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 EISENHUT, D. G. Assistant Director for Licensing

DOCKET #  
05000389

SUBJECT: Forwards final response to TMI Item II, D.1, "Performance Testing of BWR & PWR Relief & Safety Valves." Conclusions reached in encl evaluation on operability of pressurizer safety valves & PORVs satisfy commitment.

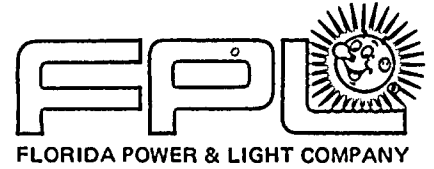
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March 22, 1983  
L-83-168

Office of Nuclear Reactor Regulations  
Attention: Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Eisenhut:

Re: ST. LUCIE UNIT NO. 2  
DOCKET NO. 50-389  
POST-TMI REQUIREMENTS  
ITEM II.D.1 - FINAL RESPONSE

The purpose of this letter is to provide the NRC with Florida Power & Light Company's final response to the requirement II.D.1, "Performance Testing of Boiling Water Reactor and Pressurized Water Reactor Relief and Safety Valves" of NUREG-0737. Our response to II.D.1 utilizes the results from Electric Power Research Institute's valve testing program.

Attached are the results of our evaluation on the operability of the St. Lucie Unit 2 Pressurizer Safety Valves, Power Operated Relief Valves (PORV's), electric motor operated gate valves (block valves) and the Safety and Relief Valve Piping Evaluation. The conclusions reached in the attachment satisfy FP&L's commitment to address the concerns of NUREG-0737, Item II.D.1.

If you have any questions regarding this submittal please contact us.

Very truly yours,

Robert E. Uhrig  
Vice President  
Advanced Systems and Technology

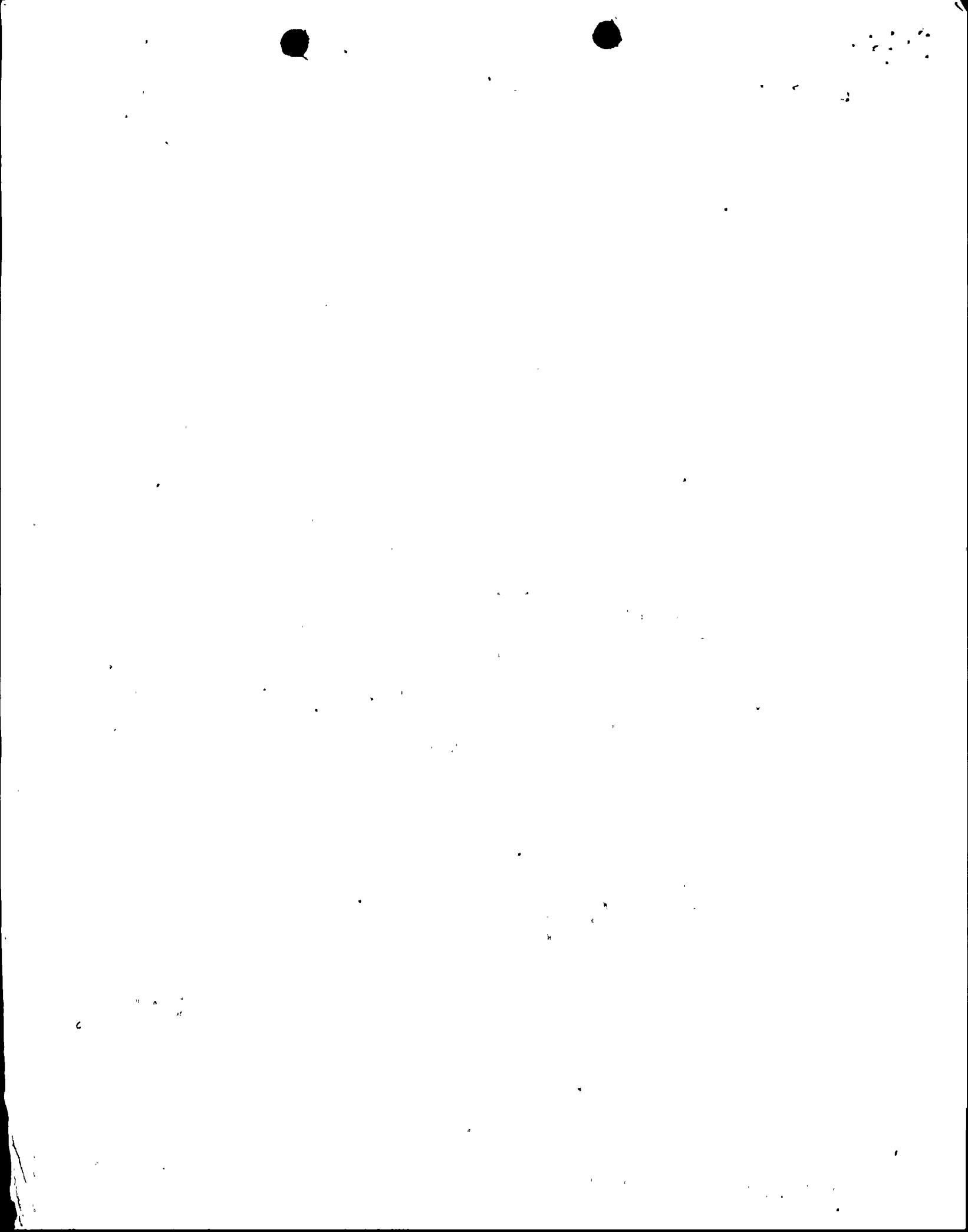
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Attachment

