

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE 764

COLUMBIA, SOUTH CAROLINA 29218

O. W. DIXON, JR.
VICE PRESIDENT
NUCLEAR OPERATIONS

March 8, 1983

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
Operating License No. NPF-12
Generic Letter 82-28
Inadequate Core Cooling
TMI Item II.F.2

Dear Mr. Denton:

On December 15, 1982, South Carolina Electric and Gas Company (SCE&G) received Generic Letter 82-28 concerning the Inadequate Core Cooling Instrumentation System. Because of the status of construction and licensing of the Virgil C. Summer Nuclear Station at the time of issuance of the TMI NUREGs (NUREG 0578, 0660, 0737 and 0696), SCE&G has provided much information to the Staff pertaining to TMI Item II.F.2, Inadequate Core Cooling. The Staff reviewed and approved our system through cycle one in the Virgil C. Summer Nuclear Station Safety Evaluation Report, NUREG 0717, Supplement 4, dated August, 1982.

Because of continuing difficulties in procurement and qualification of equipment, SCE&G may utilize different incore thermocouple hardware and core subcooling instrumentation from that described in our letter to the NRC dated June 8, 1981. Even if the instrumentation described in the June 8 letter is not changed, hardware procurement and delivery limitations prohibit installation until our estimated first refueling outage.

Our Operating License (NPF-12) contains a license condition 2.C.23(d) that requires upgrading of the incore thermocouple wiring and qualification of isolators, reference junction boxes and connectors prior to startup after the first major shutdown or refueling outage after June, 1983. However, the Final Rulemaking on Environmental Qualification of Equipment, 10CFR50.49, (effective February 22, 1983) states that final qualification of safety related equipment is not required until the second refueling outage after March 31, 1982 or by

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Add: J.S. Lee
DHFS/PTRB

Mr. Harold R. Denton
Generic Letter 82-28
March 8, 1983
Page #2

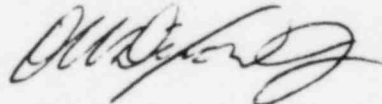
March 31, 1985 whichever is earlier. Additionally, this rule supersedes all previously imposed dates and no change to the license is required. It is likely that the March 31, 1985 date for completion of equipment qualification will apply to the Virgil C. Summer Nuclear Station.

The Reactor Coolant Inventory Tracking System at the Virgil C. Summer Nuclear Station is the Westinghouse Reactor Vessel Level Instrumentation System (RVLIS) as described in FSAR Section 7 and will not be changed. This Westinghouse RVLIS has been approved by the Staff as documented in Generic Letter 82-28.

Appendix 1 to this letter addresses the additional information and references to previous submittals as requested in Generic Letter 82-28. If different instrumentation than that described previously will be utilized, SCE&G will provide information to the Staff concerning any changes made to the system, along with schedules for additional submittals by September 1, 1983.

If you have any questions, please let us know.

Very truly yours,



O. W. Dixon, Jr.

NEC:OWD/fjc

Attachment

cc: (See Page #3)

Mr. Harold R. Denton
Generic Letter 82-28
March 8, 1983
Page #2

cc: V. C. Summer
E. C. Roberts
H. N. Cyrus
T. C. Nichols, Jr.
O. W. Dixon, Jr.
M. B. Whitaker, Jr.
J. P. O'Reilly
H. T. Babb
D. A. Nauman
C. L. Ligon (NSRC)
W. A. Williams, Jr.
R. B. Clary
O. S. Bradham
A. R. Koon
C. A. Price
G. J. Braddick
J. C. Miller
J. L. Skolds
J. B. Knotts, Jr.
B. A. Bursey
NPCF
File

APPENDIX 1

<u>Reference</u>	<u>Deviation or Explanation</u>	<u>Schedule</u>
(1-a) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	a. No deviation for RVLIS - Generic letter 82-28 states that the Westinghouse RVLIS is considered by the NRC to be an acceptable Reactor Coolant Inventory Tracking System.	N/A
Letter from T. C. Nichols to H. R. Denton dated 7/20/82	b. No additional displays required for indication of Inadequate Core Cooling. However, the present core subcooling monitor which also provides backup thermocouple readout, may be replaced by a similar system that is qualified and provides the necessary isolation.	March 31, 1985
	c. A minimum of sixteen thermocouples, two in each quadrant for each channel, will be upgraded to meet NUREG 0737 requirements. No deviation.	March 31, 1983
(1-b) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	No deviation	N/A
(1-c) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	Deviations and planned modifications are described in (1-a)(1-b) above.	N/A
2) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	No deviation	
3) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	If the system as presently described in the reference remains as the final system, then the additional testing stated in the reference is applicable. If the system is changed as described in (1b) above, then descriptions of testing and qualification will be provided in a future submittal.	March 31, 1985

