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SUBJECT: Forwards response to GL 92-08, "Thermo-Lag 330-1 Fire Barriers."

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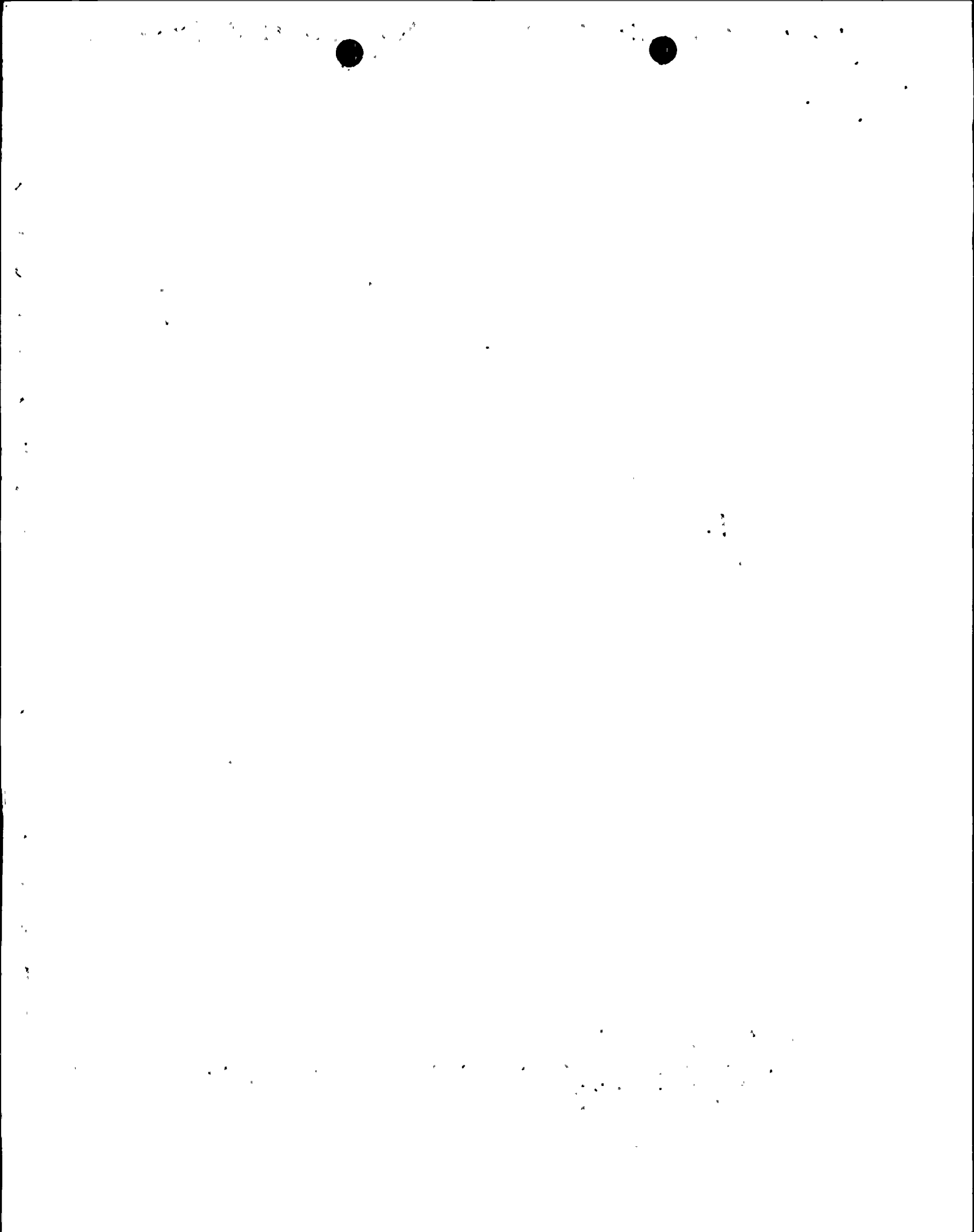
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April 13, 1993
NMPIL 0751

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

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

Nine Mile Point Unit 2
Docket No. 50-410
NFP-69

Gentlemen:

SUBJECT: RESPONSE TO GENERIC LETTER 92-08, "THERMO-LAG 330-1 FIRE BARRIERS"

Generic Letter 92-08 requested that Niagara Mohawk Power Corporation submit additional information to verify that installed Thermo-Lag 330-1 fire barrier systems comply with the Staff's requirements. Attachments 1 and 2 to this letter provide the information requested for Nine Mile Point Units 1 and 2, respectively.

