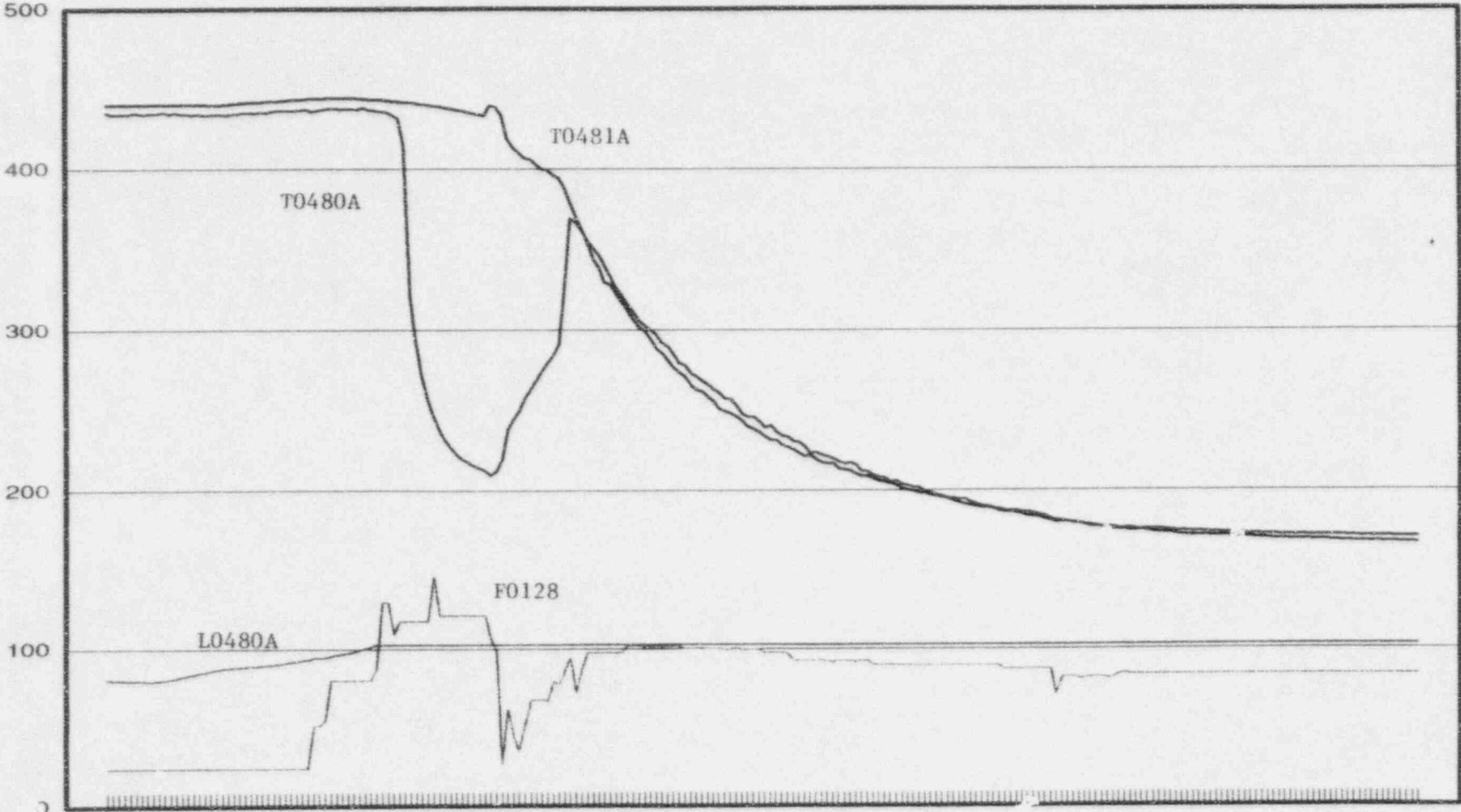
VI. DATE FULL COMPLIANCE WILL BE ACHIEVED

SCE&G is currently in full compliance.

PRESSURIZER LEVEL AND TEMPERATURE vs CHARGING FLOW

L0480A - Pressurizer Level	LT 459	
T0480A - Pressurizer Water (Liquid Space) Temperature		TE 453
T0481A - Pressurizer Steam (Steam Space) Temperature		TE 454
F0128A - Charging Pump Discharge Header Flow		FT 122

PRESSURIZER VS CHARGING



9/10/94 @ 22:00 THRU 9/11/94 @ 2:00

— L0480A — T0480A — T0481A — F0128

PRESSURIZER LEVEL AND TEMPERATURE vs CHARGING FLOW

L0462A - Pressurizer Cold-Cal Level	LT 462
L0480A - Pressurizer Level	LT 459
T0480A - Pressurizer Water (Liquid Space) Temperature	TE 453
T0481A - Pressurizer Steam (Steam Space) Temperature	TE 454
F0128A - Charging Pump Discharge Header Flow	FT 122

12/5/94 - 12/6/94 Cool Down

