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Southern California Edison Company

P. O. BOX 800

2244 WALNUT GROVE AVENUE

ROSEMEAD, CALIFORNIA 91770

L. T. PAPAY
VICE PRESIDENT

TELEPHONE
213-572-1474

May 19, 1982

Mr. R. H. Engelken, Regional Administrator
U. S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

Dear Mr. Engelken:

Subject: Docket No. 50-362
San Onofre Nuclear Generating Station, Unit 3

In a letter to your office dated April 23, 1982 we identified a condition which we consider reportable in accordance with 10CFR50.55(e). The condition involves the failure of Atmospheric Dump Valves to close consistently on loss of air supply.

Enclosed in accordance with 10CFR50.55(e) are twenty-five (25) copies of a Final Report entitled, "FINAL REPORT ON ATMOSPHERIC DUMP VALVES FAILURE TO CLOSE ON LOSS OF AIR SUPPLY."

If you have any questions regarding this report, we would be pleased to discuss this matter with you at your convenience.

Very truly yours,

Enclosures

cc: Victor Stello (NRC, Director I&E)
A. E. Chaffee (NRC, San Onofre Units 2 and 3)

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Mr. R. H. Engelken

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May 19, 1982

bcc: Robert Dietch
D. E. Nunn
D. G. Cotton (SDG&E)
D. R. Pigott (Orrick, Herrington & Sutcliffe)
H. L. Richter
K. P. Baskin
J. G. Haynes
C. C. Coppin
D. F. Pilmer
H. B. Ray
W. C. Moody
B. Katz
G. A. Chavez
D. E. Sparks (3)
D. B. Schone
J. M. Curran
QA Files 55(e) 82-03P
CDMC

May 19, 1982

FINAL REPORT ON ATMOSPHERIC
DUMP VALVES FAILURE TO CLOSE
ON LOSS OF AIR SUPPLY

San Onofre Nuclear Generating Station
Unit 3

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e)(3). It describes a condition identified by the equipment supplier, Control Components, Inc., of Irvine, California. This report includes a description of the deficiency, analysis of the safety implications and a summary of the corrective actions taken. By letter dated April 23, 1982, Edison confirmed notification to the NRC of this potentially reportable condition for San Onofre Unit 3.

BACKGROUND

Control Components, Inc. notified Bechtel Power Corporation by telex dated April 2, 1982, of insufficient actuator spring load on the steam dump to atmosphere valves, tag numbers 3 HV 8419, 8421, resulting in the inability of the subject valves to fail closed properly on loss of air.

DISCUSSION

The following discussion is responsive to 10CFR50.55(e)(3).

DESCRIPTION OF THE DEFICIENCY

As stated in the vendor's telex, the actuator spring force is insufficient to move the valve plug to its fail closed position upon loss of air. The steam dump to atmosphere valves are pneumatically actuated drag valves. The pneumatic actuator is a spring loaded piston type which closes the valve by spring force, and opens the valve by air pressure opposing the spring. In the event of loss of air supply to the valve actuator, the spring is required to force the piston to move the valve plug into the closed position.

ANALYSIS OF SAFETY IMPLICATIONS

The steam dump to atmosphere valves are required to close upon receipt of a Main Steam Isolation Signal (MSIS), and upon loss of air supply or power to the solenoid pilot valves. The control scheme of the valves is such that receipt of an MSIS or loss of power to the solenoid pilot valves, denenergizes the solenoid pilots and interrupts the air supply to the steam dump to atmosphere valves, relying on the actuator spring to close the valve.

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Units 3
Final Report on Atmospheric Dump Valves
Failure to Close on Loss of Air Supply

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The steam dump to atmosphere valves are normally closed. They are installed to provide for controlled removal of reactor decay heat during reactor cooldown when the condenser is not in service, when the plant is being started up or shut down, when a turbine trip occurs on loss of condenser vacuum, or when a turbine trip occurs due to loss of electrical power to the turbine auxiliaries.

The steam dump to atmosphere valves are upstream of the main steam isolation valves and in the event of a steam generator tube rupture, the valves must close to prevent a leakage of radiation. The second safety function of the steam dump valves is to close on MSIS in order to prevent overcooling of the primary system.

The identified failure to close on loss of air does not meet these requirements.

CORRECTIVE ACTION

Resolution of this problem was accomplished by the addition of a second spring within the actuator of the subject valves. The use of two springs is a standard design practice by the vendor when additional spring force is required. The actual installation of the springs was performed in accordance with the disposition of Southern California Edison Non-Conformance Report (NCR) No. S023-P-255 for Unit 2 and Bechtel Start Up NCR No. 0702-J for Unit 3.