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

September 29, 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
Operating License No. NPF-12
Equipment Qualification

Dear Mr. Denton:

In Operating License Conditions 2.C.8 and 2.C.23c the NRC required South Carolina Electric and Gas Company (SCE&G) as a condition prior to exceeding 5% of full power to complete actions related to environmental qualification of equipment for the Virgil C. Summer Nuclear Station as specified in Section 3.11 of Supplement No. 4 to the Safety Evaluation Report (SSER-4) and to provide documentation to the NRC to illustrate that the pressurizer safety valve position indication system is seismically qualified. This letter supplements the information provided in SCE&G letters dated July 23, 1982 and August 26, 1982.

The NRC requested to be notified when the maintenance and surveillance program at the Virgil C. Summer Nuclear Station was implemented. Aging related maintenance, component replacement and qualified life information identified during the NUREG 0588 review of equipment qualification documentation has been entered into the equipment maintenance program for all equipment for which qualification documentation has been accepted. Additional information will be entered into the system as the review of the documentation for the final pieces of equipment outlined below is completed. A procedure is in effect by which age related data is reviewed and entered into the system. The equipment performance trending procedure is in the final review process. This final link in the program will be implemented before exceeding 5% power.

The seismic and environmental qualification report for the electrical tri-axial connectors manufactured by D. G. O'Brien has been reviewed and found acceptable. The updated qualification worksheets attached to this letter are provided for your information.

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The electric hydrogen recombiners supplied by Westinghouse have been qualifed to IEEE 323-1971 standards and NUREG 0588 Category II aging requirements. Additional documentation to qualify the equipment to the 1974 standard is available and is being procured as a part of an upgrade of Westinghouse supplied Class 1E equipment. The documentation will be reviewed and placed in the file within a month of the acceptance of the purchase contract currently under negotiation with Westinghouse.

As presented by Westinghouse in a meeting with the NRC in late August, 1982, the Reactor Coolant System (RCS) wide range pressure transmitter manufactured by Veritrak, which provides a redundant and diverse method of monitoring RCS pressure, has successfully completed seismic and environmental qualification testing. SCE&G's transmitter will be modified by the vendor to ensure uniformity with the model which successfully passed the test. Modifications will be completed prior to our exceeding 5% power. The test report is in the final stages of preparation and completion of SCE&G's review and acceptance is on schedule to be completed in December, 1982 as projected in our letter of July 23, 1982.

Sample pressurizer safety valve position indication switches have been subjected to seismic and environmental testing programs. The switches successfully completed all sections of the test up to the accident environment exposure. Documentation of successful completion of the seismic portion of the program was sent to the NRC in an August 26, 1982 letter. An anomaly in the accident environment test results involving lead insulation failure is being investigated at this time by the vendor, Crosby. We project that the fault can be remedied, the accident environment test repeated, and the final test report completed by Mid-1983. It is the evaluation of SCE&G that operation at power levels in excess of 5% of full power is justified. As discussed in our letter of March 12, 1982, an acoustic leak detection system and temperature detectors are installed in piping downstream of the valves; in addition, pressure, temperature and level indicators are installed in the pressurizer relief tank. All of these systems would provide indication of any opening of a pressurizer safety valve. Also, the leads on the valve position indication switches installed at the Virgil C. Summer Nuclear Station are protected by conduit. The leads which failed during the environmental test of the switches were directly exposed to the hostile environment which apparently contributed significantly to the insulation failure.

As discussed in our letter of March 16, 1982, and April 30, 1982, it is SCE&G's assessment that the existing incore thermocouple installation at the Virgil C. Summer Nuclear Station is very likely to function acceptably during and following a high energy line break inside the Reactor Building. In addition, in the unlikely event the incore thermocouples should fail adequate additional information and procedures exist to detect and recover from inadequate core cooling. SCE&G believes that these reasons provide adequate justification to operate at levels above 5% of full power until a complete system of documented qualified equipment can be installed.

We consider this, in addition to previous letters dated March 12, 1982, March 16, 1982, April 30, 1982, June 23, 1982, and August 26, 1982, sufficient information to resolve Licensing Conditions No. 8 and 23c, for exceeding 5% power operation.

