



CLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

June 1, 1988

U. S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D. C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
NRC Bulletin 85-03, Supplement 1:
Motor-Operated Valve Common Mode
Failures During Plant Transients
Due To Improper Switch Settings
AECM-88/0112

Reference: AECM-88/0035, dated February 27, 1988

On May 2, 1988 System Energy Resources, Inc. (SERI) received NRC Bulletin (NRCB) 85-03, Supplement 1: Motor-Operated Valve Common Mode Failures During Plant Transients Due To Improper Switch Settings. The bulletin supplement was issued to clear up a misunderstanding in regard to (1) which valves are to be included and (2) the meaning of the phrase "inadvertent equipment operations (such as inadvertent valve closures or openings)" as used in the original bulletin.

In a telephone conversation with SERI on May 9, 1988, Mr. R. J. Kiessel of NRR, explained that although NRCB 85-03, Supplement 1 requested that all safety-related valves in the selected systems be evaluated for inadvertent equipment operation, the NRC was concerned about nine valves previously identified by the NRC and discussed with the BWR Owners Group (BWROG). Mr. Kiessel stated that if SERI's final response to NRCB 85-03 addressed inadvertent equipment operation for the nine identified valves, no further evaluations would be required.

In its final response to NRCB 85-03 (AECM-88/0035), SERI stated that the valves identified by the NRC applicable to GGNS were evaluated specifically for inadvertent valve operation. The maximum expected differential pressure values were incorporated into the testing program and were shown on the applicable valve data sheets.

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P. O. BOX 23070 | JACKSON, MISSISSIPPI 39225-3070 | (601) 984-9290
A Middle South Utilities Company

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As a result of the inadvertent valve operation criteria stated in NRCB 85-03, Supplement 1, SERI's engineering department has reevaluated the applicable valves and has determined that the maximum expected differential pressures (MEDP) in the open direction for the HPCS (E22-F001) and RCIC (E51-F010) pump suction valves from the condensate storage tank have increased. However, the increased MEDP does not affect valve operability or the "as-left" condition for the valves since neither valve uses a torque switch wired into its open control circuit. Revised valve data sheets are attached.

SERI considers the concerns identified in NRCB 85-03, Supplement 1 as clarified by Mr. Kiessel adequately addressed.

Yours truly,



ODK:bms
Attachments

cc: Mr. T. H. Cloninger (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
Mr. R. C. Butcher (w/a)

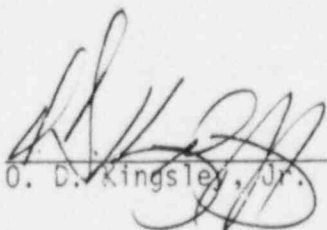
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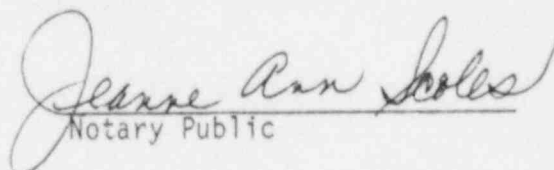
STATE OF MISSISSIPPI
COUNTY OF HINDS

O. D. Kingsley, Jr., being duly sworn, states that he is Vice President - Nuclear Operations, of System Energy Resources, Inc.; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this response to NRC Compliance Bulletin No. 85-03 on behalf of the Company and South Mississippi Electric Power Association; that he signed the foregoing letter as Vice President - Nuclear Operations, of System Energy Resources, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of his knowledge, information and belief.


O. D. Kingsley, Jr.

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 1st day of June, 1988.

(SEAL)


Notary Public

My commission expires:

My Commission Expires Sept. 21, 1991

| <u>VALVE</u> | | <u>OPERATOR</u> | | <u>VALVE FUNCTION</u> |
|--------------|-----------------------|-----------------|-------------------|-----------------------------|
| I. D. # | <u>1E22-F001</u> | Manufacturer | <u>Limitorque</u> | HPCS pump suction from CST |
| Manufacturer | <u>Anchor Darling</u> | Model | <u>SMB-00</u> | |
| Type | <u>F. W. G.</u> | Motor Size | <u>15' #</u> | - Safety function position: |
| Size | <u>18"</u> | Motor RPM | <u>1700</u> | Close |
| Rating | <u>150 #</u> | | | |

