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March 16, 2000
NMP2L 1945

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: Part 21 - Environmental Qualification Qualified Life Calculations

Gentlemen:

Pursuant to 10 CFR Part 21, Reporting of Defects and Noncompliance, Niagara Mohawk Power Corporation (NMPC) is submitting the attached report. NMPC previously notified the Nuclear Regulatory Commission, as required by 10 CFR 21.21(d)(3)(i), of this issue on February 18, 2000, via telephone and facsimile. The attached report contains the information required by 10 CFR 21.21(d)(4), and is being provided in accordance with the requirements of 10 CFR 21.21(d)(3)(ii).

Very truly yours,

A handwritten signature in black ink that reads "Richard B. Abbott".

Richard B. Abbott
Vice President Nuclear Engineering

RBA/IAA/tmk
Enclosure

xc: Mr. H. J. Miller, NRC Regional Administrator
Ms. M. K. Gamberoni, Acting Section Chief PD-I
Mr. G. K. Hunegs, NRC Resident Inspector
Mr. P. S. Tam, Senior Project Manager, NRR
Records Management

JE19

ATTACHMENT

1. *Name and address of the individual or individuals informing the Commission.*

Mr. Richard B. Abbott
Vice President Nuclear Engineering
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P. O. Box 63, Lake Road
Lycoming, NY 13093

2. *Identification of the facility, the activity or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.*

This defect involves the use of inappropriate temperature profiles in calculations for establishing Environmental Qualification (EQ) equipment qualified life. The affected components are certain limitorque operators, electrical cables and other safety-related equipment included in the Nine Mile Point Unit 2 (NMP2) EQ program.

3. *Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.*

Stone and Webster Engineering Corporation (SWEC) of Cherry Hill, New Jersey, supplied the calculations to Niagara Mohawk for its Nine Mile Point facility.

4. *Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.*

This defect involves the use of inappropriate (non-conservative) temperature profiles in calculations for establishing EQ equipment qualified life. During 1985-86, while NMP2 was under construction, SWEC performed manual heating and ventilation (EHV) calculations and EQ qualified life calculations for the plant components. The bounding lowest ambient temperature values yielded by the EHV calculations for winter shutdown periods were used in the EQ qualified life calculations. A value equal to or, for conservatism, greater than the normal expected ambient temperatures should have been used in the EQ calculations. Instead, SWEC used the lowest expected temperatures (i.e., bounding minimum temperatures) for the winter periods, resulting in qualified lives that were non-conservatively long. No documented details of the programmatic methods used by SWEC to obtain and derive temperature data for the EQ qualified life calculations could be found.

Based on an internal review, the above described deficiency affects a number of NMP2 qualified life calculations. Based on a preliminary conservative assessment, approximately thirty components (limitorque operators, electrical cables, heat trace equipment etc.) in various safety-related applications will have their qualified lives reduced from greater than 40 years to less than 40 years. The attached Table 1 provides a bounding, but not complete list of these calculations and components. Additionally, on the order of several

4. *Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply. (Cont'd)*

hundred components identified by Niagara Mohawk Power Corporation (NMPC), but not included in Table 1 may have their qualified lives reduced but not to less than 40 years.

Based on NMPC's evaluation of the most limiting components, no EQ equipment installed at NMP2 will reach its actual qualified life prior to the year 2008. This gives NMPC ample time to correct the erroneous information in the affected calculations and databases, and determine necessary remedial action to be taken prior to any EQ equipment reaching expiration of its qualified life. However, had this calculation error not been detected, certain EQ equipment would have reached the end of its qualified life significantly earlier than predicted by the EQ calculations. The equipment potentially impacted by this deficiency is installed in multiple safety-related applications at multiple locations. Therefore, it is reasonable to conclude that this error could have created a substantial safety hazard.

5. *The date on which the information of such defect or failure to comply was obtained.*

Niagara Mohawk identified the defect on December 17, 1999 as a potential Part 21 reportable condition.

6. *In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.*

This information is provided in Table 1, as described in item 4 above.

7. *The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete this action.*

1. NMPC has reviewed all EQ temperature data relating to plant shutdown periods to determine if there should be any concerns regarding expiration of EQ qualified lives in the short-term. No such concerns were identified.
2. By December 31, 2001, NMPC will identify and validate the Equipment Qualification Environmental Design Criteria database and revise appropriate values as required.

8. *Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.*

An Operating Experience report was issued to the nuclear industry on February 28, 2000.

Table 1

EQ Qualified Life Impact of Inappropriate Temperatures

The following is a representative but not complete list of equipment that will have its qualified life reduced from greater than 40 years to something less than 40 years. This list DOES NOT include components whose life is reduced to something greater than 40 years. The most limiting equipment (worst case) is the Limatorque Operators with the 58.2 year qualified life.

Calculation Number	Zone(s)	ID Number	Component Type	Qualified Life * (Years)
EQS 91	MST24045	2MSS*MOV208	Limatorque Operators	58.2
EQS 95	MST26146	2WCS*MOV200	Limatorque Operators	58.2
EQS 95	MST24045	2FWS*MOV21A	Limatorque Operators	58.2
EQS 95	MST24045	2FWS*MOV21B	Limatorque Operators	58.2
EQS 95	MST24045	2MSS*MOV112	Limatorque Operators	58.2
EQS 95	MST289155	2CSL*MOV104	Limatorque Operators	41.6
EQS 95	SC215129	2RHS*MOV80B	Limatorque Operators	41.6
EQS 95	SC215129	2RHS*MOV22B	Limatorque Operators	41.6
EQS 95	SC261150	2ICS*MOV121	Limatorque Operators	41.6
EQS 95	SC215125	2RHS*MOV22A	Limatorque Operators	41.6
EQS 95	SC215125	2RHS*MOV80A	Limatorque Operators	41.6
EQS 52	SC328187	2HVR*CAB14A	Brand Rex Cables	40.1
EQS 52	SC328187	2HVR*CAB14B	Brand Rex Cables	40.1
EQS 52	SC328187	2HVR*CAB32A	Brand Rex Cables	40.1
EQS 52	SC328187	2HVR*CAB32B	Brand Rex Cables	40.1
EQS 47	SC (Several Zones)	CMS,SLS,HVR	Thermon Heat Trace (SSK Cable)	41.5

* EQ equipment life as determined by SWEC.