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SUBJECT: Forwards response to NRC 950630 ltr re violations noted in insp rept 50-410/95-11 on 950530-0609.Corrective actions: developed calculation to evaluate operability of 2CSH*MOV118 & 2CHS*MOV107 under pressure locked conditions.

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h Sylvia
ive Vice President
Nuclear

July 31, 1995
NMP2L 1562

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

RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: *Response to Notice of Violation - NRC Combined Inspection Report Nos. 50-220/95-11 and 50-410/95-11*

Gentlemen:

The NRC Staff conducted an inspection of the Nine Mile Point Unit 1 (NMP1) and Nine Mile Point Unit 2 (NMP2) motor-operated valve programs from May 30 through June 9, 1995. The results of this inspection were documented in Inspection Report Nos. 50-220/95-11 and 50-410/95-11 dated June 30, 1995 for NMP1 and NMP2, respectively. Inspection Report No. 50-410/95-11 (NMP2) contained a Notice of Violation involving the susceptibility of two high pressure core spray valves to pressure locking. The purpose of this letter is to provide you with our response to this Notice of Violation.

Very truly yours,

B. Ralph Sylvia
Executive Vice President - Nuclear

BRS/JMT/kab
Attachment

xc: Regional Administrator, Region I
Mr. L. B. Marsh, Director, Project Directorate I-1, NRR
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NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNIT 2
DOCKET NO. 50-410
NPF-69

"RESPONSE TO NOTICE OF VIOLATION," AS CONTAINED IN INSPECTION REPORT 50-220/95-11 AND 50-410/95-11

VIOLATION 50-410/95-11

During an NRC inspection conducted from May 30 through June 9, 1995, a violation of NRC requirements was identified. The violation is delineated below.

> In accordance with 10CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment and non-conformance are promptly identified and corrected.
>
> Niagara Mohawk Power Corporation Nuclear Division Directive NDD-ECA, Rev. 4, "Evaluation and Corrective Action," Section 3.6, "Evaluation and Disposition," states in part that "Deviations/events, conditions adverse to quality and/or safety, and industry issuances determined to be applicable to Nine Mile Point Station shall have documented evaluations and dispositions."
>
> Contrary to the above, the inspectors identified that in Deviation Event Report (DER) 2-91-Q-1557, Niagara Mohawk had previously (in 1991) identified a significant condition adverse to quality regarding the potential for pressure locking of certain safety-related gate valves. This condition was not adequately dispositioned in that two safety-related high pressure core spray valves (2CSH*MOV107 and 2CSH*MOV118) were not properly identified (in DER 2-91-Q-1557) as being susceptible to pressure locking conditions. The failure to promptly identify these valves as susceptible to pressure locking resulted in an inadequate and untimely evaluation of the capability of these valves to perform their intended safety function.

This is a Severity Level IV violation (Supplement I).

I. *THE REASON FOR THE VIOLATION*

Niagara Mohawk concurs with the violation as stated in Inspection Report No. 95-11. There was a failure to promptly identify high pressure core spray valves 2CSH*MOV107 and 2CSH*MOV118 as susceptible to pressure locking. This resulted in an untimely, detailed evaluation of the capability of these valves to perform their intended function.

Niagara Mohawk responded to pressure locking/thermal binding concerns as discussed in INPO SERs 08-88, 77-83, and 20-84 in Internal Correspondence (IOC) NMP74764 dated March 12, 1991. IOC NMP74764, Appendix B, "Gate Valve Thermal Binding and Pressure Locking Data Sheets", provided an evaluation of the susceptibility of 2CSH*MOV107 and 2CSH*MOV118 and other Nine Mile Point Unit 2 (NMP2) gate valves to pressure locking and thermal binding. The evaluation indicated that 2CSH*MOV107 was not susceptible to pressure locking because no thermal transients over 100°F were expected. Also, although the valve is exposed to the discharge pressure of the pump, the valve was originally specified to operate against a differential pressure of 1575 psid. 2CSH*MOV118 was determined not to be susceptible to pressure locking because the valve was exposed to static head only and there were no thermal transients expected of over 100°F. At the time of these determinations, the 100°F screening criterion was considered appropriate based on available industry information (i.e., the events communicated in the applicable industry notices had occurred with thermal transients greater than 200°F).

General Electric Service Information Letter (GE SIL) 368, "Recirculation Discharge Valve Locking," was originally issued to inform addressees of the potential of pressure locking in GE Boiling Water Reactors (BWR) recirculation valves. Revision 1, Supplement 1 to SIL 368 (1989) increased the scope of the original SIL to include, in part, the High Pressure Core Spray System (HPCS) suppression pool suction valve and the HPCS injection valve. Niagara Mohawk dispositioned SIL 368, Rev. 1, Supp. 1 with the previous evaluation provided in IOC NMP74764 (as discussed above). SIL 368, Rev. 1, Supp. 1, did not provide additional insights that were inconsistent with previous industry guidance used in determining pressure locking susceptibility. Accordingly, our original determination was, at that time, considered adequate. It was not until recently that it was determined that small thermal transients of far less than 100°F can cause pressure locking of 2CSH*MOV118.

