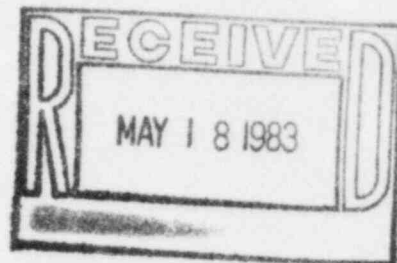


The Light company

Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

May 18, 1983
ST-HL-AE-960
File No.: G12.144

Mr. John T. Collins
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Dr., Suite 1000
Arlington, Texas 76012



Dear Mr. Collins:

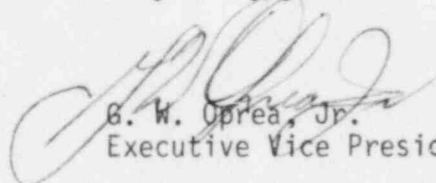
South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
First Interim Report Concerning the
Voltage Regulation Problem for Large
Motors on 480V Class 1E Load Centers

On April 19, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning a voltage regulation problem for the ESF 4160/480 Volt Load Center Transformers. Attached is the first interim report concerning this item.

The next report will be submitted to your office by June 30, 1983.

If you should have any questions concerning this matter, please contact Mr. Michael E. Powell at (713) 877-3281.

Very truly yours,


G. W. Oprea, Jr.
Executive Vice President

MEP/kr

Attachment

8305230416 830518
PDR ADOCK 05000498
S PDR

IE-27

Houston Lighting & Power Company

cc: G. W. Oprea, Jr.

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Director, Office of Inspection & Enforcement

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U. S. Nuclear Regulatory Commission

Washington, D. C. 20555

May 18, 1983

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File Number: G12.144

Page 2

Charles Bechhoefer, Esquire

Chairman, Atomic Safety & Licensing Board

U. S. Nuclear Regulatory Commission

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Citizens for Equitable Utilities, Inc.

c/o Ms. Peggy Buchorn

Route 1, Box 1684

Brazoria, Texas 77422

Revision Date 04-29-83

First Interim Report Concerning the Voltage Regulation Problem for Large Motors on 480V Class 1E Load Centers

Summary

The ESF 4160/480 volt transformers are required to supply the ESF 480 volt load centers and to ensure that the ESF load center bus voltage does not drop below 80% of the motor rated voltage of 460 volts. As presently designed, the subject transformers have an impedance which is too high for acceptable voltage regulation on the 480 volt ESF load center on start up of equipment on the busses.

Description of the Deficiency

On April 19, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power (HL&P) notified your office of an item concerning the ESF 4160/480 volt load center transformers.

There are six transformers per unit which supply the 480 volt load centers E1A, E1B, and E1C in a double ended, split bus arrangement utilizing a normally open tie breaker. This results in two busses per load center or train, which are identified as E1A1, E1A2, E1B1, E1B2, E1C1 and E1C2. There is one RCFC Supply Fan Motor assigned to each of these busses. The transformers are required to ensure that the ESF load center busses identified above do not drop below 80% of motor rated voltage (460 volts).

On initiation of a safety injection (SI) signal, two (2) RCFC Supply Fan Motors per train are designed to start simultaneously. As a result of the transformer impedance (7%) and the high starting current of the RCFC Supply Fan Motors, there is a high probability that the ESF bus voltages would drop below 80% of motor rated voltage to the extent that none of the motors could be started. Without the RCFC Supply Fan Motors, the ability to remove heat from the Containment would be inhibited during an accident.

Other equipment served by the same busses are the Residual Heat Removal Pumps and the Spent Fuel Pool Cooling Pumps. The ability of this equipment to be started may also be impacted by the high transformer impedance.

Corrective Action

Bechtel is currently evaluating potential corrective actions to eliminate this problem. Further information will be submitted including planned changes, scope of design modifications and scheduled completion in our next interim report.

Safety Analysis

No detailed safety hazards analysis will be performed. It is conservatively assumed that the large Class 1E motors served by the auxiliary transformers would fail to start on demand. This is considered to be a potential common mode failure.