Very truly yours,



C. D. Terry
Vice President
Nuclear Engineering

MC/pr
003751GG
Attachments

xc: Regional Administrator, Region I
Mr. W. L. Schmidt, Senior Resident Inspector
Mr. R. A. Capra, Director, Project Directorate I-1, NRR
Mr. D. S. Brinkman, Senior Project Manager, NRR
Mr. J. E. Menning, Project Manager, NRR
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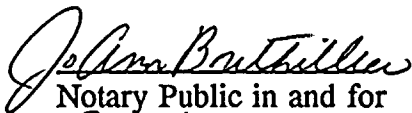
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
Niagara Mohawk Power Corporation)	
)	
Nine Mile Point Unit 1)	Docket No. 50-220
Nine Mile Point Unit 2)	Docket No. 50-410

C. D. Terry, being duly sworn, states that he is Vice President, Nuclear Engineering of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the document attached hereto; and that the document is true and correct to the best of his knowledge, information, and belief.


 C. D. Terry
 Vice President
 Nuclear Engineering

Subscribed and Sworn before me, a Notary Public in and for the State of New York and the County of Onondaga, this 13th day of April, 1993.


 Notary Public in and for
Onondaga County, New York

My Commission Expires:

Aug 31, 1994

JO ANN BOUTHILLIER
 Notary Public in the State of New York
 Qualified in Onondaga County No. 4713804
 My Commission Expires ~~March 30, 1994~~
Aug 31, 1994



ATTACHMENT 1

**NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 1
DOCKET NO. 50-220
DPR-63**

**RESPONSE TO REQUEST FOR INFORMATION
REGARDING THERMO-LAG FIRE BARRIERS (GENERIC LETTER 92-08)**

ITEM 1

State whether Thermo-Lag 330-1 barriers are relied upon (a) to meet 10CFR50.48, to achieve physical independence of electrical systems, (b) to meet a condition of a plant's operating license, or (c) to satisfy a licensing commitment. If applicable, state that Thermo-Lag 330-1 is not used at the facility. This generic letter applies to all 1-hour and 3-hour Thermo-Lag 330-1 materials and barrier systems assembled by any assembly method such as by assembling preformed panels and conduit shapes, as well as spray, trowel and brush-on applications.

RESPONSE

All Thermo-Lag 330-1 fire barrier material at Nine Mile Point Unit 1 (NMP1) is installed to meet 10CFR50.48 for the protection of safe shutdown capability. All Thermo-Lag material at NMP1 is installed to provide a 3-hour fire barrier. Specific installations are identified in Niagara Mohawk Power Corporation (NMPC) responses to NRC Bulletin 92-01 and Bulletin 92-01 Supplement 1 dated July 24, 1992 (NMP1L 0685) and September 29, 1992 (NMP1L 0700) respectively.

ITEM 2

If Thermo-Lag 330-1 barriers are used at the facility,

Item 2(a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

RESPONSE

The Thermo-Lag 330-1 fire barriers installed at NMP1 were not qualified by conducting individual specific fire endurance tests for the exact installed configurations. The governing criteria for the installations were Thermal Science Incorporated (TSI) Technical note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual, Power Generating



Plant Applications), Revision V, November 1985 and TSI Form 1082(500). The barriers were qualified to requirements and industry practice applicable at the time of installation.

Item 2(b) State (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations; and (2) whether or not the licensee has evaluated any deviations from the tested configurations.