APPENDIX

<u>Reference</u>	<u>Deviation or Explanation</u>	<u>Schedule</u>
4) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	4.1 RVLIS -No deviation 4.2 Refer to attachment 1	N/A
5) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	No deviation	N/A
6) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	See Table below	

TABLE

<u>Equipment</u>	<u>Installation</u>	<u>Calibration</u>	<u>Qualification</u>	<u>Testing</u>
1. RVLIS	Complete	Complete	Complete	Complete
2. Core Sub-cooling Monitors	Complete	Complete	See text	Complete
3. Incore Thermocouples	Complete	Complete	Not required (See R.G. 1.97 Rev. 3 Draft I)	Complete
4. Cabling for 16 qualified TCs	March 31, 1985	N/A	March 31, 1985	N/A
5. Qualified reference junction boxes and connectors	March 31, 1985	N/A	See text	March 31, 1985
6. Qualified isolators from output of subcooled monitor to process computer and TSC computer	March 31, 1985	N/A	March 31, 1985	March 31, 1985

APPENDIX

<u>Reference</u>	<u>Deviation or Explanation</u>	<u>Schedule</u>
7) NRC Audit Report 50-395 82-29, Virgil C. Summer Nuclear Station Safety Evaluation Report (NUREG 0717) Page 22-50	No deviations - Virgil C. Summer EOPs were found acceptable as documented in SER page #22-50.	N/A
8) NRC Audit Report 50-395 82-29	A program for updating the Emergency Operating Procedure based on the Westinghouse Owners Group ERG Guidelines is being developed in accordance with Generic Letter 82-33, Supplement 1 to NUREG 0737	N/A
9) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	No deviations	N/A

APPENDIX 1

ATTACHMENT I

NUREG 0737 II.F.2

Design and Qualification Criteria for Pressurized
Water Reactor Incore Thermocouples

<u>Reference</u>	<u>Deviation or Explanation</u>	<u>Schedule</u>
1) Letter from T. C. Nichols to H. R. Denton dated 6/9/81	No deviation	N/A
2) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	As indicated in our June 8, 1981 letter, the alarm and trend typewriters have been replaced with high speed printers. Computer push- button controls have been relabelled to enhance readability and to minimize substitution errors.	N/A
3) Letter from to H. R. Denton dated 6/8/81	No deviation	N/A
4) NRC Audit Report 50-395 82-29	The procedure for use of the incore thermocouple displays has been reviewed and approved (see Audit Report 82-29). The use of the primary and backup displays is described in other sections of this report. The reactor operators and shift technical advisors receive simulator training and classroom instruction on the emergency operating procedures dealing with Inadequate Core Cooling. Additionally, operators receive training on Mitigating Core Damage.	N/A

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NUREG 0737 II.F.2

Design and Qualification Criteria for Pressurized
Water Reactor Incore Thermocouples

<u>Reference</u>	<u>Deviation or Expalantion</u>	<u>Schedule</u>
5) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	The addition of the Subcooling Monitor and RVLIS Instrumentation in the Control Room was reviewed during the Human Factor Engineering Evaluation and Improvement Program for Virgil C. Summer Nuclear Station. This review and the NRC Staff Acceptance of it are documented in the references. The deviations from the criteria of NUREG 0737, Attachment 1 and Appendix B are identified and justified in the referenced documents. A minimum of sixteen thermocouples, two in each quadrant for each channel, along with associated cabling, connectors, junction boxes and penetrations meeting the requirements of NUREG 0737 will be installed by March 31, 1985.	March 31, 1985
Letter from T. C. Nichols to H. R. Denton dated 4/30/82		
Letter from T. C. Nichols to H. R. Denton dated 2/23/82		
SER Supp. #4 (pp 22-5,6)		
SER Supp. #1 (pp 22-41-42)		
6) Letter from T. C. Nichols to H. R. Denton dated 6/8/81	The deviations are described in the referenced response to NUREG 0737 II.F.2, Attachment 1.	N/A
7) Letter from T. C. Nichols to H. R. Denton dated 4/30/82	The deviations are described in the referenced document and in other sections of this response.	

APPENDIX 1

APPENDIX B

NUREG 0737 II.F.2

A. RVLIS

ReferenceLetter from T. C. Nichols to
H. R. Denton dated 12/30/80Deviation

None

B. CORE SUBCOOLING MONITOR

ReferenceLetter from T. C. Nichols to
H. R. Denton dated 6/8/81DeviationDeviations are
discussed in the
references.

C. CORE EXIT THERMOCOUPLES

ReferenceLetter from T. C. Nichols to
H. R. Denton dated 6/8/81DeviationDeviations are
discussed in the
reference.