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March 29, 1994

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
             Docket No. 50-382
             License No. NPF-38
             Reporting of Special Report

Gentlemen:

Attached is Special Report Number SR-94-001-00 for Waterford Steam
Electric Station Unit 3. This Special Report is submitted in accordance
with Technical Specifications 4.8.1.1.3 and 6.9.2 and USNRC Regulatory
Guide 1.108.

Very truly yours,

D.F. Packer
General Manager - Plant Operations

DFP/TWG/tjs
Attachment
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SPECIAL REPORT

SR-94-001

REPORTABLE OCCURRENCE

Emergency Diesel Generator (EDG) 'A' experienced nonvalid failures on two occasions. The first failure occurred during a nonvalid test on February 28, 1994; the second during a valid test on March 2, 1994. An additional invalid failure occurred during the troubleshooting process.

EVENT DESCRIPTION

At 1318 on February 28, 1994, Emergency Diesel Generator (EDG) 'A' was started in accordance with Operating Procedure OP-903-068, "Emergency Diesel Generator and Subgroup Relay Operability Verification," to demonstrate the operability of the diesel in accordance with Technical Specification (TS) 4.8.1.1.2. Approximately 37 minutes after reaching full load, EDG load began to oscillate between 3.8 and 4.4 MW. The EDG was subsequently unloaded, secured, and declared inoperable at 1424.

At 1605 on February 28th, operators attempted to start EDG 'A' using the mechanical governor (electronic governor disconnected) as a first step in localizing the problem. This start was unsuccessful as the EDG tripped on overspeed. A new mechanical governor was installed and tested satisfactorily. However, with the electronic governor back in service, the load oscillations were still present, indicating that any remaining fault was in the electronic and not the mechanical governor.

Subsequent troubleshooting identified faulty contacts in a relay associated with the electronic governor's 'droop' (test) mode of operation. After replacing the relay, EDG 'A' was started at 1237 on March 2, 1994 to verify correction of the problem and demonstrate compliance with TS 4.8.1.1.2. In the process of paralleling to the bus, the EDG tripped on reverse power.

At 1439 on March 2, 1994, EDG 'A' was restarted to perform the TS surveillance. The test was completed satisfactorily and the diesel was declared operable at 1740.

CAUSAL FACTORS

Investigation to date revealed that the load oscillations were caused by the failure of a set of contacts on a relay associated with the electronic governor's 'droop' mode of operation. These contacts are utilized when the EDG is paralleled to the bus for loading after an emergency mode start. They are not used during emergency ('isochronous') operation and thus would not have prevented the EDG from performing its safety function.

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Investigation of the overspeed and reverse power trips will continue and corrective actions will be taken as appropriate.

CORRECTIVE MEASURES

The mechanical governor and the faulty relay were replaced; the mechanical governor will be sent to an off-site facility for additional testing.

SAFETY SIGNIFICANCE

An engineering evaluation of EDG governor circuitry determined that the faulty relay contacts would not have affected EDG operation in the emergency mode. Similarly, neither the overspeed nor the reverse power trip events would have affected emergency mode operation. As a result, these events did not compromise the health and safety of the public or plant personnel.

In accordance with USNRC Regulatory Guide 1.108, the current surveillance test interval for EDG 'A' is 31 days. EDG 'A' was unavailable for 51.3 hours.

SIMILAR EVENTS

No previous similar events were identified.