However, as a result of further investigation of this issue, Niagara Mohawk reviewed a QA surveillance performed in 1994 of actions taken to address pressure locking concerns of NMP2 motor-operated valves (MOV). The surveillance, using guidance provided by more recent industry information and valve failures, identified concerns in our initial evaluations. Specific actions to fully address this surveillance were deferred based on 1) the assumption that the original evaluation (IOC NMP74764) was adequate and 2) the understanding that an NRC Generic Letter providing specific guidance on how to address pressure locking would be issued in the near future. Niagara Mohawk now believes a more aggressive approach to resolving the QA surveillance identified concerns would have been appropriate (especially considering the fact that issuance of the subject Generic Letter has been delayed).

In Inspection Report No. 95-11, the Staff states that SIL 368 was issued to alert addressees of the potential for certain safety-related gate valves (including the subject HPCS valves) to lock up and be unable to open to perform their intended safety function due to pressure locking. The Staff noted concern that an incorrect conclusion was drawn regarding the potential susceptibility of HPCS valves 2CSH*MOV107 and 2CSH*MOV118.

Based on the above, Niagara Mohawk has concluded that the cause of the initial event involving SIL 368, Rev. 1, Supp. 1, was that the technical assessment and management oversight of the assessment of industry experience was not effectively used to prevent pressure locking of the subject valves at NMP2. There was an inadequate review in that it failed to recognize that SIL 368, Rev. 1, Supp. 1 contradicted conclusions reached in the previous evaluation of similar industry events (i.e., INPO SERs). The cause of the second event involving the QA surveillance was ineffective management oversight of the concerns identified in the surveillance and an inadequate review/over reliance on previous evaluations. Niagara Mohawk believes a more aggressive approach to resolving these concerns would have been appropriate. A reevaluation based on the SIL or QA surveillance could have determined that the subject valves were susceptible to pressure locking.

II. CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

Following identification of the high pressure core spray valves pressure locking concerns, Niagara Mohawk developed a calculation (A10.1-AD-003) to evaluate the operability of 2CSH*MOV118 and 2CSH*MOV107 under pressure locked conditions. Using standard limitorque equations, the calculation indicated that the available valves actuator thrust was insufficient to open either valve. However, as indicated in the calculation, liquid entrapment in the valve bonnet can only occur if the dual valve disks and valve packing provide a 100 percent seal. This was determined not to be credible due to the slow ambient temperature increase and the measured leakage across the valves. The measured leakage of 2CSH*MOV107 and 2CSH*MOV118 was 0.1 gallons per minute (GPM) and 0.2 GPM, respectively. These leakages provide reasonable assurance that adequate venting exists such that liquid entrapment and subsequent pressure buildup in the valve bonnet due to thermal expansion is not an operability concern for these values. In other words, the calculations performed demonstrate that sufficient design margin exists for the subject core spray valves to operate under all credible conditions.

III. ACTIONS TAKEN TO PREVENT RECURRENCE

Niagara Mohawk will reevaluate all safety related power operated gate valves at NMP2 for susceptibility to pressure locking. Generic Letter 89-10, Supplement 6, "Information on Schedule and Grouping, and Staff Responses to Additional Public Questions," Enclosure 1, and the Commission's Generic Letter (currently a draft) on pressure locking/thermal binding will be considered in the evaluation. Operability assessments and hardware changes will be performed, as appropriate, based on these evaluations.

Initially, SIL 368, Rev. 1, Supp. 1 was evaluated by the NMP2 Operations Experience Assessment (OEA) group which was made up of personnel from various disciplines. The existing Deviation Event Reporting (DER) system at NMP2 to track operating experience items would result in design issues being evaluated by Design Engineering. Design Engineering would be more inclined to question previous assumptions that were not based on formal calculations. In other words, the current system of evaluating industry events by the discipline expert (which is the current practice) could have prevented this event.

Niagara Mohawk's reevaluation of Generic Letter 89-10 motor operated gate valves concerning the pressure locking/thermal binding issue will be completed by September 1, 1995. The reevaluation of the remaining safety related power operated gate valves will be completed by October 1, 1995. Appropriate operability evaluations and hardware modifications will be scheduled as required. The counseling between Senior Management Team members and the appropriate Niagara Mohawk staff will be completed by October 31, 1995.

Members of the Senior Management Team will provide job performance counseling to applicable managers and supervisory personnel. This counseling will re-emphasize the expectations for management oversight, safety review oversight and the importance of an adequate and timely response to industry events and in-house experience and the potential adverse effect on safety of failing to do so. Direction will also be given to using calculations, where possible, to verify assumptions.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance for the event described in the Notice of Violation No. 95-11 was achieved on June 20, 1995, with the completion of calculation A10.1-AD-003. This calculation demonstrated that sufficient design margin exists for the subject valves to operate under all credible conditions.