| Max. expected DP (PSID) Open/Close | Test DP (PSID) Open/Close | MOVATS DP Thrust (lbs-f) at Max Exp DP Open/Close | Vendor DP Thrust (lbs-f) at Max Exp DP Open/Close | Valve/Oper. Limiting Thrust(lbs-f) Open/Close | *As-Found Torque Sw Settings Open/Close | **As-Found Torque Sw Trip Thrust (lbs-f) Open/Close | As-Left Torque Sw Settings Open/Close | As-Left Torque Sw Trip Thrust (lbs-f) Open/Close |
|--|---------------------------------|--|--|--|--|---|--|--|
| 39/18 | N/A | 8,009/3,820 | 9,410/10,100 | 14,000/14,000 | N/A / 1 | N/A / 9537 | N/A / 1.75 | N/A / 11,473 |

Operability Justification/Remarks:

Valve considered operable prior to action taken for IEB 85-03 based on the following:

- 1) Thrust at torque switch trip in the closed direction greater than MOVATS Inc. calculated Max DP thrust.
- 2) As defined by SERI specification M189.1 (ASME Section XI pump and valve program) 1E22-F001 is categorized as a category B valve (valves for which seat leakage in the closed direction is inconsequential for fulfillment of their function) and since the control circuit is designed such that the valve would have stroked to 97% of full closed position (as-found rotor #2 actuation) its safety function would be fulfilled.
- 3) Actuator-Valve assembly sized to deliver open thrust requirements.

* OPEN circuit has no torque switch.

** "As-Left" torque switch setting increased to accommodate larger vendor close thrust value.

| <u>VALVE</u> | | <u>OPERATOR</u> | | <u>VALVE FUNCTION</u> |
|--------------|-----------------------|-----------------|-------------------|------------------------------------|
| I. D. # | <u>1E51-F010</u> | Manufacturer | <u>Limitorque</u> | RCIC pump suction from CST |
| Manufacturer | <u>William Powell</u> | Model | <u>SMB-000</u> | |
| Type | <u>F. W. G.</u> | Motor Size | <u>5'#</u> | - Active Safety Function Position: |
| Size | <u>6"</u> | Motor RPM | <u>1900</u> | Close |
| Rating | <u>150 #</u> | | | |

| Max. expected | Test | MOVATS | Vendor | *Valve/Oper. | **As-Found | As-Found | As-Left | As-Left |
|---------------|------------------|--------------------|---------------------|--------------------|----------------|--------------------|----------------|--------------------|
| DP (PSID) | DP (PSID) | DP Thrust | DP Thrust | Limiting | Torque Sw | Torque Sw | Torque Sw | Torque Sw |
| Open/Close | Open/Close | (lbs-f) | (lbs-f) | Thrust(lbs-f) | Settings | Trip Thrust | Settings | Trip Thrust |
| | | at Max | at Max | Open/Close | Open/Close | (lbs-f) | Open/Close | (lbs-f) |
| | | Exp DP | Exp DP | | | Open/Close | | Open/Close |
| | | Open/Close | Open/Close | | | | | |
| <u>37/21</u> | <u>N/A / N/A</u> | <u>3,935/2,497</u> | <u>1,720/ 1,720</u> | <u>8,000/8,000</u> | <u>N/A / 2</u> | <u>N/A / 8,220</u> | <u>N/A / 1</u> | <u>N/A / 5,957</u> |

Operability Justification/Remarks:

Valve considered operable prior to action taken for IEB 85-03 based on the following:

- 1) Valve-Operator assembly sized adequately to provide output thrust necessary to overcome required Max DP thrust for open direction.
- 2) "As-Found" torque switch trip thrust in the close direction was adequate to overcome the Max DP thrust in the close direction.

* The limiting value of 8,000 lbs-f is the commercial rating of the SMB-000 operator. This value is merely a parameter used to adequately size the operator for the particular application. SERI adopted this value as a limiting value for guidance when setting up MOV's as a precautionary measure. The fact that the "As-Found" torque switch trip thrust exceeded this value by 220 lbs-f in the close direction does not pose any operability concern, this was confirmed with Limitorque Corp. The next limiting thrust value is the 80% stall thrust of 18,206 lbs.-f.

** Valve-Operator assembly has no torque switch wired into the open control circuit.