

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NFP-54

DOCKET NO. 50-410

I. INTRODUCTION

The proposed Technical Specification amendment revises Tables 2.2.1-1, 3.6.1.2-1, and 3.6.3-1 to accommodate installation of new Main Steam Isolation Valves. The existing hydraulic actuated (spring to close) ball valves are to be replaced with air operated (spring and pneumatic to close) Y-pattern globe valves. The proposed revisions will provide consistency with the nomenclature used at the plant and will account for design differences in the position indication instrumentation. The deletions to the Operating License relate to matters unique to the ball type main steam isolation valves which are being replaced.

To address the significant hazards consideration of this change, an evaluation of the changeout from a ball valve to the globe valve is first addressed to determine if any changes to criteria or commitments made in the Final Safety Analysis Report (FSAR) are involved. The modification scope and details are discussed in Sections II to IV. The modification is virtually a one-for-one replacement with a globe valve design Main Steam Isolation Valve that has been proven by many years experience at operating Boiling Water Reactors of similar design.

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10CFR50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis, using the standards in Section 50.92, about the finding of no significant hazards consideration. Therefore, in accordance with 10CFR50.91 and 10CFR50.92, the following analysis has been performed:

II. MODIFICATION SCOPE

Overview of the Installation of New Main Steam Isolation Valves

The MSIV's perform two main functions, that is, to provide primary containment isolation and reactor coolant pressure boundary. Experience with the ball valves has shown that they have not functioned as well as anticipated and do not meet performance objectives. Delamination of the tungsten carbide coating causes wearing between the seat and the ball which causes valve leakage. Packing leakage has also been a problem.

The modification consists of replacement of the existing eight main steam isolation valves with wye pattern globe valves. The wye pattern globe valves will meet the same design and commitments applicable to these valves made in the FSAR such as seismic, and environmental qualifications; ASME Section III, Class 1; and IEEE 279; Inservice Inspection; Quality Assurance; stress analysis; and jet impingent; and Heavy Loads evaluation requirements. The operability of the valves and air supply system will be verified by pre-operational and startup testing in accordance with the FSAR. The valves are being purchased from General



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Electric which normally supply the valves as part of the NSSS contract. They meet all General Electric design requirements. Minor design differences between the ball type and globe type main steam valves which do not affect plant safety are discussed below.

MSIV Change Out

The valves will be changed out in accordance with approved Administrative Procedures, Engineering instructions, and drawings in accordance with the requirements of Technical Specifications. The NRC approved Quality Assurance Program will govern the installation of the MSIVs.

A supplemental monorail system is being installed for lifting and handling the wye pattern globe valves. The FSAR has been revised to address the additional monorail trolley and hoist for rigging the globe valves. Except for the new monorail, the normal removal path for the wye pattern globe actuators is the same as previously analyzed in the FSAR for the ball type MSIV actuator removal.

The new actuator uses pneumatic pressure to open, and spring and pneumatic force to close which is similar to other Boiling Water Reactors. The globe valves are being fitted with Class 1E actuators and limit switches to meet seismic and environmental qualification requirements in FSAR Sections 3.10 and 3.11. Also, the globe valves are being reviewed to ensure they are not jet impingent targets. When necessary, appropriate jet impingement shielding is provided in conformance with FSAR requirements.



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The valve is operated by pneumatic pressure and by the action of compressed springs. The control unit is attached to the air cylinder. This unit contains air pilot and solenoid operated valves. The solenoid valves control opening and closing of the air valves and provide exercising capability at slow speed during normal operation. Remote manual switches in the main control room enable the operator to operate the valves. A pneumatic actuator design is supplied. The safety related closure function is provided by spring force. The new wye pattern globe valves will use control room switches of a similar design and meet previously approved electrical design requirements in the FSAR and Human Factors requirements referenced in the FSAR.

The Air Supply System, the system supplying air to the outboard MSIV's and nitrogen to the inboard MSIV's, consists of piping, pipe supports, and accumulators necessary to provide air or nitrogen to open and assist in closing the MSIV's. The design and installation is in accordance with ASME Section III and Section XI and ANSI B31.1.0. In the event of loss of pressure to the header supplying the accumulator, the system is sized to provide a single closure of the MSIV's. The analysis of loss of pressure is discussed below.

III. ANALYSIS

The wye pattern globe valves function in a similar manner as the ball valves. General Electric has reviewed the effect on the transient analysis provided in FSAR, Chapter 15 and determined that there is no change required to the FSAR Transient Analysis due to the change to wye



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pattern globe valves. While the sequence of events may change slightly due to the loss of instrument air, the transient results remain the same, i.e., the closure of the MSIVs and safe shutdown of the plant.

The new valves will close in 3 to 5 seconds in accordance with existing FSAR Section 15 and the Technical Specifications. The new valves will be actuated on the same safety related signals as previously described in the FSAR. In shop acceptance tests the wye pattern valves have met General Electric requirements of 2.6 scfh which would meet the current Technical Specification limit of 6 scfh. Inasmuch as the leakage rate remains unchanged from that analyzed in the FSAR, the installation of the wye pattern valves does not increase the offsite doses.

