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L16-86(01-25)-L
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ILLINOIS POWER COMPANY

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

January 25, 1986

Docket No. 50-461

Mr. James G. Keppler
Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: 10CFR21 Defect
PRC 84-42 Topaz Inverter Low Voltage Shutoff

Dear Mr. Keppler:

On October 19, 1984, General Electric (GE) Company notified Illinois Power of a potential reportable Part 21 defect. Based on an evaluation, Illinois Power Company is providing the following information to the Commission in accordance with the requirements of 10CFR Part 21.21(b)(3).

(i) D. P. Hall, Vice President of Illinois Power Company, by means of this report, hereby informs the Commission of a 10CFR Part 21 defect.

(ii) The basic component involved is one Class 1E GE dedicated inverter (GE drawing 184C4723) used in the C61-P001 (Remote Shutdown System) panel.

(iii) The components were supplied by:

General Electric Company
Nuclear Energy Business Operations
175 Curtner Avenue
San Jose, California 95125

(iv) The defect is the adjustment of the low voltage shut off and turn on for GE dedicated Class 1E inverters (GE Drawing 184C4723). This adjustment was set too high by the original manufacturer (Power Mark, a Division of Topaz). Due to engineering error, the GE dedication process was checking for operable range of 105 to 140 volts DC, instead of 100 to 140 volts. Topaz has been routinely setting the low voltage shut off at 105 volts DC.

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Typical DC bus voltages are GE specified to range from 108 to 132 volts with momentary voltage dips to 105 volts DC during the startup of large DC loads. This results in a condition where the inverter may not start or restart until the voltage is increased, not just to 105 but to above 118 volts DC (13 volt fixed offset). Since the allowable momentary dip of the input bus voltage is equal to the factory preset inverter low voltage cutoff (105 VDC), this dip could result in an inverter trip and a failure to restart during a design basis accident. The primary effect of loss of this power supply is that it causes loss of the Reactor Core Isolation Cooling (RCIC) system as controlled from the Remote Shutdown System. Both these systems are required for safe shutdown of the plant.

(v) Illinois Power Company received notification from General Electric Company of a potential Part 21 defect on this subject on October 18, 1984.

(vi) One inverter was confirmed to be on the Clinton site within the C61-P001 (Remote Shutdown System) panel. Two additional inverters were on order under Purchase Order X17174. No spare inverters for this application were on site.

(vii) Corrective Action by GE consisted of the following:

a. Issuing Revision 3 of drawing 184C4723 to reflect the correct trip voltages.

b. FDI-SKSZ and FDDR LH1-2998 were issued to provide the procedure for resetting the on-site inverter to the proper low voltage set point.

c. GE Work Request # 396 was completed September 9, 1985, which verified that the inverter was operating properly.

(viii) Not applicable to Illinois Power.

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Our evaluation of this reportable defect is available for your review at our offices. I trust that this letter provides sufficient information for your review and analysis of the problem.

Sincerely yours,

D. P. Hall
Vice President

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cc: USNRC Resident Office
Illinois Department of Nuclear Safety
Director of Inspection and Enforcement (3 copies)
INPO Records Center