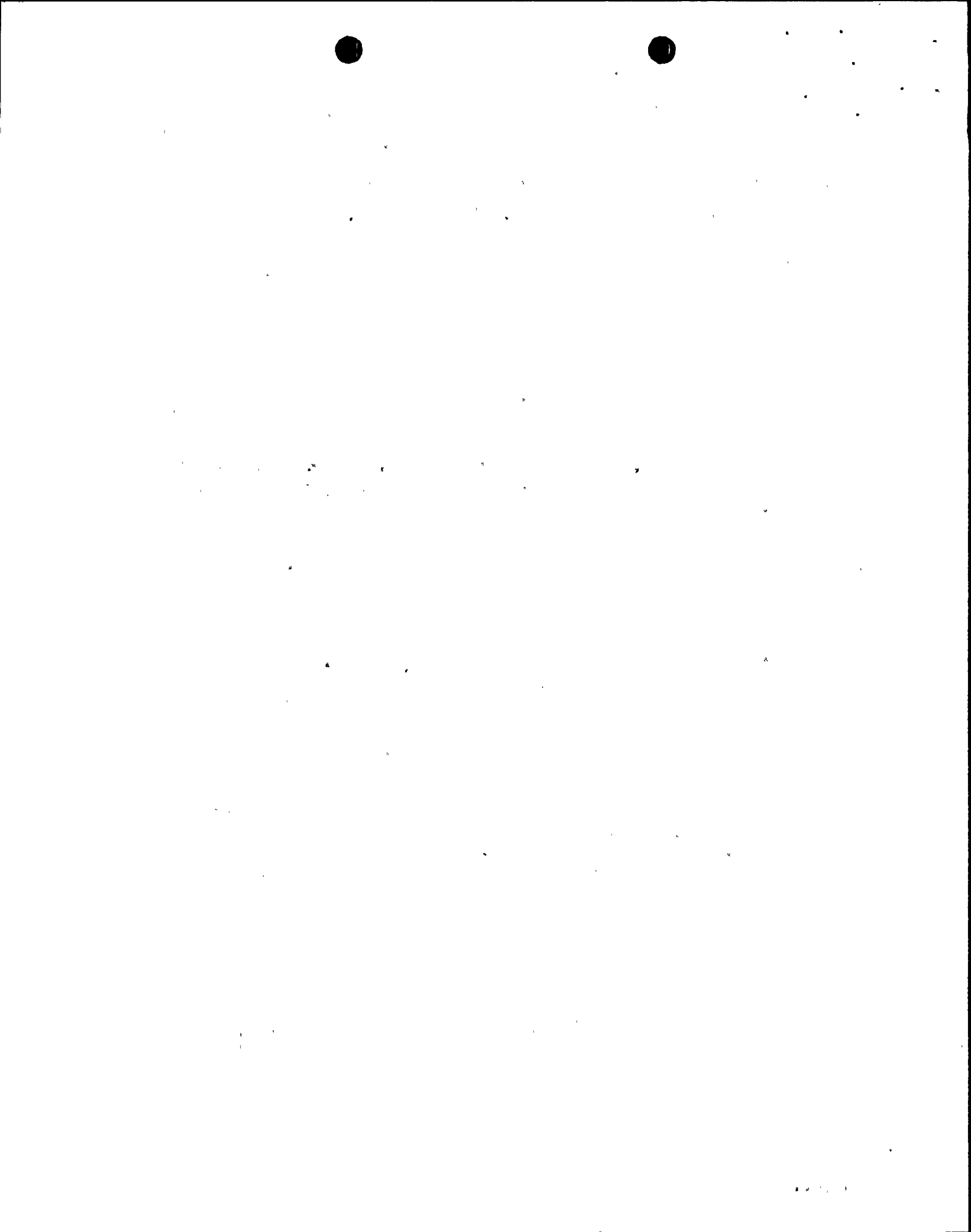
RESPONSE

Thermo-Lag 330-1 fire barrier installations at NMP1 represent the materials, workmanship, methods of assembly, dimensions and configurations of the qualification test assembly as presented in TSI Technical note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedure Manual, Power Generating Plant Applications), Revision V, November 1985 and TSI Form 1082(500). NMPC has not evaluated any deviations from tested configurations, but has documented acceptance by Pro-Tech Applications Services, Inc. (an approved Thermal Science Inc. Installer) or Thermal Science, Inc. that each installation meets the requirements for a 3-hour fire barrier.

