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VASSALLO,D.B. Operating Reactors Branch 2.

SUBJECT: Forwards info re environ qualification of electrical equipment,per NRC requests.Justification for continued operation,completed safety-related equipment list & response to 10CFR50.49 discussed.
see Repts.

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NIAGARA MOHAWK

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May 20, 1983

Mr. Domenic B. Vassallo, Chief
Operating Reactors, Branch #2
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

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

Dear Mr. Vassallo:

On March 5, 1980, Niagara Mohawk Power Corporation submitted a report on the environmental qualification of safety-related electrical equipment at Nine Mile Point Unit 1. Subsequent submittals were provided in response to I.E. Bulletin 79-01B on November 1, 1980 and February 2, 1981. On June 8, 1981, the Nuclear Regulatory Commission issued a Safety Evaluation Report on equipment qualification for Nine Mile Point Unit 1. Niagara Mohawk submitted a response to the Safety Evaluation Report on September 9, 1981. On February 2, March 2 and April 2, 1982, additional information regarding equipment qualification was submitted.

On December 20, 1982, the Nuclear Regulatory Commission provided a Safety Evaluation Report for the environmental qualification of safety-related equipment at Nine Mile Point Unit 1. That report was based on our previous submittals. A Technical Evaluation Report (TER-C5257-466), prepared by the Franklin Research Center, was attached to the Safety Evaluation Report. The Safety Evaluation Report requested Niagara Mohawk to:

- Provide, within 90 days, plans for qualification or replacement of equipment evaluated in the Technical Evaluation Report as Nuclear Regulatory Commission Category I.b, II.a or II.b items, and a schedule for accomplishing these proposed corrective actions. The major deficiencies identified in the Technical Evaluation Report (Tables 4-1, 4-2, 4-3 and 4-4) must be resolved.

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- Reaffirm the justification for continued operation. Within 30 days submit information for equipment evaluated in the Technical Evaluation Report as Nuclear Regulatory Commission Category I.b, II.a or II.b items, for which justification for continued operation was not previously submitted based on evaluated qualification deficiencies.

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- Resolve the Technical Evaluation Report concern (Technical Evaluation Report Section 4.3.1) regarding completeness of the safety-related equipment list, and identification of safety-related systems and display instrumentation.

- Notify the Nuclear Regulatory Commission within seven days whether any portions of the Technical Evaluation Report pages identified as proprietary (by the owner or originator) still require proprietary protection. If so, clearly identify, in a written response, within 20 days the proprietary information and the specific justification for protection from public disclosure.

On April 8, 1983, the Nuclear Regulatory Commission issued a "Clarification of Environmental Qualification Safety Evaluation" for Nine Mile Point Unit 1. The clarification letter requested Niagara Mohawk Power Corporation to:

- Review all justifications for continued operation submitted to date to ensure that justification for continued operation exists for all equipment which may not be qualified.

- Reaffirm within 30 days the justification for continued operation and address equipment evaluated in the Technical Evaluation Report as Nuclear Regulatory Commission Categories I.b, II.a and IV items. Guidelines are provided in paragraph (i) of 10 CFR 50.49.

- Provide within 10 days justification for continued operation or resolve the technical issue for equipment evaluated by the TER as Nuclear Regulatory Commission Category II.b items.

- Disregard the 90 day response schedule required by the Safety Evaluation Report because the schedule for accomplishing proposed corrective actions has been superseded by the requirements of 10 CFR 50.49. Paragraph (g) of the rule requires that by May 20, 1983, licensees identify electrical equipment important to safety, within the scope of the rule, that is already qualified, and submit a schedule for the qualification or replacement of the remaining electrical equipment within the scope of the rule in accordance with the qualification deadline specified in paragraph (g). The submittal required by the rule should specifically indicate whether previous submittals comply with paragraphs (a) and (b) of 10 CFR 50.49. In addition, describe the methods used to identify the equipment covered by paragraph 10 CFR 50.49 (b)(2) and establish any qualification programs not previously described for such equipment.

- Inform Nuclear Regulatory Commission within 30 days whether any portions of the identified Technical Evaluation Report pages still require proprietary protection.

