



Entergy Operations, Inc.
River Bend Station
5485 U. S. Highway 61
P.O. Box 220
St. Francisville, LA 70775
Tel 504 336 6225
Fax 504 635 5068

Rick J. King
Director
Nuclear Safety & Regulatory Affairs

June 28, 1996

U.S. Nuclear Regulatory Commission
Document Control Desk
Mail Stop P1-37
Washington, DC 20555

Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Response to NRC's Request for Additional Information on Generic
Letter 95-07 "Pressure Locking and Thermal Binding of Safety-Related
Power-Operated Gate Valves"

File Nos.: G9.5, G9.33.4

RBF1-96-0267
RBG-43059

Gentlemen:

Pursuant your letter dated May 20, 1996 requesting additional information on Generic Letter (GL) 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves," River Bend herein submits in Attachment 1 the required information. This response is being submitted at this time based on discussion with Mr. Dave Wigginton of the NRC staff.

Even though this response addresses the specific questions addressed in your request for additional information, the 180-day response submitted February 13, 1996 describes in summary form: 1) the 114 power operated safety-related gate valves that were evaluated and the methodology used in those evaluations, 2) the six safety-related valves that were identified as a result of GL 95-07 as potentially susceptible to hydraulic locking or boiler effect when performing safety related functions to open, 3) the same six valves, described above, that were modified in RF-6 (January-February 1996), and 4) the six additional valves which were modified as a result of a previous review to address pressure locking/thermal binding, for a total of 12 modified gate valves at River Bend. No further gate valve modifications are required at this time.

9607090135 960628
PDR ADOCK 05000458
P PDR

1/1
A056

Response to NRC Request for Additional Information on Generic Letter 95-07 "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves"

June 28, 1996

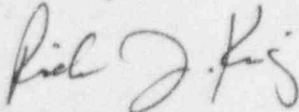
RBF1-96-0267

RBG-43059

Page 2 of 2

Should you have any questions or require additional information, please contact Mr. T. W. Gates of my staff at (504) 381-4866.

Sincerely,



RJK/JHM/kvm
attachment

cc: Mr. David L. Wigginton
U.S. Nuclear Regulatory Commission
11555 OWFN 13-H-2
Rockville, MD 20859

NRC Resident Inspector
P O. Box 1051
St. Francisville, LA 70775

U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-47

DOCKET NO. 50-458

IN THE MATTER OF

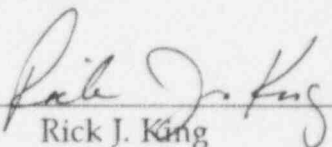
GULF STATES UTILITIES COMPANY

CAJUN ELECTRIC POWER COOPERATIVE AND

ENTERGY OPERATIONS, INC.

AFFIRMATION

I, Rick J. King, state that I am Director - Nuclear Safety & Regulatory Affairs of Entergy Operations, Inc., at River Bend Station; that on behalf of Entergy Operations, Inc., I am authorized by Entergy Operations, Inc., to sign and file with the Nuclear Regulatory Commission, this supplemental response to GL 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves"; that I signed this letter as Director - Nuclear Safety & Regulatory Affairs at River Bend Station of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information, and belief.




Rick J. King

STATE OF LOUISIANA
PARISH OF WEST FELICIANA

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the Parish and State above named, this 28th day of June, 1996.

(SEAL)



Claudia F. Hurst
Notary Public

My commission expires with life

ATTACHMENT 1

Response to Request for Additional Information

Question 1- In Attachment I to Generic Letter (GL) 95-07, the NRC staff requested that licensees include consideration of the potential for gate valves to undergo pressure locking or thermal binding during surveillance testing. During workshops on GL 95-07 in each Region, the NRC staff stated that, if closing a safety-related power-operated gate valve for test or surveillance defeats the capability of the safety system or train, the licensee should perform one of the following within the scope of GL 95-07: 1) verify that the valve is not susceptible to pressure locking or thermal binding while closed, 2) follow plant technical specifications for the train/system while the valve is closed, 3) demonstrate that the actuator has sufficient capacity to overcome these phenomena, or 4) make appropriate hardware and/or procedural modifications to prevent pressure locking and thermal binding.

The staff stated that normally open, safety-related power-operated gate valves which are closed for test or surveillance but must return to the open position should be evaluated within the scope of GL 95-07. Please discuss if valves which meet this criterion were included in your review, and how potential pressure locking or thermal binding concerns were addressed.

