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MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards info requested by L Yang re ability of electric ductlines to withstand stresses & strains induced by relative motion of duct. Info will be incorporated in next FSAR amend.

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NIAGARA MOHAWK

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

October 24, 1984
(NMP2L 0208)

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 L. Yang on the ability of electric ductlines to withstand the stresses and strains induced by the relative motion of the duct.

The enclosed information will be included in the next Final Safety Analysis Report Amendment.

Very truly yours,

cvmangan

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

DS:ja
Attachment
xc: R. Gramm, NRC Resident Inspector

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 24th day of October 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

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 19—

electrical manhole No. 1, and portions of the floor slab in the diesel generator building are supported by Category I structural fill (Table 3.7A-2). The electrical ductline is a continuously supported underground structure consisting of conduit totally encased in reinforced concrete. The electrical ductlines are evaluated for relative motion between the portions of duct supported on rock and structural fill, using ASCE procedures (5). The electrical ductlines are capable of withstanding the stresses and strains induced by the relative motion between the portions of duct supported on rock and structural fill. Manhole No. 1 is designed for seismic loads using the procedures described in Section 3.7.3.12A for Category I tunnels. See Figure 3.7A-33 for details of the manhole and ductline.

Those portions of the floor slabs in the diesel generator building beneath which granular fill was placed are shown in Fig. 3.7A-33. This fill is used solely as a construction form and, as shown on Fig. 3.7A-33, was placed in limited areas. The static and dynamic design of these slabs assumed no load transfer to, or bearing support from, the underlying backfill. Wall design, however, considered lateral soil pressures as shown in Fig. 2.5-110.

All Category I structural fill provides a factor of safety against liquefaction as listed in Section 2.5.4.8. For static properties of the Category I fill see Section 2.5.4.5.

3.7.2.4.1A Rock/Structure Interaction

Dynamic analyses for structures founded on rock are performed using fixed base models because shear wave velocity exceeds 3,500 fps. The details of the geophysical survey are discussed in Sections 2.5.4.2 and 2.5.4.4.

3.7.2.5A Development of Floor Response Spectra

ARS are defined as plots of the maximum response versus period for single degree-of-freedom systems at various locations in structures subjected to dynamic loading. In the analysis of equipment with masses that are small compared to the masses of the dynamic model of the supporting structure, the response of the structure is independent of the response of the equipment. The problem can then be solved in two parts: the response of the structure due to ground acceleration can be determined, and that response can be applied as support accelerations to the equipment. In such cases, the use of ARS is an acceptable approach to the problem of determining the dynamic loads on equipment. The time history method of analysis, using the TIMHIS6 computer program (Appendix 3A), is used to generate the ARS for Category I piping and equipment.