LOUISIANA POWER & LIGHT COMPANY
WATERFORD SES UNIT NO. 3

12/5/78
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INTERIM REPORT OF
SIGNIFICANT DEFICIENCY NO. 9

DEFECTIVE EMERGENCY DIESEL GENERATOR ROLLER PIN

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SIGNIFICANT DEFICIENCY REPORT NO. 9
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INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e) (3). It describes a deficiency in the emergency diesel generators supplied by Cooper Energy Services for Louisiana Power & Light Company's Waterford Steam Electric Station Unit No. 3 and others.

DESCRIPTION

On November 3, 1978, Cooper Energy Services pursuant to 10CFR21 notified the USNRC-Office of Inspection and Enforcement, Washington D.C. of a defective roller pin in the crosshead subassembly of each power cylinder within a KSV Power Engine.

The extent of the deficiency is as follows: Each power cylinder has one inlet and one exhaust push rod assembly and two valve crosshead assemblies. The valve crosshead assembly contains a crosshead, a roller pin, and a pin collar. During a recent performance test on this engine at another facility it was found that some subassemblies showed abnormal wear on the surface of the roller pin. No engine shutdown nor malfunction was experienced, but it is felt by the manufacturer that over a longer period of engine operation this abnormal wear could progress far enough to cause the engine to malfunction. This defect is considered to be reportable and is described in Attachment A (Cooper Energy Service letter to NRC dated November 3, 1978).

SAFETY IMPLICATIONS

This deficiency, if left uncorrected, could possibly cause an engine malfunction. There would be no significant safety implication of engine malfunction during normal plant operation. However, this deficiency could invalidate some of the assumptions used in the safety analysis report. If a design basis accident (e.g. LOCA or main steam line break) were to occur coincident with a loss of offsite power, and the diesel-generators did not perform in accordance with specifications, then some essential equipment used to mitigate the consequences of the postulated accident could be degraded.

CORRECTIVE ACTION

The corrective action to be taken by Cooper Energy Service is to redesign to increase the diameter of the roller pin to provide an interference fit at the assembly between the roller pin and the crosshead and reduce the clearance between the roller pin and the collar. In addition the hand flaring operation to seat the pin ends into chamfer on the crosshead has been replaced by a more consistent and positive press operation.

Cooper Energy Services will replace the inlet and exhaust valve crosshead assemblies with those of the new design by August 31, 1979.

COOPER-BESSEMER COMPANY

November 3, 1978

Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

ATTN: Director of Inspection and Enforcement

Gentlemen:

In accordance with 10CFR Part 21, this letter is notification of a deficiency found 9-13-78 within a KSV Power Engine supplied and manufactured by Cooper Energy Services. This engine is part of the emergency standby diesel-generator set supplied for installation at (4) four licensees' stations.

The extent of the deficiency is as follows: Each power cylinder has (1) inlet and (1) exhaust push rod assembly and (2) valve crosshead assemblies Part No. Z25-1-2#10. This sub-assembly contains; a crosshead Part No. JS-25-1G, a roller pin Part No. JS-25-1P, and a pin collar Part No. JS-25-1M. During a recent performance test on this engine, it was found that some sub-assemblies showed abnormal wear on the surface of the roller pin. No engine shutdown nor mal-function has been experienced, but it is felt that over a longer period of engine operation this abnormal wear could progress far enough to cause the engine to mal-function.

The corrective action taken by C.E.S. is to redesign to increase the diameter of the roller pin (JS-25-1P) to provide an interference fit at assembly between the roller pin and the crosshead (JS-25-1G) and reduce the clearance between the roller pin and the collar (JS-25-1M). In addition the hand flaring operation to seat the pin ends into chamfer on the crosshead has been replaced by a more consistent and positive press operation. The sub-assemblies in field units named below are to be inspected and replaced if required. The time span for the execution of the change out by C.E.S. on field units will be dependent upon availability of units for rework but will be done as soon as is practicable.

The following engines which have had field running at the licensees' sites are to be inspected by C.E.S. to determine if cam rollers have become sluggish and incipient cam scuffing is occurring. Cam or cam roller scuffing can be an indication of a worn roller pin or collar.

CONTINUED

Nebraska Public Power, Cooper Station, SN's 7102 & 7103.

Commonwealth Edison, Zion 1 & 2, SN-7090, 7091, 7092, 7093 & 7094.

The following engines at the licensees' sites which have not had field running are to have the inlet and exhaust valve crosshead assemblies replaced with those of the new design.

Pennsylvania Power & Light, Susquehanna 1 & 2, SN's 7157, 7158, 7159 and 7160.

Louisiana Power & Light, Waterford 3, SN's 7170 & 7171.

B. B. Bender
Vice President & General Manager
CB Reciprocating Products

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