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REGULATORY DOCKET FILE COPY

Docket Nos 50-250
and 50-251

MEMORANDUM FOR: A. Schwencer, Chief, Operating Reactors Branch #1, DOR

FROM: N. Grotenhuis, Project Manager, Operating Reactors Branch #1, DOR

SUBJECT: EMERGENCY POWER DIESEL GENERATOR (DG) CONTROL SYSTEM FAILURE DURING SUSTAINED (24 HOUR) LOAD TESTS AT THE FLORIDA POWER AND LIGHT COMPANY (FPL) TURKEY POINT PLANT

Background

On February 14, 1979 we met with FPL regarding Turkey Point DG surveillance tests (see meeting summary dated February 26, 1979). Among other things we requested a one time 24 hour full load test on the two Turkey Point emergency power DGs (see NRC letter dated March 9, 1979).

Discussion

On May 31, the Region II inspector informed the project manager that, on the weekend of May 26, 1979, FPL decided to run the full load test on DG-A that we had requested. At that time, Unit 3 was at hot shutdown and Unit 4 was down for refueling; the Turkey Point Units 1 and 2 fossil-fired power plants were operating and thus available as a back up power source. The tested failed after 10 hours when the three phase control power transformer (CPT) for DG-A burned out. A replacement CPT was installed and it burned out 2 hours into the load test. The burnout problems was attributed to CPT heating due to a tertiary current circulating in the three phase windings. It was solved by a circuit modification which eliminated this current. A non-safety grade CPT which perfomed satisfactorily under test, was temporarily put in service while a safety grade CRT was being shipped to replace it to restore the full safety grade capability of DG-A. DG-B was then checked and corrected and a 24 hour test run started on it on May 31, 1979. The DG-B test was terminated in a short time due to a problem. The problem was quickly found to be an improper high resistance contact in the fuse holder in one phase

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winding of the CPT. A Unit 3 cold shudown was initiated when the problem was discovered, but was not carried out due to the rapid corrections of the problem. The Unit 3 remained in the hot shutdown mode and the DG-B load test was restared.

The 24 hour test run on DG-B was satisfactorily completed on June 1, 1979 and Unit 3 was ready for startup. The Region II inspectior, who had been closely involved in the problem from the onset, concluded that Unit 3 could be brought to full power, and so informed the project manager. However, due to generic implications and the fact that certain licensee assurances could not be established, a telephone conference involving reprsentatives of FPL, IE and DOR was held on June 1, 1979 prior to the restart of Unit 3.

Participating in the conference claa are listed in attachment 1.

All staff questions were adequately answered by FPL in the conference call. In particular the following points were established:

1. DG-B had completed the 24 hour test satisfactorily with the CPT re-corrected to eliminate the tertiary current problem discovered on DG-A.

2. The DG-B CPT had not been damaged as a result of the fuse holder problem, which was also corrected.

3. DG-A was operable (with non-safety grade CPT) and a safety grade CPT would be reinstalled by June 3, 1979.

4. The circuit changes to eliminate the tertiary current in the DG-A and DG-B CPTs were discussed with and acceptable to the manufacturer of the DF (EMD-GM) and the manufacturer of the CPTs (GE).

5. The plant nuclear safety committee reviewed the changes and found them acceptable under procefures allowed by 10 CFR 50.59.

6. A complete report to the NRC on the failure and the design corrections made will be issued by FPL in two weeks.

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In view of the above permission was granted for Unit 3 to go to full power. The 24 hour test run on DG-A was satisfactorily completed on June 3, 1979.

M. Grotenhuis, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Conference Call Participants

cc: w/attachment
See next page

DISTRIBUTION

DOCKET FILES 50-250
and 50-251
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DATE	06/ /79	06/ /79	06/ /79			

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 20, 1979

Docket Nos. 50-250
and 50-251

MEMORANDUM FOR: A. Schwencer, Chief, Operating Reactors Branch #1, DOR

FROM: M. Grotenhuis, Project Manager, Operating Reactors Branch #1, DOR

SUBJECT: EMERGENCY POWER DIESEL GENERATOR (DG) CONTROL SYSTEM FAILURE DURING SUSTAINED (24 HOUR) LOAD TESTS AT THE FLORIDA POWER AND LIGHT COMPANY (FPL) TURKEY POINT PLANT

Background

On February 14, 1979 we met with FPL regarding Turkey Point DG surveillance tests (see meeting summary dated February 26, 1979). Among other things we requested a one time 24 hour full load test on the two Turkey Point emergency power DGs (see NRC letter dated March 9, 1979).

Discussion

On May 31, the Region II inspector informed the project manager that, on the weekend of May 26, 1979, FPL decided to run the full load test on DG-A that we had requested. At that time, Unit 3 was at hot shutdown and Unit 4 was down for refueling; the Turkey Point Units 1 and 2 fossil-fired power plants were operating and thus available as a back up power source. The test failed after 10 hours when the three phase control power transformer (CPT) for DG-A burned out. A replacement CPT was installed and it too burned out 2 hours into the retest. The burnout problem was solved by a circuit modification. A non-safety grade CPT, which performed satisfactorily under test, was temporarily put in service while a safety grade CPT was being shipped to replace it. The safety grade CPT would restore the full safety grade capability of DG-A. DG-B was then checked and corrected and a 24 hour test run started on it May 31, 1979. The DG-B test was terminated in a short time due to a problem in the voltage Regulator Circuit which was caused by the absence of a fuse in the fuse holder in one phase winding of the CPT. A unit 3 cold shutdown was

initiated when the problem was discovered, but was not carried out due to the rapid correction of the problem. The Unit 3 remained in the hot shutdown mode and the DG-B load test was restarted.

The 24 hour test run on DG-B was satisfactorily completed on June 1, 1979 and Unit 3 was ready for startup. The Region II inspector, who had been closely involved in the problem from the onset, concluded that Unit 3 could be brought to full power, and so informed the project manager. However, due to generic implications and the fact that certain licensee assurances could not be established, a telephone conference involving representatives of FPL, IE and DOR was held on June 1, 1979 prior to the restart of Unit 3.

Participants in the conference call are listed in attachment 1.

All staff questions were adequately answered by FPL in the conference call. In particular the following points were established:

1. DG-B had completed the 24 hour test satisfactorily with the CPT corrected to eliminate the the third harmonic problem discovered on DG-A.

2. The DG-B CPT had not been damaged as a result of the fuse holder problem, which was also corrected.

3. DG-A was operable (with non-safety grade CPT) and a safety grade CPT would be reinstalled by June 3, 1979.

4. The circuit changes to eliminate the thrid harmonic current in the DG-A and DG-B CPTs were discussed with and acceptable to the manufacturer of the DG (EMD-GM) and the manufacturer of the CPTs (GE).

5. The plant nuclear safety committee reviewed the changes and found them acceptable under procedures allowed by 10 CFR 50.59.

6. A complete report to the NRC on the failure and the design corrections made will be issued by FPL in two weeks.

In view of the above, permission was granted for Unit 3 to go to full power. The 24 hour test run on DG-A was satisfactorily completed on June 3, 1979.

M. Grotenhuis, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Conference Call Participants

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ATTACHMENT 1

CONFERENCE CALL

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