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Public Service  
Electric and Gas  
Company

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November 8, 1984

Dr. Thomas E. Murley, Administrator  
U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Dr. Murley:

POTENTIAL CONSTRUCTION DEFICIENCY  
GE SUPPLIED TOPAZ INVERTERS  
HOPE CREEK GENERATING STATION

On October 9, 1984, a verbal report was made to Region I, Office of Inspection and Enforcement representative, Mr. E. Kelly, advising of a potentially significant construction deficiency concerning the low voltage cut off setting on Topaz inverters supplied by General Electric. General Electric has reported the problem to the NRC in accordance with 10CFR21. The following interim report is submitted in accordance with 10CFR50.55(e).

Our Architect/Engineer and Constructor, Bechtel, has advised us that the low voltage cut off and turn-on adjustment for GE Class 1E inverters was set too high by the original manufacturer, Power Mark, a division of Topaz. The GE dedication process was checking for an operable range of 105 to 140 volts DC, instead of 100 to 140 volts DC. Topaz had been routinely setting the low voltage cut off at 105 volts DC. General Electric has specified typical DC bus voltages 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 volts DC, but to above 118 volts (13 volt fixed offset). Since the allowable momentary dip of the input bus voltage is equal to the factory preset inverter low voltage cut off (105VDC), this dip could result in an inverter trip and a failure to restart during a design base accident.

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Bechtel has determined that Topaz inverters have only been supplied to Hope Creek by General Electric for use in panels H11-P617, P618, P620, P621, P640 and P641. The safety systems affected by these panels are RHR, Core Spray, HPCI and RCIC.

Public Service Engineering Department is presently reviewing Bechtel's analysis and proposed corrective action. We anticipate providing you with a final report by December 14, 1984.

Very truly yours,



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Division of Reactor Construction Inspection  
Washington, D. C. 20555

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