



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION REPORT
TECHNICAL SPECIFICATION CHANGE REQUEST TO THE MSIV
NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 2
DOCKET NO. 50-410

1.0 INTRODUCTION

By letters dated March 11, 1987 and April 7, 1987, Niagara Mohawk Power Corporation submitted a request for revision of the Technical Specifications, Appendix A to Operating License NPF-54 for Nine Mile Point Unit 2 (NMP-2). The proposed changes would allow Niagara Mohawk to install new Main Steam Isolation Valves (MSIVs) at NMP-2.

The MSIV's perform several functions such as Primary Containment isolation and Reactor Coolant pressure boundary. The installed MSIV's were originally conceived to meet the Reactor Coolant pressure boundary function and improve upon the Primary Containment leak tightness performed previously by ball valves. Industry experience described in NUREG-1169 indicates that MSIV leakage has been a concern. However, experience with the ball valves has shown that they have not functioned as well as anticipated. 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. Therefore, NMP-2 MSIV's were modified.

The modification includes cutting out the existing eight main steam isolation valves and replacing them with wye-pattern globe valves. The wye-pattern globe valves will meet all the same design criteria that the original design requires. For example, the design will meet safety related seismic, and environmental qualifications; and IEEE 279 requirements. The valves are being purchased from General Electric who normally supply the valves as part of the NSSS contract.

2.0 EVALUATION

The Protection System signals that provide the trips for the wye-pattern MSIVs are the same signals utilized in the ball valve design. The power supplies are the same non-Class 1E 120VAC supplied by UPS3A (Trip System A) and UPS3B (Trip System B). The design utilizes the same electrical protection assemblies (EPA), distribution panels and the same cables.

The fail safe de-energize to operate logic function, used for the ball valves, remains with the wye-pattern valves. This logic control circuitry utilizes relay logic (coil-to-contact) operation to assure that actuation of a single emergency trip sensor (i.e., one-out-of-two in trip system A or B) will not cause inadvertent closure of the MSIVs. This is consistent with the original design basis of NMP-2 whereby the logic is set up as a one-out-of-two taken twice logic (i.e., one-out-of-two in trip system A and B are required to close the MSIVs). For example, a tripped sensor (reactor low-low water level) provide open contacts to a logic function which causes the sensor relay in the associated trip channel to de-energize. The open contacts from the de-energized sensor relay are connected in logic functions which cause a trip relay to de-energize. Output from the de-energized trip relays are combined in one-out-of-two taken twice logic which generates closure signals for the main steam isolation valves.

Each wye-pattern MSIV contains two electrically operated solenoid valves, a three way pilot solenoid valve with two coils and a test solenoid valve. The two pilot solenoid coils on a MSIV are fed from different trip systems. Since the two (2) trip pilot solenoid coils are supplied power from two (2) different trip systems and both trip systems must de-energize to operate, a transfer and isolation scheme (ball valve) is not required on the wye-pattern valves. This change and the standard General Electric control scheme have reduced the number of field cables.

The new wye-pattern globe valves will use a three position selection switch (close-out-test) and a pushbutton switch for each valve. These switches are located in the control room and are similar to the ball valve design.

Niagara Mohawk has requested that a revision be made to the NMP-2 Technical Specification Tables 2.2.1-1, 3.6.1.2-1 and 3.6.3-1 to address the installation of the new MSIVs. Table 2.2.1-1 has been changed to account for differences in the physical configuration of the position indicating switches between the ball valves and the new wye-pattern globe valves. Industry experience has indicated that the current Nominal Trip Setpoint of less than or equal to 6% closed cannot be met with the mounting brackets on the globe valves. Niagara Mohawk has proposed that the MSIV - Closure setpoint be less than or equal to 8% closed to allow margin for field adjustment. A corresponding allowable value of less than or equal to 12% closed has also been proposed to account for drift (allowable value). Table 3.6.1.2-1 and 3.6.3-1 have been changed to alter the valve designations to provide consistent notation for the type of valve installed.

Wye-pattern globe valves are used at the Perry Nuclear Power Plant in the same application and have been approved with setpoints identical to those requested for NMP-2. The staff has found that the change of setpoints is appropriate for wye-pattern globe MSIVs, changing of the valve designations is an administrative change.

3.0 CONCLUSION

Based on the above evaluation, the staff concludes that the latest design modifications made to the MSIVs did not change the actuation control system logic or power supplies and is consistent with the original design basis for NMP-2. The MSIV limit switch inputs to the Reactor Trip System logic remains unchanged from the ball valve design. However, the trip setpoint from the ball valve has been changed from 94% open to 92% open

for the wye-pattern valve. We reviewed this 2% difference in setpoint and the supporting analysis and find the trip setpoint of 8% acceptable.

The staff concludes that the changes comply with the applicable regulatory acceptance criteria including the requirements of IEEE 279. We also conclude that the changes to Tables 2.2.1-1, 3.6.1.2-1 and 3.6.3-1 in the technical specifications are acceptable.

ICSB/DBL SALP INPUT

PLANT: Nine Mile Point Unit 2

LICENSEE: Niagara Mohawk Power Corporation

DOCKET NO: 50-410

LICENSEE STATUS: OR

SER SUBJECT: TECHNICAL SPECIFICATION CHANGE

PERFORMANCE PARAMETERS:

- (1) Management Involvement in Assuring Quality
- (2) Approach to Resolution of Technical Issues From a Safety Standpoint
- (3) Response to NRC Initiatives
- (4) Staffing (Including Management)
- (5) Reporting and Analysis of Reportable Events
- (6) Training and Qualification Effectiveness
- (7) Any Other SALP Functional Area

<u>PERFORMANCE PARAMETER</u>	<u>NARRATIVE DESCRIPTION OF APPLICANT/LICENSEE'S PERFORMANCE</u>	<u>CATEGORY/ RATING</u>
1	No basis for assessment	N/A
2	Understanding of issue generally apparent	2
3	Generally timely responses	2
4 thru 6	No basis for assessment	N/A

OVERALL APPLICANT/LICENSEE PERFORMANCE RATING 2