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FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
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MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
VASSALLO,D.B. Operating Reactors Branch 2

SUBJECT: Forwards design info re Class IE protection sys being installed on motor generator sets.Three oversize figures illustrating revised control,instrument power one line & protective package encl.Aperture cards are available in PDR.

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Bob H.

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December 1, 1982

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Gentlemen:

Our letter of November 26, 1980 stated that we would install a Class 1E protection system on the reactor protection system motor generator sets by the end of the 1983 Refueling Outage. In that letter we indicated that design information as well as proposed technical specifications would be provided 90 days prior to the beginning of the outage.

Since that time, Nine Mile Point Unit 1 has been shut down for replacement of the recirculation system piping. Although Nine Mile Point 1 will not be refueling during 1983, it is our intent to install the protection system during the current outage.

The attachment to this letter contains the design information associated with this protection system. As discussed with members of your staff, technical specifications will be submitted by February 1, 1983.

Sincerely,

CVMangan
C. V. Mangan
Vice President, Nuclear Engineering
and Licensing

CVM/MGM:bd

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NINE MILE POINT UNIT 1

MOTOR GENERATOR SET PROTECTION PACKAGE

DECEMBER 1, 1982

A redundant protective relaying system, which contains overvoltage, undervoltage and underfrequency relaying shall be installed on motor generators sets 131, 141, 162 and 172 as well as the alternate power supply for these motor generator sets (instrument and control bus 130). Figures 1, 2 and 3 show the revised control and instrument power one line and the detailed protective package respectively.

A. Undervoltage Relay

The undervoltage relay is an inverse time relay with the following characteristics:

1. Dropout is 103.5 volts
2. Pickup is 105 volts
3. Time curve:
   83 volts is 8 seconds,
   0 volts is 3 seconds.

This relay is capable of withstanding 160 volts continuous and 300 volts for 10 seconds.

B. Overvoltage Relay

The overvoltage relay is an inverse time relay with the following characteristics:

1. Dropout is 125 volts
2. Pickup is 126.5 volts
3. Time curve:
   152 volts = 3 seconds
   190 volts = 0.75 seconds

This relay is capable of withstanding 160 volts continuous and 300 volts for 10 seconds.

C. Underfrequency Relay

The underfrequency has the following characteristics:

MG sets 162, 172, Bus 130	57.5 hertz (pickup frequency)
MG sets 131, 141	55.1 hertz (pickup frequency)

Time delay is 1.5 seconds.
Undervoltage setting is 90 volts

The reason for the different pickup frequency on the MG sets is because MG sets 131 and 141 are driven by induction motors.