

USNRC REGION II  
ATLANTA, GEORGIA

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November 16, 1981  
L-81-480

Mr. James P. O'Reilly, Director, Region II  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Re: St. Lucie Unit 2  
Docket No. 50-389  
IE Bulletin 81-02, Failure of Gate Type  
Valves to Close Against Differential  
Pressure, 10 CFR 50.55(e) Report 50-389/81-002



Dear Mr. O'Reilly:

On June 22, 1981 Region II was notified that gate valves of the type referred to in the IE bulletin 81-02 were utilized at St. Lucie Unit 2. An interim report was submitted to you on July 14, 1981 (L-81-289). We have determined that use of those valves is reportable under 10 CFR 50.55(e). A final report is attached for your review.

Yours truly,

Robert E. Uhrig  
Vice President  
Advanced Systems & Technology

REU:TCG:cf  
Attachments

cc: Director of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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PEOPLE SERVING PEOPLE

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STATE OF FLORIDA )  
                          )  
COUNTY OF DADE )

ss.

Robert E. Uhrig, being first duly sworn, deposes and says:

That he is                            Vice President                            of Florida Power & Light Company, the                            herein;

That he has executed the foregoing document; that the statements made in this said document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said

  
Robert E. Uhrig

Subscribed and sworn to before me this

16 day of November, 1981

Cheryl L. Fredrick  
NOTARY PUBLIC, in and for the County of Dade,  
State of Florida

My commission expires:                             
Notary Public, State of Florida at Large  
My Commission Expires October 30, 1983  
Bonded thru Maynard Bonding Agency

Final Report

BULLETIN 81-02: FAILURE OF GATE TYPE VALVES  
TO CLOSE AGAINST DIFFERENTIAL PRESSURE

Name of Station: St. Lucie Unit 2  
Owner: Florida Power & Light Co.  
NSSS Supplier: Combustion Engineering, Inc.  
Architect/Engineer: Ebasco Services, Inc.  
Date of NRC Notification: June 22, 1981  
Date of Final Report: November 16, 1981

## I. Summary

Bulletin 81-02 identified the potential for failure of certain gate valves to completely close even though the flow rate was within design limits. A review of St. Lucie Unit 2 revealed that six safety-related valves (supplied by Westinghouse via Combustion Engineering) could potentially experience closing difficulties. Westinghouse has reviewed the design of each valve and expects to complete valve modifications in December 1981.

## II. Description

The valves which could experience closing difficulties are listed in Table 1; along with the identification of the system in which each valve is used, the maximum  $\Delta P$  for which closing is required, and the valve modification being implemented. Six of these valves have safety related functions, as described in Section IV below.

## III. Corrective Action

The Westinghouse Electro-Mechanical Division has evaluated the capability of each of these valves to operate under their specified conditions. The evaluations of each valve assembly was based on engineering records of the calibration and output of each individual motor operator unit and on production test records of each valve assembly. The adjustments and modifications in Table 1 are being made to ensure valve operability in each application. The modifications are expected to be complete by December 1981. The corrective modifications indicated in Table 1 are described below.

### Torque Switch Adjustments

The torque switch settings (both OPEN and CLOSE) on each of these valves are being adjusted.

<u>Model Number</u>	<u>Valve</u>
03000GM82FBB07D00S74	V2508 V2509 V2514
04000GM82FBB07D00S74	V2501 V2525
04000GM84FEB07D00S74	V3662 V3663
10000GM84NDB07D05S74	V3664 V3665
10000GM88NDH17E00S74 (SMG-1-40 (1800) Operator)	V3651 V3652 V3480 V3481 V3545

<u>Model Number</u>	<u>Valve</u>
12000GM84NCH27D00S74	V3658
12000GM88NCH17E00S74	V3614
(SMB-2-40 (1800) Operator)	V3624
	V3634
	V3644

#### Gear Ratio Change with Torque Switch Adjustment

The motor operator gear ratio and the torque switch settings (both OPEN and CLOSE) on the following valve are being adjusted.

<u>Model Number</u>	<u>Valve</u>
12000GM84NCH27D00S74	V3517
(SB-0-15 Operator)	

#### Gear Ratio Change with Closure Control Change

The following valve requires a change from torque-controlled closure to limit closure and a gear ratio change.

<u>Model Number</u>	<u>Valve</u>
04000GM87FHB07D00S74	V3653
(SB-00-15 Operator)	V3655

#### Closure Control Change

These valves require only a change from torque-controlled closure to limit closure.

<u>Model Number</u>	<u>Valve</u>
03000GM87FBJ17D00S74	V3659
(SB-00-15 Operator)	V3660
06000GM87SGH07D00S74	V3654
(SB-0-15 Operator)	
06000GM88SGH07D00S74	V3656
(SB-0-15 Operator)	
10000GM84NDB27D05S74	V3456
(SB-0-15 Operator)	V3457

#### IV. Safety Implication

If V2501 and V2525 would fail to close completely as the result of a safety injection actuation signal, the safety injection water delivered to the RCS could have a lower

Boron concentration than that assumed in the safety analysis. However, actual safety of the plant would not be affected since there are sufficient conservatism in the safety analyses to assure that the reactor core is maintained in a subcritical state.

If V3654 and V3656 would fail to close completely the percentage of safety injection (SI) water delivered to the RCS hot and cold legs would be slightly different than assumed in the safety analyses. However, the total quantity of SI water delivered to the RCS would remain unchanged.

If V3664 and V3665 would fail to close completely, some RCS coolant could be released if there were a leak in the shutdown cooling system outside of containment.

#### V. Conclusion

The action indicated in Section III will correct the deficiency referred to in IE Bulletin 81-02. This report closes out this issue with respect to the reporting requirements of 10 CFR 50.55(e).

TABLE 1

ST. LUCIE UNIT 2 VALVES REPAIRED AS A RESULT OF BULLETIN 81-02

<u>Valve</u>	<u>Application</u>	<u>Maximum Closing <math>\Delta P</math> (psid)</u>	<u>Corrective Modification</u>
V2508, 09, 14	Boric Acid Makeup	200	Torque Switch Adjustment
V2501, 25	Normal Makeup Isolation	200	" " "
V3662, 63	Spare Valves	700	" " "
V3664, 65	Shutdown Cooling (SDC) Isolation	500	" " "
V3545	Shutdown Cooling Suction Isolation	500	" " "
V3651, 52	Shutdown Cooling Suction Isolation	500	" " "
V3480, 81	Shutdown Cooling Suction Isolation	500	" " "
V3658	SDC Heat Exchanger Isolation	300	" " "
V3614, 24, 34, 44	SI Tank Isolation	300	" " "
V3517	SDC Heat Exchanger Isolation	300	Gear Ratio Change and Torque Switch Adjustment
V3653, 55	Spare Valves	1500	Gear Ratio Change and Closure Control Change
V3654, 56	Hot Leg Safety Injection	1250	Closure Control Change
V3456, 57	SDC Heat Exchanger Isolation	500	" " "
V3659, 60	SI Pump Mini-Flow Isolation	1750	" " "