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VICE PRESIDENT  
NUCLEAR OPERATIONS

April 15, 1983

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

Subject: Virgil C. Summer Nuclear Station  
Docket No. 50/395  
Operating License No. NPF-12  
Generic Letter 82-33

Dear Mr. Denton:

On December 30, 1982, South Carolina Electric and Gas Company (SCE&G) received NRC Generic Letter 82-33, Supplement 1 to NUREG 0737, "Requirements for Emergency Response Capability." SCE&G is a participating member of the Nuclear Utility Task Action Committee (NUTAC) on Emergency Response Capabilities, which represents over forty utilities and is supported by INPO. This NUTAC is developing guidance for an integrated approach to meeting the requirements of Generic Letter 82-33. This guidance is being considered in developing the plant specific approach presented in this letter.

The Virgil C. Summer Nuclear Station was nearing construction completion and was well involved in the licensing process at the time of issuance of the TMI NUREGs. SCE&G addressed many of the items of concern in our Final Safety Analysis Report (FSAR) or in letters to the NRC. Items which have already been reviewed and approved by the Staff are addressed in the Virgil C. Summer Nuclear Station Safety Evaluation Report (SER), NUREG 0717 and in its Supplements 1 through 5. In some cases SCE&G was required to purchase and install equipment and systems for which NRC guidance was either preliminary or incomplete. As a result some differences between our systems and the now final guidance issued by the NRC may be identified. We will rely on the Staff's commitment in Generic Letter 82-33 to make allowances for work done in a good faith effort to meet requirements as they were understood.

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Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #2

#### CURRENT STATUS

The following paragraphs describe the current status of the major items of Generic Letter 82-33. For convenience, the items are addressed in order of their appearance in the Generic Letter.

The Safety Parameter Display System (SPDS) for the Virgil C. Summer Nuclear Station has been designed, installed and is functional. However, as stated in our letter to the NRC dated March 31, 1983, some problems do exist with the system software for which resolution is being pursued with the vendor. The system is described in FSAR Section 7.7.3.

As described in FSAR Section 1.2.3.1, an initial Control Room Design Review (CRDR) was conducted by Essex Corporation for SCE&G. The NRC also conducted a review of the Virgil C. Summer Nuclear Station control room. All deficiencies identified in these reviews were resolved as documented in letters to the Staff dated November 12, 1980, January 15, 1981, November 25, 1981, February 23, 1982, March 26, 1982 and June 11, 1982. The NRC's evaluation is contained in SER Section 22.2, item 1.D.1, and in its Supplements 1 and 4.

Post Accident Monitoring (PAM) instrumentation was included as a part of the original design of the Virgil C. Summer Nuclear Station. Some additional instrumentation was added in response to the TMI NUREGs. Our current PAM Instrumentation is described in FSAR Section 7.5. The Staff's review of our PAM instrumentation is provided in SER Supplement 4, Section 7.5.2.

SCE&G will use the Westinghouse Owners Group (WOG) Generic Emergency Response Guidelines (ERG) as the Technical Guidelines for developing Emergency Operating Procedures. Revision 0 of the ERGs have been issued and approved for plant specific procedure development in the Eisenhower to Kinsley letter, dated September 17, 1982.

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #3

A plant specific Writers Guide based on NUREG 0899 and INPO 82-017, Emergency Operating Procedures Writing Guidelines, has been prepared. Using a writers guide and best available information from the Westinghouse Owners Group Procedure Subcommittee a significant upgrade of the Operating Procedures was done prior to initial licensing of the plant. These procedures reflect the current status of the plant which includes the initial CRDR modifications and the existing PAM instruments. The existing Emergency Operating Procedures have been reviewed and found acceptable for use through the first refueling by the NRC as documented in SER Supplement 4, Section 22.

The Emergency Response Facilities (ERFs) including the Technical Support Center (TSC), the Operational Support Center (OSC) and the Emergency Operations Facility (EOF) are designed, installed and functional. Descriptions of these facilities were documented to the NRC in the Virgil C. Summer Nuclear Station Radiation Emergency Plan through Revision 9, in FSAR Section 1.2.3.1, and in letters dated March 30, 1981, April 15, 1981, June 1, 1981, June 3, 1981, June 16, 1981 and March 31, 1983. The TSC and EOF are equipped for the acquisition, collection, evaluation and display of information on containment conditions, radiological releases and meteorology necessary to determine protective measures. The TSC and EOF are provided with up to date drawings, procedures, emergency plans, environmental information and other emergency information (such as the FSAR, Evacuation Time assessments and Operating License documents) needed to perform TSC and EOF functions. The SCE&G ERFs provide sufficient working area to accommodate and support the Federal, State, Local and SCE&G emergency response personnel in the coordination, assessment and implementation of protective measures for the public. Successful emergency drills, both partial and full scale, have been conducted and accepted by the NRC. NRC review of our ERFs is documented in the SER Section 22 and in its Supplements 2, 3, 4 and 5. Additionally, SCE&G has been audited by Staff Emergency Planning Review Teams. Their review is documented in NRC Region II Inspection Reports 81-09, 81-12, 82-03 and 82-44.