Very truly yours,

O. W. Dixon, Jr.

/fjc

cc: V. C. Summer
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File

PURCHASE ORDER NUMBER	TYPE OF EQUIPMENT	MANUFACTURER	MODEL NUMBER OR IDENTIFICATION	LOCATION BUILDING AND ROOM	LOCATION TAG NUMBER	ABNORMAL OR ACCIDENT ENVIRONMENT	ENVIRONMENT TO WHICH QUALIFIED	OR RE
10249	ELECTRICAL PENETRATION	D.G. O'BRIEN	TRIAX CONNECTOR (VICTOREEN HIGH RANGE MONITOR)	INSIDE RB	~~XR0051A~~ XRP0051A	LOCA CONDITIONS TEMP: FSAR FIGURE 6.2-7 (267 F) PRESS: FSAR FIGURE 6.2-1 (44.7 PSIG) RH: 100% SPRAY: 2 HOURS TID: 6.2+7 RADS (1 YR) SUBMERGENCE: NO	LOCA CONDITIONS TEMP: 315°F PRESS: 72 PSIG RH: 100% SPRAY: 24 HOURS TID: 1.25 +8 RADS SUBMERGENCE: N/A	
SPLICES								
10146	KERITE SPLICE	KERITE	S-2NS-NUC	INSIDE RB	EK-I4B EK-I3A EK-I5A EK-I4C	LOCA CONDITIONS TEMP: FSAR FIGURE 6.2-7 (267 F) PRESS: FSAR FIGURE 6.2-1 (44.7 PSIG) RH: 100% SPRAY: 2 HOURS TID: 6.2+7 RADS (YR) SUBMERGENCE: NO MSB CONDITIONS TEMP: FSAR FIGURE 6.2-5A (324 F) PRESS: FSAR FIGURE 6.2-4 (47.1 PSIG) RH: 100% SPRAY: 2 HOURS TID: 2.4+7 RADS (4 MOS.) SUBMERGENCE: NO	LOCA CONDITIONS TEMP: FIGURE 42 PRESS: FIGURE 42 RH: SEE KERITE REPORT SPRAY: SEE KERITE REPORT TID: SEE KERITE REPORT SUBMERGENCE: SEE KERITE REPORT	4 MONTHS
Q296312	MOTOR TERMINATION KIT	RAYCHEM	H-MCK	VARIOUS	EKI-21B EKI-21C	LOCA CONDITIONS TEMP: FSAR FIGURE 6.2-7 (267 F) PRESS: FSAR FIGURE 6.2-1 (44.7 PSIG) RH: 100% SPRAY: 2 HOURS TID: 6.4+7 RADS (4 MOS.) SUBMERGENCE: NOTE 42 MSB CONDITIONS TEMP: FSAR FIGURE 6.2-5A (324 F) PRESS: FSAR FIGURE 6.2-4 (47.1 PSIG) RH: 100% SPRAY: 2 HOURS TID: 2.4+7 RADS (4 MOS.) SUBMERGENCE: NOTE 42	LOCA CONDITIONS TEMP: FIGURE 40 (390 F) PRESS: FIGURE 40 (66 PSIG) RH: 100% SPRAY: 30 DAYS TID: 2+8 RADS SUBMERGENCE: N/A	4 MONTHS
10464	INSULATING TAPE	OKONITE	T95	OUTSIDE RB	EKI-3A	MSB CONDITIONS TEMP: FIGURE 27 (320 F) PRESS: FSAR FIGURE 3.6-2 (5.6 PSIG) RH: 100% SPRAY: N/A TID: 6.4+7 RADS (4 MOS.) SUBMERGENCE: N/A NOTE: 52	LOCA CONDITIONS TEMP: FIGURE 36 (346 F) PRESS: FIGURE 36 (113 PSIG) RH: 100% SPRAY: N/A TID: 2+8 RADS SUBMERGENCE: N/A WAS ONE PROTOTYPE SUBJECTED TO ALL TESTS IN SERIES? YES	4 MONTHS
	JACKETING TAPE	OKONITE	T35	OUTSIDE RB	EKI-3B			
	CEMENT	OKONITE	604-45-6104	OUTSIDE RB	EKI-3C			

ENT TO ALIFIED	OPERABILITY REQUIREMENTS	OPERABILITY DEMONSTRATED	ACCURACY OR RESPONSE TIME REQUIREMENTS	ACCURACY OR RESPONSE TIME DEMONSTRATED	QUALIFICATION REPORT AND METHOD
ONDITIONS 315°F 72 PSIG 0% 24 HOURS 25 +8 RADS GENCE: N/A	30DAYS	33DAYS	N/A	N/A	GENERAL REPORT ID: ER-307 DATED: FEB 19, 1982 METHOD: TEST & ANALYSIS QUALIFIED LIFE: 40 YEARS AGING TIME: 168 HOURS AGING TEMP: 250°F
NS 42 42 E RITE TE REPORT SEE	4 MONTHS	>4 MONTHS	NOT APPLICABLE	NOT APPLICABLE	GENERAL REPORT I.D: QUALIFICATION DOCUMENTATION FOR KERITE 600 VOLT NTK/PR POWER CABLES. DATED: 10/1/81 METHOD: TEST & ANALYSIS QUALIFIED LIFE: 5 YEARS AGING TIME: SEE KERITE REPORT AGING TEMP: SEE KERITE REPORT DR-45
NS 40 (390 F) 40 3 N/A	4 MONTHS	>1 YEAR	N/A	N/A	GENERAL REPORT I.D: WYLE REPORT #58442-3 METHOD: TEST QUALIFIED LIFE: 40 YEARS AGING TIME: 1500 HOURS AGING TEMP: 150 C DR-80
NS 36 (346 F) 36 N/A TYPE SUB- TESTS IN	4 MONTHS	>1 YEAR	NOT APPLICABLE	NOT APPLICABLE	GENERAL REPORT I.D: ENGINEERING REPORT NO. 141. DATED 2/29/72 FORM G-3 DATED 2/16/79 METHOD: TEST QUALIFIED LIFE: 40 YEARS AGING TIEM: 168 HOURS AGING TEMP: 249.8 F DR-05