cc: J. P. O'Reilly, Region II  
Harold F. Reis, Esquire

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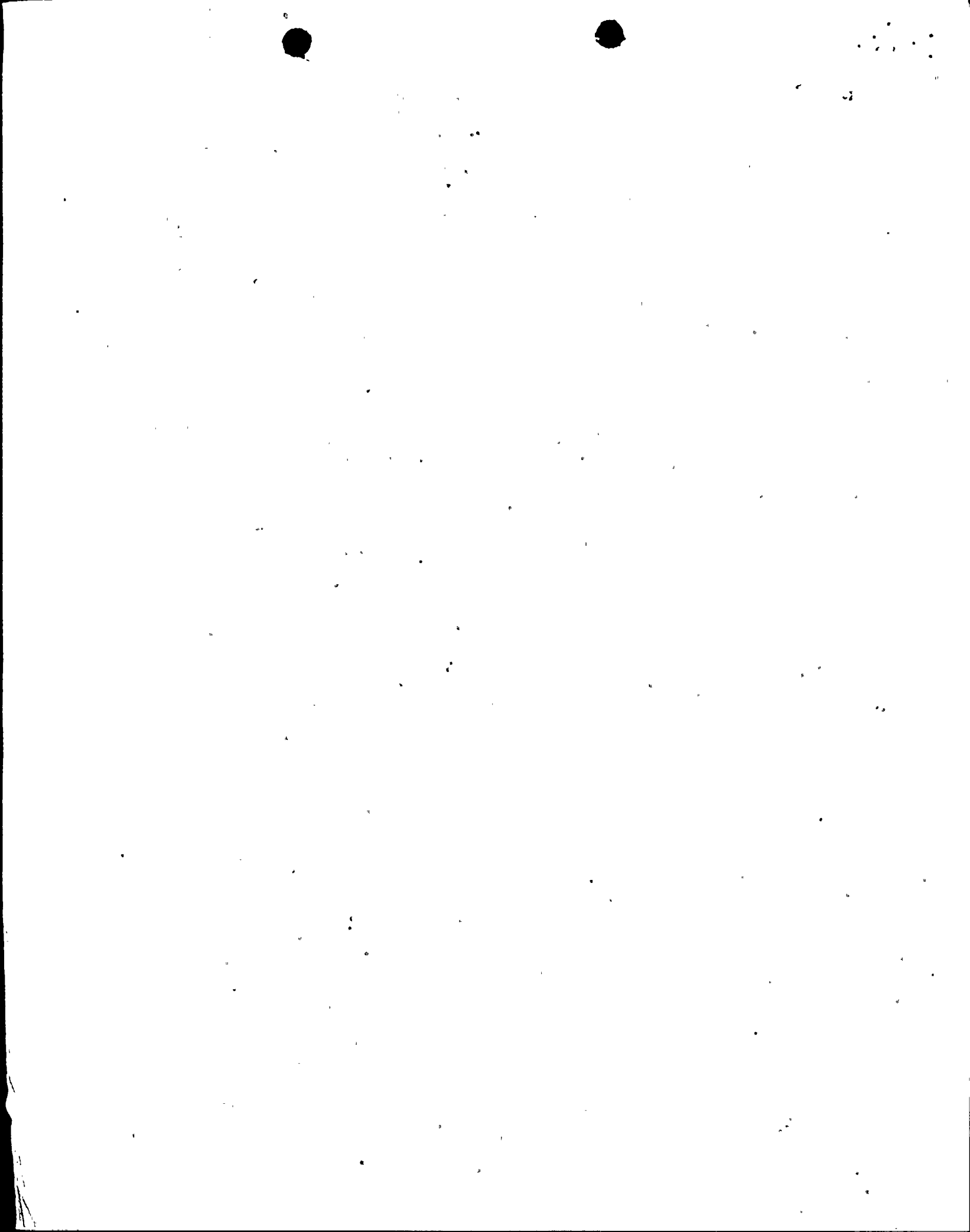