SCE&G submitted a letter dated November 24, 1982, requesting NRC concurrence for not having a backup EOF for the Virgil C. Summer Nuclear Station. We await a decision on that matter.

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #4

Based on our progress in addressing emergency response enhancements as described above and our successful completion of the above mentioned items, SCE&G is already in an excellent position to handle emergencies that might occur. In light of this confidence, we concur with the NRC's position that schedules for accomplishing required emergency response enhancements are to be integrated with other high priority regulatory work and plant improvements. Also, valid schedules will require detailed design, procurement and installation estimates which must be integrated with other outage constraints, such as, plant operational and manpower availability, available work space and health physics controls. In the interim, there is no need for compromising well planned and engineered solutions to these complex integrated design challenges.

#### PROGRAM PLAN

The ERC NUTAC's draft Guidelines for an Integrated Implementation Plan is being considered in plant-specific integration planning. This draft guideline is the ERC NUTAC's method of ideal integration of Emergency Operating Procedures (EOPs), Control Room Design Review (CRDR), PAM Instrumentation, Safety Parameter Display Systems (SPDS), and Emergency Response Facilities (ERFs).

In developing the plant-specific input and process criteria for the remaining work, we will evaluate guidelines prepared by industry groups such as WOG, INPO and NUTACS.

#### PLANT SPECIFIC PROGRAM FOR REMAINING WORK

SCE&G's plant specific program for remaining work is shown in Figure 1. In developing this plan, SCE&G used the completed items discussed earlier in this letter as a "given".

Figure 1 is divided into basic steps of an integrated plant-specific implementation plan. For the remaining work each step and its relationship to previous and succeeding steps is discussed in the following plan descriptions.

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #5

#### EOP UPGRADE PLAN

The EOP Upgrade Plan includes defining and developing an Emergency Procedure Generation Package, determining manpower requirements and establishing an achievable schedule. The Plan also describes the revision process to insure complete integration with other NUREG 0737 Supplement 1 elements to accommodate deficiencies in other areas without impacting the effectiveness of the EOPs.

The EOP upgrade will be controlled by an Emergency Procedure Generation Package as described in INPO 83-007, Emergency Operating Procedure Generation Package Guidelines. This package defines source documentation, Writers Guide, verification process, validation process, and training requirements. The completed package will be submitted to the NRC at least three months prior to the date SCE&G plans to begin formal operator training on the upgraded procedures.

The procedure upgrade is a five phase process. Phase I is assembling source material, i.e. Generic Technical Guidelines, Writers Guide, plant specific documentation, and the ERG System Review and Task Analysis.

Phase II is procedure development. This phase is the actual writing of the upgraded EOPs based on the source material. Verification of the EOPs for written correctness and technical accuracy is also performed during this phase.

Phase III is the validation phase which is a walkthrough of the procedures on the Main Control Board of the Virgil C. Summer Nuclear Station or the Virgil C. Summer Nuclear Station simulator to evaluate the operators' ability to manage emergency conditions using the EOPs. It also validates that part of the EOP not covered by any technical validation of Generic Technical Guidelines. Any anomalies identified during this validation process will be resolved through procedure revisions. Any Human Engineering Deficiencies (HEDs) identified during the procedure walkthrough will be evaluated and resolved during the CRDR.



Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #6

At the completion of this phase, the completed Procedure Generation Package will be submitted to the NRC.

Phase IV is the training and implementation phase. This phase develops the necessary training material and lesson plans. Training will be conducted in classroom sessions and by procedure walkthroughs on the Main Control Board or simulator. At the completion of training, the procedures will be issued for use and existing procedures withdrawn. The procedures will be implemented prior to making modifications resulting from other program elements as a part of the integration activity described later in this letter.

During the integration, and verification and validation process described later in this letter, these EOPs will be integrated with the other control room elements (Phase V). Revisions to the EOPs resulting from this process will be validated and implemented along with any control room modifications.

#### CRDR Plan

A CRDR Program Plan will be prepared describing how the CRDR will be accomplished. This plan will be submitted to the NRC within two months of the start of the control room review.

