

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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T. C. NICHOLS, JR.  
VICE PRESIDENT AND GROUP EXECUTIVE  
NUCLEAR OPERATIONS

April 12, 1982



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  
Independent Design Verification  
NE File 8.0030

Dear Mr. Denton:

This letter constitutes a revision to my letter of April 8, 1982.

In accordance with your requirements, South Carolina Electric and Gas Company (SCE&G) proposes that an independent seismic design review be performed for the flow path of the Turbine Driven Emergency Feedwater Pump. Attached is a draft procurement specification which outlines the scope and details of our proposal for this review. It is our contention that, by providing the information as indicated in the specification, the outside contractor will maintain his independence. To expedite the accomplishment of this task in light of our nearness to fuel load, SCE&G has selected an independent firm with a national and international market capable of performing all aspects of this contract.

Please review this proposal and provide us your comments and approval as soon as possible. If you have further questions, please advise.

Very truly yours,

*H. T. Balt*  
T. C. Nichols, Jr.

*for*

GDM:TCN:glb

Attachment

cc: Page 2

*B001  
5/1*

Mr. Harold R. Denton  
April 12, 1982  
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cc: V. C. Summer w/o att.  
G. H. Fischer w/o att.  
H. N. Cyrus  
T. C. Nichols, Jr. w/o att.  
M. B. Whitaker, Jr.  
H. T. Babb  
D. A. Nauman  
C. L. Ligon (NSRC)  
W. A. Williams, Jr.  
J. P. O'Reilly  
R. B. Clary  
O. S. Bradham  
A. R. Koon  
M. N. Browne  
G. J. Braddick  
J. C. Ruoff  
J. L. Skolds  
J. B. Knotts, Jr.  
B. A. Bursey  
NPCF  
File

PROCUREMENT SPECIFICATION

DSP-544C-SCEG

APPLICABLE TO

V. C. SUMMER NUCLEAR STATION

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

PREPARED BY:

Gary D. Moffatt  
Gary D. Moffatt  
Engineer

REVIEWED BY:

C. A. Price for  
M. D. Quinton, Director  
Mechanical Engineering

APPROVED BY:

C. A. Price  
C. A. Price, Manager  
Nuclear Engineering

## 1.0 SCOPE

The contractor is to perform an independent seismic design verification of the Emergency Feedwater System for the flow path of the Turbine Driven Emergency Feedwater Pump. The major elements of this design verification include:

1. independent determination of the as-built condition;
2. independent review of design QA program for:
  - A) general familiarization with the GAI design control program
  - B) verification of program application to the seismic design of the turbine driven portion of the emergency feedwater system.
  - C) confirmation that the appropriate structural analysis output was used as response spectra input for that system's design.
3. computer analyses;
4. review of stresses and allowables;
5. comparison of the support loads, and
6. evaluation and final report.

## 2.0 DETAILED REQUIREMENTS

2.1 The contractor shall perform a walkdown of the physical piping of the flow path identified in Attachment A. This walkdown shall include

spool piece lengths, valve locations and orientations, and support locations and orientations. The walkdown shall be performed according to "Final Check of Piping and Support As-Built," MF-14 Procedure.

2.2 The contractor is to perform computer analyses of the flow path identified in Attachment A. The math models and piping walkdowns may continue beyond the identified flow path to anchors as needed by the analyses. These analyses are to be performed to the requirements of the 1971 Edition of the ASME B&PV Code, Section III, Winter 1973 Addenda, Class 2 and 3 piping based on the existing seismic response spectra. Computer analyses input shall be checked by an independent person within the contractor's organization.

2.3 The contractor shall review the results of the analyses for stresses at all node points within the math model for compliance with the code.

2.4 Load summary sheets should be generated showing loads and movements of each support, anchor, and nozzle within the flow path. A comparison shall be made of imposed loads on anchors and nozzles within the flow path to ensure compliance with allowables.

2.5 The contractor shall make a comparison of loads and movements to those of each existing support within the flow path.

2.6 The contractor shall prepare a summary of the results of the design verification. As a part of this summary, if necessary, the contractor will evaluate any discrepancies by comparing the inputs of their analyses to that of the original design. The contractor may then be required to evaluate the impact of the discrepancies and make a conclusion on the scope and ultimate soundness to accomplish its purpose.

2.7 The contractor shall submit a final report discussing in detail the results of the independent verification.

### 3.0 INFORMATION SUPPLIED TO THE CONTRACTOR

3.1 The following information shall be provided to the contractor:

1. MF-14 Walkdown Procedure
2. Physical Piping Drawings
3. Flow Diagrams
4. Isometric Drawings
5. Support Drawings
6. Pump Drawings
7. Valve Drawings
8. Dresser Coupling Drawing and Transmitted Loads
9. Valve Weights and CG's
10. Nozzle Allowables
11. Primary Containment Penetration Drawing
12. Anchor Loads Contributed From Interfacing Problems
13. System Design Specification
14. Seismic Response Spectra
15. Load Combination and Damping Information
16. Line Specification Information

## 17. Supporting Penetrations of Walls and Floors

### 4.0 INFORMATION TO BE SUPPLIED BY THE CONTRACTOR

A draft final report is to be submitted to SCE&G. An unedited copy of this draft will be sent to the NRC staff. After resolution of comments, one (1) original and one (1) certified reproducible is to be submitted to SCE&G for approval. Documents larger than legal size shall be submitted with a sepia for purposes of reproduction.

### 5.0 QUALITY ASSURANCE REQUIREMENTS

5.1 Computer analyses shall be performed using a computer program which has been benchmarked/verified.

5.2 Personnel performing work in conjunction with this contract shall be qualified in the areas of their effort. These qualifications are to be submitted to SCE&G for review.

5.3 Additional quality assurance shall be addressed in the purchase requisition by SCE&G QA.

ATTACHMENT A  
PROCUREMENT  
SPECIFICATION  
DSP-544C-SCEG