Item 2(c) State (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems) and (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

RESPONSE

- (1) The as-built Thermo-Lag 330-1 barrier configurations at NMP1 are consistent with the barrier configurations provided by TSI Technical Note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual, Power Generating Plant Applications), Revision V, November 1985 and TSI Form 1082(500).
- (2) Cables 171-71 and 171-151 involve power cables to which ampacity considerations apply. The cables draw 11.9 and 16.0 full load amperes, respectively, under cyclic duty. Both cables are #10 AWG, quadruplex, which is rated to 38 amperes when routed in conduit. Thus, power cable 171-71 is derated 68.7% and power cable 171-151 is derated 57.9%, which far exceeds the ampacity derating of 10.9% recommended by TSI in TSI Form 1082(500). These deratings also exceed the 38.9% for 3-hour barrier installations as determined by Underwriters Laboratories for long stabilization periods.



Based on the above, it is concluded that the actual derating used in this application remains conservative and was based on engineering judgment that was applied at the time of the initial installation.

ITEM 3

With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative, (a) describe all corrective actions needed and include a schedule by which such actions shall be completed and (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

RESPONSE

- (a) Currently, all required fire barriers utilizing Thermo-Lag material have been declared inoperable in response to NRC Bulletin 92-01, Supplement 1. This was documented in NMPC's September 29, 1992 submittal to the NRC. NMPC intends to utilize the results of the NUMARC test program in returning these barriers to operability. Specific schedules will be provided to the NRC by NUMARC for conducting tests and issuing of test results. Following the review of these test results, NMPC will develop appropriate action plans for returning the required barriers to an operable condition.
- (b) Compensatory measures taken for Thermo-Lag barriers were described in NMPC's response to NRC Bulletin 92-01 and Supplement 1. These compensatory measures will remain in effect until fire barrier operability is restored.

ITEM 4

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

RESPONSE

No Thermo-Lag barriers fall into this category.



ATTACHMENT 2

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 2
DOCKET NO. 50-410
NFP-69

RESPONSE TO REQUEST FOR INFORMATION
REGARDING THERMO-LAG FIRE BARRIERS (GENERIC LETTER 92-08)

ITEM 1

State whether Thermo-Lag 330-1 barriers are relied upon (a) to meet 10CFR50.48, to achieve physical independence of electrical systems, (b) to meet a condition of a plant's operating license, or (c) to satisfy a licensing commitment. If applicable, state that Thermo-Lag 330-1 is not used at the facility. This generic letter applies to all 1-hour and 3-hour Thermo-Lag 330-1 materials and barrier systems assembled by any assembly method such as by assembling preformed panels and conduit shapes, as well as spray, trowel and brush-on applications.

RESPONSE

All Thermo-Lag 330-1 fire barrier material at Nine Mile Point Unit 2 (NMP2) is installed to meet 10CFR50.48 for the protection of safe shutdown capability. All Thermo-Lag material at NMP2 is installed to provide a 3-hour fire barrier. Specific installations are identified in Niagara Mohawk Power Corporation (NMPC) responses to NRC Bulletin 92-01 and Bulletin 92-01, Supplement 1 dated July 24, 1992 (NMP1L 0685) and September 29, 1992 (NMP1L 0700) respectively.

With respect to NMPC's response dated September 29, 1992, a Thermo-Lag coated cover on the Control Building dumbwaiter was identified as an installed system. However, this installation is no longer a required fire barrier as a result of Modification PN2Y87MX208 and is not being treated as such at this time.

ITEM 2

If Thermo-Lag 330-1 barriers are used at the facility,

Item 2(a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.



RESPONSE

The Thermo-Lag 330-1 fire barriers installed at NMP2 were not qualified by conducting individual specific fire endurance tests for the exact installed configurations. The governing criteria for the installations were Thermal Science Incorporated (TSI) Technical note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual, Power Generating Plant Applications), Revision V, November 1985 and TSI Form 1082(500). The barriers were qualified to requirements and industry practice applicable at the time of installation and were addressed by the NRC in the safe shutdown inspection for NMP2 (50-410/85-34) and subsequent follow-up communication dated May 7, 1986 (NMP2L 0706).