The effect of the change to the wye pattern globe valve is negligible on the diesel generator and power distribution systems. Instrument Air and Nitrogen System usage remains essentially unchanged.

IV. NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

Inasmuch as the change out is virtually a one-for-one replacement, the change out of the ball valves does not involve a significant hazards consideration. Because the design criteria and commitments applicable to these valves are those contained in the FSAR (as discussed above), no significant hazard is present. The wye pattern globe valves have been used extensively for BWR plants across the United States.



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The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change to the Main Steam Isolation Valve-Closure setpoint has been evaluated with respect to the limiting accident and transient analyses contained in the FSAR: Closure of all Main Steam Isolation Valves with reactor scram via position switch signals to the RPS; Steam Line Break Outside Containment, and Loss of Plant Instrument or Service Air. The revised Technical Specification setpoint values have no effect on the outcome of these analyses. The worst case overpressurization transient, MSIV closure with flux scram, was not affected since failure of direct position scram was assumed; therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change to the Section 2.c.(14) of the Operating License is also administrative in nature and has no effect on any accident analysis. The change removes commitments relative to the MSIV ball valves that will no longer be used in the plant. The completion of ball valve confirmatory leak testing, ball valve prototype leak testing and prototype test report is not applicable to the new wye pattern globe valves. The wye pattern globe valves will be leak tested in accordance with the Technical Specifications. The prototype test program and test report are not applicable nor necessary to the use and safe operation of the wye pattern valves. The wye pattern globe valves have been used extensively throughout the United States in BWR plants. Therefore,



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cessation of the developmental prototype testing would not result in an increase in the probability or consequences of an accident.

Similarly, the request to remove the license condition in Attachment 1 to the license relating to the ball-type MSIVs is administrative in nature and has no effect on any accident analysis. The construction problems relating to the ball type main steam isolation valves are not applicable to the wye pattern globe valves. The ball valve roller bearing failures, slow closure time concern, and local leak rate test problems caused by ball to seat degradation, are unique problems not applicable to wye pattern globe valves.

The change in valve designation is administrative in nature and has no effect on any accident analysis.

As discussed in Section II, the change from ball valves to wye pattern globe valves does not involve a significant increase in the probability or consequences of accident. Inasmuch as the design criteria and commitments in the FSAR applicable to the MSIVs remain the same, the proposed change does not involve a significant increase in the probability or consequences of an accident.

The proposed amendment, in accordance with the operation of Nine Mile Point Unit 2, will not create the possibility of a new or different kind of accident from any accident previously evaluated.



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The proposed changes to the Operating License Section 2.c (14), Operating License Attachment 1, and the Technical Specification Changes to alter the valve designation number are strictly administrative in nature. These changes do not create the possibility for a new or different kind of accident from any accident previously evaluated. Wye pattern globe valves have been used for this main steam line isolation valve service for many years.

The proposed change to the Main Steam Isolation Valve-Closure setpoint has been evaluated with respect to the limiting accident and transient analyses contained in the FSAR: Closure of all Main Steam Isolation Valves with reactor scram via position switch signals to the RPS; Steam Line Break Outside Containment, and Loss of Plant Instrument or Service Air. The revised Technical Specification setpoint values have no effect on the outcome of these analyses. The worst case overpressurization transient, MSIV closure with flux scram, was not affected since failure of direct position scram was assumed; therefore, the proposed change does not create a new or different kind of accident from any previously evaluated.

As discussed in Section II, the change from ball valves to wye pattern globe valves does not involve a significant increase in the probability or consequences of accident. Inasmuch as the design criteria and commitments in the FSAR applicable to the MSIVs remain the same, the proposed change does not create the possibility of a new or different kind of accident than those previously evaluated.



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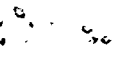
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The proposed amendment, in accordance with the operation of Nine Mile Point Unit 2, will not involve a significant reduction in a margin of safety.

The proposed changes to the Operating License Section 2.c (14), Operating License Attachment 1 and the Technical Specifications changes to alter the valve designation number are strictly administrative in nature. These changes do not involve a significant reduction in the margin of safety. Wye pattern globe valves have been used for main steam line isolation valve service for many years.

The impact of a delayed scram signal due to the new switch setpoint on transients has been evaluated. The only two transients which take credit for this scram function are the manual closure of all main steam isolation valves, (direct scram event) and the pressure regulator controller failure (open event). Of the two events, the manual closure is more limiting. The transient results are more sensitive (limiting) to differences in the allowable range of the Technical Specifications (3 to 5 sec.) speed of MSIV closure (which isn't being changed by this Technical Specification change) than due to a small scram delay resulting from the setpoint change. The proposed change to the Main Steam Isolation Valve-Closure setpoint was evaluated against affected transient analyses and there is no change in the critical power ratio (CPR) operating limit as defined in Section 2.0 of the Technical Specifications; therefore, there is no significant reduction in the margin of safety.



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As discussed in Section II, the change from ball valves to wye pattern globe valves does not involve a significant increase in the probability or consequences of accident. Inasmuch as the design criteria and commitments in the FSAR applicable to the MSIVs remain the same, the proposed change does not decrease the margin of safety in the Technical Specification.

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