Answer to #1- River Bend Station (RBS) evaluated a total of 114 safety-related power operated gate valves for susceptibility to valve bonnet pressurization and thermal binding. For each gate valve, all plant operating modes were included in the screening evaluations, including surveillance test procedures. Of this population, there are 21 normally open gates valves with a safety related function to open, (see Table 1 attached). During normal plant operations, the valves are periodically closed for surveillance testing. To ensure that they will perform their required function, they were evaluated in Engineering Report M/C 95-013, "Evaluation of Gate Valves for Susceptibility to Thermal Binding and Bonnet Pressurization," for the potential to thermally bind or pressure lock during the surveillance test. Of this population, two valves were modified to prevent pressure locking and eleven were determined not to be susceptible to pressure locking. The remaining eight were determined to be susceptible to pressure locking conditions for non-safety related scenarios; however, calculations were performed ensuring that their actuator has sufficient capacity to overcome pressure locking conditions.

Question #2- Through review of operational experience feedback, the staff is aware of instances where licensees have completed design or procedural modifications to preclude pressure locking or thermal binding which may have had an adverse impact on plant safety due to incomplete or incorrect evaluation of the potential effects of these modifications. Please describe evaluations and training for plant personnel that have been conducted for each design or procedural modification completed to address potential pressure locking or thermal binding concerns.

Answer to # 2 The RBS Training Department provides specific training for Operations personnel during operators' initial and requalification training. The training addresses some specific RBS modifications of pressure locking/thermal binding. In addition, pressure locking/thermal binding is generically referenced in the training materials as predicated in SOER 84-7, "Pressure Locking and Thermal Binding of Gate Valves." This material has been covered in the following lesson plans:

- Industry Events
- Valve Characteristics
- Components and Valves
- Residual Heat Removal
- Emergency Core Cooling Systems and Residual Heat Removal System

For the two valves that were modified by drilling a hole in the disc (upstream on pressure side), there is a note on the drawing (Note #8 on 0228.212-047-008) that indicates the size and location of the hole. The valve drawings are available for on-the-job use during disassembly and assembly to increase awareness of the modifications on the ASME valves.

Upon completion of modifications at RBS, the responsible engineer is required to obtain a review from the applicable site departments to identify any required training on the respective departmental work responsibility checklist. This program requirement is contained in procedures ENG-3-033, "Modification Design Control Plan" and ED-AA-80, "Modifications Forms."

Table 1

Valve Number	Description	Safety function
E12-MOVF004A	LPCI A Suction	Open and Close
E12-MOVF004B	LPCI B Suction	Open and Close
E12-MOVF027A	LPCI A Outboard Isolation	Open and Close
E12-MOVF027B	LPCI B Outboard Isolation	Open and Close
E12-MOVF064A	LPCI A Mini-flow	Open and Close
E12-MOVF064B	LPCI B Mini-flow	Open and Close
E12-MOVF064C	LPCI C Mini-flow	Open and Close
E12-MOVF105	LPCI C Suction	Open and Close
E21-MOVF001	LPCS Suction	Open and Close
E21-MOVF011	LPCS Mini-flow	Open and Close
E51-MOVF063	RCIC Steam Inboard Containment Isolation	Open and Close
E51-MOVF064	RCIC Steam Outboard Containment Isolation	Open and Close
E51-MOVF068	RCIC Turbine Exhaust Containment Isolation	Open and Close
SWP-MOV73A	AB Unit Cooler 5 Service Water A Supply	Open
SWP-MOV73B	AB Unit Cooler 5 Service Water B Supply	Open
SWP-MOV74A	AB Unit Cooler 5 Service Water A Return	Open
SWP-MOV74B	AB Unit Cooler 5 Service Water B Return	Open
SWP-MOV81A	Service Water A Return Containment Isolation	Open and Close
SWP-MOV81B	Service Water B Return Containment Isolation	Open and Close
SWP-MOV507A	Service Water A Supply Containment Isolation	Open and Close
SWP-MOV507B	Service Water B Supply Containment Isolation	Open and Close

Answer to # 2 The RBS Training Department provides specific training for Operations personnel during operators' initial and requalification training. The training addresses some specific RBS modifications of pressure locking/thermal binding. In addition, pressure locking/thermal binding is generically referenced in the training materials as predicated in SOER 84-7, "Pressure Locking and Thermal Binding of Gate Valves." This material has been covered in the following lesson plans:

- Industry Events
- Valve Characteristics
- Components and Valves
- Residual Heat Removal
- Emergency Core Cooling Systems and Residual Heat Removal System

For the two valves that were modified by drilling a hole in the disc (upstream on pressure side), there is a note on the drawing (Note #8 on 0228.212-047-008) that indicates the size and location of the hole. The valve drawings are available for on-the-job use during disassembly and assembly to increase awareness of the modifications on the ASME valves.

Upon completion of modifications at RBS, the responsible engineer is required to obtain a review from the applicable site departments to identify any required training on the respective departmental work responsibility checklist. This program requirement is contained in procedures ENG-3-033, "Modification Design Control Plan" and ED-AA-80, "Modifications Forms."