ATTACHMENT

FLORIDA POWER & LIGHT COMPANY  
ST. LUCIE UNIT 2

RESPONSE TO NUREG-0737, ITEM II.D.1

"Performance Testing of Boiling Water  
Reactor and Pressurized Water  
Reactor Relief and Safety Valves."



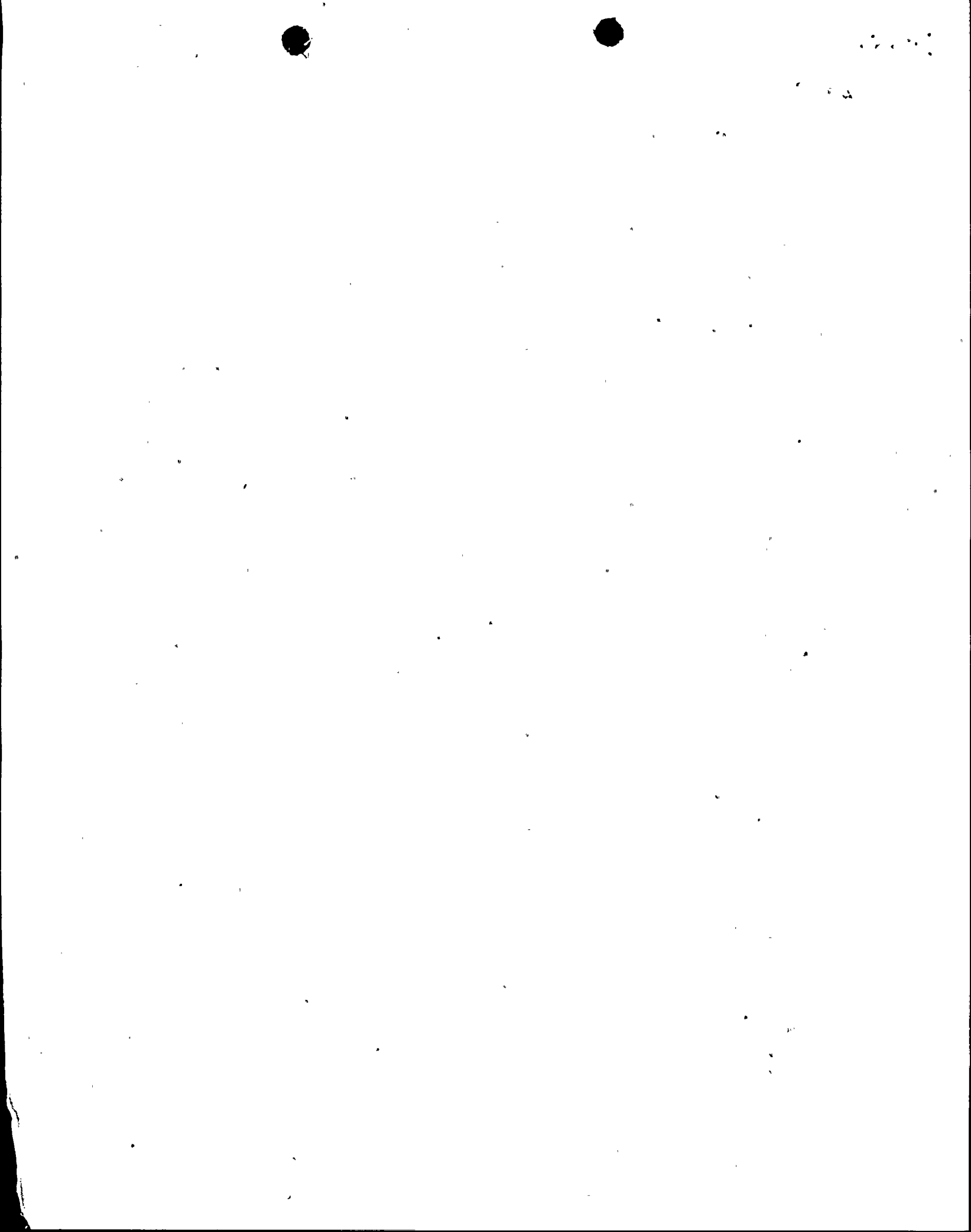
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I. SAFETY VALVE OPERABILITY

