



**ENTERGY**

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W3F1-96-0101  
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PR

July 3, 1996

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-96-001-00 for Waterford Steam Electric Station Unit 3. This report outlines the results of the investigation into the failure of the output breaker for Emergency Diesel Generator (EDG) B to close during Surveillance Testing on June 3, 1996. The most probable cause of the output breaker not closing has been determined to be an intermittent malfunction of contacts on the synchronizing switch for the EDG. 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.R. Keuter  
General Manager  
Plant Operations

DRK/RTK/tjs  
Attachment

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SPECIAL REPORT  
SR-96-001-00

REPORTABLE OCCURRENCE

On June 3, 1996, Emergency Diesel Generator (EDG) B was started for the performance of Surveillance Procedure OP-903-068 "EDG and Subgroup Relay Operability Verification". When Operations Personnel attempted to close the output breaker associated with the EDG, the breaker did not close. This event is classified as a nonvalid failure during a valid test in accordance with Regulatory Guide 1.108 and is being reported in accordance with Technical Specifications (TS) 4.8.1.1.3 "Reports" and 6.9.2 "Special Reports". EDG B has experienced no valid failures in the last 20 valid tests and one valid failure in the last 100 valid tests. In accordance with the Waterford 3 Technical Specifications, the currently required surveillance test interval for EDG B is at least once per 31 days.

EVENT DESCRIPTION

At 1011 hours on June 3, 1996, EDG B was started for the performance of Surveillance Procedure OP-903-068 "EDG and Subgroup Relay Operability Verification". Operations Personnel placed the synchronizing switch in the GEN MAN position in preparation for closing the generator output breaker. Using the generator output breaker manual close switch, Operations Personnel made several unsuccessful attempts to manually close the output breaker. Realizing that the breaker would not close, the Operator placed the synchronizing switch to the OFF position and then attempted to remove the key from the switch. It was noticed that the switch had been difficult to manipulate and the key was difficult to remove. The EDG was declared inoperable at 1032 hours due to the problems encountered in closing the output breaker. Technical Specification (TS) 3.8.1.1 "A.C. Sources" Action Statements b and d were entered. EDG B continued to run unloaded until 1056 hours when the EDG was secured. Troubleshooting was subsequently performed by Plant Maintenance - Electrical Personnel and Systems Engineering Personnel. At 1225 hours on June 3, 1996, the EDG was started for a second time to perform Surveillance Procedure OP-903-068. The output breaker was successfully closed at 1241 hours and loading of the EDG was commenced. Surveillance Procedure OP-903-068 was successfully completed at 1751 hours on June 3, 1996. The EDG was declared operable at 1856 hours on June 3, 1996, and TS 3.3.1.1 Action Statements b and d were exited.

CAUSAL FACTORS

Entergy believes that the most probable cause of the EDG B output breaker not closing is an intermittent malfunction of contacts associated with the synchronizing switch. This is based on the Operator noticing the difficulty in manipulating the synchronizing switch and the subsequent difficulty in removing the key from this

switch. In addition, a similar failure was experienced on EDG A in 1994 (reference Special Report 94-001-01) in that the synchronizing switch for EDG A had intermittent contact failures that were not repeatable during the troubleshooting process. Past experiences with the EDG A synchronizing switch indicate that had the Operator made another attempt to place the synchronizing switch in the GEN MAN position and attempted to close the EDG B output breaker, the breaker most probably would have closed.

### CORRECTIVE MEASURES

Condition Report (CR) 96-0864 was generated in accordance with Waterford 3 Administrative Procedure UNT-006-011, "Condition Report", to provide a means to implement the Waterford 3 Corrective Action Program. As an immediate corrective action, troubleshooting was performed by Waterford 3 Plant Maintenance - Electrical Personnel and Systems Engineering Personnel. Several closing permissives for the output breaker associated with EDG B were checked for proper operation. No abnormal indications were detected.

A Condition Identification (CI) has been generated to replace the synchronizing switch for EDG B. Replacement of the synchronizing switch will require lifting leads in a highly congested area which could potentially cause inadvertent actuations of other devices. Therefore, this synchronizing switch is currently scheduled to be replaced during the Waterford 3 Refuel 8 outage. As an interim corrective measure, a Caution Tag has been placed on this switch to alert Operations Personnel as to the condition of this switch.

### SAFETY SIGNIFICANCE

The synchronizing switch contacts which are believed to be intermittently malfunctioning are not used when the EDG operates in the emergency mode. These contacts would not have prevented the EDG from performing its safety function. Throughout the event described above, EDG B was available to perform the safety function because at no time during the event was the emergency mode of operation affected.

The A train EDG was operable throughout the time period that EDG B was inoperable (but available). Safety analysis assumes that a single failure disables one protection train. However, a single EDG, safety bus, and associated Engineered Safety Features equipment are adequate to protect the reactor during the worst case postulated accident.

The TS require an inoperable EDG to be restored to operable status within 72 hours. EDG B was inoperable (but available) for approximately 8.5 hours. Therefore, the TS requirements were satisfied.

Based on the above information, this event did not compromise the health and safety of the public or plant personnel.

### SIMILAR EVENTS

A review of the Licensing Research System database identified one Special Report (SR-94-001-01) that documents an EDG A trip on reverse power that occurred at Waterford 3 due to a malfunction of contacts on the synchronizing switch. This Special Report states that the information available to date indicates that the EDG A reverse power trip that is described in Special Report 94-003-00 was also caused by contacts on the synchronizing switch. The synchronizing switch for EDG A was replaced during the Refuel 7 outage and no further malfunctions attributable to this switch have been encountered.