By letters dated January 24, March 1, April 15 and May 16, 1983 Niagara Mohawk delayed submittal of the required information until its inclusion in this letter.

In response to the specific requests of the Nuclear Regulatory Commission letters dated December 20, 1982 and April 8, 1983, Niagara Mohawk submits herein the following information:

I. Nuclear Regulatory Commission Qualification Category II.b Items

There is no Nine Mile Point Unit 1 equipment evaluated by the Technical Evaluation Report as Nuclear Regulatory Commission qualification Category II.b items, "Equipment that is Unqualified."

II. Justification for Continued Operation

Appendix A provides justification for continued operation for all items on which they were not previously supplied. In addition, all prior justifications for continued operation remain unchanged.

III. Proprietary Information

With regard to identification of Technical Evaluation Report pages labeled "proprietary," Niagara Mohawk's position is as follows:

° Technical Evaluation Report equipment item No. 19, Rosemount Model 510 DU Electronic trip units:

Niagara Mohawk cited as evidence of qualification:

NUS Analysis File No. 1961-R369-001 R1. The NUS analysis references Rosemount report 3768B "Qualification Test Summary for the Trip/Calibration System, Rosemount Model 510 DU," dated March 10, 1976, revision A.

Technical Evaluation Report Reference: 5130: R. W. Strong and L. H. Youngborg
Analog Transmitter/Trip Unit for Engineered Safeguard Sensor Trip Inputs
General Electric, 00-Dec-78
NEDO-21617-A, Proprietary

These were evaluated by Franklin Research Center as part of qualification documentation associated with the general equipment qualification program. Reference 5130 describes testing conducted in Rosemount Report 3768B and the overall qualification program for these trip units. Reference 5130 is labeled proprietary to General Electric Company. Niagara Mohawk review of Technical Evaluation Report equipment, item 19 pages 5f through 5q inclusive, indicates that the information contained is considered proprietary pending resolution of this issue.

° Technical Evaluation Report equipment item 28, FENWAL Model 1700240 temperature switches:

Niagara Mohawk cited as evidence of qualification:

Technical Evaluation Report Reference: 827: W. W. Holbrook and D. F. Hatmaker
Qualification Test for Electrical Connectors Used at Browns Ferry Nuclear Power Plants Units 1, 2 and 3
Wyle Labs, 23-Mar-78
43854-1, Proprietary

Technical Evaluation Report Reference: 28: D. N. Perkey
Environmental Qualification for Fenwal Model 17002-40 Temperature Switches
NUS Corp., 17-Dec-81
1961-F080-001, Rev. 1

Reference 827 is labeled proprietary to Wyle Labs. Our review of Technical Evaluation Report equipment item 28, pages 5a through 5p, indicate that the information contained therein is considered proprietary pending resolution of this issue.

IV. Completeness of the Safety-Related Equipment List

The Technical Evaluation Report concerns (TER-C5257-466, Section 4.3.1 and Appendix C) regarding completeness of the safety-related equipment list and identification of safety-related systems and display instrumentation for Nine Mile Point Nuclear Station Unit 1 have been thoroughly reviewed. The specific concerns in Appendix C of the Technical Evaluation Report were as follows:

- The Licensee's list of systems remains insufficient to verify that all safety functions will be performed.

- It is recommended that a thorough review of plant safety analyses and emergency procedures be performed with regard to the safety functions necessary for loss of coolant accident and high energy line break accident mitigation. A complete and comprehensive list of systems to be addressed for environmental qualification should be submitted to the Nuclear Regulatory Commission for review and approval.

- As noted in Section C.1, deleting display instruments from environmental qualification because they are covered by Regulatory Guide 1.97 is not justified. Instruments which require qualification under I.E. Bulletin 79-01B must be qualified without regard to any additional requirements of Regulatory Guide 1.97. Consequently, instruments listed in Table 3-2 of Reference 14 should not be deleted or deferred from environmental qualification.

