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SUBJECT: Submits info to support data points used in constructing thermal capability curve, Figure 2.3-1 of proposed Tech Spec change. Curve establishes max second level undervoltage relay allowable operating region.

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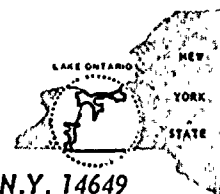
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LEON D. WHITE, JR.
VICE PRESIDENT

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November 9, 1979

Director of Nuclear Regulation
Attention: Mr. Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Undervoltage Relay Modification
R.E. Ginna Nuclear Power Plant

Referenced: Proposed Technical Specification Change, July 25, 1979

Dear Mr. Ziemann:

In response to questions from your staff, the following information is offered which supports the data points used in constructing the thermal capability curve, Figure 2.3-1 of the referenced Technical Specification change. This curve establishes the maximum second level undervoltage relay allowable operating region.

The Motor Divisions of the Westinghouse Electric Corporation were requested to perform calculations on all the safeguard motors to determine the time required, after a reduction in operating voltage, for the motor winding hot spot to reach the upper design temperature of 130°C, assuming a 40°C ambient. Specifically, the upper temperature limit for insuring no degradation in the insulation design life is an 80°C rise over a 40°C ambient. This assumes, for conservatism, that the winding hot spot temperature is taken to be 10°C above the average temperature. Westinghouse has determined, by calculation, the time each motor takes to reach this temperature limit with motor terminal voltages at various levels below the lower 90% design limit. Reduced voltage levels of 80%, 82.5% and 85% were chosen. The worst case (i.e., the shortest time period) for an 80°C rise is shown below for the Auxiliary Feed Pump motor, the most limiting safeguard motor.

<u>Motor Description</u>	<u>Horsepower</u>	<u>Calculated time at indicated voltage, minutes</u>			
		<u>80%</u>	<u>82.5%</u>	<u>85%</u>	<u>90%</u>
Aux. Feed Pump	250	8.4	11.4	17.8	Never

AO's
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DATE November 9, 1979
TO Mr. Dennis L. Ziemann, Chief

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The above data prints were used in the construction of Figure 2.3-1 of the proposed Technical Specification.

There is some degree of conservatism in the Westinghouse calculations. Furthermore, the consequences of operating above this curve are by no means severe. Should a motor experience a hot spot temperature above 130°C, the motor insulation design life would be reduced. This is a long term effect and since all motors at RG&E have a yearly inspection and a five year rewind or "dip and bake" schedule, no operational failure is likely, even if the 130°C temperature were reached.

Very truly yours,

L. D. White, Jr.

L. D. White, Jr.

LDW:np