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MIDDLE SOUTH UTILITIES SYSTEM

May 29, 1984

W3K84-1281
Q-3-A35.07.99

Mr. John T. Collins
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012

REFERENCE: LP&L letter W3K84-1062 dated May 4, 1984
Telecon C. Hooper (LP&L) and Eric Johnson (NRC IV) on May 25, 1984

Dear Mr. Collins:

SUBJECT: Waterford SES Unit No. 3
Docket No. 50-382
Significant Construction Deficiency No. 99
"Safety Injection Tanks (SIT) Isolation Valves"
Final Report

In accordance with the requirements of 10CFR50.55(e), we are hereby providing two copies of the Final Report of Significant Construction Deficiencies No. 99, "Safety Injection Tanks (SIT) Isolation Valves".

If you have any questions, please advise.

Very truly yours,

T. F. Gerrets

T. F. Gerrets
Corporate Quality Assurance Manager

TFG:CNH:VBR

Attachment

cc: Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555
(15 copies)

IE-27
1/1

cc: Director
Office of Management
Information and Program Control
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Mr. W. A. Cross
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Bethesda, Maryland 20814

FINAL REPORT OF
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 99
"SAFETY INJECTION TANKS (SIT) ISOLATION VALVES"

INTRODUCTION

This report was previously submitted pursuant to 10CFR50.55(e) and was considered reportable. It described a deficiency in the performance requirements of Safety Injection Tanks (SIT) Isolation Valve 1SI-V1507 TK2A (SI-332A) supplied by the Lunkenheimer Corporation with a Limitorque Corporation Actuator.

To the best of our knowledge, this problem has not been reported to the USNRC pursuant to 10CFR21.

DESCRIPTIONS

During Preoperational Testing, SIT Isolation Valve 1SI-V1507 TK2A (SI-332A) appeared to mechanically bind, causing the valve motor to trip on overload. Inspection of the valve actuator found a broken motor pinion gear, stripped worm gear and broken retainer ring. In addition LP&L's investigation has revealed that two similar incidents have previously occurred involving SIT Isolation Valves 1SI-V-1505-TK1A and 1SI-V15060TK1B.

SAFETY IMPLICATIONS

The valves in question are locked open when RCS pressure is increased above 500 psig during normal power operation. During plant cooldown and shutdown cooling, the SIT pressure is reduced to 377 psig when RCS pressure decreases below 650 psig. When RCS pressure is below 400 psig, the SIT isolation valves will be closed. FSAR Section 6.3.2.2.1 requires that these valves open on demand from an SIAS when the RCS pressure is less than 400 psig. This function ensures that the tanks will discharge automatically during a LOCA. Therefore, if left uncorrected, the failure of these valves would result in the inability to automatically discharge into the RCS following a depressurization event.

CORRECTIVE ACTION TAKEN

All failed components for the actuators of the three valves have been replaced and tested satisfactorily. Since the failed parts were scrapped no material analysis was accomplished. However, the motor pinion from the fourth SIT Isolation valve actuator was removed and tested by Limitorque Corporation. Limitorque has certified the material to be free of defect and the motor pinion gear sizing to be correct. All SIT Isolation valve torque switch settings have been verified to be set in accordance with manufacturer specifications. Valve 1SI-V1507 TK2A (SI-332A) was successfully stroke tested (132 cycles) from the control room. After cycle testing the motor pinion gear was inspected and found to be acceptable.

This report is submitted as the Final Report.