OCT 3 1986

Docket No. 50-410

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Mr. C. V. Mangan, Senior Vice President
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Dear Mr. Mangan:

Subject: Nine Mile Point 2 - Control Room Ambient Temperature Effects on Safety Related Electronic Equipment (Request for Additional Information)

In recent discussions with your staff, it was indicated that although equipment in the control room supplied by General Electric was purchased to operate in an environment of 120°F and therefore is expected to be able to handle the operating temperature that it would see if the control room ambient temperature reached the Technical Specification limit of 104°F, the balance of the equipment was purchased to operate in an environment with a much lower temperature. On the basis of this information, the staff is unable to conclude that the concerns (addressed in the enclosure to this memorandum) associated with control room ambient temperature have been adequately considered in the design of the main control room at Nine Mile Point Unit 2. General Design Criterion (GDC) 4 of 10 CFR 50, Appendix A requires structures, systems, and components important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. Therefore, as the staff can not presently conclude that the design of the Nine Mile Point Unit 2 control room meets the requirements of GDC 4, we request Niagara Mohawk respond to the enclosed request for additional information on a schedule commensurate with your expected fuel load readiness date.

Sincerely,

/S/

Mary F. Haughey, Project Manager
BWR Project Directorate No. 3
Division of BWR Licensing

Enclosure:
As stated

cc: See next page

BWD-3:DBL	LA:BWD-3:DBL	DD:BWD-3:DBL
MHaughey/vag	EHylton	EAdensam
10/3/86	10/3/86	10/3/86

m/A4

Mr. C. V. Mangan
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station
Unit 2

cc:
Mr. Troy B. Conner, Jr., Esq.
Conner & Wetterhahn
Suite 1050
1747 Pennsylvania Avenue, N.W.
Washington, D.C. 20006

Richard Goldsmith
Syracuse University
College of Law
E. I. White Hall Campus
Syracuse, New York 12223

Ezra I. Bialik
Assistant Attorney General
Environmental Protection Bureau
New York State Department of Law
2 World Trade Center
New York, New York 10047

Resident Inspector
Nine Mile Point Nuclear Power Station
P. O. Box 99
Lycoming, New York 13093

Mr. John W. Keib, Esq.
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Mr. James Linville
U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Norman Rademacher, Licensing
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Don Hill
Niagara Mohawk Power Corporation
Suite 550
4520 East West Highway
Bethesda, Maryland 20814

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Mr. Paul D. Eddy
New York State Public Serice
Commission
Nine Mile Point Nuclear Station -
Unit II
P.O. Box 63
Lycoming, New York 13093

EICSB REQUEST FOR ADDITIONAL INFORMATION

CONTROL ROOM AMBIENT TEMPERATURE EFFECTS ON

SAFETY RELATED ELECTRONIC EQUIPMENT

Plant operational history of various nuclear power reactors has shown there is a significant potential problem involving the failure of safety related electronic components housed within cabinets located in the control room environment due to excessive temperature effects. Such failures could lead to the malfunctioning of control systems, inoperability of instrumentation channels associated with protection systems, inadvertent actuations and/or failures of safety systems and erroneous indications and alarms to plant operators. Even though redundant control room cooling systems typically exist, it is believed that the loss of all control room cooling may be more likely to occur than previously thought as indicated by IE Information Notice No. 85-89, "Potential Loss of Solid-State Instrumentation Following Failure of Control Room Cooling." It appears from various events that control room temperatures can rise quickly (in a matter of minutes) upon loss of control room HVAC. Operational experience has shown that even though design specifications show that equipment is qualified to handle temperatures up to 120°F, an ambient control room temperature of 90°F (technical specification allowed higher temperature) can result in erratic behavior of electronic equipment housed within various enclosures. Cases have been cited where temperatures at the location of cabinet top racks have reached 125°F even though the control room ambient was 72°F and the HVAC was functioning. IE Information Notice No. 85-89 was issued to alert licensees/applicants of potential problems related to excessive temperature effects within cabinets.

Based on the above concerns associated with plant operational history at various operating nuclear plants, the applicant is requested to supply information to the staff which describes what consideration (correlation) was given to the possible temperature effects on safety related electronic equipment housed within the various control room cabinets/enclosures as related to the Technical Specification ambient temperature limit of 104°F and what measures have been taken to preclude similar problems from occurring at the Nine Mile Point 2 facility as have occurred at some operating reactors.