In order to facilitate an expeditious evaluation of the test data, the utilities operating and constructing Combustion Engineering (CE) designed plants have, through the CE Owners Group, requested that CE implement a program to evaluate and apply the EPRI test results. The CE Owners Group program was subsequently initiated in April, 1982 and completed in December, 1982. Florida Power and Light is a participant in this program.

The approach being applied by the CE Owners Group is to show that particular EPRI tests were directly representative of plant-specific safety valve models and valve installations and that acceptable valve operation was demonstrated. Accordingly, CE report CEN-227, entitled "Summary Report on the Operability of Pressurizer Safety Valves in CE Designed Plants", was forwarded on December 20, 1982 to the NRC by Mr. R. W. Wells, Chairman of the CE Owners Group. Florida Power and Light considers report CEN-227 to provide the required information on safety valve operability for St. Lucie Unit 2 and finds its contents acceptable.

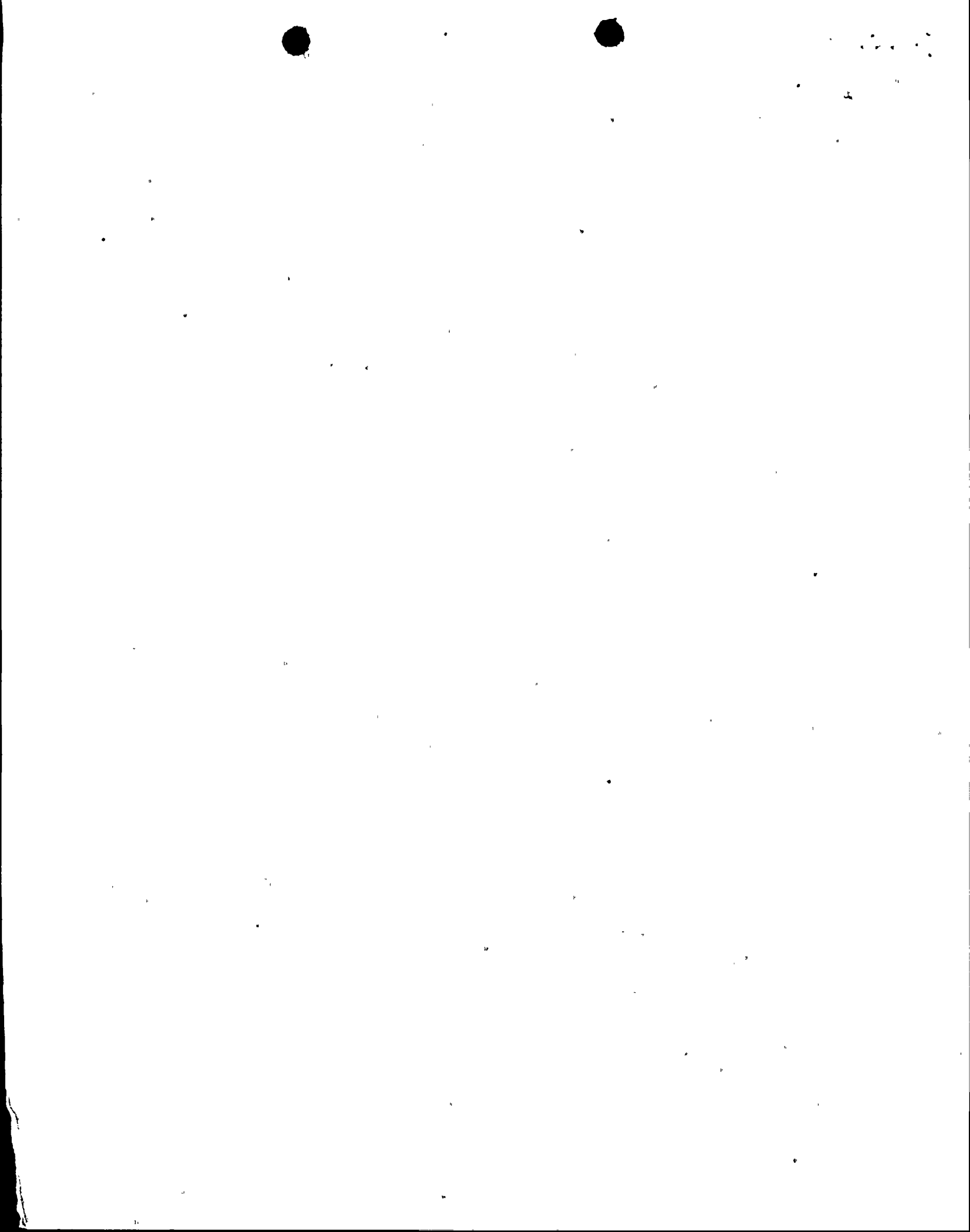




II. POWER OPERATED RELIEF VALVE OPERABILITY (PORV)

As with the safety valves, the utilities operating and constructing Combustion Engineering (CE) designed plants have, through the CE Owners Group, requested that CE implement a program to evaluate and apply the EPRI test results. The CE Owners Group program was subsequently initiated in April, 1982 and completed in December, 1982. Florida Power and Light is a participant in this program.

The approach being applied by the CE Owners Group is to show that particular EPRI tests were directly representative of plant-specific PORV models and valve installations, and that acceptable valve operation was demonstrated. Accordingly, CE report CEN-213, entitled "Summary Report on the Operability of Power Operated Relief Valves in CE Designed Plant", was forwarded on July 1, 1982 separately to the NRC by Mr. K. P. Baskin, Chairman of the CE Owners Group. Florida Power and Light considers report CEN-213 to provide the required information on PORV operability for St. Lucie Unit 2 and finds its contents acceptable.



