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RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards info requested by J.Lazenvnick on resolution of apparent inconsistencies in separation criteria presented on Table 421.47-1.Info to be included in Amend 16 to FSAR.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

November 16, 1984
(NMP2L 0247)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Schwencer:

Re: Nine Mile Point Unit 2
Docket No. 50-410

Attached is the information requested by Mr. J. Lazevnick on the resolution of apparent inconsistencies in separation criteria presented on Table 421.47-1.

This information will be included in Final Safety Analysis Report Amendment 16.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

DS:ja
Attachment
xc: R. A. Gramm, NRC Resident Manager
Project File (2)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Vice President 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 documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C V Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 16th day of November, 1984.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:
CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1985

TABLE 421.47-1

SEPARATION EVALUATION

IEEE 384-74 Criteria	Reg. Guide 1.75, Rev. 1 Regulatiory Position C	Design Conformance	
		PGCC	BOP
Isolation device - A device in a circuit which prevents malfunctions in one section of a circuit from causing unacceptable influences in other sections of the circuit or other circuits.	C.1 Supplement IEEE 384 definition as follows "interrupting devices actuated only by fault current are not considered to be isolation devices within the context of this document.	Since interrupting devices (fuses and/or circuit breakers) actuated only by fault current are not considered as isolation devices a combination of two interrupting devices or an EPA in conjunction with an interrupting device is used.	Interrupting devices actuated only by fault current are not used as isolation devices for isolating non-Class 1E power circuits from Class 1E power circuits. In the case of control and instrument circuits, a combination of two interrupting devices actuated by fault current have been used to isolate non-class 1E devices and circuits from Class 1E circuits.
Raceway - Any channel that is designed and used expressly for supporting wires, cable, or busbars. Raceways consist primarily of, but are not restricted to cable trays conduits, and interlocked armor enclosing cable.	C.2 Interlocked armor enclosing cable should not be construed as a "raceway".	Interlocked armor cable is not used as a raceway.	Meets this requirement.
Criteria			
4.1 Required Separation Separation shall be provided to maintain the independence of sufficient number of circuits and equipment so that the protective cunctions required during and following any design basis event can be accomplished. The degree of separation required varies with the potential hazards in a particular area.	No comment	Separation is provided to maintain the independence of sufficient number of circuits and equipment required for protective function. Independence is achieved through equipment arrangement, materials, wiring practices and isolation devices and/or space or by analysis.	Meets this requirement.

TABLE 421.47-1 (Cont)

IEEE 384-74 Criteria	Reg. Guide 1.75, Rev. 1 Regulatiory Position C	Design Conformance	
		PGCC	BOP
4.5 Associated Circuits Associated circuits shall comply with one of the following: (1) They shall be uniquely identified as such and shall remain with, or be separated the same as, those Class 1E circuits with which they are associated. (2) They shall be in accordance with (1) above from the Class 1E equipment to and including an isolation device. Beyond the isolation device a circuit is not subject to the requirements of this document provided it does not again become associated with a Class 1E system. (3) They shall be analyzed or tested to demonstrate that Class 1E circuits are not degraded below an acceptable level.	C.4 and C.6 Associated circuits should be subject to all requirements placed on Class 1E circuits such as cable derating, environmental qualification, flame retardance, splicing restrictions and raceway fill unless it can be demonstrated that the absence of such requirements could not significantly reduce the availability of the Class 1E circuits. Analysis should be submitted as part of Safety Analysis Report, and should identify those circuits installed in accordance with this section.	Associated circuits are either subject to all requirements placed on Class 1E circuits or are analyzed to demonstrate that the associated circuits will not degrade the Class 1E circuits below an acceptable level. Such an analysis, when performed, is maintained as part of the design record. See note 5. A summary of these analyses will be provided under separate cover.	Associated circuits are treated as Class 1E circuits including seismic requirements.
4.6 Non-class 1E Circuits 4.6.1 Separation from Class 1E Circuits Non-Class 1E circuits shall be separated from Class 1E circuits by the minimum separation requirements specified in Sections 5.1.3, 5.1.4, or 5.6 or they become associated circuits.	No comment.	Non-Class 1E circuits comply with the requirements of IEEE 384 Section 5.1.3, 5.1.4, or 5.6, or they are treated as associated circuits.	Meets this requirement except in the case of non-class 1E conduits proximate to class 1E trays. The minimum distance between a non-class 1E conduit and a class 1E cable tray (open) shall be 1 inch. See Section 1.8 RG 1.75 position for justification.

TABLE 421.47-1 (Cont)

IEEE 384-74 Criteria	Reg. Guide 1.75, Rev. 1 Regulatory Position C	Design Conformance: PGCC	Design Conformance: BOP
4.6.2 Separation from Associated Circuits Non-Class 1E circuits shall be separated from associated circuits by the minimum separation requirements specified in Sections 5.1.3, 5.1.4, or 5.6.2 or (1) the effects of lesser separation between the Non-Class 1E circuits and the associated circuits shall be analyzed to demonstrate that Class 1E circuits are not degraded below an acceptable level or (2) they become associated circuits. Non-Class 1E instrumentation and control circuits are not required to be separated from associated circuits. Figure 1 shows examples of acceptable circuit arrangements.	C.6 Analysis performed in accordance with this section should be submitted as part of Safety Analysis Report, and should identify those circuits installed in accordance with this section. C.7 Non-Class 1E instrumentation and control circuits should not be exempted from the provisions of Section 4.6.2.	Non-Class 1E circuits are separated from Class 1E and associated circuits in accordance with the requirements of IEEE-384, Sections 5.1.3, 5.1.4, or 5.6.2 or effects of lesser separation are analyzed to demonstrate that Class 1E circuits are not degraded below an acceptable level. Such analysis, when performed, is a part of the design record. Non-class 1E instrumentation and control circuits are not exempted from the provisions of Section 4.6.2.	Meets this requirement.
5. Specific Separation Criteria 5.1 Cables and Raceways 5.1.1 General 5.1.1.1 The routing of Class 1E circuits and location of equipment served by these Class 1E circuits shall be reviewed for exposure to potential hazards such as high pressure piping, missiles, flammable material flooding, and wiring that is not flame retardant. A degree of separation commensurate with the damage potential of the hazard shall be provided such that the independence of redundant	C.8 Section 5.1.1.1 should not be construed to imply that adequate separation of redundant circuits can be achieved within a confined space such as a cable tunnel that is effectively unventilated.	Separation of Class 1E circuits and equipment makes effective use of such features as different safety structures and separated areas for redundant circuits and equipment. A degree of separation commensurate with the damage potential of the hazard is provided such that the independence of the redundant Class 1E systems is maintained at an acceptable level. 1. The non-Class 1E cables within PGCC are routed in two ways: (a) They are routed in non-Class 1E ducts whenever practical. (b) When it is impractical, such as certain utility and fire protection circuits, they are routed in divisional ducts with grounded flexible conduit. In this case, they are routed mostly in one divisional duct only or occasionally in more than one divisional duct. All non-1E cables routed in divisional ducts are provided with redundant testable circuit protection. 2. All cables used within PGCC conform to IEEE-383 requirements.	Generally, different divisional equipment is located in different rooms; different divisional cables are routed through different areas; separate tunnels are used for routing cables of different divisions.