

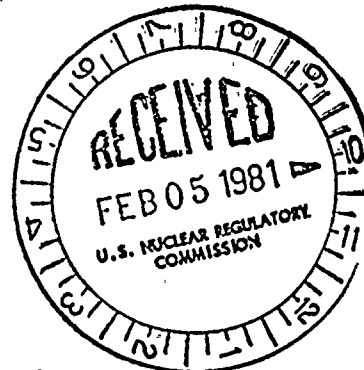


UNIT
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 2, 1981

Docket No. 50-220

Mr. Donald P. Dise
Vice President - Engineering
c/o Miss Catherine R. Seibert
Magara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202



Dear Mr. Dise:

We have received your letter of December 10, 1980 in response to our request for additional information regarding your October 3, 1979 letter on adequacy of station electric distribution system voltages for Nine Mile Point Unit 1.

We have reviewed the correspondence indicated and find that portions of the questions still remain unanswered. As a result we are re-submitting the original questions followed by a fuller discussion of the areas which still remain unanswered or which require clarification.

Please provide your response to the questions in the enclosure to this letter within 45 days of receipt of this letter.

Sincerely,

Original Signed by
T. A. Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Request for Additional
Information

cc: See next page

DISTRIBUTION

Docket File

NRC PDR

L PDR

TERA

NSIC

ORB#2 Rdg

D. Eisenhut

R. Purple

T. Novak

R. Tedesco

G. Lainas

J. Heltemes

OELD

I&E-3

T. Ippolito

P. Polk

S. Norris

Gray File

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| OFFICE | ORB#2:DL | C-ORB#2:DL | | | | |
| SURNAME | PPolk/cf | Tippolito | | | | |
| DATE | 2/2/81 | 2/2/81 | | | | |



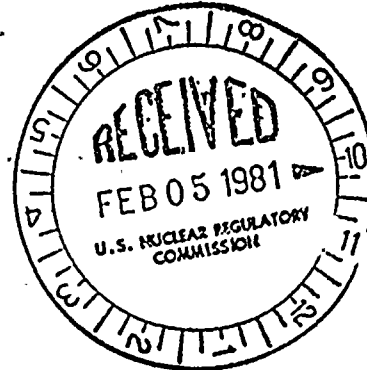
UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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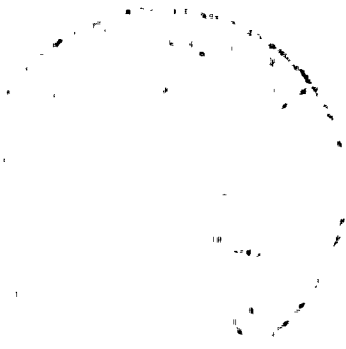
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Sincerely,


Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Request for Additional
Information

cc: See next page



Mr. Donald P. Dise

cc:

Eugene B. Thomas, Jr., Esquire
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Penfield Library - Documents
Oswego, New York 13126

Mr. Joseph J. Sunser, Manager
System Security
Niagara Mohawk Power Corporation (Security matters only)
300 Erie Boulevard West
Syracuse, New York 13202

Resident Inspector
c/o U.S. NRC
P. O. Box 126
Lycoming, New York 13093

REQUEST FOR ADDITIONAL INFORMATION
NINE MILE POINT UNIT 1
ADEQUACY OF STATION ELECTRIC DISTRIBUTION SYSTEM VOLTAGES

- REFERENCES:
1. NRC letter (William Gammill) to All Power Reactor Licensees, dated August 8, 1979
 2. Niagara Mohawk Power Corporation letter (Donald P. Diese) to NRC (William Gammill), dated October 3, 1979
 3. Niagara Mohawk Power Corporation letter (Gerald K. Rhode) to NRC (George Lear), dated October 18, 1976
 4. Niagara Mohawk Power Corporation letter (Donald P. Dise) to NRC (William Gammill), dated December 7, 1979

In reviewing the information provided in Reference 2 in response to the NRC letter of August 8, 1979, there are several areas where you have not provided sufficient information to permit an evaluation of the adequacy of station electric distribution system voltages for the Nine Mile Point Unit 1 nuclear power station. The following additional information is required:

1. The voltage rating for all Class 1E equipment for continuous operating and starting conditions..

Discussion: Voltage ratings for "operation" of motors is given in reference 3, section 1.g as $\pm 10\%$. If this figure is used as the minimum starting voltage as well, then the bus voltages given in reference 3 during full load with the grid at minimum voltage are less than the minimum required starting voltages for the 575 volt motors used in the diesel generator starting system. The actual starting voltages should therefore be given. Reference 3 also says, "all controls" supplied with power from the 600 volt boards will operate satisfactorily within a 495 to 605 volt range. Do these controls include things like inverters, battery chargers, motor generators, motor contactors, etc? If so, please specify the individual loads it applies to. If not, give the individual ratings of these or any other non-motor, Class 1E loads including the pickup and dropout voltages of motor contactors and motor-operated valves. The ratings of low voltage AC (less than 600v) GDC 13 type instrumentation should also be provided.

2. An analysis of the voltage at the terminals of all Class 1E motors and starters during starting and running under worst case plant operating conditions.

Discussion: Reference 3 analysis gave voltages only down to the Motor Control Center level. They should also be provided down to the equipment terminals for all the loads discussed in question 1 above.

3. An analysis of the effects of starting a large non-Class 1E load on the Class 1E equipment. The analysis should include the voltage at the terminals of all Class 1E loads under the conditions of full auxiliary plant load, including Class 1E loads, during the starting of the non-Class 1E loads and also determine if separation from the offsite power source will occur as a result of the action of the undervoltage relays.

Discussion: Previous correspondence (reference 4) indicated an analysis and test was accomplished in 1974 to demonstrate start-up of a feedwater string. The motor starting times were given but the corresponding voltages at the Class 1E load terminals at minimum grid voltage was not. The analysis as described in the above question is therefore required. A test is also required by reference 1 to verify the validity of all analysis results, including both steady state and transient.

4. An analysis should be performed to assure that the maximum voltage ratings of the Class 1E loads will not be exceeded under conditions of minimum plant electrical load and maximum expected offsite grid voltage.

Discussion: An analysis at maximum voltage was provided in reference 3, but voltages at the Class 1E load terminals were not given. The analysis results also indicated the maximum voltage (621 volts) at the 600 volt buses was greater than the maximum rated operating voltage (605 volts) of the Class 1E loads. This should be explained.

5. Documentation that no manual load shedding is used to prevent unacceptable voltage at the terminals of the Class 1E equipment.

Discussion: None of the previous correspondence indicated whether manual load shedding was assumed for the purposes of the analyses performed.

FEB 04 1981