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FACIL: 50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH. NAME AUTHOR AFFILIATION
DONLON, W. J. Niagara Mohawk Power Corp.
RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Forwards revised FSAR page & justification, incorporating requested info. Info supersedes info previously submitted on 860923. Rev concerns temp performance of waterstop matl.

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NIAGARA MOHAWK

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

October 15, 1986
(NMP2L 0911)

Ms. Elinor G. Adensam, Director
BWR Project Directorate No. 3
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Washington, D.C. 20555

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

Dear Ms. Adensam:

As a result of discussions between Niagara Mohawk Power Corporation and a member of your staff, further information was requested relating to Final Safety Analysis Report ("FSAR") changes submitted in Niagara Mohawk's letter dated September 23, 1986 (NMP2L 0884). This information concerns the temperature performance of waterstop material. On behalf of Niagara Mohawk Power Corporation, I am enclosing a revised Final Safety Analysis Report page and a justification discussion that incorporates the requested information. This information supersedes that previously submitted in the September 23, 1986 letter. This change will be incorporated in a future Final Safety Analysis Report update.

Sincerely,

William J. Donlon
President

MJW:sdd
Enclosures

xc: W. A. Cook, 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

W.J. Donlon, being duly sworn, states that he is 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.

Subscribed and sworn to before me, a Notary Public in and the the State of Maryland and County of Montgomery, this 15 day of October, 1986.

Notary Public in and for
Montgomery County, Maryland

My Commission expires:

VERONICA L. HUBBARD
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires July 1, 1990

TABLE 3.4-7

PERFORMANCE OF WATER STOP MATERIAL IN EXPECTED ENVIRONMENT

	Expected Environment				Expected Performance of Material(2)			
Material	Temperature Range(1)	Chemicals	Radiation Level	Aging	Temperature Range	Chemicals	Radiation Level	Aging
Styrene-Butadiene synthetic rubber waterstops	-20°F to +325°F	Unit 2 site has average pH -8.0-8.4. No acidic environment expected within the walls below grade area.	Below 1.6x10⁷ rads 4	40 yr at normal operating temperature (109°F)	-35°F to +100°F 176°F	Unaffected by acidic or alkaline soils or soil bacteria.	2x10⁶ rads before threshhold damage. 1x10⁷ rads before 25% damage. 6.0x10⁷ rads before 50% damage.	40 yr at 109°F.

(2) Safety related waterstops are insulated and sealed from ambient environmental conditions to establish 40 year qualified life.

(1) Temperature range varies from -26°F minimum outside at Site, 109°F normal operating inside secondary containment, to 325°F maximum accident inside secondary containment. The worst case design conditions during which the waterstop must function do not exceed the expected performance temperature of the material

Justification

Waterstop systems are required to contain long-term flooding from cracks in low temperature ($<175°F$) systems which have a large inventory of water, e.g., systems connected to the suppression pool. Cracks in these systems could potentially remain undetected for long periods of time assuming failure of non-redundant leak detection systems. Under these conditions, watertight cubicles, which employ several waterstops, prevent the spread of flooding to redundant safe shutdown equipment. This is discussed in FSAR Appendix 3C.5.

Waterstops are not required to contain flooding from high temperature ($>175°F$) systems, e.g., reactor core isolation cooling, reactor water cleanup or residual heat removal (shutdown cooling) systems. Loss of water from a high energy line break or moderate energy line crack in these systems is quickly detected and isolated either by the respective system instrumentation or by a redundant leak detection system. Under these conditions, only a limited quantity of water is released, and flooding of redundant safe shutdown equipment is not a concern. Thus, the waterstop function is not required.

Required service conditions have been evaluated in establishing the 40-year qualified life of the waterstops. In addition, the waterstops are protected with layers of insulation and caulking material for added assurance that the system remains functional under all conditions.

Expected environmental radiation level of 1.4×10^7 rads is consistent with the manufacturer's design data.