In response to these concerns, Niagara Mohawk performed an engineering review of Nine Mile Point Unit 1 systems to identify and appropriately document systems important to safety and to develop a complete list of safety-related equipment. The review was conducted as follows:

- All design basis events such as loss of coolant accident and main steam line breaks inside containment, and high energy line breaks outside containment (in reactor building, steam tunnel and turbine building) were reviewed.

- A list of systems required to mitigate the consequences of loss of coolant accidents, main steam line break and a high energy line breaks was established. The list was based upon a review of plant safety analyses and emergency operating procedures, considering the functions that must be performed for accident mitigation without regard to location of equipment relative to a potentially harsh environment. The six functions considered were: (1) emergency reactor shutdown, (2) containment isolation, (3) reactor core cooling, (4) containment heat removal, (5) core residual heat removal and (6) prevention of a significant release of radioactive material to the surrounding environment. A list of safety-related display instruments (including those necessary for the operator to monitor plant status) was developed simultaneously with the systems list. The primary objective was to establish a final list of safety-related systems in accordance with Nuclear Regulatory Commission criteria.

- Not all equipment in a particular safety-related system requires qualification and post-accident active or passive functional capability in order to accomplish accident mitigation. Depending on system design, certain motor-operated valves, solenoid-operated pneumatic valves, temperature switches, limit switches, and instrumentation may not be required to perform a safety function or mitigate the consequences of an accident in order for the system to accomplish its design basis safety function. Several other systems only require that the containment isolation portion of the system to remain functional.

  A system failure analysis was performed to identify the set of safety related equipment. Addition or deletion of equipment from the current master list was performed as necessary, and full written justification was developed in each case. Regulatory Guide 1.97, as modified by Division of Operating Reactors Guidelines Appendix A, and plant emergency operating procedures were used as a guide to identify devices and safety-related display instruments required to be used by the operator. The equipment which must function in these systems was identified by review of system descriptions and appropriate drawings (piping and instrumentation drawings, elementary wiring diagrams, electrical one line diagrams, and functional logic diagrams). Application of system/component failure analyses was performed to identify the safety-related equipment which requires environmental qualification.

- Plant areas with environmental parameters (pressure, temperature, humidity, radiation level, submergence level, etc.) which increase significantly above normal ambient conditions as a result of a design basis event, were considered to be harsh post-accident areas. Containment sprays and radiation dose from recirculating radioactive fluids were included in these considerations.

- A review of the location of the safety-related equipment was performed. Equipment items which were required to function but are not located within a harsh environment, were deleted from the list.. In addition, certain equipment items were not exposed to a harsh environment at the same time that they are required to perform a safety-related function. These items were deleted from the list and justification was provided.

- Based on the results of the above tasks, a final safety related systems list and a final safety related equipment list were developed and are included as Appendix B and C of this submittal.

V. Response to 10CFR50.49

This provides resolution of major equipment qualification deficiencies as required in the Nuclear Regulatory Commission's letter to Niagara Mohawk, dated April 8, 1983. Niagara Mohawk has reviewed deficiencies in Categories I.b, II.a, II.b, II.c and IV of the Nuclear Regulatory Commission's Safety Evaluation Report and Technical Evaluation Report on environmental qualification. Corrective actions and proposed schedules as shown in Appendix C. Table 26 of Appendix C is a list of qualified equipment in accordance with the requirements of 10CFR50.49, paragraph (g). Tables 1 through 24 of Appendix C identify equipment, corrective actions and schedule in accordance with 10CFR50.49 paragraph (g). Appendix C is reflective of Niagara Mohawk's ongoing qualification program which is in compliance with 10CFR50.49 paragraphs (a) and (b). In addition, Niagara Mohawk has not classified any electrical equipment as nonsafety-related, whose failure under postulated environmental conditions could prevent accomplishment of required safety functions in accordance with 10CFR50.49 (b)(2). Table 25 of Appendix B summarizes that equipment which has been determined, through system and operating procedures review, to no longer require qualification.

Because of the complexity of these tasks and schedule considerations, complete verification has not been done. This will be completed within 30 days after startup from the current outage. Any changes to the enclosed information will be sent to you immediately.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

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