The Operating Experience Review will be performed to identify any operational problems resulting from design deficiencies. This will include performing operator interviews and reviewing Off Normal Occurrence Reports and associated LERs for the Virgil C. Summer Nuclear Station.

Using accepted human engineering principles, a Control Room Survey will be performed taking into consideration the scope of and the modifications resulting from the previous CRDR, the Westinghouse Owners Group ERG System Review and Task Analysis, and the operating experience data. This survey will consider such things as control room layout environment, the usefulness of audible and visual alarms, the readability of displays, the adequacy of instrumentation, and the information recording and recall capabilities.

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #7

The Survey will identify HEDs. These deficiencies will be evaluated with items identified from other programs such as EOPs, PAM Instrumentation and the SPDS in a program for Integration of All Control Room Elements program.

#### PAM INSTRUMENTATION

A review of existing PAM instrumentation will be performed to determine how it conforms with the Westinghouse design basis requirements for PAM instrumentation. Based on the results of this review, a plant specific design basis for PAM instrumentation will be developed. This document will list all instrumentation required for Post Accident Monitoring at the Virgil C. Summer Nuclear Station along with the basis for it being required. Instrumentation range, qualification and quality assurance requirements will also be indicated. Any significant deviations from RG 1.97 guidance will be justified.

Any requirements for additional instrumentation will be considered together with the SPDS and changes associated with the EOPs, and the CRDR during the Integration of All Control Room Elements phase.

#### INTEGRATION OF ALL CONTROL ROOM ELEMENTS

During this phase of the program the results of the EOP, CRDR and PAM elements together with the completed SPDS will be integrated with respect to the overall enhancement of operator ability to comprehend plant conditions and cope with emergencies. Control room modifications required to resolve HEDs or add PAM instruments will be coordinated with the EOPs, the SPDS, and training considerations to assure effective, cost conscious resolution of concerns.

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #8

Once this integration plan is complete, EOPs will be revised (if required), Final Control Room Modifications will be designed (if required), and Final PAM Instrumentation will be designed (if required). A training program covering the final elements with proper objectives, performance evaluations and revision mechanisms will be developed.

#### INTEGRATED SYSTEM VALIDATION

An Integrated System Validation will be performed to assure that when integrated in the plant, all of the final elements (EOP's Control Room Modifications, PAM Instruments, SPDS, ERFs and Training) will provide effective Emergency Response Capability. Any anomalies identified during this validation process will be resolved through revisions to the pertinent elements. The final elements will then be implemented in the plant during the following refueling shutdown.

#### SCHEDULE

Based on our current operating schedule, SCE&G projects that elements of the plan down through the integration of all control room elements can be completed by the startup after first refueling which is scheduled for the Fall of 1984. Because all of the ingredients in this program are not entirely controllable by SCE&G, there is a possibility that this date may slip. With our current knowledge and understanding SCE&G strongly believes the first refueling date is achievable and will vigorously work to meet it. By April 15, 1984, SCE&G will confirm this schedule or provide a revised schedule and the reasons for the slippage.

SCE&G currently projects that the final elements including training, will be implemented in the plant by startup after the second refueling, which is projected to occur in the Spring of 1986. This date obviously has many variables which are not controllable by SCE&G. Since hardware modifications



Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #9

may be included, design, procurement, assembly, testing, qualification, delivery and installation all become variables in a schedule. At this time SCE&G does project that the second refueling date is reasonably achievable. By December 31, 1985, SCE&G will confirm this schedule or give a revised schedule and the reasons for the slippage.

In addition to schedules discussed above, SCE&G expects to submit the information requested in NUREG 0737 Supplement 1 for NRC review in accordance with the following schedule:

Submittal	NUREG 0737 Supplement 1 Reference	Estimated Schedule
1. SPDS Safety Analysis	4.1a	(Included in FSAR Section 7.7)
2. CRDR Program Plan	5.2a	September 1, 1983
3. CRDR Summary Report	5.2b	October 30, 1984
4. PAM Instrumentation	6.2	October 30, 1984
5. EOP Technical Guidelines (Generic)	7.2a	(Complete - Sent by Westinghouse Owners Group)
6. EOP Procedures Generation Package	7.2b	October 30, 1984

Mr. Harold R. Denton  
Generic Letter 82-33  
April 15, 1983  
Page #10

SCE&G will work with our Project Manager in negotiating an acceptable schedule. If you have any questions, please let us know.

Pursuant to 10CFR50.54(f), the undersigned attests that the information provided herein is true and correct.

Yours very truly,



O. W. Dixon, Jr.

REC:OWD/fjc

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Figure 1

