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 RECIP. NAME RECIPIENT AFFILIATION
 O'REILLY, J.P. Region 2, Atlanta, Office of the Director

SUBJECT: Final deficiency rept re potentially reportable design deficiency in valves mfg by Target Rock Corp, initially reported 801124. Target Rock has modified valve design to eliminate flow induced vibration.

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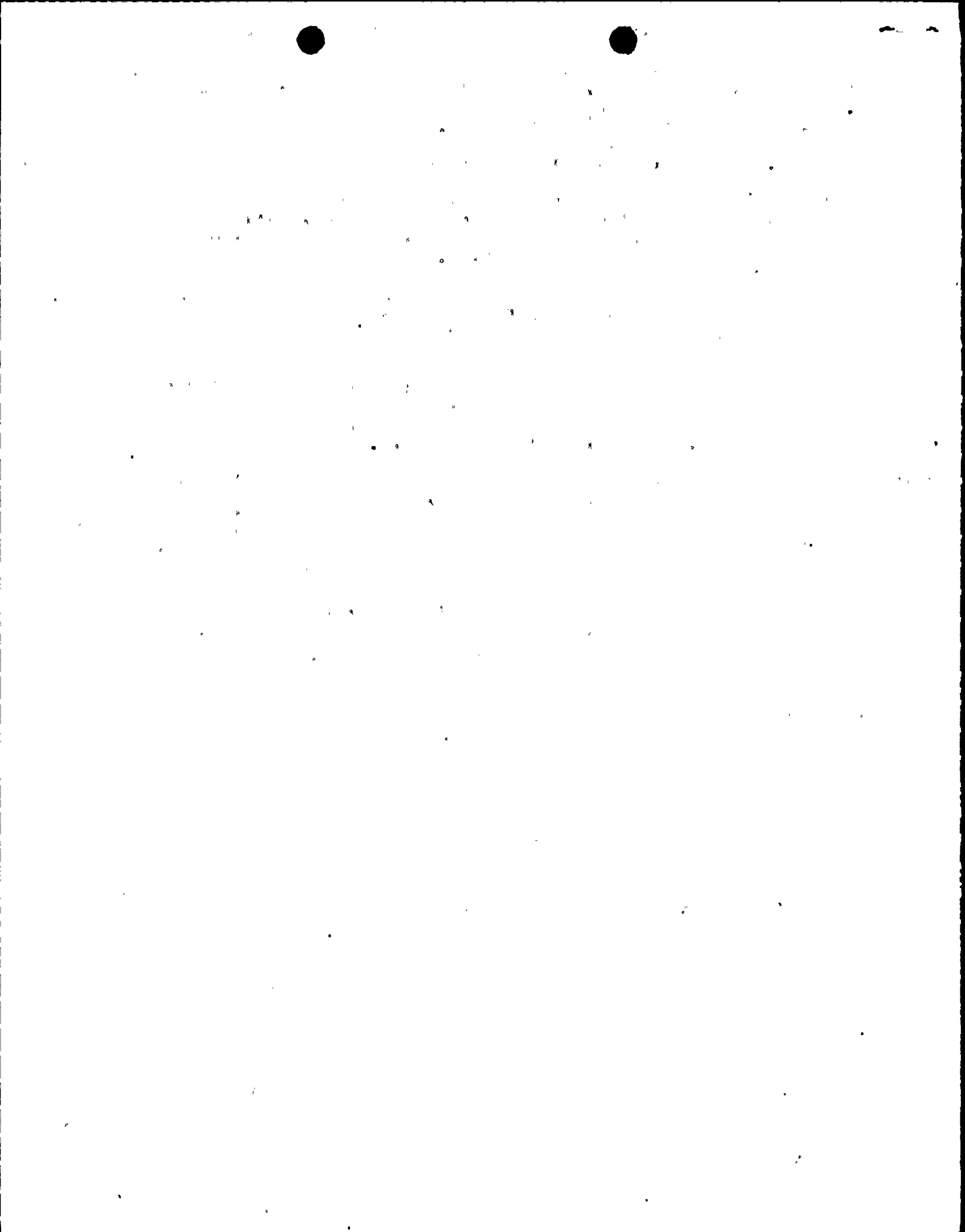
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REGION II
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Mr. James P. O'Reilly, Director, Region II
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

Re: St. Lucie Unit 2
Docket No. 50-389
Low Pressure Safety Injection System Valves
Target Rock Valves - Design Deficiency
50.55 (e)



On November 24, 1980, Florida Power & Light Company (FPL) notified the Office of Inspection and Enforcement, Region II of a potentially reportable design deficiency in several valves manufactured by the Target Rock Corporation.

On December 23, 1980 (L-80-414), FPL submitted an interim response which stated that the subject deficiency was being evaluated and that a final report would be submitted by January 24, 1981. FPL has completed its evaluation, and a final report is attached for your review.

Very truly yours,

Robert E. Uhrig
Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/TCG/ah
Attachment

cc: Harold F. Reis, Esquire. (w/o attachment)
Director of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555 (w/attachment)

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Final Design Deficiency Report

Target Rock Valves

I. Summary

A design deficiency was identified in valves manufactured by Target Rock Corporation and furnished by Combustion Engineering. Due to the design deficiency the valves, when operated under design conditions, would be prone to failure. The failure would consist of the disc separating from the stem, cracks in the valve seat and backseat, and scoring of the disc below the seating surface.

In accordance with the requirements of 10 CFR 50.55(e), the above deficiency is considered reportable. By telephone FPL notified the NRC on November 24, 1980, and an interim report was submitted on December 23, 1980 (FPL Letter L-80-414). This final report is submitted to advise the NRC of the description of the deficiency and the corrective actions that will be taken.

II. Description

Our NSSS vendor (Combustion Engineering) and Mr. C. R. McFarland (NRC) informed FPL that a design deficiency had been identified in Target Rock valves (8" motor operated globe valve) at the San Onofre Nuclear Generating Station (SONGS) and had been reported by Southern California Edison to the NRC under 10 CFR 50.55(e). An investigation concluded that St. Lucie Unit 2 globe valves HCV 3615, HCV 3625, HCV 3635, HCV 3645, V 3536, V 3539, V 3550, and V 3551 perform the same flow throttling service as the valves in the SONGS unit and are similar in design to the SONGS valves that failed, except that the St. Lucie valves are 6" (HCV 3615, HCV 3625, HCV 3635, HCV 3645), 4" (V 3536, V 3539) and 3" (V 3550, V 3551) in size. The valve failure at SONGS has been attributed to excess flow induced vibration while the valve disc was in a partially open position. Cracks in the valve seat and backseat weld and scoring of the valve disc below the seating surface would result from impact of the vibrating disc on the seat.

III. Corrective Action

Target Rock Corporation has modified their valve design to eliminate flow induced vibration by providing a disc which is guided by the seat in the partially opened position. All affected 6", 4", and 3" valves cited above will be returned to the valve manufacturer for inspection, rework, modification and testing.

IV. Safety Implication

This deficiency could have adversely affected the safety of operations at the plant during its 40 year life if it were to have remained uncorrected. It represented a significant deviation from performance specifications which required repairs to establish the adequacy of the component to perform its

intended safety function. The affected valves are part of the Safety Injection System whose safety related function is to insure that adequate flow is delivered to the Reactor Coolant System, thus insuring adequate core cooling.

Without the assurance of valve component integrity when subjected to the design basis service conditions, safety of plant operations could be jeopardized.

V. Conclusion

Corrective action as indicated in Section III of this report will be undertaken by the vendor to assure that the valves are able to perform their intended safety function.