Item 2(b) State (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations; and (2) whether or not the licensee has evaluated any deviations from the tested configurations.

RESPONSE

Thermo-Lag 330-1 fire barrier installations at NMP2 represent the materials, workmanship, methods of assembly, dimensions, configuration, etc. that were consistent with requirements and industry practices applicable at the time of installation and in accordance with the guidance provided by TSI Technical Note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual, Power Generating Plant Applications), Revision V, November 1985 and TSI Form 1082(500). No testing or evaluations of deviations from tests of the exact installed configuration of the Thermo-Lag 330-1 fire barriers installed at NMP2 has occurred. The Thermo-Lag 330-1 fire barrier configurations installed in the plant were designed and constructed by the Architect Engineer for NMP2, Stone and Webster Engineering Corporation (SWEC) of Cherry Hill, NJ, under a Quality Assurance Program consistent with NRC requirements. NMPC reviewed and accepted the work of SWEC. The fire barrier installations do not deviate from TSI's guidance.

Item 2(c) State (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems) and (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.



RESPONSE

- (1) The as-built Thermo-Lag 330-1 barrier configurations at NMP2 are consistent with the barrier configurations provided by TSI Technical Note 20684 (Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual, Power Generating Plant Applications), Revision V, November 1985 and TSI Form 1082(500).

The Thermo-Lag 330-1 Fire Barrier Systems were designed by SWEC of Cherry Hill, NJ, and the ampacity derating factors used are in accordance with the guidance provided by the TSI Form 1082(500). TSI Form 1082(500) suggested a 10.9% derating factor for a conduit applied with a 3-hour rated Thermo-Lag 330-1 Fire Barrier material.

- (2) Power Cable 2SWPAGK017 is the only cable routed through 17 feet of Thermo-Lag protected 1-1/2" diameter conduit 2CK201GL. Cable 2SWPAGK017 provides 600v power to motor operated valve (MOV) 2SWP*MOV50A. Cable 2SWPAGK017 is a 4 conductor #8 AWG cable, manufactured by Okonite with CSPE jacket and EP insulation, qualified to IEEE 383 and LOCA and is rated for 48 amperes when routed in conduit. The full load required for operation of 2SWP*MOV50A is 15.6 amperes, and the MOV is considered as an intermittent load. Thus, the power cable to MOV 2SWP*MOV50A is derated 67.5%, which far exceeds the ampacity derating of 10.9% recommended by TSI in TSI Form 1082(500). This derating also exceeds the 38.9% for 3-hour barrier installations as determined by Underwriters Laboratories for long stabilization periods.

Based on the above, it is concluded that the actual derating used in this application remains conservative and was based on engineering judgment that was applied at the time of the initial installation.

ITEM 3

With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative, (a) describe all corrective actions needed and include a schedule by which such actions shall be completed and (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.



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RESPONSE

- (a) Currently, all required fire barriers utilizing Thermo-Lag material have been declared inoperable in response to NRC Bulletin 92-01, Supplement 1. This was documented in NMPC's September 29, 1992 submittal to the NRC. NMPC intends to utilize the results of the NUMARC test program in returning these barriers to operability. Specific schedules will be provided to the NRC by NUMARC for conducting tests and issuing of test results. Following the review of these test results, NMPC will develop appropriate action plans for returning the required barriers to an operable condition.
- (b) Compensatory measures taken for Thermo-Lag barriers were described in NMPC's response to NRC Bulletin 92-01 and Supplement 1. These compensatory measures will remain in effect until fire barrier operability is restored, except for the Thermo-Lag coated cover on the Control Building dumbwaiter. This Thermo-Lag coated cover was identified in NMPC's response dated September 29, 1992 (NMP1L 0700). However, this installation is no longer a required fire barrier as a result of Modification PN2Y87MX208 and is not being treated as such at this time.

ITEM 4

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

RESPONSE

No Thermo-Lag barriers fall into this category.



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