PURCHASE ORDER NUMBER	TYPE OF EQUIPMENT	MANUFACTURER	MODEL NUMBER OR IDENTIFICATION	LOCATION: BUILDING AND ROOM	LOCATION: TAG NUMBER	ABNORMAL OR ACCIDENT ENVIRONMENT	ENVIRONMENT TO WHICH QUALIFIED
10207	SAFETY INJECTION PUMP TRANSFER SWITCH	TERAC/GOULD	MPL-C	AB-8513 M	XET2002C	LOCA CONDITIONS TEMP: 65F TO 104 PRESS: ATMOSPHERIC RH: 20 TO 90% TID: 1.1+4 RADS (4 MOS.) SPRAY: N/A SUBMERGENCE: N/A NOTE: 2	LOCA CONDITIONS TEMP: MIN 14 F TEMP: MAX 104 F TEMP: AVG 59 TO 95 F PRESS: ATMOSPHERIC RH: 0 TO 90% TID: 1+5 RADS
MISCELLANEOUS POWER EQUIPMENT							
N/A	ISOLATION FUSES IN HEAT TRACING PANELS	GOULD-SHAWMUT FUSES	N/A	AB-3603	XFN2005 THRU XFN2010	SLB CONDITIONS TEMP: FIGURE 29 (123 F) PRESS: 0.1 PSIG RH: 100% SPRAY: N/A TID: <1+3 RADS (7 DAYS) SUBMERGENCE: N/A NOTE: 2	SLB CONDITIONS SEE DR-19
N/A	ISOLATION FUSE BLOCKS IN HEAT TRACING PANELS	BRYANT ~~HINEDLIC~~ ELECTRIC	1917 ~~N/A~~ 3929	AB-3603	XFN2005 THRU XFN2010	SLB CONDITIONS TEMP: FIGURE 29 (123 F) PRESS: 0.1 PSIG RH: 100% SPRAY: N/A TID: <1+3 RADS (4 MOS.) SUBMERGENCE: N/A NOTE: 2	SLB CONDITIONS TEMP: 150 C PRESS: N/A RH: N/A SPRAY: N/A TID: 2.0+8 RADS
10171	AMP CONNECTORS	AMP	36906 321280	VARIOUS	EX-J1	LOCA CONDITIONS TEMP: FSAR FIGURE 6.2-7 (267 F) PRESS: FSAR FIGURE 6.2-1 (44.7 PSIG) RH: 100% SPRAY: 2 HOURS TID: 6.4+7 RADS (4 MOS.) SUBMERGENCE: NOTE 42 MSB CONDITIONS TEMP: FSAR FIGURE 6.2-5A (324 F) PRESS: FSAR FIGURE 6.2-4 (47.1 PSIG) RH: 100% SPRAY: 2 HOURS TID: 2.4+7 RADS (4 MOS.) SUBMERGENCE: NOTE 42	LOCA CONDITIONS TEMP: FIGURE 43 (370 F) PRESS: FIGURE 43 (60 PSIG) RH: 100% SPRAY: 16 DAYS TID: 2.05+8 RADS SUBMERGENCE: NO WAS ONE PROTOTYPE SUBJECTED TO ALL TESTS IN SERIES? YES

OPERABILITY REQUIREMENTS	OPERABILITY DEMONSTRATED	ACCURACY OR RESPONSE TIME REQUIREMENTS	ACCURACY OR RESPONSE TIME DEMONSTRATED	QUALIFICATION REPORT AND METHOD
4 MONTHS	>4 MONTHS	NOT APPLICABLE	NOT APPLICABLE	GENERAL REPORT I.D: 33-51452 QS METHOD: TEST AND ANALYSIS QUALIFIED LIFE: 40 YEARS (NOTE 50) AGING TIME: (NOTE 51) AGING TEMP: (NOTE 51) DR-18
7 DAYS	>7 DAYS	NOT APPLICABLE	NOT APPLICABLE	GENERAL REPORT I.D: GAI RPT 2227, REV. 1 METHOD: ANALYSIS QUALIFIED LIFE: N/A AGING TIME: N/A AGING TEMP : N/A DR-19
4 MONTHS	>1 YEAR	NOT APPLICABLE	NOT APPLICABLE	GENERAL REPORT ID: ~~TELEPHONE CONVERSATION WITH M. BLACK OF MARATHON 10/24/81,~~ GAI REPORT 2227, REV. 1 RAYCHEM LETTER FROM ~~M. BLACK TO M. CHAMOV~~ P. VAN HOORICK OF 6/30/82 METHOD: ANALYSIS QUALIFIED LIFE: 40 YRS AGING TIME: ~~N/A~~ 648 Hours AGING TEMP: ~~N/A~~ 188.6°F DR-76
4 MONTHS	>1 YEAR	N/A	N/A	GENERAL REPORT I.D: AMP-110-11516 METHOD: TEST QUALIFIED LIFE: 40 YEARS AGING TIME: 1500 HOURS AGING TEMP: 150 C DR-63