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MANGAN,C.V. Niagara Mohawk Power Corp.
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SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards revised response to NRC FSAR Question 210.62 re leak rate tests for RCS pressure isolation valves. Leak rate tests will be performed at least every refueling outage. Info will be included in Amend 17 to FSAR.

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NIAGARA MOHAWK

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

December 3, 1984
(NMP2L 0274)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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

Dear Mr. Schwencer:

Enclosed for your use and information is the Nine Mile Point Unit 2 revised response to a Nuclear Regulatory Commission's Final Safety Analysis Report question. This information has been previously discussed with your staff and is submitted to aid your review of the Unit 2 license application for the resolution of this question. This information includes a response to question 210.62.

The enclosed information will be included in Final Safety Analysis Report Amendment 17.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

NLR:ja
Enclosure
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 3 day of December, 1984.

Janis M Macro
Notary Public in and for
Onondaga County, New York

My Commission expires:

JANIS M. MACRO
Notary Public in the State of New York
Qualified in Onondaga County No. 4784555
My Commission Expires March 30, 1985

QUESTION F210.62 (3.9.6)

There are several safety systems connected to the reactor coolant pressure boundary that have design pressure below the rated reactor coolant system (RCS) pressure. There are also some systems which are rated at full reactor pressure on the discharge side of pumps but have pump suction below RCS pressure. In order to protect these systems from RCS pressure, two or more isolation valves are placed in series to form the interface between the high pressure RCS and the low pressure systems. The leak tight integrity of these valves must be ensured by periodic leak testing to prevent exceeding the design pressure of the low pressure systems.

Pressure isolation valves are required to be category A or AC per IWV-2000 and to meet the appropriate requirements of IWV-3420 of Section XI of the ASME Code except as discussed below.

Limiting Conditions for Operation (LCO) are required to be added to the technical specifications which will require corrective action; i.e., shutdown or system isolation when the final approved leakage limits are not met. Also, surveillance requirements which will state the acceptable leak rate testing frequency shall be provided in the technical specifications.

Periodic leak testing of each pressure isolation valve is required to be performed at least once per each refueling outage, after valve maintenance prior to return to service, and for systems rated at less than 50% of RCS design pressure each time the valve has moved from its fully closed position unless justification is given. The testing interval should average to be approximately one year. Leak testing should also be performed after all disturbances to the valves are complete, prior to reaching power operation following a refueling outage, maintenance, etc.

The staff's present position on leak rate limiting conditions for operation must be equal to or less than 1 gallon per minute (GPM) for each valve to ensure the integrity of the valve, demonstrate the adequacy of the redundant pressure isolation function and give an indication of valve degradation over a finite period of time. Significant increases over this limiting value would be an indication of valve degradation from one test to another.

The Class 1 to Class 2 boundary will be considered the isolation point which must be protected by redundant isolation valves. In cases where pressure isolation is

provided by two valves, both will be independently leak tested. When three or more valves provide isolation, only two of the valves need to be leak tested.

Provide a list of all pressure isolation valves included in your testing program along with four sets of Piping and Instrument Diagrams which describe your reactor coolant system pressure isolation valves. Also discuss in detail how your leak testing program will conform to the above staff position.

RESPONSE

The valves which separate the reactor coolant pressure boundary (RCPB) from interfacing low-pressure systems are listed in Table 210.62-1.

These valves are included in the Unit 2 Pump and Valve Inservice Testing Program which was developed in accordance with the ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWV. The Unit 2 position is that ASME III requirements provide adequate assurance of valve integrity, specifically:

1. The leak rate test for the NMP2 valves listed in Table 210.62-1 will be performed, as a minimum, at least every refueling outage (IWV-3422). This position is justified by the following:

   a. All the listed valves have direct monitoring position indication to verify valve position in the control room.

   b. The low-pressure portions of these interfacing systems are protected from an intersystem overpressurization by the following:

      1) The normal functional differential pressure forces the check valves on their seats. The air operator for these testable check valves cannot open the valves at normal differential pressure (2CSH*AOV101, 2CSL*AOV101, 2RHS*AOV 16A,B,C, 2RHS*AOV39A,B, and 2ICS*AOV156,157).

      2) Electrical interlocks prevent the motor-operated valves from opening when the differential pressure across the valve exceeds specified limits (2CSL*MOV104,

2RHS*MOV24A,B,C) or when the RCS pressure exceeds specific values (2RHS*MOV40A,B; 2RHS*MOV112; 2RHS*MOV113; 2RHS*MOV104; and 2RHS*MOV67A,B).

3) Whenever excessive leakage is present at a pressure boundary isolation valve, pressure in the low-pressure portions of these systems will increase; and, this will annunciate a high-pressure alarm.

4) Excessive leakage will be relieved via relief valves into the suppression pool, where an increase in suppression pool level will be indicated.

5) The high-pressure core spray, low-pressure core spray, and residual heat removal pumps suction piping is protected by an additional check valve on each pump discharge. Pump suctions for these systems and RCIC are protected by relief valves on the pump suction piping.

2. The leak test medium will be water with a test acceptance criteria of 1 gpm for these valves.

3. The periodic leak test will be done during refueling outages.

4. After maintenance which can affect leak tightness of the valve, leak testing will be performed in accordance with ASME XI prior to returning the valve to service.

P&IDs have been supplied with the FSAR and Preservice and Inservice Inspection Plan which describe the reactor coolant system pressure isolation valves. Procedures for the leak rate testing program are under development and will be submitted in the Preservice and Inservice Inspection Plan by December 31, 1984.

TABLE 210.62-1

REACTOR COOLANT SYSTEM
PRESSURE ISOLATION VALVES

Valve Number	Valve Type	Size		Function
2CSH*MOV107	G	12"	(o)	HPCS injection line containment isolation valve
2CSH*AOV108	TC	12"	(i)	
2CSL*MOV104	G	12"	(o)	LPCS injection line containment isolation valve
2CSL*AOV101	TC	12"	(i)	
2ICS*AOV157	TC	6"	(i)	RCIC Rx head spray containment isolation valve
2ICS*AOV156	TC	6"	(o)	
2RHS*MOV112	G	20"	(i)	RHR shutdown cooling supply to RHR pumps containment isolation valves
2RHS*MOV113	G	20"	(o)	
2RHS*AOV16A,B,C	TC	12"	(i)	RHR LPCI containment isolation valve
2RHS*MOV24A,B,C	G	12"	(o)	
2RHS*AOV39A,B	TC	12"	(i)	RHR shutdown cooling return line to Rx vessel containment isolation valve

TABLE 210.62-1 (Cont)

Valve Number	Valve Type	Size		Function
2RHS*MOV40A,B	Globe	12"	(o)	
2RHS*MOV67A,B	Globe	2"	(i)	Bypass valve for 2RHS*AOV39A,B containment isolation valve

KEY:

o - Outside
i - Inside
G - Gate
TC - Testable check