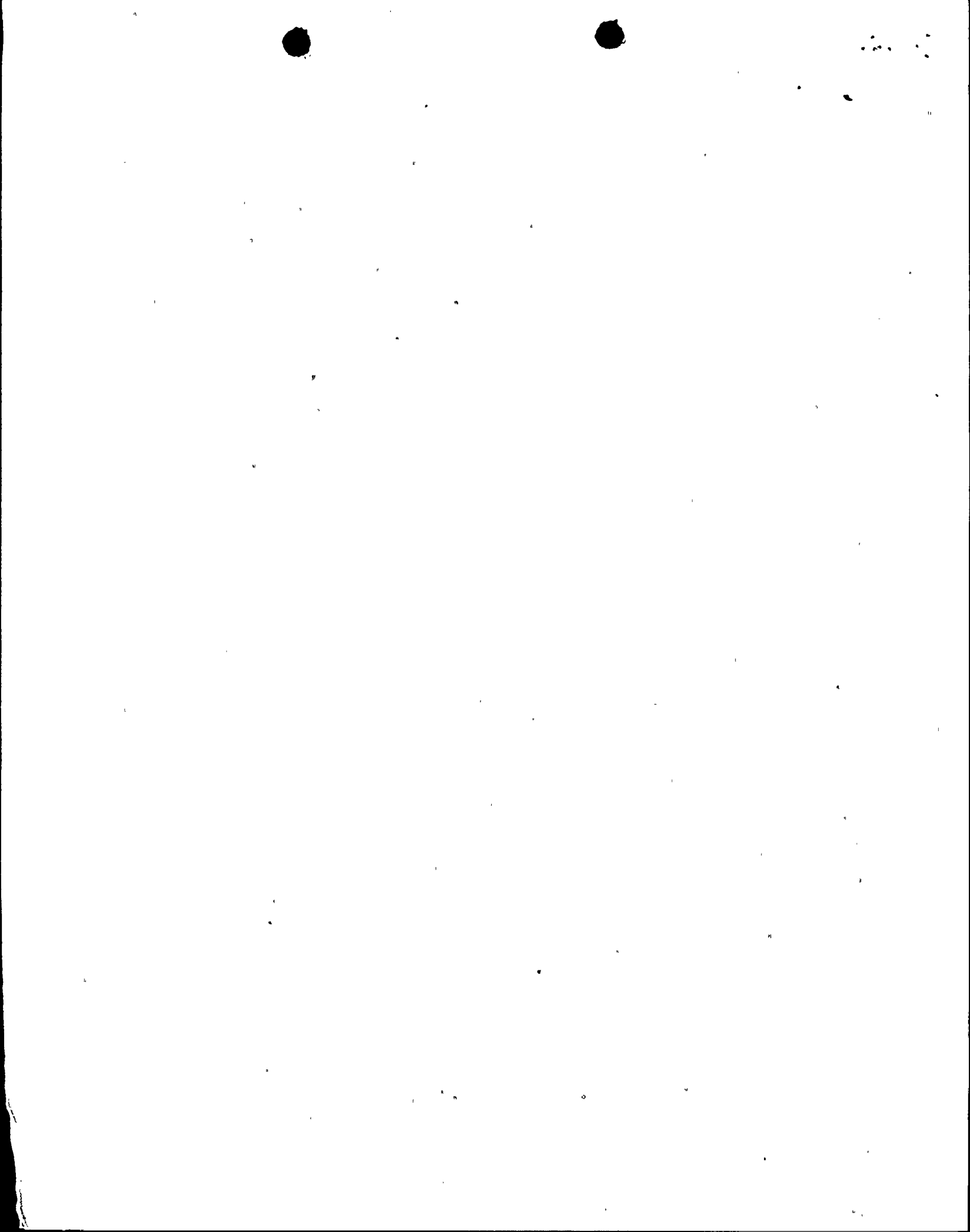
II. ELECTRIC MOTOR OPERATED GATE VALVE (BLOCK VALVE) OPERABILITY

NUREG-0737, Item II.D.1.B contains the provision that PWR utilities demonstrate that PORV block valves function properly over the range of expected operating and accident conditions. Florida Power and Light is a member utility participating in the EPRI program to demonstrate the operability of these valves.

During a meeting with NRC staff and utility representatives held on July 17, 1982, the above provision was discussed in detail and substantial agreement was reached regarding resolution of the requirement. The details of the utility position is contained in a letter to Harold Denton, NRC by R. C. Youngdahl, Consumers Power, dated July 24, 1981.

Prototype testing of representative valve and operator configurations was performed under the EPRI program. These test results were transmitted to Harold Denton, NRC by R. C. Youngdahl, Consumers Power, on June 1, 1982, on behalf of the member utilities, References (1) and (2). The block valves at St. Lucie Unit 2 are model 0306GM88FNH (88 Series) motor operated gate valves supplied by the Westinghouse Corporation.

Florida Power and Light considers the contents of References (1) and (2) to be fully applicable to St. Lucie Unit 2 block valves and adopts them in satisfying the requirements of NUREG-0737, Item II.D.1.B.



