



GULF STATES UTILITIES COMPANY

RIVER BEND STATION

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AREA CODE 504

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346-8651

May 13, 1985

RBG- 20967

File Code: G9.5, G9.20.8

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

Dear Mr. Denton:

River Bend Station - Unit 1
Docket No. 50-458

Enclosed is a revised Environmental Qualification Justification for Interim Operation (JIO) previously submitted to your office in a letter dated February 15, 1985. The revision provides a new completion date of November 30, 1985 for SRN No. 228214-2, "Motor-Operated Valves with Limitorque Type SMC Operators".

Sincerely,

J. E. Booker

J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB
JEB/JMG/LS/RJK/amg

Enclosure

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RBS - ENVIRONMENTAL QUALIFICATION PROGRAM

JUSTIFICATION FOR INTERIM OPERATION

TYPE/DESCRIPTION:

Motor-operated valves with Limitorque Type SMC operators furnished with Paramount make ac Class B motors

EQUIPMENT IDENTIFICATION NO.(S):

1B21*MOV27A	1LSV*MOV15A	1LSV*MOV11A	1LSV*MOV13A
1B21*MOV27B	1LSV*MOV16A	1LSV*MOV11B	1SWP*MOV190
1B21*MOV27C		1LSV*MOV13B	
1B21*MOV27D		1LSV*MOV15B	
		1LSV*MOV16B	

SAFETY FUNCTION:

Valves are normally open; if accident occurs while they are in a closed position, they must cycle open.

Penetration valve - leakage control system. Valves are normally closed (isolation valves) but must open when LSV system is initiated following a LOCA.

QUALIFICATION HISTORY:

The SMC actuator with the Paramount motor is qualified by Report No. B0003 (of overall Report No. B0058). Limitorque contends that operator materials of the SMC are identical to the SMB, which was tested as indicated in Report No. B0003; and the Paramount motor was subjected to the aging parameters, radiation exposure levels, and steam temperature transients indicated in Report No. B0003. Although Limitorque certifies that the Paramount motor successfully completed the testing (testing was done in 1974), Limitorque has not submitted any test data to support its certification of qualification.

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TECHNICAL JUSTIFICATION:

During an accident in the auxiliary building, maximum environmental conditions are developed during a high-energy line break (HELB). The valves listed in this JIO are not required to isolate this break and thus are not required to function during this event. Therefore, qualification to maximum temperature conditions is not concurrent with required valve operation. Extreme temperatures/pressures or radiation will not accidentally cause the valve to cycle or cause another Class 1E component to fail. This is evident because, other than the actual motor, all operator switch components have been previously qualified by test (motor control centers are also qualified by test). Valves must function during a design basis LOCA, but maximum accident conditions are only 135°F, 100 percent RH, and 2.1 psig, well below the design limits of the Class B insulation system.

The SMC operator component materials have been identified by Limitorque and have been found to be identical to the SMB operator components. These components are qualified directly by Report No. B0003 and include switch material, terminal block material, seals, O-rings, gaskets, wire insulation, and gear box lubricants.

The Class B motor insulation system of the Paramount motor has been identified as the "weak link" component of the motor. A Class B insulation motor must meet minimum thermal endurance standards in accordance with IEEE Standard 1, General Principles for Temperature Limits in the Rating of Electric Equipment. The Class B insulation has a maximum thermal endurance of 130°C (266°F), well above the RB-1 normal service temperatures (50°C ambient plus 50°C motor heat rise plus 10°C hot spot) that will be experienced by the motors in their current locations. The maximum accident temperature in which any of the motors will be energized is 135°F (57°C) with 100 percent humidity, well within thermal endurance limits of the insulation system (57°C + 50°C + 10°C = 117°C). It should also be noted that moderate radiation exposure will have little or no effect on the motor. Radiation testing was performed on a Paramount motor (see Certificate of Compliance from Isomedix, Appendix II of Report No. B0003) to the extent of 204 Mrads gamma. Projected worst-case normal exposure for 7 years is 5.6×10^6 , and 180-day accident is 4×10^6 , well within radiation endurance levels of the motor. Therefore, it is concluded that the Paramount alternating-current motor with a Class B insulation system is designed and constructed to meet or exceed the environmental service conditions outside of containment in the zones in which they are located.

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SCHEDULE COMPLETION DATE:

November 30, 1985

CONCLUSION:

Based on the above partial test data and engineering analysis, the actuator will function satisfactorily during normal, accident, and post-accident conditions and is qualified for interim operation until November 30, 1985, by which time the motor will be replaced.

This analysis meets the criteria of 10CFR50.49, paragraph (i)(2). Therefore, interim operation is justified.