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SUBJECT: Special rept: on 950606, 1A EDG automatically tripped on high water jacket temp. Caused by misapplication of calibration test equipment for temp switch. Temp switch replaced. O

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FPL

July 6, 1995

L-95-196
10CFR50.36

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

Re: St. Lucie Unit 1
Docket No. 50-335
Special Report
Date of Event: June 6, 1995
Emergency Diesel Generator Failure

The attached Special Report is being transmitted pursuant to the requirements of St. Lucie Unit 1 Technical Specifications 4.8.1.1.3 and 6.9.2. The report provides notification of a 1A Emergency Diesel Generator failure during a scheduled surveillance run.

Should there be any questions on this information, please contact us.

Very truly yours,

A handwritten signature in cursive script that reads "D. A. Sager".

D. A. Sager
Vice President
St. Lucie Plant

DAS/EJB

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

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NRC SPECIAL REPORT
DIESEL GENERATOR NON-VALID FAILURE
SPECIAL REPORT

I. TITLE

1A Emergency Diesel Generator non-valid failure due to the actuation of a high water jacket temperature switch.

II. INITIAL CONDITIONS

St. Lucie Unit 1 and Unit 2 were at 100% power.

III. EVENT SEQUENCE

On 6/6/95, the 1A Emergency Diesel Generator (EDG) was started to perform a surveillance in accordance with Technical Specification Table 4.8-1. Surveillance testing of the 1A EDG is required every 31 days. The 1A EDG surveillance began at 1050. The 1A EDG automatically tripped at 1120 on high water jacket temperature. An operator was recording the EDG parameters at the time of the trip and the water temperatures were below the 205⁰ F design trip setpoint of the temperature switch (designated TS-59-002A). The temperature switch was subsequently replaced. The surveillance was then successfully performed and the 1A EDG was declared back in service at 1825 on 6/7/95. The 1A EDG was out of service for approximately 31 hours to replace the temperature switch.

IV. CAUSE OF THE EVENT

The 1A EDG tripped due to a non-valid water jacket high temperature caused by a misapplication of the calibration test equipment for the temperature switch. At the time of the trip the recorded water temperature was 182⁰ F as read from installed thermometers in the water piping (the accuracy of the thermometers was verified). The new temperature switch was checked for calibration (205⁰ F) in a water bath and no adjustments had to be made to the factory settings. The old temperature switch, which had previously not been calibrated using the above method, was checked using the water bath method and tripped at a temperature of 186⁰ F. To verify the root cause, the old temperature switch was again checked using the equipment originally used to set the temperature switch and the trip setpoint was found at 205⁰ F. Using the original calibration equipment, the temperature switch has been found to consistently trip at a lower temperature.

NRC SPECIAL REPORT
DIESEL GENERATOR NON-VALID FAILURE
SPECIAL REPORT

V. CORRECTIVE ACTIONS

- 1) TS-59-002A was replaced with a new temperature switch calibrated in a water bath.
- 2) The 1A Emergency Diesel Generator was declared back in service at 1825 on 6/7/95 following the successful completion of the surveillance run.
- 3) The Instrumentation and Control (I&C) Department determined that the root cause for the temperature switch low setpoint was a misapplication of their current calibration equipment with the type of temperature switch installed.
- 4) The I&C Department is pursuing alternate calibration equipment for this style of temperature switch. In the interim the subject temperature switches will be calibrated using the water bath method.
- 5) Nuclear Plant Work Orders have been generated to recalibrate the remaining temperature switches on the 1A EDG, 1B EDG, 2A EDG, and 2B EDG.
- 6) The I&C Department will provide training to all I&C Technicians on the correct use of the temperature switch calibration equipment.
- 7) The I&C Department is conducting a search for other temperature switches that could have been, similarly, erroneously calibrated.

VI. SUPPORTING INFORMATION

- This problem was evaluated to be a non-valid failure per Reg. Guide 1.108 C.2.e.2 because the high water jacket temperature shutdown is overridden during the presence of a Safety Injection Actuation Signal and an undervoltage condition on the safety related 4.16KV AC buses. Thus, the unsuccessful run was attributed to the early operation of a trip that is bypassed in the emergency operating mode.
- The 1A EDG was out of service for approximately 31 hours until the switch replacement could be completed and a successful surveillance test performed.
- The surveillance schedule required because of this non-valid failure remains at 31 days. The last valid failure of the 1A EDG was on 7/5/91 and remains the single valid failure for this diesel since 6/12/90 (EDG run counts started at this time when Reg. Guide 1.108 was implemented into the St. Lucie Unit 1 Technical Specifications). The current number of valid tests for the 1A EDG is now 70.