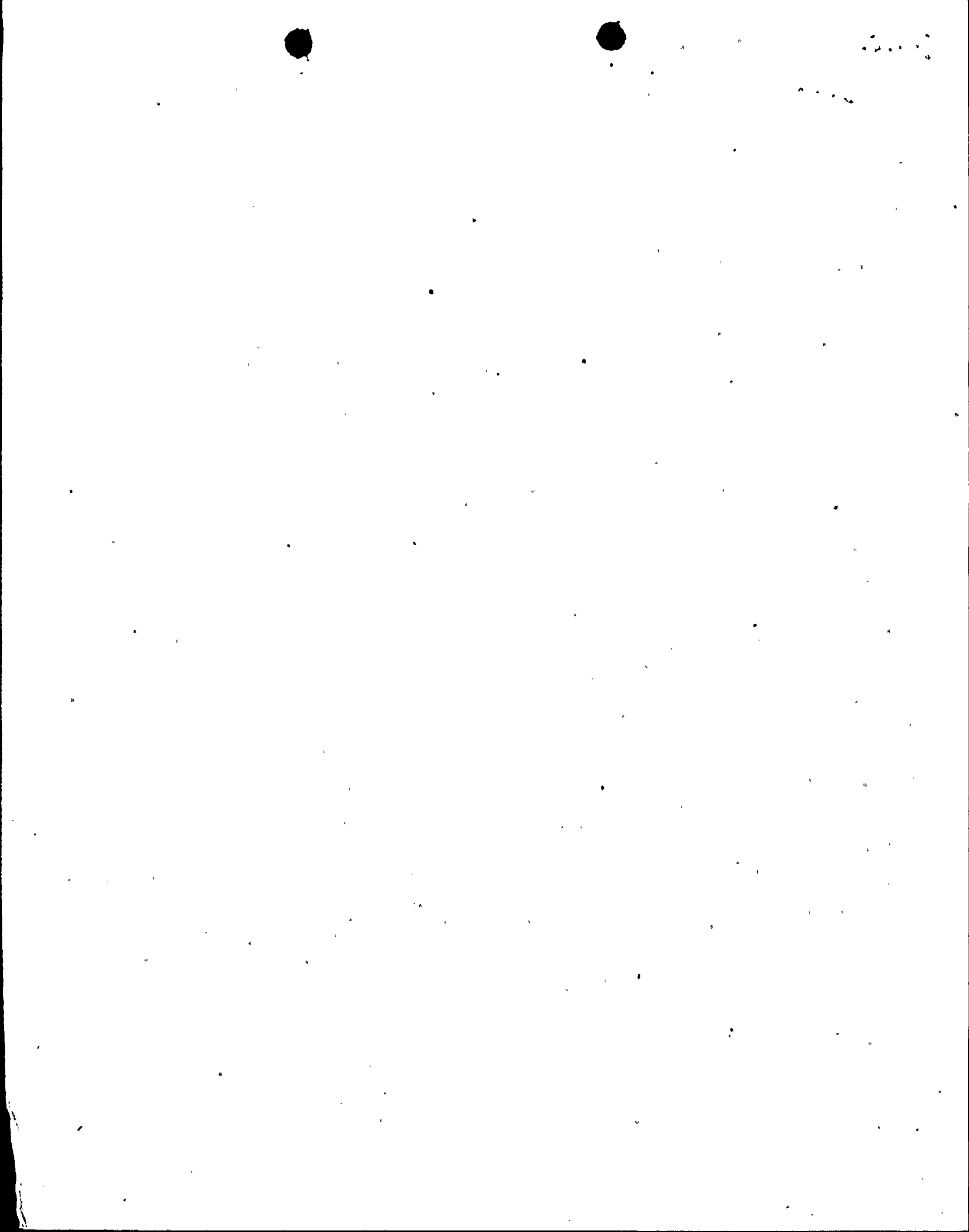
IV. SAFETY AND RELIEF VALVE PIPING EVALUATION

NUREG-0737 Item II.D.1.A requires that all utilities operating and constructing Pressurized Water Reactors (PWR) plants provide a submittal that demonstrates the adequacy of the pressurizer safety and relief valve piping and supports.

In order to comply with the requirement, Ebasco Services, Inc., has performed a computer analysis on the safety and relief valve piping at St. Lucie Unit 2 to evaluate the adequacy of the piping and support system. The SRV piping isometrics at St. Lucie Unit 2 were utilized to provide input to the EPRI developed RELAP 5 computer code. The thermal-hydraulic properties developed by RELAP 5 were then inputted into a post-processor code CALPLOT III, developed and written by Ebasco to compute the forces for each piping segment. The three valve actuating scenarios analyzed were the following:

- a) Two PORV's open simultaneously, SRV's closed.
- b) PORV's do not open. All three SRV's open simultaneously.
- c) PORV's open. Pressurizer pressure continues to increase and SRV's open simultaneously.

The valve opening times were selected from the data given in the EPRI Safety and Relief Valve Test Report from valve tests representative of the St. Lucie Unit 2 valves. The results of this present analyses were then compared to the previous analyses which resulted in the present system design. Based on the results of this evaluation, Florida Power and Light has concluded that the St. Lucie Unit 2 SRV piping and support system in its present configuration is adequate for the presently calculated hydraulic loads. This satisfies Florida Power and Light's responsibility to demonstrate adequacy of the St. Lucie Unit 2 safety and relief valve piping and support system.



" V. " REFERENCES

1. "EPRI-Marshall Electric Motor-Operated Valve (Block Valve) Interim Test Data Report", NP-2514-LD, Research Project V-102, prepared by Intermountain Technologies, Inc.
2. "EPRI Summary Report: Westinghouse Gate Valve Closure Testing Program", Engineering Memorandum 5683, Revision 1, prepared by Westinghouse Electro-Mechanical Division, March 31, 1982.



