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Refer to: RC-93-0108

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
RESPONSE TO NOTICE OF VIOLATION
NRC INSPECTION REPORT 93-04

Attached is the South Carolina Electric & Gas Company (SCE&G) response to the Notice of Violation delineated in NRC Inspection Report No. 50-395/93-04. SCE&G is in agreement with the violation, and the enclosed response addresses the reason and corrective actions being taken to prevent recurrence.

Should you have any questions, please call at your convenience.

Very truly yours,

John L. Skolds

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Attachment

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RESPONSE TO NOTICE OF VIOLATION
NUMBER 50-395/93-04-01

I. RESTATEMENT OF VIOLATION

10 CFR, Part 50, Appendix B, Criterion V States in part, ...Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The licensee's quality assurance program, chapter 13.5.1.12, states that the test procedures used to demonstrate that an item will perform satisfactorily in service are accomplished properly. Test procedures may incorporate or reference the requirements and acceptance limits contained in applicable design documents.

Contrary to the above, on January 27, 1993, two Electrical Maintenance Procedures and one Preventive Test Procedure were found to contain inadequate acceptance criteria....

II. REASONS FOR THE VIOLATION

As noted in Generic Letter 89-10, Motor-Operated Valve Testing and Surveillance, the assurance of MOV operability is a complex task which involves many factors such as development of strong testing and maintenance programs, management support, and coordination of engineering, maintenance, and testing. During the development and implementation of the program at the Virgil C. Summer Nuclear Station (VCSNS), SCE&G established an MOV Coordinator, with oversight responsibilities for plant procedures, testing schedules, and valve functional capability verification for MOVs in safety related systems.

The overall administration of the MOV program is described in Station Administration Procedure (SAP) 1250, MOV Program. This procedure provides guidance regarding program activities and defines responsibilities for ensuring adequate implementation. Implementation of these requirements is accomplished through the use of Engineering Services Procedure (ES) 424, MOV Program Implementation, Electrical Maintenance Procedures (EMPs) and Preventive Test Procedures (PTPs). These procedures collectively provide the acceptance criteria for determining whether MOVs will meet the requirements of calculations for valve performance. All of the above documents need to be considered when determining the ability of an MOV to perform its design basis function.

SCE&G believes that the violation resulted from a failure to clearly address programmatic interfaces and responsibilities of the Engineering, Operations, and Maintenance organizations within plant procedures. As previously addressed, the program elements required to show operability are contained in the procedures; however, taken individually, it is not clear that adequate acceptance criteria was identified.

A discussion of each procedure and how it interfaces with other elements of the program follows:

1. The violation stated that EMP-445.011, Baseline Testing of Limitorque Valves with the MOVATS 3000 System, did not list data for the reviewer (MOV Coordinator) to base acceptance.

Engineering data describing minimum and maximum thrust values and limits used in implementation of EMP-445.011 is provided in EMP-445.008, Motor Operated Valve Data. This data is used to establish acceptance boundaries for valve performance. Following the test and valve setup, there are two (2) independent reviews (Step 7.22 and 7.25.3) of valve performance data obtained during the MOVATS test as compared to the design basis information. EMP-445.011 then requires a final review of the test results by the MOV Coordinator (Engineering) to insure that all available information indicates that the valve is adjusted and operating correctly.

2. The second item stated that EMP-445.012, Differential Pressure Testing of Limitorque Valves, did not provide values for the differential pressure (dp) that must be met or where the required pressure is to be obtained.

The design basis calculations determined the worst case dp for each valve in our MOV program. The switch and thrust settings were based on these worst case conditions. At VCSNS, the EMP and 270 series PTPs work in conjunction to establish a dp condition to which the valve can be tested. The EMP acquires data and the PTP is used to establish the obtainable dp conditions.

The PTPs were prepared from the MOV test plans. The intent of the test plans was to achieve appropriate test conditions needed to perform an insitu test of the respective MOVs. The test plans utilized the various calculations that now make up the MOV Design Basis Document (these include the maximum dp, thrust calculations, etc.) as references.

After obtaining the actuator MOVAT signatures, the results are evaluated to determine valve functional capability as defined in the design basis calculations. Pressure and flow developed during and after dp testing is documented on the PTP attachments for consideration by the MOV Coordinator. The EMP acceptance criteria requires that the valve open and close fully against system dp conditions and that adequate thrust is developed. As previously mentioned, this certification is made by the MOV Coordinator after carefully reviewing the test conditions and data.

3. The third reference is that PTP-270.001 through 270.015, DP Testing of....(various valve numbers), did not provide requirements that flow shut off be verified.

At VCSNS the indicating lights and switches are set up during base line testing. The signatures provided by the MOVATS system reflect switch actuation and valve seating. These signatures provide adequate confidence that valves are seated and that flow is shut off. The attachments to the PTPs also provide a signoff that the position indicating lights and diagnostic dp test signatures confirm valve closure. As further verification that the valve has shut off flow, the attachments to the PTPs record system flow with the valve in both open and closed positions, where installed flow instrumentation permits.

III. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

SCE&G has initiated the following programmatic changes and enhancements:

- SAP-1250 was revised on March 5, 1993 to include a flow chart detailing MOV program interfaces. This chart was added to clarify the programmatic interfaces between Engineering, Operations, and Maintenance organizations.
- ES-424 was revised on March 4, 1993 to clearly show the MOV Coordinator evaluation methodology and interface with dp test procedures. The procedure now shows how field test data is routed to the MOV Coordinator for evaluation. The MOV Coordinator or designee evaluates the data and performs calculations as necessary with ES-424 data sheets to document acceptable thrust, dp (includes correlation between obtainable and design dp), valve factor calculations, etc. to confirm design functional performance. Documentation of this review and any actions initiated is retained within the Engineering document control system.
- Based on the revision to ES-424; EMP-445.011 did not require any changes.
- The acceptance criteria of EMP-445.012 was expanded on March 29, 1993 to better verify thrust developed by the valve under test. Appropriate references to the MOV Coordinator review of data is currently contained in the procedure.
- Eight (8) of the PTP series were revised by March 9, 1993 to ensure that all data obtained during a dp test is transferred to the MOV Coordinator. Acceptability of this information and ability of MOVs to perform their design basis function is determined by the MOV Coordinator during review under ES-424. The balance of these procedures will be revised prior to their next performance.